No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
1	Excavator	*	1	*	1	Short circuit in governor motor system
2	Excavator	*	2	*	1	Potentiometer circuit is shorted to Vcc(5V) or battery(+)
3	Excavator	*	3	*	2	Short circuit in pump EPPR valve system
4	Excavator	Cummins	3	*	3	High voltage detected at the oil pressure circuit.
5	Excavator	*	4	*	4	Short circuit in Boom Down EPPR valve system
6	Excavator	*	5	*	3	Short circuit in travel speed solenoid system
7	Excavator	*	6	*	3	Short circuit in travel boost solenoid system
8	Excavator	*	7	*	4	Short circuit in max flow solenoid system
9	Excavator	*	8	*	4	Co Cancel Sol V/V is shorted to power supply(24V) line
10	Excavator	*	9	*	4	Swing Priority Sol V/V is shorted to power supply line
11	Excavator	*	10	*	4	Short circuit in hour-meter system
12	Excavator	*	11	*	1	Accel dial circuit is shorted to Vcc(5V) or battery(+)
13	Excavator	*	12	*	4	P1 pressure sensor circuit is shorted to power supply(24V) line
14	Excavator	*	13	*	4	P2 pressure sensor circuit is shorted to power supply(24V) line
15	Excavator	*	14	*	4	P3 pressure sensor circuit is shorted to power supply(24V) line
16	Excavator	*	15	*	4	Boom Down pressure sensor circuit is short to power supply(24V) line
17	Excavator	*	16	*	1	Governor motor circuit is open or shorted to ground
18	Excavator	*	17	*	1	Potentiometer motor circuit is open or shorted to ground
19	Excavator	*	18	*	2	Pump EPPR valve circuit is open or shorted to ground
20	Excavator	*	19	*	4	Boom Down EPPR valve circuit is open or shorted to ground
21	Excavator	*	20	*	3	Travel speed solenoid circuit is open or shorted to ground
22	Excavator	*	21	*	3	Power boost solenoid circuit is open or shorted to ground
24	Excavator	Cummins	22	3	3	Extended Crankcase Blow-by Pressure Circuit - Voltage Above Normal, or Shorted to High Source
25	Excavator	Cummins	22	4	3	Extended Crankcase Blow-by Pressure Circuit - Voltage Below Normal, or Shorted to Low Source
23	Excavator	*	22	*	4	Max flow solenoid circuit is open or shorted to ground
26	Excavator	*	23	*	4	Co Cancel solenoid circuit is open or shorted to ground
27	Excavator	*	24	*	4	Swing priority solenoid circuit is open or shorted to ground
28	Excavator	*	25	*	4	Hour-meter circuit is open or shorted to ground
29	Excavator	*	26	*	1	Accel dial circuit is open or shorted to ground
31	Excavator	Cummins	27	2	4	EGR Valve Position - Data erratic, intermittent or incorrect
32	Excavator	Perkins	27	3	3	Engine Exhaust Gas Recirculation Valve Position : Voltage Above Normal
33	Excavator	Cummins	27	4	3	EGR Valve Position Circuit - Voltage below normal, or shorted to low source
34	Excavator	Perkins	27	4	3	Engine Exhaust Gas Recirculation Valve Position : Voltage Below Normal
30	Excavator	*	27	*	4	P1 pressure sensor circuit is open or shorted to ground
36	Excavator	Yanmar	28	0	4	Accelerator sensor 3 error (foot pedal in open position)
37	Excavator	Yanmar	28	1	4	Accelerator sensor 3 error (foot pedal in closed position)
38	Excavator	Yanmar	28	3	4	Accelerator sensor 2 error (Voltage high)
39	Excavator	Yanmar	28	4	4	Accelerator sensor 2 error (Voltage low)
35	Excavator	*	28	*	4	P2 pressure sensor circuit is open or shorted to ground
41	Excavator	Perkins	29	2	3	Accelerator Pedal Position 2 : Erratic, Intermittent or Incorrect
42	Excavator	Perkins	29	3	3	Accelerator Pedal Position 2 : Voltage Above Normal
43	Excavator	Yanmar	29	3	3	Accelerator sensor 3 error (Voltage high)
44	Excavator	Perkins	29	4	3	Accelerator Pedal Position 2 : Voltage Below Normal
45	Excavator	Yanmar	29	4	3	Accelerator sensor 3 error (Voltage low)
46	Excavator	Perkins	29	8	4	Accelerator Pedal Position 2 : Abnormal Frequency, Pulse width or Period
47	Excavator	Yanmar	29	8	4	Pulse accelerator sensor error (pulse communication)
40	Excavator	*	29	*	4	P3 pressure sensor circuit is open or shorted to ground
48	Excavator	*	30	*	4	Boom Down pressure sensor circuit is open or shorted to ground
49	Excavator	*	31	*	4	Engine preheater circuit is open or shorted to ground
50	Excavator	*	32	*	4	Travel alarm buzzer circuit is open or shorted to ground
51	Excavator	*	33	*	3	Alternator circuit is open or shorted to ground
52	Excavator	*	34	*	1	Controller input voltage is below 18V
53	Excavator	*	35	*	1	Controller input voltage is over 38V
54	Excavator	*	36	*	2	Communication error with cluster
55	Excavator	*	37	*	4	Engine speed sensor circuit is open or shorted to ground
56	Excavator	*	38	*	3	Anti-Restart Relay circuit is open or shorted to ground
57	Excavator	*	39	*	2	Governor motor does not stop at a target position
58	Excavator	*	40	*	3	There is more than 500 rpm difference between target speed and actual speed
59	Excavator	*	41	*	3	Hydraulic oil temperature sensor circuit is shorted to ground
60	Excavator	*	42	*	4	Fuel level sensor circuit is shorted to ground
61	Excavator	*	43	*	3	Coolant temperature sensor circuit is shorted to ground
62	Excavator	*	44	*	3	Boom Up Pressure Sensor is shorted to power supply(24V) line
63	Excavator	*	45	*	3	Hydraulic oil temperature sensor circuit is open or shorted to battery(+)
65	Excavator	Scania	46	1	5	Low air pressure signal from APS
66	Excavator	Scania	46	19	5	CAN message timeout from APS
64	Excavator	*	46	*	4	Fuel level sensor circuit is open or shorted to battery(+)
67	Excavator	*	47	*	3	Coolant temperature sensor circuit is open or shorted to battery(+)
68	Excavator	*	48	*	3	Boom Up pressure sensor is open or shorted to ground
69	Excavator	*	49	*	4	Engine preheater circuit shorted to battery(+)
70	Excavator	*	50	*	4	Boom Up EPPR valve circuit is open or shorted to ground
72	Excavator	Cummins	51	2	3	Engine Intake Throttle Actuator Position Sensor - Data Erratic, Intermittent, or Incorrect
73	Excavator	Cummins	51	3	3	Engine Intake Throttle Actuator Position Sensor Circuit - Voltage Above Normal or Shorted to High Source
74	Excavator	Perkins	51	3	3	Engine Throttle Valve 1 Position : Voltage Above Normal
75	Excavator	Scania	51	3	3	Throttle Position Sensor 1, short circuit to +24
76	Excavator	Yanmar	51	3	3	Intake throttle position sensor error (voltage high)

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
77	Excavator	Cummins	51	4	3	Engine Intake Throttle Actuator Position Sensor Circuit - Voltage Below Normal or Shorted to Low Source
78	Excavator	Perkins	51	4	3	Engine Throttle Valve 1 Position : Voltage Below Normal
79	Excavator	Scania	51	4	3	Throttle Position Sensor 1, short circuit to ground
80	Excavator	Yanmar	51	4	3	Intake throttle position sensor error (voltage low)
81	Excavator	Scania	51	7	4	Throttle Position Sensor, not plausible
82	Excavator	Scania	51	8	4	Endpoints of throttle position sensor are out of range
83	Excavator	Scania	51	9	4	Throttle Position Sensor, correlation error
71	Excavator	*	51	*	4	Boom priority solenoid circuit is open or shorted to ground
85	Excavator	Cummins	52	0	3	Coolant Temperature 2 - Data Valid but Above Normal Operational Range - Most Severe Level
87	Excavator	Cummins	52	3	3	Coolant Temperature 2 Sensor Circuit - Voltage Above Normal, or Shorted to High Source
88	Excavator	Cummins	52	4	3	Coolant Temperature 2 Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
86	Excavator	Cummins	52	16	3	Coolant Temperature 2 - Data Valid but Above Normal Operational Range - Moderately Severe Level
84	Excavator	*	52	*	4	Arm Half solenoid circuit is open or shorted to ground
89	Excavator	*	53	*	4	Boom Priority solenoid(2) circuit is open or shorted to ground
90	Excavator	*	54	*	4	Arm Flow Co solenoid circuit is open or shorted to ground
91	Excavator	*	55	*	4	Arm Flow Co solenoid circuit is shorted to battery(+)
92	Excavator	*	56	*	4	Travel alarm buzzer circuit is shorted to battery(+)
93	Excavator	*	57	*	4	Boom Up EPPR valve circuit is shorted to battery(+)
94	Excavator	*	58	*	4	Boom priority solenoid circuit is shorted to battery(+)
95	Excavator	*	59	*	4	Arm Half solenoid circuit is shorted to battery(+)
96	Excavator	*	60	*	4	Boom priority solenoid(2) circuit is shorted to battery(+)
97	Excavator	*	61	*	4	P3 Pressure Sensor is shorted to battery(+)
98	Excavator	*	62	*	3	Boom priority solenoid circuit is open or shorted to ground
99	Excavator	Cummins	70	2	3	Parking Brake Switch - Data Erratic, Intermittent, or Incorrect
100	Excavator	Cummins	81	16	3	Engine Diesel Particulate Filter Intake Pressure - Data Valid But Above Normal Operating Range - Moderately Severe Level
103	Excavator	Cummins	84	2	4	Wheel-Based Vehicle Speed - Data erratic, intermittent or incorrect
104	Excavator	Cummins	84	9	4	Wheel-Based Vehicle Speed - Abnormal update rate
101	Excavator	Cummins	84	10	4	Wheel-Based Vehicle Speed Sensor Circuit tampering has been detected - Abnormal rate of change
102	Excavator	Cummins	84	19	4	Wheel-Based Vehicle Speed - Received Network Data In Error
105	Excavator	Cummins	91	0	3	Accelerator Pedal or Lever Position Sensor 1 - Data valid but above normal operational range - Most Severe Level
106	Excavator	Cummins	91	1	2	Accelerator Pedal or Lever Position 1 Sensor Circuit Frequency - Data valid but below normal operating Range
110	Excavator	Cummins	91	2	2	Accelerator Pedal or Lever Position Sensor 1 - Data erratic, intermittent or incorrect
111	Excavator	Perkins	91	2	2	Accelerator Pedal Position 1 : Erratic, Intermittent or Inaccurate
112	Excavator	Scania	91	2	2	Auxiliary accelerator pedal is used due to other fault
113	Excavator	Cummins	91	3	2	Accelerator Pedal or Lever Position Sensor 1 Circuit - Voltage above normal, or shorted to high source
114	Excavator	Perkins	91	3	2	Accelerator Pedal Position 1 : Voltage Above Normal
115	Excavator	Yanmar	91	3	2	Accelerator sensor 1 error (Voltage high)
116	Excavator	Perkins	91	4	2	Accelerator Pedal Position 1 : Voltage Below Normal
117	Excavator	Yanmar	91	4	2	Accelerator sensor 1 error (Voltage low)
118	Excavator	Perkins	91	8	2	Accelerator Pedal Position 1 : Abnormal Frequency, Pulse width or Period
119	Excavator	Cummins	91	9	2	SAE J1939 Multiplexed Accelerator Pedal or Lever Sensor System - Abnormal update rate
120	Excavator	Scania	91	9	2	Accelerator pedal faulty or error via can
107	Excavator	Scania	91	10	2	Accelerator pedal not plausible, faulty
108	Excavator	Cummins	91	19	2	SAE J1939 Multiplexed Accelerator Pedal or Lever Sensor System - Received Network Data In Error
109	Excavator	Scania	91	19	2	Accelerator pedal value out of range via CAN
121	Excavator	Cummins	93	2	4	Auxiliary Alternate Torque Validation Switch - Data erratic, intermittent or incorrect
122	Excavator	Cummins	94	0	3	Engine Fuel Delivery Pressure - Data Valid but Above Normal Operational Range - Most Severe Level
123	Excavator	Scania	94	0	3	Accumulator pressure is too high
128	Excavator	Cummins	94	2	3	Fuel Pressure Sensor Circuit - Data Erratic, Intermittent, or Incorrect
129	Excavator	Cummins	94	3	4	Fuel Delivery Pressure Sensor Circuit - Voltage above normal, or shorted to high source
130	Excavator	Cummins	94	4	4	Fuel Delivery Pressure Sensor Circuit - Voltage below normal, or shorted to low source
124	Excavator	Cummins	94	15	3	Fuel Pump Delivery Pressure - Data Valid But Above Normal Operating Range - Least Severe Level
125	Excavator	Cummins	94	16	3	Fuel Pump Delivery Pressure - Data Valid but Above Normal Operational Range – Moderately Severe Level
126	Excavator	Cummins	94	17	3	Fuel Pump Delivery Pressure - Data Valid But Below Normal Operating Range - Least Severe Level
127	Excavator	Cummins	94	18	3	Fuel Pump Delivery Pressure - Data Valid But Below Normal Operating Range - Moderately Severe Level
131	Excavator	Cummins	95	16	3	Fuel Filter Differential Pressure - Data Valid But Above Normal Operating Range - Moderately Severe Level
132	Excavator	Cummins	97	0	3	Water in Fuel Indicator - Data Valid But Above Normal Operating Range - Most Severe Level
137	Excavator	Cummins	97	3	3	Water in Fuel Indicator Sensor Circuit - Voltage above normal, or shorted to high source
138	Excavator	Perkins	97	3	3	Water In Fuel Indicator : Voltage Above Normal
139	Excavator	Cummins	97	4	3	Water in Fuel Indicator Sensor Circuit - Voltage below normal, or shorted to low source
133	Excavator	Cummins	97	15	3	Water in Fuel Indicator - Data Valid But Above Normal Operating Range - Least Severe Level
134	Excavator	Perkins	97	15	3	Water in Fuel Indicator: High - least severe (1)
135	Excavator	Cummins	97	16	3	Water in Fuel Indicator - Data Valid But Above Normal Operating Range - Moderately Severe Level

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
136	Excavator	Perkins	97	16	3	Water In fuel Indicator : High - moderate severity (2)
140	Excavator	Cummins	98	0	3	Engine Oil Level - Data valid but above normal operational range - Most Severe Level
141	Excavator	Cummins	98	1	3	Engine Oil Level - Data valid but below normal operational range - Most Severe Level
142	Excavator	Perkins	98	1	3	Engine Oil Level : Low - most severe (3)
146	Excavator	Scania	98	2	4	Oil level sensor, faulty
147	Excavator	Scania	98	3	3	Oil level sensor, short circuit to +24V
148	Excavator	Scania	98	4	3	Oil level sensor, short circuit to ground
143	Excavator	Scania	98	10	3	Oil level sensor stuck
144	Excavator	Cummins	98	17	3	Engine Oil Level - Data Valid But Below Normal Operating Range - Least Severe Level
145	Excavator	Perkins	98	18	2	Engine Oil Level : Low - moderate severity (2)
149	Excavator	Cummins	100	1	1	Engine Oil Rifle Pressure - Data valid but below normal operational range - Most Severe Level
150	Excavator	Perkins	100	1	1	Engine Oil Pressure : Low - most severe (3)
151	Excavator	Scania	100	1	1	Oil pressure sensor, pressure too low
152	Excavator	Yanmar	100	1	1	Low oil pressure fault alarm
160	Excavator	Cummins	100	2	3	Engine Oil Rifle Pressure - Data erratic, intermittent or incorrect
161	Excavator	Perkins	100	2	3	Engine Oil Pressure: Erratic, Intermittent, or Incorrect
162	Excavator	Scania	100	2	3	Oil pressure sensor, faulty
164	Excavator	Cummins	100	3	3	Engine Oil Rifle Pressure 1 Sensor Circuit - Voltage above normal, or shorted to high source
165	Excavator	Perkins	100	3	3	Engine Oil Pressure Sensor : Voltage Above Normal
166	Excavator	Scania	100	3	3	Oil pressure sensor, short circuit to +24V
167	Excavator	Cummins	100	4	3	Engine Oil Rifle Pressure 1 Sensor Circuit - Voltage below normal, or shorted to low source
168	Excavator	Perkins	100	4	3	Engine Oil Pressure Sensor : Voltage Below Normal
169	Excavator	Scania	100	4	3	Oil pressure sensor, short circuit to ground
170	Excavator	Yanmar	100	4	3	Oil pressure switch open circuit
153	Excavator	Scania	100	13	4	Oil pressure sensor, pressure not plausible
154	Excavator	Scania	100	16	4	Oil pressure sensor, pressure above normal
155	Excavator	Perkins	100	17	3	Engine Oil Pressure: Low - least severe (1)
156	Excavator	Scania	100	17	3	Oil pressure sensor, pressure too low and engine protective action
157	Excavator	Cummins	100	18	2	Engine Oil Rifle Pressure - Data Valid But Below Normal Operating Range - Moderately Severe Level
158	Excavator	Perkins	100	18	2	Engine Oil Pressure : Low moderate severity (2)
159	Excavator	Scania	100	18	2	Oil pressure sensor, pressure below normal
163	Excavator	Scania	100	21	3	Oil Pressure Sensor-Data Not Rational-Drifted Low
171	Excavator	Cummins	101	0	2	Crankcase Pressure - Data valid but above normal operational range - Most Severe Level
174	Excavator	Cummins	101	2	4	Crankcase Pressure - Data erratic, intermittent or incorrect
175	Excavator	*	101	3	3	Hydraulic Oil Temperature-Voltage Above Normal, Or Shorted To High Source
176	Excavator	Cummins	101	3	3	Crankcase Pressure Circuit - Voltage above normal, or shorted to high source
177	Excavator	*	101	4	3	Hydraulic Oil Temperature Sensor Circuit - Voltage Below Normal, or shorted to Low Source
178	Excavator	Cummins	101	4	3	Crankcase Pressure Circuit - Voltage below normal, or shorted to low source
172	Excavator	Cummins	101	15	3	Crankcase Pressure - Data Valid But Above Normal Operating Range - Least Severe Level
173	Excavator	Cummins	101	16	3	Crankcase Pressure - Data Valid But Above Normal Operating Range - Moderately Severe Level
180	Excavator	Scania	102	0	4	Boost pressure higher than reference
181	Excavator	Scania	102	1	4	Boost pressure lower than reference
192	Excavator	Cummins	102	2	4	Intake Manifold 1 Pressure - Data erratic, intermittent or incorrect
197	Excavator	Cummins	102	3	3	Intake Manifold 1 Pressure Sensor Circuit - Voltage above normal, or shorted to high source
198	Excavator	Perkins	102	3	3	Engine Intake Manifold #1 Pressure: Voltage Above Normal
199	Excavator	Scania	102	3	3	Boost pressure sensor, short circuit to +24V
200	Excavator	Yanmar	102	3	3	EGR low pressure side pressure sensor error (voltage high)
201	Excavator	Cummins	102	4	3	Intake Manifold 1 Pressure Sensor Circuit - Voltage below normal, or shorted to low source
202	Excavator	Perkins	102	4	3	Engine Intake Manifold #1 Pressure: Voltage Below Normal
203	Excavator	Scania	102	4	3	Boost pressure sensor, short circuit to ground
204	Excavator	Yanmar	102	4	3	EGR low pressure side pressure sensor error (voltage low)
205	Excavator	Scania	102	7	3	Boost pressure, too low
206	Excavator	Scania	102	8	3	Boost pressure sensor, faulty
207	Excavator	Scania	102	9	4	Boost pressure, not plausible
182	Excavator	Cummins	102	10	4	Intake Manifold 1 Pressure - Abnormal rate of change
183	Excavator	Scania	102	10	4	Boost pressure sensor, faulty
184	Excavator	Yanmar	102	13	2	EGR low pressure side pressure sensor error (abnormal learning value)
185	Excavator	Scania	102	15	4	Boost pressure sensor and exhaust pressure sensor do not correlate
186	Excavator	Cummins	102	16	3	Intake Manifold 1 Pressure - Data Valid But Above Normal Operating Range - Moderately Severe Level
187	Excavator	Perkins	102	16	3	Engine Intake Manifold #1 Pressure : High - moderate severity (2)
188	Excavator	Scania	102	16	3	Boost pressure above normal
189	Excavator	Cummins	102	18	3	Intake Manifold 1 Pressure - Data Valid But Below Normal Operating Range - Moderately Severe Level
190	Excavator	Perkins	102	18	3	Engine Intake Manifold #1 Pressure : Low - moderate severity (2)
191	Excavator	Scania	102	18	3	Boost pressure, lower than reference at part load
193	Excavator	Perkins	102	20	3	Engine Intake Manifold #1 Pressure: Data Drifted High
194	Excavator	Scania	102	20	3	Boost pressure, too high not plausible
195	Excavator	Perkins	102	21	3	Engine Intake Manifold #1 Pressure: Data Drifted Low
196	Excavator	Scania	102	21	3	Boost pressure, too low not plausible
179	Excavator	*	102	*	1	(Warning) Hydraulic Oil Temperature High
208	Excavator	Scania	103	0	2	Turbine excessive overspeed
213	Excavator	Cummins	103	2	3	Turbocharger 1 Speed - Data erratic, intermittent or incorrect
214	Excavator	Scania	103	2	3	Turbine speed sensor, faulty
217	Excavator	Scania	103	3	3	Turbine speed sensor, short circuit to +24V
218	Excavator	Scania	103	4	3	Turbine speed sensor, short circuit to ground

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
219	Excavator	Scania	103	5	3	Turbine speed sensor, open load
220	Excavator	Scania	103	9	4	Turbine speed not plausible
209	Excavator	Cummins	103	10	3	Turbocharger speed invalid rate of change detected - Abnormal Rate of Change
210	Excavator	Cummins	103	15	4	Engine Turbocharger Speed - Data Valid But Above Normal Operating Range - Least Severe Level
211	Excavator	Cummins	103	16	3	Turbocharger 1 Speed - Data Valid But Above Normal Operating Range - Moderately Severe Level
212	Excavator	Cummins	103	18	3	Turbocharger 1 Speed - Data Valid But Below Normal Operating Range - Moderately Severe Level
215	Excavator	Scania	103	20	4	Turbine speed sensor above model, not plausible
216	Excavator	Scania	103	21	4	Turbine speed sensor below model, not plausible
222	Excavator	Cummins	104	18	1	Engine Turbocharger Lube Oil Pressure - Data Valid But Below Normal Operating Range - Moderately Severe Level
221	Excavator	*	104	*	3	(Warning) Overload
223	Excavator	*	105	0	3	Working Pilot Pressure-Data Valid But Above Normal Operational Range
224	Excavator	Cummins	105	0	3	Intake Manifold 1 Temperature - Data valid but above normal operational range - Most Severe Level
225	Excavator	Perkins	105	0	3	Engine Intake Manifold #1 Temperature : High - most severe (3)
226	Excavator	Scania	105	0	3	Boost temp sensor excessive high
227	Excavator	*	105	1	3	Working Pilot Pressure-Data Valid But Below Normal Operational Range
228	Excavator	Scania	105	1	3	Boost temp sensor excessive low
237	Excavator	Cummins	105	2	3	Intake Manifold 1 Temperature - Data erratic, intermittent or incorrect
238	Excavator	Scania	105	2	3	Boost temp sensor, faulty
239	Excavator	*	105	2	5	Working Pilot Pressure-Data Erratic, Intermittent Or Incorrect
242	Excavator	Cummins	105	3	3	Intake Manifold 1 Temperature Sensor Circuit - Voltage above normal, or shorted to high source
243	Excavator	Perkins	105	3	3	Engine Intake Manifold #1 Temperature : Voltage Above Normal
244	Excavator	Scania	105	3	3	Boost temp sensor, short circuit to +24V
245	Excavator	Yanmar	105	3	3	Intake manifold temperature sensor error (voltage high)
246	Excavator	*	105	4	3	Working Pilot Pressure-Voltage Below Normal, Or Shorted To Low Source
247	Excavator	Cummins	105	4	3	Intake Manifold 1 Temperature Sensor Circuit - Voltage below normal, or shorted to low source
248	Excavator	Perkins	105	4	3	Engine Intake Manifold #1 Temperature : Voltage Below Normal
249	Excavator	Scania	105	4	3	Boost temp sensor, short circuit to ground
250	Excavator	Yanmar	105	4	3	Intake manifold temperature sensor error (voltage low)
251	Excavator	Scania	105	9	4	Boost temperature above ambient, not plausible
229	Excavator	Cummins	105	15	4	Intake Manifold 1 Temperature - Data Valid But Above Normal Operating Range - Least Severe Level
230	Excavator	Perkins	105	15	4	Engine Intake Manifold #1 Temperature : High - least severe (1)
231	Excavator	Scania	105	15	4	Boost temperature to high for longer period
232	Excavator	Cummins	105	16	4	Intake Manifold 1 Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
233	Excavator	Perkins	105	16	4	Engine Intake Manifold #1 Temperature : High - moderate severity (2)
234	Excavator	Scania	105	16	4	Boost temperature above normal
235	Excavator	Scania	105	17	4	Boost temperature below ambient, not plausible
236	Excavator	Cummins	105	18	4	Intake Manifold 1 Temperature - Data Valid But Below Normal Operating Range - Moderately Severe Level
240	Excavator	Scania	105	20	4	Boost temperature to high, not plausible
241	Excavator	Scania	105	21	4	Boost temperature to low, not plausible
252	Excavator	Scania	107	1	3	Air filter clogged
257	Excavator	Perkins	107	2	3	Engine Air Filter 1 Differential Pressure: Erratic, Intermittent, or Incorrect
258	Excavator	Scania	107	2	3	Air filter control switch broken
259	Excavator	Perkins	107	3	3	Engine Air Filter 1 Differential Pressure : Voltage Above Normal
260	Excavator	Perkins	107	4	3	Engine Air Filter 1 Differential Pressure : Voltage Below Normal
253	Excavator	Cummins	107	15	3	Engine Air Filter Differential Pressure - Data Valid But Above Normal Operating Range - Least Severe Level
254	Excavator	Perkins	107	15	3	Engine Air Filter 1 Differential Pressure: High - least severe (1)
255	Excavator	Cummins	107	16	2	Engine Air Filter Differential Pressure - Data Valid But Above Normal Operating Range - Moderately Severe Level
256	Excavator	Perkins	107	16	2	Engine Air Filter 1 Differential Pressure: High - moderate severity (2)
261	Excavator	*	108	0	3	Travel Pilot Pressure-Data Valid But Above Normal Operational Range
262	Excavator	*	108	1	3	Travel Pilot Pressure-Data Valid But Below Normal Operational Range
266	Excavator	Cummins	108	2	3	Barometric Pressure - Data erratic, intermittent or incorrect
267	Excavator	Scania	108	2	3	Ambient Pressure Sensor Error via CAN
268	Excavator	*	108	2	5	Travel Pilot Pressure-Data Erratic, Intermittent Or Incorrect
271	Excavator	Cummins	108	3	3	Barometric Pressure Sensor Circuit - Voltage above normal, or shorted to high source
272	Excavator	Perkins	108	3	3	Barometric Pressure: Voltage Above Normal
273	Excavator	Scania	108	3	3	Ambient Pressure Sensor, short circuit to +24V
274	Excavator	Yanmar	108	3	3	Atmospheric pressure sensor error (voltage high)
275	Excavator	*	108	4	3	Travel Pilot Pressure-Voltage Below Normal, Or Shorted To Low Source
276	Excavator	Cummins	108	4	3	Barometric Pressure Sensor Circuit - Voltage above normal, or shorted to low source
277	Excavator	Perkins	108	4	3	Barometric Pressure: Voltage Below Normal
278	Excavator	Scania	108	4	3	Ambient Pressure Sensor, short circuit to ground
279	Excavator	Yanmar	108	4	3	Atmospheric pressure sensor error (voltage low)
263	Excavator	Yanmar	108	10	2	Atmospheric pressure sensor error (characteristic error)
264	Excavator	Scania	108	15	5	Ambient Pressure Sensor and Exhaust Pressure Sensor do not correlate
265	Excavator	Scania	108	16	4	Ambient Pressure above normal
269	Excavator	Scania	108	20	4	Ambient Pressure too high, not plausible
270	Excavator	Scania	108	21	5	Ambient Pressure too low, not plausible

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
281	Excavator	Cummins	109	3	3	Coolant Pressure Sensor Circuit - Voltage above normal, or shorted to high source
282	Excavator	Cummins	109	4	3	Coolant Pressure Sensor Circuit - Voltage below normal, or shorted to low source
280	Excavator	Cummins	109	18	3	Coolant Pressure - Data Valid But Below Normal Operating Range - Moderately Severe Level
284	Excavator	Cummins	110	0	2	Engine Coolant Temperature - Data valid but above normal operational range - Most Severe Level
285	Excavator	Perkins	110	0	2	Engine Coolant Temperature : High - most severe (3)
286	Excavator	Scania	110	0	2	Engine temperature, excessive high
287	Excavator	Yanmar	110	0	2	Engine coolant temperature high (overheat)
288	Excavator	Scania	110	1	4	Engine temperature too low
299	Excavator	Cummins	110	2	3	Engine Coolant Temperature - Data erratic, intermittent or incorrect
300	Excavator	Scania	110	2	3	Engine temp sensor fault
303	Excavator	Cummins	110	3	3	Engine Coolant Temperature 1 Sensor Circuit - Voltage above normal, or shorted to high source
304	Excavator	Perkins	110	3	3	Engine Coolant Temperature: Voltage Above Normal
305	Excavator	Scania	110	3	3	Engine temp sensor, short circuit to +24V
306	Excavator	Yanmar	110	3	3	Engine coolant temperature sensor error (voltage high)
308	Excavator	Cummins	110	4	3	Engine Coolant Temperature 1 Sensor Circuit - Voltage below normal, or shorted to low source
309	Excavator	Perkins	110	4	3	Engine Coolant Temperature: Voltage Below Normal
310	Excavator	Scania	110	4	3	Engine temp sensor, short circuit to ground
311	Excavator	Yanmar	110	4	3	Engine coolant temperature sensor error (voltage low)
312	Excavator	Scania	110	8	3	Engine temp sensor, stuck
313	Excavator	Scania	110	9	3	Engine temp sensor, faulty
289	Excavator	Scania	110	10	4	Engine temperature is not plausble
290	Excavator	Cummins	110	14	4	Engine Coolant Temperature - Special Instructions
291	Excavator	Cummins	110	15	4	Engine Coolant Temperature - Data Valid But Above Normal Operating Range - Least Severe Level
292	Excavator	Perkins	110	15	4	Engine Coolant Temperature: High - least severe (1)
293	Excavator	Cummins	110	16	3	Engine Coolant Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
294	Excavator	Perkins	110	16	3	Engine Coolant Temperature: High - moderate severity (2)
295	Excavator	Scania	110	16	3	Engine temperature, too high
296	Excavator	Scania	110	17	3	Engine temp sensor, temp below normal or VGT-temp above normal
297	Excavator	Cummins	110	18	3	Engine Coolant Temperature - Data Valid But Below Normal Operating Range - Moderately Severe Level
298	Excavator	Scania	110	18	3	Engine temp sensor, temp above normal or VGT-temp below normal
301	Excavator	Scania	110	20	4	Engine Coolant Water Temperature Too High
302	Excavator	Scania	110	21	5	Coolant Temperature Below Thermostat Regulating Temperature
307	Excavator	Cummins	110	31	5	Engine Coolant Temperature - Condition Exists
283	Excavator	Cummins	110	*	3	Engine Coolant Temperature - Condition Exists. Engine coolant signal indicates coolant temperature is above the engine coolant temperature engine protection warning limit.
314	Excavator	Cummins	111	1	3	Coolant Level - Data valid but below normal operational range - Most Severe Level
315	Excavator	Perkins	111	1	3	Engine coolant level : Low - most severe (3)
316	Excavator	Scania	111	1	3	Coolant level too low
323	Excavator	Cummins	111	2	4	Coolant Level - Data erratic, intermittent or incorrect
324	Excavator	Cummins	111	3	3	Coolant Level Sensor 1 Circuit - Voltage above normal, or shorted to high source
325	Excavator	Scania	111	3	3	Coolant level sensor, short circuit to +24
326	Excavator	Cummins	111	4	3	Coolant Level Sensor 1 Circuit - Voltage below normal, or shorted to low source
327	Excavator	Scania	111	4	3	Coolant level sensor, short circuit to ground
328	Excavator	Cummins	111	9	4	SAE J1939 Multiplexing PGN Timeout Error - Abnormal update rate
317	Excavator	Cummins	111	17	4	Coolant Level - Data Valid But Below Normal Operating Range - Least Severe Level
318	Excavator	Mitsubishi	111	17	4	Engine coolant level : Low - least severe (1)
319	Excavator	Perkins	111	17	4	Engine coolant level : Low - least severe (1)
320	Excavator	Cummins	111	18	3	Coolant Level - Data Valid But Below Normal Operating Range - Moderately Severe Level
321	Excavator	Perkins	111	18	3	Engine Coolant Level : Low - moderate severity (2)
322	Excavator	Cummins	111	19	4	Coolant Level Sensor - Received Network Data in Error
329	Excavator	*	120	0	4	Main Pump 1 (P1) Pressure-Data Valid But Above Normal Operational Range
330	Excavator	*	120	1	4	Main Pump 1 (P1) Pressure-Data Valid But Below Normal Operational Range
331	Excavator	*	120	2	5	Main Pump 1 (P1) Pressure-Data Erratic, Intermittent Or Incorrect
332	Excavator	*	120	4	4	Main Pump 1 (P1) Pressure-Voltage Below Normal, Or Shorted To Low Source
333	Excavator	*	121	0	4	Main Pump 2 (P2) Pressure-Data Valid But Above Normal Operational Range
334	Excavator	*	121	1	4	Main Pump 2 (P2) Pressure-Data Valid But Below Normal Operational Range
335	Excavator	*	121	2	5	Main Pump 2 (P2) Pressure-Data Erratic, Intermittent Or Incorrect
336	Excavator	*	121	4	4	Main Pump 2 (P2) Pressure-Voltage Below Normal, Or Shorted To Low Source
337	Excavator	*	122	0	3	Overload Pressure-Data Valid But Above Normal Operational Range
338	Excavator	*	122	1	3	Overload Pressure-Data Valid But Below Normal Operational Range
339	Excavator	*	122	2	5	Overload Pressure-Data Erratic, Intermittent Or Incorrect
340	Excavator	*	122	4	3	Overload Pressure-Voltage Below Normal, Or Shorted To Low Source
341	Excavator	*	123	0	4	Main Pump 1 Regulator Pressure-Data Valid But Above Normal Operational Range
342	Excavator	*	123	1	4	Main Pump 1 Regulator Pressure-Data Valid But Below Normal Operational Range
343	Excavator	*	123	2	5	Main Pump 1 Regulator Pressure-Data Erratic, Intermittent Or Incorrect
344	Excavator	*	123	4	4	Main Pump 1 Regulator Pressure-Voltage Below Normal, Or Shorted To Low Source
345	Excavator	*	124	0	4	Main Pump 2 Regulator Pressure-Data Valid But Above Normal Operational Range
346	Excavator	*	124	1	4	Main Pump 2 Regulator Pressure-Data Valid But Below Normal Operational Range
347	Excavator	*	124	2	5	Main Pump 2 Regulator Pressure-Data Erratic, Intermittent Or Incorrect
348	Excavator	*	124	4	4	Main Pump 2 Regulator Pressure-Voltage Below Normal, Or Shorted To Low Source
349	Excavator	*	125	0	4	Pilot Pump Pressure-Data Valid But Above Normal Operational Range
350	Excavator	*	125	1	4	Pilot Pump Pressure-Data Valid But Below Normal Operational Range
351	Excavator	*	125	2	5	Pilot Pump Pressure-Data Erratic, Intermittent Or Incorrect

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
352	Excavator	*	125	4	4	Pilot Pump Pressure-Voltage Below Normal, Or Shorted To Low Source
353	Excavator	*	127	0	4	Boom Up Pilot Pressure-Data Valid But Above Normal Operational Range
354	Excavator	*	127	1	4	Boom Up Pilot Pressure-Data Valid But Below Normal Operational Range
355	Excavator	*	127	2	5	Boom Up Pilot Pressure-Data Erratic, Intermittent Or Incorrect
356	Excavator	*	127	4	4	Boom Up Pilot Pressure-Voltage Below Normal, Or Shorted To Low Source
357	Excavator	*	128	0	4	Boom Down Pilot Pressure-Data Valid But Above Normal Operational Range
358	Excavator	*	128	1	4	Boom Down Pilot Pressure-Data Valid But Below Normal Operational Range
359	Excavator	*	128	2	5	Boom Down Pilot Pressure-Data Erratic, Intermittent Or Incorrect
360	Excavator	*	128	4	4	Boom Down Pilot Pressure-Voltage Below Normal, Or Shorted To Low Source
361	Excavator	*	129	0	4	Arm In Pilot Pressure-Data Valid But Above Normal Operational Range
362	Excavator	*	129	1	4	Arm In Pilot Pressure-Data Valid But Below Normal Operational Range
363	Excavator	*	129	2	5	Arm In Pilot Pressure-Data Erratic, Intermittent Or Incorrect
364	Excavator	*	129	4	4	Arm In Pilot Pressure-Voltage Below Normal, Or Shorted To Low Source
365	Excavator	*	130	0	4	Arm out pilot pressure-Data Valid But Above Normal Operational
366	Excavator	*	130	1	4	Arm out pilot pressure-Data Valid But Below Normal Operational Range
367	Excavator	*	130	2	5	Arm out pilot pressure-Data Erratic, Intermittent Or Incorrect
368	Excavator	*	130	4	4	Arm out pilot pressure-Voltage Below Normal, Or Shorted To Low Source
369	Excavator	*	131	0	4	Bucket In pilot pressure-Data Valid But Above Normal Operational Range
370	Excavator	*	131	1	4	Bucket In pilot pressure-Data Valid But Below Normal Operational Range
375	Excavator	Scania	131	2	4	Exhaust pressure sensor, not plausible
376	Excavator	*	131	2	5	Bucket In pilot pressure-Data Erratic, Intermittent Or Incorrect
379	Excavator	Scania	131	3	3	Exhaust pressure sensor, short circuit to +24V
380	Excavator	Scania	131	4	3	Exhaust pressure sensor, short circuit to ground or open load
381	Excavator	*	131	4	4	Bucket In pilot pressure-Voltage Below Normal, Or Shorted To Low Source
382	Excavator	Scania	131	7	4	Exhaust pressure sensor and boost pressure sensor do not correlate
383	Excavator	Scania	131	8	4	Exhaust pressure sensor, faulty
384	Excavator	Scania	131	9	3	Exhaust pressure sensor, stuck
371	Excavator	Scania	131	10	3	Exhaust pressure sensor and ambient pressure sensor do not correlate
372	Excavator	Scania	131	15	3	Exhaust pressure, high exhaust pressure during normal fueling
373	Excavator	Scania	131	16	4	Exhaust pressure, high exhaust pressure during motoring, no fueling
374	Excavator	Scania	131	18	4	Exhaust pressure, low exhaust pressure during exhaust brake
377	Excavator	Scania	131	20	4	Exhaust pressure too high, not plausible
378	Excavator	Scania	131	21	4	Exhaust pressure too low, not plausible
385	Excavator	Scania	132	0	3	Mass flow sensor, short circuit to +24V
386	Excavator	*	132	0	4	Bucket Out Pilot Pressure-Data Valid But Above Normal Operational Range
387	Excavator	Scania	132	1	3	Mass flow sensor, short circuit to ground or open load
388	Excavator	*	132	1	4	Bucket Out Pilot Pressure-Data Valid But Below Normal Operational Range
389	Excavator	Cummins	132	2	3	Engine Intake Air Mass Flow - Data Erratic, Intermittent, or Incorrect
390	Excavator	Scania	132	2	3	Mass flow sensor, faulty
391	Excavator	*	132	2	5	Bucket Out Pilot Pressure-Data Erratic, Intermittent Or Incorrect
394	Excavator	Cummins	132	3	3	Engine Intake Air Mass Flow Sensor Circuit - Voltage Above Normal or Shorted to High Source
395	Excavator	Scania	132	3	3	Mass flow sensor, supply
396	Excavator	Cummins	132	4	3	Engine Intake Air Mass Flow Circuit - Voltage Below Normal or Shorted to Low Source
397	Excavator	Scania	132	4	3	Mass flow sensor, sdaptation under low threshold
398	Excavator	*	132	4	4	Bucket Out Pilot Pressure-Voltage Below Normal, Or Shorted To Low Source
399	Excavator	Scania	132	5	3	Mass flow sensor, adaptation over high threshold
400	Excavator	Scania	132	7	3	Mass flow sensor, stuck
392	Excavator	Cummins	132	20	3	Engine Intake Air Mass Flow - Data Not Rational - Drifted High
393	Excavator	Cummins	132	21	3	Engine Intake Air Mass Flow - Data Not Rational - Drifted Low
401	Excavator	*	133	0	4	Arm In/Out & Bucket In Pilot Pressure-Data Valid But Above Normal Operational Range
402	Excavator	*	133	1	4	Arm In/Out & Bucket In Pilot Pressure-Data Valid But Below Normal Operational Range
403	Excavator	*	133	2	5	Arm In/Out & Bucket In Pilot Pressure-Data Erratic, Intermittent Or Incorrect
404	Excavator	*	133	4	4	Arm In/Out & Bucket In Pilot Pressure-Voltage Below Normal, Or Shorted To Low Source
405	Excavator	*	135	0	4	Swing Pilot Pressure-Data Valid But Above Normal Operational Range
406	Excavator	*	135	1	4	Swing Pilot Pressure-Data Valid But Below Normal Operational Range
407	Excavator	*	135	2	5	Swing Pilot Pressure-Data Erratic, Intermittent Or Incorrect
408	Excavator	*	135	4	4	Swing Pilot Pressure-Voltage Below Normal, Or Shorted To Low Source
409	Excavator	Cummins	135	4	4	Fuel Pump Pressure Sensor Circuit - Shorted Low
410	Excavator	*	137	0	4	Attachment Flow Control EPPR Valve Pressure-Data Valid But Above Normal Operational Range
411	Excavator	*	137	1	4	Attachment Flow Control EPPR Valve Pressure-Data Valid But Below Normal Operational Range
412	Excavator	*	137	2	5	Attachment Flow Control EPPR Valve Pressure-Data Erratic, Intermittent Or Incorrect
413	Excavator	*	137	4	4	Attachment Flow Control EPPR Valve Pressure-Voltage Below Normal, Or Shorted To Low Source
414	Excavator	*	138	0	4	Attachment Pilot Pressure-Data Valid But Above Normal Operational Range
415	Excavator	*	138	1	4	Attachment Pilot Pressure-Data Valid But Below Normal Operational Range
416	Excavator	*	138	2	5	Attachment Pilot Pressure-Data Erratic, Intermittent Or Incorrect
417	Excavator	*	138	4	4	Attachment Pilot Pressure-Voltage Below Normal, Or Shorted To Low Source
418	Excavator	*	139	0	4	Option Pilot Pressure-Data Valid But Above Normal Operational Range
419	Excavator	*	139	1	4	Option Pilot Pressure-Data Valid But Below Normal Operational Range
420	Excavator	*	139	2	5	Option Pilot Pressure-Data Erratic, Intermittent Or Incorrect
421	Excavator	*	139	4	4	Option Pilot Pressure-Voltage Below Normal, Or Shorted To Low Source
422	Excavator	*	140	5	2	Main Pump EPPR Valve Current-Current Below Normal Or Open Circuit
423	Excavator	*	140	6	2	Main Pump EPPR Valve Current-Current Above Normal Or Grounded Circuit
424	Excavator	*	141	5	4	Boom Priority (Against Swing) EPPR Valve Current -Current Below Normal Or Open Circuit
425	Excavator	*	141	6	4	Boom Priority (Against Swing) EPPR Valve Current -Current Above Normal Or Grounded Circuit

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
426	Excavator	*	143	5	4	Travel EPPR Valve Current-Current Below Normal Or Open Circuit
427	Excavator	*	143	6	4	Travel EPPR Valve Current-Current Above Normal Or Grounded Circuit
428	Excavator	*	144	5	2	Attachment Flow Valve Current-Current Below Normal Or Open Circuit
429	Excavator	*	144	6	2	Attachment Flow Valve Current-Current Above Normal Or Grounded Circuit
430	Excavator	*	145	5	4	Cooling Fan EPPR Valve Current-Current Below Normal Or Open Circuit
431	Excavator	*	145	6	4	Cooling Fan EPPR Valve Current-Current Above Normal Or Grounded Circuit
432	Excavator	*	150	5	4	Left Rotate Valve Current-Current Below Normal Or Open Circuit
433	Excavator	*	150	6	4	Left Rotate Valve Current-Current Above Normal Or Grounded Circuit
434	Excavator	*	151	5	4	Right Rotate Valve Current-Current Below Normal Or Open Circuit
435	Excavator	*	151	6	4	Right Rotate Valve Current-Current Above Normal Or Grounded Circuit
436	Excavator	Perkins	152	2	5	Number Of ECU Resets: Erratic, Intermittent, or Incorrect
437	Excavator	*	152	5	4	Left Tilt Valve Current-Current Below Normal Or Open Circuit
438	Excavator	*	152	6	4	Left Tilt Valve Current-Current Above Normal Or Grounded Circuit
439	Excavator	*	153	5	4	Right Tilt Valve Current-Current Below Normal Or Open Circuit
440	Excavator	*	153	6	4	Right Tilt Valve Current-Current Above Normal Or Grounded Circuit
441	Excavator	Scania	156	0	3	Fuel rail pressure is excessively above command
442	Excavator	Scania	156	1	3	Fuel rail pressure is excessively below command
444	Excavator	Scania	156	2	3	Fuel rail pressure sensor, faulty
445	Excavator	Scania	156	3	3	Fuel rail pressure sensor, short circuit to +24V or open load
446	Excavator	Scania	156	4	3	Fuel rail pressure sensor, short circuit to ground
447	Excavator	Scania	156	8	3	Fuel rail pressure sensor, stuck
448	Excavator	Scania	156	9	4	Fuel rail pressure is lagging
443	Excavator	Scania	156	18	3	Fuel rail pressure is too low during cranking
449	Excavator	Cummins	157	0	1	Injector Metering Rail 1 Pressure - Data valid but above normal operational range - Most Severe Level
450	Excavator	Perkins	157	0	1	Engine Injector Metering Rail #1 Pressure : High - most severe (3) —
451	Excavator	Yanmar	157	0	1	Rail pressure too high
452	Excavator	Cummins	157	1	3	Injector Metering Rail 1 Pressure - Data valid but below normal operational range - Most Severe Level
465	Excavator	Cummins	157	2	3	Injector Metering Rail 1 Pressure - Data erratic, intermittent or incorrect
466	Excavator	Perkins	157	2	3	Engine Injector Metering Rail #1 Pressure : Erratic, Intermittent, or Incorrect
467	Excavator	Cummins	157	3	3	Injector Metering Rail 1 Pressure Sensor Circuit - Voltage above normal, or shorted to high source
468	Excavator	Mitsubishi	157	3	3	Common rail pressure sensor open/short to + batt
469	Excavator	Perkins	157	3	3	Engine Injector Metering Rail #1 Pressure: Voltage Above Normal
470	Excavator	Yanmar	157	3	3	Rain pressure sensor error (voltage high)
471	Excavator	Cummins	157	4	3	Injector Metering Rail 1 Pressure Sensor Circuit - Voltage below normal, or shorted to low source
472	Excavator	Mitsubishi	157	4	3	Common rail pressure sensor short to ground
473	Excavator	Perkins	157	4	3	Engine Injector Metering Rail #1 Pressure: Voltage Below Normal
474	Excavator	Yanmar	157	4	3	Rain pressure sensor error (voltage low)
475	Excavator	Cummins	157	7	3	Injector Metering Rail 1 Pressure - Mechanical system not responding or out of adjustment
453	Excavator	Perkins	157	10	3	Engine Injector Metering Rail #1 Pressure : Abnormal Update Rate
454	Excavator	Perkins	157	12	3	Engine Injector Metering Rail #1 Pressure : Failure
455	Excavator	Cummins	157	15	2	Injector Metering Rail 1 Pressure - Data Valid But Above Normal Operating Range - Least Severe Level
456	Excavator	Yanmar	157	15	2	Rail pressure deviation error (high rail pressure)
457	Excavator	Cummins	157	16	2	Injector Metering Rail 1 Pressure - Data Valid But Above Normal Operating Range - Moderately Severe Level
458	Excavator	Perkins	157	16	2	Engine Injector Metering Rail #1 Pressure : High - moderate severity (2)
459	Excavator	Yanmar	157	16	2	PLV open valve
460	Excavator	Perkins	157	17	3	Engine Injector Metering Rail #1 Pressure : Low - least severe (1) —
461	Excavator	Cummins	157	18	2	Injector Metering Rail 1 Pressure - Data Valid But Below Normal Operating Range - Moderately Severe Level
462	Excavator	Mitsubishi	157	18	2	Low fuel rail pressure
463	Excavator	Perkins	157	18	2	Engine Injector Metering Rail #1 Pressure: Low - moderate severity (2)
464	Excavator	Yanmar	157	18	2	Rail pressure deviation error (low rail pressure)
476	Excavator	*	164	4	5	Working Cutoff Relay-Voltage Below Normal, Or Shorted To Low Source
477	Excavator	*	164	6	5	Working Cutoff Relay-Current Above Normal Or Grounded Circuit
478	Excavator	*	165	4	3	Safety Solenoid - Voltage Below Normal, Or Shorted To Low Source
479	Excavator	*	165	6	3	Safety Solenoid - Current Above Normal or Grounded Circuit
481	Excavator	Cummins	166	2	4	Cylinder Power Imbalance Between Cylinders - Data Erratic, Intermittent, or Incorrect
482	Excavator	Perkins	166	2	4	Engine Rated Power: Erratic, Intermittent, or Incorrect
483	Excavator	*	166	4	4	Power Boost Solenoid-Voltage Below Normal, Or Shorted To Low Source
484	Excavator	*	166	6	4	Power Boost Solenoid-Current Above Normal Or Grounded Circuit
480	Excavator	Perkins	166	14	4	Engine Rated Power: Special Instuction
485	Excavator	Cummins	167	1	3	Electrical Charging System Voltage Low – Data Valid but Below Normal Operational Range - Most Severe Level
486	Excavator	Yanmar	167	1	3	Charge alarm
490	Excavator	Scania	167	2	4	Alternator actuator, faulty
491	Excavator	Scania	167	3	3	Alternator actuator, short circuit to +24V
492	Excavator	Scania	167	4	3	Alternator actuator, short circuit to ground
493	Excavator	*	167	4	4	Travel Speed Solenoid-Voltage Below Normal, Or Shorted To Low Source
494	Excavator	Scania	167	5	3	Alternator actuator, open load
495	Excavator	Yanmar	167	5	3	Charge switch open circuit
496	Excavator	*	167	6	4	Travel Speed Solenoid-Current Above Normal Or Grounded Circuit
497	Excavator	Scania	167	9	3	Alternator 1, signal not plausible
487	Excavator	Scania	167	10	3	Alternator 2, signal not plausible

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
488	Excavator	Cummins	167	16	3	Electrical Charging System Voltage High – Data Valid but Above Normal Operational Range - Moderately Severe Level
489	Excavator	Cummins	167	18	3	Electrical Charging System Voltage Low – Data Valid but Below Normal Operational Range - Moderately Severe Level
498	Excavator	Scania	168	0	3	Battery voltage above 47 V for 1 s
499	Excavator	Scania	168	1	3	Battery voltage below 9 V for 0.5 s
508	Excavator	Perkins	168	3	3	Battery Potential / Power Input #1 : Voltage Above Normal
509	Excavator	Perkins	168	4	3	Battery Potential / Power Input 1 : Voltage Above Normal
510	Excavator	Scania	168	4	3	Battery voltage 1 for engine control unit is low
511	Excavator	*	168	4	4	Attachment Pressure Solenoid-Voltage Below Normal, Or Shorted To Low Source
512	Excavator	Scania	168	5	3	Battery voltage 2 for engine control unit is low
513	Excavator	*	168	6	4	Attachment Pressure Solenoid-Current Above Normal Or Grounded Circuit
500	Excavator	Cummins	168	15	3	Battery 1 Voltage - Data Valid But Above Normal Operating Range - Moderately Severe Level
501	Excavator	Scania	168	15	3	Battery voltage too high for SCR main unit
502	Excavator	Cummins	168	16	3	Battery 1 Voltage - Data Valid But Above Normal Operating Range - Moderately Severe Level
503	Excavator	Scania	168	16	3	Battery voltage above 32 V
504	Excavator	Cummins	168	17	3	Battery 1 Voltage - Data Valid But Below Normal Operating Range - Least Severe Level
505	Excavator	Scania	168	17	3	Battery voltage too low for SCR main unit
506	Excavator	Cummins	168	18	3	Battery 1 Voltage - Data Valid But Below Normal Operating Range - Moderately Severe Level
507	Excavator	Scania	168	18	3	Battery voltage below 21 V
514	Excavator	*	169	4	4	Attachment Conflux Solenoid-Voltage Below Normal, Or Shorted To Low Source
515	Excavator	*	169	6	4	Attachment Conflux Solenoid-Current Above Normal Or Grounded Circuit
516	Excavator	*	170	4	4	Arm Regeneration Solenoid-Voltage Below Normal, Or Shorted To Low Source
517	Excavator	*	170	6	4	Arm Regeneration Solenoid-Current Above Normal Or Grounded Circuit
519	Excavator	Scania	171	0	4	Ambient temperature sensors correlation error
520	Excavator	Scania	171	1	3	Ambient temperature low or boost temperature high
518	Excavator	Cummins	171	2	3	Ambient Air Temperature - Data erratic, intermittent or incorrect
527	Excavator	Scania	171	2	3	Ambient temperature sensor, faulty
530	Excavator	Cummins	171	3	3	Ambient Air Temperature Sensor 1 Circuit - Voltage above normal, or shorted to high source
531	Excavator	Scania	171	3	3	Ambient temperature sensor error via CAN
532	Excavator	Cummins	171	4	3	Ambient Air Temperature Sensor 1 Circuit - Voltage below normal, or shorted to low source
533	Excavator	Scania	171	4	3	Ambient temperature sensor error via CAN
534	Excavator	*	171	4	4	Attachment Safety Solenoid-Voltage Below Normal, Or Shorted To Low Source
535	Excavator	*	171	6	4	Attachment Safety Solenoid-Current Above Normal Or Grounded Circuit
536	Excavator	Scania	171	7	3	Ambient temperature sensor stuck
537	Excavator	Cummins	171	9	5	Ambient Air Temperature - Abnormal update rate
538	Excavator	Scania	171	9	5	CAN message AMBIENT CONDITION from coordinator timeout
521	Excavator	Scania	171	15	4	Ambient temperature sensors correlation error
522	Excavator	Scania	171	16	4	Ambient temperature high or boost temperature low
523	Excavator	Scania	171	17	3	Ambient temperature sensors correlation error
524	Excavator	Scania	171	18	3	Ambient temperature sensors correlation error
525	Excavator	Cummins	171	19	5	Ambient Air Temperature - Received Network Data In Error
526	Excavator	Scania	171	19	5	Ambient temperature sensor signal defect
528	Excavator	Scania	171	20	3	Temperature sensor before compressor low or ambient temperature sensor high
529	Excavator	Scania	171	21	3	Temperature sensor before compressor high or ambient temperature sensor low
539	Excavator	Scania	172	2	4	Air inlet temp sensor, faulty
540	Excavator	Perkins	172	3	3	Engine Air Inlet Temperature: Voltage Above Normal
541	Excavator	Scania	172	3	3	Air inlet temp sensor, short circuit to +24V
542	Excavator	Yanmar	172	3	3	Ambient coolant temperature sensor error (voltage high)
543	Excavator	Perkins	172	4	3	Engine Air Inlet Temperature: Voltage Below Normal
544	Excavator	Scania	172	4	3	Air inlet temp sensor, short circuit to ground
545	Excavator	Yanmar	172	4	3	Ambient coolant temperature sensor error (voltage low)
546	Excavator	*	172	4	4	Boom Up Lever Detent Solenoid-Voltage Below Normal, Or Shorted To Low Source
547	Excavator	*	172	6	4	Boom Up Lever Detent Solenoid-Current Above Normal Or Grounded Circuit
548	Excavator	Scania	172	7	3	Air inlet temp sensor, stuck
549	Excavator	Perkins	173	3	3	Engine Exhaust Gas Temperature : Voltage Above Normal
550	Excavator	Yanmar	173	3	3	Exhaust manifold temperature sensor error (voltage high)
551	Excavator	Yanmar	173	4	2	Exhaust manifold temperature sensor error (voltage low)
552	Excavator	Perkins	173	4	3	Engine Exhaust Gas Temperature : Voltage Below Normal
553	Excavator	*	173	4	4	Boom Down Lever Detent Solenoid-Voltage Below Normal, Or Shorted To Low Source
554	Excavator	*	173	6	4	Boom Down Lever Detent Solenoid-Current Above Normal Or Grounded Circuit
555	Excavator	Cummins	174	0	3	Engine Fuel Temperature - Data valid but above normal operational range - Most Severe Level
556	Excavator	Yanmar	174	0	3	Fuel temperature high
559	Excavator	Cummins	174	2	4	Engine Fuel Temperature - Data erratic, intermittent or incorrect
560	Excavator	Cummins	174	3	3	Engine Fuel Temperature Sensor 1 Circuit - Voltage above normal, or shorted to high source
561	Excavator	Perkins	174	3	3	Engine Fuel Temperature 1 : Voltage Above Normal
562	Excavator	Yanmar	174	3	3	Fuel temperature sensor error (voltage high)
563	Excavator	Cummins	174	4	3	Engine Fuel Temperature Sensor 1 Circuit - Voltage below normal, or shorted to low source
564	Excavator	Perkins	174	4	3	Engine Fuel Temperature 1 : Voltage Below Normal
565	Excavator	Yanmar	174	4	3	Fuel temperature sensor error (voltage low)
566	Excavator	*	174	4	4	Bucket Lever Detent Solenoid-Voltage Below Normal, Or Shorted To Low Source
567	Excavator	*	174	6	4	Bucket Lever Detent Solenoid-Current Above Normal Or Grounded Circuit
557	Excavator	Cummins	174	16	3	Engine Fuel Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
558	Excavator	Perkins	174	16	3	Engine Fuel Temperature 1 : High - Moderate Severity(2)
568	Excavator	Cummins	175	0	2	Engine Oil Temperature - Data valid but above normal operational range - Most Severe Level
569	Excavator	*	175	1	5	Pump Flow Conflux Solenoid-Data Valid But Below Normal Operational Range
572	Excavator	Cummins	175	2	4	Engine Oil Temperature - Data erratic, intermittent or incorrect

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
573	Excavator	Cummins	175	3	3	Engine Oil Temperature Sensor 1 Circuit - Voltage above normal, or shorted to high source
574	Excavator	Scania	175	3	3	Oil temp sensor, short circuit to +24V
575	Excavator	Cummins	175	4	3	Engine Oil Temperature Sensor 1 Circuit - Voltage below normal, or shorted to low source
576	Excavator	Scania	175	4	3	Oil temp sensor, short circuit to ground
577	Excavator	*	175	4	5	Pump Flow Conflux Solenoid-Voltage Below Normal, Or Shorted To Low Source
578	Excavator	*	175	6	5	Pump Flow Conflux Solenoid-Current Above Normal Or Grounded Circuit
570	Excavator	Scania	175	11	3	Oil temp sensor, faulty
571	Excavator	Cummins	175	16	3	Engine Oil Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
579	Excavator	*	176	1	5	Pump Flow Sync. Solenoid-Data Valid But Below Normal Operational Range
580	Excavator	*	176	4	5	Pump Flow Sync. Solenoid-Voltage Below Normal, Or Shorted To Low Source
581	Excavator	*	176	6	5	Pump Flow Sync. Solenoid-Current Above Normal Or Grounded Circuit
582	Excavator	*	179	4	4	Breaker Operator Solenoid-Voltage Below Normal, Or Shorted To Low Source
583	Excavator	*	179	6	4	Breaker Operator Solenoid-Current Above Normal Or Grounded Circuit
584	Excavator	*	181	4	4	Cooling Fan Reverse Solenoid-Voltage Below Normal, Or Shorted To Low Source
585	Excavator	*	181	6	4	Cooling Fan Reverse Solenoid-Current Above Normal Or Grounded Circuit
586	Excavator	*	183	4	4	Cooling Fan Reverse Driving Status-Voltage Below Normal, Or Shorted To Low Source
587	Excavator	*	183	6	4	Cooling Fan Reverse Driving Status-Current Above Normal Or Grounded Circuit
588	Excavator	*	187	4	4	Emergency Steering Pump Relay-Voltage Below Normal, Or Shorted To Low Source
589	Excavator	*	187	6	4	Emergency Steering Pump Relay-Current Above Normal Or Grounded Circuit
593	Excavator	*	188	5	4	Attachment Flow EPPR 1 Vlave-Voltage Below Normal, Or Shorted To Low Source
594	Excavator	*	188	6	4	Attachment Flow EPPR 1 Vlave-Current Above Normal Or Grounded Circuit
590	Excavator	Scania	188	14	4	Idle due to other fault
591	Excavator	Cummins	188	16	3	Engine Speed At Idle - Data Valid But Above Normal Operating Range - Moderately Severe Level
592	Excavator	Cummins	188	18	3	Engine Speed At Idle - Data Valid But Below Normal Operating Range - Moderately Severe Level
595	Excavator	*	189	5	4	Attachment Flow EPPR 2 Vlave-Voltage Below Normal, Or Shorted To Low Source
596	Excavator	*	189	6	4	Attachment Flow EPPR 2 Vlave-Current Above Normal Or Grounded Circuit
597	Excavator	Cummins	190	0	2	Engine Crankshaft Speed/Position - Data valid but above normal operational range - Most Severe Level
598	Excavator	Perkins	190	0	2	Engine Speed : High - most severe(3)
599	Excavator	Scania	190	0	2	Severe overspeed has occured
609	Excavator	Cummins	190	2	4	Engine Crankshaft Speed/Position - Data erratic, intermittent or incorrect
611	Excavator	Perkins	190	8	3	Engine Speed : Abnormal Frequency, Pulse Width, or Period
600	Excavator	Scania	190	10	3	Overspeed protection, fast over speed
601	Excavator	Cummins	190	10	4	Engine Speed/Position Sensor Circuit - lost one of two signals from the magnetic pickup sensor
602	Excavator	Cummins	190	11	1	Engine Speed - Root Cause Not Known
603	Excavator	Cummins	190	14	3	Engine Crankshaft Speed/Position - Special Instructions
604	Excavator	Perkins	190	15	4	Engine Speed : High - least severe (1)
605	Excavator	Scania	190	15	4	Engine speed has been above the limit
606	Excavator	Cummins	190	16	3	Engine Crankshaft Speed/Position - Data Valid But Above Normal Operating Range - Moderately Severe Level
607	Excavator	Scania	190	16	3	Overspeed protection, over speed
608	Excavator	Yanmar	190	16	3	Overspeed
610	Excavator	Scania	190	20	3	Engine overspeed, value to high
615	Excavator	Cummins	191	9	4	Transmission Output Shaft Speed - Abnormal update rate
612	Excavator	Cummins	191	16	4	Transmission Output Shaft Speed - Data Valid But Above Normal Operating Range - Moderately Severe Level
613	Excavator	Cummins	191	18	4	Transmission Output Shaft Speed - Data Valid But Below Normal Operating Range - Moderately Severe Level
614	Excavator	Cummins	191	19	4	Transmission Output Shaft Speed - Received Network Data In Error
616	Excavator	*	195	5	4	Travel Straight Valve - Current Below Normal Or Open Circuit
617	Excavator	*	195	6	4	Travel Straight Valve - Current Above Normal Or Grounded Circuit
618	Excavator	*	196	0	4	Attachment Flow EPPR 1 Pressure -Data Valid But Above Normal Operational Range
619	Excavator	*	196	1	4	Attachment Flow EPPR 1 Pressure -Data Valid But Below Normal Operational Range
620	Excavator	*	196	4	4	Attachment Flow EPPR 1 Pressure -Voltage Below Normal, Or Shorted To Low Source
621	Excavator	*	198	0	3	Attatchment Relief Setting EPPR 1 Valve Pressure - Data Valid But Above Normal Operational Range
622	Excavator	*	200	0	4	P1 & P2 EPPR Valve Pressure (Measurement)-Data Valid But Above Normal Operational Range
623	Excavator	*	200	1	4	P1 & P2 EPPR Valve Pressure (Measurement)-Data Valid But Below Normal Operational Range
624	Excavator	*	200	2	5	P1 & P2 EPPR Valve Pressure (Measurement)-Data Erratic, Intermittent Or Incorrect
625	Excavator	*	200	4	4	P1 & P2 EPPR Valve Pressure (Measurement)-Voltage Below Normal, Or Shorted To Low Source
626	Excavator	*	202	0	2	Steering Main Pump Pressure-Data Valid But Above Normal Operational Range
627	Excavator	*	202	1	2	Steering Main Pump Pressure-Data Valid But Below Normal Operational Range
628	Excavator	*	202	2	5	Steering Main Pump Pressure-Data Erratic, Intermittent Or Incorrect
629	Excavator	*	202	4	2	Steering Main Pump Pressure-Voltage Below Normal, Or Shorted To Low Source
630	Excavator	*	203	0	4	Emergency Steering Pump Pressure-Data Valid But Above Normal Operational Range
631	Excavator	*	203	1	4	Emergency Steering Pump Pressure-Data Valid But Below Normal Operational Range
632	Excavator	*	203	2	5	Emergency Steering Pump Pressure-Data Erratic, Intermittent Or Incorrect
633	Excavator	*	203	4	4	Emergency Steering Pump Pressure-Voltage Below Normal, Or Shorted To Low Source
634	Excavator	*	204	0	4	Boom Cylinder Head Pressure-Data Valid But Above Normal Operational Range
635	Excavator	*	204	1	4	Boom Cylinder Head Pressure-Data Valid But Below Normal Operational Range
636	Excavator	*	204	2	5	Boom Cylinder Head Pressure-Data Erratic, Intermittent Or Incorrect
637	Excavator	*	204	4	4	Boom Cylinder Head Pressure-Voltage Below Normal, Or Shorted To Low Source

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638	Excavator	*	205	0	4	Boom Cylinder Rod Pressure-Data Valid But Above Normal Operational Range
639	Excavator	*	205	1	4	Boom Cylinder Rod Pressure-Data Valid But Below Normal Operational Range
640	Excavator	*	205	2	5	Boom Cylinder Rod Pressure-Data Erratic, Intermittent Or Incorrect
641	Excavator	*	205	4	4	Boom Cylinder Rod Pressure-Voltage Below Normal, Or Shorted To Low Source
642	Excavator	*	217	4	3	Swing Parking Solenoid - Voltage Below Normal, Or Shorted To Low Source
643	Excavator	*	218	4	2	Boom Up Floating Solenoid-Voltage Below Normal, Or Shorted To Low Source
644	Excavator	*	218	6	2	Boom Up Floating Solenoid-Current Above Normal Or Grounded Circuit
645	Excavator	*	219	4	2	Boom Down Floating Solenoid-Voltage Below Normal, Or Shorted To Low Source
646	Excavator	*	219	6	2	Boom Down Floating Solenoid-Current Above Normal Or Grounded Circuit
647	Excavator	*	220	4	2	Boom Down Pliot Pressure Cutoff Solenoid-Voltage Below Normal, Or Shorted To Low Source
648	Excavator	*	220	6	2	Boom Down Pliot Pressure-Current Above Normal Or Grounded Circuit
649	Excavator	*	221	5	4	ATT Relief Setting EPPR 1 Valve-Voltage Below Normal, Or Shorted To Low Source
650	Excavator	*	221	6	4	ATT Relief Setting EPPR 1 Valve-Current Above Normal Or Grounded Circuit
651	Excavator	*	222	5	4	ATT Relief Setting EPPR 2 Valve-Voltage Below Normal, Or Shorted To Low Source
652	Excavator	*	222	6	4	ATT Relief Setting EPPR 2 Valve-Current Above Normal Or Grounded Circuit
654	Excavator	Scania	234	2	3	The EMS and EEC control units are incompatible
653	Excavator	Scania	234	19	4	Wrong CAN version transmitted by COO
657	Excavator	Cummins	237	2	4	Vehicle Identification Number - Data erratic, intermittent or incorrect
655	Excavator	Cummins	237	13	4	Vehicle Identification Number - Out of Calibration
656	Excavator	Yanmar	237	13	4	VI reception data error
658	Excavator	Cummins	237	31	4	Vehicle Identification Number - Condition Exists
659	Excavator	Yanmar	237	31	4	VI reception timeout
660	Excavator	*	239	4	4	Dozer Floating Solenoid - Voltage Below Normal, Or Shorted To Low Source
661	Excavator	*	239	6	4	Dozer Floating Solenoid - Current Above Normal Or Grounded Circuit
662	Excavator	*	240	4	4	Angle Dozer Select Relay - Voltage Below Normal, Or Shorted To Low Source
663	Excavator	*	240	6	4	Angle Dozer Select Relay - Current Above Normal Or Grounded Circuit
664	Excavator	*	241	4	4	ECO Mode Solenoid - Voltage Below Normal, Or Shorted To Low Source
665	Excavator	*	241	6	4	ECO Mode Solenoid - Current Above Normal Or Grounded Circuit
666	Excavator	*	243	4	3	FNR Forward Solenoid - Voltage Below Normal, Or Shorted To Low Source
667	Excavator	*	244	4	3	FNR Forward Solenoid - Voltage Below Normal, Or Shorted To Low Source
668	Excavator	Cummins	251	2	4	Real Time Clock - Data erratic, intermittent or incorrect
669	Excavator	*	254	0	4	Travel LH Pressure - Data Valid But Above Normal Operational Range
670	Excavator	*	254	1	4	Travel LH Pressure - Data Valid But Below Normal Operational Range
671	Excavator	*	254	4	4	Travel LH Pressure - Voltage Below Normal, Or Shorted To Low Source
672	Excavator	*	255	0	4	Travel RH Pressure - Data Valid But Above Normal Operational Range
673	Excavator	*	255	1	4	Travel RH Pressure - Data Valid But Below Normal Operational Range
674	Excavator	*	255	4	4	Travel RH Pressure - Voltage Below Normal, Or Shorted To Low Source
675	Excavator	*	256	5	4	Optional Flow Control(Proportional) EPPR 1 Valve Current - Current Below Normal Or Open Circuit
676	Excavator	*	256	6	4	Optional Flow Control(Proportional) EPPR 1 Valve Current - Current Above Normal Or Grounded Circuit
677	Excavator	*	257	5	4	Optional Flow Control(Proportional) EPPR 2 Valve Current - Current Below Normal Or Open Circuit
678	Excavator	*	257	6	4	Optional Flow Control(Proportional) EPPR 2 Valve Current - Current Above Normal Or Grounded Circuit
679	Excavator	*	258	5	4	Optional Flow Control(Proportional) EPPR 3 Valve Current - Current Below Normal Or Open Circuit
680	Excavator	*	258	6	4	Optional Flow Control(Proportional) EPPR 3 Valve Current - Current Above Normal Or Grounded Circuit
681	Excavator	*	259	5	4	Optional Flow Control(Proportional) EPPR 4 Valve Current - Current Below Normal Or Open Circuit
682	Excavator	*	259	6	4	Optional Flow Control(Proportional) EPPR 4 Valve Current - Current Above Normal Or Grounded Circuit
683	Excavator	*	263	4	4	Breaker Ready Solenoid - Voltage Below Normal, Or Shorted To Low Source
684	Excavator	*	263	6	4	Breaker Ready Solenoid - Current Above Normal Or Grounded Circuit
685	Excavator	*	301	3	4	Fuel Level -Voltage Above Normal, Or Shorted To High Source
686	Excavator	*	301	4	4	Fuel Level -Voltage Below Normal, Or Shorted To Low Source
687	Excavator	*	303	*	4	(Warning) Fuel level low
688	Excavator	*	304	3	3	Engine Coolant Temperature-Voltage Above Normal, Or Shorted To High Source
689	Excavator	*	304	4	3	Engine Coolant Temperature-Voltage Below Normal, Or Shorted To Low Source
690	Excavator	*	305	*	1	(Warning) Engine Coolant Temperature High
691	Excavator	*	307	*	1	(Warning) Engine Coolant level low
692	Excavator	*	310	8	3	Engine Speed-Abnormal Frequency Or Pulse Width Or Period
693	Excavator	*	313	*	4	(Warning) Engine Oil Pressure Low
694	Excavator	*	315	*	1	(Warning) Engine Oil filter clog
695	Excavator	*	317	*	1	(Warning) Air Cleaner Clog
696	Excavator	*	318	8	4	Cooling Fan Speed-Abnormal Frequency Or Pulse Width Or Period
697	Excavator	*	319	*	1	(Warning) Engine Stop
698	Excavator	*	320	*	4	(Warning) Engine Check
699	Excavator	*	322	3	4	Engine Preheat Relay-Voltage Above Normal, Or Shorted To High Source
700	Excavator	*	322	4	4	Engine Preheat Relay-Voltage Below Normal, Or Shorted To Low Source
701	Excavator	*	322	6	4	Engine Preheat Relay-Current Above Normal Or Grounded Circuit
702	Excavator	*	325	3	4	Fuel Warmer Relay-Voltage Above Normal, Or Shorted To High Source
703	Excavator	*	325	4	4	Fuel Warmer Relay-Voltage Below Normal, Or Shorted To Low Source
704	Excavator	*	325	6	4	Fuel Warmer Relay-Current Above Normal Or Grounded Circuit
705	Excavator	*	327	4	4	Anti-Restart Relay-Voltage Below Normal, Or Shorted To Low Source
706	Excavator	*	327	6	4	Anti-Restart Relay-Current Above Normal Or Grounded Circuit
707	Excavator	*	339	3	2	Accelerator Pedal Position 1-Voltage Above Normal, Or Shorted To High Source

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708	Excavator	*	339	4	2	Accelerator Pedal Position 1-Voltage Below Normal, Or Shorted To Low Source
709	Excavator	*	340	3	2	Potentiometer Voltage for Engine Governor Actuator-Voltage Above Normal, Or Shorted To High Source
710	Excavator	*	340	4	2	Potentiometer Voltage for Engine Governor Actuator-Voltage Below Normal, Or Shorted To Low Source
711	Excavator	*	341	5	2	Motor Driving Status for Engine Governor Actuator-Current Below Normal Or Open Circuit
712	Excavator	*	341	6	2	Motor Driving Status for Engine Governor Actuator-Current Above Normal Or Grounded Circuit
713	Excavator	*	343	3	2	Accelerator Pedal Position 2-Voltage Above Normal, Or Shorted To High Source
714	Excavator	*	343	4	2	Accelerator Pedal Position 2-Voltage Below Normal, Or Shorted To Low Source
715	Excavator	*	346	3	4	Engine Power Mode Selector Voltage-Voltage Above Normal, Or Shorted To High Source
716	Excavator	*	346	4	4	Engine Power Mode Selector Voltage-Voltage Below Normal, Or Shorted To Low Source
717	Excavator	*	352	*	3	(Warning) Engine DPF Clog
718	Excavator	*	357	*	3	(Warning) Emission System Fail
719	Excavator	*	358	*	4	(Warning) DEF Level Low
720	Excavator	*	360	*	2	Water In Fuel Indicator, SPN97, HCESPN360
721	Excavator	*	367	4	3	Start Limit Relay - Voltage Below Normal, Or Shorted To Low Source
722	Excavator	*	367	6	3	Start Limit Relay - Current Above Normal Or Grounded Circuit
724	Excavator	Cummins	411	2	3	Exhaust Gas Recirculation Differential Pressure - Data erratic, intermittent or incorrect
725	Excavator	Perkins	411	2	3	EGR Differential Pressure - Erratic, Intermittent or Incorrect
726	Excavator	Cummins	411	3	3	Exhaust Gas Recirculation Differential Pressure Sensor Circuit - Voltage above normal, or shorted to high source
727	Excavator	Perkins	411	3	3	EGR Differential Pressure - Voltage Above Normal
728	Excavator	Cummins	411	4	3	Exhaust Gas Recirculation Differential Pressure Sensor Circuit - Voltage below normal, or shorted to low source
729	Excavator	Perkins	411	4	3	EGR Differential Pressure - Voltage below normal
723	Excavator	Perkins	411	13	3	Exhaust Gas Recirculation Differential Pressure -Out of Calibration
734	Excavator	Cummins	412	2	3	Exhaust Gas Recirculation Temperature - Data erratic, intermittent or incorrect
735	Excavator	Cummins	412	3	3	Exhaust Gas Recirculation Temperature Sensor Circuit - Voltage above normal, or shorted to high source
736	Excavator	Perkins	412	3	3	Exhaust Gas Recirculation Differential Pressure -Out of Calibration
737	Excavator	Yanmar	412	3	3	EGR gas temperature sensor error (voltage high)
738	Excavator	Cummins	412	4	3	Exhaust Gas Recirculation Temperature Sensor Circuit - Voltage below normal, or shorted to low source
739	Excavator	Perkins	412	4	3	Exhaust Gas Recirculation Temperature - Voltage below normal
740	Excavator	Yanmar	412	4	3	EGR gas temperature sensor error (voltage low)
730	Excavator	Cummins	412	15	3	Exhaust Gas Recirculation Temperature - Data Valid But Above Normal Operating Range - Least Severe Level
731	Excavator	Perkins	412	15	3	Exhaust Gas Recirculation Temperature : High - least severe(1)
732	Excavator	Cummins	412	16	3	Exhaust Gas Recirculation Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
733	Excavator	Perkins	412	16	3	Exhaust Gas Recirculation Temperature : High - moderate severity (2)
742	Excavator	Cummins	441	3	3	Auxiliary Temperature Sensor Input 1 Circuit - Voltage above normal, or shorted to high source
743	Excavator	Cummins	441	4	3	Auxiliary Temperature Sensor Input 1 Circuit - Voltage below normal, or shorted to low source
741	Excavator	Cummins	441	14	3	Auxiliary Temperature Sensor Input 1 - Special Instructions
744	Excavator	Cummins	442	3	3	Auxiliary Temperature Sensor Input 2 Circuit - Voltage above normal, or shorted to high source
745	Excavator	Cummins	442	4	3	Auxiliary Temperature Sensor Input 2 Circuit - Voltage below normal, or shorted to low source
746	Excavator	*	501	0	3	Transmission Oil Pressure-Data Valid But Above Normal Operational Range
747	Excavator	*	501	1	3	Transmission Oil Pressure-Data Valid But Below Normal Operational Range
748	Excavator	*	501	2	5	Transmission Oil Pressure-Data Erratic, Intermittent Or Incorrect
749	Excavator	*	501	4	3	Transmission Oil Pressure-Voltage Below Normal, Or Shorted To Low Source
750	Excavator	*	502	*	4	(Warning) Transmission Oil Pressure low
751	Excavator	*	503	0	4	Brake Oil Pressure (Accumulator)-Data Valid But Above Normal Operational Range
752	Excavator	*	503	1	4	Brake Oil Pressure (Accumulator)-Data Valid But Below Normal Operational Range
753	Excavator	*	503	2	5	Brake Oil Pressure (Accumulator)-Data Erratic, Intermittent Or Incorrect
754	Excavator	*	503	4	4	Brake Oil Pressure (Accumulator)-Voltage Below Normal, Or Shorted To Low Source
755	Excavator	*	504	*	4	(Warning) Brake Oil Pressure Low
756	Excavator	*	505	0	4	Working Brake Pressure (Foot Pedal)-Data Valid But Above Normal Operational Range
757	Excavator	*	505	1	4	Working Brake Pressure (Foot Pedal)-Data Valid But Below Normal Operational Range
758	Excavator	*	505	2	5	Working Brake Pressure (Foot Pedal)-Data Erratic, Intermittent Or Incorrect
759	Excavator	*	505	4	4	Working Brake Pressure (Foot Pedal)-Voltage Below Normal, Or Shorted To Low Source
760	Excavator	*	506	3	4	Working Brake Status ? Indicator Lamp-Voltage Above Normal, Or Shorted To High Source
761	Excavator	*	506	4	4	Working Brake Status ? Indicator Lamp-Voltage Below Normal, Or Shorted To Low Source
762	Excavator	*	507	0	4	Parking Oil Pressure-Data Valid But Above Normal Operational Range
763	Excavator	*	507	1	4	Parking Oil Pressure-Data Valid But Below Normal Operational Range
764	Excavator	*	507	2	5	Parking Oil Pressure-Data Erratic, Intermittent Or Incorrect
765	Excavator	*	507	4	4	Parking Oil Pressure-Voltage Below Normal, Or Shorted To Low Source
766	Excavator	*	514	4	4	Parking Relay-Voltage Below Normal, Or Shorted To Low Source
767	Excavator	*	514	6	4	Parking Relay-Current Above Normal Or Grounded Circuit
768	Excavator	*	517	4	5	Traveling Cutoff Relay-Voltage Below Normal, Or Shorted To Low Source
769	Excavator	*	517	6	5	Traveling Cutoff Relay-Current Above Normal Or Grounded Circuit
770	Excavator	*	520	3	4	Ram Lock Status ? Indicator Lamp-Voltage Above Normal, Or Shorted To High Source
771	Excavator	*	520	4	4	Ram Lock Status ? Indicator Lamp-Voltage Below Normal, Or Shorted To Low Source
772	Excavator	Cummins	521	2	4	Brake Pedal Position - Data erratic, intermittent or incorrect
773	Excavator	*	525	4	2	Ram Lock Solenoid-Voltage Below Normal, Or Shorted To Low Source

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774	Excavator	*	525	6	2	Ram Lock Solenoid-Current Above Normal Or Grounded Circuit
775	Excavator	*	527	4	4	Creep Solenoid-Voltage Below Normal, Or Shorted To Low Source
776	Excavator	*	527	6	4	Creep Solenoid-Current Above Normal Or Grounded Circuit
777	Excavator	*	530	0	3	Travel Forward Pilot Pressure-Data Valid But Above Normal Operational Range
778	Excavator	*	530	1	3	Travel Forward Pilot Pressure-Data Valid But Below Normal Operational Range
779	Excavator	*	530	2	5	Travel Forward Pilot Pressure-Data Erratic, Intermittent Or Incorrect
780	Excavator	*	530	4	3	Travel Forward Pilot Pressure-Voltage Below Normal, Or Shorted To Low Source
781	Excavator	*	531	0	4	Travel Reverse Pilot Pressure-Data Valid But Above Normal Operational Range
782	Excavator	*	531	1	4	Travel Reverse Pilot Pressure-Data Valid But Below Normal Operational Range
783	Excavator	*	531	2	5	Travel Reverse Pilot Pressure-Data Erratic, Intermittent Or Incorrect
784	Excavator	*	531	4	4	Travel Reverse Pilot Pressure-Voltage Below Normal, Or Shorted To Low Source
785	Excavator	Scania	532	14	4	Increased idle due to other fault
786	Excavator	*	557	0	4	Brake Oil Charging Priority Pressure -Data Valid But Above Normal Operational Range
787	Excavator	*	557	4	4	Brake Oil Charging Priority Pressure -Voltage Below Normal, Or Shorted To Low Source
788	Excavator	*	558	0	4	Differential Lock Pressure-Data Valid But Above Normal Operational Range
789	Excavator	*	558	1	4	Differential Lock Pressure-Data Valid But Below Normal Operational Range
792	Excavator	Cummins	558	2	2	Accelerator Pedal or Lever Idle Validation Switch - Data erratic, intermittent or incorrect
793	Excavator	Perkins	558	2	2	Accelerator Pedal 1 Low Idle Switch : Erratic, Intermittent, or Incorrect
794	Excavator	Scania	558	2	2	Low idle switch error state from coordinator
795	Excavator	*	558	2	5	Differential Lock Pressure-Data Erratic, Intermittent Or Incorrect
796	Excavator	Cummins	558	4	3	Accelerator Pedal or Lever Idle Validation Circuit- Voltage Below Normal, or Shorted to Low Source
797	Excavator	*	558	4	4	Differential Lock Pressure-Voltage Below Normal, Or Shorted To Low Source
798	Excavator	Cummins	558	9	2	Accelerator Pedal or Lever Idle Validation Switch - Abnormal update rate
790	Excavator	Cummins	558	13	2	Accelerator Pedal or Lever Idle Validation Switch Circuit - Out of Calibration
791	Excavator	Cummins	558	19	2	Accelerator Pedal or Lever Idle Validation Switch - Received Network Data In Error
800	Excavator	Scania	559	2	4	Kickdown signal defect via CAN
801	Excavator	Scania	559	9	4	Accelerator pedal kickdown CAN message, faulty
799	Excavator	Scania	559	10	4	Accelerator pedal/kick down switch, EMS and coordinator do not agree
803	Excavator	Cummins	563	9	4	Anti-Lock Braking (ABS) Controller - Abnormal update rate
802	Excavator	Cummins	563	31	5	Anti-Lock Braking (ABS) Active - Condition Exists
804	Excavator	Perkins	593	31	5	Engine Idle Shutdown has Shutdown Engine
805	Excavator	Perkins	594	31	5	Engine Idle Shutdown Driver Alert Mode
807	Excavator	Cummins	596	2	4	Cruise Control Enable Switch - Data erratic, intermittent or incorrect
808	Excavator	Cummins	596	7	4	Cruise Control Enable Switch - Mechanical system not responding or out of adjustment
806	Excavator	Cummins	596	13	3	Cruise Control Enable Switch - Out of Calibration
809	Excavator	Scania	597	2	4	Brake pedal signal defect via CAN
810	Excavator	Cummins	597	3	3	Brake Switch Circuit - Voltage above normal, or shorted to high source
811	Excavator	Cummins	597	4	3	Brake Switch Circuit - Voltage below normal, or shorted to low source
813	Excavator	Scania	598	2	4	Clutch pedal signal defect via CAN
814	Excavator	Scania	598	7	4	Excessive clutch slip
812	Excavator	Scania	598	19	3	CAN-signal or engine shut-down command from OPC for automatic clutch failure, timeout
815	Excavator	Cummins	599	2	4	Cruise Control Set Switch - Data erratic, intermittent or incorrect
818	Excavator	Cummins	611	2	4	Auxiliary Intermediate (PTO) Speed Switch Validation - Data erratic, intermittent or incorrect
816	Excavator	Cummins	611	16	3	Fuel Inlet Meter Device - Data Valid but Above Normal Operational Range - Moderately Severe Level
817	Excavator	Cummins	611	18	3	Fuel Inlet Meter Device flow demand lower than expected - Data Valid but Below Normal Operational Range - Moderately Severe Level
819	Excavator	Cummins	611	31	3	Operator Interface Mode Transition to Emergency Stop (Due to E-Stop) - Condition Exists
820	Excavator	Cummins	612	2	2	Engine Magnetic Speed/Position Lost Both of Two Signals - Data erratic, intermittent or incorrect
821	Excavator	Cummins	623	4	3	Red Stop Lamp Driver Circuit - Voltage Below Normal, or Shorted to Low Source
822	Excavator	Perkins	623	5	3	Red Stop Lamp : Current Below Normal
823	Excavator	Perkins	623	6	3	Red Stop Lamp : Current Above Normal
824	Excavator	Perkins	624	5	3	Amber Warning Lamp : Current Below Normal
825	Excavator	Perkins	624	6	3	Amber Warning Lamp : Current Above Normal
826	Excavator	Cummins	625	9	2	Proprietary Datalink Error (OEM/Vehicle Datalink) - Abnormal update rate
829	Excavator	Cummins	626	3	3	Start Enable Device 1 Circuit (Ether Injection) - Voltage above normal, or shorted to high source
830	Excavator	Cummins	626	4	3	Start Enable Device 1Circuit (Ether Injection) - Voltage below normal, or shorted to low source
831	Excavator	Perkins	626	5	3	Engine Start Enable Device 1 : Current Below Normal
832	Excavator	Perkins	626	6	3	Engine Start Enable Device 1 : Current Above Normal
827	Excavator	Cummins	626	11	4	Intake Air Heater (Relay Enable) #1 Circuit - data incorrect
828	Excavator	Cummins	626	18	3	Start Enable Device 1 Canister Empty (Ether Injection) - Data Valid But Below Normal Operating Range
834	Excavator	Cummins	627	2	3	Power Supply Lost With Ignition On - Data Erratic, Intermittent, or Incorrect
833	Excavator	Cummins	627	12	3	Injector Power Supply - Bad intelligent device or component
835	Excavator	Cummins	629	12	2	Engine Control Module Critical Internal Failure - Bad intelligent device or component
836	Excavator	Cummins	629	31	3	At Least One Unacknowledged Moderately Severe Fault - Condition Exists
840	Excavator	Perkins	630	2	4	Calibration Memory: Erratic, Intermittent, or Incorrect
837	Excavator	Cummins	630	12	2	Engine Control Module Calibration Memory - Bad intelligent device or component
838	Excavator	Yanmar	630	12	2	EEPROM memory deletion error
839	Excavator	Cummins	630	13	3	Electronic Calibration Code Incompatibility - Out of Calibration
841	Excavator	Cummins	630	31	3	ECM Program Memory (RAM) Corruption - Condition Exists
842	Excavator	Perkins	631	2	4	Calibration Module : Erratic, Intermittent, or Incorrect
843	Excavator	Cummins	632	3	4	Fuel Shutoff Valve Circuit - shorted high
844	Excavator	Cummins	632	4	2	Less than Positive (+) 6 VDC detected at fuel shutoff circuit or an excessive current draw from the electronic control module (ECM) or faulty ECM output circuit.

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
845	Excavator	Cummins	632	7	2	Fuel Shutoff Valve - stuck open
846	Excavator	Yanmar	633	3	2	SCV (MPROP) H side VB short circuit
848	Excavator	Yanmar	633	5	2	SCV (MPROP) disconnection
849	Excavator	Yanmar	633	6	2	SCV (MPROP) H side GND short circuit
850	Excavator	Cummins	633	7	1	Fuel Control Valve - mechanically stuck
847	Excavator	Cummins	633	31	4	Electronic Fuel Injection Control Valve Circuit - Condition Exists
851	Excavator	Cummins	635	7	1	Engine Timing Actuator is not responding to ECM commands
852	Excavator	Scania	636	1	4	Camshaft position sensor, faulty
853	Excavator	Scania	636	2	4	Camshaft position sensor, intermittent fault
854	Excavator	Scania	636	3	3	Camshaft position sensor, short circuit to +24V
855	Excavator	Scania	636	4	3	Camshaft position sensor, short circuit to ground
856	Excavator	Scania	636	5	3	Camshaft position sensor, open circuit
857	Excavator	Scania	636	7	4	Engine speed detected by flywheel sensor, but no signal from camshaft sensor
858	Excavator	Scania	636	8	4	Camshaft Pulse Pattern, Gap or Sync Error or other fault
859	Excavator	Perkins	637	11	4	Engine Timing Sensor: Other Failure Mode
862	Excavator	Cummins	639	2	4	J1939 Network #1 - Data erratic, intermittent or incorrect
863	Excavator	Cummins	639	9	5	SAE J1939 Multiplexing PGN Timeout Error - Abnormal update rate
864	Excavator	Perkins	639	9	5	J1939 Network #1 : Abnormal Update Rate
860	Excavator	Cummins	639	13	3	SAE J1939 Multiplexing Configuration Error - Out of Calibration
861	Excavator	Perkins	639	14	2	J1939 Network #1 : Special Instruction
865	Excavator	Cummins	640	14	2	Auxiliary Commanded Dual Output Shutdown - Special Instructions
877	Excavator	Scania	641	2	3	VGT internal temperature sensor stuck
880	Excavator	Scania	641	4	3	VGT voltage supply open load
881	Excavator	Scania	641	5	3	VGT internal temperature sensor open circuit
882	Excavator	Cummins	641	6	4	VGT Actuator Driver Circuit - Current Above Normal or Grounded Circuit
883	Excavator	Scania	641	6	4	Variable geometry turbocharger control fault
884	Excavator	Cummins	641	7	3	VGT Actuator Driver Circuit (Motor) - Mechanical system not responding or out of adjustment
885	Excavator	Scania	641	7	3	VGT motion limited or restricted
886	Excavator	Scania	641	8	3	VGT reference or position not found
887	Excavator	Cummins	641	9	3	VGT Actuator Driver Circuit - Abnormal update rate
888	Excavator	Scania	641	9	3	VGT temperature sensor value not plausible
866	Excavator	Scania	641	10	3	VGT motion error, span too large
867	Excavator	Cummins	641	11	3	VGT Actuator Driver Circuit - Root Cause Not Known
868	Excavator	Scania	641	11	3	VGT actuator faulty
869	Excavator	Cummins	641	12	3	VGT Actuator Controller - Bad intelligent device or component
870	Excavator	Scania	641	12	3	VGT internal fault
871	Excavator	Cummins	641	13	3	VGT Actuator Controller - Out of Calibration
872	Excavator	Scania	641	13	3	VGT actuator installation procedure was not completed
873	Excavator	Cummins	641	15	3	VGT Actuator Driver Over Temperature (Calculated) - Data Valid But Above Normal Operating Range - Least Severe Level
874	Excavator	Scania	641	15	3	VGT error
875	Excavator	Scania	641	16	3	VGT temperature too high
876	Excavator	Scania	641	19	3	VGT timeout on CAN
878	Excavator	Scania	641	20	3	Variable geometry turbocharger control fault
879	Excavator	Cummins	641	31	2	VGT Actuator Driver Circuit - Condition Exists
889	Excavator	Cummins	644	2	4	External Speed Command Input (Multiple Unit Synchronization) - Data erratic, intermittent or incorrect
890	Excavator	Scania	645	19	4	CAN message TCO1 from tachograph timeout
891	Excavator	Cummins	647	3	4	Fan Control Circuit - Voltage above normal, or shorted to high source
892	Excavator	Cummins	647	4	4	Fan Control Circuit - Voltage below normal, or shorted to low source
893	Excavator	Cummins	649	3	3	Engine Exhaust Back Pressure Regulator Control Circuit - Voltage Above Normal, or Shorted to High Source
894	Excavator	Cummins	649	4	3	Engine Exhaust Back Pressure Regulator Control Circuit - Voltage Below Normal, or Shorted to Low Source
895	Excavator	Cummins	649	5	3	Engine Exhaust Back Pressure Regulator Control Circuit - Current Below Normal or Open Circuit
896	Excavator	Perkins	649	5	3	Engine Exhaust Back Pressure Regulator Control Command : Current Below Normal
897	Excavator	Perkins	649	6	3	Engine Exhaust Back Pressure Regulator Control Command : Current Above Normal
898	Excavator	Perkins	649	7	3	Engine Exhaust Back Pressure Regulator Control Command : Not Responding Properly
899	Excavator	Scania	651	1	4	Two or more injectors with the same trim code, injector cyl. 1
905	Excavator	Perkins	651	2	2	Engine Injector Cylinder #01 : Erratic, Intermittent, or Incorrect
906	Excavator	Scania	651	2	2	Injector trim code, checksum error injector cyl. 1
911	Excavator	Yanmar	651	3	2	Short circuit
912	Excavator	Scania	651	4	2	Injector 1 cable short circuit to ground
913	Excavator	Cummins	651	5	2	Injector Solenoid Driver Cylinder 1 Circuit - Current below normal or open circuit
914	Excavator	Perkins	651	5	2	Engine Injector Cylinder #01 : Current Below Normal
915	Excavator	Scania	651	5	2	Injector cyl. 1 cable/injector open load
916	Excavator	Yanmar	651	5	2	Disconnection (injector-specifiction)
917	Excavator	Perkins	651	6	2	Engine Injector Cylinder #01 : Current Above Normal
918	Excavator	Scania	651	6	2	Injector cyl. 1 cable/injector short circuit
919	Excavator	Yanmar	651	6	2	Coil short circuit
920	Excavator	Cummins	651	7	2	Injector Solenoid Driver Cylinder 1 - Mechanical system not responding or out of adjustment
921	Excavator	Scania	651	7	2	Injection error, physical cylinder 1
922	Excavator	Scania	651	8	2	Injector cyl. 1, over or under fueling
900	Excavator	Scania	651	10	2	Fault with sensors/actuators for the particulate filter
901	Excavator	Scania	651	13	2	Injector trim code version error, injector cyl. 1
902	Excavator	Scania	651	15	2	Cylinder 1 torque error
903	Excavator	Scania	651	16	2	Cylinder 1 injector fault, high torque

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
904	Excavator	Scania	651	18	2	Cylinder 1 injector fault, low torque
907	Excavator	Perkins	651	20	2	Engine Injector Cylinder #01 : Data Drifted High
908	Excavator	Scania	651	20	2	Cylinder 1 balancing min or max
909	Excavator	Perkins	651	21	2	Engine Injector Cylinder #01 : Data Drifted Low
910	Excavator	Scania	651	21	2	Cylinder balancing, not plausible
923	Excavator	Scania	652	1	2	Two or more injectors with the same trim code, injector cyl. 2
929	Excavator	Perkins	652	2	2	Engine Injector Cylinder #02 : Erratic, Intermittent, or Incorrect
930	Excavator	Scania	652	2	2	Injector trim code, checksum error injector cyl. 2
934	Excavator	Yanmar	652	3	2	Short circuit
935	Excavator	Scania	652	4	2	Injector 2 cable short circuit to ground
936	Excavator	Cummins	652	5	2	Injector Solenoid Driver Cylinder 2 Circuit - Current below normal or open circuit
937	Excavator	Perkins	652	5	2	Engine Injector Cylinder #02 : Current Below Normal
938	Excavator	Scania	652	5	2	Injector cyl. 2 cable/injector open load
939	Excavator	Yanmar	652	5	2	Disconnection (injector-specifiction)
940	Excavator	Perkins	652	6	2	Engine Injector Cylinder #02 : Current Above Normal
941	Excavator	Scania	652	6	2	Injector cyl. 2 cable/injector short circuit
942	Excavator	Yanmar	652	6	2	Coil short circuit
943	Excavator	Cummins	652	7	2	Injector Solenoid Driver Cylinder 2 - Mechanical system not responding or out of adjustment
944	Excavator	Scania	652	7	2	Injection error, physical cylinder 2
945	Excavator	Scania	652	8	2	Injector cyl. 2, over or under fueling
924	Excavator	Scania	652	10	2	Fault with sensors/actuators for the particulate filter
925	Excavator	Scania	652	13	2	Injector trim code version error, injector cyl. 2
926	Excavator	Scania	652	15	2	Cylinder 2 torque error
927	Excavator	Scania	652	16	2	Cylinder 2 injector fault, high torque
928	Excavator	Scania	652	18	2	Cylinder 2 injector fault, low torque
931	Excavator	Perkins	652	20	2	Engine Injector Cylinder #02 : Data Drifted High
932	Excavator	Scania	652	20	2	Cylinder 2 balancing min or max
933	Excavator	Perkins	652	21	2	Engine Injector Cylinder #02 : Data Drifted Low
946	Excavator	Scania	653	1	2	Two or more injectors with the same trim code, injector cyl. 3
952	Excavator	Perkins	653	2	2	Engine Injector Cylinder #03 : Erratic, Intermittent, or Incorrect
953	Excavator	Scania	653	2	2	Injector trim code, checksum error injector cyl. 3
957	Excavator	Yanmar	653	3	2	Short circuit
958	Excavator	Scania	653	4	2	njector 3 cable short circuit to ground
959	Excavator	Cummins	653	5	2	Injector Solenoid Driver Cylinder 3 Circuit - Current below normal or open circuit
960	Excavator	Perkins	653	5	2	Engine Injector Cylinder #03 : Current Below Normal
961	Excavator	Scania	653	5	2	Injector cyl. 3 cable/injector open load
962	Excavator	Yanmar	653	5	2	Disconnection (injector-specifiction)
963	Excavator	Perkins	653	6	2	Engine Injector Cylinder #03 : Current Above Normal
964	Excavator	Scania	653	6	2	Injector cyl. 3 cable/injector short circuit
965	Excavator	Yanmar	653	6	2	Coil short circuit
966	Excavator	Cummins	653	7	2	Injector Solenoid Driver Cylinder 3 - Mechanical system not responding or out of adjustment
967	Excavator	Scania	653	7	2	Injection error, physical cylinder 3
968	Excavator	Scania	653	8	2	Injector cyl. 3, over or under fueling
947	Excavator	Scania	653	10	2	Fault with sensors/actuators for the particulate filter
948	Excavator	Scania	653	13	2	Injector trim code version error, injector cyl. 3
949	Excavator	Scania	653	15	2	Cylinder 3 torque error
950	Excavator	Scania	653	16	2	Cylinder 3 injector fault, high torque
951	Excavator	Scania	653	18	2	Cylinder 3 injector fault, low torque
954	Excavator	Perkins	653	20	2	Engine Injector Cylinder #03 : Data Drifted High
955	Excavator	Scania	653	20	2	Cylinder 3 balancing min or max
956	Excavator	Perkins	653	21	2	Engine Injector Cylinder #03 : Data Drifted Low
969	Excavator	Scania	654	1	2	Two or more injectors with the same trim code, injector cyl. 4
975	Excavator	Perkins	654	2	2	Engine Injector Cylinder #04 : Erratic, Intermittent, or Incorrect
976	Excavator	Scania	654	2	2	Injector trim code, checksum error injector cyl. 4
980	Excavator	Yanmar	654	3	2	Short circuit
981	Excavator	Scania	654	4	2	Injector 4 cable short circuit to ground
982	Excavator	Cummins	654	5	2	Injector Solenoid Driver Cylinder 4 Circuit - Current below normal or open circuit
983	Excavator	Perkins	654	5	2	Engine Injector Cylinder #04 : Current Below Normal
984	Excavator	Scania	654	5	2	Injector cyl. 4 cable/injector open load
985	Excavator	Yanmar	654	5	2	Disconnection (injector-specifiction)
986	Excavator	Perkins	654	6	2	Engine Injector Cylinder #04 : Current Above Normal
987	Excavator	Scania	654	6	2	Injector cyl. 4 cable/injector short circuit
988	Excavator	Yanmar	654	6	2	Coil short circuit
989	Excavator	Cummins	654	7	2	Injector Solenoid Driver Cylinder 4 - Mechanical system not responding or out of adjustment
990	Excavator	Scania	654	7	2	Injection error, physical cylinder 4
991	Excavator	Scania	654	8	2	Injector cyl. 4, over or under fueling
970	Excavator	Scania	654	10	2	Fault with sensors/actuators for the particulate filter
971	Excavator	Scania	654	13	2	Injector trim code version error, injector cyl. 4
972	Excavator	Scania	654	15	2	Cylinder 4 torque error
973	Excavator	Scania	654	16	2	Cylinder 4 injector fault, high torque
974	Excavator	Scania	654	18	2	Cylinder 4 injector fault, low torque
977	Excavator	Perkins	654	20	2	Engine Injector Cylinder #04 : Data Drifted High
978	Excavator	Scania	654	20	2	Cylinder 4 balancing min or max
979	Excavator	Perkins	654	21	2	Engine Injector Cylinder #04 : Data Drifted Low
992	Excavator	Scania	655	1	2	Two or more injectors with the same trim code, injector cyl. 5
998	Excavator	Scania	655	2	2	Injector trim code, checksum error injector cyl. 5
1000	Excavator	Scania	655	4	2	Injector 5 cable short circuit to ground
1001	Excavator	Cummins	655	5	2	Injector Solenoid Driver Cylinder 5 Circuit - Current below normal or open circuit
1002	Excavator	Scania	655	5	2	Injector cyl. 5 cable/injector open load

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
1003	Excavator	Scania	655	6	2	Injector cyl. 5 cable/injector short circuit
1004	Excavator	Cummins	655	7	2	Injector Solenoid Driver Cylinder 5 - Mechanical system not responding or out of adjustment
1005	Excavator	Scania	655	7	2	Injection error, physical cylinder 5
1006	Excavator	Scania	655	8	2	Injector cyl. 5, over or under fueling
993	Excavator	Scania	655	10	2	Fault with sensors/actuators for the particulate filter
994	Excavator	Scania	655	13	2	Injector trim code version error, injector cyl. 5
995	Excavator	Scania	655	15	2	Cylinder 5 torque error
996	Excavator	Scania	655	16	2	Cylinder 5 injector fault, high torque
997	Excavator	Scania	655	18	2	Cylinder 5 injector fault, low torque
999	Excavator	Scania	655	20	2	Cylinder 5 balancing min or max
1007	Excavator	Scania	656	1	2	Two or more injectors with the same trim code, injector cyl. 6
1012	Excavator	Scania	656	2	2	Injector trim code, checksum error injector cyl. 6
1014	Excavator	Cummins	656	5	2	Injector Solenoid Driver Cylinder 6 Circuit - Current below normal or open circuit
1015	Excavator	Scania	656	5	2	Injector cyl. 6 cable/injector open load
1016	Excavator	Scania	656	6	2	Injector cyl. 6 cable/injector short circuit
1017	Excavator	Cummins	656	7	2	Injector Solenoid Driver Cylinder 6 - Mechanical system not responding or out of adjustment
1018	Excavator	Scania	656	7	2	Injection error, physical cylinder 6
1019	Excavator	Scania	656	8	2	Injector cyl. 6, over or under fueling
1008	Excavator	Scania	656	13	2	Injector trim code version error, injector cyl. 6
1009	Excavator	Scania	656	15	2	Cylinder 6 torque error
1010	Excavator	Scania	656	16	2	Cylinder 6 injector fault, high torque
1011	Excavator	Scania	656	18	2	Cylinder 6 injector fault, low torque
1013	Excavator	Scania	656	20	2	Cylinder 6 balancing min or max
1020	Excavator	Scania	657	1	2	Two or more injectors with the same trim code, injector cyl. 7
1025	Excavator	Scania	657	2	2	Injector trim code, checksum error injector cyl. 7
1027	Excavator	Cummins	657	5	2	Injector Solenoid Driver Cylinder 7 Circuit - Current below normal or open circuit
1028	Excavator	Scania	657	5	2	Injector cyl. 7 cable/injector open load
1029	Excavator	Scania	657	6	2	Injector cyl. 7 cable/injector short circuit
1030	Excavator	Scania	657	7	2	Injection error, physical cylinder 7
1031	Excavator	Scania	657	8	2	Injector cyl. 7, over or under fueling
1021	Excavator	Scania	657	13	2	Injector trim code version error, injector cyl. 7
1022	Excavator	Scania	657	15	2	Cylinder 7 torque error
1023	Excavator	Scania	657	16	2	Cylinder 7 injector fault, high torque
1024	Excavator	Scania	657	18	2	Cylinder 7 injector fault, low torque
1026	Excavator	Scania	657	20	2	Cylinder 7 balancing min or max
1032	Excavator	Scania	658	1	2	Two or more injectors with the same trim code, injector cyl. 8
1037	Excavator	Scania	658	2	2	Injector trim code, checksum error injector cyl. 8
1039	Excavator	Cummins	658	5	2	Injector Solenoid Driver Cylinder 8 Circuit - Current below normal or open circuit
1040	Excavator	Scania	658	5	2	Injector cyl. 8 cable/injector open load
1041	Excavator	Scania	658	6	2	Injector cyl. 8 cable/injector short circuit
1042	Excavator	Scania	658	7	2	Injection error, physical cylinder 8
1043	Excavator	Scania	658	8	2	Injector cyl. 8, over or under fueling
1033	Excavator	Scania	658	13	2	Injector trim code version error, injector cyl. 8
1034	Excavator	Scania	658	15	2	Cylinder 8 torque error
1035	Excavator	Scania	658	16	2	Cylinder 8 injector fault, high torque
1036	Excavator	Scania	658	18	2	Cylinder 8 injector fault, low torque
1038	Excavator	Scania	658	20	2	Cylinder 8 balancing min or max
1044	Excavator	Cummins	659	5	2	Injector Solenoid Driver Cylinder 9 Circuit - Current below normal or open circuit
1045	Excavator	Cummins	660	5	2	Injector Solenoid Driver Cylinder 10 Circuit - Current below normal or open circuit
1046	Excavator	Cummins	661	5	2	Injector Solenoid Driver Cylinder 11 Circuit - Current below normal or open circuit
1047	Excavator	Cummins	662	5	2	Injector Solenoid Driver Cylinder 12 Circuit - Current below normal or open circuit
1048	Excavator	Cummins	663	5	2	Injector Solenoid Driver Cylinder 13 Circuit - Current below normal or open circuit
1049	Excavator	Cummins	664	5	2	Injector Solenoid Driver Cylinder 14 Circuit - Current below normal or open circuit
1050	Excavator	Cummins	665	5	2	Injector Solenoid Driver Cylinder 15 Circuit - Current below normal or open circuit
1051	Excavator	Cummins	666	5	2	Injector Solenoid Driver Cylinder 16 Circuit - Current below normal or open circuit
1053	Excavator	Perkins	676	5	3	Engine Glow Plug Relay: Current Below Normal
1054	Excavator	Perkins	676	6	3	Engine Glow Plug Relay: Current Above Normal
1052	Excavator	Perkins	676	19	4	Engine Glow Plug Relay: Data Error
1055	Excavator	Scania	677	0	4	Unintentional starter activation while moving or idling
1057	Excavator	Scania	677	2	4	Starter actuator, faulty
1058	Excavator	Cummins	677	3	3	Starter Relay Driver Circuit - Voltage above normal, or shorted to high source
1059	Excavator	Perkins	677	3	3	Engine Starter Motor Relay : Voltage Above Normal
1060	Excavator	Scania	677	3	3	Starter actuator, short circuit to +24V
1061	Excavator	Cummins	677	4	3	Starter Relay Driver Circuit - Voltage below normal, or shorted to low source
1062	Excavator	Scania	677	4	3	Starter actuator, short circuit to ground
1063	Excavator	Perkins	677	5	3	Engine Starter Motor Relay: Current Below Normal
1064	Excavator	Scania	677	5	3	Starter actuator, open load
1065	Excavator	Perkins	677	6	3	Engine Starter Motor Relay : Current Above Normal
1066	Excavator	Scania	677	7	4	Starter actuator, blind start
1056	Excavator	Scania	677	19	4	Starter motor demand defect via CAN
1067	Excavator	Perkins	678	3	3	ECU 8V DC Supply : Voltage Above Normal
1068	Excavator	Perkins	678	4	3	ECU 8V DC Supply : Voltage Below Normal
1069	Excavator	Cummins	697	3	3	Auxiliary PWM Driver 1 Circuit - Voltage above normal, or shorted to high source
1070	Excavator	Cummins	697	4	3	Auxiliary PWM Driver 1 Circuit - Voltage below normal, or shorted to low source
1072	Excavator	*	701	4	4	Hour-Meter-Voltage Below Normal, Or Shorted To Low Source
1071	Excavator	Cummins	701	14	3	Auxiliary Input/Output 1 - Special Instructions
1073	Excavator	Cummins	702	3	3	Auxiliary Input/Output 2 Circuit - Voltage above normal, or shorted to high source
1074	Excavator	Cummins	702	5	3	Auxiliary Input/Output 2 Circuit - Current below normal or open circuit
1075	Excavator	Cummins	702	6	3	Auxiliary Input/Output 2 Circuit - Current above normal or grounded circuit

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1078	Excavator	Cummins	703	3	3	Auxiliary Input/Output 3 Circuit - Voltage above normal, or shorted to high source
1076	Excavator	Cummins	703	11	3	Warning Auxiliary Equipment Sensor Input # 3 (OEM Switch) - Root Cause Not Known
1077	Excavator	Cummins	703	14	2	Auxiliary Equipment Sensor Input 3 Engine Protection Critical - Special Instructions
1079	Excavator	*	705	0	1	(MCU Input)Battery Voltage-Data Valid But Above Normal Operational Range
1080	Excavator	*	705	1	1	(MCU Input)Battery Voltage-Data Valid But Below Normal Operational Range
1081	Excavator	*	706	*	4	(Warning) Battery Voltage Low
1082	Excavator	*	707	1	4	Alternator Voltage-Data Valid But Below Normal Operational Range
1083	Excavator	*	711	2	4	One Touch Deceleration Switch – Data Erratic, Intermittent Or Incorrect
1084	Excavator	*	712	2	4	Power Boost Switch – Data Erratic, Intermittent Or Incorrect
1085	Excavator	*	714	3	2	Acceleration Dial Voltage-Voltage Above Normal, Or Shorted To High Source
1086	Excavator	*	714	4	2	Acceleration Dial Voltage-Voltage Below Normal, Or Shorted To Low Source
1087	Excavator	*	715	3	4	Rotate Signal Input Voltage-Voltage Above Normal, Or Shorted To High Source
1088	Excavator	*	715	4	4	Rotate Signal Input Voltage-Voltage Below Normal, Or Shorted To Low Source
1089	Excavator	*	716	3	4	Tilt Signal Input Voltage-Voltage Above Normal, Or Shorted To High Source
1090	Excavator	*	716	4	4	Tilt Signal Input Voltage-Voltage Below Normal, Or Shorted To Low Source
1091	Excavator	*	722	3	4	Travel Alarm Buzzer-Voltage Above Normal, Or Shorted To High Source
1092	Excavator	*	722	4	4	Travel Alarm Buzzer-Voltage Below Normal, Or Shorted To Low Source
1093	Excavator	*	722	6	2	Travel Alarm Buzzer-Current Above Normal Or Grounded Circuit
1096	Excavator	Cummins	723	2	3	Engine Camshaft Speed / Position Sensor - Data erratic, intermittent or incorrect
1097	Excavator	Scania	723	2	3	Engine position sensor 2, faulty
1098	Excavator	*	723	3	4	Buzzer-Voltage Above Normal, Or Shorted To High Source
1099	Excavator	*	723	4	4	Buzzer-Voltage Below Normal, Or Shorted To Low Source
1100	Excavator	Scania	723	4	4	Engine position sensor 2, too weak signal
1101	Excavator	Cummins	723	7	3	Engine Speed / Position Camshaft and Crankshaft Misalignment - Mechanical system not responding or out of adjustment
1102	Excavator	Scania	723	7	3	Engine position sensor 2, faulty
1103	Excavator	Perkins	723	8	3	Engine Speed Sensor #2 : Abnormal Frequency, Pulse Width, or Period
1104	Excavator	Scania	723	8	3	Engine position sensor 2, Gap Puls or Sync error
1105	Excavator	Scania	723	9	4	Engine position sensor 2, Time out
1094	Excavator	Scania	723	10	3	Engine position sensor 2, position diff
1095	Excavator	Scania	723	14	3	Engine position sensor 2 error torque limit
1106	Excavator	*	727	4	4	Wiper Relay-Voltage Below Normal, Or Shorted To Low Source
1107	Excavator	*	727	6	4	Wiper Relay-Current Above Normal Or Grounded Circuit
1108	Excavator	*	728	3	4	Boom Link Angle Sensor Signal Voltage-Voltage Above Normal, Or Shorted To High Source
1109	Excavator	*	728	4	4	Boom Link Angle Sensor Signal Voltage-Voltage Below Normal, Or Shorted To Low Source
1110	Excavator	*	729	3	4	Bell Crank Angle Sensor Signal Voltage-Voltage Above Normal, Or Shorted To High Source
1111	Excavator	Cummins	729	3	4	Engine Intake Air Heater 1 Circuit - Voltage above normal, or shorted to high source
1112	Excavator	*	729	4	4	Bell Crank Angle Sensor Signal Voltage-Voltage Below Normal, Or Shorted To Low Source
1113	Excavator	Cummins	729	4	4	Engine Intake Air Heater 1 Circuit - Voltage below normal, or shorted to low source
1116	Excavator	Cummins	730	3	4	Intake Air Heater 2 Circuit - Voltage Above Normal, or Shorted to High Source
1117	Excavator	Cummins	730	4	4	Intake Air Heater 2 Circuit - Voltage Below Normal, or Shorted to Low Source
1114	Excavator	*	730	12	4	MCU Internal Memory Status-Bad Intelligent Device Or Component
1115	Excavator	*	730	19	4	APTC Heater PWM Output Duty-Received Network Data In Error
1118	Excavator	Cummins	748	9	5	Transmission Output Retarder - Abnormal update rate
1119	Excavator	*	753	3	4	LH RCV Lever Wheel Scroll Input Voltage - Voltage Above Normal, Or Shorted To High Source
1120	Excavator	*	754	3	4	RH RCV Lever Wheel Scroll Input Voltage - Voltage Above Normal, Or Shorted To High Source
1121	Excavator	*	755	3	4	Dozer Lever Wheel Scroll Input Voltage - Voltage Above Normal, Or Shorted To High Source
1122	Excavator	*	840	2	4	Cluster Communication Status-Data Erratic, Intermittent Or Incorrect
1123	Excavator	*	841	2	1	ECM Communication Status-Data Erratic, Intermittent Or Incorrect
1124	Excavator	*	843	2	4	A/C Controller Communication Status-Data Erratic, Intermittent Or Incorrect
1125	Excavator	*	844	2	4	Monitor Communication Status-Data Erratic, Intermittent Or Incorrect
1126	Excavator	*	845	2	4	I/O Controller 1 Communication Status-Data Erratic, Intermittent Or Incorrect
1127	Excavator	*	848	2	4	Haptic Controller or Jog Dial Module Communication Status Data Erratic, Intermittent Or Incorrect
1128	Excavator	*	850	2	4	RMCU Status-Data Erratic, Intermittent Or Incorrect
1129	Excavator	*	861	2	4	EHCU Communication Status-Data Erratic, Intermittent Or Incorrect
1130	Excavator	Cummins	862	3	5	Crankcase Breather Filter Heater Circuit - Voltage above normal, or shorted to high source
1131	Excavator	Cummins	862	4	5	Crankcase Breather Filter Heater Circuit - Voltage below normal, or shorted to low source
1132	Excavator	*	866	2	4	AAVM Communication Status-Data Erratic, Intermittent Or Incorrect
1133	Excavator	*	867	2	4	RDU Communication Status-Data Erratic, Intermittent Or Incorrect
1134	Excavator	*	868	2	4	Switch Controller Communication Status-Data Erratic, Intermittent Or Incorrect
1135	Excavator	*	869	2	4	KCU Communication Status-Data Erratic, Intermittent Or Incorrect
1136	Excavator	*	879	2	4	AVCU Communication Status-Data Erratic, Intermittent Or Incorrect
1137	Excavator	*	897	2	4	PCU Communication Status-Data Erratic, Intermittent Or Incorrect
1138	Excavator	*	900	2	5	MGS(Bucket) Communication Status-Data Erratic, Intermittent Or Incorrect
1139	Excavator	*	901	2	5	MGS(Arm) Communication Status-Data Erratic, Intermittent Or Incorrect
1140	Excavator	*	902	2	5	MGS(Boom) Communication Status-Data Erratic, Intermittent Or Incorrect
1141	Excavator	*	903	2	5	MGS(Body) Communication Status-Data Erratic, Intermittent Or Incorrect
1142	Excavator	*	910	2	4	MGS Laser Communication Status-Data Erratic, Intermittent Or Incorrect
1143	Excavator	*	911	2	4	MC Controller Communication Status - Data Erratic, Intermittent Or incorrect
1144	Excavator	*	920	4	4	Crusher Control Type Select Solenoid-Voltage Below Normal, Or Shorted To Low Source
1145	Excavator	*	920	6	4	Crusher Control Type Select Solenoid-Current Above Normal Or Grounded Circuit
1146	Excavator	*	923	2	5	Radar Sensor Connection Lost - Data Erratic, Intermittent Or Incorrect
1147	Excavator	Cummins	931	7	3	Fuel Supply Pump Actuator – mechanically stuck
1148	Excavator	Perkins	970	31	4	Engine Auxiliary Shutdown Switch
1149	Excavator	Scania	974	0	4	Signal level from redundant gas pedal above high limit
1150	Excavator	Scania	974	1	4	Signal level from redundant gas pedal below low limit

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
1152	Excavator	Cummins	974	3	2	Remote Accelerator Pedal or Lever Position Sensor 1 Circuit - Voltage above normal, or shorted to high source
1153	Excavator	Cummins	974	4	2	Remote Accelerator Pedal or Lever Position Sensor 1 Circuit - Voltage below normal, or shorted to low source
1151	Excavator	Cummins	974	19	2	SAE J1939 Multiplexing Remote Accelerator Pedal or Lever Position Sensor System - Received Network Data In Error
1154	Excavator	Cummins	976	2	4	Auxiliary Intermediate (PTO) Speed Switch Validation - Data erratic, intermittent or incorrect
1155	Excavator	Perkins	976	2	4	PTO Governor State : Erratic, Intermittent, or Incorrect
1156	Excavator	Scania	986	2	4	Fan actuator, faulty
1157	Excavator	Scania	986	3	3	Fan actuator, short circuit to +24V
1158	Excavator	Scania	986	4	3	Fan actuator, short circuit high to ground
1159	Excavator	Scania	986	5	3	Fan actuator, open load
1160	Excavator	Scania	986	7	4	Fan coupling unit, bad performance
1161	Excavator	Perkins	1041	2	4	Start Signal Indicator: Erratic, Intermittent, or Incorrect
1162	Excavator	Cummins	1072	3	3	Engine Brake Actuator Driver 1 Circuit - Voltage above normal, or shorted to high source
1163	Excavator	Cummins	1072	4	3	Engine Brake Actuator Driver 1 Circuit - Voltage below normal, or shorted to low source
1164	Excavator	Cummins	1073	3	3	Engine Brake Actuator Driver Output 2 Circuit - Voltage above normal, or shorted to high source
1165	Excavator	Cummins	1073	4	3	Engine Brake Actuator Driver Output 2 Circuit - Voltage below normal, or shorted to low source
1166	Excavator	Cummins	1075	3	3	Electric Lift Pump for Engine Fuel Supply Circuit - Voltage above normal, or shorted to high source
1167	Excavator	Cummins	1075	4	3	Electric Lift Pump for Engine Fuel Supply Circuit - Voltage below normal, or shorted to low source
1168	Excavator	Perkins	1075	5	3	Engine Electric Lift Pump for Engine Fuel Supply : Current Below Normal
1169	Excavator	Perkins	1075	6	3	Engine Electric Lift Pump for Engine Fuel Supply : Current Above Normal
1170	Excavator	Perkins	1076	2	4	Engine Fuel Injection Pump Fuel Control Valve: Erratic, Intermittent, or Incorrect
1171	Excavator	Perkins	1076	5	3	Engine Fuel Injection Pump Fuel Control Valve: Current Below Normal
1172	Excavator	Perkins	1076	6	3	Engine Fuel Injection Pump Fuel Control Valve : Current Above Normal
1175	Excavator	Perkins	1081	5	3	Engine Wait to Start Lamp : Current Below Normal
1176	Excavator	Perkins	1081	6	3	Engine Wait to Start Lamp : Current Above Normal
1177	Excavator	Cummins	1081	7	3	Engine Wait to Start Lamp - Mechanical system not responding or out of adjustment
1178	Excavator	Cummins	1081	9	4	Engine Wait to Start Lamp - Abnormal update rate
1173	Excavator	Cummins	1081	19	4	Engine Wait to Start Lamp - Received Network Data In Error
1174	Excavator	Cummins	1081	31	4	Engine Wait to Start Lamp - Condition Exists
1179	Excavator	Scania	1086	2	5	Electrical fault on the parking brake pressure sensor
1180	Excavator	Scania	1108	14	5	Overridden due to other fault
1181	Excavator	Cummins	1109	0	5	Engine Protection System Approaching Shutdown - Data valid but above normal operational range - Most
1182	Excavator	Scania	1110	14	4	Engine Stop due to other fault
1183	Excavator	Perkins	1110	31	5	Engine Protection System has Shutdown Engine
1184	Excavator	Cummins	1112	3	3	Engine Brake Actuator Driver 3 Circuit - Voltage above normal, or shorted to high source
1185	Excavator	Cummins	1112	4	3	Engine Brake Actuator Driver Output 3 Circuit - Voltage below normal, or shorted to low source
1188	Excavator	Cummins	1127	7	3	Engine Turbocharger 1 Boost Pressure - Mechanical system not responding or out of adjustment
1186	Excavator	Perkins	1127	16	3	Engine Turbocharger 1 Boost Pressure : High - moderate severity (2)
1187	Excavator	Perkins	1127	18	3	Engine Turbocharger 1 Boost Pressure: Low - moderate severity (2)
1189	Excavator	Cummins	1136	2	4	Engine ECU Temperature - Data erratic, intermittent or incorrect
1190	Excavator	Cummins	1136	3	3	Engine ECU Temperature Sensor Circuit - Voltage above normal, or shorted to high source
1191	Excavator	Cummins	1136	4	3	Engine ECU Temperature Sensor Circuit - Voltage below normal, or shorted to low source
1193	Excavator	Cummins	1172	2	3	Turbocharger 1 Compressor Intake Temperature - Data erratic, intermittent or incorrect
1194	Excavator	Cummins	1172	3	3	Turbocharger 1 Compressor Intake Temperature Circuit - Voltage above normal, or shorted to high source
1195	Excavator	Cummins	1172	4	3	Turbocharger 1 Compressor Intake Temperature Circuit - Voltage below normal, or shorted to low source
1196	Excavator	Cummins	1172	9	3	Turbocharger 1 Compressor Intake Temperature Sensor - Abnormal update rate
1192	Excavator	Cummins	1172	19	3	Turbocharger 1 Compressor Intake Temperature Sensor - Received Network Data In Error
1197	Excavator	Cummins	1176	1	3	Turbocharger 1 Compressor Intake Pressure - Data valid but below normal operational range - Most Severe Level
1200	Excavator	Cummins	1176	2	3	Turbocharger 1 Compressor Intake Pressure - Data erratic, intermittent or incorrect
1201	Excavator	Cummins	1176	3	3	Turbocharger 1 Compressor Intake Pressure Circuit - Voltage above normal, or shorted to high source
1202	Excavator	Cummins	1176	4	3	Turbocharger 1 Compressor Intake Pressure Circuit - Voltage below normal, or shorted to low source
1203	Excavator	Cummins	1176	9	3	Turbocharger 1 Compressor Intake Pressure - Abnormal update rate
1198	Excavator	Cummins	1176	18	3	Turbocharger 1 Compressor Intake Pressure - Data Valid But Below Normal Operating Range - Moderately
1199	Excavator	Cummins	1176	19	3	Turbocharger 1 Compressor Intake Pressure - Received Network Data In Error
1204	Excavator	Perkins	1188	5	3	Engine Turbocharger Wastegate Actuator 1 Position : Current Below Normal
1205	Excavator	Perkins	1188	6	3	Engine Turbocharger Wastegate Actuator 1 Position : Current Above Normal
1206	Excavator	Cummins	1189	3	3	Engine Turbocharger Wastegate Actuator 2 Position Circuit - Voltage Above Normal or Shorted to High Source
1207	Excavator	Cummins	1189	4	3	Engine Turbocharger Wastegate Actuator 2 Position Circuit - Voltage Below Normal or Shorted to Low Source
1208	Excavator	Cummins	1194	13	2	Anti-theft Encryption Seed - Out of Calibration
1209	Excavator	Cummins	1195	2	2	Antitheft Password Valid Indicator - Data erratic, intermittent or incorrect
1210	Excavator	Yanmar	1202	2	2	Immobilizer error (system)
1214	Excavator	Cummins	1209	2	4	Exhaust Gas Pressure 1 - Data erratic, intermittent or incorrect

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1215	Excavator	Cummins	1209	3	3	Exhaust Gas Pressure Sensor 1 Circuit - Voltage above normal, or shorted to high source
1216	Excavator	Perkins	1209	3	3	Engine Exhaust Gas Pressure: Voltage Above Normal
1217	Excavator	Yanmar	1209	3	3	EGR high pressure side pressure sensor error (voltage high)
1218	Excavator	Cummins	1209	4	3	Exhaust Gas Pressure Sensor 1 Circuit - Voltage below normal, or shorted to low source
1219	Excavator	Perkins	1209	4	3	Engine Exhaust Gas Pressure: Voltage Below Normal
1220	Excavator	Yanmar	1209	4	3	EGR high pressure side pressure sensor error (voltage low)
1211	Excavator	Yanmar	1209	13	2	EGR high pressure side pressure sensor error (abnormal learning value)
1212	Excavator	Cummins	1209	15	3	Exhaust Pressure 1 - Data Valid But Above Normal Operating Range - Least Severe Level
1213	Excavator	Cummins	1209	16	3	Exhaust Gas Pressure 1 - Data Valid But Above Normal Operating Range - Moderately Severe Level
1221	Excavator	Cummins	1213	9	4	Malfunction Indicator Lamp - Abnormal update rate
1223	Excavator	Perkins	1221	2	4	Continuously Monitored Systems Support/Status ; Erratic, Intermittent, or Incorrect
1222	Excavator	Perkins	1221	14	4	Continuously Monitored Systems Support/Status ; Special Instruction
1224	Excavator	Cummins	1231	2	4	J1939 Network #2 - Data erratic, intermittent or incorrect
1226	Excavator	Cummins	1235	2	4	J1939 Network #3 - Data erratic, intermittent or incorrect
1227	Excavator	Perkins	1235	9	2	J1939 Network #3 - Abnormal Update Rate
1225	Excavator	Perkins	1235	14	2	J1939 Network #3 - Special Instruction
1228	Excavator	Perkins	1239	0	1	Engine Fuel Leakage 1 : High - most severe (3)
1230	Excavator	Scania	1239	7	4	Fuel Rail pressure, small volume leak
1229	Excavator	Cummins	1239	16	2	Engine Fuel Leakage - Data Valid But Above Normal Operating Range - Moderately Severe Level
1231	Excavator	Cummins	1267	3	3	Idle Shutdown Vehicle Accessories Relay Driver Circuit - Voltage above normal, or shorted to high source
1232	Excavator	Cummins	1267	4	3	Idle Shutdown Vehicle Accessories Relay Driver Circuit - Voltage below normal, or shorted to low source
1233	Excavator	Cummins	1279	4	3	Ignition Coil Cylinder 12 - Voltage Below Normal or Shorted to Low Source
1234	Excavator	Perkins	1279	5	3	Engine Ignition Coil #12
1236	Excavator	Scania	1322	7	2	Random/Multiple Cylinder Misfire Detected
1235	Excavator	Cummins	1322	31	2	Engine Misfire for Multiple Cylinders - Condition Exists
1238	Excavator	Scania	1323	7	2	Cylinder 1 Misfire Detected
1237	Excavator	Cummins	1323	31	2	Engine Misfire Cylinder 1 - Condition Exists
1240	Excavator	Scania	1324	7	2	Cylinder 2 Misfire Detected
1239	Excavator	Cummins	1324	31	2	Engine Misfire Cylinder 2 - Condition Exists
1242	Excavator	Scania	1325	7	2	Cylinder 3 Misfire Detected
1241	Excavator	Cummins	1325	31	2	Engine Misfire Cylinder 3 - Condition Exists
1244	Excavator	Scania	1326	7	2	Cylinder 4 Misfire Detected
1243	Excavator	Cummins	1326	31	2	Engine Misfire Cylinder 4 - Condition Exists
1246	Excavator	Scania	1327	7	2	Cylinder 5 Misfire Detected
1245	Excavator	Cummins	1327	31	2	Engine Misfire Cylinder 5 - Condition Exists
1247	Excavator	Cummins	1328	31	2	Engine Misfire Cylinder 6 - Condition Exists
1248	Excavator	Cummins	1347	3	3	Engine Fuel Pump Pressurizing Assembly 1 Circuit - Voltage above normal, or shorted to high source
1249	Excavator	Cummins	1347	4	3	Engine Fuel Pump Pressurizing Assembly 1 Circuit - Voltage below normal, or shorted to low source
1250	Excavator	Cummins	1347	7	3	Engine Fuel Pump Pressurizing Assembly 1 - Mechanical system not responding or out of adjustment
1251	Excavator	Cummins	1349	3	3	Injector Metering Rail 2 Pressure Sensor Circuit - Voltage above normal, or shorted to high source
1252	Excavator	Cummins	1349	4	3	Injector Metering Rail 2 Pressure Sensor Circuit - Voltage below normal, or shorted to low source
1253	Excavator	Cummins	1377	2	4	Multiple Unit Synchronization Switch - Data erratic, intermittent or incorrect
1254	Excavator	Cummins	1378	31	5	Engine Oil Change Interval - Condition Exists
1255	Excavator	Cummins	1383	31	3	Engine Shut Down Hot - Condition Exists
1256	Excavator	Cummins	1384	31	4	Engine Shutdown Commanded by J1939
1257	Excavator	Cummins	1387	3	3	Auxiliary Pressure Sensor Input 1 Circuit - Voltage above normal, or shorted to high source
1258	Excavator	Cummins	1387	4	3	Auxiliary Pressure Sensor Input 1 Circuit - Voltage below normal, or shorted to low source
1260	Excavator	Cummins	1388	3	3	Auxiliary Pressure Sensor Input 2 Circuit - Voltage above normal, or shorted to high source
1261	Excavator	Cummins	1388	4	3	Auxiliary Pressure Sensor Input 2 Circuit - Voltage below normal, or shorted to low source
1259	Excavator	Cummins	1388	14	3	Auxiliary Pressure Sensor Input 2 - Special Instructions
1263	Excavator	Scania	1442	2	4	Inlet metering valve 1, faulty
1264	Excavator	Scania	1442	3	3	Inlet metering valve 1, short circuit to +24V
1265	Excavator	Scania	1442	5	3	Inlet metering valve 1, short circuit to ground
1266	Excavator	Scania	1442	7	4	Inlet metering valve 1, stuck
1267	Excavator	Scania	1442	8	4	Inlet metering valve 1, plausible leakage
1262	Excavator	Scania	1442	10	5	Inlet metering valve 1, calculated resistance error
1268	Excavator	Scania	1443	1	3	Mechanical dump dalve, opened
1269	Excavator	Scania	1443	6	3	Mechanical dump valve, tripped
1272	Excavator	Scania	1483	2	3	EMS internal error
1273	Excavator	Scania	1483	8	3	EMS Memory or TPU Error
1274	Excavator	Scania	1483	9	3	Camshaft TPU Supervision Error
1270	Excavator	Scania	1483	11	4	Software Watchdog Reset
1271	Excavator	Scania	1483	12	4	Hardware watchdog error
1282	Excavator	Scania	1484	9	4	CAN message DLN1 from coordinator timeout
1275	Excavator	Scania	1484	10	4	CAN message CRUISE CONTROL/ VEHICLE SPEED from coordinator timeout
1276	Excavator	Scania	1484	16	5	CAN message from EMSX, invalid data
1277	Excavator	Scania	1484	18	4	CAN message from EMSX, invalid data
1278	Excavator	Scania	1484	19	4	CAN message DLN6 from coordinator timeout
1279	Excavator	Scania	1484	20	4	CAN message timout from EMSX
1280	Excavator	Scania	1484	21	4	CAN message timout from EMSX

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
1281	Excavator	Cummins	1484	31	3	Additional Auxiliary Diagnostic Codes logged - Condition Exists
1286	Excavator	Yanmar	1485	2	4	main relay early opening
1287	Excavator	Perkins	1485	7	3	ECM Main Relay: Not Responding Properly
1288	Excavator	Yanmar	1485	7	3	Main relay contact sticking
1283	Excavator	Perkins	1485	14	3	ECM Main relay: Special Instruction
1284	Excavator	Scania	1485	16	5	SCR main unit, power switched off too early
1285	Excavator	Scania	1485	18	4	SCR main unit, power switched off too late
1289	Excavator	Cummins	1563	2	4	Control Module Identification Input State Error - Data erratic, intermittent or incorrect
1290	Excavator	Cummins	1569	14	2	Engine Protection Torque Derate - Special Instructions
1291	Excavator	Scania	1569	14	3	Torque reduction due to other fault
1292	Excavator	Cummins	1569	31	2	Engine Protection Torque Derate - Condition Exists
1293	Excavator	Cummins	1590	2	4	Adaptive Cruise Control Mode - Data erratic, intermittent or incorrect
1296	Excavator	Cummins	1623	9	4	Tachograph Output Shaft Speed - Abnormal update rate
1294	Excavator	Cummins	1623	13	4	Tachograph Output Shaft Speed - Out of Calibration
1295	Excavator	Cummins	1623	19	4	Tachograph Output Shaft Speed - Received Network Data In Error
1297	Excavator	Cummins	1632	14	3	Engine Torque Limit Feature - Special Instructions
1298	Excavator	Cummins	1632	31	2	Engine Torque Limit Feature - Condition Exists
1299	Excavator	Cummins	1639	0	3	Fan Speed - Data Valid but Above Normal Operational Range - Most Severe Level
1300	Excavator	Cummins	1639	1	4	Fan Speed - Data Valid but Below Normal Operational Range - Most Severe Level
1304	Excavator	Cummins	1639	2	4	Fan Speed- Data Erratic, Intermittent, or Incorrect
1305	Excavator	Scania	1639	3	3	Fan speed sensor, short circuit to +24V
1306	Excavator	Scania	1639	4	3	Fan speed sensor supply too low
1307	Excavator	Scania	1639	8	3	Fan speed sensor circuit no signal
1301	Excavator	Cummins	1639	15	4	Fan Speed - Data Valid but Above Normal Operational Range - Most Severe Level
1302	Excavator	Cummins	1639	17	4	Fan Speed - Data Valid but Below Normal Operational Range - Most Severe Level
1303	Excavator	Perkins	1639	17	4	Fan Speed : Low - least severe(1)
1308	Excavator	Cummins	1661	4	3	Engine Automatic Start Lamp Driver Circuit - Voltage Above Normal, or Shorted to High Source
1309	Excavator	Cummins	1668	2	4	J1939 Network #4 - Data erratic, intermittent or incorrect
1313	Excavator	Scania	1675	2	5	Immobiliser - EMS and EMSX
1315	Excavator	Scania	1675	9	5	Invalid Data Received From Vehicle Control Module
1310	Excavator	Scania	1675	12	5	Immobiliser error
1311	Excavator	Scania	1675	13	5	Software Incompatibility With Vehicle Immoblilizer Control Module
1312	Excavator	Scania	1675	19	5	Lost Communication With Vehicle Immobilizer Control Module
1314	Excavator	Cummins	1675	31	5	Engine Starter Mode Overcrank Protection - Condition Exists
1316	Excavator	Cummins	1761	1	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Level - Data valid but below normal operational range -Most Severe Level
1317	Excavator	Perkins	1761	1	3	Catalyst Tank Level : Low - most severe (3)
1318	Excavator	Scania	1761	1	3	Reductant tank, empty
1331	Excavator	Cummins	1761	2	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Level Sensor - Data erratic, intermittent or incorrect
1332	Excavator	Perkins	1761	2	3	Aftertreatment #1 Diesel Exhaust Fluid Tank Level : Erratic Intermittent or Incorrect
1333	Excavator	Scania	1761	2	3	Reductant tank level sensor, short circuit to ground
1334	Excavator	Cummins	1761	3	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Level Sensor Circuit - Voltage above normal, or shorted to high source
1335	Excavator	Scania	1761	3	3	Reductant tank level sensor, short circuit to +24V
1336	Excavator	Cummins	1761	4	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Level Sensor Circuit - Voltage below normal, or shorted to low source
1337	Excavator	Scania	1761	4	3	Fault in the reductant level sensor.
1338	Excavator	Cummins	1761	5	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Level Sensor Circuit - Current below normal or open circuit
1339	Excavator	Scania	1761	5	3	Reductant tank level sensor, open circuit
1340	Excavator	Cummins	1761	6	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Level Sensor Circuit - Current above normal or grounded circuit
1341	Excavator	Scania	1761	6	3	Fault on voltage supply to reductant pick-up unit.
1342	Excavator	Scania	1761	8	3	The reductant level in the reductant tank is falling too quickly.
1343	Excavator	Cummins	1761	9	3	SAE J1939 Multiplexing PGN Timeout Error - Abnormal update rate
1319	Excavator	Cummins	1761	10	4	Aftertreatment 1 Diesel Exhaust Fluid Tank Level Sensor - Abnormal Rate of Change
1320	Excavator	Scania	1761	10	4	The consumption of reductant is low.
1321	Excavator	Cummins	1761	11	4	Aftertreatment 1 Diesel Exhaust Fluid Tank Level Sensor - Root Cause Not Known
1322	Excavator	Perkins	1761	12	3	Aftertreatment #1 Diesel Exhaust Fluid Tank Level : Failure
1323	Excavator	Cummins	1761	13	4	Aftertreatment 1 Diesel Exhaust Fluid Tank Level Sensor - Out of Calibration
1324	Excavator	Cummins	1761	17	4	Aftertreatment 1 Diesel Exhaust Fluid Tank Level - Data Valid But Below Normal Operating Range - Least Severe Level
1325	Excavator	Perkins	1761	17	4	Aftertreatment #1 DEF Tank Volume : Low - least severe (1)
1326	Excavator	Scania	1761	17	4	The level of reductant in the reductant tank is low.
1327	Excavator	Perkins	1761	18	2	Aftertreatment #1 DEF Tank Volume : Low - moderate severity (1)
1328	Excavator	Cummins	1761	18	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Level - Data Valid But Below Normal Operating Range - Moderately Severe Level
1329	Excavator	Scania	1761	18	3	Reductant tank, low level
1330	Excavator	Scania	1761	19	4	CAN communication to the reductant pick-up unit is interrupted.
1344	Excavator	Cummins	1800	16	3	Battery Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
1345	Excavator	Cummins	1800	18	3	Battery Temperature - Data Valid But Below Normal Operating Range - Moderately Severe Level
1346	Excavator	Cummins	1818	31	3	Roll Over Protection Brake Control Active - Condition Exists
1347	Excavator	*	2000	1	5	RMS Step 1-Satellite/mobile communication link failure
1348	Excavator	*	2000	5	5	RMS Step 0-Incorrect satellite/mobile antenna connection
1349	Excavator	*	2001	1	5	RMS Step 1-GPS position update failure

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
1350	Excavator	*	2001	5	5	RMS Step 0-Incorrect GPS antenna connection
1351	Excavator	*	2002	1	5	RMS Step 2-Test message transmission failure
1353	Excavator	*	2003	2	5	RMS Step 3-Failure in transmitting current gauge reply
1352	Excavator	*	2003	19	5	RMS Step 3-Failure in receiving current gauge request
1354	Excavator	*	2004	0	5	RMS Step 4
1355	Excavator	*	2005	0	5	RMS Step 5
1356	Excavator	Cummins	2006	9	4	Source Address 6 - Abnormal Update Rate
1357	Excavator	Scania	2609	2	4	AC compressor actuator, faulty
1358	Excavator	Scania	2609	3	3	AC compressor actuator, short circuit to +24V
1359	Excavator	Scania	2609	4	3	AC compressor actuator, short circuit to ground
1360	Excavator	Scania	2609	5	3	AC compressor actuator, open load
1361	Excavator	Cummins	2623	3	3	Accelerator Pedal or Lever Position Sensor 2 Circuit - Voltage above normal, or shorted to high source
1362	Excavator	Cummins	2623	4	3	Accelerator Pedal or Lever Position Sensor 2 Circuit - Voltage below normal, or shorted to low source
1363	Excavator	Cummins	2629	15	3	Turbocharger Compressor Outlet Temperature (Calculated) - Data Valid But Above Normal Operating Range
1364	Excavator	Cummins	2630	2	3	Engine Charge Air Cooler Outlet Temperature - Data erratic, intermittent or incorrect
1365	Excavator	Cummins	2630	3	3	Engine Charge Air Cooler Outlet Temperature - Voltage above normal, or shorted to high source
1366	Excavator	Cummins	2630	4	3	Engine Charge Air Cooler Outlet Temperature - Voltage below normal, or shorted to low source
1367	Excavator	Cummins	2633	7	3	Engine VGT Nozzle Position - Mechanical system not responding or out of adjustment
1368	Excavator	Cummins	2634	3	3	Power Relay Driver Circuit - Voltage above normal, or shorted to high source
1369	Excavator	Cummins	2634	4	3	Power Relay Driver Circuit - Voltage below normal, or shorted to low source
1370	Excavator	Perkins	2659	7	3	Engine Exhaust Gas Recirculation(EGR) Mass Flow Rate - Not Responding Properly
1371	Excavator	Cummins	2789	0	3	Turbocharger Turbine Intake Temperature - Data Valid But Above Normal Operating Range - Most Severe Level
1372	Excavator	Cummins	2789	15	3	Turbocharger Turbine Intake Temperature - Data Valid But Above Normal Operating Range - Least Severe
1373	Excavator	Cummins	2789	16	3	Turbocharger Turbine Intake Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
1374	Excavator	Yanmar	2791	0	3	EGR overvoltage error
1375	Excavator	Yanmar	2791	1	3	EGR low voltage error
1382	Excavator	Scania	2791	2	3	EGR actuator, control error
1385	Excavator	Scania	2791	3	3	EGR actuator, short circuit to +24V
1386	Excavator	Scania	2791	4	3	EGR actuator, short circuit to ground
1387	Excavator	Cummins	2791	5	3	EGR Valve Control Circuit - Current below normal or open circuit
1388	Excavator	Perkins	2791	5	3	Engine Exhaust Gas Recirculation (EGR) Valve Control: Current Below Normal
1389	Excavator	Scania	2791	5	3	EGR actuator, stuck open
1390	Excavator	Cummins	2791	6	3	EGR Valve Control Circuit - Current above normal or grounded circuit
1391	Excavator	Perkins	2791	6	3	Engine Exhaust Gas Recirculation (EGR) Valve Control: Current Above Normal
1392	Excavator	Cummins	2791	7	3	EGR Valve Control Circuit - Mechanical System Not Responding or Out of Adjustment
1393	Excavator	Perkins	2791	7	3	Engine Exhaust Gas Recirculation (EGR) Valve Control: Not Responding Properly
1394	Excavator	Scania	2791	7	3	EGR actuator, stuck close
1395	Excavator	Yanmar	2791	7	3	EGR feedback error
1396	Excavator	Scania	2791	8	4	The EGR valve is responding too slow
1397	Excavator	Cummins	2791	9	3	EGR Valve Control Circuit - Abnormal update rate
1398	Excavator	Yanmar	2791	9	3	EGR ECM data error
1376	Excavator	Scania	2791	10	3	NOx Exceedence - Incorrect EGR Flow
1377	Excavator	Scania	2791	11	4	EGR system faulty
1378	Excavator	Yanmar	2791	12	3	Disconnection in EGR motor coils
1379	Excavator	Cummins	2791	13	4	EGR Valve Controller - Out of Calibration
1380	Excavator	Cummins	2791	15	3	EGR Valve Control Circuit Over Temperature - Data Valid But Above Normal Operating Range - Least Severe Level
1381	Excavator	Scania	2791	16	3	NOx Exceedence - Deactivation of EGR
1383	Excavator	Scania	2791	20	3	EGR higher than desired
1384	Excavator	Scania	2791	21	3	EGR lower than desired
1400	Excavator	Scania	2797	2	4	Injector group A, short circuit to other bank
1401	Excavator	Scania	2797	3	3	Injector group A, short circuit to +24V
1402	Excavator	Scania	2797	4	3	Injector group A, short circuit to ground
1403	Excavator	Scania	2797	5	3	Injector drive voltage, faulty
1404	Excavator	Perkins	2797	6	3	Engine Injector Group 1 : Current Above Normal
1405	Excavator	Yanmar	2797	6	3	Injector drive circuit (Bank 1) short circuit (4TN : Common circuit for No. 1, No. 4 and all 3TN cylinders)
1406	Excavator	Perkins	2797	7	3	Engine Injector Group 1 : Not Responding Properly
1407	Excavator	Scania	2797	8	4	Injector group A, injection error
1399	Excavator	Cummins	2797	13	4	Engine Injector Bank 1 Barcodes - Out of Calibration
1408	Excavator	Scania	2798	2	3	Injector group B, short circuit to other bank
1409	Excavator	Scania	2798	3	3	Injector group B, short circuit +24V
1410	Excavator	Scania	2798	4	3	Injector group B, short circuit ground
1411	Excavator	Perkins	2798	6	3	Engine Injector Group 2 : Current Above Normal
1412	Excavator	Yanmar	2798	6	3	Injector drive circuit (Bank 2) short circuit (4TN : Circuit for No. 2 and 3 cylinders)
1413	Excavator	Scania	2798	8	4	Injection error, group B
1414	Excavator	Cummins	2802	31	3	Electronic Control Module data lost - Condition Exists
1415	Excavator	Perkins	2840	12	3	ECU Instance: Failure
1416	Excavator	Perkins	2840	14	3	ECU Instance: Special Instruction
1417	Excavator	Scania	2858	13	3	EMS, Default EOL Data in E2

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
1418	Excavator	Scania	2859	13	3	EMS, Default Barcoding Data in E2
1419	Excavator	Scania	2860	13	4	EMS internal software error
1420	Excavator	Scania	2861	13	4	EMS Configuration for Automatic Clutch Faulty
1421	Excavator	Scania	2862	13	4	Internal software error
1422	Excavator	Perkins	2880	2	4	Engine Operator Primary Intermediate Speed Select: Erratic, Intermittent, or Incorrect
1423	Excavator	Perkins	2880	3	3	Engine Operator Primary Intermediate Speed Select: Voltage Above Normal
1424	Excavator	Perkins	2880	4	3	Engine Operator Primary Intermediate Speed Select: Voltage Below Normal
1425	Excavator	Perkins	2882	2	4	Engine Alternate Rating Select : Erratic, Intermittent, or Incorrect
1426	Excavator	Cummins	2884	9	4	Engine Auxiliary Governor Switch - Abnormal update rate
1428	Excavator	Cummins	2900	9	4	Transmission Engine Crank Enable - Abnormal Update Rate
1427	Excavator	Cummins	2900	19	4	Transmission Engine Crank Enable - Received Network Data in Error
1429	Excavator	Yanmar	2950	3	2	Power short circuit of throttle valve drive H bridge output 1
1430	Excavator	Yanmar	2950	4	2	GND short circuit of throttle valve drive H bridge output 1
1431	Excavator	Yanmar	2950	5	2	No-load of throttle valve drive H bridge circuit
1432	Excavator	Yanmar	2950	6	2	Overload on the drive H bridge circuit of throttle valve
1433	Excavator	Yanmar	2951	3	2	VB Power short circuit of throttle valve drive H bridge output 2
1434	Excavator	Yanmar	2951	4	2	GND short circuit of throttle valve drive H bridge output 2
1435	Excavator	Perkins	2970	2	4	Accelerator Pedal 2 Low Idle Switch : Erratic, Intermittent, or Incorrect
1436	Excavator	Cummins	2978	9	3	Estimated Engine Parasitic Losses - Percent Torque - Abnormal update rate
1438	Excavator	Cummins	2981	3	3	Coolant Pressure 2 Circuit - Voltage Above Normal, or Shorted to High Source
1439	Excavator	Cummins	2981	4	3	Coolant Pressure 2 Circuit - Voltage Below Normal, or Shorted to Low Source
1437	Excavator	Cummins	2981	18	3	Coolant Pressure 2 - Data Valid but Below Normal Operational Range - Moderately Severe Level
1440	Excavator	Scania	3031	0	3	SCR main unit, high temperature low limit exceedence
1441	Excavator	Scania	3031	1	4	The reductant tank temperature sensor indicates incorrect values.
1447	Excavator	Cummins	3031	2	4	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature - Data erratic, intermittent or incorrect
1448	Excavator	Cummins	3031	3	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature Sensor - Voltage above normal, or shorted to high source
1449	Excavator	Scania	3031	3	3	Fault in the reductant tank temperature sensor.
1450	Excavator	Cummins	3031	4	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature Sensor - Voltage below normal, or shorted to low source
1451	Excavator	Scania	3031	4	3	The EEC control unit indicates a short circuit to ground for the pins connected to the reductant tank temperature sensor.
1452	Excavator	Cummins	3031	5	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature Sensor Circuit - Current below normal or open circuit
1453	Excavator	Cummins	3031	6	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature Sensor Circuit - Current above normal or grounded circuit
1454	Excavator	Perkins	3031	7	3	Aftertreatment #1 DEF Tant Temperature - Not Responding Properly
1455	Excavator	Cummins	3031	9	4	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature - Abnormal Update Rate
1442	Excavator	Cummins	3031	11	4	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature - Root Cause Not Known
1443	Excavator	Perkins	3031	12	3	Aftertreatment #1 DEF Tant Temperature - Failure
1444	Excavator	Cummins	3031	13	4	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature Sensor - Out of Calibration
1445	Excavator	Perkins	3031	16	3	Aftertreatment #1 DEF Tant Temperature : High - moderate severity (2)
1446	Excavator	Perkins	3031	18	3	Aftertreatment #1 DEF Tant Temperature : Low - moderate severity (2)
1456	Excavator	Cummins	3060	18	3	Engine Cooling System Monitor - Data Valid But Below Normal Operating Range - Moderately Severe Level
1465	Excavator	Scania	3216	2	3	NOx sensor T131 upstream of the SCR catalytic converter indicates incorrect values.
1466	Excavator	Cummins	3216	2	4	Aftertreatment 1 Intake NOx Sensor - Data erratic, intermittent or incorrect
1470	Excavator	Cummins	3216	4	3	Aftertreatment 1 Intake NOx Sensor Circuit - Voltage below normal, or shorted to low source
1471	Excavator	Scania	3216	4	3	NOx sensor upstream, internal fault or open circuit
1472	Excavator	Perkins	3216	5	3	Aftertreatment #1 Intake NOx - Current Below Normal
1473	Excavator	Scania	3216	5	3	NOx sensor upstream, open circuit
1474	Excavator	Perkins	3216	6	3	Aftertreatment #1 Intake NOx - Current Above Normal
1475	Excavator	Scania	3216	6	3	Fault in the voltage supply to NOx sensor T131 upstream of the SCR catalytic converter.
1476	Excavator	Perkins	3216	7	3	Aftertreatment #1 Intake NOx - Not Responding Properly
1477	Excavator	Scania	3216	7	3	NOx sensor upstream, internal fault
1478	Excavator	Scania	3216	8	3	NOx sensor upstream of catalytic converter
1479	Excavator	Cummins	3216	9	3	Aftertreatment 1 Intake NOx Sensor - Abnormal update rate
1480	Excavator	Scania	3216	9	3	NOx sensor upstream of catalytic converter
1457	Excavator	Cummins	3216	10	3	Aftertreatment 1 Intake NOx Sensor - Abnormal rate of change
1458	Excavator	Scania	3216	10	3	NOx sensor upstream, stuck
1459	Excavator	Perkins	3216	11	3	Aftertreatment #1 Intake NOx - Other Failure Mode
1460	Excavator	Cummins	3216	13	4	Aftertreatment 1 Intake NOx - Out of Calibration
1461	Excavator	Cummins	3216	16	3	Aftertreatment 1 Intake NOx - Data Valid But Above Normal Operating Range - Moderately Severe Level
1462	Excavator	Scania	3216	17	3	NOx sensor upstream, low signal
1463	Excavator	Scania	3216	18	3	NOx sensor upstream, too low value
1464	Excavator	Scania	3216	19	4	NOx sensor upstream error via CAN
1467	Excavator	Cummins	3216	20	3	Aftertreatment 1 Intake NOx Sensor - Data not Rational - Drifted High
1468	Excavator	Scania	3216	20	3	NOx sensor upstream, not plausible
1469	Excavator	Cummins	3216	21	4	Aftertreatment 1 Intake NOx Sensor - Data not Rational - Drifted Low
1485	Excavator	Cummins	3217	2	4	Aftertreatment Intake Oxygen Sensor - Data erratic, intermittent or incorrect
1488	Excavator	Perkins	3217	3	3	Aftertreatment #1 Intake 02 : Voltage Above Normal
1489	Excavator	Perkins	3217	4	3	Aftertreatment #1 Intake 02 : Voltage Below Normal
1490	Excavator	Perkins	3217	5	3	Aftertreatment #1 Intake 02 : Current Below Normal
1491	Excavator	Perkins	3217	6	3	Aftertreatment #1 Intake 02 : Current Above Normal
1481	Excavator	Perkins	3217	12	3	Aftertreatment #1 Intake 02 : Failure
1482	Excavator	Perkins	3217	13	3	Aftertreatment #1 Intake 02 : Out of Calibration

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
1483	Excavator	Perkins	3217	15	4	Aftertreatment #1 Intake 02 : High - least severe (1)
1484	Excavator	Perkins	3217	16	3	Aftertreatment #1 Intake O2 : High - moderate severity (2)
1486	Excavator	Cummins	3217	20	3	Aftertreatment Intake Oxygen Sensor - Data Not Rational - Drifted High
1487	Excavator	Cummins	3217	21	3	Aftertreatment Intake Oxygen Sensor - Data Not Rational - Drifted Low
1493	Excavator	Cummins	3218	2	4	Aftertreatment 1 Intake NOx Sensor Power Supply - Data erratic, intermittent or incorrect
1492	Excavator	Perkins	3218	12	3	Aftertreatment #1 Intake NOx : failure
1494	Excavator	Perkins	3219	15	3	Aftertreatment #1 Intake Gas Sensor at Temperature: High -least severe (1)
1495	Excavator	Perkins	3219	17	3	Aftertreatment #1 Intake Gas Sensor at Temperature: Low -least severe (1)
1496	Excavator	Perkins	3222	3	3	Aftertreatment #1 Intake Gas Sensor Heater: Voltage Above Normal
1497	Excavator	Perkins	3222	4	3	Aftertreatment #1 Intake Gas Sensor Heater: Voltage Below Normal
1498	Excavator	Perkins	3222	5	3	Aftertreatment #1 Intake Gas Sensor Heater: Current Below Normal
1508	Excavator	Cummins	3226	2	3	Aftertreatment 1 Outlet NOx Sensor - Data not Rational - Drifted High
1509	Excavator	Scania	3226	2	3	Nox sensor downstream, Implausible signal
1513	Excavator	Cummins	3226	4	3	Aftertreatment 1 Outlet NOx Sensor Circuit - Voltage below normal, or shorted to low source
1514	Excavator	Scania	3226	4	3	NOx sensor downstream, internal fault or open circuit
1515	Excavator	Perkins	3226	5	3	Aftertreatment #1 Outlet NOx : Current Below Normal
1516	Excavator	Scania	3226	5	3	NOx sensor downstream, open circuit
1517	Excavator	Perkins	3226	6	3	Aftertreatment #1 Outlet NOx : Current Above Normal
1518	Excavator	Scania	3226	6	3	Fault in the voltage supply to NOx sensor T115 downstream of the SCR catalytic converter.
1519	Excavator	Cummins	3226	7	3	Aftertreatment 1 Outlet NOx Sensor Closed Loop Operation - Condition Exists
1520	Excavator	Perkins	3226	7	3	Aftertreatment #1 Outlet NOx : Not Responding Properly
1521	Excavator	Scania	3226	7	3	NOx sensor downstream, internal fault
1522	Excavator	Scania	3226	8	4	NLev.4 sensor downstream error via CAN
1523	Excavator	Cummins	3226	9	3	Aftertreatment 1 Outlet NOx Sensor - Abnormal update rate
1524	Excavator	Scania	3226	9	3	NOx sensor downstream of the SCR catalytic converter
1499	Excavator	Cummins	3226	10	3	Aftertreatment 1 Outlet NOx Sensor - Abnormal rate of change
1500	Excavator	Scania	3226	10	3	NOx sensor downstream, stuck
1501	Excavator	Cummins	3226	11	3	Aftertreatment 1 Outlet NOx Sensor - Root Cause Not Known
1502	Excavator	Perkins	3226	11	3	Aftertreatment 1 Outlet NOx : Other Failure Mode
1503	Excavator	Perkins	3226	12	3	Aftertreatment 1 Outlet NOx : Failure
1504	Excavator	Cummins	3226	13	4	Aftertreatment 1 Outlet NOx Sensor - Out of Calibration
1505	Excavator	Scania	3226	17	3	NOx sensor downstream, low signal
1506	Excavator	Scania	3226	18	3	NOx sensor downstream, too low value
1507	Excavator	Scania	3226	19	3	NOx sensor downstream of the catalytic converter
1510	Excavator	Cummins	3226	20	3	Aftertreatment 1 Outlet NOx Sensor - Data not Rational - Drifted High
1511	Excavator	Scania	3226	20	3	NOx sensor downstream, not plausible
1512	Excavator	Cummins	3226	21	4	Aftertreatment 1 Outlet NOx Sensor - Data not Rational - Drifted High
1528	Excavator	Cummins	3227	9	3	Aftertreatment Outlet Oxygen Sensor Circuit - Abnormal update rate
1525	Excavator	Perkins	3227	16	3	Aftertreatment #1 Outlet O2 : High - moderate severity (2)
1526	Excavator	Cummins	3227	20	3	Aftertreatment Outlet Oxygen - Data Not Rational - Drifted High
1527	Excavator	Cummins	3227	21	3	Aftertreatment Outlet Oxygen - Data Not Rational - Drifted Low
1529	Excavator	Cummins	3228	2	4	Aftertreatment 1 Outlet NOx Sensor Power Supply - Data erratic, intermittent or incorrect
1536	Excavator	Scania	3241	2	3	Upstream catalyst temperature sensor not plausible, not plausible
1537	Excavator	Scania	3241	3	4	Upstream catalyst temperature sensor not plausible, to high
1538	Excavator	Scania	3241	4	3	Upstream catalyst temperature sensor not plausible, short circuit
1539	Excavator	Scania	3241	5	3	Upstream catalyst temperature sensor not plausible, open circuit
1540	Excavator	Scania	3241	6	4	The exhaust gas temperature sensor upstream of the oxidation catalytic converter indicates incorrect values.
1541	Excavator	Scania	3241	8	3	Upstream catalyst temperature sensor not plausible, to high
1530	Excavator	Scania	3241	10	3	Upstream catalyst temperature sensor not plausible, not plausible
1531	Excavator	Scania	3241	11	4	The exhaust gas temperature sensor upstream of the oxidation catalytic converter indicates incorrect values.
1532	Excavator	Scania	3241	12	4	The exhaust gas temperature sensor upstream of the oxidation catalytic converter indicates incorrect values.
1533	Excavator	Scania	3241	16	4	Upstream catalyst temperature too high
1534	Excavator	Scania	3241	18	4	Upstream catalyst temperature sensor not plausible, to low
1535	Excavator	Scania	3241	19	4	CAN Error from Exhaust Temperature Sensors
1542	Excavator	Cummins	3242	0	2	Aftertreatment 1 Diesel Particulate Filter Intake Temperature - Data valid but above normal operation
1543	Excavator	Perkins	3242	0	2	Particulate Trap Intake Gas Temperature : High - most severe (3)
1544	Excavator	Scania	3242	0	2	Upstream DPF temperature sensor, to high
1545	Excavator	Yanmar	3242	0	2	DPF inlet temperature sensor error (high temperature)
1555	Excavator	Cummins	3242	2	3	Aftertreatment 1 Diesel Particulate Filter Intake Temperature - Data erratic, intermittent or incorrect
1556	Excavator	Cummins	3242	3	3	Aftertreatment 1 Diesel Particulate Filter Intake Temperature Sensor Circuit - Voltage above normal, or shorted to high source
1557	Excavator	Perkins	3242	3	3	Particulate Trap Intake Gas Temperature : Voltage Above Normal
1558	Excavator	Scania	3242	3	3	The exhaust gas temperature sensor upstream of the particulate filter indicates incorrect values.
1559	Excavator	Yanmar	3242	3	3	DPF inlet temperature sensor error (voltage high)
1560	Excavator	Cummins	3242	4	3	Aftertreatment 1 Diesel Particulate Filter Intake Temperature Sensor Circuit - Voltage below normal, or shorted to low source
1561	Excavator	Perkins	3242	4	3	Particulate Trap Intake Gas Temperature : Voltage Below Normal
1562	Excavator	Scania	3242	4	3	The exhaust gas temperature sensor upstream of the particulate filter indicates incorrect values.
1563	Excavator	Yanmar	3242	4	3	DPF inlet temperature sensor error (voltage low)
1564	Excavator	Scania	3242	5	4	The exhaust gas temperature sensor upstream of the particulate filter indicates incorrect values.

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
1565	Excavator	Scania	3242	6	4	The exhaust gas temperature sensor upstream of the particulate filter indicates incorrect values.
1566	Excavator	Scania	3242	7	3	Upstream DPF temperature sensor, not plausible
1567	Excavator	Scania	3242	9	3	Upstream DPF temperature sensor, not plausible
1546	Excavator	Scania	3242	10	4	Upstream DPF temperature too high during normal condition
1547	Excavator	Scania	3242	11	4	The exhaust gas temperature sensor upstream of the particulate filter indicates incorrect values.
1548	Excavator	Scania	3242	12	4	The exhaust gas temperature sensor upstream of the particulate filter indicates incorrect values.
1549	Excavator	Cummins	3242	15	3	Aftertreatment 1 Diesel Particulate Filter Intake Temperature - Data Valid But Above Normal Operating Range - Least Severe Level
1550	Excavator	Cummins	3242	16	3	Aftertreatment 1 Diesel Particulate Filter Intake Temperature - Data Valid But Above Normal Operating Range
1551	Excavator	Scania	3242	16	3	Upstream DPF temperature too high during regeneration
1552	Excavator	Perkins	3242	17	4	Aftertreatment #1 DPF Intake Gas Temperature : Low - least severe (1)
1553	Excavator	Perkins	3242	18	3	Aftertreatment #1 DPF Intake Gas Temperature : Low - moderate severity (2)
1554	Excavator	Scania	3242	19	3	The exhaust gas temperature sensor upstream of the particulate filter indicates incorrect values.
1569	Excavator	Scania	3245	6	3	Fault in the voltage supply to the exhaust gas temperature sensors for exhaust gas aftertreatment.
1568	Excavator	Scania	3245	19	4	Auxiliary Temperature Sensor Error on CAN
1570	Excavator	Cummins	3246	0	2	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature - Data valid but above normal operation
1578	Excavator	Cummins	3246	2	3	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature - Data erratic, intermittent or incorrect
1579	Excavator	Scania	3246	2	4	Downstream DPF temperature sensor error
1580	Excavator	Cummins	3246	3	3	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature Sensor Circuit - Voltage above normal, or shorted to high source
1581	Excavator	Scania	3246	3	3	Exhaust temperature sensor after SCR catalytic converter, short circuit
1582	Excavator	Cummins	3246	4	3	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature Sensor Circuit - Voltage below normal, or shorted to low source
1583	Excavator	Scania	3246	4	3	Exhaust temperature sensor after SCR catalytic converter, open circuit
1584	Excavator	Scania	3246	5	4	The exhaust gas temperature sensor downstream of the particulate filter indicates incorrect values.
1585	Excavator	Scania	3246	6	4	The exhaust gas temperature sensor downstream of the particulate filter indicates incorrect values.
1586	Excavator	Scania	3246	9	4	Downstream exhaust temperature sensor, not plausible
1571	Excavator	Scania	3246	11	4	The exhaust gas temperature sensor downstream of the particulate filter indicates incorrect values.
1572	Excavator	Scania	3246	12	4	The exhaust gas temperature sensor downstream of the particulate filter indicates incorrect values.
1573	Excavator	Cummins	3246	15	3	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature - Data Valid But Above Normal Operating Range - Least Severe Level
1574	Excavator	Scania	3246	15	3	Downstream DPF temperature too high during normal condition
1575	Excavator	Cummins	3246	16	3	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature - Data Valid But Above Normal Operating Range
1576	Excavator	Scania	3246	16	3	Downstream DPF temperature too high during regeneration
1577	Excavator	Scania	3246	19	3	The exhaust gas temperature sensor downstream of the particulate filter indicates incorrect values.
1589	Excavator	Scania	3249	3	3	Fault on the exhaust gas temperature sensor upstream of the SCR catalytic converter.
1590	Excavator	Scania	3249	4	3	Fault on the exhaust gas temperature sensor upstream of the SCR catalytic converter.
1587	Excavator	Cummins	3249	17	4	Aftertreatment Exhaust Gas Temperature 2 - Data Valid But Below Normal Operating Range - Least Severe Level
1588	Excavator	Cummins	3249	18	3	Aftertreatment Exhaust Gas Temperature 2 - Data Valid But Below Normal Operating Range - Moderately Severe Level
1591	Excavator	Yanmar	3250	0	2	DPF intermediate temperature sensor temperature rise error (post-injection failure)
1592	Excavator	Yanmar	3250	1	2	DPF intermediate temperature sensor temperature too low
1593	Excavator	Yanmar	3250	3	2	DPF intermediate temperature sensor error (voltage high)
1594	Excavator	Yanmar	3250	4	2	DPF intermediate temperature sensor error (voltage low)
1595	Excavator	Cummins	3251	0	2	Aftertreatment Diesel Particulate Filter Differential Pressure - Data valid but above normal Operating Range
1596	Excavator	Perkins	3251	0	2	Particulate Trap Differential Pressure : High - most severe (3)
1597	Excavator	Yanmar	3251	0	2	DPF differential pressure sensor differential pressure rise error
1606	Excavator	Scania	3251	2	3	Particulate filter is missing
1607	Excavator	Cummins	3251	2	4	Aftertreatment Diesel Particulate Filter Differential Pressure Sensor - Data erratic, intermittent or incorrect
1608	Excavator	Cummins	3251	3	3	Aftertreatment Diesel Particulate Filter Differential Pressure Sensor Circuit - Voltage above normal
1609	Excavator	Perkins	3251	3	3	Particulate Trap Differential Pressure : Voltage Above Normal
1610	Excavator	Scania	3251	3	3	Fault in the particulate filter differential pressure sensor
1611	Excavator	Yanmar	3251	3	3	DPF differential pressure sensor error (voltage high)
1612	Excavator	Cummins	3251	4	3	Aftertreatment Diesel Particulate Filter Differential Pressure Sensor Circuit - Voltage below normal
1613	Excavator	Perkins	3251	4	3	Particulate Trap Differential Pressure : Voltage Below Normal
1614	Excavator	Scania	3251	4	3	Fault in the particulate filter differential pressure sensor
1615	Excavator	Yanmar	3251	4	3	DPF differential pressure sensor error (voltage low)
1616	Excavator	Perkins	3251	7	2	Particulate Trap Differential Pressure : Not Responding Properly
1617	Excavator	Scania	3251	7	2	Differential pressure sensor over particulate filter, faulty

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1618	Excavator	Scania	3251	8	4	Differential pressure sensor not plausible
1619	Excavator	Scania	3251	9	4	Differential pressure sensor over particulate filter, not plausible
1598	Excavator	Cummins	3251	10	4	Aftertreatment 1 Diesel Particulate Filter Differential Pressure - Abnormal Rate of Change
1599	Excavator	Perkins	3251	10	4	Particulate Trap Differential Pressure : Abnormal Rate of Change
1600	Excavator	Yanmar	3251	13	2	DPF differential pressure sensor error (abnormal learning value)
1601	Excavator	Cummins	3251	15	4	Aftertreatment Diesel Particulate Filter Differential Pressure - Data valid but above normal Operating Range
1602	Excavator	Cummins	3251	16	3	Aftertreatment Diesel Particulate Filter Differential Pressure - Data Valid But Above Normal Operating Range
1603	Excavator	Perkins	3251	16	3	Particulate Trap Differential Pressure : High - moderate severity (2) —
1604	Excavator	Perkins	3251	17	4	Particulate Trap Differential Pressure : Low - least severe (1)
1605	Excavator	Perkins	3251	18	3	Particulate Trap Differential Pressure : Low - moderate severity (2)
1620	Excavator	Cummins	3255	9	3	Aftertreatment 2 Intake NOx Sensor - Abnormal update rate
1621	Excavator	Cummins	3265	9	3	Aftertreatment 2 Outlet NOx - Abnormal Update Rate
1622	Excavator	Scania	3275	19	3	The EEC control unit for exhaust gas aftertreatment has lost contact with the exhaust gas temperature sensor upstream of the SCR catalytic converter.
1624	Excavator	Scania	3279	2	3	Electrical fault in the exhaust gas temperature sensors for exhaust gas aftertreatment.
1625	Excavator	Scania	3279	8	4	The exhaust gas temperature sensors for exhaust gas aftertreatment indicate incorrect values.
1626	Excavator	Scania	3279	9	4	The exhaust gas temperature sensors for exhaust gas aftertreatment indicate incorrect values.
1623	Excavator	Scania	3279	19	3	The EEC control unit for exhaust gas aftertreatment has lost contact with the exhaust gas temperature sensors.
1627	Excavator	Scania	3340	1	4	Intercooler temperature, too low
1633	Excavator	Scania	3340	3	3	Intercooler pressure sensor, short circuit to ground
1634	Excavator	Scania	3340	4	3	Intercooler pressure sensor, short circuit to +24
1635	Excavator	Scania	3340	7	4	Intercooler pressure sensor, stuck
1636	Excavator	Scania	3340	9	4	Intercooler pressure sensor, not plausible
1628	Excavator	Scania	3340	10	4	Intercooler pressure sensor, not plausible
1629	Excavator	Scania	3340	15	4	Intercooler pressure, above normal
1630	Excavator	Scania	3340	16	4	Intercooler pressure, above normal
1631	Excavator	Scania	3340	20	4	Intercooler pressure too high
1632	Excavator	Scania	3340	21	4	Intercooler pressure too low
1637	Excavator	Cummins	3353	3	3	Alternator 1 Status - Voltage Above Normal, or Shorted to High Source
1638	Excavator	Cummins	3353	4	3	Alternator 1 Status - Voltage Below Normal, or Shorted to Low Source
1641	Excavator	Perkins	3358	3	3	Engine Exhaust Gas Recirculation Inlet Pressure : Voltage Above Normal
1642	Excavator	Perkins	3358	4	3	Engine Exhaust Gas Recirculation Inlet Pressure : Voltage Below Normal
1639	Excavator	Perkins	3358	10	3	Engine Exhaust Gas Recirculation 1 Intake Pressure : Abnormal Rate of Change
1640	Excavator	Perkins	3358	13	3	Engine Exhaust Gas Recirculation Inlet Pressure : Out of Calibration
1643	Excavator	Scania	3360	0	3	SCR system adaptation have reached max values
1644	Excavator	Scania	3360	1	3	SCR system adaptation have reached min values
1650	Excavator	Scania	3360	2	4	EEC3 System has demanded SCR Hazardous major functional failure actions
1651	Excavator	Perkins	3360	3	3	Aftertreatment #1 DEF Controller : Voltage Above Normal
1652	Excavator	Scania	3360	3	3	SCR main unit, ventilation valve test, short to battery
1653	Excavator	Perkins	3360	4	4	Aftertreatment #1 DEF Controller : Voltage Below Normal
1654	Excavator	Scania	3360	4	4	SCR main unit, internal supply voltage low
1655	Excavator	Scania	3360	5	3	SCR main unit, ventilation valve test, open load
1656	Excavator	Scania	3360	6	3	SCR main unit, system voltage error
1657	Excavator	Scania	3360	7	4	SCR main unit, ignition switch plausible error
1658	Excavator	Perkins	3360	9	3	Aftertreatment #1 DEF Controller : Abnormal Update Rate
1659	Excavator	Scania	3360	9	3	EEC3 has demanded SCR Major functional failure reductant dosing stopped actions
1645	Excavator	Scania	3360	10	3	EEC3 System has demanded SCR minor functional failure actions
1646	Excavator	Scania	3360	12	4	SCR main unit, error
1647	Excavator	Perkins	3360	14	3	Aftertreatment #1 DEF Controller : Special Instruction
1648	Excavator	Scania	3360	16	3	SCR main unit, internal supply voltage high
1649	Excavator	Scania	3360	19	3	SCR main unit, communication error
1661	Excavator	Cummins	3361	2	4	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Temperature - Data erratic, intermittent or incorrect
1662	Excavator	Scania	3361	2	4	Fault in reductant doser injection valve.
1663	Excavator	Cummins	3361	3	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit - Voltage above normal, or shorted to high source
1664	Excavator	Scania	3361	3	3	SCR reductant dosing valve, short circuit to battery
1665	Excavator	Cummins	3361	4	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit - Voltage below normal, or shorted to low source
1666	Excavator	Scania	3361	4	3	Fault in reductant doser injection valve.
1667	Excavator	Perkins	3361	5	2	Aftertreatment #1 DEF Dosing Unit : Current Below Normal
1668	Excavator	Scania	3361	5	3	SCR reductant dosing valve, open circuit
1669	Excavator	Perkins	3361	6	3	Aftertreatment #1 DEF Dosing Unit : Current Above Normal
1670	Excavator	Scania	3361	6	3	Fault in reductant doser injection valve.
1660	Excavator	Scania	3361	10	4	SCR main unit, reductant pressure not plausible
1671	Excavator	Scania	3362	0	3	The reductant pressure has been above the permitted level.
1672	Excavator	Scania	3362	1	3	Required reductant pressure cannot be reached.
1673	Excavator	Scania	3362	2	3	SCR reductant pressure, error
1674	Excavator	Cummins	3362	31	4	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Input Lines - Condition Exists
1675	Excavator	Scania	3363	0	3	SCR main unit, reductant heater, circuit high
1682	Excavator	Scania	3363	2	3	SCR main unit, reductant heater, open load
1683	Excavator	Cummins	3363	3	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater - Voltage above normal, or shorted to high source
1684	Excavator	Scania	3363	3	3	SCR main unit, internal heating pump, short circuit to battery
1685	Excavator	Cummins	3363	4	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater - Voltage below normal, or shorted to low source

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1686	Excavator	Scania	3363	4	3	SCR main unit, reductant temperature sensor circuit low
1687	Excavator	Perkins	3363	5	3	Aftertreatment #1 DEF Tank Heater : Current Below Normal
1688	Excavator	Scania	3363	5	3	SCR main unit, internal heating pump, open load
1689	Excavator	Perkins	3363	6	3	Aftertreatment #1 DEF Tank Heater : Current Above Normal
1690	Excavator	Scania	3363	6	3	The heater of the reductant doser has consumed more power than permitted.
1691	Excavator	Cummins	3363	7	4	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater - Mechanical system not responding or out of adjustment
1692	Excavator	Scania	3363	8	3	SCR main unit, reductant heater, circuit performance
1676	Excavator	Scania	3363	15	4	SCR reagent tank temperature too high
1677	Excavator	Cummins	3363	16	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater - Data Valid But Above Normal Operating Range - Moderately Severe Level
1678	Excavator	Scania	3363	16	3	SCR main unit, high temperature high limit exceeded
1679	Excavator	Scania	3363	17	3	SCR reductant tank temperatur too low
1680	Excavator	Cummins	3363	18	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater - Data Valid But Below Normal Operating Range - Moderately Severe Level
1681	Excavator	Scania	3363	18	3	SCR main unit, low temperature limit exceeded
1693	Excavator	Cummins	3364	1	1	Aftertreatment Diesel Exhaust Fluid Quality - Data valid but below normal operational range - Most Severe Level
1700	Excavator	Cummins	3364	2	2	Aftertreatment Diesel Exhaust Fluid Quality - Data erratic, intermittent or incorrect
1701	Excavator	Cummins	3364	3	2	Aftertreatment Diesel Exhaust Fluid Quality Sensor Circuit - Voltage above normal, or shorted to high source
1702	Excavator	Cummins	3364	4	2	Aftertreatment Diesel Exhaust Fluid Quality Sensor Circuit - Voltage below normal, or shorted to low source
1703	Excavator	Cummins	3364	5	3	Aftertreatment Diesel Exhaust Fluid Quality Sensor Circuit - Current below normal or open circuit
1704	Excavator	Cummins	3364	6	2	Aftertreatment Diesel Exhaust Fluid Quality Sensor Circuit - Current above normal or grounded circuit
1705	Excavator	Cummins	3364	7	2	Aftertreatment Diesel Exhaust Fluid Quality Sensor - Mechanical system not responding or out of adjustment
1706	Excavator	Cummins	3364	9	2	Aftertreatment Diesel Exhaust Fluid Quality - Abnormal update rate
1694	Excavator	Cummins	3364	10	2	Aftertreatment Diesel Exhaust Fluid Quality - Abnormal Rate of Change
1695	Excavator	Cummins	3364	11	2	Aftertreatment Diesel Exhaust Fluid Quality - Root Cause Not Known
1696	Excavator	Cummins	3364	12	2	Aftertreatment Diesel Exhaust Fluid Quality Sensor - Bad intelligent device or component
1697	Excavator	Cummins	3364	13	2	Aftertreatment Diesel Exhaust Fluid Quality - Out of Calibration
1698	Excavator	Cummins	3364	15	2	Aftertreatment Diesel Exhaust Fluid Quality - Data Valid But Above Normal Operating Range - Least Severe Level
1699	Excavator	Cummins	3364	18	2	Aftertreatment Diesel Exhaust Fluid Quality - Data Valid But Below Normal Operating Range - Moderately Severe Level
1707	Excavator	*	3410	1	4	Ambient temperature sensor open
1716	Excavator	*	3410	2	4	Ambient temperature sensor short
1719	Excavator	*	3410	3	4	In cab temperature sensor open
1720	Excavator	*	3410	4	4	In cab temperature sensor short
1721	Excavator	*	3410	5	4	Evap. temperature sensor open
1722	Excavator	*	3410	6	4	Evap. temperature sensor short
1723	Excavator	*	3410	9	4	Mode 1 actuator open/short
1708	Excavator	*	3410	10	4	Mode 1 actuator drive circuit malfunction
1709	Excavator	*	3410	11	4	Intake actuator open/short
1710	Excavator	*	3410	12	4	Intake actuator drive circuit malfunction
1711	Excavator	*	3410	13	4	Temperature actuator open/short
1712	Excavator	*	3410	14	4	Temperature actuator drive circuit malfunction
1713	Excavator	*	3410	17	4	Duct temperature sensor open
1714	Excavator	*	3410	18	4	Duct temperature sensor short
1715	Excavator	*	3410	19	4	Water Valve sensor open
1717	Excavator	*	3410	20	4	Water Valve sensor short
1718	Excavator	*	3410	21	4	G.P.S Circuit Error
1724	Excavator	*	3427	1	4	AAVM Communication Error -AAVM
1731	Excavator	*	3427	2	4	AAVM Communication Error -Front Camera
1732	Excavator	*	3427	3	4	AAVM Communication Error -Rear Camera
1733	Excavator	*	3427	4	4	AAVM Communication Error -Left Camera
1734	Excavator	*	3427	5	4	AAVM Communication Error -Right Camera
1735	Excavator	*	3427	6	4	Manual Setting Fail
1736	Excavator	*	3427	7	4	No MCU CID
1737	Excavator	*	3427	8	4	MCU CID Format Error
1738	Excavator	*	3427	9	4	AAVM Hardware Error -AAVM
1725	Excavator	*	3427	10	4	AAVM Hardware Error -Front Camera
1726	Excavator	*	3427	11	4	AAVM Hardware Error -Rear Camera
1727	Excavator	*	3427	12	4	AAVM Hardware Error -Left Camera
1728	Excavator	*	3427	13	4	AAVM Hardware Error -Right Camera
1729	Excavator	*	3427	14	4	MCU CID Model is not registered
1730	Excavator	*	3427	15	4	MCU CID Model can't be applied
1739	Excavator	Scania	3464	2	4	Throttle, control error
1740	Excavator	Cummins	3464	3	3	Electronic Throttle Control Actuator Driver Circuit - Voltage Above Normal or Shorted to High Source
1741	Excavator	Scania	3464	3	3	Throttle Actuator, short circuit to +24V
1742	Excavator	Cummins	3464	4	3	Electronic Throttle Control Actuator Driver Circuit - Voltage Below Normal or Shorted to Low Source
1743	Excavator	Scania	3464	4	3	Throttle Actuator, short circuit
1744	Excavator	Cummins	3464	5	3	Electronic Throttle Control Actuator Driver Circuit-Voltage above normal, or shorted to high source

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1745	Excavator	Scania	3464	5	3	Throttle Actuator, slow response
1746	Excavator	Scania	3464	6	3	Throttle Actuator Control System - Forced Limited Power
1747	Excavator	Cummins	3464	7	3	Electronic Throttle Control Actuator - Mechanical System Not Responding or Out of Adjustment
1748	Excavator	Scania	3464	7	3	Throttle, stuck in open position
1749	Excavator	Scania	3464	8	3	Throttle, stuck in closed position
1751	Excavator	Scania	3471	2	3	Electrical fault in the fuel valve circuit.
1752	Excavator	Scania	3471	3	3	Electrical fault in the fuel valve circuit. Short circuit to battery voltage in the circuit.
1753	Excavator	Scania	3471	4	3	Electrical fault in the fuel valve circuit. Short circuit to ground in the circuit.
1754	Excavator	Scania	3471	5	3	Electric fault on the fuel valve in valve block V184. The circuit is open.
1755	Excavator	Scania	3471	9	3	The fuel pressure in the valve block for exhaust gas aftertreatment V184 does not increase compared to the air pressure in the system when the fuel valve has been opened.
1750	Excavator	Scania	3471	10	3	The fuel pressure in the valve block for exhaust gas aftertreatment is too high when the fuel valve for the fuel injection nozzle is open.
1756	Excavator	Scania	3472	2	3	Electrical fault in the circuit for the air control valve.
1757	Excavator	Scania	3472	3	3	Electrical fault in the circuit for the air control valve. Short circuit to battery voltage in the circuit.
1758	Excavator	Scania	3472	4	3	Electrical fault in the circuit for the air control valve to the fuel injection nozzle. Short circuit to ground in the circuit.
1759	Excavator	Scania	3472	5	3	Electrical fault in the circuit for the air control valve to the fuel injection nozzle. The circuit is open.
1760	Excavator	Scania	3472	9	3	The air pressure in the valve block for exhaust gas aftertreatment is not increasing even though the air control valve is open.
1763	Excavator	Cummins	3480	2	3	Aftertreatment Fuel Pressure Sensor - Data erratic, intermittent or incorrect
1764	Excavator	Scania	3480	2	3	Fault in the sensor which measures the air and fuel pressure in the valve block for exhaust gas aftertreatment.
1765	Excavator	Cummins	3480	3	3	Aftertreatment Fuel Pressure Sensor Circuit - Voltage above normal, or shorted to high source
1766	Excavator	Scania	3480	3	3	Fault in the pressure sensor which measures the air and fuel pressure in the valve block for exhaust gas aftertreatment V184.
1767	Excavator	Cummins	3480	4	3	Aftertreatment Fuel Pressure Sensor Circuit - Voltage below normal, or shorted to low source
1768	Excavator	Scania	3480	4	3	Fault in the pressure sensor which measures the air and fuel pressure in the valve block for exhaust gas aftertreatment V184.
1769	Excavator	Scania	3480	8	3	The air pressure is too high when the air control valve in the valve block for exhaust gas aftertreatment is open.
1770	Excavator	Scania	3480	9	3	The air pressure in the valve block for exhaust gas aftertreatment is not increasing even though the air control valve is open.
1761	Excavator	Scania	3480	10	3	The air and fuel pressure sensor in the valve block V184 displays too low a value compared to the atmospheric pressure sensor and differential pressure sensors.
1762	Excavator	Cummins	3480	17	3	Aftertreatment Fuel Pressure Sensor - Data Valid But Below Normal Operating Range - Least Severe Level
1771	Excavator	Cummins	3481	16	3	Aftertreatment Fuel Rate - Data Valid But Above Normal Operating Range - Moderately Severe Level
1774	Excavator	Cummins	3482	2	3	Aftertreatment Fuel Shutoff Valve - Data erratic, intermittent or incorrect
1775	Excavator	Cummins	3482	3	3	Aftertreatment Fuel Shutoff Valve Circuit - Voltage above normal, or shorted to high source
1776	Excavator	Cummins	3482	4	3	Aftertreatment Fuel Shutoff Valve Circuit - Voltage below normal, or shorted to low source
1777	Excavator	Cummins	3482	7	3	Aftertreatment Fuel Shutoff Valve - Mechanical system not responding or out of adjustment
1772	Excavator	Cummins	3482	13	3	Aftertreatment Fuel Shutoff Valve Swapped - Out of Calibration
1773	Excavator	Cummins	3482	16	3	Aftertreatment Fuel Shutoff Valve - Data Valid But Above Normal Operating Range - Moderately Severe
1778	Excavator	Scania	3485	1	4	SCR main unit, air pressure too low
1780	Excavator	Scania	3485	2	3	SCR main unit, air pressure sensor after orifice circuit supply
1782	Excavator	Scania	3485	3	3	SCR main unit, air pressure sensor after orifice circuit high
1783	Excavator	Scania	3485	4	3	SCR main unit, air pressure sensor after orifice circuit low
1784	Excavator	Scania	3485	7	3	SCR, air circuit blocked
1785	Excavator	Scania	3485	9	4	SCR main unit, air pressure sensor after orifice performance
1779	Excavator	Scania	3485	18	4	EEC, air supply low
1781	Excavator	Scania	3485	20	4	SCR main unit, air pressure sensor after orifice plausible error
1786	Excavator	Cummins	3490	3	3	Aftertreatment Purge Air Actuator Circuit - Voltage above normal, or shorted to high source
1787	Excavator	Cummins	3490	4	3	Aftertreatment Purge Air Actuator Circuit - Voltage below normal, or shorted to low source
1788	Excavator	Cummins	3490	7	3	Aftertreatment Purge Air Actuator - Mechanical system not responding or out of adjustment
1789	Excavator	Perkins	3509	2	5	Sensor Supply Voltage 1 : Erratic, Intermittent, or Incorrect
1790	Excavator	Cummins	3509	3	5	Sensor Supply 1 Circuit - Voltage above normal, or shorted to high source
1791	Excavator	Perkins	3509	3	5	Sensor Supply Voltage 1 : Voltage Above Normal
1792	Excavator	Cummins	3509	4	5	Sensor Supply 1 Circuit - Voltage below normal, or shorted to low source
1793	Excavator	Perkins	3509	4	5	Sensor Supply Voltage 1 : Voltage Below Normal
1794	Excavator	Perkins	3510	2	5	Sensor Supply Voltage 2 : Erratic, Intermittent, or Incorrect
1795	Excavator	Cummins	3510	3	5	Sensor Supply 2 Circuit - Voltage above normal, or shorted to high source
1796	Excavator	Perkins	3510	3	5	Sensor Supply Voltage 2 : Voltage Above Normal
1797	Excavator	Cummins	3510	4	5	Sensor Supply 2 Circuit - Voltage below normal, or shorted to low source
1798	Excavator	Perkins	3510	4	5	Sensor Supply Voltage 2 : Voltage Below Normal
1799	Excavator	Perkins	3511	2	5	Sensor Supply Voltage 3 : Erratic, Intermittent, or Incorrect
1800	Excavator	Cummins	3511	3	5	Sensor Supply 3 Circuit - Voltage above normal, or shorted to high source
1801	Excavator	Perkins	3511	3	5	Sensor Supply Voltage 3 : Voltage Above Normal
1802	Excavator	Cummins	3511	4	5	Sensor Supply 3 Circuit - Voltage below normal, or shorted to low source
1803	Excavator	Perkins	3511	4	5	Sensor Supply Voltage 3 : Voltage Below Normal
1804	Excavator	Cummins	3512	3	5	Sensor Supply 4 Circuit - Voltage above normal, or shorted to high source
1805	Excavator	Perkins	3512	3	5	Sensor Supply Voltage 4 : Voltage Above Normal
1806	Excavator	Cummins	3512	4	5	Sensor Supply 4 Circuit - Voltage below normal, or shorted to low source

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1807	Excavator	Perkins	3512	4	5	Sensor Supply Voltage 4 : Voltage Below Normal
1808	Excavator	Cummins	3513	3	5	Sensor Supply 5 - Voltage above normal, or shorted to high source
1809	Excavator	Cummins	3513	4	5	Sensor Supply 5 - Voltage below normal, or shorted to low source
1810	Excavator	Cummins	3514	3	5	Sensor Supply 6 Circuit - Voltage above normal, or shorted to high source
1811	Excavator	Cummins	3514	4	5	Sensor Supply 6 Circuit - Voltage below normal, or shorted to low source
1814	Excavator	Cummins	3515	2	3	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2 - Data erratic, intermittent or incorrect
1815	Excavator	Scania	3515	2	3	Fault in the reductant doser temperature sensor and pressure sensor.
1816	Excavator	Cummins	3515	3	3	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2 Sensor Circuit - Voltage above normal, or shorted to high source
1817	Excavator	Cummins	3515	4	3	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2 Sensor Circuit - Voltage below normal, or shorted to low source
1818	Excavator	Cummins	3515	5	3	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2 Sensor Circuit - Current below normal or open circuit
1819	Excavator	Cummins	3515	6	3	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2 Sensor Circuit - Current above normal or grounded
1812	Excavator	Cummins	3515	10	4	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2 - Abnormal Rate of Change
1813	Excavator	Cummins	3515	11	3	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2 - Root Cause Not Known
1823	Excavator	Perkins	3516	2	3	Aftertreatment #1 DEF Concentration : Erratic, Intermittent, or Incorrect
1824	Excavator	Scania	3516	2	3	The reductant pick-up unit indicates an internal fault in the reductant sensor.
1820	Excavator	Perkins	3516	12	3	Aftertreatment #1 DEF Concentration : Failure
1821	Excavator	Perkins	3516	16	3	Aftertreatment #1 DEF Concentration : High - moderate severity (2)
1822	Excavator	Perkins	3516	18	3	Aftertreatment #1 DEF Concentration : Low - moderate severity (2)
1825	Excavator	Cummins	3521	11	3	Aftertreatment 1 Diesel Exhaust Fluid Property - Root Cause Not Known
1826	Excavator	Cummins	3521	31	3	Aftertreatment 1 Diesel Exhaust Fluid Property - Condition Exists
1827	Excavator	Cummins	3555	17	4	Ambient Air Density - Data Valid But Below Normal Operating Range - Least Severe Level
1829	Excavator	Cummins	3556	2	3	Aftertreatment Doser - Data erratic, intermittent or incorrect
1830	Excavator	Cummins	3556	5	3	Aftertreatment Doser Circuit - Current below normal or open circuit.
1831	Excavator	Cummins	3556	7	3	Aftertreatment Doser - Mechanical system not responding or out of adjustment
1828	Excavator	Cummins	3556	18	3	Aftertreatment Doser - Data Valid But Below Normal Operating Range - Moderately Severe Level
1836	Excavator	Perkins	3563	3	3	Engine Intake Manifold #1 Absolute Pressure : Voltage Above Normal
1837	Excavator	Perkins	3563	4	3	Engine Intake Manifold #1 Absolute Pressure : Voltage Below Normal
1832	Excavator	Scania	3563	11	4	Boost pressure sensor and ambient pressure sensor do not correlate
1833	Excavator	Perkins	3563	13	3	Engine Intake Manifold #1 Absolute Pressure : Out of Calibration
1834	Excavator	Scania	3563	15	4	Boost pressure sensor and ambient pressure sensor do not correlate
1835	Excavator	Scania	3563	17	3	Boost pressure sensor and ambient pressure sensor do not correlate
1838	Excavator	Perkins	3583	21	3	Common AC Auxiliaries Breaker
1842	Excavator	Cummins	3597	2	5	Power Supply Lost With Ignition On - Data erratic, intermittent or incorrect
1843	Excavator	Cummins	3597	3	3	ECU Power Output Supply Voltage 1 - Voltage above normal, or shorted to high source
1844	Excavator	Cummins	3597	4	3	ECU Power Output Supply Voltage 1 - Voltage below normal, or shorted to low source
1839	Excavator	Cummins	3597	12	4	Injector Power Supply - Bad intelligent device or component
1840	Excavator	Cummins	3597	17	3	ECU Power Output Supply Voltage 1 - Data Valid But Below Normal Operating Range - Moderately Severe Level
1841	Excavator	Cummins	3597	18	3	ECU Power Output Supply Voltage 1 - Data Valid But Below Normal Operating Range - Moderately Severe Level
1845	Excavator	Scania	3607	2	3	Incorrect EMS shutdown
1846	Excavator	Scania	3607	8	3	The EEC control unit has been shut down incorrectly.
1847	Excavator	Yanmar	3609	3	2	DPF high pressure side pressure sensor error (voltage high)
1848	Excavator	Yanmar	3609	4	2	DPF high pressure side pressure sensor error (voltage low)
1850	Excavator	Cummins	3610	2	3	Aftertreatment 1 Diesel Particulate Filter Outlet Pressure - Data erratic, intermittent or incorrect
1851	Excavator	Cummins	3610	3	3	Aftertreatment 1 Diesel Particulate Filter Outlet Pressure Sensor Circuit - Voltage above normal, or shorted to high source
1852	Excavator	Cummins	3610	4	3	Aftertreatment 1 Diesel Particulate Filter Outlet Pressure Sensor Circuit - Voltage below normal, or shorted to low source
1849	Excavator	Cummins	3610	10	4	Aftertreatment 1 Diesel Particulate Filter Outlet Pressure - Abnormal Rate of Change
1853	Excavator	Cummins	3667	2	2	Engine Air Shutoff Status - Data erratic, intermittent or incorrect
1854	Excavator	Cummins	3667	3	3	Engine Air Shutoff Circuit - Voltage above normal, or shorted to high source
1856	Excavator	Cummins	3667	4	3	Engine Air Shutoff Circuit - Voltage below normal, or shorted to low source
1857	Excavator	Cummins	3667	7	2	Engine Air Shutoff - Mechanical System Not Responding or Out of Adjustment
1855	Excavator	Cummins	3667	31	3	Engine Air Shutoff - Condition Exists
1858	Excavator	Scania	3673	3	3	Throttle Position Sensor 2, short circuit to +24V
1859	Excavator	Scania	3673	4	3	Throttle Position Sensor 2, short circuit to ground
1861	Excavator	Cummins	3695	2	4	Aftertreatment Regeneration Inhibit Switch - Data erratic, intermittent or incorrect
1860	Excavator	Yanmar	3695	14	4	Reset regeneration is inhibited
1862	Excavator	Perkins	3697	5	3	Particulate Trap Lamp Command: Current Below Normal
1863	Excavator	Perkins	3697	6	3	Particulate Trap Lamp Command : Current Above Normal
1864	Excavator	Perkins	3698	5	3	Exhaust System High Temperature Lamp Command: Current Below Normal
1865	Excavator	Perkins	3698	6	3	Exhaust System High Temperature Lamp Command : Current Above Normal
1866	Excavator	Perkins	3702	5	3	Diesel Particulate Filter Active Regeneration Inhibited Status : Current Below Normal
1867	Excavator	Perkins	3702	6	3	Diesel Particulate Filter Active Regeneration Inhibited Status : Current Above Normal
1868	Excavator	Cummins	3703	31	3	Particulate Trap Active Regeneration Inhibited Due to Inhibit Switch - Condition Exists
1869	Excavator	Cummins	3713	31	4	Diesel Particulate Filter Active Regeneration Inhibited Due to System Timeout - Condition Exists
1870	Excavator	Perkins	3719	0	2	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent: High - most severe (3》
1871	Excavator	Yanmar	3719	0	2	backup mode
1874	Excavator	Yanmar	3719	7	1	Recovery regeneration is inhibited
1875	Excavator	Yanmar	3719	9	1	Recovery regeneration failure
1872	Excavator	Perkins	3719	16	3	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent: High - moderate severity (2)

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1873	Excavator	Yanmar	3719	16	3	Stationary regeneration standby
1876	Excavator	Yanmar	3720	0	3	Ash cleaning request 2
1877	Excavator	Cummins	3720	15	3	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent - Data Valid But Above Normal Operating Range - Least Severe Level
1878	Excavator	Yanmar	3720	16	3	Ash cleaning request 1
1879	Excavator	Cummins	3750	14	4	Aftertreatment 1 Diesel Particulate Filter Conditions Not Met for Active Regeneration - Special Instructions
1880	Excavator	Cummins	3750	31	3	Diesel Particulate Filter 1 Conditions Not Met for Active Regeneration - Condition Exists
1887	Excavator	Scania	3822	2	3	The EGR valve actuator M28 reports that the damper does not move as expected or does not move at all.
1890	Excavator	Scania	3822	3	3	EGR position sensor, short circuit to +24V
1891	Excavator	Scania	3822	4	3	EGR position sensor, short circuit to ground
1892	Excavator	Scania	3822	7	4	EGR SRA reports a warning during Learn Stops.
1893	Excavator	Scania	3822	8	4	EGR position sensor, outside the permitted range
1894	Excavator	Scania	3822	9	2	The actuator for EGR valve M28 reports that the engine performance has been limited.
1881	Excavator	Scania	3822	12	4	EGR SRA reports it has a continuous fault.
1882	Excavator	Scania	3822	13	4	EGR position sensor, not plausible
1883	Excavator	Scania	3822	15	3	The electric motor temperature for the actuator for EGR valve M28 has been above 125°C for more than 10 minutes or above 130°C for more than 3 seconds.
1884	Excavator	Scania	3822	16	3	EGR SRA reports a running conditions warning for high temp or low voltage.
1885	Excavator	Scania	3822	18	3	The actuator for EGR valve M28 reports that the supply voltage is too low.
1886	Excavator	Scania	3822	19	4	EGR CAN timeout
1888	Excavator	Scania	3822	20	3	EGR position sensor, voltage shows large variation in open position
1889	Excavator	Scania	3822	21	3	EGR position sensor, voltage shows large variation in closed position
1895	Excavator	Cummins	3826	18	3	Aftertreatment 1 Diesel Exhaust Fluid Average Consumption - Data Valid But Below Normal Operating Range
1899	Excavator	Scania	3936	2	3	Particulate filter, clogged
1900	Excavator	Scania	3936	6	3	Particulate filter, ash level too high
1901	Excavator	Cummins	3936	7	3	Aftertreatment 1 Diesel Particulate Filter System - Mechanical system not responding or out of adjustment
1896	Excavator	Scania	3936	10	3	Exhaust temperature sensors, not plausible
1897	Excavator	Cummins	3936	14	2	Aftertreatment Diesel Particulate Filter System - Special Instructions
1898	Excavator	Cummins	3936	15	3	Aftertreatment 1 Diesel Particulate Filter System - Data Valid But Above Normal Operating Range - Level
1902	Excavator	Scania	4090	0	3	NOx level after catalytic converter too high
1903	Excavator	Scania	4090	11	4	NOx Exceedence - Root Cause Unknown
1904	Excavator	Scania	4090	16	3	SCR main unit, NOx level too high
1905	Excavator	Cummins	4094	31	3	NOx limits exceeded due to Insufficient Reagent Quality - Condition Exists
1906	Excavator	Scania	4095	2	3	NOx Exceedence - Interruption of Reagent Dosing Activity
1907	Excavator	Scania	4096	2	3	NOx Exceedence - Empty Reagent Tank
1908	Excavator	Cummins	4096	31	3	Aftertreatment Diesel Exhaust Fluid Tank Empty - Condition Exists
1909	Excavator	Cummins	4097	3	3	Aftertreatment Fuel Drain Valve Circuit - Voltage above normal, or shorted to high source
1910	Excavator	Cummins	4097	4	3	Aftertreatment Fuel Drain Valve Circuit - Voltage below normal, or shorted to low source
1911	Excavator	Cummins	4097	7	3	Aftertreatment Fuel Drain Valve - Mechanical system not responding or out of adjustment
1912	Excavator	Cummins	4182	4	3	Generator Output Frequency Adjust Potentiometer Circuit - Voltage below normal, or shorted to low source
1913	Excavator	Cummins	4183	4	3	Droop Adjust Potentiometer Circuit - Voltage below normal, or shorted to low source
1914	Excavator	Cummins	4184	4	3	Gain Adjust Potentiometer Circuit - Voltage below normal, or shorted to low source
1915	Excavator	Cummins	4185	31	4	Overspeed Shutdown Relay Driver Diagnostic has detected an error - Condition Exists
1916	Excavator	Cummins	4186	31	4	Low Oil Pressure (LOP) Shutdown Relay Driver Diagnostic has detected an error - Condition Exists
1917	Excavator	Cummins	4187	31	4	High Engine Temperature (HET) Shutdown Relay Driver Diagnostic has detected an error - Condition Exists
1918	Excavator	Cummins	4188	31	4	Pre-Low Oil Pressure Warning Relay Driver Diagnostic has detected an error - Condition Exists
1920	Excavator	Scania	4201	2	3	Engine position sensor 1, faulty
1921	Excavator	Scania	4201	4	4	Engine position sensor 1, too weak signal
1922	Excavator	Scania	4201	7	3	Engine position sensor 1, faulty
1923	Excavator	Scania	4201	8	4	Engine position sensor 1, Gap Puls or Sync error
1924	Excavator	Scania	4201	9	4	Engine position sensor 1, time out
1919	Excavator	Scania	4201	10	3	Engine position sensor 1, position diff
1925	Excavator	Scania	4202	2	3	Engine speed sensor faulty
1926	Excavator	Cummins	4223	31	4	Pre-High Engine Temperature Warning Relay Driver Diagnostic has detected an error - Condition Exists
1927	Excavator	Scania	4225	2	3	Failure in the NOx control monitoring system
1928	Excavator	Yanmar	4257	12	2	Injector drive IC error
1930	Excavator	Scania	4301	2	3	Fault in injection valve for exhaust gas aftertreatment V185.
1931	Excavator	Scania	4301	3	3	Fault in injection valve for exhaust gas aftertreatment V185.
1932	Excavator	Scania	4301	4	3	Fault in injection valve for exhaust gas aftertreatment V185.
1933	Excavator	Scania	4301	5	3	Fault in injection valve for exhaust gas aftertreatment V185.
1934	Excavator	Scania	4301	6	3	Fault in injection valve for exhaust gas aftertreatment V185.
1935	Excavator	Scania	4301	7	3	Leakage in the injection valve V185 or in the pipes to the injection valve.
1936	Excavator	Scania	4301	9	3	The fuel pressure in the valve block for exhaust gas aftertreatment does not fall when the fuel injection valve has been opened.
1929	Excavator	Scania	4301	10	3	The fuel pressure in the exhaust gas aftertreatment valve block V184 is too high when the fuel injection valve V185 is open.
1937	Excavator	Cummins	4331	18	3	Aftertreatment SCR Actual Dosing Reagent Quantity - Data Valid But Below Normal Operating Range - Mo
1938	Excavator	Scania	4334	0	3	SCR reductant pressure error

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
1939	Excavator	Scania	4334	1	3	EEC3 has demanded SCR Hazardous functional failure reductant dosing stopped actions
1948	Excavator	Cummins	4334	2	3	Aftertreatment 1 Diesel Exhaust Fluid Pressure Sensor - Data erratic, intermittent or incorrect
1949	Excavator	Scania	4334	2	3	Urea pressure sensor, plausible error during start-up
1952	Excavator	Cummins	4334	3	3	Aftertreatment 1 Diesel Exhaust Fluid Pressure Sensor - Voltage above normal, or shorted to high source
1953	Excavator	Perkins	4334	3	3	Aftertreatment #1 DEF#1 Pressure(absolute) : Voltage Above Normal
1954	Excavator	Scania	4334	3	3	Urea pressure sensor, SRC high
1955	Excavator	Cummins	4334	4	3	Aftertreatment 1 Diesel Exhaust Fluid Pressure Sensor - Voltage below normal, or shorted to low source
1956	Excavator	Perkins	4334	4	3	Aftertreatment #1 DEF#1 Pressure(absolute) : Voltage Below Normal
1957	Excavator	Scania	4334	4	3	Urea pressure sensor, SRC low
1958	Excavator	Cummins	4334	5	3	Aftertreatment 1 Diesel Exhaust Fluid Pressure Sensor Circuit - Current Below Normal or Open Circuit
1959	Excavator	Cummins	4334	7	3	Aftertreatment 1 Diesel Exhaust Fluid Pressure - Mechanical System Not Responding or Out of Adjustment
1960	Excavator	Scania	4334	8	3	Urea pressure sensor, pressure too high not plausible
1940	Excavator	Scania	4334	10	3	The reductant pressure is too low or too high when the reductant pump is shut off.
1941	Excavator	Cummins	4334	15	3	Aftertreatment 1 Diesel Exhaust Fluid Pressure - Data Valid But Above Normal Operating Range - Least Severe Level
1942	Excavator	Scania	4334	15	3	The reductant pressure is too high even though the reductant pump is shut off.
1943	Excavator	Cummins	4334	16	3	Aftertreatment 1 Diesel Exhaust Fluid Pressure Sensor - Data Valid But Above Normal Operating Range
1944	Excavator	Perkins	4334	16	3	Aftertreatment #1 DEF#1 Pressure(absolute) : High - moderate severity (2)
1945	Excavator	Scania	4334	17	3	The reductant pressure is too low when the reductant pump is shut off.
1946	Excavator	Perkins	4334	18	2	Aftertreatment #1 DEF#1 Pressure(absolute) : Low - moderate severity (2)
1947	Excavator	Cummins	4334	18	3	Aftertreatment 1 Diesel Exhaust Fluid Pressure Sensor - Data Valid But Below Normal Operating Range
1950	Excavator	Perkins	4334	20	4	Aftertreatment #1 DEF#1 Pressure(absolute) : Data Drifted High
1951	Excavator	Perkins	4334	21	3	Aftertreatment #1 DEF#1 Pressure(absolute) : Data Drifted Low
1961	Excavator	Scania	4337	1	3	The reductant doser temperature sensor indicates values which are too low.
1963	Excavator	Cummins	4337	2	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Temperature - Data erratic, intermittent or incorrect
1964	Excavator	Cummins	4337	3	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Temperature Sensor - Voltage Above Normal, or Shorted to High Source
1965	Excavator	Scania	4337	3	3	The reductant doser temperature sensor indicates incorrect values.
1966	Excavator	Cummins	4337	4	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Temperature Sensor - Voltage below normal, or shorted to low source
1962	Excavator	Cummins	4337	10	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Temperature - Abnormal Rate of Change
1968	Excavator	Cummins	4339	7	3	Aftertreatment 1 SCR Feedback Control Status - Mechanical System Not Responding or Out of Adjustment
1967	Excavator	Cummins	4339	31	3	Aftertreatment 1 SCR Feedback Control Status - Condition Exists
1969	Excavator	Cummins	4340	3	3	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 1 Circuit - Voltage above normal, or shorted to high source
1970	Excavator	Cummins	4340	4	3	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 1 Circuit - Voltage below normal, or shorted to low source
1971	Excavator	Cummins	4340	5	3	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 1 Circuit - Current below normal or open circuit
1972	Excavator	Scania	4341	2	3	Fault in the reductant heater for reductant hose 1 (H25).
1973	Excavator	Scania	4341	3	3	Fault in the reductant heater for reductant hose 1 (H25).
1974	Excavator	Scania	4341	4	3	Fault in the reductant heater for reductant hose 1 (H25).
1975	Excavator	Scania	4341	5	3	Fault in the reductant heater for reductant hose 1 (H25).
1976	Excavator	Scania	4341	6	3	The reductant heater for reductant hose 1 (H25) has consumed more power than permitted.
1977	Excavator	Cummins	4342	3	3	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 2 Circuit - Voltage above normal, or shorted to high source
1978	Excavator	Cummins	4342	4	3	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 2 Circuit - Voltage below normal, or shorted to low source
1979	Excavator	Cummins	4342	5	3	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 2 Circuit - Current below normal or open circuit
1980	Excavator	Scania	4343	2	3	Fault in the reductant heater for reductant hose 2 (H26).
1981	Excavator	Scania	4343	3	3	Fault in the reductant heater for reductant hose 2 (H26).
1982	Excavator	Scania	4343	4	3	Fault in the reductant heater for reductant hose 2 (H26).
1983	Excavator	Scania	4343	5	3	Fault in the reductant heater for reductant hose 2 (H26).
1984	Excavator	Scania	4343	6	3	The reductant heater for reductant hose 2 (H26) has consumed more power than permitted.
1985	Excavator	Cummins	4344	3	3	Aftertreatment Diesel Exhaust Fluid Line Heater 3 Circuit - Voltage above normal, or shorted to high source
1986	Excavator	Cummins	4344	4	3	Aftertreatment Diesel Exhaust Fluid Line Heater 3 Circuit - Voltage below normal, or shorted to low source
1987	Excavator	Cummins	4344	5	3	Aftertreatment Diesel Exhaust Fluid Line Heater 3 Circuit - Current below normal or open circuit
1988	Excavator	Scania	4345	2	3	Fault in the reductant heater for reductant hose 3 (H27).
1989	Excavator	Scania	4345	3	3	Fault in the reductant heater for reductant hose 3 (H27).
1990	Excavator	Scania	4345	4	3	Fault in the reductant heater for reductant hose 3 (H27).
1991	Excavator	Scania	4345	5	3	Fault in the reductant heater for reductant hose 3 (H27).
1992	Excavator	Scania	4345	6	3	The reductant heater for reductant hose 3 (H27) has consumed more power than permitted.
1993	Excavator	Scania	4347	2	3	Electrical fault in the reductant heater for reductant hose 4 (H28).
1994	Excavator	Scania	4347	3	3	Fault in the reductant heater for reductant hose 4 (H28).
1995	Excavator	Scania	4347	4	3	Fault in the reductant heater for reductant hose 4 (H28).
1996	Excavator	Scania	4347	5	3	Fault in the reductant heater for reductant hose 4 (H28).
1997	Excavator	Scania	4347	6	3	The reductant heater for reductant hose 4 (H28) has consumed more power than permitted.

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
1998	Excavator	Cummins	4353	31	2	Aftertreatment 1 Diesel Exhaust Fluid Doser Heating Mode Request - Condition Exists
1999	Excavator	Perkins	4354	5	3	Aftertreatment #1 DEF Line Heater #1 : Current Below Normal
2000	Excavator	Perkins	4354	6	3	Aftertreatment #1 DEF Line Heater #1 : Current Above Normal
2001	Excavator	Perkins	4355	5	3	Aftertreatment #1 DEF Line Heater #2 : Current Below Normal
2002	Excavator	Perkins	4355	6	3	Aftertreatment #1 DEF Line Heater #2 : Current Above Normal
2003	Excavator	Perkins	4356	5	3	Aftertreatment #1 DEF Line Heater #3 : Current Below Normal
2004	Excavator	Perkins	4356	6	3	Aftertreatment #1 DEF Line Heater #3 : Current Above Normal
2005	Excavator	Cummins	4360	0	2	Aftertreatment 1 SCR Intake Temperature - Data valid but above normal operational range - Most Severe Level
2011	Excavator	Cummins	4360	2	4	Aftertreatment 1 SCR Intake Temperature Sensor - Data erratic, intermittent or incorrect
2013	Excavator	Cummins	4360	3	3	Aftertreatment 1 SCR Intake Temperature Sensor Circuit - Voltage above normal, or shorted to high source
2014	Excavator	Perkins	4360	3	3	Aftertreatment #1 SCR Catalyst Intake Gas Temperature : Voltage Above Normal
2015	Excavator	Cummins	4360	4	3	Aftertreatment 1 SCR Intake Temperature Sensor Circuit - Voltage below normal, or shorted to low source
2016	Excavator	Perkins	4360	4	3	Aftertreatment #1 SCR Catalyst Intake Gas Temperature : Voltage Below Normal
2006	Excavator	Cummins	4360	15	4	Aftertreatment 1 SCR Intake Temperature - Data Valid But Above Normal Operating Range - Least Severe
2007	Excavator	Cummins	4360	16	3	Aftertreatment 1 SCR Intake Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
2008	Excavator	Perkins	4360	16	3	Aftertreatment #1 SCR Catalyst Intake Gas Temperature : High - moderate severity (2)
2009	Excavator	Perkins	4360	17	4	Aftertreatment #1 SCR Catalyst Intake Gas Temperature : Low - least severe (1)
2010	Excavator	Perkins	4360	18	3	Aftertreatment #1 SCR Catalyst Intake Gas Temperature : Low - moderate severity (2)
2012	Excavator	Perkins	4360	20	4	Aftertreatment #1 SCR Catalyst Intake Gas Temperature : Data Drifted High
2017	Excavator	Cummins	4363	0	2	Aftertreatment 1 SCR Outlet Temperature - Data valid but above normal operational range - Most Severe
2019	Excavator	Cummins	4363	2	4	Aftertreatment 1 SCR Outlet Temperature Sensor - Data erratic, intermittent or incorrect
2020	Excavator	Cummins	4363	3	3	Aftertreatment 1 SCR Outlet Temperature Sensor Circuit - Voltage above normal, or shorted to high source
2021	Excavator	Cummins	4363	4	3	Aftertreatment 1 SCR Outlet Temperature Sensor Circuit - Voltage below normal, or shorted to low source
2018	Excavator	Cummins	4363	16	2	Aftertreatment 1 SCR Outlet Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
2025	Excavator	Perkins	4364	2	4	Aftertreatment #1 SCR Catalyst Conversion Efficiecy : Erratic, Intermittent ,or Incorrcet
2022	Excavator	Cummins	4364	17	4	Aftertreatment SCR Catalyst Conversion Efficiency - Data Valid But Below Normal Operating Range - Moderately Severe Level
2023	Excavator	Cummins	4364	18	3	Aftertreatment SCR Catalyst Conversion Efficiency - Data Valid But Below Normal Operating Range - Moderately Severe Level
2024	Excavator	Perkins	4364	18	3	Aftertreatment #1 SCR Catalyst Conversion Efficiecy : Low - moderate severity (2)
2026	Excavator	Cummins	4364	31	3	Aftertreatment 1 SCR Conversion Efficiency - Condition Exists
2027	Excavator	Scania	4374	0	3	Reductant pump fault, pump speed too high
2028	Excavator	Scania	4374	1	3	Reductant pump fault, pump speed too low
2031	Excavator	Scania	4374	2	3	The EEC control unit for exhaust gas aftertreatment does not receive a signal from the reductant pump about the current rotational speed.
2032	Excavator	Cummins	4374	3	3	Aftertreatment 1 Diesel Exhaust Fluid Pump 1 Motor Speed Circuit - Voltage Above Normal or Shorted to High Source
2033	Excavator	Cummins	4374	4	3	Aftertreatment 1 Diesel Exhaust Fluid Pump 1 Motor Speed Circuit - Voltage Below Normal or Shorted to Low Source
2034	Excavator	Scania	4374	4	3	Short circuit to ground in the voltage supply circuit for the reductant pump.
2035	Excavator	Cummins	4374	5	3	Aftertreatment 1 Diesel Exhaust Fluid Pump 1 Motor Speed Circuit - Current Below Normal or Open Circuit
2036	Excavator	Perkins	4374	5	3	Aftertreatment #1 DEF Pump #1 Motor Speed : Current Below Normal
2037	Excavator	Scania	4374	5	3	Fault in the reductant pump control and voltage supply circuit.
2038	Excavator	Perkins	4374	6	3	Aftertreatment #1 DEF Pump #1 Motor Speed : Current Above Normal
2039	Excavator	Scania	4374	6	3	Fault in the reductant pump voltage supply circuit.
2040	Excavator	Scania	4374	7	3	The reductant pressure does not increase and the reductant pump rotational speed sensor indicates too low a value.
2029	Excavator	Scania	4374	16	3	The reductant pump needs to run more slowly than expected to maintain the correct reductant pressure.
2030	Excavator	Scania	4374	17	3	The reductant pump needs to run more quickly than expected to maintain the correct reductant pressure.
2041	Excavator	Cummins	4375	3	3	Aftertreatment 1 Diesel Exhaust Fluid Pump Command Circuit - Voltage Above Normal or Shorted to High Source
2042	Excavator	Cummins	4375	4	3	Aftertreatment 1 Diesel Exhaust Fluid Pump Command Circuit - Voltage Below Normal or Shorted to Low Source
2043	Excavator	Cummins	4376	3	3	Aftertreatment Diesel Exhaust Fluid Return Valve - Voltage above normal, or shorted to high source
2044	Excavator	Cummins	4376	4	3	Aftertreatment Diesel Exhaust Fluid Return Valve - Voltage below normal, or shorted to low source
2045	Excavator	Cummins	4376	7	3	Aftertreatment Diesel Exhaust Fluid Return Valve - Mechanical system not responding or out of adjust
2046	Excavator	Perkins	4377	12	3	Aftertreatment #1 Outlet NH3 : Failure
2047	Excavator	Perkins	4380	2	4	Aftertreatment 1 Outlet NH3 Gas Sensor Power In Range : Erratic, Intermittent, or Incorrect
2048	Excavator	Scania	4427	2	3	The reductant pick-up unit indicates an internal fault in the temperature sensor.
2050	Excavator	Cummins	4490	9	3	Specific Humidity Sensor - Abnormal update rate
2049	Excavator	Cummins	4490	19	4	Specific Humidity Sensor - Received Network Data In Error
2054	Excavator	Cummins	4765	2	4	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature - Data erratic, intermittent or incorrect

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
2055	Excavator	Cummins	4765	3	3	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature Sensor Circuit - Voltage above normal, or shorted to high source
2056	Excavator	Perkins	4765	3	3	Aftertreatment #1 Diesel Oxidation Catalyst Intake Gas Temperature : Voltage Above Normal
2057	Excavator	Cummins	4765	4	3	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature Sensor Circuit - Voltage below normal, or shorted to low source
2058	Excavator	Perkins	4765	4	3	Aftertreatment #1 Diesel Oxidation Catalyst Intake Gas Temperature : Voltage Below Normal
2051	Excavator	Cummins	4765	13	3	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature Swapped - Out of Calibration
2052	Excavator	Cummins	4765	16	2	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature - Data Valid But Above Normal Operating Range
2053	Excavator	Perkins	4765	17	4	Aftertreatment #1 Diesel Oxidation Catalyst Intake Gas Temperature : Low - least severe (1)
2059	Excavator	Cummins	4766	0	2	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Gas Temperature - Data Valid But Above Normal Operating Range - Most Severe Level
2062	Excavator	Cummins	4766	2	4	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Gas Temperature - Data Erratic, Intermittent, or Incorrect
2063	Excavator	Cummins	4766	3	3	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Gas Temperature Sensor Circuit - Voltage above normal, or shorted to high source
2064	Excavator	Cummins	4766	4	3	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Gas Temperature Sensor Circuit - Voltage below normal, or shorted to low source
2060	Excavator	Cummins	4766	15	4	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Gas Temperature - Data Valid But Above Normal Operating Range - Least Severe Level
2061	Excavator	Cummins	4766	16	2	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Gas Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
2065	Excavator	Scania	4782	0	3	Particulate filter is clogged, hazardous
2066	Excavator	Scania	4782	16	3	Particulate filter is clogged, major
2071	Excavator	Perkins	4783	3	3	DPF #1 Average Soot Signal : Voltage Above Normal
2072	Excavator	Perkins	4783	4	3	DPF #1 Average Soot Signal : Voltage Below Normal
2073	Excavator	Perkins	4783	9	3	Diesel Particulate Filter #1 Mean Soot Sognal : Abnormal update Rate
2067	Excavator	Perkins	4783	12	3	DPF #1 Average Soot Signal : Failure
2068	Excavator	Perkins	4783	13	3	Diesel Particulate Filter #1 Mean Soot Sognal : Calibration Required
2069	Excavator	Perkins	4783	19	3	Diesel Particulate Filter #1 Mean Soot Sognal : Data Error
2070	Excavator	Perkins	4783	21	4	DPF #1 Average Soot Signal : Data Drifted Low
2075	Excavator	Cummins	4792	7	3	Aftertreatment SCR Catalyst System - Mechanical system not responding or out of adjustment
2074	Excavator	Cummins	4792	14	2	Aftertreatment 1 SCR Catalyst System - Special Instructions
2076	Excavator	Cummins	4793	31	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Missing - Condition Exists
2077	Excavator	Cummins	4794	31	4	Aftertreatment 1 SCR Catalyst System Missing - Condition Exists
2078	Excavator	Cummins	4795	31	4	Aftertreatment 1 Diesel Particulate Filter Missing - Condition Exists
2079	Excavator	Cummins	4796	31	4	Aftertreatment 1 Diesel Oxidation Catalyst Missing - Condition Exists
2084	Excavator	Cummins	4809	2	4	Aftertreatment Warm Up Diesel Oxidation Catalyst Intake Temperature - Data erratic, intermittent or incorrect
2085	Excavator	Scania	4809	2	4	Upstream exhaust temperature sensor error
2086	Excavator	Cummins	4809	3	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Intake Temperature Sensor Circuit - Voltage above normal
2087	Excavator	Cummins	4809	4	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Intake Temperature Sensor Circuit - Voltage below normal
2088	Excavator	Scania	4809	7	3	Upstream exhaust temperature sensor, stuck
2089	Excavator	Scania	4809	8	4	Upstream exhaust temperature sensor error
2090	Excavator	Scania	4809	9	4	Upstream exhaust temperature sensor, not plausible
2080	Excavator	Cummins	4809	13	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Intake Temperature Sensor Swapped - Out of Calibration
2081	Excavator	Cummins	4809	16	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Intake Temperature - Data Valid But Above Normal Operating Range
2082	Excavator	Scania	4809	16	3	Upstream exhaust temperature sensor, above limit
2083	Excavator	Scania	4809	18	3	Upstream exhaust temperature sensor, below limit
2091	Excavator	Cummins	4810	0	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Outlet Temperature - Data valid but above normal operating Range ?Most Severe level
2095	Excavator	Cummins	4810	2	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Outlet Temperature - Data erratic, intermittent or incorrect
2096	Excavator	Cummins	4810	3	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Outlet Temperature Sensor Circuit - Voltage above normal
2097	Excavator	Cummins	4810	4	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Outlet Temperature Sensor Circuit - Voltage below normal
2098	Excavator	Scania	4810	9	5	Particulate filter, temperature drop not plausible
2092	Excavator	Cummins	4810	15	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Outlet Temperature - Data Valid But Above Normal Operating Range
2093	Excavator	Cummins	4810	16	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Outlet Temperature - Data Valid But Above Normal Operating Range
2094	Excavator	Scania	4810	18	5	Upstream exhaust temperature too low during regeneration
2100	Excavator	Scania	4814	2	3	Coolant water pump actuator, faulty
2101	Excavator	Scania	4814	3	3	Coolant water pump actuator, short circiut on high side
2102	Excavator	Scania	4814	4	3	Coolant water pump actuator, short circiut on low side
2103	Excavator	Scania	4814	7	3	Coolant pump speed sensor, stuck
2104	Excavator	Scania	4814	8	4	Electrically controlled coolant pump
2099	Excavator	Scania	4814	10	3	Coolant pump speed sensor, no signal
2105	Excavator	Perkins	4863	21	3	Special Ignitor Loop 36 - Resistance
2106	Excavator	Cummins	5018	11	4	Aftertreatment 1 Diesel Oxidation Catalyst Face Plugged - Root Cause Not Known
2107	Excavator	Cummins	5019	2	4	Engine Exhaust Gas Recirculation Outlet Pressure - Data erratic, intermittent or incorrect
2108	Excavator	Cummins	5019	3	3	Engine Exhaust Gas Recirculation Outlet Pressure Sensor Circuit - Voltage above normal, or shorted to high source

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
2109	Excavator	Cummins	5019	4	3	Engine Exhaust Gas Recirculation Outlet Pressure Sensor Circuit - Voltage below normal, or shorted to low source
2110	Excavator	Cummins	5024	10	4	Aftertreatment 1 Intake NOx Sensor Heater - Abnormal rate of change
2111	Excavator	Cummins	5031	10	4	Aftertreatment 1 Outlet NOx Sensor Heater - Abnormal rate of change
2112	Excavator	Perkins	5055	17	4	Engine Oil Viscosity : Low - least severe (1)
2113	Excavator	Perkins	5055	18	3	Engine Oil Viscosity : Low - moderate severity (2)
2114	Excavator	Cummins	5097	3	3	Engine Brake Active Lamp - Voltage Above Normal, or Shorted to High Source
2115	Excavator	Cummins	5097	4	3	Engine Brake Active Lamp - Voltage below normal, or shorted to low source
2116	Excavator	Perkins	5099	5	3	Engine Oil Pressure Low Lamp Data - Current Below Normal
2117	Excavator	Perkins	5099	6	3	Engine Oil Pressure Low Lamp Data - Current Above Normal
2118	Excavator	Cummins	5125	3	3	Sensor Supply 7 Circuit - Voltage above normal, or shorted to high source
2119	Excavator	Cummins	5125	4	3	Sensor Supply 7 Circuit - Voltage below normal, or shorted to low source
2120	Excavator	Cummins	5245	31	3	Aftertreatment SCR Operator Inducement Active - Condition Exists
2121	Excavator	Cummins	5246	0	2	Aftertreatment SCR Operator Inducement - Data valid but above normal operational range - Most Severe level
2122	Excavator	Perkins	5246	0	2	Aftertreatment SCR Operator Inducement Severity : High - most severe (3)
2123	Excavator	Perkins	5246	15	3	Aftertreatment SCR Operator Inducement Severity: High - least severe(1)
2124	Excavator	Perkins	5246	16	3	Aftertreatment SCR Operator Inducement Severity: High - moderate severity (2)
2125	Excavator	Scania	5285	1	3	Boost temperature to high, not plausible
2126	Excavator	Cummins	5298	17	3	Aftertreatment 1 Diesel Oxidation Catalyst Conversion Efficiency - Data Valid But Below Normal Operating Range - Moderately Severe Level
2127	Excavator	Perkins	5298	17	3	Aftertreatment 1 Diesel Oxidation Catalyst Conversion Efficiency : Low - least severe (1)
2128	Excavator	Cummins	5298	18	3	Aftertreatment 1 Diesel Oxidation Catalyst Conversion Efficiency - Data Valid But Below Normal Operating Range - Moderately Severe Level
2129	Excavator	Cummins	5319	31	2	Aftertreatment Diesel Particulate Filter Incomplete Regeneration - Condition Exists
2130	Excavator	Perkins	5319	31	2	Aftertreatment 1 Diesel Particulate Filter Incomplete Regeneration
2131	Excavator	Perkins	5324	7	3	Engine Glow Plug 1 : Not Responding Properly
2132	Excavator	Perkins	5325	7	3	Engine Glow Plug 2 : Not Responding Properly
2133	Excavator	Perkins	5326	7	3	Engine Glow Plug 3 : Not Responding Properly
2134	Excavator	Perkins	5327	7	3	Engine Glow Plug 4 : Not Responding Properly
2135	Excavator	Cummins	5357	31	3	Engine Fuel Injection Quantity Error for Multiple Cylinders - Condition Exists
2136	Excavator	Perkins	5357	31	3	Engine Fuel Injection Quantity Error for Multiple Cylinders
2137	Excavator	Cummins	5380	11	3	Engine Fuel Valve 1 - Root Cause Not Known
2138	Excavator	Cummins	5380	13	3	Engine Fuel Valve 1 - Out of Calibration
2139	Excavator	Perkins	5392	31	3	Aftertreatment Diesel Exhaust Fluid Dosing Unit Loss of Prime
2140	Excavator	Cummins	5394	2	4	Aftertreatment Diesel Exhaust Fluid Dosing Valve - Data erratic, intermittent or incorrect
2141	Excavator	Cummins	5394	3	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Valve 1 Circuit - Voltage Above Normal or Shorted to High Source
2142	Excavator	Cummins	5394	5	3	Aftertreatment Diesel Exhaust Fluid Dosing Valve - Current below normal or open circuit
2143	Excavator	Cummins	5394	7	3	Aftertreatment Diesel Exhaust Fluid Dosing Valve - Mechanical system not responding or out of adjustment
2144	Excavator	Cummins	5395	16	3	Engine Idle Fuel Quantity - Data Valid But Above Normal Operating Range - Moderately Severe Level
2145	Excavator	Cummins	5395	18	3	Engine Idle Fuel Quantity - Data Valid But Below Normal Operating Range - Moderately Severe Level
2146	Excavator	Cummins	5396	31	3	Engine Crankcase Ventilation Hose Disconnected - Condition Exists
2147	Excavator	Cummins	5397	31	4	Aftertreatment Diesel Particulate Filter Regeneration too Frequent - Condition Exists
2148	Excavator	Scania	5401	2	3	EGR bypass actuator, faulty
2149	Excavator	Scania	5401	3	3	EGR bypass actuator, short circuit high to +24V
2150	Excavator	Scania	5401	4	3	EGR bypass actuator, short circuit high to ground
2151	Excavator	Scania	5401	5	3	EGR bypass actuator, open load
2159	Excavator	Scania	5419	2	4	Throttle M42, CAN interface fault
2160	Excavator	Scania	5419	3	4	Throttle M42, supply voltage fault
2162	Excavator	Perkins	5419	5	5	Engine Throttle Actuator #1 : Current Below Normal
2163	Excavator	Scania	5419	5	5	Throttle M42, current limited
2164	Excavator	Perkins	5419	6	5	Engine Throttle Actuator #1 : Current Above Normal
2165	Excavator	Scania	5419	6	5	Throttle M42, overload
2166	Excavator	Perkins	5419	7	3	Engine Throttle Actuator #1 : Not Responding Properlyl
2167	Excavator	Scania	5419	9	4	Throttle M42 has detected a CAN timeout
2152	Excavator	Scania	5419	10	4	Throttle M42, control error
2153	Excavator	Scania	5419	11	4	Throttle M42, internal fault
2154	Excavator	Scania	5419	12	4	Throttle M42, software execution error
2155	Excavator	Scania	5419	13	4	Throttle M42, unsuccessful learning of the reference position
2156	Excavator	Scania	5419	14	4	Throttle M42 has detected a CAN timeout
2157	Excavator	Scania	5419	16	4	Throttle M42, too high temperature
2158	Excavator	Scania	5419	19	4	Throttle M42, CAN timeout
2161	Excavator	Scania	5419	31	4	Throttle M42, service mode enabled
2168	Excavator	Scania	5421	3	3	Wastegate actuator, short circuit to +24V
2169	Excavator	Scania	5421	4	3	Wastegate actuator, short circuit
2170	Excavator	Cummins	5421	5	3	Engine Turbocharger 1 Wastegate Actuator 1 - Current Below Normal or Open Circuit
2171	Excavator	Scania	5421	5	3	Wastegate actuator, short circuit to ground
2172	Excavator	Scania	5421	6	3	Wastegate actuator, short circuit
2173	Excavator	Cummins	5484	3	3	Engine Fan Clutch 2 Control Circuit - Voltage above normal, or shorted to high source
2174	Excavator	Cummins	5484	4	3	Engine Fan Clutch 2 Control Circuit - Voltage below normal, or shorted to low source
2175	Excavator	Cummins	5491	3	3	Aftertreatment Diesel Exhaust Fluid Line Heater Relay - Voltage above normal, or shorted to high source
2177	Excavator	Cummins	5491	4	3	Aftertreatment Diesel Exhaust Fluid Line Heater Relay - Voltage below normal, or shorted to low source

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
2178	Excavator	Cummins	5491	7	3	Aftertreatment 1 Diesel Exhaust Fluid Line Heater Relay - Mechanical system not responding or out of adjustment
2176	Excavator	Cummins	5491	31	3	Aftertreatment 1 Diesel Exhaust Fluid Line Heater Relay - Condition Exists
2185	Excavator	Scania	5543	2	3	Exhaust brake actuator, control fault
2187	Excavator	Scania	5543	3	3	Exhaust brake actuator, short circuit to +24V
2188	Excavator	Scania	5543	4	3	Exhaust brake actuator, short circuit to ground
2189	Excavator	Scania	5543	5	3	Exhaust brake actuator, stuck in open position
2190	Excavator	Scania	5543	6	3	Exhaust brake actuator, faulty
2191	Excavator	Scania	5543	7	3	Exhaust brake actuator, stuck in closed position
2192	Excavator	Scania	5543	9	3	The electric motor temperature for the actuator for exhaust brake M4000 has been above 125°C for more than 10 minutes or above 130°C for more than 3 seconds.
2179	Excavator	Scania	5543	12	3	Exhaust brake actuator, control fault
2180	Excavator	Scania	5543	13	3	Exhaust brake actuator, fault with stop position
2181	Excavator	Scania	5543	15	3	Actuator for exhaust brake M4000 reports that the supply voltage is too low.
2182	Excavator	Scania	5543	16	3	Exhaust brake actuator, over temperature
2183	Excavator	Scania	5543	18	3	The electric motor temperature for the actuator for exhaust brake M4000 has been above 125°C for more than 10 minutes or above 130°C for more than 3 seconds.
2184	Excavator	Scania	5543	19	4	Exhaust brake actuator, CAN timeout
2186	Excavator	Scania	5543	21	3	Exhaust brake actuator, error
2193	Excavator	Cummins	5571	0	3	High Pressure Common Rail Fuel Pressure Relief Valve - Data valid but above normal operational range
2194	Excavator	Perkins	5571	0	3	High Pressure Common Rail Fuel Pressure Relief Valve : High - most severe (3)
2200	Excavator	Perkins	5571	2	3	High Pressure Common Rail Fuel Pressure Relief Valve : Erratic, Intermittent, or Incorrect
2201	Excavator	Cummins	5571	3	3	High Pressure Common Rail Fuel Pressure Relief Valve - Voltage Above Normal, or Shorted to High Source
2203	Excavator	Cummins	5571	4	3	High Pressure Common Rail Fuel Pressure Relief Valve - Voltage below normal, or shorted to low source
2204	Excavator	Cummins	5571	7	2	High Pressure Common Rail Fuel Pressure Relief Valve - Mechanical system not responding or out of adjustment
2205	Excavator	Perkins	5571	7	2	High Pressure Common Rail Fuel Pressure Relief Valve : Not Responding Properly
2195	Excavator	Perkins	5571	10	3	High Pressure Common Rail Fuel Pressure Relief Valve : Abnormal Rate of Change
2196	Excavator	Cummins	5571	11	4	High Pressure Common Rail Fuel Pressure Relief Valve - Root Cause Not Known
2197	Excavator	Perkins	5571	14	3	High Pressure Common Rail Fuel Pressure Relief Valve : Special Instruction
2198	Excavator	Cummins	5571	15	3	High Pressure Common Rail Fuel Pressure Relief Valve - Data Valid But Above Normal Operating Range - Least Severe Level
2199	Excavator	Perkins	5571	16	3	High Pressure Common Rail Fuel Pressure Relief Valve : High -moderate severity (2)
2202	Excavator	Cummins	5571	31	4	High Pressure Common Rail Fuel Pressure Relief Valve - Condition Exists
2207	Excavator	Perkins	5576	2	3	Aftertreatment #1 Identification : Erratic, Intermittent, or Incorrect
2208	Excavator	Perkins	5576	8	3	Aftertreatment #1 Identification : Abnormal Frequency, Pulse Width, or Perod
2206	Excavator	Perkins	5576	14	3	Aftertreatment #1 Identification : Special Instruction
2209	Excavator	Cummins	5585	18	3	Engine Injector Metering Rail 1 Cranking Pressure - Data Valid But Below Normal Operating Range - Mo
2210	Excavator	Perkins	5588	14	3	Propretary Network #2 : Special Instruction
2212	Excavator	Cummins	5603	9	5	Cruise Control Disable Command - Abnormal update rate
2211	Excavator	Cummins	5603	31	5	Cruise Control Disable Command - Condition Exists
2213	Excavator	Cummins	5605	31	5	Cruise Control Pause Command - Condition Exists
2214	Excavator	Cummins	5607	7	3	Cruise Control System Command State - Mechanical System Not Responding or Out of Adjustment
2215	Excavator	Cummins	5625	2	3	Engine Exhaust Back Pressure Regulator Position - Data Erratic, Intermittent or Incorrect
2216	Excavator	Cummins	5625	3	3	Engine Exhaust Back Pressure Regulator Position Sensor Circuit - Voltage Above Normal, or Shorted to High Source
2217	Excavator	Perkins	5625	3	3	Engine Exhaust Back Pressure Regulator Position : Voltage Above Normal
2218	Excavator	Cummins	5625	4	3	Engine Exhaust Back Pressure Regulator Position Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
2219	Excavator	Perkins	5625	4	3	Engine Exhaust Back Pressure Regulator Position : Voltage Below Normal
2221	Excavator	Cummins	5626	7	3	Engine Exhaust Back Pressure Regulator - Mechanical System Not Responding or Out of Adjustment
2220	Excavator	Cummins	5626	13	4	Engine Exhaust Back Pressure Regulator - Out of Calibration
2222	Excavator	Perkins	5631	0	3	Engine Throttle Valve 1 Differential Pressure
2223	Excavator	Scania	5706	3	3	Fault in reductant pump control.
2224	Excavator	Scania	5706	4	3	Fault in reductant pump control.
2225	Excavator	Perkins	5706	5	3	Aftertreatment #1 Diesel Exhaust Fluid Pump Heater : Current Below Normal
2226	Excavator	Perkins	5706	6	3	Aftertreatment #1 Diesel Exhaust Fluid Pump Heater : Current Above Normal
2227	Excavator	Scania	5706	6	3	Fault in reductant pump control.
2228	Excavator	Cummins	5741	2	3	Aftertreatment 1 Outlet Soot - Data erratic, intermittent or incorrect
2229	Excavator	Cummins	5741	3	3	Aftertreatment 1 Outlet Soot Sensor - Voltage Above Normal, or Shorted to High Source
2230	Excavator	Cummins	5741	4	3	Aftertreatment 1 Outlet Soot Sensor - Voltage below normal, or shorted to low source
2234	Excavator	Cummins	5742	3	3	Aftertreatment Diesel Particulate Filter Temperature Sensor Module - Voltage Above Normal, or Shorted to high source
2235	Excavator	Cummins	5742	4	3	Aftertreatment Diesel Particulate Filter Temperature Sensor Module - Voltage below normal, or shorted to low source
2236	Excavator	Cummins	5742	9	4	Aftertreatment Diesel Particulate Filter Temperature Sensor Module - Abnormal update rate
2231	Excavator	Cummins	5742	11	4	Aftertreatment Diesel Particulate Filter Temperature Sensor Module - Root Cause Not Known
2232	Excavator	Cummins	5742	12	4	Aftertreatment Diesel Particulate Filter Temperature Sensor Module - Bad intelligent device or component
2233	Excavator	Cummins	5742	16	4	Aftertreatment Diesel Particulate Filter Temperature Sensor Module- Data Valid But Above Normal Operating Range
2240	Excavator	Scania	5743	2	3	Reductant tank temperature sensor, not plausible

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
2241	Excavator	Cummins	5743	3	3	Aftertreatment Selective Catalytic Reduction Temperature Sensor Module - Voltage Above Normal, or Shorted to high source
2242	Excavator	Cummins	5743	4	3	Aftertreatment Selective Catalytic Reduction Temperature Sensor Module - Voltage below normal, or Shorted to low source
2243	Excavator	Scania	5743	4	3	Reductant tank temperature sensor, short circuit
2244	Excavator	Scania	5743	5	3	Reductant tank temperature sensor, open load
2245	Excavator	Cummins	5743	9	4	Aftertreatment Selective Catalytic Reduction Temperature Sensor Module - Abnormal update rate
2237	Excavator	Cummins	5743	11	4	Aftertreatment Selective Catalytic Reduction Temperature Sensor Module - Root Cause Not Known
2238	Excavator	Cummins	5743	12	4	Aftertreatment Selective Catalytic Reduction Temperature Sensor Module - Bad intelligent device or component
2239	Excavator	Cummins	5743	16	4	Aftertreatment Selective Catalytic Reduction Temperature Sensor Module - Data Valid But Above Normal
2248	Excavator	Cummins	5745	3	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Heater - Voltage Above Normal, or Shorted to High
2249	Excavator	Scania	5745	3	3	SCR water valve, short circuit to battery
2250	Excavator	Cummins	5745	4	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Heater - Voltage below normal, or shorted to low source
2251	Excavator	Scania	5745	5	3	SCR water valve, open load
2246	Excavator	Cummins	5745	17	4	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Heater - Data Valid But Below Normal Operating Range
2247	Excavator	Cummins	5745	18	4	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit 1 Heater - Data Valid But Below Normal Operating Range - Moderately Severe Level
2252	Excavator	Cummins	5746	3	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Heater Relay - Voltage Above Normal, or Shorted to high source
2253	Excavator	Cummins	5746	4	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Heater Relay - Voltage below normal, or shorted to low source
2255	Excavator	Cummins	5747	3	3	Aftertreatment 1 Outlet Soot Sensor Heater - Voltage Above Normal, or Shorted to High Source
2256	Excavator	Cummins	5747	4	3	Aftertreatment 1 Outlet Soot Sensor Heater - Voltage below normal, or shorted to low source
2254	Excavator	Cummins	5747	10	3	Aftertreatment 1 Outlet Soot Sensor Heater - Abnormal rate of change
2257	Excavator	Perkins	5758	11	3	Aftertreatment #1 Intake Gas Sensor Power Supply : Other Failure Mode
2258	Excavator	Perkins	5759	11	3	Aftertreatment #1 Outlet Gas Sensor Power Supply : Other Failure Mode
2259	Excavator	Cummins	5793	9	3	Desired Engine Fueling State - Abnormal Update Rate
2263	Excavator	Cummins	5797	3	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Temperature Sensor Module - Voltage Above Normal, or shorted to high source
2264	Excavator	Cummins	5797	4	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Temperature Sensor Module - Voltage below normal, or shorted to low source
2260	Excavator	Cummins	5797	11	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Temperature Sensor Module - Root Cause Not Known
2261	Excavator	Cummins	5797	12	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Temperature Sensor Module - Bad intelligent device
2262	Excavator	Cummins	5797	16	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Temperature Sensor Module - Data Valid But Above Normal Operating Range ? Moderately Severe Level
2266	Excavator	Cummins	5798	2	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Heater Temperature - Data erratic, intermittent or incorrect
2265	Excavator	Cummins	5798	10	4	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Heater Temperature - Abnormal Rate of Change
2267	Excavator	Perkins	5826	15	3	Emission Control System Operator Inducement Severity: High -least severe (1)
2268	Excavator	Perkins	5826	16	2	Emission Control System Operator Inducement Severity: High -moderate severity (2)
2269	Excavator	Cummins	5835	3	3	Aftertreatment 1 Outlet Soot Sensor - Voltage Above Normal, or Shorted to High Source
2270	Excavator	Cummins	5835	4	3	Aftertreatment 1 Outlet Soot Sensor - Voltage below normal, or shorted to low source
2271	Excavator	Cummins	5838	31	3	EGR Valve Malfunction - Condition Exists
2272	Excavator	Cummins	5839	31	3	Diesel Exhaust Fluid Consumption Malfunction - Condition Exists
2273	Excavator	Cummins	5840	31	3	Diesel Exhaust Fluid Dosing Malfunction - Condition Exists
2274	Excavator	Scania	5841	1	4	SCR main unit, reductant quality too low
2275	Excavator	Cummins	5841	31	3	Diesel Exhaust Fluid Quality Malfunction - Condition Exists
2276	Excavator	Cummins	5842	14	3	SCR Monitoring System Malfunction - Special Instructions
2277	Excavator	Cummins	5842	31	3	SCR Monitoring System Malfunction - Condition Exists
2280	Excavator	Cummins	5848	4	3	Aftertreatment 1 SCR Intermediate NH3 Sensor - Voltage Below Normal or Shorted to Low Source
2278	Excavator	Cummins	5848	12	3	Aftertreatment 1 SCR Intermediate NH3 Sensor - Bad Intelligent Device or Component
2279	Excavator	Cummins	5848	13	3	Aftertreatment 1 SCR Intermediate NH3 Sensor - Out of Calibration
2281	Excavator	Cummins	5851	16	3	Aftertreatment 1 SCR Intermediate NH3 Gas Sensor Power Supply - Data Valid But Above Normal Operating Range - Moderately Severe Level
2282	Excavator	Cummins	5851	18	3	Aftertreatment 1 SCR Intermediate NH3 Gas Sensor Power Supply - Data Valid But Below Normal Operating Range - Moderately Severe Level
2283	Excavator	Perkins	5965	5	3	Aftertreatment #1 DEF Control Module Relay Control : Current Below Normal
2284	Excavator	Perkins	5965	6	3	Aftertreatment #1 DEF Control Module Relay Control : Current Above Normal
2285	Excavator	Perkins	5966	5	3	Aftertreatment #1 DEF Control Module Power Supply : Current Below Normal
2286	Excavator	Perkins	5966	6	3	Aftertreatment #1 DEF Control Module Power Supply : Current Above Normal
2287	Excavator	Cummins	6301	3	3	Water in Fuel Indicator 2 Sensor Circuit - Voltage above normal, or shorted to high source
2288	Excavator	Cummins	6301	4	3	Water in Fuel Indicator 2 Sensor Circuit - Voltage below normal, or shorted to low source
2289	Excavator	Perkins	6309	5	3	Aftertreatment 1 Diesel Exhaust Fluid Control Module Power Supply 2 : Current Below Normal
2290	Excavator	Perkins	6309	6	3	Aftertreatment 1 Diesel Exhaust Fluid Control Module Power Supply 2 : Current Above Normal

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
2292	Excavator	Cummins	6326	3	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Valve 1 Heater - Voltage Above Normal, or Shorted to High Source
2293	Excavator	Cummins	6326	4	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Valve 1 Heater - Voltage Below Normal, or Shorted to Low Source
2291	Excavator	Cummins	6326	18	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Valve 1 Heater - Data Valid But Below Normal Operating Range - Moderately Severe Level
2294	Excavator	Cummins	6385	3	3	Engine Starter Motor Relay Control Circuit - Voltage Above Normal or Shorted to High Source
2295	Excavator	Cummins	6385	4	3	Engine Starter Motor Relay Control Circuit - Voltage Below Normal or Shorted to Low Source
2296	Excavator	Cummins	6653	16	3	Cold Start Injector Metering Rail 1 Pressure - Data Valid But Above Normal Operating Range - Moderate Severe Level
2297	Excavator	Cummins	6655	3	3	Maintain ECU Power Lamp - Voltage Above Normal, or Shorted to High Source
2298	Excavator	Cummins	6655	4	3	Maintain ECU Power Lamp - Voltage Below Normal, or Shorted to Low Source
2301	Excavator	Cummins	6713	9	3	VGT Actuator Driver Circuit - Abnormal update rate
2299	Excavator	Cummins	6713	13	2	Variable Geometry Turbocharger Actuator Software - Out of Calibration
2300	Excavator	Cummins	6713	31	2	Variable Geometry Turbocharger Actuator Software - Condition Exists
2302	Excavator	Cummins	6799	2	5	Fan Blade Pitch - Mechanical system not responding or out of adjustment
2303	Excavator	Cummins	6799	3	3	Fan Blade Pitch Position Sensor Circuit - Voltage Above Normal, or Shorted to High Source
2304	Excavator	Cummins	6799	4	3	Fan Blade Pitch Position Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
2305	Excavator	Cummins	6799	7	3	Fan Blade Pitch - Mechanical system not responding or out of adjustment
2306	Excavator	Cummins	6802	31	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing System Frozen - Condition Exists
2308	Excavator	Cummins	6881	9	4	SCR Operator Inducement Override Switch - Abnormal Update Rate
2307	Excavator	Cummins	6881	13	4	SCR Operator Inducement Override Switch - Out of Calibration
2312	Excavator	Cummins	6882	3	3	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Voltage Above Normal or Shorted to High Source
2313	Excavator	Cummins	6882	4	3	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Voltage Below Normal or Shorted to Low Source
2314	Excavator	Cummins	6882	9	4	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Abnormal Update Rate
2309	Excavator	Cummins	6882	11	4	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Root Cause Not Known
2310	Excavator	Cummins	6882	12	4	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Bad Intelligent Device or Component
2311	Excavator	Cummins	6882	16	3	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Data Valid But Above Normal Operating Range - Moderately Severe Level
2315	Excavator	Cummins	6918	31	4	SCR System Cleaning Inhibited Due to Inhibit Switch - Condition Exists
2316	Excavator	Cummins	6928	31	3	SCR System Cleaning Inhibited Due to System Timeout - Condition Exists
2317	Excavator	Cummins	7026	11	3	Engine Fuel Valve 1 - Root Cause Not Known
2318	Excavator	Cummins	7026	13	3	Engine Fuel Valve 1 - Out of Calibration
2319	Excavator	Cummins	7321	3	3	Aftertreatment 1 Outlet Soot Sensor Heater - Voltage Above Normal, or Shorted to High Source
2320	Excavator	Cummins	7323	4	3	Aftertreatment 1 Outlet Soot Sensor Heater - Voltage below normal, or shorted to low source
2321	Excavator	Perkins	7343	31	3	SCR Operator Inducement Override Renewal Required
2322	Excavator	Perkins	7440	31	3	Aftertreatment Active Regeneration Inhibited Due to Low Exhaust Pressure
2323	Excavator	Perkins	7441	3	3	Aftertreatment Ambient Air Temperature : Voltage Above Normal
2324	Excavator	Perkins	7441	4	3	Aftertreatment Ambient Air Temperature : Voltage Below Normal
2325	Excavator	Cummins	7576	12	3	Glow Plug Module - Bad intelligent device or component
2327	Excavator	Cummins	7745	9	1	Engine Start Request - Abnormal Update Rate
2326	Excavator	Cummins	7745	13	1	Engine Start Request - Out of Calibration
2328	Excavator	Cummins	7746	13	1	Engine Start Consent - Out of Calibration
2329	Excavator	Cummins	7848	14	4	Aftertreatment 1 SCR System Conditions Not Met for Active Cleaning - Special Instructions
2330	Excavator	Cummins	520199	3	3	Cruise Control (Resistive) Signal Circuit - Voltage above normal, or shorted to high source
2331	Excavator	Cummins	520199	4	3	Cruise Control (Resistive) Signal Circuit - Voltage below normal, or shorted to low source
2332	Excavator	Cummins	520320	7	3	Crankcase Depression Valve - Mechanical system not responding or out of adjustment
2333	Excavator	Cummins	520332	3	3	Cruise Control (Resistive) #2 Signal Circuit - Voltage above normal, or shorted to high source
2334	Excavator	Cummins	520332	4	3	Cruise Control (Resistive) #2 Signal Circuit - Voltage below normal, or shorted to low source
2335	Excavator	Cummins	520435	12	3	Glow Plug Module - Bad intelligent device or component
2336	Excavator	Cummins	520595	2	4	Closed Crankcase Ventilation System Pressure - Data erratic, intermittent or incorrect
2337	Excavator	Cummins	520595	3	3	Closed Crankcase Ventilation System Pressure Sensor - Voltage Above Normal, or Shorted to High Source
2338	Excavator	Cummins	520595	4	3	Closed Crankcase Ventilation System Pressure Sensor - Voltage below normal, or shorted to low source
2339	Excavator	Cummins	520668	31	3	Aftertreatment 1 Outlet NOx Sensor Closed Loop Operation- Condition Exists
2340	Excavator	Cummins	520716	3	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Valve 1 Heater - Voltage Above Normal, or Shorted to High Source
2341	Excavator	Cummins	520716	4	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Valve 1 Heater - Voltage Below Normal, or Shorted to Low Source
2342	Excavator	Cummins	520791	2	4	Engine Boost Curve Selection - Data erratic, intermittent or incorrect
2343	Excavator	Cummins	520808	31	4	Engine Emergency Shutdown Switch Actived - Condition Exists
2344	Excavator	Cummins	520809	31	4	Excessive Time Since Last Engine Air Shutoff Maintenance Test - Condition Exists
2345	Excavator	Cummins	520953	3	3	Aftertreatment Diesel Exhaust Fluid Dosing Unit Relay Feedback - Voltage Above Normal or Shorted to High Source
2346	Excavator	Cummins	520953	4	3	Aftertreatment Diesel Exhaust Fluid Dosing Unit Relay Feedback- Voltage Below Normal or Shorted to Low Source.
2348	Excavator	Cummins	520968	9	4	Machine Constrained Operation- Abnormal Update Rate. No Communication or an invalid data transfer rate has been detected on the J1939 data link between the ECM and the machine electronic control unit.
2347	Excavator	Cummins	520968	19	4	Machine Constrained Operation- Received Network Data in Error. The received J1939 datalink message was not valid.

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
2349	Excavator	Cummins	521002	31	1	Engine Cranks Slowly - Condition Exists
2350	Excavator	Cummins	521032	14	3	Aftertreatment System Assembly - Special Instructions
2351	Excavator	Yanmar	522183	1	3	EGR high temperature thermistor error
2352	Excavator	Yanmar	522184	1	3	EGR low temperature thermistor error
2353	Excavator	Yanmar	522243	5	4	Starting aid relay disconnection
2354	Excavator	Yanmar	522243	6	4	Starting aid relay GND short circuit
2355	Excavator	Yanmar	522323	0	3	Air cleaner clogged alarm
2356	Excavator	Yanmar	522329	0	3	Water separator alarm
2357	Excavator	Yanmar	522400	2	2	Crankshaft signal error
2358	Excavator	Yanmar	522400	5	2	No signal from crankshaft
2359	Excavator	Yanmar	522401	2	4	Camshaft signal error
2360	Excavator	Yanmar	522401	5	4	No signal from camshft
2361	Excavator	Yanmar	522401	7	4	Angle offset error
2362	Excavator	Yanmar	522571	3	2	SCV (MPROP) L side VB short circuit
2363	Excavator	Yanmar	522571	6	2	SCV (MPROP) L side GND short circuit
2365	Excavator	Yanmar	522572	6	2	SCV (MPROP) drive current (high level)
2364	Excavator	Yanmar	522572	11	2	SCV (MPROP) pump overload error
2366	Excavator	Yanmar	522573	0	4	Excessive PM accumulation (method C)
2367	Excavator	Yanmar	522574	0	4	Excessive PM accumulation (method P)
2368	Excavator	Yanmar	522575	7	4	Regeneration failure (stationary regeneration failure)
2369	Excavator	Yanmar	522576	12	3	EEPROM memory reading error
2370	Excavator	Yanmar	522577	11	4	Regeneration failure (stationary regeneration not performed)
2371	Excavator	Yanmar	522578	12	3	EEPROM memory writing error
2372	Excavator	Yanmar	522579	12	3	Short circuit in EGR motor coils
2373	Excavator	Yanmar	522580	12	3	EGR position sensor error
2374	Excavator	Yanmar	522581	7	2	EGR valve sticking error
2375	Excavator	Yanmar	522582	7	2	EGR initialization error
2376	Excavator	Yanmar	522585	12	1	CY 146 SPI communication fault
2377	Excavator	Yanmar	522588	12	1	Excessive voltage of supply1
2378	Excavator	Yanmar	522589	12	1	Insufficient voltage of supply 1
2379	Excavator	Yanmar	522590	12	4	Sensor supply voltage error 1
2380	Excavator	Yanmar	522591	12	4	Sensor supply voltage error 2
2381	Excavator	Yanmar	522592	12	4	Sensor supply voltage error 3
2382	Excavator	Yanmar	522596	9	4	TSC1 (SA1) reception timeout
2383	Excavator	Yanmar	522597	9	4	TSC1 (SA2) reception timeout
2384	Excavator	Yanmar	522599	9	4	Y_ECR1 reception timeout
2385	Excavator	Yanmar	522600	9	4	Y_EC reception timeout
2386	Excavator	Yanmar	522601	9	4	Y_RSS reception timeout
2387	Excavator	Yanmar	522609	9	4	Y_ETCP1 reception time out
2388	Excavator	Yanmar	522610	9	3	CAN 1 (for EGR) : Reception time out
2389	Excavator	Yanmar	522611	9	3	CAN 1 (for exhaust throttle) : Reception time out
2390	Excavator	Yanmar	522617	12	3	EGR target value out of range
2391	Excavator	Yanmar	522618	9	4	EBC1 reception timeout
2392	Excavator	Yanmar	522619	9	4	Y_DPFIF reception timeout
2393	Excavator	Yanmar	522623	7	4	Dual accelerator sensor error (open position)
2394	Excavator	Yanmar	522624	7	4	Dual accelerator sensor error (closed position)
2395	Excavator	Yanmar	522730	12	2	Immobilizer error (CAN communication)
2396	Excavator	Yanmar	522744	4	2	Actuator drive circuit 1 short to ground
2397	Excavator	Yanmar	522746	12	3	Exhaust throttle (voltage fault)
2398	Excavator	Yanmar	522747	12	1	Exhaust throttle (motor fault)
2399	Excavator	Yanmar	522748	12	1	Exhaust throttle (sensor system fault)
2400	Excavator	Yanmar	522749	12	3	Exhaust throttle (MPU fault)
2401	Excavator	Yanmar	522750	12	4	Exhaust throttle (PCB fault)
2402	Excavator	Yanmar	522751	19	3	Exhaust throttle (CAN fault)
2403	Excavator	Yanmar	522994	4	2	Actuator drive circuit 2 short to ground
2404	Excavator	Yanmar	523249	5	1	Nosignal on both crankshaft and camshaft speed sensor
2405	Excavator	Yanmar	523460	7	1	Rail pressure fault (Operation time error during RPS limp home)
2406	Excavator	Yanmar	523462	13	1	Injector (No. 1 cylinder) correction value error
2407	Excavator	Yanmar	523463	13	1	Injector (No. 2 cylinder) correction value error
2408	Excavator	Yanmar	523468	9	1	Rail pressure fault (Controlled rail pressure error after PLV valve opening)
2409	Excavator	Yanmar	523469	0	2	Rail pressure fault (The times of PLV valve opening error)
2410	Excavator	Yanmar	523470	0	2	Rail pressure fault (The time of PLV valve opening error)
2411	Excavator	Yanmar	523471	6	2	Actuator drive circuit 3 short to ground
2412	Excavator	Yanmar	523473	12	1	AD converter fault 1
2413	Excavator	Yanmar	523474	12	1	AD converter fault 2
2414	Excavator	Yanmar	523475	12	1	External monitoring IC and CPU fault 1
2415	Excavator	Yanmar	523476	12	1	External monitoring IC and CPU fault 2
2416	Excavator	Yanmar	523477	12	1	ROM fault
2417	Excavator	Yanmar	523478	12	1	Shutoff path fault 1
2418	Excavator	Yanmar	523479	12	3	Shutoff path fault 2
2419	Excavator	Yanmar	523480	12	1	Shutoff path fault 3
2420	Excavator	Yanmar	523481	12	1	Shutoff path fault 4
2421	Excavator	Yanmar	523482	12	1	Shutoff path fault 5
2422	Excavator	Yanmar	523483	12	1	Shutoff path fault 6
2423	Excavator	Yanmar	523484	12	1	Shutoff path fault 7
2424	Excavator	Yanmar	523485	12	1	Shutoff path fault 8
2425	Excavator	Yanmar	523486	12	1	Shutoff path fault 9
2426	Excavator	Yanmar	523487	12	1	Shutoff path fault 10

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
2427	Excavator	Yanmar	523488	0	1	Recognition error of engine speed
2428	Excavator	Yanmar	523489	0	2	Rail pressure fault (The actual rail pressure is too high during PRV limp home)
2429	Excavator	Yanmar	523491	0	2	Rail pressure fault (Injector B/F temperature error during PLV4 limp home)
2430	Excavator	Cummins	524286	31	3	Reserved for temporary use - Condition Exists
2431	Excavator	Yanmar	623464	13	1	Injector (No. 3 cylinder) correction value error
2432	Excavator	Yanmar	623465	13	1	Injector (No. 4 cylinder) correction value error
2433	Fork Lift	Cummins	3	*	4	High voltage detected at the oil pressure circuit.
2434	Fork Lift	*	11	*	4	LOGICAL ERROR AT GEAR RANGE SIGNAL
2435	Fork Lift	*	12	*	4	LOGICAL ERROR AT DIRECTION SELECT SIGNAL
2436	Fork Lift	*	13	*	4	LOGICAL ERROR AT ENGINE DERATING DEVICE
2437	Fork Lift	*	14	*	4	LOGICAL ERROR AT PARKBRAKE STATUS
2438	Fork Lift	*	15	*	4	LOGICAL ERROR AT DIRECTION SELECT SIGNAL 2. SHIFT LEVER
2439	Fork Lift	*	16	*	4	LOGICAL ERROR AT AXLE CONNECTION
2440	Fork Lift	*	17	*	4	S.C. TO GROUND AT CUSTOMER SPECIFIC FUNCTION NO. 1
2441	Fork Lift	*	18	*	4	S.C. TO BATTERY VOLTAGE AT CUSTOMER SPECIFIC FUNCTION NO. 1
2442	Fork Lift	*	19	*	4	O.C. AT CUSTOMER SPECIFIC FUNCTION NO. 1
2443	Fork Lift	*	21	*	4	S.C. TO BATTERY VOLTAGE AT CLUTCH CUTOFF INPUT
2445	Fork Lift	*	22	3	5	Crankcase Pressure : Extended Crankcase Blow - by Pressure Circuit Voltage Above Normal, or Shorted to High Source
2446	Fork Lift	Cummins	22	3	5	Crankcase Pressure : Extended Crankcase Blow - by Pressure Circuit Voltage Above Normal, or Shorted to High Source
2447	Fork Lift	*	22	4	5	Crankcase Pressure : Extended Crankcase Blow - by Pressure Circuit Voltage Below Normal, or Shorted to Low Source
2448	Fork Lift	Cummins	22	4	5	Crankcase Pressure : Extended Crankcase Blow - by Pressure Circuit Voltage Below Normal, or Shorted to Low Source
2444	Fork Lift	*	22	*	4	S.C. TO GROUND OR O.C. AT CLUTCH CUTOFF INPUT
2449	Fork Lift	*	23	*	4	S.C. TO BATTERY VOLTAGE AT LOAD SENSOR INPUT
2450	Fork Lift	*	24	*	4	S.C. TO GROUND OR O.C. AT LOAD SENSOR INPUT
2451	Fork Lift	*	25	*	4	S.C. TO BATTERY VOLTAGE OR O.C. AT TRANSMISSION SUMP TEMPERATURE SENSOR INPUT
2452	Fork Lift	*	26	*	4	S.C. TO GROUND AT TRANSMISSION SUMP TEMPERATURE SENSOR INPUT
2455	Fork Lift	Cummins	27	2	3	EGR Valve Position - Data erratic, intermittent, or incorrect. Intermittent EGR position information is being received by the electronic control module (ECM).
2456	Fork Lift	Cummins	27	3	3	Exhaust Gas Recirculation (EGR) Valve Position Sensor Circuit - Voltage Above Normal or Shorted to High Source. High signal voltage detected at the EGR valve position sensor circuit.
2457	Fork Lift	Cummins	27	4	3	Exhaust Gas Recirculation (EGR) valve position circuit - voltage below normal or shorted to low source. Low signal voltage detected at the EGR valve position sensor circuit.
2454	Fork Lift	Cummins	27	13	3	EGR valve failed automatic calibration procedure - out of calibration.
2453	Fork Lift	*	27	*	4	S.C. TO BATTERY VOLTAGE OR O.C. AT RETARDER / TORQUECONVERTER TEMPERATURE SENSOR INPUT
2458	Fork Lift	*	28	*	4	S.C. TO GROUND AT RETARDER / TORQUECONVERTER TEMPERATURE SENSOR INPUT
2460	Fork Lift	Cummins	29	3	2	High voltage detected at the remote throttle position signal circuit.
2461	Fork Lift	Cummins	29	4	2	Low voltage detected at the remote throttle position signal circuit.
2459	Fork Lift	*	29	*	4	S.C. TO BATTERY VOLTAGE OR O.C. AT PARKING BRAKE SENSOR INPUT
2462	Fork Lift	*	31	*	4	S.C. TO BATTERY VOLTAGE OR O.C. AT ENGINE SPEED INPUT
2463	Fork Lift	*	32	*	4	S.C. TO GROUND AT ENGINE SPEED INPUT
2464	Fork Lift	*	33	*	4	LOGICAL ERROR AT ENGINE SPEED INPUT
2465	Fork Lift	*	34	*	4	S.C. TO BATTERY VOLTAGE OR O.C. AT TURBINE SPEED INPUT
2466	Fork Lift	*	35	*	4	S.C. TO GROUND AT TURBINE SPEED INPUT
2467	Fork Lift	*	36	*	4	LOGICAL ERROR AT TURBINE SPEED INPUT
2468	Fork Lift	*	37	*	4	S.C. TO BATTERY VOLTAGE OR O.C. AT INTERNAL SPEED INPUT
2469	Fork Lift	*	38	*	4	S.C. TO GROUND AT INTERNAL SPEED INPUT
2470	Fork Lift	*	39	*	4	LOGICAL ERROR AT INTERNAL SPEED INPUT
2471	Fork Lift	*	40	*	4	GEAR RANGE RESTRICTION SIGNAL
2472	Fork Lift	*	41	*	4	TCU RECEIVES MESSAGES 'GEAR RANGE SELECT(ZF_3_IDENT)' AND 'FRONT WHEEL DRIVE STATUS'(V_IDENT_FWD) ALTHOUGH CONFIGURATION STATES THAT FWD CONTROLLER IS NOT INSTALLED
2473	Fork Lift	Scania	46	1	4	Low air pressure signal from APS
2475	Fork Lift	Cummins	46	2	4	Voltage at wet tank pressure signal indicates wet tank pressure is too high or too low.
2476	Fork Lift	Cummins	46	3	4	High voltage detected at air compressor wet tank pressure signal circuit.
2477	Fork Lift	Cummins	46	4	4	Low voltage detected at air compressor wet tank pressure sensor.
2474	Fork Lift	Scania	46	19	4	CAN message timeout from APS
2478	Fork Lift	*	50	*	4	FMR1 TIMEOUT
2480	Fork Lift	Scania	51	0	4	The position of the valve used to regulate the supply of a fluid, usually air or fuel/air mixture, to an engine.
2481	Fork Lift	Scania	51	1	4	The position of the valve used to regulate the supply of a fluid, usually air or fuel/air mixture, to an engine.
2482	Fork Lift	Scania	51	2	4	The position of the valve used to regulate the supply of a fluid, usually air or fuel/air mixture, to an engine.
2483	Fork Lift	Scania	51	3	4	The position of the valve used to regulate the supply of a fluid, usually air or fuel/air mixture, to an engine.
2484	Fork Lift	Scania	51	4	4	The position of the valve used to regulate the supply of a fluid, usually air or fuel/air mixture, to an engine.
2485	Fork Lift	Scania	51	5	4	The position of the valve used to regulate the supply of a fluid, usually air or fuel/air mixture, to an engine.
2486	Fork Lift	Scania	51	7	4	Throttle Position Sensor, not plausible
2487	Fork Lift	Scania	51	8	4	Endpoints of throttle position sensor are out of range
2488	Fork Lift	Scania	51	9	4	Throttle Position Sensor, correlation error
2479	Fork Lift	*	51	*	4	FMR2 TIMEOUT

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
2490	Fork Lift	*	52	0	5	Coolant Temperature : Coolant Temperature 2 - Data Valid but Above Normal Operational Range - Most Severe Level
2491	Fork Lift	Cummins	52	0	5	Coolant Temperature : Coolant Temperature 2 - Data Valid but Above Normal Operational Range - Most Severe Level
2494	Fork Lift	*	52	3	5	Coolant Temperature : Coolant Temperature 2 Sensor Circuit - Voltage Above Normal, or Shorted to High Source
2495	Fork Lift	Cummins	52	3	5	Coolant Temperature : Coolant Temperature 2 Sensor Circuit - Voltage Above Normal, or Shorted to High Source
2496	Fork Lift	*	52	4	5	Coolant Temperature : Coolant Temperature 2 Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
2497	Fork Lift	Cummins	52	4	5	Coolant Temperature : Coolant Temperature 2 Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
2492	Fork Lift	*	52	16	5	Coolant Temperature : Coolant Temperature 2 - Data Valid but Above Normal Operational Range - Moderately Severe Level
2493	Fork Lift	Cummins	52	16	5	Coolant Temperature : Coolant Temperature 2 - Data Valid but Above Normal Operational Range - Moderately Severe Level
2489	Fork Lift	*	52	*	4	EAMODUL1 TIMEOUT
2498	Fork Lift	*	53	*	4	ABS TIMEOUT
2499	Fork Lift	*	54	*	4	MDU1 TIMEOUT
2500	Fork Lift	*	55	*	4	FRONT WHEEL DRIVE STATUS TIMEOUT
2501	Fork Lift	*	56	*	4	ENGINE CONF TIMEOUT
2502	Fork Lift	*	57	*	4	EEC1 TIMEOUT
2503	Fork Lift	*	58	*	4	EEC3 TIMEOUT
2504	Fork Lift	*	59	*	4	TEST MODE SIGNAL
2505	Fork Lift	*	60	*	4	ADDITIONAL BRAKE STATUS SIGNAL
2506	Fork Lift	*	61	*	4	AEB REQUEST SIGNAL
2507	Fork Lift	*	62	*	4	PTO TORQUE SIGNAL
2508	Fork Lift	*	63	*	4	DRIVING MODE SIGNAL
2509	Fork Lift	*	64	*	4	STARTING GEAR SIGNAL
2510	Fork Lift	*	65	*	4	ENGINGE TORQUE SIGNAL
2511	Fork Lift	*	69	*	4	REFERENCE ENGINE TORQUE SIGNAL
2512	Fork Lift	*	71	*	3	S.C. TO BATTERY VOLTAGE AT CLUTCH K1
2513	Fork Lift	*	72	*	3	S.C. TO GROUND AT CLUTCH K1
2515	Fork Lift	Cummins	73	11	4	Error detected in lift pump circuit at pins 11 and 22 of the engine harness.
2514	Fork Lift	*	73	*	3	O.C. AT CLUTCH K1
2516	Fork Lift	*	74	*	3	S.C. TO BATTERY VOLTAGE AT CLUTCH K2
2517	Fork Lift	*	75	*	3	S.C. TO GROUND AT CLUTCH K2
2518	Fork Lift	*	76	*	3	O.C. AT CLUTCH K2
2519	Fork Lift	*	77	*	3	S.C. TO BATTERY VOLTAGE AT CLUTCH K3
2520	Fork Lift	*	78	*	3	S.C. TO GROUND AT CLUTCH K3
2521	Fork Lift	*	79	*	3	O.C. AT CLUTCH K3
2523	Fork Lift	Cummins	81	16	3	Engine Diesel Particulate Filter Intake Pressure - Data Valid But Above Normal Operating Range - Moderately Severe Level
2522	Fork Lift	*	81	*	3	S.C. TO BATTERY VOLTAGE AT CLUTCH K4
2524	Fork Lift	*	82	*	3	S.C. TO GROUND AT CLUTCH K4
2525	Fork Lift	*	83	*	3	O.C. AT CLUTCH K4
2531	Fork Lift	Cummins	84	2	3	Vehicle Speed Sensor Circuit - Data Erratic, Intermittent, or Incorrect
2532	Fork Lift	*	84	2	4	Wheel-based Vehicle Speed : Vehicle Speed Sensor Circuit - Data Erratic, Intermittent, or Incorrect
2533	Fork Lift	Cummins	84	9	3	Wheel-Based Vehicle Speed - Abnormal update rate
2527	Fork Lift	Cummins	84	10	3	Wheel-based Vehicle Speed : Vehicle Speed Sensor Circuit tampering has been detected - Abnormal Rate of Change
2528	Fork Lift	*	84	10	4	Wheel-based Vehicle Speed : Vehicle Speed Sensor Circuit tampering has been detected - Abnormal Rate of Change
2529	Fork Lift	Cummins	84	18	3	Wheel-Based Vehicle Speed Data Valid but Below Normal Operational Range Moderately Severe Level. The ECM lost the vehicle speed signal.
2530	Fork Lift	Cummins	84	19	3	Wheel-Based Vehicle Speed - Received Network Data In Error
2526	Fork Lift	*	84	*	3	S.C. TO BATTERY VOLTAGE AT CLUTCH KV
2534	Fork Lift	*	85	*	3	S.C. TO GROUND AT CLUTCH KV
2535	Fork Lift	*	86	*	3	O.C. AT CLUTCH KV
2536	Fork Lift	*	87	*	3	S.C. TO BATTERY VOLTAGE AT CLUTCH KR
2537	Fork Lift	*	88	*	3	S.C. TO GROUND AT CLUTCH KR
2538	Fork Lift	*	89	*	3	O.C. AT CLUTCH KR
2540	Fork Lift	*	91	0	3	Accelerator Pedal Position : Accelerator Pedal or Lever Position Sensor Circuit - Abnormal Frequency, Pulse Width, or Period
2541	Fork Lift	Cummins	91	1	2	Accelerator Pedal or Lever Position 1 Sensor Circuit Frequency - Data valid but below normal operating Range
2542	Fork Lift	*	91	1	3	Accelerator Pedal Position : Accelerator Pedal or Lever Position Sensor Circuit - Abnormal Frequency, Pulse Width, or Period
2548	Fork Lift	Cummins	91	2	3	Accelerator Pedal Idle Validation Circuit - data incorrect
2549	Fork Lift	Scania	91	2	4	Auxiliary accelerator pedal is used due to other fault
2550	Fork Lift	*	91	2	5	Accelerator Pedal Position : Accelerator Pedal or Lever Position Sensor 1 and 2 - Data Erratic, Intermittent, or Incorrect
2551	Fork Lift	Cummins	91	3	2	Accelerator Pedal or Lever Position Sensor 1 Circuit - Voltage above normal, or shorted to high source
2552	Fork Lift	*	91	3	5	Accelerator Pedal Position : Accelerator Pedal or Lever Position Sensor Circuit Voltage Above Normal, or Shorted to High Source
2553	Fork Lift	Cummins	91	4	3	FC 131: High voltage detected at accelerator position signal pin 30 of the OEM harness. FC 132: Low voltage detected at accelerator position signal pin 30 of the OEM harness.

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
2554	Fork Lift	*	91	4	5	Accelerator Pedal Position : Accelerator Pedal or Lever Position Sensor Circuit Voltage Below Normal, or Shorted to Low Source
2555	Fork Lift	Cummins	91	8	2	Accelerator Pedal Position Sensor Circuit - high frequency
2556	Fork Lift	Cummins	91	9	2	SAE J1939 Multiplexed Accelerator Pedal or Lever Sensor System - Abnormal update rate
2557	Fork Lift	Scania	91	9	4	Accelerator pedal faulty or error via can
2543	Fork Lift	Scania	91	10	2	Accelerator pedal not plausible, faulty
2544	Fork Lift	Cummins	91	13	2	Accelerator Pedal Idle Validation Circuit - out of calibration
2545	Fork Lift	Cummins	91	19	2	SAE J1939 Multiplexing Accelerator Pedal Sensor System Error
2546	Fork Lift	Scania	91	19	4	Accelerator pedal value out of range via CAN
2547	Fork Lift	*	91	19	5	Accelerator Pedal Position : SAE J1939 Multiplexing Accelerator Pedal or Lever Sensor System Error - Received Network Data In Error
2539	Fork Lift	*	91	*	4	S.C. TO GROUND AT RELAY REVERSE WARNING ALARM
2558	Fork Lift	*	92	*	4	S.C. TO BATTERY VOLTAGE AT RELAY REVERSE WARNING ALARM
2560	Fork Lift	Cummins	93	2	4	OEM Alternate torque validation switch - data incorrect
2561	Fork Lift	*	93	2	5	Switch - Data : Auxiliary Alternate Torque Validation Switch - Data Erratic, Intermittent, or Incorrect
2559	Fork Lift	*	93	*	4	O.C. AT RELAY REVERSE WARNING ALARM
2563	Fork Lift	Cummins	94	0	3	Fuel pressure signal indicates that fuel pressure has exceeded the maximum limit for the given engine rating.
2564	Fork Lift	Scania	94	0	4	Gage pressure of fuel in system as delivered from supply pump to the injection pump.
2565	Fork Lift	*	94	1	5	Fuel Delivery Pressure : Fuel Pump Delivery Pressure - Data Valid but Above Normal Operational Range - Moderately Severe Level
2566	Fork Lift	Cummins	94	1	5	Fuel Delivery Pressure : Fuel Pump Delivery Pressure - Data Valid but Above Normal Operational Range - Moderately Severe Level
2575	Fork Lift	Cummins	94	2	4	Indicates that the sensor is significantly offset or biased with respect to actual pressure at ambient conditions.
2576	Fork Lift	*	94	2	5	Fuel Delivery Pressure : Fuel Pressure Sensor Circuit - Data Erratic, Intermittent, or Incorrect
2577	Fork Lift	*	94	3	5	Fuel Delivery Pressure : Fuel Delivery Pressure Sensor Circuit - Voltage Above Normal, or Shorted to High Source
2578	Fork Lift	Cummins	94	3	5	Fuel Delivery Pressure : Fuel Delivery Pressure Sensor Circuit - Voltage Above Normal, or Shorted to High Source
2579	Fork Lift	*	94	4	5	Fuel Delivery Pressure : Fuel Delivery Pressure Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
2580	Fork Lift	Cummins	94	4	5	Fuel Delivery Pressure : Fuel Delivery Pressure Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
2567	Fork Lift	Cummins	94	10	4	Fuel pressure sensor stuck in range while engine is operating or fuel pressure sensor reading erratic in range.
2568	Fork Lift	*	94	15	5	Fuel Delivery Pressure : Fuel Pump Delivery Pressure - Data Valid but Above Normal Operational Range - Least Severe Level
2569	Fork Lift	Cummins	94	15	5	Fuel Delivery Pressure : Fuel Pump Delivery Pressure - Data Valid but Above Normal Operational Range - Least Severe Level
2570	Fork Lift	Cummins	94	16	4	Fuel Pressure High - Warning
2571	Fork Lift	*	94	17	5	Fuel Delivery Pressure : Fuel Pump Delivery Pressure - Data Valid but Below Normal Operational Range - Least Severe Level
2572	Fork Lift	Cummins	94	17	5	Fuel Delivery Pressure : Fuel Pump Delivery Pressure - Data Valid but Below Normal Operational Range - Least Severe Level
2573	Fork Lift	Cummins	94	18	3	Fuel Pump Delivery Pressure Low - Data Valid but Below Normal Operational Range - Moderately Severe Level. The ECM has detected that fuel pressure is lower than commanded pressure.
2574	Fork Lift	*	94	18	5	Fuel Delivery Pressure : Fuel Pump Delivery Pressure - Data Valid but Below Normal Operational Range - Moderately Severe Level
2562	Fork Lift	*	94	*	4	S.C. TO GROUND AT RELAY STARTER INTERLOCK
2582	Fork Lift	*	95	16	5	Engine Fuel Filter Differential Pressure : Fuel Filter Differential Pressure - Data Valid but Above Normal Operational Range - Moderately Severe Level
2583	Fork Lift	Cummins	95	16	5	Engine Fuel Filter Differential Pressure : Fuel Filter Differential Pressure - Data Valid but Above Normal Operational Range - Moderately Severe Level
2581	Fork Lift	*	95	*	4	S.C. TO BATTERY VOLTAGE AT RELAY STARTER INTERLOCK
2584	Fork Lift	*	96	*	4	O.C. AT RELAY STARTER INTERLOCK
2586	Fork Lift	Cummins	97	0	4	Water-in-fuel signal indicates the water in the fuel filter needs to be drained.
2591	Fork Lift	*	97	3	3	Water-in-Fuel Indicator : Water-In-Fuel Sensor Signal Voltage High (Check the water-in-fuel sensor and circuit) 97-3
2592	Fork Lift	Cummins	97	3	3	Water-in-Fuel Indicator : Water-In-Fuel Sensor Signal Voltage High (Check the water-in-fuel sensor and circuit) 97-3
2593	Fork Lift	*	97	4	3	Water-In-Fuel Sensor Signal Voltage Low (Check the water-in-fuel sensor and circuit) 97-4
2594	Fork Lift	Cummins	97	4	4	Low voltage detected at WIF signal pin 40 of the original equipment manufacturer (OEM) harness.
2587	Fork Lift	*	97	15	3	Water in Fuel Indicator : Water in Fuel Indicator High - Data Valid but Above Normal Operational Range - Least Severe Level (Water has been detected in the fuel filter) 97-15
2588	Fork Lift	Cummins	97	15	3	Water in Fuel Indicator : Water in Fuel Indicator High - Data Valid but Above Normal Operational Range - Least Severe Level (Water has been detected in the fuel filter) 97-15
2589	Fork Lift	*	97	16	3	Water in Fuel Indicator : Water in Fuel Indicator - Data Valid but Above Normal Operational Range - Moderately Severe Level
2590	Fork Lift	Cummins	97	16	3	Water in Fuel Indicator : Water in Fuel Indicator - Data Valid but Above Normal Operational Range - Moderately Severe Level
2585	Fork Lift	*	97	*	4	S.C. TO GROUND AT PARK BRAKE SOLENOID
2596	Fork Lift	Cummins	98	0	4	Engine Oil Level Data Valid But Above Normal Operational Range Most Severe Level. High oil level has been detected by the oil level sensor.
2597	Fork Lift	Cummins	98	1	3	Engine Oil Level Low – Maintenance
2600	Fork Lift	Cummins	98	2	4	Engine Oil Level #1 Sensor Circuit - data incorrect

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
2601	Fork Lift	Scania	98	2	4	Ratio of current volume of engine sump oil to maximum required volume.
2602	Fork Lift	Cummins	98	3	4	Engine Oil Level Sensor Circuit - Voltage Above Normal or Shorted to High Source. The engine oil level sensor has detected an internal failure.
2603	Fork Lift	Scania	98	3	4	Ratio of current volume of engine sump oil to maximum required volume.
2604	Fork Lift	Cummins	98	4	4	Engine Oil Level Sensor Circuit - Voltage Below Normal or Shorted to Low Source. The engine oil level sensor has detected an internal failure.
2605	Fork Lift	Scania	98	4	4	Ratio of current volume of engine sump oil to maximum required volume.
2598	Fork Lift	Scania	98	10	4	Oil level sensor stuck
2599	Fork Lift	Cummins	98	17	4	Engine Oil Level Data Valid But Below Normal Operational Range Least Severe Level. Low oil level has been detected by the oil level sensor.
2595	Fork Lift	*	98	*	4	S.C. TO BATTERY VOLTAGE AT PARK BRAKE SOLENOID
2607	Fork Lift	Cummins	99	1	2	High Lubricating Oil Filter Restriction
2606	Fork Lift	*	99	*	4	O.C. AT PARK BRAKE SOLENOID
2608	Fork Lift	Scania	100	0	4	Gage pressure of oil in engine lubrication system as provided by oil pump.
2609	Fork Lift	*	100	1	2	Engine Oil Pressure Below Normal Range
2610	Fork Lift	Cummins	100	1	4	Engine Oil Pressure Low – Warning
2611	Fork Lift	Scania	100	1	4	Gage pressure of oil in engine lubrication system as provided by oil pump.
2618	Fork Lift	Cummins	100	2	3	Engine Oil Rifle Pressure - Data erratic, intermittent or incorrect
2619	Fork Lift	*	100	2	4	Engine Oil Pressure : Oil Pressure Sensor Circuit -Data Erratic, Intermittent, or Incorrect
2620	Fork Lift	Scania	100	2	4	Gage pressure of oil in engine lubrication system as provided by oil pump.
2621	Fork Lift	*	100	3	4	Engine Oil Pressure : Oil Pressure Sensor Circuit -Voltage Above Normal, or Shorted to High Source
2622	Fork Lift	Cummins	100	3	4	High voltage detected at oil pressure sensor signal pin 33 of the engine harness.
2623	Fork Lift	Scania	100	3	4	Gage pressure of oil in engine lubrication system as provided by oil pump.
2624	Fork Lift	Scania	100	4	2	Gage pressure of oil in engine lubrication system as provided by oil pump.
2625	Fork Lift	Cummins	100	4	3	Engine Oil Pressure : Oil Pressure Sensor Circuit -Voltage Below Normal, or Shorted to Low Source
2626	Fork Lift	*	100	4	4	Engine Oil Pressure : Oil Pressure Sensor Circuit -Voltage Below Normal, or Shorted to Low Source
2612	Fork Lift	Scania	100	13	4	Oil pressure sensor, pressure not plausible
2613	Fork Lift	Scania	100	16	4	Oil pressure sensor, pressure above normal
2614	Fork Lift	Scania	100	17	4	Oil pressure sensor, pressure too low and engine protective action
2615	Fork Lift	*	100	18	3	Engine Oil Pressure : Oil Pressure Low . Data Valid but Below Normal Operational Range - Moderately Severe Level
2616	Fork Lift	Cummins	100	18	3	Engine Oil Rifle Pressure - Data Valid but Below Normal Operational Range - Moderately Severe Level. Engine oil pressure signal indicates engine oil pressure is below the engine protection warning limit.
2617	Fork Lift	Scania	100	18	4	Oil pressure sensor, pressure below normal
2627	Fork Lift	Cummins	101	0	3	Crankcase Pressure - Data valid but above normal operational range - Most Severe Level
2630	Fork Lift	Cummins	101	2	3	Crankcase Pressure - Data erratic, intermittent or incorrect
2631	Fork Lift	Cummins	101	3	3	Crankcase Pressure Circuit - Voltage above normal, or shorted to high source
2632	Fork Lift	*	101	3	4	Hydraulic Oil Temperature Sensor Circuit - Voltage Above Normal, or Shorted to High Source (or Open Circuit)
2633	Fork Lift	Cummins	101	4	3	Crankcase Pressure Circuit - Voltage below normal, or shorted to low source
2634	Fork Lift	*	101	4	4	Hydraulic Oil Temperature Sensor Circuit - Voltage Below Normal, or shorted to Low Source
2628	Fork Lift	Cummins	101	15	3	Crankcase Pressure - Data Valid But Above Normal Operating Range - Least Severe Level
2629	Fork Lift	Cummins	101	16	3	Crankcase Pressure - Data Valid But Above Normal Operating Range - Moderately Severe Level
2636	Fork Lift	Cummins	102	0	4	Intake manifold pressure signal indicates intake manifold pressure has exceeded the maximum limit for the given engine rating.
2637	Fork Lift	Scania	102	0	4	Boost pressure higher than reference
2638	Fork Lift	Scania	102	1	4	Boost pressure lower than reference
2647	Fork Lift	Cummins	102	2	4	Intake Manifold Pressure Sensor Circuit - data incorrect
2648	Fork Lift	Scania	102	2	4	The gage pressure measurement of the air intake manifold.
2649	Fork Lift	*	102	2	5	Boost Pressure : Intake Manifold Pressure Sensor Circuit - Data Erratic, Intermittent, or Incorrect
2652	Fork Lift	*	102	3	4	Boost Pressure : Intake Manifold Pressure Sensor Circuit - Voltage Above Normal, or Shorted to High Source
2653	Fork Lift	Cummins	102	3	4	High voltage detected at the boost pressure sensor signal pin-45 of the engine harness.
2654	Fork Lift	Scania	102	3	4	Boost pressure sensor, short circuit to +24V
2655	Fork Lift	*	102	4	4	Boost Pressure : Intake Manifold Pressure Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
2656	Fork Lift	Cummins	102	4	4	Low voltage detected at the boost pressure sensor signal pin 45 of the engine harness.
2657	Fork Lift	Scania	102	4	4	Boost pressure sensor, short circuit to ground
2658	Fork Lift	Scania	102	5	4	The gage pressure measurement of the air intake manifold.
2659	Fork Lift	Scania	102	7	4	Boost pressure, too low
2660	Fork Lift	Scania	102	8	4	Boost pressure sensor, faulty
2661	Fork Lift	Scania	102	9	4	Boost pressure, not plausible
2639	Fork Lift	Cummins	102	10	3	Intake Manifold 1 Pressure - Abnormal rate of change
2640	Fork Lift	Scania	102	10	4	Boost pressure sensor, faulty
2641	Fork Lift	Scania	102	15	4	Boost pressure sensor and exhaust pressure sensor do not correlate
2642	Fork Lift	*	102	16	4	Boost Pressure : Intake Manifold 1 Pressure - Data Valid but Above Normal Operational Range - Moderately Severe Level
2643	Fork Lift	Cummins	102	16	4	High Intake Manifold Pressure Left Bank
2644	Fork Lift	Scania	102	16	4	Boost pressure above normal
2645	Fork Lift	Cummins	102	18	3	Low Intake Manifold Pressure Left Bank
2646	Fork Lift	Scania	102	18	4	Boost pressure, lower than reference at part load
2650	Fork Lift	Scania	102	20	4	Boost pressure, too high not plausible
2651	Fork Lift	Scania	102	21	4	Boost pressure, too low not plausible

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
2635	Fork Lift	*	102	*	2	(Warning) Hydraulic Oil Temperature High
2662	Fork Lift	Cummins	103	0	3	Turbocharger Number 1 speed high - warning level. High turbocharger speed has been detected.
2663	Fork Lift	Scania	103	0	4	Turbine excessive overspeed
2671	Fork Lift	Cummins	103	2	3	Turbocharger 1 Speed - Data erratic, intermittent or incorrect
2672	Fork Lift	Scania	103	2	4	Turbine speed sensor, faulty
2675	Fork Lift	Scania	103	3	4	Turbine speed sensor, short circuit to +24V
2676	Fork Lift	Scania	103	4	4	Turbine speed sensor, short circuit to ground
2677	Fork Lift	Scania	103	5	4	Turbine speed sensor, open load
2678	Fork Lift	Scania	103	9	4	Turbine speed not plausible
2664	Fork Lift	Cummins	103	10	3	Turbocharger speed invalid rate of change detected - Abnormal Rate of Change
2665	Fork Lift	*	103	10	4	Turbocharger 1 Speed : Turbocharger speed invalid rate of change detected - Abnormal Rate of Change
2666	Fork Lift	Cummins	103	15	3	Turbocharger 1 Speed - Data Valid But Above Normal Operating Range - Least Severe Level
2667	Fork Lift	Cummins	103	16	3	Turbocharger #1 Speed High - warning level
2668	Fork Lift	*	103	16	4	Turbocharger 1 Speed : Turbocharger #1 Speed High - Data Valid but Above Normal Operational Range - Moderately Severe Level
2669	Fork Lift	Cummins	103	18	3	Turbocharger number 1 speed low - warning level. Low turbocharger speed detected by the ECM.
2670	Fork Lift	*	103	18	4	Turbocharger 1 Speed : Turbocharger #1 Speed Low - Data Valid but Below Normal Operational Range - Moderately Severe Level
2673	Fork Lift	Scania	103	20	4	Turbine speed sensor above model, not plausible
2674	Fork Lift	Scania	103	21	4	Turbine speed sensor below model, not plausible
2679	Fork Lift	Cummins	104	18	3	Engine Turbocharger Lube Oil Pressure - Data Valid But Below Normal Operating Range - Moderately Severe Level
2680	Fork Lift	Cummins	105	0	2	Intake Manifold Temperature #1 High – Critical
2681	Fork Lift	*	105	0	4	Intake Manifold #1 Temp : Intake Manifold Air Temperature High - Data Valid but Above Normal Operational Range - Most Severe Level
2682	Fork Lift	Scania	105	0	4	Boost temp sensor excessive high
2683	Fork Lift	Scania	105	1	4	Boost temp sensor excessive low
2691	Fork Lift	Cummins	105	2	3	Intake Manifold 1 Temperature Data Erratic, Intermittent, or Incorrect. The intake manifold temperature sensor is reading an erratic value at initial key-on.
2692	Fork Lift	Scania	105	2	4	Boost temp sensor, faulty
2695	Fork Lift	Cummins	105	3	3	Intake Manifold Temperature Sensor #1 Circuit - shorted high
2696	Fork Lift	*	105	3	4	Intake Manifold #1 Temp : Intake Manifold Air Temperature Sensor Circuit Voltage Above Normal, or Shorted to High Source
2697	Fork Lift	Scania	105	3	4	Boost temp sensor, short circuit to +24V
2698	Fork Lift	Cummins	105	4	3	Low voltage detected at the intake manifold temperature sensor circuit.
2699	Fork Lift	*	105	4	4	Intake Manifold #1 Temp : Intake Manifold Air Temperature Sensor Circuit Voltage Below Normal, or Shorted to Low Source
2700	Fork Lift	Scania	105	4	4	Boost temp sensor, short circuit to ground
2701	Fork Lift	Scania	105	9	4	Boost temperature above ambient, not plausible
2684	Fork Lift	Cummins	105	15	3	Intake Manifold Temperature High - Data Valid but Above Normal Operational Range - Least Severe Level. Intake manifold air temperature signal indicates intake manifold air temperature above engine protection warning limit.
2685	Fork Lift	Scania	105	15	4	Boost temperature to high for longer period
2686	Fork Lift	Cummins	105	16	3	Intake Manifold Temperature High – Warningl
2687	Fork Lift	*	105	16	4	Intake Manifold : Intake Manifold 1 Temperature - Data Valid but Above Normal Operational Range - Moderately Severe Level
2688	Fork Lift	Scania	105	16	4	Boost temperature above normal
2689	Fork Lift	Scania	105	17	4	Boost temperature below ambient, not plausible
2690	Fork Lift	Cummins	105	18	3	Intake Manifold 1 Temperature - Data Valid But Below Normal Operating Range - Moderately Severe Level
2693	Fork Lift	Scania	105	20	4	Boost temperature to high, not plausible
2694	Fork Lift	Scania	105	21	4	Boost temperature to low, not plausible
2702	Fork Lift	Scania	107	1	4	Air filter clogged
2705	Fork Lift	Scania	107	2	4	Air filter control switch broken
2703	Fork Lift	Cummins	107	15	3	Engine Air Filter Differential Pressure - Data Valid But Above Normal Operating Range - Least Severe Level
2704	Fork Lift	Cummins	107	16	3	Engine Air Filter Differential Pressure - Data Valid But Above Normal Operating Range - Moderately Severe Level
2708	Fork Lift	*	108	2	4	Barometric Pressure : Barometric Pressure Sensor Circuit - Data Erratic, Intermittent, or Incorrect
2709	Fork Lift	Cummins	108	2	4	Ambient Air Pressure Sensor Circuit - data incorrect
2710	Fork Lift	Scania	108	2	4	Ambient Pressure Sensor Error via CAN
2713	Fork Lift	*	108	3	4	Barometric Pressure : Barometric Pressure Sensor Circuit - Voltage Above Normal, or Shorted to High Source
2714	Fork Lift	Cummins	108	3	4	Ambient Air Pressure Sensor Circuit – shorted high
2715	Fork Lift	Scania	108	3	4	Ambient Pressure Sensor, short circuit to +24V
2716	Fork Lift	*	108	4	4	Barometric Pressure : Barometric Pressure Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
2717	Fork Lift	Cummins	108	4	4	Low voltage detected at the ambient air pressure circuit.
2718	Fork Lift	Scania	108	4	4	Ambient Pressure Sensor, short circuit to ground
2706	Fork Lift	Scania	108	15	4	Ambient Pressure Sensor and Exhaust Pressure Sensor do not correlate
2707	Fork Lift	Scania	108	16	4	Ambient Pressure above normal
2711	Fork Lift	Scania	108	20	4	Ambient Pressure too high, not plausible
2712	Fork Lift	Scania	108	21	4	Ambient Pressure too low, not plausible
2721	Fork Lift	Cummins	109	3	3	Coolant Pressure Sensor Circuit - Voltage Above Normal, or Shorted to High Source

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
2722	Fork Lift	*	109	3	5	Coolant Pressure : Coolant Pressure Sensor Circuit - Voltage Above Normal, or Shorted to High Source
2723	Fork Lift	Cummins	109	4	3	Coolant Pressure Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
2724	Fork Lift	*	109	4	5	Coolant Pressure : Coolant Pressure Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
2719	Fork Lift	Cummins	109	18	4	Engine Coolant Pressure Low – Warning
2720	Fork Lift	*	109	18	5	Coolant Pressure : Coolant Pressure - Data Valid but Below Normal Operational Range - Moderately Severe Level
2726	Fork Lift	*	110	0	3	Engine Coolant Temperature : Coolant Temperature Low - Data Valid but Above Normal Operational Range - Most Severe Level
2727	Fork Lift	Cummins	110	0	3	Coolant temperature signal indicates coolant temperature has exceeded the engine protection limit.
2728	Fork Lift	Scania	110	0	4	Engine temperature, excessive high
2729	Fork Lift	Scania	110	1	4	Engine temperature too low
2740	Fork Lift	Cummins	110	2	3	Engine Coolant Temperature : Coolant Temperature Sensor Circuit - Data Erratic, Intermittent, or Incorrect
2741	Fork Lift	*	110	2	4	Engine Coolant Temperature : Coolant Temperature Sensor Circuit - Data Erratic, Intermittent, or Incorrect
2742	Fork Lift	Scania	110	2	4	Engine temp sensor fault
2745	Fork Lift	Cummins	110	3	3	High voltage detected at the coolant temperature circuit.
2746	Fork Lift	*	110	3	4	Engine Coolant Temperature : Coolant Temperature Sensor Circuit - Voltage Above Normal, or Shorted to High Source
2747	Fork Lift	Scania	110	3	4	Engine temp sensor, short circuit to +24V
2749	Fork Lift	*	110	4	4	Engine Coolant Temperature : Coolant Temperature Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
2750	Fork Lift	Cummins	110	4	4	Engine Coolant Temperature Sensor Circuit - shorted low
2751	Fork Lift	Scania	110	4	4	Engine temp sensor, short circuit to ground
2752	Fork Lift	Cummins	110	6	3	Engine Coolant Temperature - Data Valid but Above Normal Operational Range - Moderately Severe Level. Engine coolant temperature signal indicates engine coolant temperature is above engine protection warning limit.
2753	Fork Lift	Scania	110	8	4	Engine temp sensor, stuck
2754	Fork Lift	Scania	110	9	4	Engine temp sensor, faulty
2730	Fork Lift	Scania	110	10	4	Engine temperature is not plausble
2731	Fork Lift	Cummins	110	14	2	Engine Coolant Temperature - Special Instructions
2732	Fork Lift	*	110	15	5	Engine Coolant Temperature : Engine Coolant Temperature High - Data Valid but Above Normal Operational Range - Least Severe Level
2733	Fork Lift	Cummins	110	15	5	Engine Coolant Temperature : Engine Coolant Temperature High - Data Valid but Above Normal Operational Range - Least Severe Level
2734	Fork Lift	Cummins	110	16	3	Engine Coolant Temperature High – Warning
2735	Fork Lift	*	110	16	4	Engine Coolant Temperature : Coolant Temperature High - Data Valid but Above Normal Operational Range - Moderately Severe Level
2736	Fork Lift	Scania	110	16	4	Engine temperature, too high
2737	Fork Lift	Scania	110	17	4	Engine temp sensor, temp below normal or VGT-temp above normal
2738	Fork Lift	Cummins	110	18	3	Engine Coolant Temperature - Data Valid But Below Normal Operating Range - Moderately Severe Level
2739	Fork Lift	Scania	110	18	4	Engine temp sensor, temp above normal or VGT-temp below normal
2743	Fork Lift	Scania	110	20	4	Engine Coolant Water Temperature Too High
2744	Fork Lift	Scania	110	21	4	Coolant Temperature Below Thermostat Regulating Temperature
2748	Fork Lift	Cummins	110	31	4	Engine Coolant Temperature - Condition Exists
2725	Fork Lift	Cummins	110	*	3	Engine Coolant Temperature - Condition Exists. Engine coolant signal indicates coolant temperature is above the engine coolant temperature engine protection warning limit.
2755	Fork Lift	*	111	1	4	Coolant Level : Coolant Level Low - Data Valid but Below Normal Operational Range - Most Severe Level
2756	Fork Lift	Cummins	111	1	4	Coolant level signal at pin 27 and pin 37 of the engine harness indicates coolant level is low.
2757	Fork Lift	Scania	111	1	4	Coolant level too low
2762	Fork Lift	*	111	2	4	Coolant Level : Coolant Level - Data Erratic, Intermittent, or Incorrect
2763	Fork Lift	Cummins	111	2	4	Voltage detected simultaneously on both the coolant level high and low signal pins 27 and 37 of the engine harness or no voltage detected on either pin.
2764	Fork Lift	*	111	3	4	Coolant Level : Coolant Level Sensor Circuit - Voltage Above Normal, or Shorted to High Source
2765	Fork Lift	Cummins	111	3	4	Coolant Level Sensor 1 Circuit - Voltage Above Normal or Shorted to High Source. High signal voltage detected at engine coolant level circuit. (Cummins-Excavator) 111-3
2766	Fork Lift	Scania	111	3	4	Coolant level sensor, short circuit to +24
2767	Fork Lift	*	111	4	4	Coolant Level : Coolant Level Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
2768	Fork Lift	Cummins	111	4	4	Coolant Level Sensor 1 Circuit - Voltage Below Normal or Shorted to Low Source. Low signal voltage detected at the engine coolant level circuit (Cummins-Excavator) 111-4
2769	Fork Lift	Scania	111	4	4	Coolant level sensor, short circuit to ground
2770	Fork Lift	Cummins	111	9	3	SAE J1939 Multiplexing PGN Timeout Error - Abnormal update rate
2758	Fork Lift	Cummins	111	17	3	Coolant Level - Data Valid But Below Normal Operating Range - Least Severe Level
2759	Fork Lift	*	111	18	3	Coolant Level : Coolant Level - Data Valid but Below Normal Operational Range - Moderately Severe Level
2760	Fork Lift	Cummins	111	18	3	Coolant Level - Data Valid but Below Normal Operational Range - Moderately Severe Level. Low engine coolant level detected (Cummins-Loader) 111-18
2761	Fork Lift	Cummins	111	19	3	Coolant Level Sensor - Received Network Data in Error
2771	Fork Lift	Cummins	113	2	4	OEM Alternate Droop Switch Validation - data incorrect
2776	Fork Lift	Scania	131	2	4	Exhaust pressure sensor, not plausible
2779	Fork Lift	Scania	131	3	4	Exhaust pressure sensor, short circuit to +24V
2780	Fork Lift	Scania	131	4	4	Exhaust pressure sensor, short circuit to ground or open load

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
2781	Fork Lift	Scania	131	7	4	Exhaust pressure sensor and boost pressure sensor do not correlate
2782	Fork Lift	Scania	131	8	4	Exhaust pressure sensor, faulty
2783	Fork Lift	Scania	131	9	4	Exhaust pressure sensor, stuck
2772	Fork Lift	Scania	131	10	4	Exhaust pressure sensor and ambient pressure sensor do not correlate
2773	Fork Lift	Scania	131	15	4	Exhaust pressure, high exhaust pressure during normal fueling
2774	Fork Lift	Scania	131	16	4	Exhaust pressure, high exhaust pressure during motoring, no fueling
2775	Fork Lift	Scania	131	18	4	Exhaust pressure, low exhaust pressure during exhaust brake
2777	Fork Lift	Scania	131	20	4	Exhaust pressure too high, not plausible
2778	Fork Lift	Scania	131	21	4	Exhaust pressure too low, not plausible
2784	Fork Lift	Scania	132	0	4	Mass flow sensor, short circuit to +24V
2785	Fork Lift	Scania	132	1	4	Mass flow sensor, short circuit to ground or open load
2786	Fork Lift	Cummins	132	2	3	Engine Intake Air Mass Flow - Data Erratic, Intermittent, or Incorrect
2787	Fork Lift	Scania	132	2	4	Mass flow sensor, faulty
2788	Fork Lift	Cummins	132	3	3	Engine Intake Air Mass Flow Sensor Circuit - Voltage Above Normal or Shorted to High Source
2789	Fork Lift	Scania	132	3	4	Mass flow sensor, supply
2790	Fork Lift	Cummins	132	4	3	Engine Intake Air Mass Flow Circuit - Voltage Below Normal or Shorted to Low Source
2791	Fork Lift	Scania	132	4	4	Mass flow sensor, sdaptation under low threshold
2792	Fork Lift	Scania	132	5	4	Mass flow sensor, adaptation over high threshold
2793	Fork Lift	Scania	132	7	4	Mass flow sensor, stuck
2794	Fork Lift	Cummins	135	4	4	Fuel Pump Delivery Pressure Sensor Circuit - shorted low
2795	Fork Lift	*	145	5	5	Engine Cooling Fan EPPR Valve Circuit - Current Below Normal, or Open Circuit
2796	Fork Lift	*	145	6	5	Engine Cooling Fan EPPR Valve Circuit - Current Above Normal
2797	Fork Lift	Scania	156	0	4	Fuel rail pressure is excessively above command
2798	Fork Lift	Scania	156	1	4	Fuel rail pressure is excessively below command
2800	Fork Lift	Cummins	156	2	4	Fuel Timing Pressure or Timing Actuator Stuck
2801	Fork Lift	Scania	156	2	4	Fuel rail pressure sensor, faulty
2802	Fork Lift	Cummins	156	3	2	Fuel Timing Pressure Sensor Circuit - shorted high
2803	Fork Lift	Scania	156	3	4	Fuel rail pressure sensor, short circuit to +24V or open load
2804	Fork Lift	Cummins	156	4	2	Fuel Timing Pressure Sensor Circuit - shorted low
2805	Fork Lift	Scania	156	4	4	Fuel rail pressure sensor, short circuit to ground
2806	Fork Lift	Scania	156	8	4	Fuel rail pressure sensor, stuck
2807	Fork Lift	Scania	156	9	4	Fuel rail pressure is lagging
2799	Fork Lift	Scania	156	18	4	Fuel rail pressure is too low during cranking
2808	Fork Lift	*	157	0	3	Injector Metering Rail 1 Pressure Above Normal Range (157-0)
2809	Fork Lift	Cummins	157	0	3	Injector Metering Rail Number 1 Pressure - Data Valid But Above Normal Operating Range - Most Severe Level. Fuel pressure signal indicates that fuel pressure has exceeded the maximum limit for the given engine rating.
2810	Fork Lift	*	157	1	3	Injector Metering Rail 1 Pressure : Injector Metering Rail 1 Pressure - Data Valid but Below Normal Operational Range - Most Severe Level (157-1)
2811	Fork Lift	Cummins	157	1	3	Injector Metering Rail 1 Pressure - Data Valid but Below Normal Operational Range - Most Severe Level. The ECM has detected that fuel pressure is lower than commanded pressure. 157-1
2817	Fork Lift	*	157	2	3	Injector Metering Rail 1 Pressure : Fuel Pressure Sensor Error - Data Erratic, Intermittent, or Incorrect (157-2)
2818	Fork Lift	Cummins	157	2	3	Fuel Pressure Sensor Error - Data Erratic, Intermittent, or Incorrect
2819	Fork Lift	*	157	3	3	Injector Metering Rail 1 Pressure : Injector Metering Rail #1 Pressure Sensor Circuit Voltage Above Normal, or Shorted to High Source (157-3)
2820	Fork Lift	Cummins	157	3	3	Injector Metering Rail 1 Pressure : Injector Metering Rail #1 Pressure Sensor Circuit Voltage Above Normal, or Shorted to High Source (157-3)
2821	Fork Lift	*	157	4	3	Injector Metering Rail 1 Pressure : Injector Metering Rail #1 Pressure Sensor Circuit Voltage Below Normal, or Shorted to Low Source (157-4)
2822	Fork Lift	Cummins	157	4	3	Injector Metering Rail Number 1 Pressure Sensor Circuit - Voltage Below Normal or Shorted to Low Source. Low signal voltage detected at the rail fuel pressure sensor circuit 157-4
2823	Fork Lift	Cummins	157	7	3	Injector Metering Rail 1 Pressure - Mechanical system not responding or out of adjustment
2812	Fork Lift	Cummins	157	15	3	Injector Metering Rail 1 Pressure - Data Valid But Above Normal Operating Range - Least Severe Level
2813	Fork Lift	*	157	16	3	Injector Metering Rail 1 Pressure Above Normal Range(157-16)
2814	Fork Lift	Cummins	157	16	4	Injector Metering Rail #1 Pressure High - warning level
2815	Fork Lift	*	157	18	3	Injector Metering Rail 1 Pressure Below Normal Range (157-18)
2816	Fork Lift	Cummins	157	18	3	Injector Metering Rail #1 Pressure Low – Data Valid but Below Normal Operational Range - Moderately Severe Level
2824	Fork Lift	*	166	2	5	Cylinder Power : Cylinder Power Imbalance Between Cylinders Data Erratic, Intermittent, or Incorrect
2825	Fork Lift	Cummins	166	2	5	Cylinder Power : Cylinder Power Imbalance Between Cylinders Data Erratic, Intermittent, or Incorrect
2826	Fork Lift	Cummins	167	1	2	Electrical Charging System Voltage Low - Critical Level
2827	Fork Lift	*	167	1	4	Alternate Potential (voltage) : Electrical Charging System Voltage Low - Data Valid but Below Normal Operational Range - Most Severe Level
2834	Fork Lift	Scania	167	2	4	Alternator actuator, faulty
2835	Fork Lift	Scania	167	3	4	Alternator actuator, short circuit to +24V
2836	Fork Lift	Scania	167	4	4	Alternator actuator, short circuit to ground
2837	Fork Lift	Scania	167	5	4	Alternator actuator, open load
2838	Fork Lift	Scania	167	6	4	Electrical potential measured at the charging system output. The charging system may be any device charging the batteries. This includes alternators, generators, solid state charger and other charging devices.
2839	Fork Lift	Scania	167	9	4	Alternator 1, signal not plausible
2828	Fork Lift	Scania	167	10	4	Alternator 2, signal not plausible

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
2829	Fork Lift	*	167	16	4	Alternate Potential (voltage) : Electrical Charging System Voltage High - Data Valid but Above Normal Operational Range Moderately Severe Level
2830	Fork Lift	Cummins	167	16	4	Electrical Charging System Voltage High - warning level
2832	Fork Lift	Cummins	167	18	4	Electrical Charging System Voltage Low - Warning Level
2833	Fork Lift	*	167	18	5	Amber Alternate Potential (voltage) : Electrical Charging System Voltage Low - Data Valid but Below Normal Operational Range Moderately Severe Level
2831	Fork Lift	Cummins	167	161	4	High battery voltage detected by the battery voltage monitor feature.
2840	Fork Lift	Cummins	168	0	4	Battery #1 Voltage High – Warning
2841	Fork Lift	Scania	168	0	4	Battery voltage above 47 V for 1 s
2842	Fork Lift	Cummins	168	1	4	Voltage detected at electronic control module (ECM) power supply pins 38, 39, 40, and 50 of the engine harness indicates ECM supply voltage fell below (+) 6 VDC.
2843	Fork Lift	Scania	168	1	4	Battery voltage below 9 V for 0.5 s
2853	Fork Lift	Scania	168	4	4	Battery voltage 1 for engine control unit is low
2854	Fork Lift	Scania	168	5	4	Battery voltage 2 for engine control unit is low
2844	Fork Lift	Scania	168	15	4	Battery voltage too high for SCR main unit
2845	Fork Lift	Scania	168	16	2	Battery voltage above 32 V
2846	Fork Lift	*	168	16	4	Electrical Potential (Voltage) : Battery #1 Voltage High - Data Valid but Above Normal Operational Range - Moderately Severe Level
2847	Fork Lift	Cummins	168	16	4	Battery voltage above normal operating level.
2848	Fork Lift	Cummins	168	17	3	[C2ST] Battery 1 Voltage - Data Valid But Below Normal Operating Range - Least Severe Level
2849	Fork Lift	Scania	168	17	4	Battery voltage too low for SCR main unit
2850	Fork Lift	*	168	18	4	Electrical Potential (Voltage) : Battery #1 Voltage Low - Data Valid but Below Normal Operational Range - Moderately Severe Level
2851	Fork Lift	Cummins	168	18	4	Battery #1 Voltage Low - Warning
2852	Fork Lift	Scania	168	18	4	Battery voltage below 21 V
2855	Fork Lift	Scania	171	0	4	Ambient temperature sensors correlation error
2856	Fork Lift	Scania	171	1	4	Ambient temperature low or boost temperature high
2863	Fork Lift	Cummins	171	2	3	Ambient Air Temperature - Data erratic, intermittent or incorrect
2864	Fork Lift	Scania	171	2	4	Ambient temperature sensor, faulty
2867	Fork Lift	Cummins	171	3	3	Ambient Air Temperature Sensor 1 Circuit - Voltage above normal, or shorted to high source
2868	Fork Lift	*	171	3	4	Ambient Air Temperature : Ambient Air Temperature Sensor Circuit - Voltage Above Normal, or Shorted to High Source
2869	Fork Lift	Scania	171	3	4	Ambient temperature sensor error via CAN
2870	Fork Lift	Cummins	171	4	3	Ambient Air Temperature Sensor 1 Circuit - Voltage below normal, or shorted to low source
2871	Fork Lift	*	171	4	4	Ambient Air Temperature : Ambient Air Temperature Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
2872	Fork Lift	Scania	171	4	4	Ambient temperature sensor error via CAN
2873	Fork Lift	Scania	171	7	4	Ambient temperature sensor stuck
2874	Fork Lift	Cummins	171	9	3	Ambient Air Temperature - Abnormal update rate
2875	Fork Lift	Scania	171	9	4	CAN message AMBIENT CONDITION from coordinator timeout
2857	Fork Lift	Scania	171	15	4	Ambient temperature sensors correlation error
2858	Fork Lift	Scania	171	16	4	Ambient temperature high or boost temperature low
2859	Fork Lift	Scania	171	17	4	Ambient temperature sensors correlation error
2860	Fork Lift	Scania	171	18	4	Ambient temperature sensors correlation error
2861	Fork Lift	Cummins	171	19	3	Ambient Air Temperature - Received Network Data In Error
2862	Fork Lift	Scania	171	19	4	Ambient temperature sensor signal defect
2865	Fork Lift	Scania	171	20	4	Temperature sensor before compressor low or ambient temperature sensor high
2866	Fork Lift	Scania	171	21	4	Temperature sensor before compressor high or ambient temperature sensor low
2876	Fork Lift	Scania	172	2	4	Air inlet temp sensor, faulty
2877	Fork Lift	Scania	172	3	4	Air inlet temp sensor, short circuit to +24V
2878	Fork Lift	Scania	172	4	4	Air inlet temp sensor, short circuit to ground
2879	Fork Lift	*	172	4	5	Boom Up Lever Detent Solenoid Circuit - Voltage Below Normal, or Shorted to Low Source (or Open Circuit)
2880	Fork Lift	*	172	6	5	Boom Up Lever Detent Solenoid Circuit - Current Above Normal
2881	Fork Lift	Scania	172	7	4	Air inlet temp sensor, stuck
2882	Fork Lift	*	173	4	5	Boom Down Lever Detent Solenoid Circuit - Voltage Below Normal, or Shorted to Low Source (or Open Circuit)
2883	Fork Lift	*	173	6	5	Boom Down Lever Detent Solenoid Circuit - Current Above Normal
2884	Fork Lift	Cummins	174	0	4	Engine Fuel Temperature - Data valid but above normal operational range - Most Severe Level
2888	Fork Lift	Cummins	174	2	4	VP44 연료 펌프 컨트롤러 내부의 연료 온도 감지 회로에서 2초 동안 고전압 또는 저전압이 감지됨.
2889	Fork Lift	Cummins	174	3	3	Engine Fuel Temperature Sensor 1 Circuit - Voltage above normal, or shorted to high source
2890	Fork Lift	*	174	3	4	Fuel Temperature : Engine Fuel Temperature Sensor 1 Circuit - Voltage Above Normal, or Shorted to High Source
2891	Fork Lift	Cummins	174	4	3	Engine Fuel Temperature Sensor 1 Circuit - Voltage below normal, or shorted to low source
2892	Fork Lift	*	174	4	5	Bucket Lever Detent Solenoid Circuit - Voltage Below Normal, or Shorted to Low Source (or Open Circuit)
2893	Fork Lift	*	174	6	5	Bucket Lever Detent Solenoid Circuit - Current Above Normal
2885	Fork Lift	Cummins	174	11	4	Fuel Temperature Sensor Circuit - data out-of-range
2886	Fork Lift	Cummins	174	16	3	Engine Fuel Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
2887	Fork Lift	*	174	16	5	Fuel Temperature : Engine Fuel Temperature -Data Valid but Above Normal Operational Range - Moderately Severe Level
2894	Fork Lift	*	175	0	5	Oil Temperature : Engine Oil Temperature -Data Valid but Above Normal Operational Range - Most Severe Level
2895	Fork Lift	Cummins	175	0	5	Oil Temperature : Engine Oil Temperature -Data Valid but Above Normal Operational Range - Most Severe Level

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
2898	Fork Lift	*	175	2	5	Oil Temperature : Engine Oil Temperature - Data Erratic, Intermittent, or Incorrect
2899	Fork Lift	Cummins	175	2	5	Oil Temperature : Engine Oil Temperature - Data Erratic, Intermittent, or Incorrect
2900	Fork Lift	Cummins	175	3	3	Engine Oil Temperature Sensor 1 Circuit - Voltage above normal, or shorted to high source
2901	Fork Lift	Scania	175	3	4	Oil temp sensor, short circuit to +24V
2902	Fork Lift	*	175	3	5	Oil Temperature : Engine Oil Temperature Sensor 1 Circuit - Voltage Above Normal, or Shorted to High Source
2903	Fork Lift	Cummins	175	4	3	Engine Oil Temperature Sensor 1 Circuit - Voltage below normal, or shorted to low source
2904	Fork Lift	Scania	175	4	4	Oil temp sensor, short circuit to ground
2905	Fork Lift	*	175	4	5	Oil Temperature : Engine Oil Temperature Sensor 1 Circuit - Voltage Below Normal, or Shorted to Low Source
2896	Fork Lift	Scania	175	11	4	Oil temp sensor, faulty
2897	Fork Lift	Cummins	175	16	3	Engine Oil Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
2906	Fork Lift	*	181	4	5	Engine Cooling Fan Reverse Solenoid Circuit - Voltage Below Normal, or Shorted to Low Source (or Open Circuit)
2907	Fork Lift	*	181	6	5	Engine Cooling Fan Reverse Solenoid Circuit - Current Above Normal
2908	Fork Lift	*	183	4	5	Engine Cooling Fan Reverse Driving Status Signal Circuit - Voltage Below Normal, or Shorted to Low Source (or Open Circuit)
2909	Fork Lift	*	183	6	5	Engine Cooling Fan Reverse Driving Status Signal Circuit - Current Above Normal
2910	Fork Lift	*	184	*	3	(Warning) Steering Main Pump Pressure Low
2911	Fork Lift	*	185	*	5	(Warning) Emergency Steering Active
2912	Fork Lift	*	187	4	5	Emergency Steering Pump Relay Circuit - Voltage Below Normal, or Shorted to Low Source (or Open Circuit)
2913	Fork Lift	*	187	6	5	Emergency Steering Pump Relay Circuit . Current Above Normal
2914	Fork Lift	Scania	188	14	4	Idle due to other fault
2915	Fork Lift	Cummins	188	16	3	Engine Speed At Idle - Data Valid But Above Normal Operating Range - Moderately Severe Level
2916	Fork Lift	Cummins	188	18	3	Engine Speed At Idle - Data Valid But Below Normal Operating Range - Moderately Severe Level
2917	Fork Lift	Cummins	190	0	2	Engine Crankshaft Speed/Position - Data valid but above normal operational range - Most Severe Level
2918	Fork Lift	Scania	190	0	4	Severe overspeed has occured
2919	Fork Lift	*	190	0	5	Engine Speed : Engine Speed High - Data Valid but Above Normal Operational Range - Most Severe Level
2925	Fork Lift	Cummins	190	2	3	Engine Crankshaft Speed/Position - Data Erratic, Intermittent, or Incorrect. Loss of signal from crankshaft sensor.
2926	Fork Lift	*	190	2	4	Engine Speed : Primary Engine Speed Sensor Error - Data Erratic, Intermittent, or Incorrect
2927	Fork Lift	Scania	190	2	4	Actual engine speed which is calculated over a minimum crankshaft angle of 720 degrees divided by the number of cylinders.
2929	Fork Lift	Cummins	190	4	4	엔진 하네스의 메인 엔진 속도 센서 전압 공급 핀 8에서 고전압이 감지됨.
2920	Fork Lift	Cummins	190	10	4	Engine Speed/Position Sensor Circuit - lost one of two signals from the magnetic pickup sensor
2921	Fork Lift	Scania	190	10	4	Overspeed protection, fast over speed
2922	Fork Lift	Scania	190	15	4	Engine speed has been above the limit
2923	Fork Lift	Cummins	190	16	2	Engine Crankshaft Speed/Position - Data Valid but Above Normal Operational Range - Moderately Severe Level. Engine crankshaft speed/position SIGNAL indicates engine speed above engine protection limit.
2924	Fork Lift	Scania	190	16	2	Overspeed protection, over speed
2928	Fork Lift	Scania	190	20	4	Engine overspeed, value to high
2930	Fork Lift	Cummins	191	0	4	The auxiliary speed or auxiliary pressure indicates the frequency is above a calibrated threshold value.
2931	Fork Lift	Cummins	191	1	4	Transmission Output Shaft (Aux Gov) Speed Low – Warning
2937	Fork Lift	Cummins	191	9	3	Transmission Output Shaft Speed - Abnormal update rate
2932	Fork Lift	Cummins	191	16	4	Transmission Output Shaft (Tailshaft) Speed High – Warning
2933	Fork Lift	*	191	16	5	Transmission Output Shaft Speed : Transmission Output Shaft Speed - Data Valid but Above Normal Operational Range - Moderately Severe Level
2934	Fork Lift	Cummins	191	18	4	Auxiliary speed frequency on input pin indicates the frequency is below a calibration-dependent threshold.
2935	Fork Lift	*	191	18	5	Transmission Output Shaft Speed : Transmission Output Shaft Speed - Data Valid but Below Normal Operational Range - Moderately Severe Level
2936	Fork Lift	Cummins	191	19	3	Transmission Output Shaft Speed - Received Network Data In Error
2938	Fork Lift	*	200	0	5	Pump EPPR 2nd Pressure Sensor Data Above Normal Range (or Open Circuit)
2939	Fork Lift	*	200	1	5	Pump EPPR 2nd Pressure Sensor Data Below Normal Range
2940	Fork Lift	*	200	2	5	Pump EPPR 2nd Pressure Sensor Data Error
2941	Fork Lift	*	200	4	5	Pump EPPR 2nd Pressure Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
2942	Fork Lift	*	202	0	5	Steering Main Pump Pressure Sensor Data Above Normal Range (or Open Circuit)
2943	Fork Lift	*	202	1	5	Steering Main Pump Pressure Sensor Data Below Normal Range
2944	Fork Lift	*	202	2	5	Steering Main Pump Pressure Sensor Data Error
2945	Fork Lift	*	202	4	5	Steering Main Pump Pressure Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
2946	Fork Lift	*	203	0	5	Emergency Steering Pump Pressure Sensor Data Above Normal Range (or Open Circuit)
2947	Fork Lift	*	203	1	5	Emergency Steering Pump Pressure Sensor Data Below Normal Range
2948	Fork Lift	*	203	2	5	Emergency Steering Pump Pressure Sensor Data Error
2949	Fork Lift	*	203	4	5	Emergency Steering Pump Pressure Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
2950	Fork Lift	*	204	0	5	Boom Cylinder Pressure Sensor Data Above Normal Range (or Open Circuit)
2951	Fork Lift	*	204	1	5	Boom Cylinder Pressure Sensor Data Below Normal Range
2952	Fork Lift	*	204	2	5	Boom Cylinder Pressure Sensor Data Error
2953	Fork Lift	*	204	4	5	Boom Cylinder Pressure Sensor Circuit - Voltage Below Normal, or Shorted to Low Source

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
2954	Fork Lift	*	205	0	5	Bucket Cylinder Pressure Sensor Data Above Normal Range (or Open Circuit)
2955	Fork Lift	*	205	1	5	Bucket Cylinder Pressure Sensor Data Below Normal Range
2956	Fork Lift	*	205	2	5	Bucket Cylinder Pressure Sensor Data Error
2957	Fork Lift	*	205	4	5	Bucket Cylinder Pressure Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
2959	Fork Lift	Scania	234	2	2	The EMS and EEC control units are incompatible
2958	Fork Lift	Scania	234	19	4	Wrong CAN version transmitted by COO
2961	Fork Lift	Cummins	237	2	3	Vehicle Identification Number - Data erratic, intermittent or incorrect
2960	Fork Lift	Cummins	237	13	3	Vehicle Identification Number - Out of Calibration
2962	Fork Lift	Cummins	237	31	3	Vehicle Identification Number - Condition Exists
2963	Fork Lift	*	251	2	5	Real Time Clock Power : Real Time Clock Power Interrupt - Data Erratic, Intermittent, or Incorrect
2964	Fork Lift	Cummins	251	2	5	Real Time Clock Power : Real Time Clock Power Interrupt - Data Erratic, Intermittent, or Incorrect
2965	Fork Lift	*	301	3	5	Fuel Level Sensor Circuit - Voltage Above Normal, or Shorted to High Source (or Open Circuit)
2966	Fork Lift	*	301	4	5	Fuel Level Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
2967	Fork Lift	*	303	*	5	(Warning) Fuel level low
2968	Fork Lift	*	304	3	4	Engine Coolant Temperature Sensor Circuit - Voltage Above Normal, or Shorted to High Source (or Open Circuit)
2969	Fork Lift	*	304	4	4	Engine Coolant Temperature Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
2970	Fork Lift	*	305	*	2	(Warning) Engine Coolant Temperature High
2971	Fork Lift	*	310	8	4	Engine Speed Signal Error . Abnormal Frequency or Pulse Width
2972	Fork Lift	*	313	*	5	(Warning) Engine Oil Pressure Low
2973	Fork Lift	*	317	*	2	(Warning) Air Cleaner Clog
2974	Fork Lift	*	318	8	5	Engine Cooling Fan Speed Signal Error . Abnormal Frequency or Pulse Width
2975	Fork Lift	*	319	*	1	(Warning) Engine Stop
2976	Fork Lift	*	320	*	5	(Warning) Engine Check
2977	Fork Lift	*	322	4	5	Engine Preheat Relay Circuit . Voltage Below Normal, or Shorted to Low Source (or Open Circuit)
2978	Fork Lift	*	322	6	5	Engine Preheat Relay Circuit - Current Above Normal
2979	Fork Lift	*	325	4	4	Fuel Warmer Relay Circuit - Voltage Below Normal, or Shorted to Low Source (or Open Circuit)
2980	Fork Lift	*	325	6	5	Fuel Warmer Relay Circuit . Current Above Normal
2981	Fork Lift	*	327	4	5	Anti-Restart Relay Circuit - Voltage Below Normal, or Shorted to Low Source (or Open Circuit)
2982	Fork Lift	*	327	6	5	Anti-Restart Relay Circuit . Current Above Normal
2983	Fork Lift	*	346	3	5	Engine Power Mode Selector Circuit . Voltage Above Normal, or Shorted to High Source (or Open Circuit)
2984	Fork Lift	*	346	4	5	Engine Power Mode Selector Circuit . Voltage Below Normal, or Shorted to Low Source
2985	Fork Lift	*	352	*	3	(Warning) Engine DPF Clog
2986	Fork Lift	*	360	*	2	Water In Fuel Indicator, SPN97, HCESPN360
2989	Fork Lift	Cummins	411	2	3	Exhaust Gas Recirculation Valve Delta Pressure - Data erratic, intermittent or incorrect
2990	Fork Lift	Cummins	411	3	3	Exhaust Gas Recirculation Differential Pressure Sensor Circuit - Voltage above normal, or shorted to high source
2991	Fork Lift	Cummins	411	4	3	EGR valve differential pressure sensor circuit - shorted low. Low signal voltage detected on the EGR valve differential pressure sensor circuit.
2987	Fork Lift	Cummins	411	11	4	Auxiliary Temperature Sensor Input 1 Circuit - Root Cause Not Known. High temperature detected by the OEM temperature sensor or by the engine coolant temperature sensor.
2988	Fork Lift	Cummins	411	16	3	Exhaust Gas Recirculation (EGR) Differential Pressure Sensor - Data Valid but Above Normal Operating Range - Moderately Severe Level. EGR differential pressure sensor failed automatic calibration procedure or EGR differential pressure reading not valid for engine operating conditions.
2994	Fork Lift	Cummins	412	2	3	Exhaust Gas Recirculation Temperature - Data erratic, intermittent or incorrect
2995	Fork Lift	*	412	3	5	Exhaust Gas Recirculation Temperature : Exhaust Gas Recirculation Temperature Sensor Circuit - Voltage Above Normal, or Shorted to High Source
2996	Fork Lift	Cummins	412	3	5	Exhaust Gas Recirculation Temperature : Exhaust Gas Recirculation Temperature Sensor Circuit - Voltage Above Normal, or Shorted to High Source
2997	Fork Lift	*	412	4	5	Exhaust Gas Recirculation Temperature : Exhaust Gas Recirculation Temperature Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
2998	Fork Lift	Cummins	412	4	5	Exhaust Gas Recirculation Temperature : Exhaust Gas Recirculation Temperature Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
2992	Fork Lift	Cummins	412	15	3	Exhaust Gas Recirculation (EGR) temperature - Data Valid but Above Normal Operating Range, Least Severe Level.
2993	Fork Lift	Cummins	412	16	3	EGR Temperature - Data Valid But Above Normal Operating Range, Moderately Severe Level.
3001	Fork Lift	Cummins	441	3	3	Auxiliary Temperature Sensor Input # 1 Circuit - Voltage Above Normal, or Shorted to High Source
3002	Fork Lift	*	441	3	5	OEM Temperature : Auxiliary Temperature Sensor Input # 1 Circuit Voltage Above Normal, or Shorted to High Source
3003	Fork Lift	Cummins	441	4	3	Auxiliary Temperature Sensor Input # 1 Circuit - Voltage Below Normal, or Shorted to Low Source
3004	Fork Lift	*	441	4	5	OEM Temperature : Auxiliary Temperature Sensor Input # 1 Circuit Voltage Below Normal, or Shorted to Low Source
2999	Fork Lift	*	441	14	5	Auxiliary Temperature 1 : Auxiliary Temperature Sensor Input 1 - Special Instructions
3000	Fork Lift	Cummins	441	14	5	Auxiliary Temperature 1 : Auxiliary Temperature Sensor Input 1 - Special Instructions
3005	Fork Lift	Cummins	442	3	3	Auxiliary Temperature Sensor Input 2 Circuit - Voltage above normal, or shorted to high source
3006	Fork Lift	Cummins	442	4	3	Auxiliary Temperature Sensor Input 2 Circuit - Voltage below normal, or shorted to low source

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
3007	Fork Lift	*	503	0	4	Brake Oil Pressure Sensor Data Above Normal Range (or Open Circuit)
3008	Fork Lift	*	503	1	4	Brake Oil Pressure Sensor Data Below Normal Range
3009	Fork Lift	*	503	2	4	Brake Oil Pressure Sensor Data Error
3010	Fork Lift	*	503	4	4	Brake Oil Pressure Sensor Circuit . Voltage Below Normal, or Shorted to Low Source
3011	Fork Lift	*	504	*	5	(Warning) Brake Oil Pressure Low
3012	Fork Lift	*	507	0	5	Parking Oil Pressure Sensor Data Above Normal Range (or Open Circuit)
3013	Fork Lift	*	507	1	5	Parking Oil Pressure Sensor Data Below Normal Range
3014	Fork Lift	*	507	2	5	Parking Oil Pressure Sensor Data Error
3015	Fork Lift	*	507	4	5	Parking Oil Pressure Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
3016	Fork Lift	Cummins	513	4	4	Engine Brake Driver #1 Circuit - shorted low
3017	Fork Lift	Cummins	521	2	3	Brake Pedal Position - Data erratic, intermittent or incorrect
3018	Fork Lift	Scania	532	14	4	Increased idle due to other fault
3019	Fork Lift	*	537	*	2	(Warning) Transmission Oil Temperature High
3020	Fork Lift	*	538	*	5	(Warning) Transmission Check
3021	Fork Lift	*	551	3	5	Clutch Cutoff Mode Selector Circuit . Voltage Above Normal, or Shorted to High Source (or Open Circuit)
3022	Fork Lift	*	551	4	5	Clutch Cutoff Mode Selector Circuit . Voltage Below Normal, or Shorted to Low Source
3023	Fork Lift	*	552	3	5	Transmission Shift Mode Selector Circuit . Voltage Above Normal, or Shorted to High Source (or Open Circuit)
3024	Fork Lift	*	552	4	5	Transmission Shift Mode Selector Circuit . Voltage Below Normal, or Shorted to Low Source
3025	Fork Lift	*	558	0	5	Differential Lock Pressure Sensor Data Above Normal Range (or Open Circuit)
3026	Fork Lift	*	558	1	5	Differential Lock Pressure Sensor Data Below Normal Range
3030	Fork Lift	Cummins	558	2	3	Accelerator Pedal or Lever Idle Validation Circuit - Data Erratic, Intermittent, or Incorrect
3031	Fork Lift	Scania	558	2	4	Low idle switch error state from coordinator
3032	Fork Lift	*	558	2	5	Differential Lock Pressure Sensor Data Error
3033	Fork Lift	Cummins	558	4	3	Accelerator Pedal or Lever Idle Validation Circuit - Voltage Below Normal, or Shorted to Low Source
3034	Fork Lift	*	558	4	5	Differential Lock Pressure Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
3035	Fork Lift	Cummins	558	9	2	Accelerator Pedal or Lever Idle Validation Switch - Abnormal update rate
3027	Fork Lift	Cummins	558	13	2	Voltage detected at idle validation on-idle circuit when voltage at throttle position circuit indicates the pedal is not at idle or voltage detected at idle validation off-idle circuit when voltage at throttle position circuit indicates the pedal is at rest.
3028	Fork Lift	*	558	13	4	Accelerator Pedal Low Idle Switch : Accelerator Pedal or Lever Idle Validation Circuit Out of Calibration
3029	Fork Lift	Cummins	558	19	2	Accelerator Pedal or Lever Idle Validation Switch - Received Network Data In Error
3037	Fork Lift	Scania	559	2	4	Kickdown signal defect via CAN
3038	Fork Lift	Scania	559	9	4	Accelerator pedal kickdown CAN message, faulty
3036	Fork Lift	Scania	559	10	4	Accelerator pedal/kick down switch, EMS and coordinator do not agree
3040	Fork Lift	Cummins	563	9	3	Anti-Lock Braking (ABS) Controller - Abnormal update rate
3039	Fork Lift	Cummins	563	31	4	Anti-Lock Braking (ABS) Active - Condition Exists
3041	Fork Lift	*	566	*	5	(Warning) Brake Oil Level Low
3042	Fork Lift	*	567	*	2	(Warning) WIF(Water In Fuel)
3043	Fork Lift	Scania	590	2	4	Status signal which indicates the current mode of operation of the idle shutdown timer system.
3045	Fork Lift	Cummins	596	2	3	Cruise Control Enable Switch - Data erratic, intermittent or incorrect
3046	Fork Lift	Cummins	596	7	3	Cruise Control Enable Switch - Mechanical system not responding or out of adjustment
3044	Fork Lift	Cummins	596	13	3	Cruise Control Enable Switch - Out of Calibration
3047	Fork Lift	Scania	597	2	4	Brake pedal signal defect via CAN
3048	Fork Lift	Cummins	597	3	3	Brake Switch Circuit - Voltage above normal, or shorted to high source
3049	Fork Lift	Cummins	597	4	3	Brake Switch Circuit - Voltage below normal, or shorted to low source
3051	Fork Lift	Scania	598	2	4	Clutch pedal signal defect via CAN
3052	Fork Lift	Scania	598	7	4	Excessive clutch slip
3050	Fork Lift	Scania	598	19	2	CAN-signal or engine shut-down command from OPC for automatic clutch failure, timeout
3053	Fork Lift	Cummins	599	2	3	Cruise Control Set Switch - Data erratic, intermittent or incorrect
3054	Fork Lift	Cummins	608	2	4	SAE J1587/J1922 data link - can not transmit. Communication between the ECM and another device on the J1587/J1922 data link has been lost.
3055	Fork Lift	Cummins	608	9	4	Data Communication error over the J1587 data link Circuit
3056	Fork Lift	Cummins	609	2	4	Engine Control Module Identification Input State Error
3057	Fork Lift	Cummins	609	2(J1587)	4	Error detected in the control synchronization of multiple engines.
3063	Fork Lift	Cummins	611	2	3	Auxiliary Intermediate (PTO) Speed Switch Validation - Data Erratic, Intermittent, or Incorrect. The position of the intermediate speed control switch 1 does not match the position of the intermediate speed control validation switch.
3064	Fork Lift	*	611	2	5	System Diagnostic code # 1 : OEM Intermediate (PTO) Speed switch Validation Data Erratic, Intermittent, or Incorrect
3065	Fork Lift	Cummins	611	3	4	High voltage detected at the alarm circuit when low voltage was expected by the ECM.
3067	Fork Lift	Cummins	611	4	3	Post-Filter Oil Pressure Sensor Circuit- Shorted Low
3068	Fork Lift	Cummins	611	7	4	Autoshift failure, at least three shift attempts were missed.
3058	Fork Lift	Cummins	611	15	3	Turbocharger compressor outlet temperature - data above normal. High turbocharger compressor outlet temperature has been calculated by the ECM.
3059	Fork Lift	*	611	16	5	Fuel Inlet Meter Device : Fuel Inlet Meter Device - Data Valid but Above Normal Operational Range - Moderately Severe Level
3060	Fork Lift	Cummins	611	16	5	Fuel Inlet Meter Device : Fuel Inlet Meter Device - Data Valid but Above Normal Operational Range - Moderately Severe Level
3061	Fork Lift	*	611	18	5	Fuel Inlet Meter Device : Fuel Inlet Meter Device flow demand lower than expected - Data Valid but Below Normal Operational Range - Moderately Severe Level
3062	Fork Lift	Cummins	611	18	5	Fuel Inlet Meter Device : Fuel Inlet Meter Device flow demand lower than expected - Data Valid but Below Normal Operational Range - Moderately Severe Level
3066	Fork Lift	Cummins	611	31	3	Engine Control Module Data Lost - Condition Exits. Severe loss of data from the ECM.

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
3069	Fork Lift	Cummins	612	2	2	Engine Speed/Position Sensor Circuit lost both of two signals from the magnetic pickup sensor - Data Erratic, Intermittent, or incorrect
3070	Fork Lift	*	612	2	4	System Diagnostic Code # 2 : Engine Speed/Position Sensor Circuit lost both of two signals from the magnetic pickup sensor - Data Erratic, Intermittent, or incorrect
3071	Fork Lift	Cummins	612	3	4	High voltage detected at the ICON lamp circuit when low voltage was expected by the ECM.
3072	Fork Lift	Cummins	612	4	4	Less than 6 VDC (low voltage) detected at the ICON lamp circuit when high voltage was expected by the ECM.
3073	Fork Lift	Cummins	613	14	3	OEM Component Failure
3074	Fork Lift	Cummins	613	31	4	ICON™이 엔진에 자동으로 시동을 걸지 못합니다.
3075	Fork Lift	Cummins	614	2	4	ICON™ 캡 서모스탯이 하자를 기록했거나(서모스탯에서 E3으로 표시됨) 전자 컨트롤 모듈(ECM) 측 캡 서모스탯 신호가 손실되었습니다.
3076	Fork Lift	Cummins	615	31	4	Incorrect voltage detected at the ICON starter relay/Interlock Circuit input circuit by the ECM.
3077	Fork Lift	Cummins	620	1	4	원장비 제조업체(OEM) 하네스의 리모트 액셀러레이터 위치 센서 공급 핀 10에서 고전압이 감지됨.
3079	Fork Lift	Cummins	620	3	4	High voltage detected on the internal electronic control module (ECM) supply wire to the sensors.
3080	Fork Lift	Cummins	620	4	4	Low voltage detected on the internal electronic control module (ECM) supply line to some of the sensors.
3078	Fork Lift	Cummins	620	18	4	OEM Sensor Supply Voltage Low - Warning
3081	Fork Lift	*	623	4	5	Red Stop Lamp : Red Stop Lamp Driver Circuit - Voltage Below Normal, or Shorted to Low Source
3082	Fork Lift	Cummins	623	4	5	Red Stop Lamp : Red Stop Lamp Driver Circuit - Voltage Below Normal, or Shorted to Low Source
3083	Fork Lift	Cummins	625	2	3	Komnet Datalink Cannot Transmit - Data Erratic, Intermittent, or Incorrect. Communications within the OEM datalink network is intermittent.
3084	Fork Lift	Cummins	625	9	2	Proprietary Datalink Error (OEM/Vehicle Datalink) - Abnormal update rate
3085	Fork Lift	Cummins	626	1	3	Start Assist Device - Canister Empty (Ether Injection)
3088	Fork Lift	Cummins	626	3	3	Start Enable Device 1 Circuit (Ether Injection) - Voltage above normal, or shorted to high source
3089	Fork Lift	Cummins	626	4	3	Start Enable Device 1Circuit (Ether Injection) - Voltage below normal, or shorted to low source
3086	Fork Lift	Cummins	626	11	4	Start Assist Device Control Circuit Error (Ether Injection)
3087	Fork Lift	Cummins	626	18	3	Start Enable Device 1 Canister Empty (Ether Injection) - Data Valid But Below Normal Operating Range
3092	Fork Lift	*	627	2	4	Power Supply : Power Lost With Ignition On - Data Erratic, Intermittent, or Incorrect
3093	Fork Lift	Cummins	627	2	4	Power Supply : Power Lost With Ignition On - Data Erratic, Intermittent, or Incorrect
3090	Fork Lift	Cummins	627	12	3	Injector Power Supply - Bad Intelligent Device or Component
3091	Fork Lift	*	627	12	4	Controller #1 : Injector Power Supply - Bad Intelligent Device or Component
3094	Fork Lift	Cummins	628	9	2	Proprietary Datalink Error (OEM/Vehicle Datalink) Abnormal Update Rate. The ECM cannot communicate with the immobilizer anti-theft system.
3097	Fork Lift	Cummins	629	2	4	Fuel Pump Control Module, Electronic Calibration Code Error
3099	Fork Lift	Cummins	629	9	4	The ECM expected information from a multiplexed device but did not receive it soon enough, or did not receive it at all.
3095	Fork Lift	*	629	12	3	Controller #1 : Engine Control Module Warning internal hardware failure - Bad Intelligent Device or Component
3096	Fork Lift	Cummins	629	12	3	Engine Control Module Warning Internal Hardware Failure - Bad intelligent device or component
3098	Fork Lift	Cummins	629	31	2	At Least One Unacknowledged Most Severe Fault - Condition Exists
3103	Fork Lift	*	630	2	4	Calibration Memory : Engine Control Module data lost - Data Erratic, Intermittent, or Incorrect
3104	Fork Lift	Cummins	630	2	4	Calibration Memory : Engine Control Module data lost - Data Erratic, Intermittent, or Incorrect
3100	Fork Lift	Cummins	630	12	4	Engine Control Module - Warning Software error
3101	Fork Lift	Cummins	630	13	2	Engine Control Module – out of calibration
3102	Fork Lift	*	630	13	4	Calibration Memory : Electronic Calibration Code Incompatibility - Out of Calibration
3105	Fork Lift	*	630	31	5	Calibration Memory : ECM Program Memory (RAM) Corruption Condition Exists
3106	Fork Lift	Cummins	630	31	5	Calibration Memory : ECM Program Memory (RAM) Corruption Condition Exists
3108	Fork Lift	Cummins	632	3	4	Fuel Shutoff Valve Circuit - shorted high
3109	Fork Lift	Cummins	632	4	2	Less than Positive (+) 6 VDC detected at fuel shutoff circuit or an excessive current draw from the electronic control module (ECM) or faulty ECM output circuit.
3110	Fork Lift	Cummins	632	7	2	Fuel Shutoff Valve - stuck open
3107	Fork Lift	Cummins	632	11	4	Fuel Shutoff Valve Supply Voltage error
3112	Fork Lift	Cummins	633	2	4	Fuel Rail Actuator Circuit - data incorrect
3113	Fork Lift	Cummins	633	3	4	Fuel Injection Control Valve Circuit - shorted high
3116	Fork Lift	Cummins	633	4	4	Fuel Injection Control Valve Circuit - shorted low
3117	Fork Lift	Cummins	633	5	4	Fueling Actuator #1 Circuit - open circuit
3118	Fork Lift	Cummins	633	6	4	Fueling Actuator #1 Circuit - grounded circuit
3119	Fork Lift	Cummins	633	7	4	Engine ECM has detected a failure in the injection control valve.
3111	Fork Lift	Cummins	633	11	4	Open circuit detected at the transient suppressor in the injection control valve circuit in the engine harness.
3114	Fork Lift	*	633	31	4	Fuel Control Valve #1 : Fueling Actuator #1 Circuit Error - Condition Exists
3115	Fork Lift	Cummins	633	31	4	Fuel Control Valve #1 : Fueling Actuator #1 Circuit Error - Condition Exists
3120	Fork Lift	Cummins	635	2	4	Timing Rail Actuator Circuit - data incorrect
3121	Fork Lift	Cummins	635	3	4	Engine Timing Actuator Circuit - shorted high
3122	Fork Lift	Cummins	635	4	4	Engine Timing Actuator Circuit - shorted low
3123	Fork Lift	Cummins	635	5	4	Timing Actuator #1 Circuit - open circuit
3124	Fork Lift	Cummins	635	6	4	Timing Actuator #1 Circuit - grounded circuit
3125	Fork Lift	Cummins	635	7	2	Engine Timing Actuator is not responding to ECM commands
3126	Fork Lift	Scania	636	1	4	Camshaft position sensor, faulty

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
3127	Fork Lift	Scania	636	2	4	Camshaft position sensor, intermittent fault
3128	Fork Lift	Scania	636	3	4	Camshaft position sensor, short circuit to +24V
3129	Fork Lift	Scania	636	4	4	Camshaft position sensor, short circuit to ground
3130	Fork Lift	Scania	636	5	4	Camshaft position sensor, open circuit
3131	Fork Lift	Scania	636	7	4	Engine speed detected by flywheel sensor, but no signal from camshaft sensor
3132	Fork Lift	Scania	636	8	4	Camshaft Pulse Pattern, Gap or Sync Error or other fault
3133	Fork Lift	Cummins	638	6	2	Rack Actuator Position #1 Circuit - grounded circuit
3134	Fork Lift	Cummins	638	7	4	Rack Actuator - mechanically stuck open
3137	Fork Lift	Cummins	639	2	4	Engine Control Module Network Communication Error
3138	Fork Lift	*	639	9	5	SAE J1939 Datalink : SAE J1939 Multiplexing PGN Timeout Error Abnormal Update Rate
3139	Fork Lift	Cummins	639	9	5	J1939 Datalink - Abnormal Update Rate. Communication between the electronic control module (ECM) and another device on the SAE J1939 data link has been lost.
3135	Fork Lift	*	639	13	5	SAE J1939 Datalink : SAE J1939 Multiplexing Configuration Error - Out of Calibration
3136	Fork Lift	Cummins	639	13	5	SAE J1939 Datalink : SAE J1939 Multiplexing Configuration Error - Out of Calibration
3140	Fork Lift	Cummins	640	14	2	OEM Commanded Dual Output Shutdown
3141	Fork Lift	*	640	14	4	Engine External Protection Input : Auxiliary Commanded Dual Output Shutdown Special Instructions
3153	Fork Lift	Scania	641	2	4	VGT internal temperature sensor stuck
3154	Fork Lift	Cummins	641	3	3	VGT actuator driver circuit - voltage above normal or shorted to high source.
3156	Fork Lift	Cummins	641	4	3	VGT actuator driver circuit - voltage below normal, or shorted to low source.
3157	Fork Lift	Scania	641	4	4	VGT voltage supply open load
3158	Fork Lift	Cummins	641	5	3	Variable Geometry Turbocharger actuator circuit - current below normal, or open circuit.
3159	Fork Lift	Scania	641	5	4	VGT internal temperature sensor open circuit
3160	Fork Lift	Cummins	641	7	3	VGT Actuator Driver Circuit (Motor) - Mechanical system not responding or out of adjustment
3161	Fork Lift	Scania	641	7	4	VGT motion limited or restricted
3162	Fork Lift	Scania	641	8	4	VGT reference or position not found
3163	Fork Lift	Cummins	641	9	2	VGT Actuator Driver Circuit - Abnormal update rate
3164	Fork Lift	Scania	641	9	4	VGT temperature sensor value not plausible
3142	Fork Lift	Scania	641	10	4	VGT motion error, span too large
3143	Fork Lift	Cummins	641	11	3	VGT Actuator Driver Circuit - Root Cause Not Known
3144	Fork Lift	Scania	641	11	4	VGT actuator faulty
3145	Fork Lift	Cummins	641	12	3	VGT Actuator Controller - Bad intelligent device or component
3146	Fork Lift	Scania	641	12	4	VGT internal fault
3147	Fork Lift	Cummins	641	13	3	VGT Actuator Controller - Out of Calibration
3148	Fork Lift	Scania	641	13	4	VGT actuator installation procedure was not completed
3149	Fork Lift	Cummins	641	15	3	Variable geometry turbocharger actuator over temperature (calculated) - data above normal range - least severe level.
3150	Fork Lift	Scania	641	15	4	VGT error
3151	Fork Lift	Scania	641	16	4	VGT temperature too high
3152	Fork Lift	Scania	641	19	4	VGT timeout on CAN
3155	Fork Lift	Cummins	641	31	2	VGT Actuator Driver Circuit - Condition Exists
3165	Fork Lift	*	644	2	4	External Speed Input : External Speed Input (Multiple Unit Synchronization) - Data Erratic, Intermittent, or Incorrect
3166	Fork Lift	Cummins	644	2	4	External Speed Input (Multiple Unit Sychronization) - data incorrect
3167	Fork Lift	Scania	645	19	4	CAN message TCO1 from tachograph timeout
3169	Fork Lift	Cummins	647	3	3	Fan Control Circuit - Voltage Above Normal or Shorted to High Source. Open circuit or high voltage detected at the fan control circuit.
3170	Fork Lift	*	647	3	5	Fan Clutch Output Device Driver : Fan Control Circuit - Voltage Above Normal, or Shorted to High Source
3171	Fork Lift	*	647	4	5	Fan Clutch Output Device Driver : Fan Control Circuit - Voltage Below Normal, or Shorted to Low Source
3172	Fork Lift	Cummins	647	4	5	Fan Clutch Output Device Driver : Fan Control Circuit - Voltage Below Normal, or Shorted to Low Source
3168	Fork Lift	Cummins	647	11	4	Fan Clutch Circuit Error
3173	Fork Lift	Cummins	649	3	3	Engine Exhaust Back Pressure Regulator Control Circuit - Voltage Above Normal, or Shorted to High Source
3174	Fork Lift	Cummins	649	4	3	Engine Exhaust Back Pressure Regulator Control Circuit - Voltage Below Normal, or Shorted to Low Source
3175	Fork Lift	Cummins	649	5	3	Engine Exhaust Back Pressure Regulator Control Circuit - Current Below Normal or Open Circuit
3176	Fork Lift	Scania	651	1	4	Two or more injectors with the same trim code, injector cyl. 1
3182	Fork Lift	Scania	651	2	4	Injector trim code, checksum error injector cyl. 1
3185	Fork Lift	Scania	651	4	4	Injector 1 cable short circuit to ground
3186	Fork Lift	Cummins	651	5	3	Injector Solenoid Driver Cylinder 1 Circuit - Current Below Normal, or Open Circuit. High resistance or no current detected at Number 1 injector DRIVER or RETURN pin.
3187	Fork Lift	*	651	5	4	Injector Cylinder #01 : Injector Solenoid Cylinder #1 Circuit - Current Below Normal, or Open Circuit Amber
3188	Fork Lift	Scania	651	5	4	Injector cyl. 1 cable/injector open load
3189	Fork Lift	Cummins	651	6	4	Injector Solenoid Valve Cylinder #1 Circuit – grounded circuit
3190	Fork Lift	Scania	651	6	4	Injector cyl. 1 cable/injector short circuit
3191	Fork Lift	Cummins	651	7	3	Injector Solenoid Driver Cylinder 1 - Mechanical System Not Responding Properly or Out of Adjustment. Unintended fueling detected in cylinder number 1.
3192	Fork Lift	Scania	651	7	4	Injection error, physical cylinder 1
3193	Fork Lift	*	651	7	5	Injector Cylinder # 01 : Injector Cylinder #1 - Mechanical System Not Responding Properly or Out of Adjustment
3194	Fork Lift	Scania	651	8	4	Injector cyl. 1, over or under fueling
3177	Fork Lift	Scania	651	10	4	Fault with sensors/actuators for the particulate filter
3178	Fork Lift	Scania	651	13	4	Injector trim code version error, injector cyl. 1

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
3179	Fork Lift	Scania	651	15	4	Cylinder 1 torque error
3180	Fork Lift	Scania	651	16	4	Cylinder 1 injector fault, high torque
3181	Fork Lift	Scania	651	18	4	Cylinder 1 injector fault, low torque
3183	Fork Lift	Scania	651	20	4	Cylinder 1 balancing min or max
3184	Fork Lift	Scania	651	21	2	Cylinder balancing, not plausible
3195	Fork Lift	Scania	652	1	4	Two or more injectors with the same trim code, injector cyl. 2
3201	Fork Lift	Scania	652	2	4	Injector trim code, checksum error injector cyl. 2
3203	Fork Lift	Scania	652	4	4	Injector 2 cable short circuit to ground
3204	Fork Lift	Cummins	652	5	3	Injector Solenoid Driver Cylinder 2 Circuit - Current below normal or open circuit
3205	Fork Lift	*	652	5	4	Injector Cylinder #02 : Injector Solenoid Cylinder #2 Circuit - Current Below Normal, or Open Circuit
3206	Fork Lift	Scania	652	5	4	Injector cyl. 2 cable/injector open load
3207	Fork Lift	Cummins	652	6	4	Injector Solenoid Valve Cylinder #2 Circuit – grounded circuit
3208	Fork Lift	Scania	652	6	4	Injector cyl. 2 cable/injector short circuit
3209	Fork Lift	Cummins	652	7	3	Injector Solenoid Driver Cylinder 2 - Mechanical System Not Responding Properly or Out of Adjustment. Unintended fueling detected in cylinder number 2.
3210	Fork Lift	Scania	652	7	4	Injection error, physical cylinder 2
3211	Fork Lift	*	652	7	5	Injector Cylinder # 02 : Injector Cylinder #2 - Mechanical System Not Responding Properly or Out of Adjustment
3212	Fork Lift	Scania	652	8	4	Injector cyl. 2, over or under fueling
3196	Fork Lift	Scania	652	10	4	Fault with sensors/actuators for the particulate filter
3197	Fork Lift	Scania	652	13	4	Injector trim code version error, injector cyl. 2
3198	Fork Lift	Scania	652	15	4	Cylinder 2 torque error
3199	Fork Lift	Scania	652	16	4	Cylinder 2 injector fault, high torque
3200	Fork Lift	Scania	652	18	4	Cylinder 2 injector fault, low torque
3202	Fork Lift	Scania	652	20	4	Cylinder 2 balancing min or max
3213	Fork Lift	Scania	653	1	4	Two or more injectors with the same trim code, injector cyl. 3
3219	Fork Lift	Scania	653	2	4	Injector trim code, checksum error injector cyl. 3
3221	Fork Lift	Scania	653	4	4	njector 3 cable short circuit to ground
3222	Fork Lift	*	653	5	4	Injector Cylinder #03 : Injector Solenoid Cylinder #3 Circuit - Current Below Normal, or Open Circuit
3223	Fork Lift	Cummins	653	5	4	Injector Cylinder #03 : Injector Solenoid Cylinder #3 Circuit - Current Below Normal, or Open Circuit
3224	Fork Lift	Scania	653	5	4	Injector cyl. 3 cable/injector open load
3225	Fork Lift	Cummins	653	6	4	Injector Solenoid Valve Cylinder #3 Circuit – grounded circuit
3226	Fork Lift	Scania	653	6	4	Injector cyl. 3 cable/injector short circuit
3227	Fork Lift	Scania	653	7	4	Injection error, physical cylinder 3
3228	Fork Lift	*	653	7	5	Injector Cylinder # 03 : Injector Cylinder #3 - Mechanical System Not Responding Properly or Out of Adjustment
3229	Fork Lift	Cummins	653	7	5	Injector Cylinder # 03 : Injector Cylinder #3 - Mechanical System Not Responding Properly or Out of Adjustment
3230	Fork Lift	Scania	653	8	4	Injector cyl. 3, over or under fueling
3214	Fork Lift	Scania	653	10	4	Fault with sensors/actuators for the particulate filter
3215	Fork Lift	Scania	653	13	4	Injector trim code version error, injector cyl. 3
3216	Fork Lift	Scania	653	15	4	Cylinder 3 torque error
3217	Fork Lift	Scania	653	16	4	Cylinder 3 injector fault, high torque
3218	Fork Lift	Scania	653	18	4	Cylinder 3 injector fault, low torque
3220	Fork Lift	Scania	653	20	2	Cylinder 3 balancing min or max
3231	Fork Lift	Scania	654	1	4	Two or more injectors with the same trim code, injector cyl. 4
3237	Fork Lift	Scania	654	2	4	Injector trim code, checksum error injector cyl. 4
3239	Fork Lift	Scania	654	4	4	Injector 4 cable short circuit to ground
3240	Fork Lift	Cummins	654	5	3	Injector Solenoid Driver Cylinder 4 Circuit - Current below normal or open circuit
3241	Fork Lift	*	654	5	4	Injector Cylinder #04 : Injector Solenoid Cylinder #4 Circuit - Current Below Normal, or Open Circuit
3242	Fork Lift	Scania	654	5	4	Injector cyl. 4 cable/injector open load
3243	Fork Lift	Cummins	654	6	4	Injector Solenoid Valve Cylinder #4 Circuit - grounded circuit
3244	Fork Lift	Scania	654	6	4	Injector cyl. 4 cable/injector short circuit
3245	Fork Lift	Scania	654	7	4	Injection error, physical cylinder 4
3246	Fork Lift	*	654	7	5	Injector Cylinder # 04 : Injector Cylinder #4 - Mechanical System Not Responding Properly or Out of Adjustment
3247	Fork Lift	Cummins	654	7	5	Injector Solenoid Driver Cylinder 4 - Mechanical System Not Responding Properly or Out of Adjustment. Unintended fueling detected in cylinder number 4.
3248	Fork Lift	Scania	654	8	4	Injector cyl. 4, over or under fueling
3232	Fork Lift	Scania	654	10	4	Fault with sensors/actuators for the particulate filter
3233	Fork Lift	Scania	654	13	4	Injector trim code version error, injector cyl. 4
3234	Fork Lift	Scania	654	15	4	Cylinder 4 torque error
3235	Fork Lift	Scania	654	16	4	Cylinder 4 injector fault, high torque
3236	Fork Lift	Scania	654	18	4	Cylinder 4 injector fault, low torque
3238	Fork Lift	Scania	654	20	4	Cylinder 4 balancing min or max
3249	Fork Lift	Scania	655	1	4	Two or more injectors with the same trim code, injector cyl. 5
3255	Fork Lift	Scania	655	2	4	Injector trim code, checksum error injector cyl. 5
3257	Fork Lift	Scania	655	4	4	Injector 5 cable short circuit to ground
3258	Fork Lift	Scania	655	5	4	Injector cyl. 5 cable/injector open load
3259	Fork Lift	*	655	5	5	Injector Cylinder #05 : Injector Solenoid Cylinder #5 Circuit - Current Below Normal, or Open Circuit
3260	Fork Lift	Cummins	655	5	5	Injector Cylinder #05 : Injector Solenoid Cylinder #5 Circuit - Current Below Normal, or Open Circuit
3261	Fork Lift	Cummins	655	6	4	Injector Solenoid Valve Cylinder #5 Circuit – grounded circuit
3262	Fork Lift	Scania	655	6	4	Injector cyl. 5 cable/injector short circuit

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
3263	Fork Lift	Scania	655	7	4	Injection error, physical cylinder 5
3264	Fork Lift	*	655	7	5	Injector Cylinder # 05 : Injector Cylinder #5 - Mechanical System Not Responding Properly or Out of Adjustment
3265	Fork Lift	Cummins	655	7	5	Injector Solenoid Driver Cylinder 5 - Mechanical System Not Responding Properly or Out of Adjustment. Unintended fueling detected in cylinder Number 5.
3266	Fork Lift	Scania	655	8	4	Injector cyl. 5, over or under fueling
3250	Fork Lift	Scania	655	10	4	Fault with sensors/actuators for the particulate filter
3251	Fork Lift	Scania	655	13	4	Injector trim code version error, injector cyl. 5
3252	Fork Lift	Scania	655	15	4	Cylinder 5 torque error
3253	Fork Lift	Scania	655	16	4	Cylinder 5 injector fault, high torque
3254	Fork Lift	Scania	655	18	4	Cylinder 5 injector fault, low torque
3256	Fork Lift	Scania	655	20	4	Cylinder 5 balancing min or max
3267	Fork Lift	Scania	656	1	4	Two or more injectors with the same trim code, injector cyl. 6
3272	Fork Lift	Scania	656	2	4	Injector trim code, checksum error injector cyl. 6
3274	Fork Lift	Cummins	656	5	3	Injector Solenoid Driver Cylinder 6 Circuit - Current Below Normal, or Open Circuit. Current detected at injector number 1 when voltage is turned off.
3275	Fork Lift	*	656	5	4	Injector Cylinder #06 : Injector Solenoid Cylinder #6 Circuit - Current Below Normal, or Open Circuit
3276	Fork Lift	Scania	656	5	4	Injector cyl. 6 cable/injector open load
3277	Fork Lift	Cummins	656	6	4	Injector Solenoid Valve Cylinder #6 Circuit - grounded circuit
3278	Fork Lift	Scania	656	6	4	Injector cyl. 6 cable/injector short circuit
3279	Fork Lift	Scania	656	7	4	Injection error, physical cylinder 6
3280	Fork Lift	*	656	7	5	Injector Cylinder # 06 : Injector Cylinder #6 - Mechanical System Not Responding Properly or Out of Adjustment
3281	Fork Lift	Cummins	656	7	5	Injector Cylinder # 06 : Injector Cylinder #6 - Mechanical System Not Responding Properly or Out of Adjustment
3282	Fork Lift	Scania	656	8	4	Injector cyl. 6, over or under fueling
3268	Fork Lift	Scania	656	13	4	Injector trim code version error, injector cyl. 6
3269	Fork Lift	Scania	656	15	4	Cylinder 6 torque error
3270	Fork Lift	Scania	656	16	4	Cylinder 6 injector fault, high torque
3271	Fork Lift	Scania	656	18	4	Cylinder 6 injector fault, low torque
3273	Fork Lift	Scania	656	20	4	Cylinder 6 balancing min or max
3283	Fork Lift	Scania	657	1	4	Two or more injectors with the same trim code, injector cyl. 7
3288	Fork Lift	Scania	657	2	4	Injector trim code, checksum error injector cyl. 7
3290	Fork Lift	Cummins	657	5	3	Injector Solenoid Driver Cylinder 7 Circuit - Current below normal or open circuit
3291	Fork Lift	Scania	657	5	4	Injector cyl. 7 cable/injector open load
3292	Fork Lift	Scania	657	6	4	Injector cyl. 7 cable/injector short circuit
3293	Fork Lift	Scania	657	7	4	Injection error, physical cylinder 7
3294	Fork Lift	Scania	657	8	4	Injector cyl. 7, over or under fueling
3284	Fork Lift	Scania	657	13	4	Injector trim code version error, injector cyl. 7
3285	Fork Lift	Scania	657	15	4	Cylinder 7 torque error
3286	Fork Lift	Scania	657	16	4	Cylinder 7 injector fault, high torque
3287	Fork Lift	Scania	657	18	4	Cylinder 7 injector fault, low torque
3289	Fork Lift	Scania	657	20	4	Cylinder 7 balancing min or max
3295	Fork Lift	Scania	658	1	4	Two or more injectors with the same trim code, injector cyl. 8
3300	Fork Lift	Scania	658	2	4	Injector trim code, checksum error injector cyl. 8
3302	Fork Lift	Cummins	658	5	3	Injector Solenoid Driver Cylinder 8 Circuit - Current below normal or open circuit
3303	Fork Lift	Scania	658	5	4	Injector cyl. 8 cable/injector open load
3304	Fork Lift	Scania	658	6	4	Injector cyl. 8 cable/injector short circuit
3305	Fork Lift	Scania	658	7	4	Injection error, physical cylinder 8
3306	Fork Lift	Scania	658	8	4	Injector cyl. 8, over or under fueling
3296	Fork Lift	Scania	658	13	4	Injector trim code version error, injector cyl. 8
3297	Fork Lift	Scania	658	15	4	Cylinder 8 torque error
3298	Fork Lift	Scania	658	16	4	Cylinder 8 injector fault, high torque
3299	Fork Lift	Scania	658	18	4	Cylinder 8 injector fault, low torque
3301	Fork Lift	Scania	658	20	4	Cylinder 8 balancing min or max
3307	Fork Lift	Cummins	659	5	3	Injector Solenoid Driver Cylinder 9 Circuit - Current below normal or open circuit
3308	Fork Lift	Cummins	660	5	3	Injector Solenoid Driver Cylinder 10 Circuit - Current below normal or open circuit
3309	Fork Lift	Cummins	661	5	3	Injector Solenoid Driver Cylinder 11 Circuit - Current below normal or open circuit
3310	Fork Lift	Cummins	662	5	3	Injector Solenoid Driver Cylinder 12 Circuit - Current below normal or open circuit
3311	Fork Lift	Cummins	663	5	3	Injector Solenoid Driver Cylinder 13 Circuit - Current below normal or open circuit
3312	Fork Lift	Cummins	664	5	3	Injector Solenoid Driver Cylinder 14 Circuit - Current below normal or open circuit
3313	Fork Lift	Cummins	665	5	3	Injector Solenoid Driver Cylinder 15 Circuit - Current below normal or open circuit
3314	Fork Lift	Cummins	666	5	3	Injector Solenoid Driver Cylinder 16 Circuit - Current below normal or open circuit
3315	Fork Lift	Scania	677	0	4	Unintentional starter activation while moving or idling
3317	Fork Lift	Scania	677	2	4	Starter actuator, faulty
3318	Fork Lift	Scania	677	3	4	Starter actuator, short circuit to +24V
3319	Fork Lift	*	677	3	5	Starter Solenoid Lockout Relay Driver Circuit : Starter Relay Circuit - Voltage Above Normal, or Shorted to High Source
3320	Fork Lift	Cummins	677	3	5	Starter Solenoid Lockout Relay Driver Circuit : Starter Relay Circuit - Voltage Above Normal, or Shorted to High Source
3321	Fork Lift	Scania	677	4	4	Starter actuator, short circuit to ground
3322	Fork Lift	*	677	4	5	Starter Solenoid Lockout Relay Driver Circuit : Starter Relay Circuit - Voltage Below Normal, or Shorted to Low Source
3323	Fork Lift	Cummins	677	4	5	Starter Solenoid Lockout Relay Driver Circuit : Starter Relay Circuit - Voltage Below Normal, or Shorted to Low Source
3324	Fork Lift	Scania	677	5	4	Starter actuator, open load
3325	Fork Lift	Scania	677	7	4	Starter actuator, blind start
3326	Fork Lift	Scania	677	8	4	Activates the starter

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
3316	Fork Lift	Scania	677	19	4	Starter motor demand defect via CAN
3327	Fork Lift	*	697	3	5	Auxiliary PWM Driver #1 : Auxiliary PWM Driver #1 - Voltage Above Normal, or Shorted to High Source
3328	Fork Lift	Cummins	697	3	5	Auxiliary PWM Driver #1 : Auxiliary PWM Driver #1 - Voltage Above Normal, or Shorted to High Source
3329	Fork Lift	*	697	4	5	Auxiliary PWM Driver #1 : Auxiliary PWM Driver #1 - Voltage Below Normal, or Shorted to Low Source
3330	Fork Lift	Cummins	697	4	5	Auxiliary PWM Driver #1 : Auxiliary PWM Driver #1 - Voltage Below Normal, or Shorted to Low Source
3332	Fork Lift	*	701	4	5	Hourmeter Circuit - Voltage Below Normal, or Shorted to Low Source
3331	Fork Lift	Cummins	701	14	2	Auxiliary Input/Output 1 - Special Instructions
3333	Fork Lift	Cummins	702	3	4	A problem was detected with the dual output-driver A circuit.
3334	Fork Lift	*	702	3	5	Circuit - Voltage : Auxiliary Input/Output 2 Circuit - Voltage Above Normal, or Shorted to High Source
3335	Fork Lift	Cummins	702	5	3	Auxiliary Input/Output 2 Circuit - Current below normal or open circuit
3336	Fork Lift	Cummins	702	6	3	Auxiliary Input/Output 2 Circuit - Current above normal or grounded circuit
3341	Fork Lift	Cummins	703	3	4	Auxiliary Input/Output #3 Circuit - shorted high
3342	Fork Lift	*	703	3	5	Circuit - Voltage : Auxiliary Input/Output 3 Circuit - Voltage Above Normal, or Shorted to High Source
3337	Fork Lift	Cummins	703	11	4	Auxiliary Equipment Sensor Input Number 3 (OEM Switch) - Root Cause Not Known.
3338	Fork Lift	*	703	11	5	Auxiliary Equipment Sensor Input : Warning Auxiliary Equipment Sensor Input # 3 (OEM Switch) - Root Cause Not Known
3339	Fork Lift	*	703	14	5	Auxiliary Equipment Sensor : Auxiliary Equipment Sensor Input 3 Engine Protection Critical - Special Instructions
3340	Fork Lift	Cummins	703	14	5	Auxiliary Equipment Sensor : Auxiliary Equipment Sensor Input 3 Engine Protection Critical - Special Instructions
3343	Fork Lift	*	705	0	4	Battery Voltage High
3344	Fork Lift	*	705	1	4	Battery Voltage Low
3345	Fork Lift	*	706	*	5	(Warning) Battery Voltage Low
3346	Fork Lift	*	707	1	4	Alternator Node I Voltage Low (or Open Circuit)
3347	Fork Lift	Cummins	717	11	4	Either low voltage detected on autoshift high gear actuator circuit when (+) 12 VDC are commanded or voltage detected when no voltage is commanded.
3348	Fork Lift	Cummins	718	11	4	Either low voltage detected on autoshift low gear actuator circuit when + 12 VDC are commanded or voltage detected when no voltage is commanded.
3349	Fork Lift	Cummins	719	11	4	Either low voltage detected on autoshift neutral gear actuator circuit when + 12 VDC are commanded or voltage detected when no voltage is commanded.
3352	Fork Lift	Cummins	723	2	3	Engine Speed Sensor (Camshaft) Error - Data Erratic, Intermittent, or Incorrect. The ECM has detected an error in the camshaft position sensor signal.
3353	Fork Lift	*	723	2	4	Engine Speed Sensor #2 : Engine Speed Sensor (Camshaft) Error - Data Erratic, Intermittent, or Incorrect
3354	Fork Lift	Scania	723	2	4	Engine position sensor 2, faulty
3355	Fork Lift	*	723	3	5	Buzzer Circuit - Voltage Above Normal, or Shorted to High Source
3356	Fork Lift	Scania	723	4	4	Engine position sensor 2, too weak signal
3357	Fork Lift	*	723	4	5	Buzzer Circuit - Voltage Below Normal, or Shorted to Low Source (or Open Circuit)
3358	Fork Lift	Cummins	723	7	3	Engine Speed / Position Camshaft and Crankshaft Misalignment - Mechanical system not responding or out of adjustment
3359	Fork Lift	*	723	7	4	Engine Speed Sensor #2 : Engine Speed/Position #2 mechanical misalignment between camshaft and crankshaft sensors Mechanical System Not Responding Properly or Out of Adjustment
3360	Fork Lift	Scania	723	7	4	Engine position sensor 2, faulty
3361	Fork Lift	Scania	723	8	4	Engine position sensor 2, Gap Puls or Sync error
3362	Fork Lift	Scania	723	9	4	Engine position sensor 2, Time out
3350	Fork Lift	Scania	723	10	4	Engine position sensor 2, position diff
3351	Fork Lift	Scania	723	14	4	Engine position sensor 2 error torque limit
3363	Fork Lift	*	727	4	5	Wiper Relay Circuit - Voltage Below Normal, or Shorted to Low Source (or Open Circuit)
3364	Fork Lift	*	727	6	5	Wiper Relay Circuit . Current Above Normal
3365	Fork Lift	*	728	3	5	Boom Position Sensor Signal Circuit . Voltage Above Normal, or Shorted to High Source (or Open Circuit)
3366	Fork Lift	*	728	4	5	Boom Position Sensor Signal Circuit . Voltage Below Normal, or Shorted to Low Source
3367	Fork Lift	*	729	3	5	Bucket Position Sensor Signal Circuit . Voltage Above Normal, or Shorted to High Source (or Open Circuit)
3368	Fork Lift	Cummins	729	3	5	Inlet Air Heater Driver #1 : Intake Air Heater #1 Circuit - Voltage Above Normal, or Shorted to High Source
3369	Fork Lift	*	729	4	5	Bucket Position Sensor Signal Circuit . Voltage Below Normal, or Shorted to Low Source
3370	Fork Lift	Cummins	729	4	5	Inlet Air Heater Driver #1 : Intake Air Heater #1 Circuit - Voltage Below Normal, or Shorted to Low Source
3372	Fork Lift	*	730	3	5	Intake Air Heater # 2 : Intake Air Heater 2 Circuit - Voltage Above Normal, or Shorted to High Source
3373	Fork Lift	Cummins	730	3	5	Intake Air Heater # 2 : Intake Air Heater 2 Circuit - Voltage Above Normal, or Shorted to High Source
3374	Fork Lift	*	730	4	5	Intake Air Heater # 2 : Intake Air Heater 2 Circuit - Voltage Below Normal, or Shorted to Low Source
3375	Fork Lift	Cummins	730	4	5	Intake Air Heater # 2 : Intake Air Heater 2 Circuit - Voltage Below Normal, or Shorted to Low Source
3371	Fork Lift	*	730	19	5	APTC Heater PWM Output Duty Operation Error
3376	Fork Lift	Cummins	733	3	4	Rack Position Sensor #1 Circuit - shorted high
3377	Fork Lift	Cummins	734	5	4	전압을 공급했을 때 1번 실린더의 인젝터에서 전류가 감지되지 않음.
3378	Fork Lift	Cummins	748	9	3	Transmission Output Retarder - Abnormal update rate
3379	Fork Lift	*	830	12	5	MCU Internal Memory Error

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
3380	Fork Lift	*	840	2	4	Cluster Communication Error
3381	Fork Lift	*	841	2	4	ECM Communication Error
3382	Fork Lift	*	842	2	3	TCU Communication Error
3383	Fork Lift	*	843	2	5	APTC Communication Error
3384	Fork Lift	*	844	2	4	Monitor Communication Error
3385	Fork Lift	*	850	2	5	RMCU-MCU Communication Error
3386	Fork Lift	Cummins	862	3	3	Crankcase Breather Filter Heater Circuit - Voltage above normal, or shorted to high source
3387	Fork Lift	Cummins	862	4	3	Crankcase Breather Filter Heater Circuit - Voltage below normal, or shorted to low source
3388	Fork Lift	Cummins	876	11	5	Air conditioner clutch driver signal indicates a short to ground when commanded on.
3389	Fork Lift	Cummins	923	11	4	Output Device Driver (VGT or Transmission shift PWM signal)
3390	Fork Lift	Cummins	931	3	4	Fuel Supply Pump Actuator Circuit - shorted high
3391	Fork Lift	Cummins	931	7	4	Fuel Supply Pump Actuator – mechanically stuck
3392	Fork Lift	Scania	974	0	4	Signal level from redundant gas pedal above high limit
3393	Fork Lift	Scania	974	1	4	Signal level from redundant gas pedal below low limit
3396	Fork Lift	Cummins	974	3	2	Remote Accelerator Pedal or Lever Position Sensor 1 Circuit - Voltage Above Normal, or shorted to High Source. High voltage detected at remote accelerator pedal position circuit.
3397	Fork Lift	*	974	3	4	Remote Accelerator : Remote Accelerator Pedal or Lever Position Sensor Circuit - Voltage Above Normal, or Shorted to High Source
3398	Fork Lift	Cummins	974	4	2	Remote Accelerator Pedal or Lever Position Sensor 1 Circuit - Voltage below normal, or shorted to low source
3399	Fork Lift	*	974	4	4	Remote Accelerator : Remote Accelerator Pedal or Lever Position Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
3394	Fork Lift	Cummins	974	19	2	SAE J1939 Multiplexing Remote Throttle Data Error
3395	Fork Lift	*	974	19	5	Remote Accelerator : SAE J1939 Multiplexing Remote Accelerator Pedal or Lever Data Error - Received Network Data In Error Red
3400	Fork Lift	Scania	986	2	4	Fan actuator, faulty
3401	Fork Lift	Scania	986	3	4	Fan actuator, short circuit to +24V
3402	Fork Lift	Scania	986	4	4	Fan actuator, short circuit high to ground
3403	Fork Lift	Scania	986	5	4	Fan actuator, open load
3404	Fork Lift	Scania	986	7	4	Fan coupling unit, bad performance
3405	Fork Lift	*	999	555	2	Hyundai Industries Heavy
3406	Fork Lift	Cummins	999	555	2	Hyundai Industries Heavy
3408	Fork Lift	Cummins	1043	3	3	Accelerator Pedal or Lever Position Sensor Supply Voltage Circuit - Voltage Above Normal or Shorted to High Source. High voltage detected at sensor supply circuit for the accelerator pedal or lever position sensor.
3409	Fork Lift	Cummins	1043	4	3	Accelerator Pedal or Lever Position Sensor Supply Voltage Circuit - Voltage Below Normal or Shorted to Low Source. Low voltage detected at sensor supply circuit to the accelerator pedal or lever position sensor.
3410	Fork Lift	*	1043	4	4	Internal Sensor Voltage Supply : Engine Speed/Position Sensor (Crankshaft) Supply Voltage Circuit -Voltage Below Normal, or Shorted to Low Source
3407	Fork Lift	Cummins	1043	11	4	Engine Speed/Position Sensor #2 (Camshaft) Supply Voltage
3412	Fork Lift	Cummins	1072	3	3	Engine Brake Actuator Circuit #1 - Voltage Above Normal or Shorted to High Source. Open circuit or high voltage detected at the engine brake solenoid number 1 signal circuit.
3413	Fork Lift	*	1072	3	5	Engine Brake Output # 1 : Engine Brake Actuator Driver 1 Circuit - Voltage Above Normal, or Shorted to High Source
3414	Fork Lift	*	1072	4	5	Engine Brake Output # 1 : Engine Brake Actuator Driver 1 Circuit - Voltage Below Normal, or Shorted to Low Source
3415	Fork Lift	Cummins	1072	4	5	Engine Brake Output # 1 : Engine Brake Actuator Driver 1 Circuit - Voltage Below Normal, or Shorted to Low Source
3411	Fork Lift	Cummins	1072	11	4	Less than 6 VDC detected at the engine brake circuit 1 when on indicates an excessive current draw from the electronic control module (ECM) or faulty ECM output circuit.
3417	Fork Lift	*	1073	3	5	Engine Compression Brake Output # 2 : Engine Brake Actuator Circuit #2 - Voltage Above Normal, or Shorted to High Source
3418	Fork Lift	Cummins	1073	3	5	Engine Compression Brake Output # 2 : Engine Brake Actuator Circuit #2 - Voltage Above Normal, or Shorted to High Source
3419	Fork Lift	*	1073	4	5	Engine Compression Brake Output # 2 : Engine Brake Actuator Circuit #2 - Voltage Below Normal, or Shorted to Low Source
3420	Fork Lift	Cummins	1073	4	5	Engine Compression Brake Output # 2 : Engine Brake Actuator Circuit #2 - Voltage Below Normal, or Shorted to Low Source
3416	Fork Lift	Cummins	1073	11	4	Less than 6 VDC detected at engine brake circuit 2 when on indicates an excessive current draw from the electronic control module (ECM) or a faulty ECM output circuit.
3422	Fork Lift	*	1075	3	4	Electric Lift Pump for Engine Fuel : Fuel Priming Pump Control Signal Circuit - Voltage Above Normal, or Shorted to High Source
3423	Fork Lift	Cummins	1075	3	4	Electric Lift Pump for Engine Fuel : Fuel Priming Pump Control Signal Circuit - Voltage Above Normal, or Shorted to High Source
3424	Fork Lift	*	1075	4	4	Electric Lift Pump for Engine Fuel : Fuel Priming Pump Control Signal Circuit - Voltage Below Normal, or Shorted to Low Source
3425	Fork Lift	Cummins	1075	4	4	Electric Lift Pump for Engine Fuel : Fuel Priming Pump Control Signal Circuit - Voltage Below Normal, or Shorted to Low Source
3421	Fork Lift	Cummins	1075	11	4	Fuel Priming Pump Control Circuit - shorted high/low
3428	Fork Lift	Cummins	1076	3	2	Fuel Pump Control Module, Fuel Control Valve Circuit - shorted high
3429	Fork Lift	Cummins	1076	4	4	Fuel Pump Control Module, Fuel Control Valve Circuit - shorted low
3430	Fork Lift	Cummins	1076	7	4	Fuel Pump Control Module, Fuel Control Valve - mechanically stuck
3426	Fork Lift	Cummins	1076	12	4	Fuel Metering Solenoid - bad device
3427	Fork Lift	Cummins	1076	13	4	The electronic control module (ECM) detected a failure in the injection control valve identifier circuit.
3435	Fork Lift	Cummins	1077	2	4	Fuel Pump Control Module, Supply Voltage Circuit - data incorrect
3436	Fork Lift	Cummins	1077	3	2	Fuel Pump Control Module, Fuel Shutoff Error
3437	Fork Lift	Cummins	1077	4	4	Fuel Pump Control Module, Supply Voltage Circuit - shorted low

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
3438	Fork Lift	Cummins	1077	7	4	Fuel Pump Control Module, Stuck Relay Error
3439	Fork Lift	Cummins	1077	9	4	Fuel Pump Control Module, CAN Communication Error - abnormal update rate
3431	Fork Lift	Cummins	1077	11	4	Fuel Pump Control Module, Idle Validation Error
3432	Fork Lift	Cummins	1077	12	4	Fuel Pump Control Module, Self-Test Error
3433	Fork Lift	Cummins	1077	13	4	Fuel Pump Control Module, Fueling or Engine Speed Mismatch
3434	Fork Lift	Cummins	1077	14	4	Fuel System Leakage error
3441	Fork Lift	Cummins	1078	2	4	Fuel Pump Control Module, Engine Synchronization Error
3442	Fork Lift	Cummins	1078	8	4	Fuel Pump Control Module, Timing Error
3440	Fork Lift	Cummins	1078	11	4	Fuel Pump Control Module, Increment Angle Time Sensor Error
3443	Fork Lift	Cummins	1079	3	3	Sensor Supply Voltage number 1 Circuit - Voltage Above Normal or Shorted to High Source. High voltage detected at sensor supply number 1 circuit.
3444	Fork Lift	Cummins	1079	4	3	Sensor Supply Voltage Number 1 Circuit - Voltage Below Normal or Shorted to Low Source. Low voltage detected at sensor supply number 1 circuit.
3445	Fork Lift	Cummins	1080	3	3	Sensor Supply 2 Circuit - Voltage Above Normal or Shorted to High Source. High voltage detected at sensor supply number 2 circuit.
3446	Fork Lift	Cummins	1080	4	3	Sensor Supply Voltage Number 2 Circuit - Voltage Below Normal or Shorted to Low Source. Low voltage detected at the sensor supply number 2 circuit.
3449	Fork Lift	Cummins	1081	7	3	Engine Wait to Start Lamp - Mechanical system not responding or out of adjustment
3450	Fork Lift	Cummins	1081	9	3	Engine Wait to Start Lamp - Abnormal update rate
3447	Fork Lift	Cummins	1081	19	3	Engine Wait to Start Lamp - Received Network Data In Error
3448	Fork Lift	Cummins	1081	31	3	Engine Wait to Start Lamp - Condition Exists
3452	Fork Lift	Cummins	1083	3	4	High voltage detected at the OEM temperature sensor signal pin of the 31-pin OEM connector.
3453	Fork Lift	Cummins	1083	4	4	Auxiliary Temperature Sensor Input # 1 Circuit – shorted low
3451	Fork Lift	Cummins	1083	14	4	Auxiliary Temperature Sensor Input # 1 Engine Protection - Critical
3455	Fork Lift	Cummins	1084	3	4	High voltage detected at the original equipment manufacturers (OEM) pressure sensor signal.
3456	Fork Lift	Cummins	1084	4	4	Low voltage detected at the original equipment manufacturers (OEM) pressure sensor signal.
3454	Fork Lift	Cummins	1084	14	4	Auxiliary Pressure Sensor Input # 2 Engine Protection - Critical
3457	Fork Lift	Scania	1086	2	4	Electrical fault on the parking brake pressure sensor
3458	Fork Lift	Scania	1108	14	4	Overridden due to other fault
3459	Fork Lift	Cummins	1109	0	2	Engine Protection System Approaching Shutdown - Data valid but above normal operational range - Most
3461	Fork Lift	Scania	1110	2	4	Status signal which indicates whether or not the engine protection system has shutdown the engine.
3460	Fork Lift	Scania	1110	14	2	Engine Stop due to other fault
3463	Fork Lift	*	1112	3	5	Engine Brake Output # 3 : Engine Brake Actuator Driver 3 Circuit - Voltage Above Normal, or Shorted to High Source
3464	Fork Lift	Cummins	1112	3	5	Engine Brake Output # 3 : Engine Brake Actuator Driver 3 Circuit - Voltage Above Normal, or Shorted to High Source
3465	Fork Lift	*	1112	4	5	Engine Brake Output # 3 : Engine Brake Actuator Driver Output 3 Circuit Voltage Below Normal, or Shorted to Low Source
3466	Fork Lift	Cummins	1112	4	5	Engine Brake Output # 3 : Engine Brake Actuator Driver Output 3 Circuit Voltage Below Normal, or Shorted to Low Source
3462	Fork Lift	Cummins	1112	11	4	켜질 때 엔진 브레이크 회로 3에서 (+) 6 VDC 미만이 감지됨. 이는 과도한 전류가 ECM 또는 결함이 있는 ECM 출력 회로에서 소모되고 있음을 의미합니다.
3467	Fork Lift	Cummins	1127	7	3	Engine Turbocharger 1 Boost Pressure - Mechanical system not responding or out of adjustment
3470	Fork Lift	Cummins	1129	3	4	Right Bank Intake Manifold Pressure Sensor Circuit Failed High
3471	Fork Lift	Cummins	1129	4	3	Right Bank Intake Manifold Pressure Sensor Circuit Failed Low
3468	Fork Lift	Cummins	1129	16	4	High Intake Manifold Pressure Right Bank
3469	Fork Lift	Cummins	1129	18	4	Low Intake Manifold Pressure Right Bank
3472	Fork Lift	Cummins	1131	0	4	High Intake Manifold Temp - Left Bank Rear
3474	Fork Lift	Cummins	1131	3	4	Left Bank Rear Intake Manifold Temp Sensor Circuit Failed High
3475	Fork Lift	Cummins	1131	4	4	Left Bank Rear Intake Manifold Temp Sensor Circuit Failed Low
3473	Fork Lift	Cummins	1131	10	4	Rapid Rise in Intake Manifold Temperature LBR
3476	Fork Lift	Cummins	1132	0	4	High Intake Manifold Temperature - Right Bank Front
3478	Fork Lift	Cummins	1132	3	4	Right Bank Front Intake Manifold Temperature Sensor Circuit Failed High
3479	Fork Lift	Cummins	1132	4	4	Right Bank Front Intake Manifold Temperature Sensor Circuit Failed Low
3477	Fork Lift	Cummins	1132	10	4	Rapid Rise in Intake Manifold Temperature RBF
3480	Fork Lift	Cummins	1133	0	4	High Intake Manifold Temperature - Right Bank Rear
3482	Fork Lift	Cummins	1133	3	4	Right Bank Rear Intake Manifold Temperature Sensor Circuit Failed High
3483	Fork Lift	Cummins	1133	4	4	Right Bank Rear Intake Manifold Temperature Sensor Circuit Failed Low
3481	Fork Lift	Cummins	1133	10	4	Rapid Rise in Intake Manifold Temperature RBR
3484	Fork Lift	Cummins	1136	2	3	Engine ECU Temperature - Data erratic, intermittent or incorrect
3485	Fork Lift	Cummins	1136	3	3	Engine ECU Temperature Sensor Circuit - Voltage above normal, or shorted to high source
3486	Fork Lift	*	1136	3	5	Sensor Circuit -Voltage : ECM Internal Temperature Sensor Circuit - Voltage Above Normal, or Shorted to High Source
3487	Fork Lift	*	1136	4	5	Sensor Circuit -Voltage : ECM Internal Temperature Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
3488	Fork Lift	Cummins	1136	4	5	Sensor Circuit -Voltage : ECM Internal Temperature Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
3489	Fork Lift	Cummins	1137	0	2	High #1 LB Cylinder Exhaust Temperature
3492	Fork Lift	Cummins	1137	4	3	Cyl #1 LB Exhaust Temp Sens Failed Low
3490	Fork Lift	Cummins	1137	16	4	High #1 LB Cylinder Power
3491	Fork Lift	Cummins	1137	18	4	Low #1 LB Cylinder Power
3493	Fork Lift	Cummins	1138	0	2	High #2 LB Cylinder Exhaust Temperature
3496	Fork Lift	Cummins	1138	4	3	Cyl #2 LB Exhaust Temp Sens Failed Low
3494	Fork Lift	Cummins	1138	16	4	High #2 LB Cylinder Power

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
3495	Fork Lift	Cummins	1138	18	4	Low #2 LB Cylinder Power
3497	Fork Lift	Cummins	1139	0	2	High #3 LB Cylinder Exhaust Temperature
3500	Fork Lift	Cummins	1139	4	4	Cyl #3 LB Exhaust Temp Sens Failed Low
3498	Fork Lift	Cummins	1139	16	4	High #3 LB Cylinder Power
3499	Fork Lift	Cummins	1139	18	4	Low #3 LB Cylinder Power
3501	Fork Lift	Cummins	1140	0	2	High #4 LB Cylinder Exhaust Temperature
3504	Fork Lift	Cummins	1140	4	2	Cyl #4 LB Exhaust Temp Sens Failed Low
3502	Fork Lift	Cummins	1140	16	4	High #4 LB Cylinder Power
3503	Fork Lift	Cummins	1140	18	4	Low #4 LB Cylinder Power
3505	Fork Lift	Cummins	1141	0	2	High #5 LB Cylinder Exhaust Temperature
3508	Fork Lift	Cummins	1141	4	2	Cyl #5 LB Exhaust Temp Sens Failed Low
3506	Fork Lift	Cummins	1141	16	4	High #5 LB Cylinder Power
3507	Fork Lift	Cummins	1141	18	4	Low #5 LB Cylinder Power
3509	Fork Lift	Cummins	1142	0	2	High #6 LB Cylinder Exhaust Temperature
3512	Fork Lift	Cummins	1142	4	3	Cyl #6 LB Exhaust Temp Sens Failed Low
3510	Fork Lift	Cummins	1142	16	4	High #6 LB Cylinder Power
3511	Fork Lift	Cummins	1142	18	4	Low #6 LB Cylinder Power
3513	Fork Lift	Cummins	1143	0	2	High #7 LB Cylinder Exhaust Temperature
3517	Fork Lift	Cummins	1143	4	3	Cyl #7 LB Exhaust Temp Sens Failed Low
3514	Fork Lift	Cummins	1143	16	4	High #7 LB Cylinder Power
3515	Fork Lift	Cummins	1143	18	4	Low #7 LB Cylinder Power
3516	Fork Lift	Cummins	1143	30	2	High #1 RB Cylinder Exhaust Temperature
3518	Fork Lift	Cummins	1143	45	4	Low #1 RB Cylinder Power
3519	Fork Lift	Cummins	1144	0	2	High #8 LB Cylinder Exhaust Temperature
3523	Fork Lift	Cummins	1144	4	3	Cyl #8 LB Exhaust Temp Sens Failed Low
3520	Fork Lift	Cummins	1144	16	4	High #8 LB Cylinder Power
3521	Fork Lift	Cummins	1144	18	4	Low #8 LB Cylinder Power
3522	Fork Lift	Cummins	1144	30	2	High #2 RB Cylinder Exhaust Temperature
3524	Fork Lift	Cummins	1144	45	4	Low #2 RB Cylinder Power
3525	Fork Lift	Cummins	1145	30	2	High #3 RB Cylinder Exhaust Temperature
3526	Fork Lift	Cummins	1145	45	4	Low #3 RB Cylinder Power
3527	Fork Lift	Cummins	1145	60	4	Low #1 RB Cylinder Power
3528	Fork Lift	Cummins	1146	30	2	High #4 RB Cylinder Exhaust Temperature
3529	Fork Lift	Cummins	1146	45	4	Low #4 RB Cylinder Power
3530	Fork Lift	Cummins	1146	60	4	Low #2 RB Cylinder Power
3531	Fork Lift	Cummins	1147	30	2	High #5 RB Cylinder Exhaust Temperature
3532	Fork Lift	Cummins	1147	45	4	Low #5 RB Cylinder Power
3533	Fork Lift	Cummins	1147	60	4	Low #3 RB Cylinder Power
3534	Fork Lift	Cummins	1148	30	2	High #6 RB Cylinder Exhaust Temperature
3535	Fork Lift	Cummins	1148	45	4	Low #6 RB Cylinder Power
3536	Fork Lift	Cummins	1148	60	4	Low #4 RB Cylinder Power
3537	Fork Lift	Cummins	1149	60	4	Low #5 RB Cylinder Power
3538	Fork Lift	Cummins	1150	0	2	High #7 RB Cylinder Exhaust Temperature
3539	Fork Lift	Cummins	1150	60	4	Low #6 RB Cylinder Power
3540	Fork Lift	Cummins	1151	0	2	High #8 RB Cylinder Exhaust Temperature
3542	Fork Lift	Cummins	1151	4	3	Cyl #7 RB Exhaust Temp Sens Failed Low
3541	Fork Lift	Cummins	1151	18	4	Low #7 RB Cylinder Power
3544	Fork Lift	Cummins	1152	4	3	Cyl #8 RB Exhaust Temp Sens Failed Low
3543	Fork Lift	Cummins	1152	18	4	Low #8 RB Cylinder Power
3545	Fork Lift	Cummins	1153	0	3	High #9 LB Cylinder Exhaust Temperature
3546	Fork Lift	Cummins	1153	4	3	Exhaust Gas Temperature Sensor Circuit Failed Low Cyl # 9 RB
3547	Fork Lift	Cummins	1154	0	3	High #9 RB Cylinder Exhaust Temperature
3548	Fork Lift	Cummins	1154	4	3	Exhaust Gas Temperature Sensor Circuit Failed Low Cyl # 9 LB
3549	Fork Lift	Cummins	1172	0	4	High Turbo Compressor Inlet Temp LB
3551	Fork Lift	Cummins	1172	2	3	Turbocharger 1 Compressor Intake Temperature - Data erratic, intermittent or incorrect
3552	Fork Lift	Cummins	1172	3	3	Turbocharger Number 1 Compressor Inlet Temperature Sensor Circuit - Voltage Above Normal or Shorted to High Source. High signal voltage detected at the turbocharger compressor inlet air temperature circuit.
3553	Fork Lift	*	1172	3	4	Turbocharger #1Compressor Inlet Temperature : Turbocharger #1 Compressor Inlet Temperature Sensor Circuit - Voltage Above Normal, or Shorted to High Source
3554	Fork Lift	*	1172	4	4	Turbocharger #1Compressor Inlet Temperature : Turbocharger #1 Compressor Inlet Temperature Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
3555	Fork Lift	Cummins	1172	4	4	LBR Turbo Comp Inlet Temp Sens Failed Low
3556	Fork Lift	Cummins	1172	9	3	Turbocharger 1 Compressor Intake Temperature Sensor - Abnormal update rate
3550	Fork Lift	Cummins	1172	19	3	Turbocharger 1 Compressor Intake Temperature Sensor - Received Network Data In Error
3558	Fork Lift	Cummins	1173	3	4	RBF Turbo Comp Inlet Temp Sens Failed High
3557	Fork Lift	Cummins	1173	16	4	High Turbo Compressor Inlet Temp RB
3559	Fork Lift	Cummins	1174	4	4	RBR Turbo Comp Inlet Temp Sens Failed Low
3560	Fork Lift	Cummins	1176	1	2	Turbocharger 1 Compressor Intake Pressure - Data valid but below normal operational range - Most Severe Level
3563	Fork Lift	Cummins	1176	2	3	Turbocharger 1 Compressor Intake Pressure - Data erratic, intermittent or incorrect
3564	Fork Lift	Cummins	1176	3	3	Turbocharger 1 Compressor Intake Pressure Circuit - Voltage above normal, or shorted to high source
3565	Fork Lift	Cummins	1176	4	3	Turbocharger 1 Compressor Intake Pressure Circuit - Voltage below normal, or shorted to low source
3566	Fork Lift	Cummins	1176	9	3	Turbocharger 1 Compressor Intake Pressure - Abnormal update rate
3561	Fork Lift	Cummins	1176	18	3	Turbocharger 1 Compressor Intake Pressure - Data Valid But Below Normal Operating Range - Moderately
3562	Fork Lift	Cummins	1176	19	3	Turbocharger 1 Compressor Intake Pressure - Received Network Data In Error

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
3567	Fork Lift	Cummins	1180	0	4	Turbocharger #1 Turbine Inlet Temperature High - warning level
3568	Fork Lift	Cummins	1188	3	4	High voltage detected at the wastegate actuator number 1 circuit when no voltage was being supplied by the electronic control module (ECM).
3569	Fork Lift	Cummins	1188	4	4	Turbocharger #1 Wastegate Control Circuit - shorted low
3570	Fork Lift	Cummins	1188	7	3	Turbocharger 1 Wastegate Control Mechanical System Not Responding Properly or Out of Adjustment. Intake manifold pressure has exceeded the maximum limit for the given engine rating.
3571	Fork Lift	Cummins	1189	3	4	High voltage detected at the wastegate actuator number 2 circuit when no voltage was being supplied by the electronic control module (ECM).
3572	Fork Lift	Cummins	1189	4	4	Less than + 6 VDC detected at the wastegate actuator number 2 circuit when activated indicates an excessive current draw from the electronic control module (ECM) or faulty ECM output circuit.
3573	Fork Lift	Cummins	1194	13	2	Anti-theft Encryption Seed - Out of Calibration
3574	Fork Lift	Cummins	1195	2	2	Antitheft Password Valid Indicator Data Erratic, Intermittent, or Incorrect. Engine ignition attempt without authorization from immobilizer anti-theft device.
3575	Fork Lift	Cummins	1208	3	3	Pre Filter Oil Pressure Sensor Circuit Failed High
3577	Fork Lift	Cummins	1209	2	3	Exhaust Gas Pressure 1 - Data erratic, intermittent or incorrect
3578	Fork Lift	Cummins	1209	3	3	Exhaust gas pressure sensor circuit - shorted high. High voltage detected at the exhaust gas pressure sensor circuit.
3579	Fork Lift	*	1209	3	5	Exhaust Gas Pressure : Exhaust Gas Pressure Sensor Circuit - Voltage Above Normal, or Shorted to High Source
3580	Fork Lift	Cummins	1209	4	3	Exhaust gas pressure sensor circuit - shorted low. Low voltage detected on the exhaust gas pressure sensor exhaust circuit.
3581	Fork Lift	*	1209	4	5	Exhaust Gas Pressure : Exhaust Gas Pressure Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
3576	Fork Lift	Cummins	1209	16	3	Exhaust Gas Pressure 1 - Data Valid But Above Normal Operating Range - Moderately Severe Level
3582	Fork Lift	Cummins	1213	9	3	Malfunction Indicator Lamp - Abnormal update rate
3583	Fork Lift	Cummins	1231	2	4	J1939 Network #2 - Data erratic, intermittent or incorrect
3584	Fork Lift	Cummins	1235	2	4	J1939 Network #3 - Data erratic, intermittent or incorrect
3586	Fork Lift	Scania	1239	7	4	Fuel Rail pressure, small volume leak
3585	Fork Lift	Cummins	1239	16	3	Engine Fuel Leakage - Data Valid But Above Normal Operating Range - Moderately Severe Level
3587	Fork Lift	Cummins	1244	5	4	Fueling Actuator #2 Circuit - open circuit
3588	Fork Lift	Cummins	1244	6	4	Fueling Actuator #2 Circuit - grounded circuit
3589	Fork Lift	Cummins	1245	5	4	Timing Actuator #2 Circuit - open circuit
3590	Fork Lift	Cummins	1245	6	4	Timing Actuator #2 Circuit - grounded circuit
3591	Fork Lift	Cummins	1264	0	4	Engine Blowby - Warning Level
3593	Fork Lift	Cummins	1264	3	4	Crankcase Blowby Pressure Sensor Circuit - shorted high
3594	Fork Lift	Cummins	1264	4	4	Crankcase Blowby Pressure Sensor Circuit - shorted low
3592	Fork Lift	Cummins	1264	16	4	Engine Blowby - Warning Level
3595	Fork Lift	Cummins	1265	4	4	Engine Oil Burn Valve Solenoid Circuit – shorted low
3596	Fork Lift	Cummins	1266	4	4	Engine Oil Replacement Valve Solenoid Circuit - shorted low
3597	Fork Lift	*	1267	3	4	Idle Shutdown Vehicle Accessory/Ignition Bus Relay Circuit
3598	Fork Lift	Cummins	1267	3	4	High voltage detected at the ignition bus relay output circuit (ignition relay positive (+)) when low voltage was expected by the ECM.
3599	Fork Lift	*	1267	4	4	Vehicle Accessories Relay Driver : Idle Shutdown Vehicle Accessories Relay Driver Circuit - Voltage Below Normal, or Shorted to Low Source
3600	Fork Lift	Cummins	1267	4	4	Less than 6 VDC detected at the ignition bus relay output circuit when the high voltage was expected by the ECM.
3601	Fork Lift	Cummins	1318	9	4	Exhaust Port Temperature Bank Imbalance
3602	Fork Lift	Cummins	1319	2	4	Intake Manifold Boost Pressure Imbalance
3603	Fork Lift	Cummins	1321	2	4	Either low voltage detected when + 12 VDC are commanded or voltage detected when no voltage is commanded.
3605	Fork Lift	Scania	1322	7	4	Random/Multiple Cylinder Misfire Detected
3604	Fork Lift	Cummins	1322	31	3	Engine Misfire for Multiple Cylinders Condition Exists. Engine misfire has been detected in multiple cylinder numbers.
3606	Fork Lift	Cummins	1323	0	4	High #1 LB Cylinder Power
3608	Fork Lift	Scania	1323	7	4	Cylinder 1 Misfire Detected
3607	Fork Lift	Cummins	1323	31	3	Engine Misfire Cylinder 1- Condition Exists. Engine misfire has been detected in cylinder number 1.
3609	Fork Lift	Cummins	1324	0	4	High #2 LB Cylinder Power
3611	Fork Lift	Scania	1324	7	4	Cylinder 2 Misfire Detected
3610	Fork Lift	Cummins	1324	31	3	Engine Misfire Cylinder 2 - Condition Exists. Engine misfire has been detected in cylinder number 2.
3612	Fork Lift	Cummins	1325	0	4	High #3 LB Cylinder Power
3614	Fork Lift	Scania	1325	7	4	Cylinder 3 Misfire Detected
3613	Fork Lift	Cummins	1325	31	3	Engine Misfire Cylinder 3 - Condition Exists. Engine misfire has been detected in cylinder number 3.
3615	Fork Lift	Cummins	1326	0	4	High #4 LB Cylinder Power
3617	Fork Lift	Scania	1326	7	4	Cylinder 4 Misfire Detected
3616	Fork Lift	Cummins	1326	31	3	Engine Misfire Cylinder 4 - Condition Exists. Engine misfire has been detected in cylinder number 4.
3618	Fork Lift	Cummins	1327	0	4	High #5 LB Cylinder Power
3620	Fork Lift	Scania	1327	7	4	Cylinder 5 Misfire Detected
3619	Fork Lift	Cummins	1327	31	3	Engine Misfire Cylinder 5 - Condition Exists. Engine misfire has been detected in cylinder number 5.
3621	Fork Lift	Cummins	1328	0	4	High #6 LB Cylinder Power
3623	Fork Lift	Scania	1328	7	4	Engine misfire detected in cylinder

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
3622	Fork Lift	Cummins	1328	31	3	Engine Misfire Cylinder 6 - Condition Exists. Engine misfire has been detected in cylinder number 6.
3624	Fork Lift	Cummins	1329	0	4	High #1 RB Cylinder Power
3625	Fork Lift	Cummins	1329	1	4	Low #1 RB Cylinder Power
3626	Fork Lift	Scania	1329	7	4	Engine misfire detected in cylinder
3627	Fork Lift	Cummins	1330	0	4	High #2 RB Cylinder Power
3628	Fork Lift	Scania	1330	7	4	Engine misfire detected in cylinder
3629	Fork Lift	Cummins	1331	0	4	High #3 RB Cylinder Power
3630	Fork Lift	Cummins	1332	0	4	High #4 RB Cylinder Power
3631	Fork Lift	Cummins	1333	0	4	High #5 RB Cylinder Power
3632	Fork Lift	Cummins	1334	0	4	High #6 RB Cylinder Power
3633	Fork Lift	Cummins	1340	16	3	High Power – Cylinder # 9 Left Bank
3634	Fork Lift	Cummins	1340	18	3	Low Power – Cylinder # 9 Left Bank
3635	Fork Lift	Cummins	1341	16	3	High Power – Cylinder # 9 Right Bank
3636	Fork Lift	Cummins	1341	18	3	Low Power – Cylinder # 9 Right Bank
3637	Fork Lift	Cummins	1347	3	3	Engine Fuel Pump Pressurizing Assembly 1 Circuit - Voltage above normal, or shorted to high source
3638	Fork Lift	*	1347	3	4	Fuel Pump Pressurizing Assembly #1 : High Fuel Pressure Solenoid Valve Circuit - Voltage Above Normal, or Shorted to High Source
3639	Fork Lift	Cummins	1347	4	3	High Fuel Pressure Solenoid Valve Circuit - Voltage Below Normal or Shorted to Low Source. Electronic fuel control actuator shorted low.
3640	Fork Lift	*	1347	4	4	Fuel Pump Pressurizing Assembly #1 : High Fuel Pressure Solenoid Valve Circuit - Voltage Below Normal, or Shorted to Low Source
3641	Fork Lift	*	1347	7	4	Fuel Pump Pressurizing Assembly #1 : High Fuel Pressure Solenoid Valve #1 - Mechanical System Not Responding Properly or Out of Adjustment
3642	Fork Lift	Cummins	1347	7	4	Front Pumping Element. The electronic control module (ECM) has detected a malfunction in the front pumping element.
3643	Fork Lift	Cummins	1348	3	4	High Fuel Pressure Solenoid Valve #2 Circuit - shorted high
3644	Fork Lift	Cummins	1348	4	4	High Fuel Pressure Solenoid Valve #2 Circuit - shorted low
3645	Fork Lift	Cummins	1348	7	4	The electronic control module (ECM) has detected a malfunction in the rear pumping element.
3648	Fork Lift	Cummins	1349	3	3	Injector Metering Rail 2 Pressure Sensor Circuit - Voltage above normal, or shorted to high source
3649	Fork Lift	Cummins	1349	4	3	Injector Metering Rail 2 Pressure Sensor Circuit - Voltage below normal, or shorted to low source
3650	Fork Lift	Cummins	1349	7	4	Injector Metering Rail #2 Pressure Malfunction
3646	Fork Lift	Cummins	1349	16	4	Injector Metering Rail #2 Pressure High - Warning
3647	Fork Lift	Cummins	1349	18	4	Injector Metering Rail #2 Pressure Low - Warning
3651	Fork Lift	Cummins	1351	3	4	High voltage or an open circuit detected at the electronic air compressor governor actuator circuit.
3652	Fork Lift	Cummins	1351	4	4	Low voltage was detected on the electronic air compressor circuit when high voltage was expected.
3653	Fork Lift	Cummins	1377	2	4	Multiple Unit Synchronization Switch Circuit - data incorrect
3654	Fork Lift	*	1377	2	5	Switch Circuit : Multiple Unit Synchronization Switch Circuit - Data Erratic, Intermittent, or Incorrect
3655	Fork Lift	Cummins	1378	0	3	Change Lubricating Oil and Filter
3656	Fork Lift	*	1378	31	5	Engine Oil Change Interval Change : Lubricating Oil and Filter - Condition Exists
3657	Fork Lift	Cummins	1378	31	5	Engine Oil Change Interval Change : Lubricating Oil and Filter - Condition Exists
3658	Fork Lift	Cummins	1380	1	4	Low Oil Level in the Centinel makeup oil tank
3660	Fork Lift	Cummins	1380	2	5	Either high or low voltage detected on the crankcase oil level sensor circuit by the electronic control module (ECM).
3659	Fork Lift	Cummins	1380	17	5	Low Oil Level in the Centinel makeup oil tank
3662	Fork Lift	Cummins	1381	3	4	Fuel Supply Pump Inlet Pressure Sensor Circuit - shorted high
3663	Fork Lift	Cummins	1381	4	4	Fuel Supply Pump Inlet Pressure Sensor Circuit – shorted low
3661	Fork Lift	Cummins	1381	18	4	Fuel Supply Pump Inlet Pressure Low - warning level
3664	Fork Lift	Cummins	1383	31	2	Engine Shut Down Hot - Condition Exists
3665	Fork Lift	Cummins	1384	31	4	Engine Shutdown Commanded by J1939
3668	Fork Lift	Cummins	1387	3	4	Auxiliary Pressure Sensor Input # 2 Circuit – shorted high
3669	Fork Lift	Cummins	1387	4	4	Auxiliary Pressure Sensor Input # 2 Circuit – shorted low
3666	Fork Lift	Cummins	1387	11	4	Auxiliary Equipment Sensor Input # 2 (OEM Pressure Sensor) Engine Protection – Warning
3667	Fork Lift	Cummins	1387	14	2	OEM pressure signal at pin 48 of the OEM harness indicates pressure outside the engine protection limit.
3672	Fork Lift	*	1388	3	5	Auxiliary Pressure : Auxiliary Pressure Sensor Input # 2 Circuit - Voltage Above Normal, or Shorted to High Source
3673	Fork Lift	Cummins	1388	3	5	Auxiliary Pressure : Auxiliary Pressure Sensor Input # 2 Circuit - Voltage Above Normal, or Shorted to High Source
3674	Fork Lift	*	1388	4	5	Auxiliary Pressure : Auxiliary Pressure Sensor Input # 2 Circuit - Voltage Below Normal, or Shorted to Low Source
3675	Fork Lift	Cummins	1388	4	5	Auxiliary Pressure : Auxiliary Pressure Sensor Input # 2 Circuit - Voltage Below Normal, or Shorted to Low Source
3670	Fork Lift	Cummins	1388	14	2	Crankcase Pressure - Data Above Normal Operational Range - Severe Level.
3671	Fork Lift	*	1388	14	5	Auxiliary Pressure : Auxiliary Pressure Sensor Input 1 - Special Instructions
3676	Fork Lift	Cummins	1399	3	3	Auxiliary Pressure Sensor Input 1 Circuit - Voltage Above Normal, or Shorted to High Source. High signal voltage detected at the OEM pressure circuit.
3678	Fork Lift	Scania	1442	2	4	Inlet metering valve 1, faulty
3679	Fork Lift	Scania	1442	3	2	Inlet metering valve 1, short circuit to +24V
3680	Fork Lift	Scania	1442	5	2	Inlet metering valve 1, short circuit to ground
3681	Fork Lift	Scania	1442	7	4	Inlet metering valve 1, stuck
3682	Fork Lift	Scania	1442	8	4	Inlet metering valve 1, plausible leakage

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
3677	Fork Lift	Scania	1442	10	4	Inlet metering valve 1, calculated resistance error
3683	Fork Lift	Scania	1443	1	4	Mechanical dump dalve, opened
3684	Fork Lift	Scania	1443	6	4	Mechanical dump valve, tripped
3687	Fork Lift	Scania	1483	2	2	EMS internal error
3688	Fork Lift	Scania	1483	8	2	EMS Memory or TPU Error
3689	Fork Lift	Scania	1483	9	2	Camshaft TPU Supervision Error
3685	Fork Lift	Scania	1483	11	4	Software Watchdog Reset
3686	Fork Lift	Scania	1483	12	4	Hardware watchdog error
3698	Fork Lift	Scania	1484	9	4	CAN message DLN1 from coordinator timeout
3690	Fork Lift	Scania	1484	10	4	CAN message CRUISE CONTROL/ VEHICLE SPEED from coordinator timeout
3691	Fork Lift	Scania	1484	16	4	CAN message from EMSX, invalid data
3692	Fork Lift	Scania	1484	18	4	CAN message from EMSX, invalid data
3693	Fork Lift	Scania	1484	19	4	CAN message DLN6 from coordinator timeout
3694	Fork Lift	Scania	1484	20	4	CAN message timout from EMSX
3695	Fork Lift	Scania	1484	21	4	CAN message timout from EMSX
3696	Fork Lift	*	1484	31	5	J1939 Error : Additional Auxiliary Diagnostic Codes logged Condition Exists
3697	Fork Lift	Cummins	1484	31	5	Additional Auxiliary Diagnostic Codes logged - Condition Exists
3699	Fork Lift	Scania	1485	16	4	SCR main unit, power switched off too early
3700	Fork Lift	Scania	1485	18	4	SCR main unit, power switched off too late
3701	Fork Lift	Cummins	1563	2	2	Control Module Identification Input State Error - Data erratic, intermittent or incorrect
3702	Fork Lift	*	1563	2	5	Control Module Identification Input State : Control Module Identification Input State Error Data Erratic, Intermittent, or Incorrect
3703	Fork Lift	Scania	1569	14	4	Torque reduction due to other fault
3704	Fork Lift	Cummins	1569	31	3	Engine Protection Torque Derate - Condition Exists
3705	Fork Lift	Cummins	1590	2	3	Adaptive Cruise Control Mode - Data erratic, intermittent or incorrect
3708	Fork Lift	Cummins	1623	9	3	Tachograph Output Shaft Speed - Abnormal update rate
3706	Fork Lift	Cummins	1623	13	3	Tachograph Output Shaft Speed - Out of Calibration
3707	Fork Lift	Cummins	1623	19	3	Tachograph Output Shaft Speed - Received Network Data In Error
3710	Fork Lift	Scania	1632	2	4	Torque limit rating described in the current record.
3709	Fork Lift	Cummins	1632	14	3	Engine Torque Limit Feature - Special Instructions
3711	Fork Lift	Cummins	1632	31	3	Engine Torque Limit Feature - Condition Exists
3712	Fork Lift	Cummins	1639	0	3	Fan Speed - Data Valid but Above Normal Operational Range - Most Severe Level
3713	Fork Lift	Cummins	1639	1	3	Fan Speed - Data Valid but Below Normal Operational Range - Most Severe Level
3714	Fork Lift	Scania	1639	3	4	Fan speed sensor, short circuit to +24V
3715	Fork Lift	Scania	1639	4	4	Fan speed sensor supply too low
3716	Fork Lift	Scania	1639	8	4	Fan speed sensor circuit no signal
3717	Fork Lift	*	1661	4	5	Engine Automatic Start Lamp : Engine Automatic Start Lamp Driver Circuit Voltage Above Normal, or Shorted to High Source
3718	Fork Lift	Cummins	1661	4	5	Engine Automatic Start Lamp : Engine Automatic Start Lamp Driver Circuit Voltage Above Normal, or Shorted to High Source
3719	Fork Lift	Cummins	1668	2	4	J1939 Network #4 - Data erratic, intermittent or incorrect
3723	Fork Lift	Scania	1675	2	4	Immobiliser - EMS and EMSX
3725	Fork Lift	Scania	1675	9	4	Invalid Data Received From Vehicle Control Module
3720	Fork Lift	Scania	1675	12	4	Immobiliser error
3721	Fork Lift	Scania	1675	13	4	Software Incompatibility With Vehicle Immoblilizer Control Module
3722	Fork Lift	Scania	1675	19	4	Lost Communication With Vehicle Immobilizer Control Module
3724	Fork Lift	Cummins	1675	31	3	Engine Starter Mode Overcrank Protection - Condition Exists
3726	Fork Lift	Cummins	1689	2	3	실시간 시계 전원 차단 - 데이터가 이상하거나 끊어지거나 정확하지 않음. 실시간 시계 전원이 차단되었습니다.
3727	Fork Lift	Scania	1761	0	4	A special catalyst uses a chemical reagent to reach legal requirement for NOX emissions. This parameter indicates the reagent level within that catalyst tank.
3728	Fork Lift	Cummins	1761	1	3	Catalyst Tank Level Data Valid but Below Normal Operational Range Most Severe Level. No catalyst solution has been detected in the catalyst solution tank.
3729	Fork Lift	Scania	1761	1	4	Reductant tank, empty
3739	Fork Lift	Cummins	1761	2	3	Catalyst Tank Level Sensor Data Erratic, Intermittent, or Incorrect. Catalyst solution level is not changing with engine operating conditions.
3740	Fork Lift	Scania	1761	2	4	Reductant tank level sensor, short circuit to ground
3741	Fork Lift	Cummins	1761	3	3	Catalyst Tank Level Sensor Circuit Voltage Above Normal, or Shorted to High Source. High signal voltage detected at the catalyst tank level sensor circuit.
3742	Fork Lift	Scania	1761	3	4	Reductant tank level sensor, short circuit to +24V
3743	Fork Lift	Cummins	1761	4	3	Catalyst Tank Level Sensor Circuit Voltage Below Normal, or Shorted to Low Source. Low signal voltage detected at the catalyst tank level sensor circuit.
3744	Fork Lift	Scania	1761	4	4	Aftertreatment Diesel Exhaust Fluid Tank Level
3745	Fork Lift	Cummins	1761	5	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Level Sensor Circuit - Current below normal or open circuit
3746	Fork Lift	Scania	1761	5	4	Reductant tank level sensor, open circuit
3747	Fork Lift	Cummins	1761	6	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Level Sensor Circuit - Current above normal or grounded circuit
3748	Fork Lift	Scania	1761	6	4	Aftertreatment Diesel Exhaust Fluid Tank Level
3749	Fork Lift	Scania	1761	8	4	Aftertreatment Diesel Exhaust Fluid Tank Level
3730	Fork Lift	Cummins	1761	10	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Level Sensor - Abnormal Rate of Change
3731	Fork Lift	Scania	1761	10	4	Aftertreatment Diesel Exhaust Fluid Tank Level
3732	Fork Lift	Cummins	1761	11	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Level Sensor - Root Cause Not Known
3733	Fork Lift	Cummins	1761	13	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Level Sensor - Out of Calibration
3734	Fork Lift	Cummins	1761	17	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Level - Data Valid But Below Normal Operating Range - Least Severe Level
3735	Fork Lift	Scania	1761	17	4	Aftertreatment Diesel Exhaust Fluid Tank Level
3736	Fork Lift	Cummins	1761	18	3	Catalyst Tank Level Data Valid but Below Normal Operational Range Moderately Severe Level. Low catalyst solution level has been detected in the catalyst solution tank.

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
3737	Fork Lift	Scania	1761	18	4	Reductant tank, low level
3738	Fork Lift	Scania	1761	19	4	Aftertreatment Diesel Exhaust Fluid Tank Level
3750	Fork Lift	*	1800	16	5	Battery Temperature : Battery Temperature - Data Valid but Above Normal Operational Range - Moderately Severe Level
3751	Fork Lift	Cummins	1800	16	5	Battery Temperature : Battery Temperature - Data Valid but Above Normal Operational Range - Moderately Severe Level
3752	Fork Lift	*	1800	18	5	Battery Temperature : Battery Temperature - Data Valid but Below Normal Operational Range - Moderately Severe Level
3753	Fork Lift	Cummins	1800	18	5	Battery Temperature : Battery Temperature - Data Valid but Below Normal Operational Range - Moderately Severe Level
3754	Fork Lift	Cummins	1818	31	4	Roll Over Protection Brake Control Active - Condition Exists
3755	Fork Lift	Cummins	2006	9	3	Source Address 6 - Abnormal Update Rate
3756	Fork Lift	Cummins	2185	3	3	Sensor Supply Voltage 4 Circuit - Voltage Above Normal or Shorted to High Source. High voltage detected at +5 volt sensor supply circuit to the accelerator pedal position sensor.
3757	Fork Lift	Scania	2609	2	4	AC compressor actuator, faulty
3758	Fork Lift	Scania	2609	3	4	AC compressor actuator, short circuit to +24V
3759	Fork Lift	Scania	2609	4	4	AC compressor actuator, short circuit to ground
3760	Fork Lift	Scania	2609	5	4	AC compressor actuator, open load
3761	Fork Lift	*	2623	3	5	Accelerator Pedal Position : Accelerator Pedal or Lever Position Sensor 2 Circuit - Voltage Above Normal, or Shorted to High Source
3762	Fork Lift	Cummins	2623	3	5	Accelerator Pedal Position : Accelerator Pedal or Lever Position Sensor 2 Circuit - Voltage Above Normal, or Shorted to High Source
3763	Fork Lift	*	2623	4	5	Accelerator Pedal Position : Accelerator Pedal or Lever Position Sensor 2 Circuit - Voltage Below Normal, or Shorted to Low Source
3764	Fork Lift	Cummins	2623	4	5	Accelerator Pedal Position : Accelerator Pedal or Lever Position Sensor 2 Circuit - Voltage Below Normal, or Shorted to Low Source
3765	Fork Lift	Cummins	2629	15	3	Turbocharger Compressor Outlet Temperature (Calculated) - Data Valid But Above Normal Operating Range
3766	Fork Lift	Cummins	2630	2	3	Engine Charge Air Cooler Outlet Temperature - Data erratic, intermittent or incorrect
3767	Fork Lift	Cummins	2630	3	3	Engine Charge Air Cooler Outlet Temperature - Voltage above normal, or shorted to high source
3768	Fork Lift	Cummins	2630	4	3	Engine Charge Air Cooler Outlet Temperature - Voltage below normal, or shorted to low source
3769	Fork Lift	Cummins	2633	7	3	Engine VGT Nozzle Position - Mechanical system not responding or out of adjustment
3770	Fork Lift	Cummins	2634	3	3	Power Relay Driver Circuit - Voltage above normal, or shorted to high source
3771	Fork Lift	Cummins	2634	4	3	Power Relay Driver Circuit - Voltage below normal, or shorted to low source
3772	Fork Lift	Cummins	2789	15	3	Turbocharger Turbine Inlet Temperature (Calculated) - Data Valid but Above Normal Operational Range – Least Severe Level
3773	Fork Lift	*	2789	15	5	System Diagnostic Code #1 : Turbocharger Turbine Inlet Temperature (Calculated) - Data Valid but Above Normal Operational Range - Least Severe Level
3774	Fork Lift	Cummins	2789	16	4	Turbocharger Turbine Intake Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
3775	Fork Lift	Cummins	2790	15	4	Turbocharger Compressor Outlet Temperature (Calculated) - Data Valid but Above Normal Operational Range – Least Severe Level
3776	Fork Lift	*	2790	15	5	System Diagnostic Code #1 : Turbocharger Compressor Outlet Temperature (Calculated) - Data Valid but Above Normal Operational Range - Least Severe Level
3782	Fork Lift	Scania	2791	2	4	EGR actuator, control error
3785	Fork Lift	Cummins	2791	3	3	EGR Valve Control Circuit - Voltage Above Normal or Shorted to High Source. High voltage detected at the EGR valve motor circuit.
3786	Fork Lift	Scania	2791	3	4	EGR actuator, short circuit to +24V
3787	Fork Lift	Cummins	2791	4	3	EGR Valve Control Circuit - Voltage Below Normal or Shorted to Low Source. Low voltage detected at the EGR valve motor circuit.
3788	Fork Lift	Scania	2791	4	4	EGR actuator, short circuit to ground
3789	Fork Lift	Cummins	2791	5	3	EGR Valve Control Circuit - Current Below Normal or Open Circuit. High voltage or open circuit detected at the EGR valve motor circuit.
3790	Fork Lift	Scania	2791	5	4	EGR actuator, stuck open
3791	Fork Lift	Cummins	2791	7	3	Exhaust Gas Recirculation (EGR) Valve Control - Mechanical System Not Responding Properly or Out of Adjustment. EGR valve motor does not respond or is slow to respond.
3792	Fork Lift	Scania	2791	7	4	EGR actuator, stuck close
3793	Fork Lift	Scania	2791	8	4	The EGR valve is responding too slow
3794	Fork Lift	Cummins	2791	9	3	EGR Valve Control Circuit - Abnormal update rate
3777	Fork Lift	Scania	2791	10	4	NOx Exceedence - Incorrect EGR Flow
3778	Fork Lift	Scania	2791	11	4	EGR system faulty
3779	Fork Lift	Cummins	2791	13	3	EGR Valve Controller - Out of Calibration
3780	Fork Lift	Cummins	2791	15	4	Exhaust Gas Recirculation (EGR) Valve Actuator Over Temperature (Calculated) - Data Above Normal Range - least severe level.
3781	Fork Lift	Scania	2791	16	4	NOx Exceedence - Deactivation of EGR
3783	Fork Lift	Scania	2791	20	4	EGR higher than desired
3784	Fork Lift	Scania	2791	21	4	EGR lower than desired
3796	Fork Lift	Cummins	2795	2	3	VGT Position Sensor - Data erratic, intermittent, or incorrect. Intermittent variable geometry turbocharger (VGT) position information is being received by the electronic control module (ECM).
3797	Fork Lift	Cummins	2795	4	3	Turbocharger position sensor circuit - shorted high. High signal voltage detected at the turbocharger position sensor circuit.
3795	Fork Lift	Cummins	2795	13	3	Variable Geometry Turbocharger actuator position failed automatic calibration procedure - out of calibration.
3799	Fork Lift	Scania	2797	2	4	Injector group A, short circuit to other bank
3800	Fork Lift	Scania	2797	3	4	Injector group A, short circuit to +24V
3801	Fork Lift	Scania	2797	4	4	Injector group A, short circuit to ground

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
3802	Fork Lift	Scania	2797	5	4	Injector drive voltage, faulty
3803	Fork Lift	Scania	2797	8	4	Injector group A, injection error
3798	Fork Lift	Cummins	2797	13	3	Engine Injector Bank 1 Barcodes - Out of Calibration
3804	Fork Lift	Scania	2798	2	4	Injector group B, short circuit to other bank
3805	Fork Lift	Scania	2798	3	4	Injector group B, short circuit +24V
3806	Fork Lift	Scania	2798	4	4	Injector group B, short circuit ground
3807	Fork Lift	Scania	2798	8	4	Injection error, group B
3808	Fork Lift	*	2802	31	5	Electronic Control Module : Electronic Control Module data lost - Condition Exists
3809	Fork Lift	Cummins	2802	31	5	Electronic Control Module : Electronic Control Module data lost - Condition Exists
3810	Fork Lift	Scania	2858	13	4	Machine Data Configuration
3811	Fork Lift	Cummins	2884	9	4	Engine Auxiliary Governor Switch - Abnormal update rate
3812	Fork Lift	Cummins	2971	6	3	Exhaust Gas Recirculation (EGR) valve control circuit - current above normal or grounded circuit. Excess current detected at the EGR valve motor output circuit.
3813	Fork Lift	Cummins	2975	6	3	Turbocharger actuator motor circuit - current is above normal. Excessive current detected at the turbocharger actuator motor circuit.
3814	Fork Lift	Cummins	2975	7	3	Turbocharger actuator motor - the mechanical system is not responding properly or is out of adjustment. Turbocharger actuator is not responding or is slow to respond.
3815	Fork Lift	Cummins	2978	9	3	Estimated Engine Parasitic Losses - Percent Torque - Abnormal update rate
3818	Fork Lift	Cummins	2981	3	3	Coolant Pressure 2 Circuit - Voltage Above Normal, or Shorted to High Source
3819	Fork Lift	*	2981	3	5	Coolant Pressure : Coolant Pressure 2 Circuit - Voltage Above Normal, or Shorted to High Source
3820	Fork Lift	*	2981	4	5	Coolant Pressure : Coolant Pressure 2 Circuit - Voltage Below Normal, or Shorted to Low Source
3821	Fork Lift	Cummins	2981	4	5	Coolant Pressure : Coolant Pressure 2 Circuit - Voltage Below Normal, or Shorted to Low Source
3816	Fork Lift	*	2981	18	5	Coolant Pressure : Coolant Pressure 2 - Data Valid but Below Normal Operational Range - Moderately Severe Level
3817	Fork Lift	Cummins	2981	18	5	Coolant Pressure : Coolant Pressure 2 - Data Valid but Below Normal Operational Range - Moderately Severe Level
3822	Fork Lift	Scania	3031	0	4	SCR main unit, high temperature low limit exceedence
3823	Fork Lift	Scania	3031	1	4	Aftertreatment Diesel Exhaust Fluid Tank Temperature
3826	Fork Lift	Cummins	3031	2	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature - Data erratic, intermittent or incorrect
3827	Fork Lift	Cummins	3031	3	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature Sensor - Voltage above normal, or shorted to high source
3828	Fork Lift	Scania	3031	3	4	Aftertreatment Diesel Exhaust Fluid Tank Temperature
3829	Fork Lift	Cummins	3031	4	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature Sensor - Voltage below normal, or shorted to low source
3830	Fork Lift	Scania	3031	4	4	Aftertreatment Diesel Exhaust Fluid Tank Temperature
3831	Fork Lift	Cummins	3031	5	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature Sensor Circuit - Current below normal or open circuit
3832	Fork Lift	Cummins	3031	6	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature Sensor Circuit - Current above normal or grounded circuit
3833	Fork Lift	Scania	3031	6	4	Temperature of the reagent in the storage tank.
3834	Fork Lift	Cummins	3031	9	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature - Abnormal Update Rate
3824	Fork Lift	Cummins	3031	11	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature - Root Cause Not Known
3825	Fork Lift	Cummins	3031	13	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature Sensor - Out of Calibration
3835	Fork Lift	Cummins	3050	0	3	Catalyst Over Temperature - Data Valid but Above Normal Operational Range - Most Severe Level. Very high temperatures have been detected in the aftertreatment system.
3836	Fork Lift	Cummins	3050	31	3	Catalyst Missing Condition Exists. The aftertreatment catalyst in the exhaust system is not present.
3837	Fork Lift	Cummins	3060	18	3	Engine Cooling System Monitor - Data Valid But Below Normal Operating Range - Moderately Severe Level
3845	Fork Lift	Cummins	3216	2	3	Aftertreatment 1 Intake NOx Sensor - Data erratic, intermittent or incorrect
3846	Fork Lift	Scania	3216	2	4	Aftertreatment Intake NOx
3849	Fork Lift	Cummins	3216	4	3	Aftertreatment 1 Intake NOx Sensor Circuit - Voltage below normal, or shorted to low source
3850	Fork Lift	Scania	3216	4	4	NOx sensor upstream, internal fault or open circuit
3851	Fork Lift	Scania	3216	5	4	NOx sensor upstream, open circuit
3852	Fork Lift	Scania	3216	6	4	Aftertreatment Intake NOx
3853	Fork Lift	Scania	3216	7	4	NOx sensor upstream, internal fault
3854	Fork Lift	Scania	3216	8	4	NOx sensor upstream of catalytic converter
3855	Fork Lift	Cummins	3216	9	3	Aftertreatment 1 Intake NOx Sensor - Abnormal update rate
3856	Fork Lift	Scania	3216	9	4	NOx sensor upstream of catalytic converter
3838	Fork Lift	Cummins	3216	10	3	Aftertreatment 1 Intake NOx Sensor - Abnormal rate of change
3839	Fork Lift	Scania	3216	10	4	NOx sensor upstream, stuck
3840	Fork Lift	Cummins	3216	13	3	Aftertreatment 1 Intake NOx - Out of Calibration
3841	Fork Lift	Cummins	3216	16	3	Aftertreatment 1 Intake NOx - Data Valid But Above Normal Operating Range - Moderately Severe Level
3842	Fork Lift	Scania	3216	17	4	NOx sensor upstream, low signal
3843	Fork Lift	Scania	3216	18	4	NOx sensor upstream, too low value
3844	Fork Lift	Scania	3216	19	4	NOx sensor upstream error via CAN
3847	Fork Lift	Cummins	3216	20	3	Aftertreatment 1 Intake NOx Sensor - Data not Rational - Drifted High
3848	Fork Lift	Scania	3216	20	4	NOx sensor upstream, not plausible
3857	Fork Lift	Cummins	3217	2	3	Aftertreatment Intake Oxygen Sensor - Data erratic, intermittent or incorrect
3858	Fork Lift	Cummins	3218	2	3	Aftertreatment 1 Intake NOx Sensor Power Supply - Data erratic, intermittent or incorrect
3859	Fork Lift	Cummins	3226	0	2	Aftertreatment Outlet NOx - Data Valid but Above Normal Operational Range - Most Severe Level. The engine NOx output is higher than recommended levels.
3867	Fork Lift	Cummins	3226	2	3	Aftertreatment 1 Outlet NOx Sensor - Data erratic, intermittent or incorrect
3868	Fork Lift	Scania	3226	2	4	Aftertreatment Outlet NOx

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3871	Fork Lift	Scania	3226	3	4	Aftertreatment Outlet NOx
3872	Fork Lift	Cummins	3226	4	3	Aftertreatment 1 Outlet NOx Sensor Circuit - Voltage below normal, or shorted to low source
3873	Fork Lift	Scania	3226	4	4	NOx sensor downstream, internal fault or open circuit
3874	Fork Lift	Scania	3226	5	4	NOx sensor downstream, open circuit
3875	Fork Lift	Scania	3226	6	4	Aftertreatment Outlet NOx
3876	Fork Lift	Scania	3226	7	4	NOx sensor downstream, internal fault
3877	Fork Lift	Scania	3226	8	4	NOx sensor downstream error via CAN
3878	Fork Lift	Cummins	3226	9	3	Aftertreatment 1 Outlet NOx Sensor - Abnormal update rate
3879	Fork Lift	Scania	3226	9	4	NOx sensor downstream of the SCR catalytic converter
3860	Fork Lift	Cummins	3226	10	3	Aftertreatment 1 Outlet NOx Sensor - Abnormal rate of change
3861	Fork Lift	Scania	3226	10	4	NOx sensor downstream, stuck
3862	Fork Lift	Cummins	3226	13	3	Aftertreatment 1 Outlet NOx Sensor - Out of Calibration
3863	Fork Lift	Cummins	3226	15	3	Aftertreatment Outlet NOx - Data Valid but Above Normal Operational Range - Least Severe Level. The engine NOx output is higher than recommended levels.
3864	Fork Lift	Scania	3226	17	4	NOx sensor downstream, low signal
3865	Fork Lift	Scania	3226	18	4	NOx sensor downstream, too low value
3866	Fork Lift	Scania	3226	19	4	NOx sensor downstream of the catalytic converter
3869	Fork Lift	Cummins	3226	20	3	Aftertreatment 1 Outlet NOx Sensor - Data not Rational - Drifted High
3870	Fork Lift	Scania	3226	20	4	NOx sensor downstream, not plausible
3880	Fork Lift	Cummins	3227	9	3	Aftertreatment Outlet Oxygen Sensor Circuit - Abnormal update rate
3881	Fork Lift	Cummins	3228	2	3	Aftertreatment 1 Outlet NOx Sensor Power Supply - Data erratic, intermittent or incorrect
3882	Fork Lift	Cummins	3234	2	3	Aftertreatment Outlet NOx Sensor - Data Erratic, Intermittent, or Incorrect. An incorrect NOx sensor reading has been detected by the aftertreatment outlet NOx sensor.
3883	Fork Lift	Cummins	3234	4	3	Aftertreatment NOx Sensor - Voltage Below Normal, or Shorted to Low Source. Out-of-range battery voltage has been detected by the aftertreatment outlet NOx sensor.
3884	Fork Lift	Cummins	3234	9	3	Aftertreatment Outlet NOx Sensor - Abnormal Update Rate. No communications or valid data transfer rate detected on the J1939 datalink between the ECM and the aftertreatment outlet NOx sensor.
3893	Fork Lift	Cummins	3241	2	3	Exhaust Gas Temperature 1 Data Erratic, Intermittent, or Incorrect. The exhaust gas temperature #1 sensor is not changing with engine operating conditions.
3894	Fork Lift	Scania	3241	2	4	Upstream catalyst temperature sensor not plausible, not plausible
3895	Fork Lift	Cummins	3241	3	3	Exhaust Gas Temperature 1 Circuit Voltage Above Normal, or Shorted to Low Source. High signal voltage detected at the catalyst inlet temperature sensor circuit
3896	Fork Lift	Scania	3241	3	4	Upstream catalyst temperature sensor not plausible, to high
3898	Fork Lift	Cummins	3241	4	3	Exhaust Gas Temperature 1 Circuit Voltage Below Normal, or Shorted to Low Source. Low signal voltage detected at the catalyst inlet temperature sensor circuit.
3899	Fork Lift	Scania	3241	4	4	Upstream catalyst temperature sensor not plausible, short circuit
3900	Fork Lift	Scania	3241	5	4	Upstream catalyst temperature sensor not plausible, open circuit
3901	Fork Lift	Scania	3241	6	4	Aftertreatment Exhaust Gas Temperature
3902	Fork Lift	Scania	3241	8	4	Upstream catalyst temperature sensor not plausible, to high
3885	Fork Lift	Cummins	3241	10	3	배기 가스 온도 1 - 비정상적인 변화율. 촉매 입구 온도 온도 센서가 엔진 작동 상태의 변화에 반응하지 않습니다.
3886	Fork Lift	Scania	3241	10	4	Upstream catalyst temperature sensor not plausible, not plausible
3887	Fork Lift	Scania	3241	11	4	Aftertreatment Exhaust Gas Temperature
3888	Fork Lift	Scania	3241	12	4	Aftertreatment Exhaust Gas Temperature
3889	Fork Lift	Cummins	3241	15	4	Exhaust Gas Temperature 1 Data Valid but Above Normal Operational Range Least Severe Level. High catalyst inlet temperature has been detected.
3890	Fork Lift	Scania	3241	16	4	Upstream catalyst temperature too high
3891	Fork Lift	Scania	3241	18	4	Upstream catalyst temperature sensor not plausible, to low
3892	Fork Lift	Scania	3241	19	2	CAN Error from Exhaust Temperature Sensors
3897	Fork Lift	Cummins	3241	31	3	Catalyst Inlet Temperature Sensor Swapped with Outlet Condition Exists. The inlet and outlet catalyst temperature sensor connections are swapped.
3903	Fork Lift	Scania	3242	0	4	Upstream DPF temperature sensor, to high
3911	Fork Lift	Cummins	3242	3	3	Aftertreatment 1 Diesel Particulate Filter Intake Temperature Sensor Circuit - Voltage above normal, or shorted to high source
3912	Fork Lift	Scania	3242	3	4	Aftertreatment Diesel Particulate Filter Intake Gas Temperature
3913	Fork Lift	Cummins	3242	4	3	Aftertreatment 1 Diesel Particulate Filter Intake Temperature Sensor Circuit - Voltage below normal, or shorted to low source
3914	Fork Lift	Scania	3242	4	4	Aftertreatment Diesel Particulate Filter Intake Gas Temperature
3915	Fork Lift	Scania	3242	5	4	Aftertreatment Diesel Particulate Filter Intake Gas Temperature
3916	Fork Lift	Scania	3242	6	4	Aftertreatment Diesel Particulate Filter Intake Gas Temperature
3917	Fork Lift	Scania	3242	7	2	Upstream DPF temperature sensor, not plausible
3918	Fork Lift	Scania	3242	9	2	Upstream DPF temperature sensor, not plausible
3904	Fork Lift	Scania	3242	10	4	Upstream DPF temperature too high during normal condition
3905	Fork Lift	Scania	3242	11	4	Aftertreatment Diesel Particulate Filter Intake Gas Temperature
3906	Fork Lift	Scania	3242	12	4	Aftertreatment Diesel Particulate Filter Intake Gas Temperature
3907	Fork Lift	Cummins	3242	15	3	Aftertreatment 1 Diesel Particulate Filter Intake Temperature - Data Valid But Above Normal Operating Range
3908	Fork Lift	Cummins	3242	16	2	Aftertreatment 1 Diesel Particulate Filter Intake Temperature - Data Valid But Above Normal Operating Range
3909	Fork Lift	Scania	3242	16	4	Upstream DPF temperature too high during regeneration
3910	Fork Lift	Scania	3242	19	4	Aftertreatment Diesel Particulate Filter Intake Gas Temperature
3920	Fork Lift	Scania	3245	3	4	Aftertreatment Exhaust Gas Temperature
3921	Fork Lift	Scania	3245	4	4	Aftertreatment Exhaust Gas Temperature
3922	Fork Lift	Scania	3245	6	4	Aftertreatment Exhaust Gas Temperature
3919	Fork Lift	Scania	3245	19	4	Auxiliary Temperature Sensor Error on CAN
3923	Fork Lift	Cummins	3246	0	2	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature - Data valid but above normal operation

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3931	Fork Lift	Cummins	3246	2	3	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature - Data erratic, intermittent or incorrect
3932	Fork Lift	Scania	3246	2	4	Downstream DPF temperature sensor error
3933	Fork Lift	Cummins	3246	3	3	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature Sensor Circuit - Voltage above normal, or shorted to high source
3934	Fork Lift	Scania	3246	3	4	Exhaust temperature sensor after SCR catalytic converter, short circuit
3935	Fork Lift	Cummins	3246	4	3	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature Sensor Circuit - Voltage below normal, or shorted to low source
3936	Fork Lift	Scania	3246	4	4	Exhaust temperature sensor after SCR catalytic converter, open circuit
3937	Fork Lift	Scania	3246	5	4	Aftertreatment Diesel Particulate Filter Outlet Gas Temperature
3938	Fork Lift	Scania	3246	6	4	Aftertreatment Diesel Particulate Filter Outlet Gas Temperature
3939	Fork Lift	Scania	3246	9	2	Downstream exhaust temperature sensor, not plausible
3924	Fork Lift	Scania	3246	11	4	Aftertreatment Diesel Particulate Filter Outlet Gas Temperature
3925	Fork Lift	Scania	3246	12	4	Aftertreatment Diesel Particulate Filter Outlet Gas Temperature
3926	Fork Lift	Scania	3246	15	2	Downstream DPF temperature too high during normal condition
3927	Fork Lift	Cummins	3246	15	3	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature - Data Valid But Above Normal Operating Range
3928	Fork Lift	Cummins	3246	16	2	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature - Data Valid But Above Normal Operating Range
3929	Fork Lift	Scania	3246	16	4	Downstream DPF temperature too high during regeneration
3930	Fork Lift	Scania	3246	19	4	Aftertreatment Diesel Particulate Filter Outlet Gas Temperature
3943	Fork Lift	Cummins	3249	2	3	Exhaust Gas Temperature 2 Data Erratic, Intermittent, or Incorrect. The exhaust gas temperature #2 sensor is not changing with engine operating conditions.
3944	Fork Lift	Cummins	3249	3	3	Exhaust Gas Temperature 2 Circuit Voltage Above Normal, or Shorted to Low Source. High signal voltage detected at the catalyst outlet temperature sensor circuit.
3945	Fork Lift	Scania	3249	3	4	Aftertreatment Exhaust Gas Temperature
3946	Fork Lift	Cummins	3249	4	3	Exhaust Gas Temperature 2 Circuit Voltage Below Normal, or Shorted to Low Source. Low signal voltage detected at the catalyst exhaust temperature sensor circuit.
3947	Fork Lift	Scania	3249	4	4	Aftertreatment Exhaust Gas Temperature
3940	Fork Lift	Cummins	3249	10	3	Exhaust Gas Temperature 2 Abnormal Rate of Change. The catalyst outlet temperature sensor is not responding to a change in engine operating conditions.
3941	Fork Lift	Cummins	3249	17	3	Aftertreatment Exhaust Gas Temperature 2 - Data Valid But Below Normal Operating Range - Least Severe Level
3942	Fork Lift	Cummins	3249	18	3	Aftertreatment Exhaust Gas Temperature 2 - Data Valid But Below Normal Operating Range - Moderately Severe Level
3948	Fork Lift	Cummins	3251	0	2	Aftertreatment Diesel Particulate Filter Differential Pressure - Data valid but above normal Operating Range
3951	Fork Lift	Cummins	3251	2	3	Aftertreatment Diesel Particulate Filter Differential Pressure Sensor - Data erratic, intermittent or incorrect
3952	Fork Lift	Scania	3251	2	4	Particulate filter is missing
3953	Fork Lift	Cummins	3251	3	3	Aftertreatment Diesel Particulate Filter Differential Pressure Sensor Circuit - Voltage above normal
3954	Fork Lift	Scania	3251	3	4	Fault in the filter system
3955	Fork Lift	Cummins	3251	4	3	Aftertreatment Diesel Particulate Filter Differential Pressure Sensor Circuit - Voltage below normal
3956	Fork Lift	Scania	3251	4	4	Fault in the filter system
3957	Fork Lift	Scania	3251	7	4	Differential pressure sensor over particulate filter, faulty
3958	Fork Lift	Scania	3251	8	4	Differential pressure sensor not plausible
3959	Fork Lift	Scania	3251	9	4	Differential pressure sensor over particulate filter, not plausible
3949	Fork Lift	Cummins	3251	15	3	Aftertreatment Diesel Particulate Filter Differential Pressure - Data valid but above normal Operating Range
3950	Fork Lift	Cummins	3251	16	3	Aftertreatment Diesel Particulate Filter Differential Pressure - Data Valid But Above Normal Operating Range
3960	Fork Lift	Cummins	3255	9	3	Aftertreatment 2 Intake Nox Sensor - Abnormal update rate
3961	Fork Lift	Cummins	3265	9	3	Aftertreatment 2 Outlet NOx - Abnormal Update Rate
3962	Fork Lift	Scania	3275	0	4	Exhaust gas temperature upstream
3963	Fork Lift	Scania	3275	1	4	Exhaust gas temperature upstream
3967	Fork Lift	Scania	3275	2	4	Exhaust gas temperature upstream
3968	Fork Lift	Scania	3275	3	4	Exhaust gas temperature upstream
3969	Fork Lift	Scania	3275	4	4	Exhaust gas temperature upstream
3970	Fork Lift	Scania	3275	5	4	Exhaust gas temperature upstream
3971	Fork Lift	Scania	3275	6	4	Exhaust gas temperature upstream
3972	Fork Lift	Scania	3275	9	4	EEC unit has no contact with sensors
3964	Fork Lift	Scania	3275	11	4	Exhaust gas temperature upstream
3965	Fork Lift	Scania	3275	12	4	Exhaust gas temperature upstream
3966	Fork Lift	Scania	3275	19	4	EEC unit has no contact with sensors
3974	Fork Lift	Scania	3279	2	4	Electrical fault in the sensors
3975	Fork Lift	Scania	3279	8	4	Electrical fault in the sensors
3976	Fork Lift	Scania	3279	9	4	Electrical fault in the sensors
3973	Fork Lift	Scania	3279	19	4	EEC unit has no contact with sensors
3977	Fork Lift	Scania	3340	1	4	Intercooler temperature, too low
3983	Fork Lift	Scania	3340	3	4	Intercooler pressure sensor, short circuit to ground
3984	Fork Lift	Scania	3340	4	4	Intercooler pressure sensor, short circuit to +24
3985	Fork Lift	Scania	3340	7	4	Intercooler pressure sensor, stuck
3986	Fork Lift	Scania	3340	9	4	Intercooler pressure sensor, not plausible
3978	Fork Lift	Scania	3340	10	4	Intercooler pressure sensor, not plausible
3979	Fork Lift	Scania	3340	15	4	Intercooler pressure, above normal
3980	Fork Lift	Scania	3340	16	4	Intercooler pressure, above normal
3981	Fork Lift	Scania	3340	20	4	Intercooler pressure too high

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3982	Fork Lift	Scania	3340	21	4	Intercooler pressure too low
3987	Fork Lift	Cummins	3353	3	3	Alternator 1 Status - Voltage Above Normal, or Shorted to High Source
3988	Fork Lift	Cummins	3353	4	3	Alternator 1 Status - Voltage Below Normal, or Shorted to Low Source
3989	Fork Lift	Scania	3360	0	4	SCR system adaptation have reached max values
3990	Fork Lift	Scania	3360	1	4	SCR system adaptation have reached min values
3995	Fork Lift	Scania	3360	2	4	EEC3 System has demanded "SCR Hazardous major functional failure" actions
3996	Fork Lift	Scania	3360	3	4	SCR main unit, ventilation valve test, short to battery
3997	Fork Lift	Scania	3360	4	4	SCR main unit, internal supply voltage low
3998	Fork Lift	Scania	3360	5	4	SCR main unit, ventilation valve test, open load
3999	Fork Lift	Scania	3360	6	2	SCR main unit, system voltage error
4000	Fork Lift	Scania	3360	7	4	SCR main unit, ignition switch plausible error
4001	Fork Lift	Scania	3360	9	4	EEC3 has demanded "SCR Major functional failure reductant dosing stopped" actions
3991	Fork Lift	Scania	3360	10	4	EEC3 System has demanded "SCR minor functional failure" actions
3992	Fork Lift	Scania	3360	12	4	SCR main unit, error
3993	Fork Lift	Scania	3360	16	4	SCR main unit, internal supply voltage high
3994	Fork Lift	Scania	3360	19	4	SCR main unit, communication error
4002	Fork Lift	Cummins	3361	1	3	정량 분배 컨트롤 유닛 온도 - 데이터가 이상하거나 끊어지거나 정확하지 않음. 촉매 정량 분배 컨트롤 유닛에서 내부 오류가 감지되었습니다.
4005	Fork Lift	Cummins	3361	2	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Temperature - Data erratic, intermittent or incorrect
4006	Fork Lift	Scania	3361	2	4	Reductant doser injection valve
4007	Fork Lift	Cummins	3361	3	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit - Voltage above normal, or shorted to high source
4008	Fork Lift	Scania	3361	3	4	SCR reductant dosing valve, short circuit to battery
4009	Fork Lift	Cummins	3361	4	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit - Voltage below normal, or shorted to low source
4010	Fork Lift	Scania	3361	4	4	Reductant doser injection valve
4011	Fork Lift	Scania	3361	5	4	SCR reductant dosing valve, open circuit
4012	Fork Lift	Scania	3361	6	4	Reductant doser injection valve
4013	Fork Lift	Cummins	3361	9	3	Dosing Control Unit Data Link Abnormal Update Rate. Data Link communications between the ECM and the Dosing Control Unit have been interrupted.
4003	Fork Lift	Scania	3361	10	4	SCR main unit, reductant pressure not plausible
4004	Fork Lift	Cummins	3361	12	3	Catalyst Dosing Control Unit Bad Intelligent Device or Component. An internal error has been detected in the catalyst dosing control unit.
4014	Fork Lift	Scania	3362	0	4	Reductant pressure
4015	Fork Lift	Scania	3362	1	4	Reductant pressure
4016	Fork Lift	Scania	3362	2	4	SCR reductant pressure, error
4017	Fork Lift	Cummins	3362	31	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Input Lines - Condition Exists
4018	Fork Lift	Scania	3363	0	4	SCR main unit, reductant heater, circuit high
4025	Fork Lift	Scania	3363	2	4	SCR main unit, reductant heater, open load
4026	Fork Lift	Cummins	3363	3	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater - Voltage above normal, or shorted to high source
4027	Fork Lift	Scania	3363	3	4	SCR main unit, internal heating pump, short circuit to battery
4028	Fork Lift	Cummins	3363	4	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater - Voltage below normal, or shorted to low source
4029	Fork Lift	Scania	3363	4	4	SCR main unit, reductant temperature sensor circuit low
4030	Fork Lift	Scania	3363	5	4	SCR main unit, internal heating pump, open load
4031	Fork Lift	Scania	3363	6	4	Reductant doser fault
4032	Fork Lift	Cummins	3363	7	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater - Mechanical system not responding or out of adjustment
4033	Fork Lift	Scania	3363	8	4	SCR main unit, reductant heater, circuit performance
4019	Fork Lift	Scania	3363	15	4	SCR reagent tank temperature too high
4020	Fork Lift	Cummins	3363	16	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater - Data Valid But Above Normal Operating Range - Moderately Severe Level
4021	Fork Lift	Scania	3363	16	4	SCR main unit, high temperature high limit exceeded
4022	Fork Lift	Scania	3363	17	4	SCR reductant tank temperatur too low
4023	Fork Lift	Cummins	3363	18	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater - Data Valid But Below Normal Operating Range - Moderately Severe Level
4024	Fork Lift	Scania	3363	18	4	SCR main unit, low temperature limit exceeded
4034	Fork Lift	Cummins	3364	1	3	Aftertreatment Diesel Exhaust Fluid Quality - Data valid but below normal operational range - Most Severe Level
4042	Fork Lift	Cummins	3364	2	3	Aftertreatment Diesel Exhaust Fluid Quality - Data erratic, intermittent or incorrect
4043	Fork Lift	Cummins	3364	3	3	Aftertreatment Diesel Exhaust Fluid Quality Sensor Circuit - Voltage above normal, or shorted to high source
4044	Fork Lift	Cummins	3364	4	3	Aftertreatment Diesel Exhaust Fluid Quality Sensor Circuit - Voltage below normal, or shorted to low source
4045	Fork Lift	Cummins	3364	5	3	Aftertreatment Diesel Exhaust Fluid Quality Sensor Circuit - Current below normal or open circuit
4046	Fork Lift	Cummins	3364	6	3	Aftertreatment Diesel Exhaust Fluid Quality Sensor Circuit - Current above normal or grounded circuit
4047	Fork Lift	Cummins	3364	7	3	Aftertreatment Diesel Exhaust Fluid Quality Sensor - Mechanical system not responding or out of adjustment
4048	Fork Lift	Cummins	3364	9	3	Aftertreatment Diesel Exhaust Fluid Quality - Abnormal update rate
4035	Fork Lift	Cummins	3364	10	3	Aftertreatment Diesel Exhaust Fluid Quality - Abnormal Rate of Change
4036	Fork Lift	Cummins	3364	11	3	Aftertreatment Diesel Exhaust Fluid Quality - Root Cause Not Known
4037	Fork Lift	Cummins	3364	12	3	Aftertreatment Diesel Exhaust Fluid Quality Sensor - Bad intelligent device or component
4038	Fork Lift	Cummins	3364	13	3	Aftertreatment Diesel Exhaust Fluid Quality - Out of Calibration
4039	Fork Lift	Cummins	3364	15	3	Aftertreatment Diesel Exhaust Fluid Quality - Data Valid But Above Normal Operating Range - Least Severe Level

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
4040	Fork Lift	Cummins	3364	18	3	Aftertreatment Diesel Exhaust Fluid Quality - Data Valid But Below Normal Operating Range - Moderate Severe Level
4041	Fork Lift	Cummins	3364	19	3	Aftertreatment Diesel Exhaust Fluid Quality - Received Network Data In Error
4049	Fork Lift	Cummins	3449	3	3	Catalyst Tank Heater Circuit Voltage Above Normal, or Shorted to High Source. High signal voltage detected at the catalyst tank heater relay sensor circuit.
4050	Fork Lift	Scania	3464	2	4	Throttle, control error
4051	Fork Lift	Scania	3464	3	4	Throttle Actuator, short circuit to +24V
4052	Fork Lift	Scania	3464	4	4	Throttle Actuator, short circuit
4053	Fork Lift	Scania	3464	5	4	Throttle Actuator, slow response
4054	Fork Lift	Scania	3464	6	4	Throttle Actuator Control System - Forced Limited Power
4055	Fork Lift	Scania	3464	7	4	Throttle, stuck in open position
4056	Fork Lift	Scania	3464	8	4	Throttle, stuck in closed position
4058	Fork Lift	Scania	3471	2	4	Reductant doser fault
4059	Fork Lift	Scania	3471	3	4	Fault in doser valve
4060	Fork Lift	Scania	3471	4	4	Fault in doser valve
4061	Fork Lift	Scania	3471	5	4	Fault in doser valve
4062	Fork Lift	Scania	3471	9	4	Fault in doser valve
4057	Fork Lift	Scania	3471	10	4	Fault in doser valve
4063	Fork Lift	Scania	3472	2	4	Fault in doser valve
4064	Fork Lift	Scania	3472	3	4	Fault in doser valve
4065	Fork Lift	Scania	3472	4	4	Fault in doser valve
4066	Fork Lift	Scania	3472	5	4	Fault in doser valve
4067	Fork Lift	Scania	3472	9	4	Fault in doser valve
4070	Fork Lift	Cummins	3480	2	3	Aftertreatment Fuel Pressure Sensor - Data erratic, intermittent or incorrect
4071	Fork Lift	Scania	3480	2	4	Fault in doser valve
4072	Fork Lift	Cummins	3480	3	3	Aftertreatment Fuel Pressure Sensor Circuit - Voltage above normal, or shorted to high source
4073	Fork Lift	Scania	3480	3	4	Fault in dose valve sensor
4074	Fork Lift	Cummins	3480	4	3	Aftertreatment Fuel Pressure Sensor Circuit - Voltage below normal, or shorted to low source
4075	Fork Lift	Scania	3480	4	4	Fault in dose valve sensor
4076	Fork Lift	Scania	3480	8	4	Reductant circuit pressure
4077	Fork Lift	Scania	3480	9	4	Reductant circuit pressure
4068	Fork Lift	Scania	3480	10	4	Reductant circuit pressure
4069	Fork Lift	Cummins	3480	17	3	Aftertreatment Fuel Pressure Sensor - Data Valid But Below Normal Operating Range - Least Severe Level
4078	Fork Lift	Cummins	3481	16	3	Aftertreatment Fuel Rate - Data Valid But Above Normal Operating Range - Moderately Severe Level
4081	Fork Lift	Cummins	3482	2	3	Aftertreatment Fuel Shutoff Valve - Data erratic, intermittent or incorrect
4082	Fork Lift	Cummins	3482	3	3	Aftertreatment Fuel Shutoff Valve Circuit - Voltage above normal, or shorted to high source
4083	Fork Lift	Cummins	3482	4	3	Aftertreatment Fuel Shutoff Valve Circuit - Voltage below normal, or shorted to low source
4084	Fork Lift	Cummins	3482	7	3	Aftertreatment Fuel Shutoff Valve - Mechanical system not responding or out of adjustment
4079	Fork Lift	Cummins	3482	13	3	Aftertreatment Fuel Shutoff Valve Swapped - Out of Calibration
4080	Fork Lift	Cummins	3482	16	3	Aftertreatment Fuel Shutoff Valve - Data Valid But Above Normal Operating Range - Moderately Severe
4085	Fork Lift	Scania	3485	1	4	SCR main unit, air pressure too low
4087	Fork Lift	Scania	3485	2	4	SCR main unit, air pressure sensor after orifice circuit supply
4089	Fork Lift	Scania	3485	3	4	SCR main unit, air pressure sensor after orifice circuit high
4090	Fork Lift	Scania	3485	4	4	SCR main unit, air pressure sensor after orifice circuit low
4091	Fork Lift	Scania	3485	7	4	SCR, air circuit blocked
4092	Fork Lift	Scania	3485	9	4	SCR main unit, air pressure sensor after orifice performance
4086	Fork Lift	Scania	3485	18	4	EEC, air supply low
4088	Fork Lift	Scania	3485	20	4	SCR main unit, air pressure sensor after orifice plausible error
4093	Fork Lift	Cummins	3489	3	3	Aftertreatment #1 Air Enable Actuator Voltage Above Normal, or Shorted to High Source. High signal voltage has been detected at the catalyst air solenoid circuit.
4094	Fork Lift	Cummins	3489	4	3	Aftertreatment #1 Air Enable Actuator Voltage Below Normal, or Shorted to Low Source. Low signal voltage has been detected at the catalyst air solenoid circuit.
4095	Fork Lift	Cummins	3490	3	3	Aftertreatment Purge Air Actuator Circuit - Voltage above normal, or shorted to high source
4096	Fork Lift	Cummins	3490	4	3	Aftertreatment Purge Air Actuator Circuit - Voltage below normal, or shorted to low source
4097	Fork Lift	Cummins	3490	7	3	Aftertreatment Purge Air Actuator - Mechanical system not responding or out of adjustment
4098	Fork Lift	Cummins	3509	3	3	Sensor Supply Voltage #1 Circuit – Voltage Above Normal, or Shorted to High Source
4099	Fork Lift	*	3509	3	5	5 Volts DC Supply : Sensor Supply Voltage #1 Circuit - Voltage Above Normal, or Shorted to High Source
4100	Fork Lift	Cummins	3509	4	3	Sensor Supply Voltage #1 Circuit – Voltage Below Normal, or Shorted to Low Source
4101	Fork Lift	*	3509	4	5	5 Volts DC Supply : Sensor Supply Voltage #1 Circuit - Voltage Below Normal, or Shorted to Low Source
4102	Fork Lift	Cummins	3510	3	3	Sensor Supply Voltage #2 Circuit – Voltage Above Normal, or Shorted to High Source
4103	Fork Lift	*	3510	3	5	5 Volts DC Supply : Sensor Supply Voltage #2 Circuit - Voltage Above Normal, or Shorted to High Source
4104	Fork Lift	Cummins	3510	4	3	Sensor Supply Voltage #2 Circuit – Voltage Below Normal, or Shorted to Low Source
4105	Fork Lift	*	3510	4	5	5 Volts DC Supply : Sensor Supply Voltage #2 Circuit - Voltage Below Normal, or Shorted to Low Source
4106	Fork Lift	Cummins	3511	3	3	Sensor Supply Voltage #3 Circuit - Voltage Above Normal, or Shorted to High Source
4107	Fork Lift	*	3511	3	5	System Diagnostic code #2 : Sensor Supply Voltage #3 Circuit - Voltage Above Normal, or Shorted to High Source
4108	Fork Lift	Cummins	3511	4	3	Sensor Supply Voltage #3 Circuit – Voltage Below Normal, or Shorted to Low Source
4109	Fork Lift	*	3511	4	5	System Diagnostic code # 1 : Sensor Supply Voltage #3 Circuit - Voltage Below Normal, or Shorted to Low Source
4110	Fork Lift	Cummins	3512	3	3	Sensor Supply Voltage #4 Circuit – Voltage Above Normal, or Shorted to High Source

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
4111	Fork Lift	*	3512	3	5	System Diagnostic code # 1 : Sensor Supply Voltage #4 Circuit - Voltage Above Normal, or Shorted to High Source
4112	Fork Lift	Cummins	3512	4	3	Sensor Supply Voltage #4 Circuit – Voltage Below Normal, or Shorted to Low Source
4113	Fork Lift	*	3512	4	5	System Diagnostic code # 1 : Sensor Supply Voltage #4 Circuit - Voltage Below Normal, or Shorted to Low Source
4114	Fork Lift	Cummins	3513	3	3	Sensor Supply 5 - Voltage above normal, or shorted to high source
4115	Fork Lift	Cummins	3513	4	3	Sensor Supply 5 - Voltage below normal, or shorted to low source
4116	Fork Lift	Cummins	3514	3	3	Sensor Supply 6 Circuit - Voltage above normal, or shorted to high source
4117	Fork Lift	Cummins	3514	4	3	Sensor Supply 6 Circuit - Voltage below normal, or shorted to low source
4119	Fork Lift	Cummins	3515	2	3	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2 - Data erratic, intermittent or incorrect
4120	Fork Lift	Scania	3515	2	4	Reductant doser temperature
4121	Fork Lift	Cummins	3515	3	3	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2 Sensor Circuit - Voltage above normal, or shorted to high source
4122	Fork Lift	Cummins	3515	4	3	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2 Sensor Circuit - Voltage below normal, or shorted to low source
4123	Fork Lift	Cummins	3515	5	3	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2 Sensor Circuit - Current below normal or open circuit
4124	Fork Lift	Cummins	3515	6	3	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2 Sensor Circuit - Current above normal or grounded
4118	Fork Lift	Cummins	3515	10	3	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2 - Abnormal Rate of Change
4125	Fork Lift	Scania	3516	2	4	Reductant pick up fault
4126	Fork Lift	Cummins	3521	11	3	Aftertreatment 1 Diesel Exhaust Fluid Property - Root Cause Not Known
4127	Fork Lift	Cummins	3521	31	2	Aftertreatment 1 Diesel Exhaust Fluid Property - Condition Exists
4128	Fork Lift	Cummins	3555	17	3	Ambient Air Density - Data Valid But Below Normal Operating Range - Least Severe Level
4130	Fork Lift	Cummins	3556	2	3	Aftertreatment Doser - Data erratic, intermittent or incorrect
4131	Fork Lift	Cummins	3556	5	3	Aftertreatment Doser Circuit - Current below normal or open circuit.
4132	Fork Lift	Cummins	3556	7	3	Aftertreatment Doser - Mechanical system not responding or out of adjustment
4129	Fork Lift	Cummins	3556	18	3	Aftertreatment Doser - Data Valid But Below Normal Operating Range - Moderately Severe Level
4133	Fork Lift	Scania	3563	11	4	Boost pressure sensor and ambient pressure sensor do not correlate
4134	Fork Lift	Scania	3563	15	4	Boost pressure sensor and ambient pressure sensor do not correlate
4135	Fork Lift	Scania	3563	17	4	Boost pressure sensor and ambient pressure sensor do not correlate
4138	Fork Lift	Cummins	3597	2	3	Power Supply Lost With Ignition On - Data erratic, intermittent or incorrect
4139	Fork Lift	Cummins	3597	3	3	ECU Power Output Supply Voltage 1 - Voltage above normal, or shorted to high source
4140	Fork Lift	Cummins	3597	4	3	ECU Power Output Supply Voltage 1 - Voltage below normal, or shorted to low source
4136	Fork Lift	Cummins	3597	12	3	Injector Power Supply - Bad intelligent device or component
4137	Fork Lift	Cummins	3597	18	3	ECU Power Output Supply Voltage 1 - Data Valid But Below Normal Operating Range - Moderately Severe Level
4141	Fork Lift	Scania	3607	2	4	Incorrect EMS shutdown
4142	Fork Lift	Scania	3607	8	4	Incorrect EEC shutdown
4143	Fork Lift	Cummins	3610	2	3	Aftertreatment 1 Diesel Particulate Filter Outlet Pressure - Data erratic, intermittent or incorrect
4144	Fork Lift	Cummins	3610	3	3	Aftertreatment 1 Diesel Particulate Filter Outlet Pressure Sensor Circuit - Voltage above normal, or shorted to high source
4145	Fork Lift	Cummins	3610	4	3	Aftertreatment 1 Diesel Particulate Filter Outlet Pressure Sensor Circuit - Voltage below normal, or shorted to low source
4146	Fork Lift	Cummins	3667	2	2	Engine Air Shutoff Status - Data erratic, intermittent or incorrect
4147	Fork Lift	Cummins	3667	3	3	Engine Air Shutoff Circuit - Voltage above normal, or shorted to high source
4148	Fork Lift	Cummins	3667	4	3	Engine Air Shutoff Circuit - Voltage below normal, or shorted to low source
4149	Fork Lift	Cummins	3667	7	2	Engine Air Shutoff - Mechanical System Not Responding or Out of Adjustment
4150	Fork Lift	Scania	3673	3	4	Throttle Position Sensor 2, short circuit to +24V
4151	Fork Lift	Scania	3673	4	4	Throttle Position Sensor 2, short circuit to ground
4152	Fork Lift	Cummins	3695	2	3	Aftertreatment Regeneration Inhibit Switch - Data erratic, intermittent or incorrect
4153	Fork Lift	Cummins	3703	31	3	Particulate Trap Active Regeneration Inhibited Due to Inhibit Switch - Condition Exists
4154	Fork Lift	Cummins	3713	31	3	Diesel Particulate Filter Active Regeneration Inhibited Due to System Timeout - Condition Exists
4155	Fork Lift	Cummins	3750	31	3	Diesel Particulate Filter 1 Conditions Not Met for Active Regeneration - Condition Exists
4162	Fork Lift	Scania	3822	3	4	EGR position sensor, short circuit to +24V
4163	Fork Lift	Scania	3822	4	4	EGR position sensor, short circuit to ground
4164	Fork Lift	Scania	3822	7	4	EGR SRA reports a warning during Learn Stops.
4165	Fork Lift	Scania	3822	8	4	EGR position sensor, outside the permitted range
4156	Fork Lift	Scania	3822	12	4	EGR SRA reports it has a continuous fault.
4157	Fork Lift	Scania	3822	13	4	EGR position sensor, not plausible
4158	Fork Lift	Scania	3822	16	4	EGR SRA reports a running conditions warning for high temp or low voltage.
4159	Fork Lift	Scania	3822	19	4	EGR CAN timeout
4160	Fork Lift	Scania	3822	20	4	EGR position sensor, voltage shows large variation in open position
4161	Fork Lift	Scania	3822	21	4	EGR position sensor, voltage shows large variation in closed position
4166	Fork Lift	Cummins	3826	18	3	Aftertreatment 1 Diesel Exhaust Fluid Average Consumption - Data Valid But Below Normal Operating Range
4170	Fork Lift	Scania	3936	2	4	Particulate filter, clogged
4171	Fork Lift	Scania	3936	6	4	Particulate filter, ash level too high
4172	Fork Lift	Cummins	3936	7	3	Aftertreatment 1 Diesel Particulate Filter System - Mechanical system not responding or out of adjustment
4167	Fork Lift	Scania	3936	10	4	Exhaust temperature sensors, not plausible
4168	Fork Lift	Cummins	3936	14	2	Aftertreatment Diesel Particulate Filter System - Special Instructions
4169	Fork Lift	Cummins	3936	15	3	Aftertreatment 1 Diesel Particulate Filter System - Data Valid But Above Normal Operating Range - Level
4173	Fork Lift	Scania	4090	0	4	NOx level after catalytic converter too high

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4176	Fork Lift	Scania	4090	2	4	Indicates that On-Board Diagnostics has determined that the limits for NOx in the exhaust stream have been exceeded, but the root cause cannot be determined by the OBD system.
4174	Fork Lift	Scania	4090	11	4	NOx Exceedence - Root Cause Unknown
4175	Fork Lift	Scania	4090	16	4	SCR main unit, NOx level too high
4177	Fork Lift	Cummins	4094	31	3	NOx limits exceeded due to Insufficient Reagent Quality - Condition Exists
4178	Fork Lift	Scania	4095	2	4	NOx Exceedence - Interruption of Reagent Dosing Activity
4179	Fork Lift	Scania	4096	2	4	NOx Exceedence - Empty Reagent Tank
4180	Fork Lift	Cummins	4096	31	3	Aftertreatment Diesel Exhaust Fluid Tank Empty - Condition Exists
4181	Fork Lift	Cummins	4097	3	3	Aftertreatment Fuel Drain Valve Circuit - Voltage above normal, or shorted to high source
4182	Fork Lift	Cummins	4097	4	3	Aftertreatment Fuel Drain Valve Circuit - Voltage below normal, or shorted to low source
4183	Fork Lift	Cummins	4097	7	3	Aftertreatment Fuel Drain Valve - Mechanical system not responding or out of adjustment
4184	Fork Lift	Cummins	4182	4	3	Generator Output Frequency Adjust Potentiometer Circuit - Voltage below normal, or shorted to low source
4185	Fork Lift	Cummins	4183	4	3	Droop Adjust Potentiometer Circuit - Voltage below normal, or shorted to low source
4186	Fork Lift	Cummins	4184	4	3	Gain Adjust Potentiometer Circuit - Voltage below normal, or shorted to low source
4187	Fork Lift	Cummins	4185	31	3	Overspeed Shutdown Relay Driver Diagnostic has detected an error - Condition Exists
4188	Fork Lift	Cummins	4187	31	3	High Engine Temperature (HET) Shutdown Relay Driver Diagnostic has detected an error - Condition Exists
4189	Fork Lift	Cummins	4188	31	3	Pre-Low Oil Pressure Warning Relay Driver Diagnostic has detected an error - Condition Exists
4191	Fork Lift	Scania	4201	2	4	Engine position sensor 1, faulty
4192	Fork Lift	Scania	4201	4	4	Engine position sensor 1, too weak signal
4193	Fork Lift	Scania	4201	7	4	Engine position sensor 1, faulty
4194	Fork Lift	Scania	4201	8	4	Engine position sensor 1, Gap Puls or Sync error
4195	Fork Lift	Scania	4201	9	4	Engine position sensor 1, time out
4190	Fork Lift	Scania	4201	10	4	Engine position sensor 1, position diff
4196	Fork Lift	Scania	4202	2	2	Engine speed sensor faulty
4197	Fork Lift	Cummins	4223	31	3	Pre-High Engine Temperature Warning Relay Driver Diagnostic has detected an error - Condition Exists
4198	Fork Lift	Scania	4225	2	4	Failure in the NOx control monitoring system
4200	Fork Lift	Scania	4301	2	4	Reductant doser fault
4201	Fork Lift	Scania	4301	3	4	Reductant doser fault
4202	Fork Lift	Scania	4301	4	4	Reductant doser fault
4203	Fork Lift	Scania	4301	5	4	Reductant doser fault
4204	Fork Lift	Scania	4301	6	4	Reductant doser fault
4205	Fork Lift	Scania	4301	7	4	Reductant doser fault
4206	Fork Lift	Scania	4301	9	4	Reductant doser fault
4199	Fork Lift	Scania	4301	10	4	Reductant doser fault
4207	Fork Lift	Cummins	4331	18	3	Aftertreatment SCR Actual Dosing Reagent Quantity - Data Valid But Below Normal Operating Range - Mo
4208	Fork Lift	Scania	4334	0	4	SCR reductant pressure error
4209	Fork Lift	Scania	4334	1	4	EEC3 has demanded "SCR Hazardous functional failure reductant dosing stopped" actions
4216	Fork Lift	Cummins	4334	2	3	Aftertreatment 1 Diesel Exhaust Fluid Pressure Sensor - Data erratic, intermittent or incorrect
4217	Fork Lift	Scania	4334	2	4	Urea pressure sensor, plausible error during start-up
4218	Fork Lift	Cummins	4334	3	3	Aftertreatment 1 Diesel Exhaust Fluid Pressure Sensor - Voltage above normal, or shorted to high source
4219	Fork Lift	Scania	4334	3	4	Urea pressure sensor, SRC high
4220	Fork Lift	Cummins	4334	4	3	Aftertreatment 1 Diesel Exhaust Fluid Pressure Sensor - Voltage below normal, or shorted to low source
4221	Fork Lift	Scania	4334	4	4	Urea pressure sensor, SRC low
4222	Fork Lift	Scania	4334	6	4	The SCR dosing reagent absolute pressure (measured closest to dosing valve) for aftertreatment system 1 (exhaust bank 1).
4223	Fork Lift	Scania	4334	8	4	Urea pressure sensor, pressure too high not plausible
4210	Fork Lift	Scania	4334	10	4	Reductant circuit pressure
4211	Fork Lift	Scania	4334	15	4	Reductant circuit pressure
4212	Fork Lift	Cummins	4334	16	3	Aftertreatment 1 Diesel Exhaust Fluid Pressure Sensor - Data Valid But Above Normal Operating Range
4213	Fork Lift	Scania	4334	16	4	Reductant pressure
4214	Fork Lift	Scania	4334	17	4	Reductant circuit pressure
4215	Fork Lift	Cummins	4334	18	3	Aftertreatment 1 Diesel Exhaust Fluid Pressure Sensor - Data Valid But Below Normal Operating Range
4224	Fork Lift	Scania	4337	1	4	Reductant doser temperature
4226	Fork Lift	Cummins	4337	2	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Temperature - Data erratic, intermittent or incorrect
4227	Fork Lift	Scania	4337	2	4	The SCR dosing reagent temperature (measured closest to dosing valve) for aftertreatment system 1 (exhaust bank 1).
4228	Fork Lift	Cummins	4337	3	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Temperature Sensor - Voltage Above Normal, or Shorted to High Source
4229	Fork Lift	Scania	4337	3	4	Reductant doser temperature
4230	Fork Lift	Cummins	4337	4	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Temperature Sensor - Voltage below normal, or shorted to low source
4231	Fork Lift	Scania	4337	6	4	The SCR dosing reagent temperature (measured closest to dosing valve) for aftertreatment system 1 (exhaust bank 1).
4225	Fork Lift	Cummins	4337	10	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Temperature - Abnormal Rate of Change
4232	Fork Lift	Cummins	4339	31	3	Aftertreatment 1 SCR Feedback Control Status - Condition Exists
4233	Fork Lift	Cummins	4340	3	3	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 1 Circuit - Voltage above normal, or shorted to high source
4234	Fork Lift	Cummins	4340	4	3	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 1 Circuit - Voltage below normal, or shorted to low source

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
4235	Fork Lift	Cummins	4340	5	3	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 1 Circuit - Current below normal or open circuit
4236	Fork Lift	Scania	4341	2	4	Reductant hose fault
4237	Fork Lift	Scania	4341	3	4	Reductant hose fault
4238	Fork Lift	Scania	4341	4	4	Reductant hose fault
4239	Fork Lift	Scania	4341	5	4	Reductant hose fault
4240	Fork Lift	Scania	4341	6	4	Reductant hose fault
4241	Fork Lift	Cummins	4342	3	3	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 2 Circuit - Voltage above normal, or shorted to high source
4242	Fork Lift	Cummins	4342	4	3	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 2 Circuit - Voltage below normal, or shorted to low source
4243	Fork Lift	Cummins	4342	5	3	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 2 Circuit - Current below normal or open circuit
4244	Fork Lift	Scania	4343	2	4	Reductant hose fault
4245	Fork Lift	Scania	4343	3	4	Reductant hose fault
4246	Fork Lift	Scania	4343	4	4	Reductant hose fault
4247	Fork Lift	Scania	4343	5	4	Reductant hose fault
4248	Fork Lift	Scania	4343	6	4	Reductant hose fault
4249	Fork Lift	Cummins	4344	3	3	Aftertreatment Diesel Exhaust Fluid Line Heater 3 Circuit - Voltage above normal, or shorted to high source
4250	Fork Lift	Cummins	4344	4	3	Aftertreatment Diesel Exhaust Fluid Line Heater 3 Circuit - Voltage below normal, or shorted to low source
4251	Fork Lift	Cummins	4344	5	3	Aftertreatment Diesel Exhaust Fluid Line Heater 3 Circuit - Current below normal or open circuit
4252	Fork Lift	Scania	4345	2	4	Reductant hose fault
4253	Fork Lift	Scania	4345	3	4	Reductant hose fault
4254	Fork Lift	Scania	4345	4	4	Reductant hose fault
4255	Fork Lift	Scania	4345	5	4	Reductant hose fault
4256	Fork Lift	Scania	4345	6	4	Reductant hose fault
4257	Fork Lift	Scania	4347	2	4	Reductant heater fault
4258	Fork Lift	Scania	4347	3	4	Reductant heater fault
4259	Fork Lift	Scania	4347	4	4	Reductant heater fault
4260	Fork Lift	Scania	4347	5	4	Reductant heater fault
4261	Fork Lift	Scania	4347	6	4	Reductant heater fault
4262	Fork Lift	Cummins	4360	0	2	Aftertreatment 1 SCR Intake Temperature - Data valid but above normal operational range - Most Severe Level
4265	Fork Lift	Cummins	4360	2	3	Aftertreatment 1 SCR Intake Temperature Sensor - Data erratic, intermittent or incorrect
4266	Fork Lift	Cummins	4360	3	3	Aftertreatment 1 SCR Intake Temperature Sensor Circuit - Voltage above normal, or shorted to high source
4267	Fork Lift	Cummins	4360	4	3	Aftertreatment 1 SCR Intake Temperature Sensor Circuit - Voltage below normal, or shorted to low source
4263	Fork Lift	Cummins	4360	15	3	Aftertreatment 1 SCR Intake Temperature - Data Valid But Above Normal Operating Range - Least Severe
4264	Fork Lift	Cummins	4360	16	2	Aftertreatment 1 SCR Intake Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
4268	Fork Lift	Cummins	4363	0	2	Aftertreatment 1 SCR Outlet Temperature - Data valid but above normal operational range - Most Severe
4270	Fork Lift	Cummins	4363	2	3	Aftertreatment 1 SCR Outlet Temperature Sensor - Data erratic, intermittent or incorrect
4271	Fork Lift	Cummins	4363	3	3	Aftertreatment 1 SCR Outlet Temperature Sensor Circuit - Voltage above normal, or shorted to high source
4272	Fork Lift	Cummins	4363	4	3	Aftertreatment 1 SCR Outlet Temperature Sensor Circuit - Voltage below normal, or shorted to low source
4269	Fork Lift	Cummins	4363	16	2	Aftertreatment 1 SCR Outlet Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
4273	Fork Lift	Cummins	4364	18	3	Aftertreatment SCR Catalyst Conversion Efficiency - Data Valid But Below Normal Operating Range - Moderately Severe Level
4274	Fork Lift	Scania	4374	0	4	Reductant pump fault, pump speed too high
4275	Fork Lift	Scania	4374	1	4	Reductant pump fault, pump speed too low
4278	Fork Lift	Scania	4374	2	4	Reductant pump no contact with EEC
4279	Fork Lift	Scania	4374	3	4	Rotational speed of the motor driving a pump for reagent used in an aftertreatment system.
4280	Fork Lift	Scania	4374	4	4	Reductant pump voltage supply
4281	Fork Lift	Scania	4374	5	4	Reductant pump voltage supply
4282	Fork Lift	Scania	4374	6	4	Reductant pump voltage supply
4283	Fork Lift	Scania	4374	7	4	Reductant circuit pressure
4276	Fork Lift	Scania	4374	16	4	Reductant pump speed
4277	Fork Lift	Scania	4374	17	4	Reductant pump speed
4284	Fork Lift	Cummins	4376	3	3	Aftertreatment Diesel Exhaust Fluid Return Valve - Voltage above normal, or shorted to high source
4285	Fork Lift	Cummins	4376	4	3	Aftertreatment Diesel Exhaust Fluid Return Valve - Voltage below normal, or shorted to low source
4286	Fork Lift	Cummins	4376	7	3	Aftertreatment Diesel Exhaust Fluid Return Valve - Mechanical system not responding or out of adjust
4287	Fork Lift	Scania	4427	2	4	Reductant pick up fault
4289	Fork Lift	Cummins	4490	9	3	Specific Humidity Sensor - Abnormal update rate
4288	Fork Lift	Cummins	4490	19	3	Specific Humidity Sensor - Received Network Data In Error
4292	Fork Lift	Cummins	4765	2	3	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature - Data erratic, intermittent or incorrect
4293	Fork Lift	Cummins	4765	3	3	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature Sensor Circuit - Voltage above normal, or shorted to high source

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
4294	Fork Lift	Cummins	4765	4	3	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature Sensor Circuit - Voltage below normal, or shorted to low source
4290	Fork Lift	Cummins	4765	13	3	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature Swapped - Out of Calibration
4291	Fork Lift	Cummins	4765	16	2	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature - Data Valid But Above Normal Operating Range
4295	Fork Lift	Cummins	4766	0	3	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Gas Temperature - Data Valid But Above Normal Operating Range - Most Severe Level
4297	Fork Lift	Cummins	4766	2	3	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Gas Temperature - Data Erratic, Intermittent, or Incorrect
4298	Fork Lift	Cummins	4766	3	3	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Gas Temperature Sensor Circuit - Voltage below normal, or shorted to low source
4299	Fork Lift	Cummins	4766	4	3	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Gas Temperature Sensor Circuit - Voltage below normal, or shorted to low source
4296	Fork Lift	Cummins	4766	16	2	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Gas Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
4300	Fork Lift	Scania	4782	0	4	Particulate filter is clogged, hazardous
4301	Fork Lift	Scania	4782	16	4	Particulate filter is clogged, major
4303	Fork Lift	Cummins	4792	7	3	Aftertreatment SCR Catalyst System - Mechanical system not responding or out of adjustment
4302	Fork Lift	Cummins	4792	14	2	Aftertreatment 1 SCR Catalyst System - Special Instructions
4304	Fork Lift	Cummins	4793	31	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Missing - Condition Exists
4305	Fork Lift	Cummins	4794	31	3	Aftertreatment 1 SCR Catalyst System Missing - Condition Exists
4306	Fork Lift	Cummins	4795	31	3	Aftertreatment Diesel Particulate Filter Missing - Condition Exists
4307	Fork Lift	Cummins	4796	31	3	Aftertreatment 1 Diesel Oxidation Catalyst Missing - Condition Exists
4312	Fork Lift	Cummins	4809	2	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Intake Temperature - Data erratic, intermittent or incorrect
4313	Fork Lift	Scania	4809	2	4	Upstream exhaust temperature sensor error
4314	Fork Lift	Cummins	4809	3	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Intake Temperature Sensor Circuit - Voltage above normal
4315	Fork Lift	Cummins	4809	4	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Intake Temperature Sensor Circuit - Voltage below normal
4316	Fork Lift	Scania	4809	7	4	Upstream exhaust temperature sensor, stuck
4317	Fork Lift	Scania	4809	8	4	Upstream exhaust temperature sensor error
4318	Fork Lift	Scania	4809	9	4	Upstream exhaust temperature sensor, not plausible
4308	Fork Lift	Cummins	4809	13	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Intake Temperature Sensor Swapped - Out of Calibration
4309	Fork Lift	Cummins	4809	16	2	Aftertreatment Warm Up Diesel Oxidation Catalyst Intake Temperature - Data Valid But Above Normal Operating Range
4310	Fork Lift	Scania	4809	16	4	Upstream exhaust temperature sensor, above limit
4311	Fork Lift	Scania	4809	18	4	Upstream exhaust temperature sensor, below limit
4319	Fork Lift	Cummins	4810	0	2	Aftertreatment Warm Up Diesel Oxidation Catalyst Outlet Temperature - Data valid but above normal operating Range –Most Severe level
4323	Fork Lift	Cummins	4810	2	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Outlet Temperature - Data erratic, intermittent or incorrect
4324	Fork Lift	Cummins	4810	3	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Outlet Temperature Sensor Circuit - Voltage above normal
4325	Fork Lift	Cummins	4810	4	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Outlet Temperature Sensor Circuit - Voltage below normal
4326	Fork Lift	Scania	4810	9	4	Particulate filter, temperature drop not plausible
4320	Fork Lift	Cummins	4810	15	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Outlet Temperature - Data Valid But Above Normal Operating Range
4321	Fork Lift	Cummins	4810	16	2	Aftertreatment Warm Up Diesel Oxidation Catalyst Outlet Temperature - Data Valid But Above Normal Operating Range
4322	Fork Lift	Scania	4810	18	4	Upstream exhaust temperature too low during regeneration
4328	Fork Lift	Scania	4814	2	4	Coolant water pump actuator, faulty
4329	Fork Lift	Scania	4814	3	4	Coolant water pump actuator, short circiut on high side
4330	Fork Lift	Scania	4814	4	4	Coolant water pump actuator, short circiut on low side
4331	Fork Lift	Scania	4814	7	4	Coolant pump speed sensor, stuck
4332	Fork Lift	Scania	4814	8	4	Electrically controlled coolant pump
4327	Fork Lift	Scania	4814	10	4	Coolant pump speed sensor, no signal
4333	Fork Lift	Cummins	5018	11	4	Aftertreatment 1 Diesel Oxidation Catalyst Face Plugged - Root Cause Not Known
4334	Fork Lift	Cummins	5019	2	3	Engine Exhaust Gas Recirculation Outlet Pressure - Data erratic, intermittent or incorrect
4335	Fork Lift	Cummins	5019	3	3	Engine Exhaust Gas Recirculation Outlet Pressure Sensor Circuit - Voltage above normal, or shorted to high source
4336	Fork Lift	Cummins	5019	4	3	Engine Exhaust Gas Recirculation Outlet Pressure Sensor Circuit - Voltage below normal, or shorted to low source
4337	Fork Lift	Cummins	5024	10	3	Aftertreatment 1 Intake NOx Sensor Heater - Abnormal rate of change
4338	Fork Lift	Cummins	5031	10	3	Aftertreatment 1 Outlet NOx Sensor Heater - Abnormal rate of change
4339	Fork Lift	Cummins	5097	3	3	Engine Brake Active Lamp - Voltage Above Normal, or Shorted to High Source
4340	Fork Lift	Cummins	5097	4	3	Engine Brake Active Lamp - Voltage below normal, or shorted to low source
4341	Fork Lift	Cummins	5125	3	3	Sensor Supply 7 Circuit - Voltage above normal, or shorted to high source
4342	Fork Lift	Cummins	5125	4	3	Sensor Supply 7 Circuit - Voltage below normal, or shorted to low source
4343	Fork Lift	Cummins	5245	31	3	Aftertreatment SCR Operator Inducement Active - Condition Exists
4344	Fork Lift	Cummins	5246	0	2	Aftertreatment SCR Operator Inducement - Data valid but above normal operational range - Most Severe level
4345	Fork Lift	Scania	5285	1	4	Boost temperature to high, not plausible
4346	Fork Lift	Cummins	5298	17	3	Aftertreatment Diesel Oxidation Catalyst Conversion Efficiency - Data Valid But Below Normal Operating Range - Least Severe Level

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
4347	Fork Lift	Cummins	5298	18	3	Aftertreatment 1 Diesel Oxidation Catalyst Conversion Efficiency - Data Valid But Below Normal Operating Range - Moderately Severe Level
4348	Fork Lift	Cummins	5319	31	3	Aftertreatment Diesel Particulate Filter Incomplete Regeneration - Condition Exists
4349	Fork Lift	Cummins	5357	31	3	Engine Fuel Injection Quantity Error for Multiple Cylinders - Condition Exists
4350	Fork Lift	Cummins	5380	11	3	Engine Fuel Valve 1 - Root Cause Not Known
4351	Fork Lift	Cummins	5380	13	3	Engine Fuel Valve 1 - Out of Calibration
4352	Fork Lift	Cummins	5394	2	4	Aftertreatment Diesel Exhaust Fluid Dosing Valve - Data erratic, intermittent or incorrect
4353	Fork Lift	Cummins	5394	5	3	Aftertreatment Diesel Exhaust Fluid Dosing Valve - Current below normal or open circuit
4354	Fork Lift	Cummins	5394	7	3	Aftertreatment Diesel Exhaust Fluid Dosing Valve - Mechanical system not responding or out of adjustment
4355	Fork Lift	Cummins	5395	16	3	Engine Idle Fuel Quantity - Data Valid But Above Normal Operating Range - Moderately Severe Level
4356	Fork Lift	Cummins	5395	18	3	Engine Idle Fuel Quantity - Data Valid But Below Normal Operating Range - Moderately Severe Level
4357	Fork Lift	Cummins	5396	31	3	Engine Crankcase Ventilation Hose Disconnected - Condition Exists
4358	Fork Lift	Cummins	5397	31	3	Aftertreatment Diesel Particulate Filter Regeneration too Frequent - Condition Exists
4359	Fork Lift	Scania	5401	2	4	EGR bypass actuator, faulty
4360	Fork Lift	Scania	5401	3	4	EGR bypass actuator, short circuit high to +24V
4361	Fork Lift	Scania	5401	4	4	EGR bypass actuator, short circuit high to ground
4362	Fork Lift	Scania	5401	5	4	EGR bypass actuator, open load
4370	Fork Lift	Scania	5419	2	4	Throttle M42, CAN interface fault
4371	Fork Lift	Scania	5419	3	4	Throttle M42, supply voltage fault
4373	Fork Lift	Scania	5419	5	4	Throttle M42, current limited
4374	Fork Lift	Scania	5419	6	4	Throttle M42, overload
4375	Fork Lift	Scania	5419	9	4	Throttle M42 has detected a CAN timeout
4363	Fork Lift	Scania	5419	10	4	Throttle M42, control error
4364	Fork Lift	Scania	5419	11	4	Throttle M42, internal fault
4365	Fork Lift	Scania	5419	12	4	Throttle M42, software execution error
4366	Fork Lift	Scania	5419	13	4	Throttle M42, unsuccessful learning of the reference position
4367	Fork Lift	Scania	5419	14	4	Throttle M42 has detected a CAN timeout
4368	Fork Lift	Scania	5419	16	4	Throttle M42, too high temperature
4369	Fork Lift	Scania	5419	19	4	Throttle M42, CAN timeout
4372	Fork Lift	Scania	5419	31	4	Throttle M42, service mode enabled
4376	Fork Lift	Scania	5421	3	4	Wastegate actuator, short circuit to +24V
4377	Fork Lift	Scania	5421	4	4	Wastegate actuator, short circuit
4378	Fork Lift	Scania	5421	5	4	Wastegate actuator, short circuit to ground
4379	Fork Lift	Scania	5421	6	4	Wastegate actuator, short circuit
4380	Fork Lift	Cummins	5484	3	3	Engine Fan Clutch 2 Control Circuit - Voltage above normal, or shorted to high source
4381	Fork Lift	Cummins	5484	4	3	Engine Fan Clutch 2 Control Circuit - Voltage below normal, or shorted to low source
4382	Fork Lift	Cummins	5491	3	3	Aftertreatment Diesel Exhaust Fluid Line Heater Relay - Voltage above normal, or shorted to high source
4383	Fork Lift	Cummins	5491	4	3	Aftertreatment Diesel Exhaust Fluid Line Heater Relay - Voltage below normal, or shorted to low source
4384	Fork Lift	Cummins	5491	7	3	Aftertreatment 1 Diesel Exhaust Fluid Line Heater Relay - Mechanical system not responding or out of adjustment
4389	Fork Lift	Scania	5543	2	4	Exhaust brake actuator, control fault
4391	Fork Lift	Scania	5543	3	4	Exhaust brake actuator, short circuit to +24V
4392	Fork Lift	Scania	5543	4	4	Exhaust brake actuator, short circuit to ground
4393	Fork Lift	Scania	5543	5	4	Exhaust brake actuator, stuck in open position
4394	Fork Lift	Scania	5543	6	4	Exhaust brake actuator, faulty
4395	Fork Lift	Scania	5543	7	4	Exhaust brake actuator, stuck in closed position
4385	Fork Lift	Scania	5543	12	4	Exhaust brake actuator, control fault
4386	Fork Lift	Scania	5543	13	4	Exhaust brake actuator, fault with stop position
4387	Fork Lift	Scania	5543	16	4	Exhaust brake actuator, over temperature
4388	Fork Lift	Scania	5543	19	4	Exhaust brake actuator, CAN timeout
4390	Fork Lift	Scania	5543	21	4	Exhaust brake actuator, error
4396	Fork Lift	Cummins	5571	0	3	High Pressure Common Rail Fuel Pressure Relief Valve - Data valid but above normal operational range
4399	Fork Lift	Cummins	5571	3	3	High Pressure Common Rail Fuel Pressure Relief Valve - Voltage Above Normal, or Shorted to High Source
4401	Fork Lift	Cummins	5571	4	3	High Pressure Common Rail Fuel Pressure Relief Valve - Voltage below normal, or shorted to low source
4402	Fork Lift	Cummins	5571	7	3	High Pressure Common Rail Fuel Pressure Relief Valve - Mechanical system not responding or out of adjustment
4397	Fork Lift	Cummins	5571	11	3	High Pressure Common Rail Fuel Pressure Relief Valve - Root Cause Not Known
4398	Fork Lift	Cummins	5571	15	3	High Pressure Common Rail Fuel Pressure Relief Valve - Data Valid But Above Normal Operating Range - Least Severe Level
4400	Fork Lift	Cummins	5571	31	3	High Pressure Common Rail Fuel Pressure Relief Valve - Condition Exists
4403	Fork Lift	Cummins	5585	18	3	Engine Injector Metering Rail 1 Cranking Pressure - Data Valid But Below Normal Operating Range - Mo
4405	Fork Lift	Cummins	5603	9	5	Cruise Control Disable Command - Abnormal update rate
4404	Fork Lift	Cummins	5603	31	5	Cruise Control Disable Command - Condition Exists
4406	Fork Lift	Cummins	5605	31	5	Cruise Control Pause Command - Condition Exists
4407	Fork Lift	Cummins	5625	2	3	Engine Exhaust Back Pressure Regulator Position - Data Erratic, Intermittent or Incorrect
4408	Fork Lift	Cummins	5625	3	3	Engine Exhaust Back Pressure Regulator Position Sensor Circuit - Voltage Above Normal, or Shorted to High Source
4409	Fork Lift	Cummins	5625	4	3	Engine Exhaust Back Pressure Regulator Position Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
4410	Fork Lift	Cummins	5626	13	3	Engine Exhaust Back Pressure Regulator - Out of Calibration

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
4411	Fork Lift	Scania	5706	3	4	Reductant pump control
4412	Fork Lift	Scania	5706	4	4	Reductant pump control
4413	Fork Lift	Scania	5706	6	4	Reductant pump control
4414	Fork Lift	Cummins	5741	2	3	Aftertreatment 1 Outlet Soot - Data erratic, intermittent or incorrect
4415	Fork Lift	Cummins	5741	3	3	Aftertreatment 1 Outlet Soot Sensor - Voltage Above Normal, or Shorted to High Source
4416	Fork Lift	Cummins	5741	4	3	Aftertreatment 1 Outlet Soot Sensor - Voltage below normal, or shorted to low source
4420	Fork Lift	Cummins	5742	3	3	Aftertreatment Diesel Particulate Filter Temperature Sensor Module - Voltage Above Normal, or Shorted to high source
4421	Fork Lift	Cummins	5742	4	3	Aftertreatment Diesel Particulate Filter Temperature Sensor Module - Voltage below normal, or shorted to low source
4422	Fork Lift	Cummins	5742	9	3	Aftertreatment Diesel Particulate Filter Temperature Sensor Module - Abnormal update rate
4417	Fork Lift	Cummins	5742	11	3	Aftertreatment Diesel Particulate Filter Temperature Sensor Module - Root Cause Not Known
4418	Fork Lift	Cummins	5742	12	3	Aftertreatment Diesel Particulate Filter Temperature Sensor Module - Bad intelligent device or component
4419	Fork Lift	Cummins	5742	16	3	Aftertreatment Diesel Particulate Filter Temperature Sensor Module- Data Valid But Above Normal Operating Range
4426	Fork Lift	Scania	5743	2	4	Reductant tank temperature sensor, not plausible
4427	Fork Lift	Cummins	5743	3	3	Aftertreatment Selective Catalytic Reduction Temperature Sensor Module - Voltage Above Normal, or Shorted to high source
4428	Fork Lift	Cummins	5743	4	3	Aftertreatment Selective Catalytic Reduction Temperature Sensor Module - Voltage below normal, or Shorted to low source
4429	Fork Lift	Scania	5743	4	4	Reductant tank temperature sensor, short circuit
4430	Fork Lift	Scania	5743	5	4	Reductant tank temperature sensor, open load
4431	Fork Lift	Cummins	5743	9	3	Aftertreatment Selective Catalytic Reduction Temperature Sensor Module - Abnormal update rate
4423	Fork Lift	Cummins	5743	11	3	Aftertreatment Selective Catalytic Reduction Temperature Sensor Module - Root Cause Not Known
4424	Fork Lift	Cummins	5743	12	3	Aftertreatment Selective Catalytic Reduction Temperature Sensor Module - Bad intelligent device or component
4425	Fork Lift	Cummins	5743	16	3	Aftertreatment Selective Catalytic Reduction Temperature Sensor Module - Data Valid But Above Normal
4433	Fork Lift	Cummins	5745	3	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Heater - Voltage Above Normal, or Shorted to High
4434	Fork Lift	Scania	5745	3	4	SCR water valve, short circuit to battery
4435	Fork Lift	Cummins	5745	4	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Heater - Voltage below normal, or shorted to low source
4436	Fork Lift	Scania	5745	5	4	SCR water valve, open load
4432	Fork Lift	Cummins	5745	18	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Heater - Data Valid But Below Normal Operating Range
4437	Fork Lift	Cummins	5746	3	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Heater Relay - Voltage Above Normal, or Shorted to high source
4438	Fork Lift	Cummins	5746	4	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Heater Relay - Voltage below normal, or shorted to low source
4440	Fork Lift	Cummins	5747	3	3	Aftertreatment 1 Outlet Soot Sensor Heater - Voltage Above Normal, or Shorted to High Source
4441	Fork Lift	Cummins	5747	4	3	Aftertreatment 1 Outlet Soot Sensor Heater - Voltage below normal, or shorted to low source
4439	Fork Lift	Cummins	5747	10	3	Aftertreatment 1 Outlet Soot Sensor Heater - Abnormal rate of change
4442	Fork Lift	Cummins	5793	9	3	Desired Engine Fueling State - Abnormal Update Rate
4446	Fork Lift	Cummins	5797	3	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Temperature Sensor Module - Voltage Above Normal, or shorted to high source
4447	Fork Lift	Cummins	5797	4	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Temperature Sensor Module - Voltage below normal, or shorted to low source
4443	Fork Lift	Cummins	5797	11	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Temperature Sensor Module - Root Cause Not Known
4444	Fork Lift	Cummins	5797	12	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Temperature Sensor Module - Bad intelligent device
4445	Fork Lift	Cummins	5797	16	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Temperature Sensor Module - Data Valid But Above Normal Operating Range – Moderately Severe Level
4449	Fork Lift	Cummins	5798	2	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Heater Temperature - Data erratic, intermittent or incorrect
4448	Fork Lift	Cummins	5798	10	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Heater Temperature - Abnormal Rate of Change
4450	Fork Lift	Cummins	5838	31	3	EGR Valve Malfunction - Condition Exists
4451	Fork Lift	Cummins	5839	31	3	Diesel Exhaust Fluid Consumption Malfunction - Condition Exists
4452	Fork Lift	Cummins	5840	31	3	Diesel Exhaust Fluid Dosing Malfunction - Condition Exists
4453	Fork Lift	Scania	5841	1	4	SCR main unit, reductant quality too low
4454	Fork Lift	Cummins	5841	31	3	Diesel Exhaust Fluid Quality Malfunction - Condition Exists
4455	Fork Lift	Cummins	5842	31	3	SCR Monitoring System Malfunction - Condition Exists
4456	Fork Lift	Cummins	6301	3	3	Water in Fuel Indicator 2 Sensor Circuit - Voltage above normal, or shorted to high source
4457	Fork Lift	Cummins	6301	4	3	Water in Fuel Indicator 2 Sensor Circuit - Voltage below normal, or shorted to low source
4458	Fork Lift	Cummins	6653	16	3	Cold Start Injector Metering Rail 1 Pressure - Data Valid But Above Normal Operating Range - Moderate Severe Level
4459	Fork Lift	Cummins	6655	3	3	Maintain ECU Power Lamp - Voltage Above Normal, or Shorted to High Source
4460	Fork Lift	Cummins	6655	4	3	Maintain ECU Power Lamp - Voltage Below Normal, or Shorted to Low Source
4463	Fork Lift	Cummins	6713	9	3	VGT Actuator Driver Circuit - Abnormal update rate
4461	Fork Lift	Cummins	6713	13	3	Variable Geometry Turbocharger Actuator Software - Out of Calibration
4462	Fork Lift	Cummins	6713	31	3	Variable Geometry Turbocharger Actuator Software - Condition Exists
4465	Fork Lift	Cummins	6881	9	3	SCR Operator Inducement Override Switch - Abnormal Update Rate
4464	Fork Lift	Cummins	6881	13	3	SCR Operator Inducement Override Switch - Out of Calibration

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
4469	Fork Lift	Cummins	6882	3	3	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Voltage Above Normal or Shorted to High Source
4470	Fork Lift	Cummins	6882	4	3	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Voltage Below Normal or Shorted to Low Source
4471	Fork Lift	Cummins	6882	9	3	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Abnormal Update Rate
4466	Fork Lift	Cummins	6882	11	3	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Root Cause Not Known
4467	Fork Lift	Cummins	6882	12	3	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Bad Intelligent Device or Component
4468	Fork Lift	Cummins	6882	16	3	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Data Valid But Above Normal Operating Range - Moderately Severe Level
4472	Fork Lift	Cummins	6918	31	5	SCR System Cleaning Inhibited Due to Inhibit Switch - Condition Exists
4473	Fork Lift	Cummins	6928	31	3	SCR System Cleaning Inhibited Due to System Timeout - Condition Exists
4474	Fork Lift	*	520199	3	5	Cruise Control : Cruise Control (Resistive) Signal Circuit - Voltage Above Normal, or Shorted to High Source
4475	Fork Lift	Cummins	520199	3	5	Cruise Control : Cruise Control (Resistive) Signal Circuit - Voltage Above Normal, or Shorted to High Source
4476	Fork Lift	*	520199	4	5	Cruise Control : Cruise Control (Resistive) Signal Circuit - Voltage Below Normal, or Shorted to Low Source
4477	Fork Lift	Cummins	520199	4	5	Cruise Control : Cruise Control (Resistive) Signal Circuit - Voltage Below Normal, or Shorted to Low Source
4479	Fork Lift	Cummins	520286	4	3	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Voltage Below Normal or Shorted to Low Source
4478	Fork Lift	Cummins	520286	11	3	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Root Cause Not Known
4480	Fork Lift	Cummins	520320	7	3	Crankcase Depression Valve - Mechanical system not responding or out of adjustment
4481	Fork Lift	Cummins	520332	3	3	Cruise Control (Resistive) #2 Signal Circuit - Voltage above normal, or shorted to high source
4482	Fork Lift	Cummins	520332	4	3	Cruise Control (Resistive) #2 Signal Circuit - Voltage below normal, or shorted to low source
4483	Fork Lift	Cummins	520435	12	3	Glow Plug Module - Bad intelligent device or component
4484	Fork Lift	Cummins	520595	2	3	Closed Crankcase Ventilation System Pressure - Data erratic, intermittent or incorrect
4485	Fork Lift	Cummins	520595	3	3	Closed Crankcase Ventilation System Pressure Sensor - Voltage Above Normal, or Shorted to High Source
4486	Fork Lift	Cummins	520595	4	3	Closed Crankcase Ventilation System Pressure Sensor - Voltage below normal, or shorted to low source
4487	Fork Lift	Cummins	520668	31	3	Aftertreatment 1 Outlet NOx Sensor Closed Loop Operation - Condition Exists
4488	Fork Lift	Cummins	520716	3	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Valve 1 Heater - Voltage Above Normal, or Shorted to High Source
4489	Fork Lift	Cummins	520716	4	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Valve 1 Heater - Voltage Below Normal, or Shorted to Low Source
4490	Fork Lift	Cummins	520784	3	3	Fan Blade Pitch Position Sensor Circuit - Voltage Above Normal, or Shorted to High Source
4491	Fork Lift	Cummins	520784	4	3	Fan Blade Pitch Position Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
4492	Fork Lift	Cummins	520784	5	3	Fan Blade Pitch - Mechanical system not responding or out of adjustment
4493	Fork Lift	Cummins	520791	2	3	Engine Boost Curve Selection - Data erratic, intermittent or incorrect
4494	Fork Lift	Cummins	520808	31	3	Engine Emergency Shutdown Switch Actived - Condition Exists
4495	Fork Lift	Cummins	520809	31	3	Excessive Time Since Last Engine Air Shutoff Maintenance Test - Condition Exists
4498	Fork Lift	Cummins	520826	3	3	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Voltage Above Normal or Shorted to High Source
4499	Fork Lift	Cummins	520826	9	3	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Abnormal Update Rate
4496	Fork Lift	Cummins	520826	12	3	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Bad Intelligent Device or Component
4497	Fork Lift	Cummins	520826	16	3	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Data Valid But Above Normal Operating Range - Moderately Severe Level
4500	Fork Lift	Cummins	524286	31	3	Aftertreatment 1 Diesel Oxidation Catalyst System- Special Instruction
4501	Fork Lift	*	1A	*	4	S.C. TO GROUND AT CUSTOMER SPECIFIC FUNCTION NO. 2
4502	Fork Lift	*	1B	*	4	S.C. TO BATTERY VOLTAGE AT CUSTOMER SPECIFIC FUNCTION NO. 2
4503	Fork Lift	*	1C	*	4	O.C. AT CUSTOMER SPECIFIC FUNCTION NO. 2
4504	Fork Lift	*	1D	*	4	S.C. TO GROUND AT CUSTOMER SPECIFIC FUNCTION NO. 3
4505	Fork Lift	*	1E	*	4	S.C. TO BATTERY VOLTAGE AT CUSTOMER SPECIFIC FUNCTION NO. 3
4506	Fork Lift	*	1F	*	4	O.C. AT CUSTOMER SPECIFIC FUNCTION NO. 3
4507	Fork Lift	*	2A	*	4	S.C. TO GROUND PARKING BRAKE SENSOR INPUT
4508	Fork Lift	*	2B	*	4	INCHSENSOR-SIGNAL MISMATCH
4509	Fork Lift	*	2C	*	4	S.C. TO BATTERY VOLTAGE OR O.C. AT DLM TRACTION ADJUST DASHBOARD DEVICE INPUT
4510	Fork Lift	*	2D	*	4	S.C. TO GROUND DLM TRACTION ADJUST DASHBOARD DEVICE INPUT
4511	Fork Lift	*	2E	*	4	S.C. TO BATTERY VOLTAGE OR O.C. AT DLM STEERING ANGLE SENSOR INPUT
4512	Fork Lift	*	2F	*	4	S.C. TO GROUND DLM STEERING ANGLE SENSOR INPUT
4513	Fork Lift	*	3A	*	4	S.C. TO BATTERY VOLTAGE OR O.C. AT OUTPUT SPEED INPUT
4514	Fork Lift	*	3B	*	4	S.C. TO GROUND AT OUTPUT SPEED INPUT
4515	Fork Lift	*	3C	*	4	LOGICAL ERROR AT OUTPUT SPEED INPUT
4516	Fork Lift	*	3D	*	4	TURBINE SPEED ZERO DOESN'T FIT TO OTHER SPEED SIGNALS
4517	Fork Lift	*	3E	*	4	OUTPUT SPEED ZERO DOESN'T FIT TO OTHER PEED SIGNALS
4518	Fork Lift	*	5A	*	4	PARKBRAKE STATUS SIGNAL
4519	Fork Lift	*	5B	*	4	SHIFT QUALITY SEL SIGNAL
4520	Fork Lift	*	5C	*	4	AUTO DOWNSHIFT SIGNAL
4521	Fork Lift	*	5D	*	4	MANUAL DOWNSHIFT SIGNAL
4522	Fork Lift	*	5E	*	4	CCO REQUEST SIGNAL
4523	Fork Lift	*	5F	*	4	SHIFT LEVER SIGNAL
4524	Fork Lift	*	6A	*	4	ACTUAL ENGINE TORQUE SIGNAL

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
4525	Fork Lift	*	6B	*	4	NOM FRICTION TORQUE SIGNAL
4526	Fork Lift	*	6E	*	4	EEC2 TIMEOUT
4527	Fork Lift	*	7A	*	3	S.C. TO BATTERY VOLTAGE AT CONVERTER CLUTCH no reaction
4528	Fork Lift	*	7B	*	3	S.C. TO GROUND AT CONVERTER CLUTCH
4529	Fork Lift	*	7C	*	3	O.C. AT CONVERTER CLUTCH
4530	Fork Lift	*	7D	*	3	S.C. TO GROUND AT ENGINE DERATING DEVICE
4531	Fork Lift	*	7E	*	3	S.C. TO BATTERY VOLTAGE AT ENGINE DERATING DEVICE
4532	Fork Lift	*	7F	*	3	O.C. AT ENGINE DERATING DEVICE
4533	Fork Lift	*	8A	*	4	S.C. TO GROUND AT DLM TRANSVERSAL OUTPUT
4534	Fork Lift	*	8B	*	4	S.C. TO BATTERY VOLTAGE AT DLM TRANSVERSAL
4535	Fork Lift	*	8C	*	4	O.C. AT DLM TRANSVERSAL OUTPUT
4536	Fork Lift	*	8D	*	4	S.C. TO GROUND AT DLM INDICATOR LAMP OUTPUT
4537	Fork Lift	*	8E	*	4	S.C. TO BATTERY VOLTAGE AT DLM INDICATOR LAMP OUTPUT
4538	Fork Lift	*	8F	*	4	O.C. DLM INDICATOR LAMP OUTPUT
4539	Fork Lift	*	9A	*	4	S.C. TO GROUND AT CONVERTER LOCK UP CLUTCH SOLENOID
4540	Fork Lift	*	9B	*	4	O.C. AT CONVERTER LOCK UP CLUTCH SOLENOID
4541	Fork Lift	*	9C	*	4	S.C. TO BATTERY VOLTAGE AT CONVERTER LOCK UP CLUTCH SOLENOID
4542	Fork Lift	*	9D	*	4	S.C. TO GROUND AT RETARDER SOLENOID
4543	Fork Lift	*	9E	*	4	O.C. AT RETARDER SOLENOID
4544	Fork Lift	*	9F	*	4	S.C. TO BATTERY VOLTAGE AT RETARDER SOLENOID
4545	Fork Lift	*	A1	*	4	S.C. TO GROUND AT DIFFLOCK OR AXLE CONNECTION SOLENOID
4546	Fork Lift	*	A2	*	4	S.C. TO BATTERY VOLTAGE AT DIFFLOCK OR AXLE CONNECTION SOLENOID
4547	Fork Lift	*	A3	*	4	O.C. AT DIFFLOCK OR AXLE CONNECTION SOLENOID
4548	Fork Lift	*	A4	*	4	S.C. TO GROUND AT WARNING SIGNAL OUTPUT
4549	Fork Lift	*	A5	*	4	O.C. AT WARNING SIGNAL OUTPUT
4550	Fork Lift	*	A6	*	4	S.C. TO BATTERY VOLTAGE AT WARNING SIGNAL OUTPUT
4551	Fork Lift	*	A7	*	4	S.C. TO GROUND AT CUSTOMER SPECIFIC FUNCTION NO. 4
4552	Fork Lift	*	A8	*	4	S.C. TO BATTERY VOLTAGE AT CUSTOMER SPECIFIC FUNCTION NO. 4
4553	Fork Lift	*	A9	*	4	O.C. AT CUSTOMER SPECIFIC FUNCTION NO. 4
4554	Fork Lift	*	AA	*	4	S.C. TO GROUND AT CUSTOMER SPECIFIC FUNCTION NO. 5
4555	Fork Lift	*	AB	*	4	S.C. TO BATTERY VOLTAGE AT CUSTOMER SPECIFIC FUNCTION NO. 5
4556	Fork Lift	*	AC	*	4	O.C. AT CUSTOMER SPECIFIC FUNCTION NO. 5
4557	Fork Lift	*	AD	*	4	S.C. TO GROUND AT CUSTOMER SPECIFIC FUNCTION NO. 6
4558	Fork Lift	*	AE	*	4	S.C. TO BATTERY VOLTAGE AT CUSTOMER SPECIFIC FUNCTION NO. 6
4559	Fork Lift	*	AF	*	4	O.C. AT CUSTOMER SPECIFIC FUNCTION NO. 6
4560	Fork Lift	*	B1	*	3	SLIPPAGE AT CLUTCH K1
4561	Fork Lift	*	B2	*	3	SLIPPAGE AT CLUTCH K2
4562	Fork Lift	*	B3	*	3	SLIPPAGE AT CLUTCH K3
4563	Fork Lift	*	B4	*	3	SLIPPAGE AT CLUTCH K4
4564	Fork Lift	*	B5	*	3	SLIPPAGE AT CLUTCH KV
4565	Fork Lift	*	B6	*	3	SLIPPAGE AT CLUTCH KR
4566	Fork Lift	*	B7	*	3	OVERTEMP SUMP
4567	Fork Lift	*	B8	*	3	OVERTEMP RETARDER
4568	Fork Lift	*	B9	*	3	OVERSPEED ENGINE
4569	Fork Lift	*	BA	*	3	Differential Pressure TM Oil Filter (Clogging)
4570	Fork Lift	*	BB	*	3	SLIPPAGE AT CONVERTER LOCKUP CLUTCH
4571	Fork Lift	*	BC	*	3	OVERSPEED OUTPUT
4572	Fork Lift	*	BD	*	4	S.C. TO GROUND AT ENGINE BRKAE SOLENOID
4573	Fork Lift	*	BE	*	4	S.C. TO BATTERY VOLTAGE AT ENGINE BRAKE
4574	Fork Lift	*	BF	*	4	O.C. AT ENGINE BRAKE
4575	Fork Lift	*	C0	*	4	ENGINE TORQUE OR ENGINE POWER OVERLOAD
4576	Fork Lift	*	C1	*	4	TRANSMISSION OUTPUT TORQUE OVERLOAD
4577	Fork Lift	*	C2	*	4	TRANSMISSION INPUT TORQUE OVERLOAD
4578	Fork Lift	*	C3	*	4	OVERTEMP CONVERTER OUTPUT
4579	Fork Lift	*	C4	*	4	S.C. TO GROUND AT JOYSTICK STATUS INDICATOR
4580	Fork Lift	*	C5	*	4	S.C. TO BATTERY VOLTAGE AT JOYSTICK STATUS INDICATOR
4581	Fork Lift	*	C6	*	4	O.C. AT JOYSTICK STATUS INDICATOR
4582	Fork Lift	*	C7	*	4	S.C. TO GROUND AT OVERTEMP NEUTRAL
4583	Fork Lift	*	C8	*	4	S.C. TO BATTERY VOLTAGE AT OVERTEMP NEUTRAL INDICATOR
4584	Fork Lift	*	C9	*	4	O.C. AT OVERTEMP NEUTRAL INDICATOR
4585	Fork Lift	*	CA	*	4	ENGINE_RETARDER CONFIG_TIMEOUT
4586	Fork Lift	*	CB	*	4	ERC1 TIMEOUT
4587	Fork Lift	*	D1	*	4	S.C. TO BATTERY VOLTAGE AT POWER SUPPLY FOR SENSORS
4588	Fork Lift	*	D2	*	4	S.C. TO GROUND AT POWER SUPPLY FOR SENSORS
4589	Fork Lift	*	D3	*	4	LOW VOLTAGE AT BATTERY
4590	Fork Lift	*	D4	*	4	HIGH VOLTAGE AT BATTERY
4591	Fork Lift	*	D5	*	4	ERROR AT VALVE POWER SUPPLY VPS1
4592	Fork Lift	*	D6	*	4	ERROR VALVE POWER SUPPLY VPS2
4593	Fork Lift	*	D7	*	4	S.C. TO GROUND AT DLM LONGITUDINAL OUTPUT
4594	Fork Lift	*	D8	*	4	S.C. TO BATTERY VOLTAGE AT DLM LONGITUDINAL OUTPUT
4595	Fork Lift	*	D9	*	4	O.C. AT DLM LONGITUDINAL OUTPUT
4596	Fork Lift	*	E1	*	4	OPEN CIRCUIT AT DIRECTION SELECT SIGNALS
4597	Fork Lift	*	E2	*	4	OPEN CIRCUIT AT DIRECTION SELECT SIGNALS OF SHIFTER 2
4598	Fork Lift	*	E3	*	4	S.C. TO BATTERY VOLTAGE AT DISPLAY OUTPUT
4599	Fork Lift	*	E4	*	4	S.C. TO GROUND AT DISPLAY OUTPUT
4600	Fork Lift	*	E5	*	4	DISPID1_TIMEOUT
4601	Fork Lift	*	E6	*	4	ILLEGAL ID REQUEST VIA CAN
4602	Fork Lift	*	EE	81	4	System Error Alarm (GPS Antenna Fail)
4603	Fork Lift	*	EE	82	4	Wireless Com Antenna Failure

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
4604	Fork Lift	*	EE	8A	5	System Error Alarm (Time out 1)
4605	Fork Lift	*	EE	8B	5	System Error Alarm (Time out 2)
4606	Fork Lift	*	F1	*	4	GENERAL EEPROM FAULT
4607	Fork Lift	*	F2	*	5	CONFIGURATION LOST
4608	Fork Lift	*	F3	*	5	APPLICATION ERROR
4609	Fork Lift	*	F4	*	4	LIMP HOME REQUEST
4610	Fork Lift	*	F5	*	3	CLUTCH FAILURE
4611	Fork Lift	*	F6	*	5	CLUTCH ADJUSTMENT DATA LOST OR INCHPEDAL CALIBRATION DATA LOST
4612	Skid Loader	Daedong	1	18	1	IMV DRIVER SIGNAL OPEN CIRCUIT FAULT
4613	Skid Loader	Daedong	2	5	1	RAIL PRESSURE CONTROL LOW FAULT
4614	Skid Loader	Daedong	2	6	1	RAIL PRESSURE CONTROL HIGH FAULT
4615	Skid Loader	Daedong	2	8	2	RAIL PRESSURE CONTROL FAULT F_M_RPC_CTRL_ERROR_IO_NEG_APV
4616	Skid Loader	Daedong	2	9	1	RAIL PRESSURE CONTROL F_M_RPC_CTRL_ERROR_IO_POS_APV
4618	Skid Loader	Daedong	3	3	4	IMV FEEDBACK CURRENT LOW FAULT
4619	Skid Loader	Daedong	3	5	4	IMV CONTROL FAULT 2
4620	Skid Loader	Daedong	3	6	4	IMV CONTROL FAULT 2
4617	Skid Loader	Daedong	3	20	1	IMV DRIVER SC2G FAULT
4621	Skid Loader	Daedong	4	1	4	IMV CONTROL FAULT 2
4623	Skid Loader	Daedong	4	3	1	IMV FEEDBACK CURRENT HIGH FAULT
4624	Skid Loader	Daedong	4	5	1	IMV CONTROL FAULT 2
4625	Skid Loader	Daedong	4	6	2	IMV CONTROL FAULT 1
4622	Skid Loader	Daedong	4	21	1	IMV DRIVER SC2VBATT FAULT
4626	Skid Loader	Daedong	94	8	4	IMV CONTROL FAULT 2
4627	Skid Loader	Daedong	94	9	4	IMV CONTROL FAULT 1
4628	Skid Loader	*	101	3	3	Hydraulic Oil Temperature-Voltage Above Normal, Or Shorted To High Source
4629	Skid Loader	*	101	4	3	Hydraulic Oil Temperature Sensor Circuit - Voltage Below Normal, or shorted to Low Source
4630	Skid Loader	*	102	*	1	(Warning) Hydraulic Oil Temperature High
4631	Skid Loader	Daedong	135	16	4	RAIL PRESSURE BUILD FAULT
4632	Skid Loader	Daedong	136	16	1	OVER RAIL PRESSURE FAULT
4633	Skid Loader	Daedong	136	17	1	OVER RAIL PRESSURE IMV FAULT
4634	Skid Loader	Daedong	137	8	2	RAIL PRESSURE CONTROL FAULT
4635	Skid Loader	Daedong	137	9	1	RAIL PRESSURE CONTROL FAULT
4636	Skid Loader	Daedong	147	16	1	RAIL PRESSURE DROP FAULT
4637	Skid Loader	Daedong	150	1	4	INTAKE AIR TEMP. SENSOR FAULT
4638	Skid Loader	Daedong	151	20	4	INTAKE AIR TEMP. SENSOR SC2G FAULT
4639	Skid Loader	Daedong	152	18	4	INTAKE AIR TEMP. SENSOR OC OR SC2VBATT FAULT
4640	Skid Loader	Daedong	262	5	4	INTAKE AIR PRESS. SENSOR FAULT
4641	Skid Loader	Daedong	262	6	4	INTAKE AIR PRESS. SENSOR FAULT
4642	Skid Loader	Daedong	263	20	3	INTAKE AIR PRESS. SENSOR SC2G FAULT
4643	Skid Loader	Daedong	264	18	3	INTAKE AIR PRESS. SENSOR OC OR SC2VBATT FAULT
4644	Skid Loader	Daedong	274	20	4	INLET AIR TEMP. SENSOR SC2G FAULT
4645	Skid Loader	Daedong	275	18	4	INLET AIR TEMP. SENSOR OC OR SC2VBATT HIGH FAULT
4646	Skid Loader	Daedong	277	1	3	COOLANT TEMP. SENSOR PLAUSIBILITY
4647	Skid Loader	Daedong	279	20	3	COOLANT TEMP. SENSOR SC2G FAULT
4648	Skid Loader	Daedong	280	18	3	COOLANT TEMP. SENSOR OC OR SC2VBATT FAULT
4649	Skid Loader	Daedong	288	23	2	FOOT PEDAL SIGNAL TRACK1 FAULT
4650	Skid Loader	*	301	3	4	Fuel Level -Voltage Above Normal, Or Shorted To High Source
4651	Skid Loader	*	301	4	4	Fuel Level -Voltage Below Normal, Or Shorted To Low Source
4652	Skid Loader	*	303	*	4	(Warning) Fuel level low
4653	Skid Loader	*	305	*	1	(Warning) Engine Coolant Temperature High
4654	Skid Loader	*	313	*	4	(Warning) Engine Oil Pressure Low
4655	Skid Loader	*	319	*	1	(Warning) Engine Stop
4656	Skid Loader	*	320	*	4	(Warning) Engine Check
4657	Skid Loader	*	360	*	2	Water In Fuel Indicator, SPN97, HCESPN360
4658	Skid Loader	Daedong	386	20	4	FUEL TEMP. SENSOR SC2G FAULT
4659	Skid Loader	Daedong	387	18	4	FUEL TEMP. SENSOR OC OR SC2VBATT FAULT
4660	Skid Loader	Daedong	400	22	1	RAIL PRESSURE SENSOR SIGNAL GRADIENT FAULT
4661	Skid Loader	Daedong	401	1	1	RAIL PRESSURE SENSOR PLAUSIBILITY FAULT
4663	Skid Loader	Daedong	401	5	1	RAIL PRESSURE SENSOR PLAUSIBILITY FAULT
4664	Skid Loader	Daedong	401	6	1	RAIL PRESSURE SENSOR PLAUSIBILITY FAULT
4662	Skid Loader	Daedong	401	30	1	RAIL PRESSURE SENSOR PLAUSIBILITY FAULT
4665	Skid Loader	Daedong	402	20	1	RAIL PRESSURE SENSOR SIGNAL SC2G FAULT
4666	Skid Loader	Daedong	403	18	1	RAIL PRESSURE SENSOR SIGNAL OC OR SC2VATT FAULT
4667	Skid Loader	Daedong	513	18	2	INJECTOR 0 OPEN CIRCUIT FAULT
4668	Skid Loader	Daedong	513	19	2	INJECTOR 0 SHORT CIRCUIT FAULT
4669	Skid Loader	Daedong	514	18	2	INJECTOR 3 OPEN CIRCUIT FAULT
4670	Skid Loader	Daedong	514	19	2	INJECTOR 3 SHORT CIRCUIT FAULT
4671	Skid Loader	Daedong	515	18	2	INJECTOR 1 OPEN CIRCUIT FAULT
4672	Skid Loader	Daedong	515	19	2	INJECTOR 1 SHORT CIRCUIT FAULT
4673	Skid Loader	Daedong	516	18	2	INJECTOR 2 OPEN CIRCUIT FAULT
4674	Skid Loader	Daedong	516	19	2	INJECTOR 2 SHORT CIRCUIT FAULT
4675	Skid Loader	Daedong	544	24	2	FOOT PEDAL SIGNAL TRACK 2 FAULT
4676	Skid Loader	Daedong	594	7	2	RAIL PRESSURE CONTORL FAULT
4677	Skid Loader	Daedong	609	14	2	INJECTOR 0 & WIRING LSD RESISTANCE FAULT
4678	Skid Loader	Daedong	610	15	2	INJECTOR 0 & WIRING HSD RESISTANCE FAULT
4679	Skid Loader	Daedong	612	14	2	INJECTOR 3 & WIRING LSD RESISTANCE FAULT
4680	Skid Loader	Daedong	613	15	2	INJECTOR 3 & WIRING HSD RESISTANCE FAULT
4681	Skid Loader	Daedong	615	14	2	INJECTOR 1 & WIRING LSD RESISTANCE FAULT
4682	Skid Loader	Daedong	616	15	2	INJECTOR 1 & WIRING HSD RESISTANCE FAULT

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
4683	Skid Loader	Daedong	624	14	2	INJECTOR 2 & WIRING LSD RESISTANCE FAULT
4684	Skid Loader	Daedong	625	15	2	INJECTOR 2 & WIRING HSD RESISTANCE FAULT
4685	Skid Loader	Daedong	639	0	5	CAN TIMEOUT FAULT
4686	Skid Loader	Daedong	666	6	2	INJECTOR 0 MDP TRIM HIGH FAULT
4688	Skid Loader	Daedong	667	5	4	INJECTOR 0 LEARNING FAULT
4687	Skid Loader	Daedong	667	30	2	INJECTOR 0 LEARNING FAULT
4689	Skid Loader	Daedong	670	6	2	INJECTOR 3 MDP TRIM HIGH FAULT
4691	Skid Loader	Daedong	671	5	4	INJECTOR 3 LEARNING FAULT
4690	Skid Loader	Daedong	671	30	2	INJECTOR 3 LEARNING FAULT
4692	Skid Loader	Daedong	674	6	2	INJECTOR 1 MDP TRIM HIGH FAULT
4694	Skid Loader	Daedong	675	5	4	INJECTOR 1 LEARNING FAULT
4693	Skid Loader	Daedong	675	30	2	INJECTOR 1 LEARNING FAULT
4695	Skid Loader	Daedong	678	6	2	INJECTOR 2 MDP TRIM HIGH FAULT
4697	Skid Loader	Daedong	679	5	4	INJECTOR 2 LEARNING FAULT
4696	Skid Loader	Daedong	679	30	2	INJECTOR 2 LEARNING FAULT
4698	Skid Loader	*	705	0	1	(MCU Input)Battery Voltage-Data Valid But Above Normal Operational Range
4699	Skid Loader	*	705	1	1	(MCU Input)Battery Voltage-Data Valid But Below Normal Operational Range
4700	Skid Loader	*	706	*	4	(Warning) Battery Voltage Low
4701	Skid Loader	Daedong	805	1	5	KNOCK SENSOR 1 FAULT
4702	Skid Loader	Daedong	816	1	5	KNOCK SENSOR 2 FAULT
4703	Skid Loader	Daedong	821	2	2	CRANK SENSOR SIGNAL GAP MISSED FAULT
4704	Skid Loader	Daedong	821	27	2	CRANK SENSOR SIGNAL OVER SPEED FAULT
4705	Skid Loader	Daedong	832	29	2	CAM SENSOR SIGNAL ERRATIC FAULT
4706	Skid Loader	Daedong	832	30	2	CAM SENSOR SIGNAL LEARNING FAULT
4707	Skid Loader	Daedong	833	26	2	CAM SENSOR SIGNAL FAULT
4708	Skid Loader	Daedong	833	29	2	CAM SENSOR SIGNAL FAULT
4709	Skid Loader	Daedong	833	30	2	CAM SENSOR SIGNAL DRIFT FAULT
4710	Skid Loader	*	841	2	1	ECM Communication Status-Data Erratic, Intermittent Or Incorrect
4711	Skid Loader	*	850	2	4	RMCU Status-Data Erratic, Intermittent Or Incorrect
4712	Skid Loader	Daedong	881	27	2	CRANK SIGNAL FAULT 2
4713	Skid Loader	Daedong	882	23	2	CRANK SIGNAL FAULT 3
4714	Skid Loader	Daedong	884	26	2	CRANK SIGNAL FAULT 4
4715	Skid Loader	Daedong	896	18	4	GLOW PLUG RELAY OC FAULT
4716	Skid Loader	Daedong	896	20	4	GLOW PLUG RELAY SC2G FAULT
4717	Skid Loader	Daedong	896	21	4	GLOW PLUG RELAY SC2VBATT FAULT
4718	Skid Loader	Daedong	896	30	4	GLOW PLUG RELAY FAULT
4719	Skid Loader	Daedong	897	18	5	GLOW PLUG LAMP OC FAULT
4720	Skid Loader	Daedong	897	20	5	GLOW PLUG LAMP SC2G FAULT
4721	Skid Loader	Daedong	897	21	5	GLOW PLUG LAMP SC2VBATT FAULT
4722	Skid Loader	Daedong	1024	5	2	EGR CONTROL AIR FLOW LOW FAULT
4723	Skid Loader	Daedong	1025	6	2	EGR CONTROL AIR FLOW HIGH FAULT
4724	Skid Loader	Daedong	1027	1	2	EGR CONTROL AND SINAL FAULT
4726	Skid Loader	Daedong	1027	2	2	EGR H-BRIDGE DRIVER FAULT
4729	Skid Loader	Daedong	1027	3	2	EGR H-BRIDGE DRIVER FAULT
4730	Skid Loader	Daedong	1027	4	2	EGR H-BRIDGE DRIVER FAULT
4725	Skid Loader	Daedong	1027	18	2	EGR H-BRIDGE DRIVER FAULT
4727	Skid Loader	Daedong	1027	20	2	EGR SC2G FAULT
4728	Skid Loader	Daedong	1027	21	2	EGR SC2VBATT FAULT
4731	Skid Loader	Daedong	1028	30	2	EGR POSITION LEARNING DRIFT FAULT
4732	Skid Loader	Daedong	1029	20	2	EGR POSITION FEEDBACK SIGNAL SC2G FAULT
4733	Skid Loader	Daedong	1030	21	2	EGR POSITION FEEDBACK SIGNAL OC OR SC2VBATT FAULT
4734	Skid Loader	Daedong	1159	18	3	ACV POSITION FEEDBACK SIGNAL OC OR SC2VBATT FAULT
4735	Skid Loader	Daedong	1159	20	3	ACV POSITION FEEDBACK SIGNAL SC2G FAULT
4736	Skid Loader	Daedong	1159	30	3	ACV POSITION LEARNING FAULT
4737	Skid Loader	Daedong	1181	30	2	EGR POSITION LEARNING RANGE FAULT
4738	Skid Loader	Daedong	1314	5	1	ENGINE OIL PRESSURE LOW FAULT
4739	Skid Loader	Daedong	1348	1	4	EXHAUST GAS TEMP.SENSOR FAULT
4740	Skid Loader	Daedong	1349	20	4	EXHAUST GAS TEMP.SENSOR SC2G FAULT
4741	Skid Loader	Daedong	1350	18	4	EXHAUST GAS TEMP.SENSOR OC OR SC2VBATT FAULT
4742	Skid Loader	Daedong	1378	4	4	BATTERY VOLTAGE LOW FAULT
4743	Skid Loader	Daedong	1379	4	2	BATTERY VOLTAGE HIGH FAULT
4744	Skid Loader	Daedong	1538	10	2	INJECTOR 0 C3I DATA FAULT
4745	Skid Loader	Daedong	1538	11	2	INJECTOR 1 C3I DATA FAULT
4746	Skid Loader	Daedong	1538	12	2	INJECTOR 2 C3I DATA FAULT
4747	Skid Loader	Daedong	1538	13	2	INJECTOR 3 C3I DATA FAULT
4748	Skid Loader	Daedong	1538	26	2	INJECTOR C3I RAM DATA FAULT
4749	Skid Loader	Daedong	1539	26	2	ECU MEMORY INTEGRITY DATA FAULT
4750	Skid Loader	Daedong	1540	26	2	ECU MEMORY INTEGRITY RAM FAULT
4751	Skid Loader	Daedong	1541	26	2	ECU MEMORY INTEGRITY FAULT
4752	Skid Loader	Daedong	1547	26	2	ECU ADC FAULT
4753	Skid Loader	Daedong	1563	26	4	ESM 0 TORQUE MONITORING
4754	Skid Loader	Daedong	1581	1	2	INJECTOR DRIVER CIRCUIT PERFORMANCE BANK `A` FAULT
4755	Skid Loader	Daedong	1581	20	2	INJECTOR DRIVER CIRCUIT PERFORMANCE BANK `A` FAULT
4756	Skid Loader	Daedong	1581	21	2	INJECTOR DRIVER CIRCUIT PERFORMANCE BANK `A` FAULT
4757	Skid Loader	Daedong	1582	1	2	INJECTOR DRIVER CIRCUIT PERFORMANCE BANK `B` FAULT
4758	Skid Loader	Daedong	1582	20	2	INJECTOR DRIVER CIRCUIT PERFORMANCE BANK `B` FAULT
4759	Skid Loader	Daedong	1582	21	2	INJECTOR DRIVER CIRCUIT PERFORMANCE BANK `B` FAULT
4760	Skid Loader	Daedong	1583	26	2	ECU DATA STORAGE FAULT
4761	Skid Loader	Daedong	1601	26	2	ECU INTERNAL 5V SUPPLY 1 FAULT

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
4762	Skid Loader	Daedong	1617	26	2	ECU INTERNAL 5V SUPPLY 2 FAULT
4763	Skid Loader	Daedong	1669	26	4	MAIN ECU RELAY FAULT
4764	Skid Loader	Daedong	1687	26	2	ECU INTERNAL 5V AUXILLARY FAULT
4765	Skid Loader	*	2000	1	5	RMS Step 1-Satellite/mobile communication link failure
4766	Skid Loader	*	2000	5	5	RMS Step 0-Incorrect satellite/mobile antenna connection
4767	Skid Loader	*	2001	1	5	RMS Step 1-GPS position update failure
4768	Skid Loader	*	2001	5	5	RMS Step 0-Incorrect GPS antenna connection
4769	Skid Loader	*	2002	1	5	RMS Step 2-Test message transmission failure
4770	Skid Loader	*	2003	2	5	RMS Step 3-Failure in transmitting current gauge reply
4771	Skid Loader	*	2004	0	5	RMS Step 4
4772	Skid Loader	*	2005	0	5	RMS Step 5
4773	Skid Loader	Daedong	4097	25	2	DPF REDUCED TORQUE FAULT
4774	Skid Loader	Daedong	4633	26	4	ESM VDG MONITORING FAULT
4775	Skid Loader	Daedong	4641	25	2	FOOT PEDAL LIMP HOME FAULT
4776	Skid Loader	Daedong	4644	25	2	HAND PEDAL LIMP HOME FAULT
4777	Skid Loader	Daedong	4646	25	2	PEDAL LIMP HOME FAULT
4778	Skid Loader	Daedong	4647	25	2	PEDAL REDUCED TORQUE FAULT
4779	Skid Loader	Daedong	4714	18	5	WATER IN FUEL SENSOR LAMP FAULT
4780	Skid Loader	Daedong	4714	20	5	WATER IN FUEL SENSOR LAMP FAULT
4781	Skid Loader	Daedong	4714	21	5	WATER IN FUEL SENSOR LAMP FAULT
4782	Skid Loader	Daedong	4714	30	5	WATER IN FUEL SENSOR LAMP FAULT
4783	Skid Loader	Daedong	4867	30	2	INJECTOR LEARNING CONDITION FAULT
4784	Skid Loader	Daedong	4881	30	2	INJECTOR LEARNING CONDITION FAULT
4785	Skid Loader	Daedong	5632	18	5	DPF REGENERATION WARNING LAMP OC FAULT
4786	Skid Loader	Daedong	5632	20	5	DPF REGENERATION WARNING LAMP SC2G FAULT
4787	Skid Loader	Daedong	5632	21	5	DPF REGENERATION WARNING LAMP SC2VBATT FAULT
4788	Skid Loader	Daedong	5632	30	5	DPF REGENERATION WARNING LAMP DRIVER FAULT
4789	Skid Loader	Daedong	5633	18	5	DPF REGENERATION UNDERWAY LAMP OC FAULT
4790	Skid Loader	Daedong	5633	20	5	DPF REGENERATION UNDERWAY LAMP SC2G FAULT
4791	Skid Loader	Daedong	5633	21	5	DPF REGENERATION UNDERWAY LAMP SC2VBATT FAULT
4792	Skid Loader	Daedong	5633	26	4	ESM LEVEL 3 FAULT
4793	Skid Loader	Daedong	5633	30	5	DPF REGENERATION UNDERWAY LAMP FAULT
4794	Skid Loader	Daedong	5634	26	4	ESM LEVEL 3 FAULT
4795	Skid Loader	Daedong	5636	26	4	ESM LEVEL 3 FAULT
4796	Skid Loader	Daedong	5638	26	4	ESM LEVEL 3 FAULT
4797	Skid Loader	Daedong	5639	26	4	ESM LEVEL 3 FAULT
4798	Skid Loader	Daedong	5643	26	4	ESM LEVEL 3 FAULT
4799	Skid Loader	Daedong	5644	26	4	ESM ENGINE OFF MONITORING FAULT
4800	Skid Loader	Daedong	5645	26	4	ESM PEDAL MONITORING FAULT
4801	Skid Loader	Daedong	5646	26	4	ESM HAND PEDAL MONITORING FAULT
4802	Skid Loader	Daedong	5649	26	4	ESM LEVEL 3 FAULT
4803	Skid Loader	Daedong	5650	26	4	ESM LEVEL 3 FAULT
4804	Skid Loader	Daedong	5659	25	4	ESM TORQUE REDUCTION FAULT
4805	Skid Loader	Daedong	5664	26	4	ESM LEVEL 3 FAULT
4806	Skid Loader	Daedong	5665	26	4	ESM LEVEL 3 FAULT
4807	Skid Loader	Daedong	5666	26	4	ESM LEVEL 3 FAULT
4808	Skid Loader	Daedong	5667	26	4	ESM LEVEL 3 FAULT
4809	Skid Loader	Daedong	5668	26	4	ESM LEVEL 3 FAULT
4810	Skid Loader	Daedong	5669	26	4	ESM LEVEL 3 FAULT
4811	Skid Loader	Daedong	5670	26	4	ESM LEVEL 3 FAULT
4812	Skid Loader	Daedong	5671	26	4	ESM LEVEL 3 FAULT
4813	Skid Loader	Daedong	5672	26	4	ESM LEVEL 3 FAULT
4814	Skid Loader	Daedong	5675	26	4	ESM LEVEL 3 FAULT
4815	Skid Loader	Daedong	5680	26	4	ESM PULSE CHECK FAULT
4816	Skid Loader	Daedong	5681	26	4	ESM PULSE CHECK FAULT
4817	Skid Loader	Daedong	5682	26	4	ESM PULSE CHECK FAULT
4818	Skid Loader	Daedong	5683	26	4	ESM PULSE CHECK FAULT
4819	Skid Loader	Daedong	5684	26	4	ESM PULSE CHECK FAULT
4820	Skid Loader	Daedong	5685	26	4	ESM PULSE CHECK FAULT
4821	Skid Loader	Daedong	5686	26	4	ESM PULSE CHECK FAULT
4822	Skid Loader	Daedong	5687	26	4	ESM PULSE CHECK FAULT
4823	Skid Loader	Daedong	5688	26	4	ESM PULSE CHECK FAULT
4824	Skid Loader	Daedong	5712	1	5	CHECK ENGINE LAMP FAULT
4825	Skid Loader	Daedong	5712	18	5	CHECK ENGINE LAMP OC FAULT
4826	Skid Loader	Daedong	5712	20	5	CHECK ENGINE LAMP SC2G FAULT
4827	Skid Loader	Daedong	5712	21	5	CHECK ENGINE LAMP SC2VBATT FAULT
4828	Skid Loader	Daedong	5728	26	4	ESM PULSE CHECK FAULT
4829	Skid Loader	Daedong	5729	26	4	ESM PULSE CHECK FAULT
4830	Skid Loader	Daedong	5730	1	5	ENGINE HOUR METER FAULT
4831	Skid Loader	Daedong	5730	26	4	ESM LEVEL 3 FAULT
4832	Skid Loader	Daedong	5731	18	5	ENGINE HOUR METER OC FAULT
4833	Skid Loader	Daedong	5731	26	4	ESM LEVEL 3 FAULT
4834	Skid Loader	Daedong	5732	20	5	ENGINE HOUR METER SC2G FAULT
4835	Skid Loader	Daedong	5733	21	5	ENGINE HOUR METER SC2VBATT FAULT
4836	Skid Loader	Daedong	5734	1	5	ENGINE SPEED GAUGE FAULT
4837	Skid Loader	Daedong	5735	18	5	ENGINE SPEED GAUGE OC FAULT
4838	Skid Loader	Daedong	5736	20	5	ENGINE SPEED GAUGE SC2G FAULT
4839	Skid Loader	Daedong	5737	21	5	ENGINE SPEED GAUGE SC2VBATT FAULT
4840	Skid Loader	Daedong	5776	26	4	ESM LEVEL 3 FAULT

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
4841	Skid Loader	Daedong	5777	26	4	ESM LEVEL 3 FAULT
4842	Skid Loader	Daedong	5778	26	4	ESM LEVEL 3 FAULT
4843	Skid Loader	Daedong	5842	26	4	ESM TORQUE REDUCTION MONITORING FAULT
4844	Skid Loader	Daedong	5846	26	4	ESM ENGINE SPEED FAULT
4845	Skid Loader	Daedong	5848	26	4	ESM PEDAL TRACK FAULT
4846	Skid Loader	Daedong	8194	28	2	DPF OVERLOAD FAULT
4847	Skid Loader	Daedong	8241	1	3	DPF IN TEMP. SENSOR SIGNAL FAULT
4848	Skid Loader	Daedong	8241	22	3	DPF IN TEMP. SENSOR SIGNAL FAULT
4849	Skid Loader	Daedong	8242	20	3	DPF IN TEMP. SENSOR SC2G FAULT
4850	Skid Loader	Daedong	8243	18	3	DPF IN TEMP. SENSOR OC OR SC2VBATT FAULT
4851	Skid Loader	Daedong	8321	22	4	EXHAUST GAS TEMP. SENSOR SIGNAL FAULT
4852	Skid Loader	Daedong	8448	18	4	ACV DRIVER OC FAULT
4853	Skid Loader	Daedong	8449	2	3	ACV H-BRIDGE DRIVER FAULT
4854	Skid Loader	Daedong	8449	4	3	ACV H-BRIDGE DRIVER FAULT
4855	Skid Loader	Daedong	8450	20	3	ACV H-BRIDGE DRIVER FAULT
4856	Skid Loader	Daedong	8451	21	3	ACV H-BRIDGE DRIVER FAULT
4857	Skid Loader	Daedong	8472	3	3	ACV H-BRIDGE DRIVER FAULT
4858	Skid Loader	Daedong	8473	7	3	ACV CONTROL FAULT
4859	Skid Loader	Daedong	8480	23	2	HAND PEDAL SIGNAL TRACK1 FAULT
4860	Skid Loader	Daedong	8485	24	2	HAND PEDAL SIGNAL TRACK2 FAULT
4861	Skid Loader	Daedong	8501	1	2	FOOT PEDAL CORRELATION FAULT
4862	Skid Loader	Daedong	8504	1	2	HAND PEDAL CORRELATION FAULT
4863	Skid Loader	Daedong	8744	5	4	ATMOSPHERIC SENSOR LOW FAULT
4864	Skid Loader	Daedong	8745	6	4	ATMOSPHERIC SENSOR HIGH FAULT
4865	Skid Loader	Daedong	8804	8	2	WATER IN FUEL SENSOR FEEDBACK FAULT
4866	Skid Loader	Daedong	8804	9	2	WATER IN FUEL SENSOR FEEDBACK FAULT
4867	Skid Loader	Daedong	8809	1	1	WATER IN FUEL SENSOR DETECT FAULT
4868	Skid Loader	Daedong	9263	28	2	DPF PLUGGED FAULT
4869	Skid Loader	Daedong	9299	1	3	DPF DIFF.PRESS SENSOR PLAUSIBILITY FAULT
4870	Skid Loader	Daedong	9299	22	3	DPF DIFF.PRESS SENSOR PLAUSIBILITY FAULT
4871	Skid Loader	Daedong	9300	20	3	DPF DIFF. PRESS SENSOR SC2G FAULT
4872	Skid Loader	Daedong	9301	18	3	DPF DIFF. PRESS SENSOR OC OR SC2VBATT FAULT
4873	Skid Loader	Daedong	9323	1	4	DPF REGENERATION SWITCH FAULT
4874	Skid Loader	Daedong	9349	29	3	DPF DIFF. PRESS LEAK FAULT
4875	Skid Loader	Daedong	11200	0	2	SCR INDUCEMENT_WARNING1 FAULT
4876	Skid Loader	Daedong	11201	0	2	SCR INDUCEMENT_WARNING2 FAULT
4877	Skid Loader	Daedong	11202	0	2	SCR INDUCEMENT_WARNING3(LOW) FAULT
4878	Skid Loader	Daedong	11203	0	2	SCR INDUCEMENT_WARNING4(SEVERE) FAULT
4879	Skid Loader	Daedong	521015	31	4	RAIL PRESSURE OVER TIME FAULT
4880	Skid Loader	Daedong	521516	31	2	PRESSURE LIMIT VALVE OPEN FAULT
4881	Wheel Loader	Cummins	3	*	3	High voltage detected at the oil pressure circuit.
4882	Wheel Loader	*	10	*	3	LOGICAL ERROR AT DIRECTION SELECT SIGNAL 3RD SHIFT LEVER
4883	Wheel Loader	*	11	*	3	LOGICAL ERROR AT GEAR RANGE SIGNAL
4884	Wheel Loader	*	12	*	3	LOGICAL ERROR AT DIRECTION SELECT SIGNAL
4885	Wheel Loader	*	13	*	3	LOGICAL ERROR AT ENGINE DERATING DEVICE
4886	Wheel Loader	*	14	*	3	LOGICAL ERROR AT PARKBRAKE STATUS
4887	Wheel Loader	*	15	*	3	LOGICAL ERROR AT DIRECTION SELECT SIGNAL 2. SHIFT LEVER
4888	Wheel Loader	*	16	*	3	LOGICAL ERROR AT AXLE CONNECTION
4889	Wheel Loader	*	17	*	3	S.C. TO GROUND AT CUSTOMER SPECIFIC FUNCTION NO. 1
4890	Wheel Loader	*	18	*	3	S.C. TO BATTERY VOLTAGE AT CUSTOMER SPECIFIC FUNCTION NO. 1
4891	Wheel Loader	*	19	*	3	O.C. AT CUSTOMER SPECIFIC FUNCTION NO. 1
4892	Wheel Loader	*	21	*	3	S.C. TO BATTERY VOLTAGE AT CLUTCH CUTOFF INPUT
4894	Wheel Loader	Cummins	22	3	3	Extended Crankcase Blow-by Pressure Circuit - Voltage Above Normal, or Shorted to High Source
4895	Wheel Loader	Cummins	22	4	3	Extended Crankcase Blow-by Pressure Circuit - Voltage Below Normal, or Shorted to Low Source
4893	Wheel Loader	*	22	*	3	S.C. TO GROUND OR O.C. AT CLUTCH CUTOFF INPUT
4896	Wheel Loader	*	23	*	3	S.C. TO BATTERY VOLTAGE AT LOAD SENSOR INPUT
4897	Wheel Loader	*	24	*	3	S.C. TO GROUND OR O.C. AT LOAD SENSOR INPUT
4898	Wheel Loader	*	25	*	3	S.C. TO BATTERY VOLTAGE OR O.C. AT TRANSMISSION SUMP TEMPERATURE SENSOR INPUT
4899	Wheel Loader	*	26	*	3	S.C. TO GROUND AT TRANSMISSION SUMP TEMPERATURE SENSOR INPUT
4901	Wheel Loader	Cummins	27	2	4	EGR Valve Position - Data erratic, intermittent or incorrect
4902	Wheel Loader	Perkins	27	3	3	Engine Exhaust Gas Recirculation Valve Position : Voltage Above Normal
4903	Wheel Loader	Cummins	27	4	3	EGR Valve Position Circuit - Voltage below normal, or shorted to low source
4904	Wheel Loader	Perkins	27	4	3	Engine Exhaust Gas Recirculation Valve Position : Voltage Below Normal
4900	Wheel Loader	*	27	*	3	S.C. TO BATTERY VOLTAGE OR O.C. AT RETARDER / TORQUECONVERTER TEMPERATURE SENSOR INPUT
4906	Wheel Loader	Yanmar	28	0	4	Accelerator sensor 3 error (foot pedal in open position)
4907	Wheel Loader	Yanmar	28	1	4	Accelerator sensor 3 error (foot pedal in closed position)
4908	Wheel Loader	Yanmar	28	3	4	Accelerator sensor 2 error (Voltage high)
4909	Wheel Loader	Yanmar	28	4	4	Accelerator sensor 2 error (Voltage low)
4905	Wheel Loader	*	28	*	3	S.C. TO GROUND AT RETARDER / TORQUECONVERTER TEMPERATURE SENSOR INPUT
4911	Wheel Loader	Perkins	29	2	3	Accelerator Pedal Position 2 : Erratic, Intermittent or Incorrect
4912	Wheel Loader	Perkins	29	3	3	Accelerator Pedal Position 2 : Voltage Above Normal
4913	Wheel Loader	Yanmar	29	3	3	Accelerator sensor 3 error (Voltage high)
4914	Wheel Loader	Perkins	29	4	3	Accelerator Pedal Position 2 : Voltage Below Normal
4915	Wheel Loader	Yanmar	29	4	3	Accelerator sensor 3 error (Voltage low)
4916	Wheel Loader	Perkins	29	8	4	Accelerator Pedal Position 2 : Abnormal Frequency, Pulse width or Period

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
4917	Wheel Loader	Yanmar	29	8	4	Pulse accelerator sensor error (pulse communication)
4910	Wheel Loader	*	29	*	3	S.C. TO BATTERY VOLTAGE OR O.C. AT PARKING BRAKE SENSOR INPUT
4918	Wheel Loader	*	31	*	3	S.C. TO BATTERY VOLTAGE OR O.C. AT ENGINE SPEED INPUT
4919	Wheel Loader	*	32	*	3	S.C. TO GROUND AT ENGINE SPEED INPUT
4920	Wheel Loader	*	33	*	3	LOGICAL ERROR AT ENGINE SPEED INPUT
4921	Wheel Loader	*	34	*	3	S.C. TO BATTERY VOLTAGE OR O.C. AT TURBINE SPEED INPUT
4922	Wheel Loader	*	35	*	3	S.C. TO GROUND AT TURBINE SPEED INPUT
4923	Wheel Loader	*	36	*	3	LOGICAL ERROR AT TURBINE SPEED INPUT
4924	Wheel Loader	*	37	*	3	S.C. TO BATTERY VOLTAGE OR O.C. AT INTERNAL SPEED INPUT
4925	Wheel Loader	*	38	*	3	S.C. TO GROUND AT INTERNAL SPEED INPUT
4926	Wheel Loader	*	39	*	3	LOGICAL ERROR AT INTERNAL SPEED INPUT
4927	Wheel Loader	*	40	*	3	GEAR RANGE RESTRICTION SIGNAL
4928	Wheel Loader	*	41	*	3	TCU RECEIVES MESSAGES 'GEAR RANGE SELECT(ZF_3_IDENT)' AND 'FRONT WHEEL DRIVE STATUS'(V_IDENT_FWD) ALTHOUGH CONFIGURATION STATES THAT FWD CONTROLLER IS NOT INSTALLED
4929	Wheel Loader	*	44	*	5	SPEEDLIMIT_PROP1, Timeout of CAN-message SpeedLimit_Prop1 form Vehicle controller
4930	Wheel Loader	*	45	*	5	SPEEDLIMIT_PROP2, Timeout of CAN-message SpeedLimit_Prop2 from Vehicle controller
4931	Wheel Loader	Scania	46	1	5	Low air pressure signal from APS
4932	Wheel Loader	Scania	46	19	5	CAN message timeout from APS
4933	Wheel Loader	*	50	*	3	FMR1 TIMEOUT
4935	Wheel Loader	Cummins	51	2	3	Engine Intake Throttle Actuator Position Sensor - Data Erratic, Intermittent, or Incorrect
4936	Wheel Loader	Cummins	51	3	3	Engine Intake Throttle Actuator Position Sensor Circuit - Voltage Above Normal or Shorted to High Source
4937	Wheel Loader	Perkins	51	3	3	Engine Throttle Valve 1 Position : Voltage Above Normal
4938	Wheel Loader	Scania	51	3	3	Throttle Position Sensor 1, short circuit to +24
4939	Wheel Loader	Yanmar	51	3	3	Intake throttle position sensor error (voltage high)
4940	Wheel Loader	Cummins	51	4	3	Engine Intake Throttle Actuator Position Sensor Circuit - Voltage Below Normal or Shorted to Low Source
4941	Wheel Loader	Perkins	51	4	3	Engine Throttle Valve 1 Position : Voltage Below Normal
4942	Wheel Loader	Scania	51	4	3	Throttle Position Sensor 1, short circuit to ground
4943	Wheel Loader	Yanmar	51	4	3	Intake throttle position sensor error (voltage low)
4944	Wheel Loader	Scania	51	7	4	Throttle Position Sensor, not plausible
4945	Wheel Loader	Scania	51	8	4	Endpoints of throttle position sensor are out of range
4946	Wheel Loader	Scania	51	9	4	Throttle Position Sensor, correlation error
4934	Wheel Loader	*	51	*	3	FMR2 TIMEOUT
4948	Wheel Loader	Cummins	52	0	3	Coolant Temperature 2 - Data Valid but Above Normal Operational Range - Most Severe Level
4950	Wheel Loader	Cummins	52	3	3	Coolant Temperature 2 Sensor Circuit - Voltage Above Normal, or Shorted to High Source
4951	Wheel Loader	Cummins	52	4	3	Coolant Temperature 2 Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
4949	Wheel Loader	Cummins	52	16	3	Coolant Temperature 2 - Data Valid but Above Normal Operational Range - Moderately Severe Level
4947	Wheel Loader	*	52	*	3	EAMODUL1 TIMEOUT
4952	Wheel Loader	*	53	*	3	ABS TIMEOUT
4953	Wheel Loader	*	54	*	3	MDU1 TIMEOUT
4954	Wheel Loader	*	55	*	3	JSS TIMEOUT
4955	Wheel Loader	*	56	*	3	ENGINE CONF TIMEOUT
4956	Wheel Loader	*	57	*	3	EEC1 TIMEOUT
4957	Wheel Loader	*	58	*	3	EEC3 TIMEOUT
4958	Wheel Loader	*	59	*	3	ENGINE SPEED LIMIT FUNCTION DOES NOT WORK PROPERLY
4959	Wheel Loader	*	60	*	3	ADDITIONAL BRAKE STATUS SIGNAL
4960	Wheel Loader	*	61	*	3	AEB REQUEST SIGNAL
4961	Wheel Loader	*	62	*	3	PTO TORQUE SIGNAL
4962	Wheel Loader	*	63	*	3	DRIVING MODE SIGNAL
4963	Wheel Loader	*	64	*	3	STARTING GEAR SIGNAL
4964	Wheel Loader	*	65	*	3	ENGINGE TORQUE SIGNAL
4965	Wheel Loader	*	69	*	3	REFERENCE ENGINE TORQUE SIGNAL
4966	Wheel Loader	Cummins	70	2	3	Parking Brake Switch - Data Erratic, Intermittent, or Incorrect
4967	Wheel Loader	*	71	*	2	S.C. TO BATTERY VOLTAGE AT CLUTCH K1
4968	Wheel Loader	*	72	*	3	S.C. TO GROUND AT CLUTCH K1
4969	Wheel Loader	*	73	*	2	O.C. AT CLUTCH K1
4970	Wheel Loader	*	74	*	2	S.C. TO BATTERY VOLTAGE AT CLUTCH K2
4971	Wheel Loader	*	75	*	3	S.C. TO GROUND AT CLUTCH K2
4972	Wheel Loader	*	76	*	2	O.C. AT CLUTCH K2
4973	Wheel Loader	*	77	*	2	S.C. TO BATTERY VOLTAGE AT CLUTCH K3
4974	Wheel Loader	*	78	*	3	S.C. TO GROUND AT CLUTCH K3
4975	Wheel Loader	*	79	*	2	O.C. AT CLUTCH K3
4977	Wheel Loader	Cummins	81	16	3	Engine Diesel Particulate Filter Intake Pressure - Data Valid But Above Normal Operating Range - Moderately Severe Level
4976	Wheel Loader	*	81	*	2	S.C. TO BATTERY VOLTAGE AT CLUTCH K4
4978	Wheel Loader	*	82	*	3	S.C. TO GROUND AT CLUTCH K4
4979	Wheel Loader	*	83	*	2	O.C. AT CLUTCH K4
4983	Wheel Loader	Cummins	84	2	4	Wheel-Based Vehicle Speed - Data erratic, intermittent or incorrect
4984	Wheel Loader	Cummins	84	9	4	Wheel-Based Vehicle Speed - Abnormal update rate
4981	Wheel Loader	Cummins	84	10	4	Wheel-Based Vehicle Speed Sensor Circuit tampering has been detected - Abnormal rate of change
4982	Wheel Loader	Cummins	84	19	4	Wheel-Based Vehicle Speed - Received Network Data In Error
4980	Wheel Loader	*	84	*	2	S.C. TO BATTERY VOLTAGE AT CLUTCH KV
4985	Wheel Loader	*	85	*	2	S.C. TO GROUND AT CLUTCH KV
4986	Wheel Loader	*	86	*	2	O.C. AT CLUTCH KV

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
4987	Wheel Loader	*	87	*	2	S.C. TO BATTERY VOLTAGE AT CLUTCH KR
4988	Wheel Loader	*	88	*	2	S.C. TO GROUND AT CLUTCH KR
4989	Wheel Loader	*	89	*	2	O.C. AT CLUTCH KR
4991	Wheel Loader	Cummins	91	0	2	Accelerator Pedal or Lever Position Sensor 1 - Data valid but above normal operational range - Most Severe Level
4992	Wheel Loader	Cummins	91	1	2	Accelerator Pedal or Lever Position 1 Sensor Circuit Frequency - Data valid but below normal operating Range
4996	Wheel Loader	Cummins	91	2	2	Accelerator Pedal or Lever Position Sensor 1 - Data erratic, intermittent or incorrect
4997	Wheel Loader	Perkins	91	2	2	Accelerator Pedal Position 1 : Erratic, Intermittent or Inaccurate
4998	Wheel Loader	Scania	91	2	2	Auxiliary accelerator pedal is used due to other fault
4999	Wheel Loader	Cummins	91	3	2	Accelerator Pedal or Lever Position Sensor 1 Circuit - Voltage above normal, or shorted to high source
5000	Wheel Loader	Perkins	91	3	2	Accelerator Pedal Position 1 : Voltage Above Normal
5001	Wheel Loader	Yanmar	91	3	2	Accelerator sensor 1 error (Voltage high)
5002	Wheel Loader	Cummins	91	4	2	Accelerator Pedal or Lever Position Sensor 1 Circuit - Voltage below normal, or shorted to low source
5003	Wheel Loader	Perkins	91	4	2	Accelerator Pedal Position 1 : Voltage Below Normal
5004	Wheel Loader	Yanmar	91	4	2	Accelerator sensor 1 error (Voltage low)
5005	Wheel Loader	Perkins	91	8	2	Accelerator Pedal Position 1 : Abnormal Frequency, Pulse width or Period
5006	Wheel Loader	Cummins	91	9	2	SAE J1939 Multiplexed Accelerator Pedal or Lever Sensor System - Abnormal update rate
5007	Wheel Loader	Scania	91	9	2	Accelerator pedal faulty or error via can
4993	Wheel Loader	Scania	91	10	2	Accelerator pedal not plausible, faulty
4994	Wheel Loader	Cummins	91	19	2	SAE J1939 Multiplexed Accelerator Pedal or Lever Sensor System - Received Network Data In Error
4995	Wheel Loader	Scania	91	19	2	Accelerator pedal value out of range via CAN
4990	Wheel Loader	*	91	*	3	S.C. TO GROUND AT RELAY REVERSE WARNING ALARM
5008	Wheel Loader	*	92	*	3	S.C. TO BATTERY VOLTAGE AT RELAY REVERSE WARNING ALARM
5010	Wheel Loader	Cummins	93	2	4	Auxiliary Alternate Torque Validation Switch - Data erratic, intermittent or incorrect
5009	Wheel Loader	*	93	*	3	O.C. AT RELAY REVERSE WARNING ALARM
5012	Wheel Loader	Cummins	94	0	3	Engine Fuel Delivery Pressure - Data Valid but Above Normal Operational Range - Most Severe Level
5013	Wheel Loader	Scania	94	0	3	Accumulator pressure is too high
5018	Wheel Loader	Cummins	94	2	3	Fuel Pressure Sensor Circuit - Data Erratic, Intermittent, or Incorrect
5019	Wheel Loader	Cummins	94	3	4	Fuel Delivery Pressure Sensor Circuit - Voltage above normal, or shorted to high source
5020	Wheel Loader	Cummins	94	4	4	Fuel Delivery Pressure Sensor Circuit - Voltage below normal, or shorted to low source
5014	Wheel Loader	Cummins	94	15	3	Fuel Pump Delivery Pressure - Data Valid But Above Normal Operating Range - Least Severe Level
5015	Wheel Loader	Cummins	94	16	3	Fuel Pump Delivery Pressure - Data Valid but Above Normal Operational Range – Moderately Severe Level
5016	Wheel Loader	Cummins	94	17	3	Fuel Pump Delivery Pressure - Data Valid But Below Normal Operating Range - Least Severe Level
5017	Wheel Loader	Cummins	94	18	3	Fuel Pump Delivery Pressure - Data Valid But Below Normal Operating Range - Moderately Severe Level
5011	Wheel Loader	*	94	*	3	S.C. TO GROUND AT RELAY STARTER INTERLOCK
5022	Wheel Loader	Cummins	95	16	3	Fuel Filter Differential Pressure - Data Valid But Above Normal Operating Range - Moderately Severe Level
5021	Wheel Loader	*	95	*	3	S.C. TO BATTERY VOLTAGE AT RELAY STARTER INTERLOCK
5023	Wheel Loader	*	96	*	3	O.C. AT RELAY STARTER INTERLOCK
5025	Wheel Loader	Cummins	97	0	3	Water in Fuel Indicator - Data Valid But Above Normal Operating Range - Most Severe Level
5030	Wheel Loader	Cummins	97	3	3	Water in Fuel Indicator Sensor Circuit - Voltage above normal, or shorted to high source
5031	Wheel Loader	Perkins	97	3	3	Water In Fuel Indicator : Voltage Above Normal
5032	Wheel Loader	Cummins	97	4	3	Water in Fuel Indicator Sensor Circuit - Voltage below normal, or shorted to low source
5026	Wheel Loader	Cummins	97	15	3	Water in Fuel Indicator - Data Valid But Above Normal Operating Range - Least Severe Level
5027	Wheel Loader	Perkins	97	15	3	Water in Fuel Indicator: High - least severe (1)
5028	Wheel Loader	Cummins	97	16	3	Water in Fuel Indicator - Data Valid But Above Normal Operating Range - Moderately Severe Level
5029	Wheel Loader	Perkins	97	16	3	Water In fuel Indicator : High - moderate severity (2)
5024	Wheel Loader	*	97	*	3	S.C. TO GROUND AT PARK BRAKE SOLENOID
5034	Wheel Loader	Cummins	98	0	3	Engine Oil Level - Data valid but above normal operational range - Most Severe Level
5035	Wheel Loader	Cummins	98	1	3	Engine Oil Level - Data valid but below normal operational range - Most Severe Level
5036	Wheel Loader	Perkins	98	1	3	Engine Oil Level : Low - most severe (3)
5040	Wheel Loader	Scania	98	2	4	Oil level sensor, faulty
5041	Wheel Loader	Scania	98	3	3	Oil level sensor, short circuit to +24V
5042	Wheel Loader	Scania	98	4	3	Oil level sensor, short circuit to ground
5037	Wheel Loader	Scania	98	10	3	Oil level sensor stuck
5038	Wheel Loader	Cummins	98	17	3	Engine Oil Level - Data Valid But Below Normal Operating Range - Least Severe Level
5039	Wheel Loader	Perkins	98	18	2	Engine Oil Level : Low - moderate severity (2)
5033	Wheel Loader	*	98	*	3	S.C. TO BATTERY VOLTAGE AT PARK BRAKE SOLENOID
5043	Wheel Loader	*	99	*	3	O.C. AT PARK BRAKE SOLENOID
5044	Wheel Loader	Cummins	100	1	1	Engine Oil Rifle Pressure - Data valid but below normal operational range - Most Severe Level
5045	Wheel Loader	Perkins	100	1	1	Engine Oil Pressure : Low - most severe (3)
5046	Wheel Loader	Scania	100	1	1	Oil pressure sensor, pressure too low
5047	Wheel Loader	Yanmar	100	1	1	Low oil pressure fault alarm
5055	Wheel Loader	Cummins	100	2	3	Engine Oil Rifle Pressure - Data erratic, intermittent or incorrect
5056	Wheel Loader	Perkins	100	2	3	Engine Oil Pressure: Erratic, Intermittent, or Incorrect
5057	Wheel Loader	Scania	100	2	3	Oil pressure sensor, faulty
5059	Wheel Loader	Cummins	100	3	3	Engine Oil Rifle Pressure 1 Sensor Circuit - Voltage above normal, or shorted to high source
5060	Wheel Loader	Perkins	100	3	3	Engine Oil Pressure Sensor : Voltage Above Normal

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5061	Wheel Loader	Scania	100	3	3	Oil pressure sensor, short circuit to +24V
5062	Wheel Loader	Cummins	100	4	3	Engine Oil Rifle Pressure 1 Sensor Circuit - Voltage below normal, or shorted to low source
5063	Wheel Loader	Perkins	100	4	3	Engine Oil Pressure Sensor : Voltage Below Normal
5064	Wheel Loader	Scania	100	4	3	Oil pressure sensor, short circuit to ground
5065	Wheel Loader	Yanmar	100	4	3	Oil pressure switch open circuit
5048	Wheel Loader	Scania	100	13	4	Oil pressure sensor, pressure not plausible
5049	Wheel Loader	Scania	100	16	4	Oil pressure sensor, pressure above normal
5050	Wheel Loader	Perkins	100	17	3	Engine Oil Pressure: Low - least severe (1)
5051	Wheel Loader	Scania	100	17	3	Oil pressure sensor, pressure too low and engine protective action
5052	Wheel Loader	Cummins	100	18	2	Engine Oil Rifle Pressure - Data Valid But Below Normal Operating Range - Moderately Severe Level
5053	Wheel Loader	Perkins	100	18	2	Engine Oil Pressure : Low moderate severity (2)
5054	Wheel Loader	Scania	100	18	2	Oil pressure sensor, pressure below normal
5058	Wheel Loader	Scania	100	21	3	Oil Pressure Sensor-Data Not Rational-Drifted Low
5066	Wheel Loader	Cummins	101	0	2	Crankcase Pressure - Data valid but above normal operational range - Most Severe Level
5069	Wheel Loader	Cummins	101	2	4	Crankcase Pressure - Data erratic, intermittent or incorrect
5070	Wheel Loader	*	101	3	3	Hydraulic Oil Temperature-Voltage Above Normal, Or Shorted To High Source
5071	Wheel Loader	Cummins	101	3	3	Crankcase Pressure Circuit - Voltage above normal, or shorted to high source
5072	Wheel Loader	*	101	4	3	Hydraulic Oil Temperature Sensor Circuit - Voltage Below Normal, or shorted to Low Source
5073	Wheel Loader	Cummins	101	4	3	Crankcase Pressure Circuit - Voltage below normal, or shorted to low source
5067	Wheel Loader	Cummins	101	15	3	Crankcase Pressure - Data Valid But Above Normal Operating Range - Least Severe Level
5068	Wheel Loader	Cummins	101	16	3	Crankcase Pressure - Data Valid But Above Normal Operating Range - Moderately Severe Level
5075	Wheel Loader	Scania	102	0	4	Boost pressure higher than reference
5076	Wheel Loader	Scania	102	1	4	Boost pressure lower than reference
5087	Wheel Loader	Cummins	102	2	4	Intake Manifold 1 Pressure - Data erratic, intermittent or incorrect
5092	Wheel Loader	Cummins	102	3	3	Intake Manifold 1 Pressure Sensor Circuit - Voltage above normal, or shorted to high source
5093	Wheel Loader	Perkins	102	3	3	Engine Intake Manifold #1 Pressure: Voltage Above Normal
5094	Wheel Loader	Scania	102	3	3	Boost pressure sensor, short circuit to +24V
5095	Wheel Loader	Yanmar	102	3	3	EGR low pressure side pressure sensor error (voltage high)
5096	Wheel Loader	Cummins	102	4	3	Intake Manifold 1 Pressure Sensor Circuit - Voltage below normal, or shorted to low source
5097	Wheel Loader	Perkins	102	4	3	Engine Intake Manifold #1 Pressure: Voltage Below Normal
5098	Wheel Loader	Scania	102	4	3	Boost pressure sensor, short circuit to ground
5099	Wheel Loader	Yanmar	102	4	3	EGR low pressure side pressure sensor error (voltage low)
5100	Wheel Loader	Scania	102	7	3	Boost pressure, too low
5101	Wheel Loader	Scania	102	8	3	Boost pressure sensor, faulty
5102	Wheel Loader	Scania	102	9	4	Boost pressure, not plausible
5077	Wheel Loader	Cummins	102	10	4	Intake Manifold 1 Pressure - Abnormal rate of change
5078	Wheel Loader	Scania	102	10	4	Boost pressure sensor, faulty
5079	Wheel Loader	Yanmar	102	13	2	EGR low pressure side pressure sensor error (abnormal learning value)
5080	Wheel Loader	Scania	102	15	4	Boost pressure sensor and exhaust pressure sensor do not correlate
5081	Wheel Loader	Cummins	102	16	3	Intake Manifold 1 Pressure - Data Valid But Above Normal Operating Range - Moderately Severe Level
5082	Wheel Loader	Perkins	102	16	3	Engine Intake Manifold #1 Pressure : High - moderate severity (2)
5083	Wheel Loader	Scania	102	16	3	Boost pressure above normal
5084	Wheel Loader	Cummins	102	18	3	Intake Manifold 1 Pressure - Data Valid But Below Normal Operating Range - Moderately Severe Level
5085	Wheel Loader	Perkins	102	18	3	Engine Intake Manifold #1 Pressure : Low - moderate severity (2)
5086	Wheel Loader	Scania	102	18	3	Boost pressure, lower than reference at part load
5088	Wheel Loader	Perkins	102	20	3	Engine Intake Manifold #1 Pressure: Data Drifted High
5089	Wheel Loader	Scania	102	20	3	Boost pressure, too high not plausible
5090	Wheel Loader	Perkins	102	21	3	Engine Intake Manifold #1 Pressure: Data Drifted Low
5091	Wheel Loader	Scania	102	21	3	Boost pressure, too low not plausible
5074	Wheel Loader	*	102	*	1	(Warning) Hydraulic Oil Temperature High
5103	Wheel Loader	Scania	103	0	2	Turbine excessive overspeed
5108	Wheel Loader	Cummins	103	2	3	Turbocharger 1 Speed - Data erratic, intermittent or incorrect
5109	Wheel Loader	Scania	103	2	3	Turbine speed sensor, faulty
5112	Wheel Loader	Scania	103	3	3	Turbine speed sensor, short circuit to +24V
5113	Wheel Loader	Scania	103	4	3	Turbine speed sensor, short circuit to ground
5114	Wheel Loader	Scania	103	5	3	Turbine speed sensor, open load
5115	Wheel Loader	Scania	103	9	4	Turbine speed not plausible
5104	Wheel Loader	Cummins	103	10	3	Turbocharger speed invalid rate of change detected - Abnormal Rate of Change
5105	Wheel Loader	Cummins	103	15	4	Engine Turbocharger Speed - Data Valid But Above Normal Operating Range - Least Severe Level
5106	Wheel Loader	Cummins	103	16	3	Turbocharger 1 Speed - Data Valid But Above Normal Operating Range - Moderately Severe Level
5107	Wheel Loader	Cummins	103	18	3	Turbocharger 1 Speed - Data Valid But Below Normal Operating Range - Moderately Severe Level
5110	Wheel Loader	Scania	103	20	4	Turbine speed sensor above model, not plausible
5111	Wheel Loader	Scania	103	21	4	Turbine speed sensor below model, not plausible
5116	Wheel Loader	Cummins	104	18	1	Engine Turbocharger Lube Oil Pressure - Data Valid But Below Normal Operating Range - Moderately Severe Level
5117	Wheel Loader	*	105	0	3	Working Pilot Pressure-Data Valid But Above Normal Operational Range
5118	Wheel Loader	Cummins	105	0	3	Intake Manifold 1 Temperature - Data valid but above normal operational range - Most Severe Level
5119	Wheel Loader	Perkins	105	0	3	Engine Intake Manifold #1 Temperature : High - most severe (3)
5120	Wheel Loader	Scania	105	0	3	Boost temp sensor excessive high
5121	Wheel Loader	*	105	1	3	Working Pilot Pressure-Data Valid But Below Normal Operational Range
5122	Wheel Loader	Scania	105	1	3	Boost temp sensor excessive low

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
5131	Wheel Loader	Cummins	105	2	3	Intake Manifold 1 Temperature - Data erratic, intermittent or incorrect
5132	Wheel Loader	Scania	105	2	3	Boost temp sensor, faulty
5133	Wheel Loader	*	105	2	5	Working Pilot Pressure-Data Erratic, Intermittent Or Incorrect
5136	Wheel Loader	Cummins	105	3	3	Intake Manifold 1 Temperature Sensor Circuit - Voltage above normal, or shorted to high source
5137	Wheel Loader	Perkins	105	3	3	Engine Intake Manifold #1 Temperature : Voltage Above Normal
5138	Wheel Loader	Scania	105	3	3	Boost temp sensor, short circuit to +24V
5139	Wheel Loader	Yanmar	105	3	3	Intake manifold temperature sensor error (voltage high)
5140	Wheel Loader	*	105	4	3	Working Pilot Pressure-Voltage Below Normal, Or Shorted To Low Source
5141	Wheel Loader	Cummins	105	4	3	Intake Manifold 1 Temperature Sensor Circuit - Voltage below normal, or shorted to low source
5142	Wheel Loader	Perkins	105	4	3	Engine Intake Manifold #1 Temperature : Voltage Below Normal
5143	Wheel Loader	Scania	105	4	3	Boost temp sensor, short circuit to ground
5144	Wheel Loader	Yanmar	105	4	3	Intake manifold temperature sensor error (voltage low)
5145	Wheel Loader	Scania	105	9	4	Boost temperature above ambient, not plausible
5123	Wheel Loader	Cummins	105	15	4	Intake Manifold 1 Temperature - Data Valid But Above Normal Operating Range - Least Severe Level
5124	Wheel Loader	Perkins	105	15	4	Engine Intake Manifold #1 Temperature : High - least severe (1)
5125	Wheel Loader	Scania	105	15	4	Boost temperature to high for longer period
5126	Wheel Loader	Cummins	105	16	4	Intake Manifold 1 Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
5127	Wheel Loader	Perkins	105	16	4	Engine Intake Manifold #1 Temperature : High - moderate severity (2)
5128	Wheel Loader	Scania	105	16	4	Boost temperature above normal
5129	Wheel Loader	Scania	105	17	4	Boost temperature below ambient, not plausible
5130	Wheel Loader	Cummins	105	18	4	Intake Manifold 1 Temperature - Data Valid But Below Normal Operating Range - Moderately Severe Level
5134	Wheel Loader	Scania	105	20	4	Boost temperature to high, not plausible
5135	Wheel Loader	Scania	105	21	4	Boost temperature to low, not plausible
5146	Wheel Loader	Scania	107	1	3	Air filter clogged
5151	Wheel Loader	Perkins	107	2	3	Engine Air Filter 1 Differential Pressure: Erratic, Intermittent, or Incorrect
5152	Wheel Loader	Scania	107	2	3	Air filter control switch broken
5153	Wheel Loader	Perkins	107	3	3	Engine Air Filter 1 Differential Pressure : Voltage Above Normal
5154	Wheel Loader	Perkins	107	4	3	Engine Air Filter 1 Differential Pressure : Voltage Below Normal
5147	Wheel Loader	Cummins	107	15	3	Engine Air Filter Differential Pressure - Data Valid But Above Normal Operating Range - Least Severe Level
5148	Wheel Loader	Perkins	107	15	3	Engine Air Filter 1 Differential Pressure: High - least severe (1)
5149	Wheel Loader	Cummins	107	16	2	Engine Air Filter Differential Pressure - Data Valid But Above Normal Operating Range - Moderately Severe Level
5150	Wheel Loader	Perkins	107	16	2	Engine Air Filter 1 Differential Pressure: High - moderate severity (2)
5155	Wheel Loader	*	108	0	3	Travel Pilot Pressure-Data Valid But Above Normal Operational Range
5156	Wheel Loader	*	108	1	3	Travel Pilot Pressure-Data Valid But Below Normal Operational Range
5160	Wheel Loader	Cummins	108	2	3	Barometric Pressure - Data erratic, intermittent or incorrect
5161	Wheel Loader	Scania	108	2	3	Ambient Pressure Sensor Error via CAN
5162	Wheel Loader	*	108	2	5	Travel Pilot Pressure-Data Erratic, Intermittent Or Incorrect
5165	Wheel Loader	Cummins	108	3	3	Barometric Pressure Sensor Circuit - Voltage above normal, or shorted to high source
5166	Wheel Loader	Perkins	108	3	3	Barometric Pressure: Voltage Above Normal
5167	Wheel Loader	Scania	108	3	3	Ambient Pressure Sensor, short circuit to +24V
5168	Wheel Loader	Yanmar	108	3	3	Atmospheric pressure sensor error (voltage high)
5169	Wheel Loader	*	108	4	3	Travel Pilot Pressure-Voltage Below Normal, Or Shorted To Low Source
5170	Wheel Loader	Cummins	108	4	3	Barometric Pressure Sensor Circuit - Voltage above normal, or shorted to low source
5171	Wheel Loader	Perkins	108	4	3	Barometric Pressure: Voltage Below Normal
5172	Wheel Loader	Scania	108	4	3	Ambient Pressure Sensor, short circuit to ground
5173	Wheel Loader	Yanmar	108	4	3	Atmospheric pressure sensor error (voltage low)
5157	Wheel Loader	Yanmar	108	10	2	Atmospheric pressure sensor error (characteristic error)
5158	Wheel Loader	Scania	108	15	5	Ambient Pressure Sensor and Exhaust Pressure Sensor do not correlate
5159	Wheel Loader	Scania	108	16	4	Ambient Pressure above normal
5163	Wheel Loader	Scania	108	20	4	Ambient Pressure too high, not plausible
5164	Wheel Loader	Scania	108	21	5	Ambient Pressure too low, not plausible
5175	Wheel Loader	Cummins	109	3	3	Coolant Pressure Sensor Circuit - Voltage above normal, or shorted to high source
5176	Wheel Loader	Cummins	109	4	3	Coolant Pressure Sensor Circuit - Voltage below normal, or shorted to low source
5174	Wheel Loader	Cummins	109	18	3	Coolant Pressure - Data Valid But Below Normal Operating Range - Moderately Severe Level
5178	Wheel Loader	Cummins	110	0	2	Engine Coolant Temperature - Data valid but above normal operational range - Most Severe Level
5179	Wheel Loader	Perkins	110	0	2	Engine Coolant Temperature : High - most severe (3)
5180	Wheel Loader	Scania	110	0	2	Engine temperature, excessive high
5181	Wheel Loader	Yanmar	110	0	2	Engine coolant temperature high (overheat)
5182	Wheel Loader	Scania	110	1	4	Engine temperature too low
5193	Wheel Loader	Cummins	110	2	3	Engine Coolant Temperature - Data erratic, intermittent or incorrect
5194	Wheel Loader	Scania	110	2	3	Engine temp sensor fault
5197	Wheel Loader	Cummins	110	3	3	Engine Coolant Temperature 1 Sensor Circuit - Voltage above normal, or shorted to high source
5198	Wheel Loader	Perkins	110	3	3	Engine Coolant Temperature: Voltage Above Normal
5199	Wheel Loader	Scania	110	3	3	Engine temp sensor, short circuit to +24V
5200	Wheel Loader	Yanmar	110	3	3	Engine coolant temperature sensor error (voltage high)
5202	Wheel Loader	Cummins	110	4	3	Engine Coolant Temperature 1 Sensor Circuit - Voltage below normal, or shorted to low source
5203	Wheel Loader	Perkins	110	4	3	Engine Coolant Temperature: Voltage Below Normal
5204	Wheel Loader	Scania	110	4	3	Engine temp sensor, short circuit to ground
5205	Wheel Loader	Yanmar	110	4	3	Engine coolant temperature sensor error (voltage low)

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
5206	Wheel Loader	Scania	110	8	3	Engine temp sensor, stuck
5207	Wheel Loader	Scania	110	9	3	Engine temp sensor, faulty
5183	Wheel Loader	Scania	110	10	4	Engine temperature is not plausble
5184	Wheel Loader	Cummins	110	14	4	Engine Coolant Temperature - Special Instructions
5185	Wheel Loader	Cummins	110	15	4	Engine Coolant Temperature - Data Valid But Above Normal Operating Range - Least Severe Level
5186	Wheel Loader	Perkins	110	15	4	Engine Coolant Temperature: High - least severe (1)
5187	Wheel Loader	Cummins	110	16	3	Engine Coolant Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
5188	Wheel Loader	Perkins	110	16	3	Engine Coolant Temperature: High - moderate severity (2)
5189	Wheel Loader	Scania	110	16	3	Engine temperature, too high
5190	Wheel Loader	Scania	110	17	3	Engine temp sensor, temp below normal or VGT-temp above normal
5191	Wheel Loader	Cummins	110	18	3	Engine Coolant Temperature - Data Valid But Below Normal Operating Range - Moderately Severe Level
5192	Wheel Loader	Scania	110	18	3	Engine temp sensor, temp above normal or VGT-temp below normal
5195	Wheel Loader	Scania	110	20	4	Engine Coolant Water Temperature Too High
5196	Wheel Loader	Scania	110	21	5	Coolant Temperature Below Thermostat Regulating Temperature
5201	Wheel Loader	Cummins	110	31	5	Engine Coolant Temperature - Condition Exists
5177	Wheel Loader	Cummins	110	*	2	Engine Coolant Temperature - Condition Exists. Engine coolant signal indicates coolant temperature is above the engine coolant temperature engine protection warning limit.
5208	Wheel Loader	Cummins	111	1	3	Coolant Level - Data valid but below normal operational range - Most Severe Level
5209	Wheel Loader	Perkins	111	1	3	Engine coolant level : Low - most severe (3)
5210	Wheel Loader	Scania	111	1	3	Coolant level too low
5217	Wheel Loader	Cummins	111	2	4	Coolant Level - Data erratic, intermittent or incorrect
5218	Wheel Loader	Cummins	111	3	3	Coolant Level Sensor 1 Circuit - Voltage above normal, or shorted to high source
5219	Wheel Loader	Scania	111	3	3	Coolant level sensor, short circuit to +24
5220	Wheel Loader	Cummins	111	4	3	Coolant Level Sensor 1 Circuit - Voltage below normal, or shorted to low source
5221	Wheel Loader	Scania	111	4	3	Coolant level sensor, short circuit to ground
5222	Wheel Loader	Cummins	111	9	4	SAE J1939 Multiplexing PGN Timeout Error - Abnormal update rate
5211	Wheel Loader	Cummins	111	17	4	Coolant Level - Data Valid But Below Normal Operating Range - Least Severe Level
5212	Wheel Loader	Mitsubishi	111	17	4	Engine coolant level : Low - least severe (1)
5213	Wheel Loader	Perkins	111	17	4	Engine coolant level : Low - least severe (1)
5214	Wheel Loader	Cummins	111	18	3	Coolant Level - Data Valid But Below Normal Operating Range - Moderately Severe Level
5215	Wheel Loader	Perkins	111	18	3	Engine Coolant Level : Low - moderate severity (2)
5216	Wheel Loader	Cummins	111	19	4	Coolant Level Sensor - Received Network Data in Error
5223	Wheel Loader	*	120	0	4	Main Pump 1 (P1) Pressure-Data Valid But Above Normal Operational Range
5224	Wheel Loader	*	120	1	4	Main Pump 1 (P1) Pressure-Data Valid But Below Normal Operational Range
5225	Wheel Loader	*	120	2	5	Main Pump 1 (P1) Pressure-Data Erratic, Intermittent Or Incorrect
5226	Wheel Loader	*	120	4	4	Main Pump 1 (P1) Pressure-Voltage Below Normal, Or Shorted To Low Source
5227	Wheel Loader	*	121	0	4	Main Pump 2 (P2) Pressure-Data Valid But Above Normal Operational Range
5228	Wheel Loader	*	121	1	4	Main Pump 2 (P2) Pressure-Data Valid But Below Normal Operational Range
5229	Wheel Loader	*	121	2	5	Main Pump 2 (P2) Pressure-Data Erratic, Intermittent Or Incorrect
5230	Wheel Loader	*	121	4	4	Main Pump 2 (P2) Pressure-Voltage Below Normal, Or Shorted To Low Source
5231	Wheel Loader	*	122	0	3	Overload Pressure-Data Valid But Above Normal Operational Range
5232	Wheel Loader	*	122	1	3	Overload Pressure-Data Valid But Below Normal Operational Range
5233	Wheel Loader	*	122	2	5	Overload Pressure-Data Erratic, Intermittent Or Incorrect
5234	Wheel Loader	*	122	4	3	Overload Pressure-Voltage Below Normal, Or Shorted To Low Source
5235	Wheel Loader	*	123	0	4	Main Pump 1 Regulator Pressure-Data Valid But Above Normal Operational Range
5236	Wheel Loader	*	123	1	4	Main Pump 1 Regulator Pressure-Data Valid But Below Normal Operational Range
5237	Wheel Loader	*	123	2	5	Main Pump 1 Regulator Pressure-Data Erratic, Intermittent Or Incorrect
5238	Wheel Loader	*	123	4	4	Main Pump 1 Regulator Pressure-Voltage Below Normal, Or Shorted To Low Source
5239	Wheel Loader	*	124	0	4	Main Pump 2 Regulator Pressure-Data Valid But Above Normal Operational Range
5240	Wheel Loader	*	124	1	4	Main Pump 2 Regulator Pressure-Data Valid But Below Normal Operational Range
5241	Wheel Loader	*	124	2	5	Main Pump 2 Regulator Pressure-Data Erratic, Intermittent Or Incorrect
5242	Wheel Loader	*	124	4	4	Main Pump 2 Regulator Pressure-Voltage Below Normal, Or Shorted To Low Source
5243	Wheel Loader	*	125	0	4	Pilot Pump Pressure-Data Valid But Above Normal Operational Range
5244	Wheel Loader	*	125	1	4	Pilot Pump Pressure-Data Valid But Below Normal Operational Range
5245	Wheel Loader	*	125	2	5	Pilot Pump Pressure-Data Erratic, Intermittent Or Incorrect
5246	Wheel Loader	*	125	4	4	Pilot Pump Pressure-Voltage Below Normal, Or Shorted To Low Source
5247	Wheel Loader	*	127	0	4	Boom Up Pilot Pressure-Data Valid But Above Normal Operational Range
5248	Wheel Loader	*	127	1	4	Boom Up Pilot Pressure-Data Valid But Below Normal Operational Range
5249	Wheel Loader	*	127	2	5	Boom Up Pilot Pressure-Data Erratic, Intermittent Or Incorrect
5250	Wheel Loader	*	127	4	4	Boom Up Pilot Pressure-Voltage Below Normal, Or Shorted To Low Source
5251	Wheel Loader	*	128	0	4	Boom Down Pilot Pressure-Data Valid But Above Normal Operational Range
5252	Wheel Loader	*	128	1	4	Boom Down Pilot Pressure-Data Valid But Below Normal Operational Range
5253	Wheel Loader	*	128	2	5	Boom Down Pilot Pressure-Data Erratic, Intermittent Or Incorrect
5254	Wheel Loader	*	128	4	4	Boom Down Pilot Pressure-Voltage Below Normal, Or Shorted To Low Source
5255	Wheel Loader	*	129	0	4	Arm In Pilot Pressure-Data Valid But Above Normal Operational Range
5256	Wheel Loader	*	129	1	4	Arm In Pilot Pressure-Data Valid But Below Normal Operational Range
5257	Wheel Loader	*	129	2	5	Arm In Pilot Pressure-Data Erratic, Intermittent Or Incorrect
5258	Wheel Loader	*	129	4	4	Arm In Pilot Pressure-Voltage Below Normal, Or Shorted To Low Source
5259	Wheel Loader	*	130	0	4	Arm out pilot pressure-Data Valid But Above Normal Operational
5260	Wheel Loader	*	130	1	4	Arm out pilot pressure-Data Valid But Below Normal Operational Range
5261	Wheel Loader	*	130	2	5	Arm out pilot pressure-Data Erratic, Intermittent Or Incorrect
5262	Wheel Loader	*	130	4	4	Arm out pilot pressure-Voltage Below Normal, Or Shorted To Low Source
5263	Wheel Loader	*	131	0	4	Bucket In pilot pressure-Data Valid But Above Normal Operational Range
5264	Wheel Loader	*	131	1	4	Bucket In pilot pressure-Data Valid But Below Normal Operational Range
5269	Wheel Loader	Scania	131	2	4	Exhaust pressure sensor, not plausible
5270	Wheel Loader	*	131	2	5	Bucket In pilot pressure-Data Erratic, Intermittent Or Incorrect

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
5273	Wheel Loader	Scania	131	3	3	Exhaust pressure sensor, short circuit to +24V
5274	Wheel Loader	Scania	131	4	3	Exhaust pressure sensor, short circuit to ground or open load
5275	Wheel Loader	*	131	4	4	Bucket In pilot pressure-Voltage Below Normal, Or Shorted To Low Source
5276	Wheel Loader	Scania	131	7	4	Exhaust pressure sensor and boost pressure sensor do not correlate
5277	Wheel Loader	Scania	131	8	4	Exhaust pressure sensor, faulty
5278	Wheel Loader	Scania	131	9	3	Exhaust pressure sensor, stuck
5265	Wheel Loader	Scania	131	10	3	Exhaust pressure sensor and ambient pressure sensor do not correlate
5266	Wheel Loader	Scania	131	15	3	Exhaust pressure, high exhaust pressure during normal fueling
5267	Wheel Loader	Scania	131	16	4	Exhaust pressure, high exhaust pressure during motoring, no fueling
5268	Wheel Loader	Scania	131	18	4	Exhaust pressure, low exhaust pressure during exhaust brake
5271	Wheel Loader	Scania	131	20	4	Exhaust pressure too high, not plausible
5272	Wheel Loader	Scania	131	21	4	Exhaust pressure too low, not plausible
5279	Wheel Loader	Scania	132	0	3	Mass flow sensor, short circuit to +24V
5280	Wheel Loader	Scania	132	1	3	Mass flow sensor, short circuit to ground or open load
5281	Wheel Loader	Cummins	132	2	3	Engine Intake Air Mass Flow - Data Erratic, Intermittent, or Incorrect
5282	Wheel Loader	Scania	132	2	3	Mass flow sensor, faulty
5285	Wheel Loader	Cummins	132	3	3	Engine Intake Air Mass Flow Sensor Circuit - Voltage Above Normal or Shorted to High Source
5286	Wheel Loader	Scania	132	3	3	Mass flow sensor, supply
5287	Wheel Loader	Cummins	132	4	3	Engine Intake Air Mass Flow Circuit - Voltage Below Normal or Shorted to Low Source
5288	Wheel Loader	Scania	132	4	3	Mass flow sensor, sdaptation under low threshold
5289	Wheel Loader	Scania	132	5	3	Mass flow sensor, adaptation over high threshold
5290	Wheel Loader	Scania	132	7	3	Mass flow sensor, stuck
5283	Wheel Loader	Cummins	132	20	3	Engine Intake Air Mass Flow - Data Not Rational - Drifted High
5284	Wheel Loader	Cummins	132	21	3	Engine Intake Air Mass Flow - Data Not Rational - Drifted Low
5291	Wheel Loader	*	133	0	4	Arm In/Out & Bucket In Pilot Pressure-Data Valid But Above Normal Operational Range
5292	Wheel Loader	*	133	1	4	Arm In/Out & Bucket In Pilot Pressure-Data Valid But Below Normal Operational Range
5293	Wheel Loader	*	133	2	5	Arm In/Out & Bucket In Pilot Pressure-Data Erratic, Intermittent Or Incorrect
5294	Wheel Loader	*	133	4	4	Arm In/Out & Bucket In Pilot Pressure-Voltage Below Normal, Or Shorted To Low Source
5295	Wheel Loader	*	135	0	4	Swing Pilot Pressure-Data Valid But Above Normal Operational Range
5296	Wheel Loader	*	135	1	4	Swing Pilot Pressure-Data Valid But Below Normal Operational Range
5297	Wheel Loader	*	135	2	5	Swing Pilot Pressure-Data Erratic, Intermittent Or Incorrect
5298	Wheel Loader	*	135	4	4	Swing Pilot Pressure-Voltage Below Normal, Or Shorted To Low Source
5299	Wheel Loader	Cummins	135	4	4	Fuel Pump Pressure Sensor Circuit - Shorted Low
5300	Wheel Loader	*	137	0	4	Attachment Flow Control EPPR Valve Pressure-Data Valid But Above Normal Operational Range
5301	Wheel Loader	*	137	1	4	Attachment Flow Control EPPR Valve Pressure-Data Valid But Below Normal Operational Range
5302	Wheel Loader	*	137	2	5	Attachment Flow Control EPPR Valve Pressure-Data Erratic, Intermittent Or Incorrect
5303	Wheel Loader	*	137	4	4	Attachment Flow Control EPPR Valve Pressure-Voltage Below Normal, Or Shorted To Low Source
5304	Wheel Loader	*	138	0	4	Attachment Pilot Pressure-Data Valid But Above Normal Operational Range
5305	Wheel Loader	*	138	1	4	Attachment Pilot Pressure-Data Valid But Below Normal Operational Range
5306	Wheel Loader	*	138	2	5	Attachment Pilot Pressure-Data Erratic, Intermittent Or Incorrect
5307	Wheel Loader	*	138	4	4	Attachment Pilot Pressure-Voltage Below Normal, Or Shorted To Low Source
5308	Wheel Loader	*	139	0	4	Option Pilot Pressure-Data Valid But Above Normal Operational Range
5309	Wheel Loader	*	139	1	4	Option Pilot Pressure-Data Valid But Below Normal Operational Range
5310	Wheel Loader	*	139	2	5	Option Pilot Pressure-Data Erratic, Intermittent Or Incorrect
5311	Wheel Loader	*	139	4	4	Option Pilot Pressure-Voltage Below Normal, Or Shorted To Low Source
5312	Wheel Loader	*	140	5	2	Main Pump EPPR Valve Current-Current Below Normal Or Open Circuit
5313	Wheel Loader	*	140	6	2	Main Pump EPPR Valve Current-Current Above Normal Or Grounded Circuit
5314	Wheel Loader	*	141	5	4	Boom Priority (Against Swing) EPPR Valve Current -Current Below Normal Or Open Circuit
5315	Wheel Loader	*	141	6	4	Boom Priority (Against Swing) EPPR Valve Current -Current Above Normal Or Grounded Circuit
5316	Wheel Loader	*	143	5	4	Travel EPPR Valve Current-Current Below Normal Or Open Circuit
5317	Wheel Loader	*	143	6	4	Travel EPPR Valve Current-Current Above Normal Or Grounded Circuit
5318	Wheel Loader	*	144	5	2	Attachment Flow Valve Current-Current Below Normal Or Open Circuit
5319	Wheel Loader	*	144	6	2	Attachment Flow Valve Current-Current Above Normal Or Grounded Circuit
5320	Wheel Loader	*	145	5	4	Cooling Fan EPPR Valve Current-Current Below Normal Or Open Circuit
5321	Wheel Loader	*	145	6	4	Cooling Fan EPPR Valve Current-Current Above Normal Or Grounded Circuit
5322	Wheel Loader	*	150	5	4	Left Rotate Valve Current-Current Below Normal Or Open Circuit
5323	Wheel Loader	*	150	6	4	Left Rotate Valve Current-Current Above Normal Or Grounded Circuit
5324	Wheel Loader	*	151	5	4	Right Rotate Valve Current-Current Below Normal Or Open Circuit
5325	Wheel Loader	*	151	6	4	Right Rotate Valve Current-Current Above Normal Or Grounded Circuit
5326	Wheel Loader	Perkins	152	2	5	Number Of ECU Resets: Erratic, Intermittent, or Incorrect
5327	Wheel Loader	*	152	5	4	Left Tilt Valve Current-Current Below Normal Or Open Circuit
5328	Wheel Loader	*	152	6	4	Left Tilt Valve Current-Current Above Normal Or Grounded Circuit
5329	Wheel Loader	*	153	5	4	Right Tilt Valve Current-Current Below Normal Or Open Circuit
5330	Wheel Loader	*	153	6	4	Right Tilt Valve Current-Current Above Normal Or Grounded Circuit
5331	Wheel Loader	Scania	156	0	3	Fuel rail pressure is excessively above command
5332	Wheel Loader	Scania	156	1	3	Fuel rail pressure is excessively below command
5334	Wheel Loader	Scania	156	2	3	Fuel rail pressure sensor, faulty
5335	Wheel Loader	Scania	156	3	3	Fuel rail pressure sensor, short circuit to +24V or open load
5336	Wheel Loader	Scania	156	4	3	Fuel rail pressure sensor, short circuit to ground
5337	Wheel Loader	Scania	156	8	3	Fuel rail pressure sensor, stuck
5338	Wheel Loader	Scania	156	9	4	Fuel rail pressure is lagging
5333	Wheel Loader	Scania	156	18	3	Fuel rail pressure is too low during cranking
5339	Wheel Loader	Cummins	157	0	1	Injector Metering Rail 1 Pressure - Data valid but above normal operational range - Most Severe Level

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
5340	Wheel Loader	Perkins	157	0	1	Engine Injector Metering Rail #1 Pressure : High - most severe (3) —
5341	Wheel Loader	Yanmar	157	0	1	Rail pressure too high
5342	Wheel Loader	Cummins	157	1	3	Injector Metering Rail 1 Pressure - Data valid but below normal operational range - Most Severe Level
5355	Wheel Loader	Cummins	157	2	3	Injector Metering Rail 1 Pressure - Data erratic, intermittent or incorrect
5356	Wheel Loader	Perkins	157	2	3	Engine Injector Metering Rail #1 Pressure : Erratic, Intermittent, or Incorrect
5357	Wheel Loader	Cummins	157	3	3	Injector Metering Rail 1 Pressure Sensor Circuit - Voltage above normal, or shorted to high source
5358	Wheel Loader	Mitsubishi	157	3	3	Common rail pressure sensor open/short to + batt
5359	Wheel Loader	Perkins	157	3	3	Engine Injector Metering Rail #1 Pressure: Voltage Above Normal
5360	Wheel Loader	Yanmar	157	3	3	Rain pressure sensor error (voltage high)
5361	Wheel Loader	Cummins	157	4	3	Injector Metering Rail 1 Pressure Sensor Circuit - Voltage below normal, or shorted to low source
5362	Wheel Loader	Mitsubishi	157	4	3	Common rail pressure sensor short to ground
5363	Wheel Loader	Perkins	157	4	3	Engine Injector Metering Rail #1 Pressure: Voltage Below Normal
5364	Wheel Loader	Yanmar	157	4	3	Rain pressure sensor error (voltage low)
5365	Wheel Loader	Cummins	157	7	3	Injector Metering Rail 1 Pressure - Mechanical system not responding or out of adjustment
5343	Wheel Loader	Perkins	157	10	3	Engine Injector Metering Rail #1 Pressure : Abnormal Update Rate
5344	Wheel Loader	Perkins	157	12	3	Engine Injector Metering Rail #1 Pressure : Failure
5345	Wheel Loader	Cummins	157	15	2	Injector Metering Rail 1 Pressure - Data Valid But Above Normal Operating Range - Least Severe Level
5346	Wheel Loader	Yanmar	157	15	2	Rail pressure deviation error (high rail pressure)
5347	Wheel Loader	Cummins	157	16	2	Injector Metering Rail 1 Pressure - Data Valid But Above Normal Operating Range - Moderately Severe Level
5348	Wheel Loader	Perkins	157	16	2	Engine Injector Metering Rail #1 Pressure : High - moderate severity (2)
5349	Wheel Loader	Yanmar	157	16	2	PLV open valve
5350	Wheel Loader	Perkins	157	17	3	Engine Injector Metering Rail #1 Pressure : Low - least severe (1) —
5351	Wheel Loader	Cummins	157	18	2	Injector Metering Rail 1 Pressure - Data Valid But Below Normal Operating Range - Moderately Severe Level
5352	Wheel Loader	Mitsubishi	157	18	2	Low fuel rail pressure
5353	Wheel Loader	Perkins	157	18	2	Engine Injector Metering Rail #1 Pressure: Low - moderate severity (2)
5354	Wheel Loader	Yanmar	157	18	2	Rail pressure deviation error (low rail pressure)
5366	Wheel Loader	*	164	4	5	Working Cutoff Relay-Voltage Below Normal, Or Shorted To Low Source
5367	Wheel Loader	*	164	6	5	Working Cutoff Relay-Current Above Normal Or Grounded Circuit
5368	Wheel Loader	*	165	4	3	Safety Solenoid - Voltage Below Normal, Or Shorted To Low Source
5369	Wheel Loader	*	165	6	3	Safety Solenoid - Current Above Normal or Grounded Circuit
5371	Wheel Loader	Cummins	166	2	4	Cylinder Power Imbalance Between Cylinders - Data Erratic, Intermittent, or Incorrect
5372	Wheel Loader	Perkins	166	2	4	Engine Rated Power: Erratic, Intermittent, or Incorrect
5373	Wheel Loader	*	166	4	4	Power Boost Solenoid-Voltage Below Normal, Or Shorted To Low Source
5374	Wheel Loader	*	166	6	4	Power Boost Solenoid-Current Above Normal Or Grounded Circuit
5370	Wheel Loader	Perkins	166	14	4	Engine Rated Power: Special Instuction
5375	Wheel Loader	Cummins	167	1	3	Electrical Charging System Voltage Low – Data Valid but Below Normal Operational Range - Most Severe Level
5376	Wheel Loader	Yanmar	167	1	3	Charge alarm
5380	Wheel Loader	Scania	167	2	4	Alternator actuator, faulty
5381	Wheel Loader	Scania	167	3	3	Alternator actuator, short circuit to +24V
5382	Wheel Loader	Scania	167	4	3	Alternator actuator, short circuit to ground
5383	Wheel Loader	*	167	4	4	Travel Speed Solenoid-Voltage Below Normal, Or Shorted To Low Source
5384	Wheel Loader	Scania	167	5	3	Alternator actuator, open load
5385	Wheel Loader	Yanmar	167	5	3	Charge switch open circuit
5386	Wheel Loader	*	167	6	4	Travel Speed Solenoid-Current Above Normal Or Grounded Circuit
5387	Wheel Loader	Scania	167	9	3	Alternator 1, signal not plausible
5377	Wheel Loader	Scania	167	10	3	Alternator 2, signal not plausible
5378	Wheel Loader	Cummins	167	16	3	Electrical Charging System Voltage High – Data Valid but Above Normal Operational Range - Moderately Severe Level
5379	Wheel Loader	Cummins	167	18	3	Electrical Charging System Voltage Low – Data Valid but Below Normal Operational Range - Moderately Severe Level
5388	Wheel Loader	Scania	168	0	3	Battery voltage above 47 V for 1 s
5389	Wheel Loader	Scania	168	1	3	Battery voltage below 9 V for 0.5 s
5398	Wheel Loader	Perkins	168	3	3	Battery Potential / Power Input #1 : Voltage Above Normal
5399	Wheel Loader	Perkins	168	4	3	Battery Potential / Power Input 1 : Voltage Above Normal
5400	Wheel Loader	Scania	168	4	3	Battery voltage 1 for engine control unit is low
5401	Wheel Loader	*	168	4	4	Attachment Pressure Solenoid-Voltage Below Normal, Or Shorted To Low Source
5402	Wheel Loader	Scania	168	5	3	Battery voltage 2 for engine control unit is low
5403	Wheel Loader	*	168	6	4	Attachment Pressure Solenoid-Current Above Normal Or Grounded Circuit
5390	Wheel Loader	Cummins	168	15	3	Battery 1 Voltage - Data Valid But Above Normal Operating Range - Moderately Severe Level
5391	Wheel Loader	Scania	168	15	3	Battery voltage too high for SCR main unit
5392	Wheel Loader	Cummins	168	16	3	Battery 1 Voltage - Data Valid But Above Normal Operating Range - Moderately Severe Level
5393	Wheel Loader	Scania	168	16	3	Battery voltage above 32 V
5394	Wheel Loader	Cummins	168	17	3	Battery 1 Voltage - Data Valid But Below Normal Operating Range - Least Severe Level
5395	Wheel Loader	Scania	168	17	3	Battery voltage too low for SCR main unit
5396	Wheel Loader	Cummins	168	18	3	Battery 1 Voltage - Data Valid But Below Normal Operating Range - Moderately Severe Level
5397	Wheel Loader	Scania	168	18	3	Battery voltage below 21 V
5404	Wheel Loader	*	169	4	4	Attachment Conflux Solenoid-Voltage Below Normal, Or Shorted To Low Source
5405	Wheel Loader	*	169	6	4	Attachment Conflux Solenoid-Current Above Normal Or Grounded Circuit
5406	Wheel Loader	*	170	4	4	Arm Regeneration Solenoid-Voltage Below Normal, Or Shorted To Low Source
5407	Wheel Loader	*	170	6	4	Arm Regeneration Solenoid-Current Above Normal Or Grounded Circuit
5408	Wheel Loader	Scania	171	0	4	Ambient temperature sensors correlation error
5409	Wheel Loader	Scania	171	1	3	Ambient temperature low or boost temperature high

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
5416	Wheel Loader	Cummins	171	2	3	Ambient Air Temperature - Data erratic, intermittent or incorrect
5417	Wheel Loader	Scania	171	2	3	Ambient temperature sensor, faulty
5420	Wheel Loader	Cummins	171	3	3	Ambient Air Temperature Sensor 1 Circuit - Voltage above normal, or shorted to high source
5421	Wheel Loader	Scania	171	3	3	Ambient temperature sensor error via CAN
5422	Wheel Loader	Cummins	171	4	3	Ambient Air Temperature Sensor 1 Circuit - Voltage below normal, or shorted to low source
5423	Wheel Loader	Scania	171	4	3	Ambient temperature sensor error via CAN
5424	Wheel Loader	*	171	4	4	Attachment Safety Solenoid-Voltage Below Normal, Or Shorted To Low Source
5425	Wheel Loader	*	171	6	4	Attachment Safety Solenoid-Current Above Normal Or Grounded Circuit
5426	Wheel Loader	Scania	171	7	3	Ambient temperature sensor stuck
5427	Wheel Loader	Cummins	171	9	5	Ambient Air Temperature - Abnormal update rate
5428	Wheel Loader	Scania	171	9	5	CAN message AMBIENT CONDITION from coordinator timeout
5410	Wheel Loader	Scania	171	15	4	Ambient temperature sensors correlation error
5411	Wheel Loader	Scania	171	16	4	Ambient temperature high or boost temperature low
5412	Wheel Loader	Scania	171	17	3	Ambient temperature sensors correlation error
5413	Wheel Loader	Scania	171	18	3	Ambient temperature sensors correlation error
5414	Wheel Loader	Cummins	171	19	5	Ambient Air Temperature - Received Network Data In Error
5415	Wheel Loader	Scania	171	19	5	Ambient temperature sensor signal defect
5418	Wheel Loader	Scania	171	20	3	Temperature sensor before compressor low or ambient temperature sensor high
5419	Wheel Loader	Scania	171	21	3	Temperature sensor before compressor high or ambient temperature sensor low
5429	Wheel Loader	Scania	172	2	4	Air inlet temp sensor, faulty
5430	Wheel Loader	Perkins	172	3	3	Engine Air Inlet Temperature: Voltage Above Normal
5431	Wheel Loader	Scania	172	3	3	Air inlet temp sensor, short circuit to +24V
5432	Wheel Loader	Yanmar	172	3	3	Ambient coolant temperature sensor error (voltage high)
5433	Wheel Loader	Perkins	172	4	3	Engine Air Inlet Temperature: Voltage Below Normal
5434	Wheel Loader	Scania	172	4	3	Air inlet temp sensor, short circuit to ground
5435	Wheel Loader	Yanmar	172	4	3	Ambient coolant temperature sensor error (voltage low)
5436	Wheel Loader	*	172	4	4	Boom Up Lever Detent Solenoid-Voltage Below Normal, Or Shorted To Low Source
5437	Wheel Loader	*	172	6	4	Boom Up Lever Detent Solenoid-Current Above Normal Or Grounded Circuit
5438	Wheel Loader	Scania	172	7	3	Air inlet temp sensor, stuck
5439	Wheel Loader	Perkins	173	3	3	Engine Exhaust Gas Temperature : Voltage Above Normal
5440	Wheel Loader	Yanmar	173	3	3	Exhaust manifold temperature sensor error (voltage high)
5441	Wheel Loader	Yanmar	173	4	2	Exhaust manifold temperature sensor error (voltage low)
5442	Wheel Loader	Perkins	173	4	3	Engine Exhaust Gas Temperature : Voltage Below Normal
5443	Wheel Loader	*	173	4	4	Boom Down Lever Detent Solenoid-Voltage Below Normal, Or Shorted To Low Source
5444	Wheel Loader	*	173	6	4	Boom Down Lever Detent Solenoid-Current Above Normal Or Grounded Circuit
5445	Wheel Loader	Cummins	174	0	3	Engine Fuel Temperature - Data valid but above normal operational range - Most Severe Level
5446	Wheel Loader	Yanmar	174	0	3	Fuel temperature high
5449	Wheel Loader	Cummins	174	2	4	Engine Fuel Temperature - Data erratic, intermittent or incorrect
5450	Wheel Loader	Cummins	174	3	3	Engine Fuel Temperature Sensor 1 Circuit - Voltage above normal, or shorted to high source
5451	Wheel Loader	Perkins	174	3	3	Engine Fuel Temperature 1 : Voltage Above Normal
5452	Wheel Loader	Yanmar	174	3	3	Fuel temperature sensor error (voltage high)
5453	Wheel Loader	Cummins	174	4	3	Engine Fuel Temperature Sensor 1 Circuit - Voltage below normal, or shorted to low source
5454	Wheel Loader	Perkins	174	4	3	Engine Fuel Temperature 1 : Voltage Below Normal
5455	Wheel Loader	Yanmar	174	4	3	Fuel temperature sensor error (voltage low)
5456	Wheel Loader	*	174	4	4	Bucket Lever Detent Solenoid-Voltage Below Normal, Or Shorted To Low Source
5457	Wheel Loader	*	174	6	4	Bucket Lever Detent Solenoid-Current Above Normal Or Grounded Circuit
5447	Wheel Loader	Cummins	174	16	3	Engine Fuel Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
5448	Wheel Loader	Perkins	174	16	3	Engine Fuel Temperature 1 : High - Moderate Severity(2)
5458	Wheel Loader	Cummins	175	0	2	Engine Oil Temperature - Data valid but above normal operational range - Most Severe Level
5459	Wheel Loader	*	175	1	5	Pump Flow Conflux Solenoid-Data Valid But Below Normal Operational Range
5462	Wheel Loader	Cummins	175	2	4	Engine Oil Temperature - Data erratic, intermittent or incorrect
5463	Wheel Loader	Cummins	175	3	3	Engine Oil Temperature Sensor 1 Circuit - Voltage above normal, or shorted to high source
5464	Wheel Loader	Scania	175	3	3	Oil temp sensor, short circuit to +24V
5465	Wheel Loader	Cummins	175	4	3	Engine Oil Temperature Sensor 1 Circuit - Voltage below normal, or shorted to low source
5466	Wheel Loader	Scania	175	4	3	Oil temp sensor, short circuit to ground
5467	Wheel Loader	*	175	4	5	Pump Flow Conflux Solenoid-Voltage Below Normal, Or Shorted To Low Source
5468	Wheel Loader	*	175	6	5	Pump Flow Conflux Solenoid-Current Above Normal Or Grounded Circuit
5460	Wheel Loader	Scania	175	11	3	Oil temp sensor, faulty
5461	Wheel Loader	Cummins	175	16	3	Engine Oil Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
5469	Wheel Loader	*	176	1	5	Pump Flow Sync. Solenoid-Data Valid But Below Normal Operational Range
5470	Wheel Loader	*	176	4	5	Pump Flow Sync. Solenoid-Voltage Below Normal, Or Shorted To Low Source
5471	Wheel Loader	*	176	6	5	Pump Flow Sync. Solenoid-Current Above Normal Or Grounded Circuit
5472	Wheel Loader	*	179	4	4	Breaker Operator Solenoid-Voltage Below Normal, Or Shorted To Low Source
5473	Wheel Loader	*	179	6	4	Breaker Operator Solenoid-Current Above Normal Or Grounded Circuit
5474	Wheel Loader	*	181	4	4	Cooling Fan Reverse Solenoid-Voltage Below Normal, Or Shorted To Low Source
5475	Wheel Loader	*	181	6	4	Cooling Fan Reverse Solenoid-Current Above Normal Or Grounded Circuit
5476	Wheel Loader	*	183	4	4	Cooling Fan Reverse Driving Status-Voltage Below Normal, Or Shorted To Low Source
5477	Wheel Loader	*	183	6	4	Cooling Fan Reverse Driving Status-Current Above Normal Or Grounded Circuit
5478	Wheel Loader	*	184	*	2	(Warning) Steering Main Pump Pressure Low
5479	Wheel Loader	*	185	*	4	(Warning) Emergency Steering Active
5480	Wheel Loader	*	187	4	4	Emergency Steering Pump Relay-Voltage Below Normal, Or Shorted To Low Source
5481	Wheel Loader	*	187	6	4	Emergency Steering Pump Relay-Current Above Normal Or Grounded Circuit
5485	Wheel Loader	*	188	5	4	Attachment Flow EPPR 1 Vlave-Voltage Below Normal, Or Shorted To Low Source
5486	Wheel Loader	*	188	6	4	Attachment Flow EPPR 1 Vlave-Current Above Normal Or Grounded Circuit
5482	Wheel Loader	Scania	188	14	4	Idle due to other fault

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
5483	Wheel Loader	Cummins	188	16	3	Engine Speed At Idle - Data Valid But Above Normal Operating Range - Moderately Severe Level
5484	Wheel Loader	Cummins	188	18	3	Engine Speed At Idle - Data Valid But Below Normal Operating Range - Moderately Severe Level
5487	Wheel Loader	*	189	5	4	Attachment Flow EPPR 2 Vlave-Voltage Below Normal, Or Shorted To Low Source
5488	Wheel Loader	*	189	6	4	Attachment Flow EPPR 2 Vlave-Current Above Normal Or Grounded Circuit
5489	Wheel Loader	Cummins	190	0	2	Engine Crankshaft Speed/Position - Data valid but above normal operational range - Most Severe Level
5490	Wheel Loader	Perkins	190	0	2	Engine Speed : High - most severe(3)
5491	Wheel Loader	Scania	190	0	2	Severe overspeed has occured
5501	Wheel Loader	Cummins	190	2	4	Engine Crankshaft Speed/Position - Data erratic, intermittent or incorrect
5503	Wheel Loader	Perkins	190	8	3	Engine Speed : Abnormal Frequency, Pulse Width, or Period
5492	Wheel Loader	Scania	190	10	3	Overspeed protection, fast over speed
5493	Wheel Loader	Cummins	190	10	4	Engine Speed/Position Sensor Circuit - lost one of two signals from the magnetic pickup sensor
5494	Wheel Loader	Cummins	190	11	1	Engine Speed - Root Cause Not Known
5495	Wheel Loader	Cummins	190	14	3	Engine Crankshaft Speed/Position - Special Instructions
5496	Wheel Loader	Perkins	190	15	4	Engine Speed : High - least severe (1)
5497	Wheel Loader	Scania	190	15	4	Engine speed has been above the limit
5498	Wheel Loader	Cummins	190	16	3	Engine Crankshaft Speed/Position - Data Valid But Above Normal Operating Range - Moderately Severe Level
5499	Wheel Loader	Scania	190	16	3	Overspeed protection, over speed
5500	Wheel Loader	Yanmar	190	16	3	Overspeed
5502	Wheel Loader	Scania	190	20	3	Engine overspeed, value to high
5507	Wheel Loader	Cummins	191	9	4	Transmission Output Shaft Speed - Abnormal update rate
5504	Wheel Loader	Cummins	191	16	4	Transmission Output Shaft Speed - Data Valid But Above Normal Operating Range - Moderately Severe Level
5505	Wheel Loader	Cummins	191	18	4	Transmission Output Shaft Speed - Data Valid But Below Normal Operating Range - Moderately Severe Level
5506	Wheel Loader	Cummins	191	19	4	Transmission Output Shaft Speed - Received Network Data In Error
5508	Wheel Loader	*	196	0	4	Attachment Flow EPPR 1 Pressure -Data Valid But Above Normal Operational Range
5509	Wheel Loader	*	196	1	4	Attachment Flow EPPR 1 Pressure -Data Valid But Below Normal Operational Range
5510	Wheel Loader	*	196	4	4	Attachment Flow EPPR 1 Pressure -Voltage Below Normal, Or Shorted To Low Source
5511	Wheel Loader	*	198	0	3	Attatchment Relief Setting EPPR 1 Valve Pressure - Data Valid But Above Normal Operational Range
5512	Wheel Loader	*	200	0	4	P1 & P2 EPPR Valve Pressure (Measurement)-Data Valid But Above Normal Operational Range
5513	Wheel Loader	*	200	1	4	P1 & P2 EPPR Valve Pressure (Measurement)-Data Valid But Below Normal Operational Range
5514	Wheel Loader	*	200	2	5	P1 & P2 EPPR Valve Pressure (Measurement)-Data Erratic, Intermittent Or Incorrect
5515	Wheel Loader	*	200	4	4	P1 & P2 EPPR Valve Pressure (Measurement)-Voltage Below Normal, Or Shorted To Low Source
5516	Wheel Loader	*	202	0	2	Steering Main Pump Pressure-Data Valid But Above Normal Operational Range
5517	Wheel Loader	*	202	1	2	Steering Main Pump Pressure-Data Valid But Below Normal Operational Range
5518	Wheel Loader	*	202	2	5	Steering Main Pump Pressure-Data Erratic, Intermittent Or Incorrect
5519	Wheel Loader	*	202	4	2	Steering Main Pump Pressure-Voltage Below Normal, Or Shorted To Low Source
5520	Wheel Loader	*	203	0	4	Emergency Steering Pump Pressure-Data Valid But Above Normal Operational Range
5521	Wheel Loader	*	203	1	4	Emergency Steering Pump Pressure-Data Valid But Below Normal Operational Range
5522	Wheel Loader	*	203	2	5	Emergency Steering Pump Pressure-Data Erratic, Intermittent Or Incorrect
5523	Wheel Loader	*	203	4	4	Emergency Steering Pump Pressure-Voltage Below Normal, Or Shorted To Low Source
5524	Wheel Loader	*	204	0	4	Boom Cylinder Head Pressure-Data Valid But Above Normal Operational Range
5525	Wheel Loader	*	204	1	4	Boom Cylinder Head Pressure-Data Valid But Below Normal Operational Range
5526	Wheel Loader	*	204	2	5	Boom Cylinder Head Pressure-Data Erratic, Intermittent Or Incorrect
5527	Wheel Loader	*	204	4	4	Boom Cylinder Head Pressure-Voltage Below Normal, Or Shorted To Low Source
5528	Wheel Loader	*	205	0	4	Boom Cylinder Rod Pressure-Data Valid But Above Normal Operational Range
5529	Wheel Loader	*	205	1	4	Boom Cylinder Rod Pressure-Data Valid But Below Normal Operational Range
5530	Wheel Loader	*	205	2	5	Boom Cylinder Rod Pressure-Data Erratic, Intermittent Or Incorrect
5531	Wheel Loader	*	205	4	4	Boom Cylinder Rod Pressure-Voltage Below Normal, Or Shorted To Low Source
5532	Wheel Loader	*	217	4	3	Swing Parking Solenoid - Voltage Below Normal, Or Shorted To Low Source
5533	Wheel Loader	*	218	4	2	Boom Up Floating Solenoid-Voltage Below Normal, Or Shorted To Low Source
5534	Wheel Loader	*	218	6	2	Boom Up Floating Solenoid-Current Above Normal Or Grounded Circuit
5535	Wheel Loader	*	219	4	2	Boom Down Floating Solenoid-Voltage Below Normal, Or Shorted To Low Source
5536	Wheel Loader	*	219	6	2	Boom Down Floating Solenoid-Current Above Normal Or Grounded Circuit
5537	Wheel Loader	*	220	4	2	Boom Down Pliot Pressure Cutoff Solenoid-Voltage Below Normal, Or Shorted To Low Source
5538	Wheel Loader	*	220	6	2	Boom Down Pliot Pressure-Current Above Normal Or Grounded Circuit
5539	Wheel Loader	*	221	5	4	ATT Relief Setting EPPR 1 Valve-Voltage Below Normal, Or Shorted To Low Source
5540	Wheel Loader	*	221	6	4	ATT Relief Setting EPPR 1 Valve-Current Above Normal Or Grounded Circuit
5541	Wheel Loader	*	222	5	4	ATT Relief Setting EPPR 2 Valve-Voltage Below Normal, Or Shorted To Low Source
5542	Wheel Loader	*	222	6	4	ATT Relief Setting EPPR 2 Valve-Current Above Normal Or Grounded Circuit
5544	Wheel Loader	Scania	234	2	3	The EMS and EEC control units are incompatible
5543	Wheel Loader	Scania	234	19	4	Wrong CAN version transmitted by COO
5547	Wheel Loader	Cummins	237	2	4	Vehicle Identification Number - Data erratic, intermittent or incorrect
5545	Wheel Loader	Cummins	237	13	4	Vehicle Identification Number - Out of Calibration
5546	Wheel Loader	Yanmar	237	13	4	VI reception data error
5548	Wheel Loader	Cummins	237	31	4	Vehicle Identification Number - Condition Exists
5549	Wheel Loader	Yanmar	237	31	4	VI reception timeout
5550	Wheel Loader	Cummins	251	2	4	Real Time Clock - Data erratic, intermittent or incorrect
5551	Wheel Loader	*	301	3	4	Fuel Level -Voltage Above Normal, Or Shorted To High Source

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
5552	Wheel Loader	*	301	4	4	Fuel Level -Voltage Below Normal, Or Shorted To Low Source
5553	Wheel Loader	*	303	*	4	(Warning) Fuel level low
5554	Wheel Loader	*	304	3	3	Engine Coolant Temperature-Voltage Above Normal, Or Shorted To High Source
5555	Wheel Loader	*	304	4	3	Engine Coolant Temperature-Voltage Below Normal, Or Shorted To Low Source
5556	Wheel Loader	*	305	*	1	(Warning) Engine Coolant Temperature High
5557	Wheel Loader	*	307	*	1	(Warning) Engine Coolant level low
5558	Wheel Loader	*	310	8	3	Engine Speed-Abnormal Frequency Or Pulse Width Or Period
5559	Wheel Loader	*	313	*	4	(Warning) Engine Oil Pressure Low
5560	Wheel Loader	*	317	*	1	(Warning) Air Cleaner Clog
5561	Wheel Loader	*	318	8	4	Cooling Fan Speed-Abnormal Frequency Or Pulse Width Or Period
5562	Wheel Loader	*	319	*	1	(Warning) Engine Stop
5563	Wheel Loader	*	320	*	4	(Warning) Engine Check
5564	Wheel Loader	*	322	3	4	Engine Preheat Relay-Voltage Above Normal, Or Shorted To High Source
5565	Wheel Loader	*	322	4	4	Engine Preheat Relay-Voltage Below Normal, Or Shorted To Low Source
5566	Wheel Loader	*	322	6	4	Engine Preheat Relay-Current Above Normal Or Grounded Circuit
5567	Wheel Loader	*	325	3	4	Fuel Warmer Relay-Voltage Above Normal, Or Shorted To High Source
5568	Wheel Loader	*	325	4	4	Fuel Warmer Relay-Voltage Below Normal, Or Shorted To Low Source
5569	Wheel Loader	*	325	6	4	Fuel Warmer Relay-Current Above Normal Or Grounded Circuit
5570	Wheel Loader	*	327	4	4	Anti-Restart Relay-Voltage Below Normal, Or Shorted To Low Source
5571	Wheel Loader	*	327	6	4	Anti-Restart Relay-Current Above Normal Or Grounded Circuit
5572	Wheel Loader	*	339	3	2	Accelerator Pedal Position 1-Voltage Above Normal, Or Shorted To High Source
5573	Wheel Loader	*	339	4	2	Accelerator Pedal Position 1-Voltage Below Normal, Or Shorted To Low Source
5574	Wheel Loader	*	340	3	2	Potentiometer Voltage for Engine Governor Actuator-Voltage Above Normal, Or Shorted To High Source
5575	Wheel Loader	*	340	4	2	Potentiometer Voltage for Engine Governor Actuator-Voltage Below Normal, Or Shorted To Low Source
5576	Wheel Loader	*	341	5	2	Motor Driving Status for Engine Governor Actuator-Current Below Normal Or Open Circuit
5577	Wheel Loader	*	341	6	2	Motor Driving Status for Engine Governor Actuator-Current Above Normal Or Grounded Circuit
5578	Wheel Loader	*	343	3	2	Accelerator Pedal Position 2-Voltage Above Normal, Or Shorted To High Source
5579	Wheel Loader	*	343	4	2	Accelerator Pedal Position 2-Voltage Below Normal, Or Shorted To Low Source
5580	Wheel Loader	*	346	3	4	Engine Power Mode Selector Voltage-Voltage Above Normal, Or Shorted To High Source
5581	Wheel Loader	*	346	4	4	Engine Power Mode Selector Voltage-Voltage Below Normal, Or Shorted To Low Source
5582	Wheel Loader	*	352	*	3	(Warning) Engine DPF Clog
5583	Wheel Loader	*	357	*	3	(Warning) Emission System Fail
5584	Wheel Loader	*	358	*	4	(Warning) DEF Level Low
5585	Wheel Loader	*	360	*	2	Water In Fuel Indicator, SPN97, HCESPN360
5587	Wheel Loader	Cummins	411	2	3	Exhaust Gas Recirculation Differential Pressure - Data erratic, intermittent or incorrect
5588	Wheel Loader	Perkins	411	2	3	EGR Differential Pressure - Erratic, Intermittent or Incorrect
5589	Wheel Loader	Cummins	411	3	3	Exhaust Gas Recirculation Differential Pressure Sensor Circuit - Voltage above normal, or shorted to high source
5590	Wheel Loader	Perkins	411	3	3	EGR Differential Pressure - Voltage Above Normal
5591	Wheel Loader	Cummins	411	4	3	Exhaust Gas Recirculation Differential Pressure Sensor Circuit - Voltage below normal, or shorted to low source
5592	Wheel Loader	Perkins	411	4	3	EGR Differential Pressure - Voltage below normal
5586	Wheel Loader	Perkins	411	13	3	Exhaust Gas Recirculation Differential Pressure -Out of Calibration
5597	Wheel Loader	Cummins	412	2	3	Exhaust Gas Recirculation Temperature - Data erratic, intermittent or incorrect
5598	Wheel Loader	Cummins	412	3	3	Exhaust Gas Recirculation Temperature Sensor Circuit - Voltage above normal, or shorted to high source
5599	Wheel Loader	Perkins	412	3	3	Exhaust Gas Recirculation Differential Pressure -Out of Calibration
5600	Wheel Loader	Yanmar	412	3	3	EGR gas temperature sensor error (voltage high)
5601	Wheel Loader	Cummins	412	4	3	Exhaust Gas Recirculation Temperature Sensor Circuit - Voltage below normal, or shorted to low source
5602	Wheel Loader	Perkins	412	4	3	Exhaust Gas Recirculation Temperature - Voltage below normal
5603	Wheel Loader	Yanmar	412	4	3	EGR gas temperature sensor error (voltage low)
5593	Wheel Loader	Cummins	412	15	3	Exhaust Gas Recirculation Temperature - Data Valid But Above Normal Operating Range - Least Severe Level
5594	Wheel Loader	Perkins	412	15	3	Exhaust Gas Recirculation Temperature : High - least severe(1)
5595	Wheel Loader	Cummins	412	16	3	Exhaust Gas Recirculation Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
5596	Wheel Loader	Perkins	412	16	3	Exhaust Gas Recirculation Temperature : High - moderate severity (2)
5605	Wheel Loader	Cummins	441	3	3	Auxiliary Temperature Sensor Input 1 Circuit - Voltage above normal, or shorted to high source
5606	Wheel Loader	Cummins	441	4	3	Auxiliary Temperature Sensor Input 1 Circuit - Voltage below normal, or shorted to low source
5604	Wheel Loader	Cummins	441	14	3	Auxiliary Temperature Sensor Input 1 - Special Instructions
5607	Wheel Loader	Cummins	442	3	3	Auxiliary Temperature Sensor Input 2 Circuit - Voltage above normal, or shorted to high source
5608	Wheel Loader	Cummins	442	4	3	Auxiliary Temperature Sensor Input 2 Circuit - Voltage below normal, or shorted to low source
5609	Wheel Loader	*	501	0	3	Transmission Oil Pressure-Data Valid But Above Normal Operational Range
5610	Wheel Loader	*	501	1	3	Transmission Oil Pressure-Data Valid But Below Normal Operational Range
5611	Wheel Loader	*	501	2	5	Transmission Oil Pressure-Data Erratic, Intermittent Or Incorrect
5612	Wheel Loader	*	501	4	3	Transmission Oil Pressure-Voltage Below Normal, Or Shorted To Low Source
5613	Wheel Loader	*	503	0	4	Brake Oil Pressure (Accumulator)-Data Valid But Above Normal Operational Range
5614	Wheel Loader	*	503	1	4	Brake Oil Pressure (Accumulator)-Data Valid But Below Normal Operational Range
5615	Wheel Loader	*	503	2	5	Brake Oil Pressure (Accumulator)-Data Erratic, Intermittent Or Incorrect
5616	Wheel Loader	*	503	4	4	Brake Oil Pressure (Accumulator)-Voltage Below Normal, Or Shorted To Low Source
5617	Wheel Loader	*	504	*	4	(Warning) Brake Oil Pressure Low

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
5618	Wheel Loader	*	505	0	4	Working Brake Pressure (Foot Pedal)-Data Valid But Above Normal Operational Range
5619	Wheel Loader	*	505	1	4	Working Brake Pressure (Foot Pedal)-Data Valid But Below Normal Operational Range
5620	Wheel Loader	*	505	2	5	Working Brake Pressure (Foot Pedal)-Data Erratic, Intermittent Or Incorrect
5621	Wheel Loader	*	505	4	4	Working Brake Pressure (Foot Pedal)-Voltage Below Normal, Or Shorted To Low Source
5622	Wheel Loader	*	506	3	4	Working Brake Status ? Indicator Lamp-Voltage Above Normal, Or Shorted To High Source
5623	Wheel Loader	*	506	4	4	Working Brake Status ? Indicator Lamp-Voltage Below Normal, Or Shorted To Low Source
5624	Wheel Loader	*	507	0	4	Parking Oil Pressure-Data Valid But Above Normal Operational Range
5625	Wheel Loader	*	507	1	4	Parking Oil Pressure-Data Valid But Below Normal Operational Range
5626	Wheel Loader	*	507	2	5	Parking Oil Pressure-Data Erratic, Intermittent Or Incorrect
5627	Wheel Loader	*	507	4	4	Parking Oil Pressure-Voltage Below Normal, Or Shorted To Low Source
5628	Wheel Loader	*	514	4	4	Parking Relay-Voltage Below Normal, Or Shorted To Low Source
5629	Wheel Loader	*	514	6	4	Parking Relay-Current Above Normal Or Grounded Circuit
5630	Wheel Loader	*	517	4	5	Traveling Cutoff Relay-Voltage Below Normal, Or Shorted To Low Source
5631	Wheel Loader	*	517	6	5	Traveling Cutoff Relay-Current Above Normal Or Grounded Circuit
5632	Wheel Loader	*	520	3	4	Ram Lock Status ? Indicator Lamp-Voltage Above Normal, Or Shorted To High Source
5633	Wheel Loader	*	520	4	4	Ram Lock Status ? Indicator Lamp-Voltage Below Normal, Or Shorted To Low Source
5634	Wheel Loader	Cummins	521	2	4	Brake Pedal Position - Data erratic, intermittent or incorrect
5635	Wheel Loader	*	525	4	2	Ram Lock Solenoid-Voltage Below Normal, Or Shorted To Low Source
5636	Wheel Loader	*	525	6	2	Ram Lock Solenoid-Current Above Normal Or Grounded Circuit
5637	Wheel Loader	*	527	4	4	Creep Solenoid-Voltage Below Normal, Or Shorted To Low Source
5638	Wheel Loader	*	527	6	4	Creep Solenoid-Current Above Normal Or Grounded Circuit
5639	Wheel Loader	*	530	0	3	Travel Forward Pilot Pressure-Data Valid But Above Normal Operational Range
5640	Wheel Loader	*	530	1	3	Travel Forward Pilot Pressure-Data Valid But Below Normal Operational Range
5641	Wheel Loader	*	530	2	5	Travel Forward Pilot Pressure-Data Erratic, Intermittent Or Incorrect
5642	Wheel Loader	*	530	4	3	Travel Forward Pilot Pressure-Voltage Below Normal, Or Shorted To Low Source
5643	Wheel Loader	*	531	0	4	Travel Reverse Pilot Pressure-Data Valid But Above Normal Operational Range
5644	Wheel Loader	*	531	1	4	Travel Reverse Pilot Pressure-Data Valid But Below Normal Operational Range
5645	Wheel Loader	*	531	2	5	Travel Reverse Pilot Pressure-Data Erratic, Intermittent Or Incorrect
5646	Wheel Loader	*	531	4	4	Travel Reverse Pilot Pressure-Voltage Below Normal, Or Shorted To Low Source
5647	Wheel Loader	Scania	532	14	4	Increased idle due to other fault
5648	Wheel Loader	*	537	*	1	(Warning) Transmission Oil Temperature High
5649	Wheel Loader	*	538	*	4	(Warning) Transmission Check
5650	Wheel Loader	*	551	3	4	Clutch Cutoff Mode Selector Voltage – Voltage Above Normal, Or Shorted To High Source
5651	Wheel Loader	*	551	4	4	Clutch Cutoff Mode Selector Voltage – Voltage Below Normal, Or Shorted To Low Source
5652	Wheel Loader	*	552	3	4	Transmission Shift Mode Selector Voltage – Voltage Above Normal, Or Shorted To High Source
5653	Wheel Loader	*	552	4	4	Transmission Shift Mode Selector Voltage – Voltage Below Normal, Or Shorted To Low Source
5654	Wheel Loader	*	557	0	4	Brake Oil Charging Priority Pressure -Data Valid But Above Normal Operational Range
5655	Wheel Loader	*	557	4	4	Brake Oil Charging Priority Pressure -Voltage Below Normal, Or Shorted To Low Source
5656	Wheel Loader	*	558	0	4	Differential Lock Pressure-Data Valid But Above Normal Operational Range
5657	Wheel Loader	*	558	1	4	Differential Lock Pressure-Data Valid But Below Normal Operational Range
5660	Wheel Loader	Cummins	558	2	2	Accelerator Pedal or Lever Idle Validation Switch - Data erratic, intermittent or incorrect
5661	Wheel Loader	Perkins	558	2	2	Accelerator Pedal 1 Low Idle Switch : Erratic, Intermittent, or Incorrect
5662	Wheel Loader	Scania	558	2	2	Low idle switch error state from coordinator
5663	Wheel Loader	*	558	2	5	Differential Lock Pressure-Data Erratic, Intermittent Or Incorrect
5664	Wheel Loader	Cummins	558	4	3	Accelerator Pedal or Lever Idle Validation Circuit- Voltage Below Normal, or Shorted to Low Source
5665	Wheel Loader	*	558	4	4	Differential Lock Pressure-Voltage Below Normal, Or Shorted To Low Source
5666	Wheel Loader	Cummins	558	9	2	Accelerator Pedal or Lever Idle Validation Switch - Abnormal update rate
5658	Wheel Loader	Cummins	558	13	2	Accelerator Pedal or Lever Idle Validation Switch Circuit - Out of Calibration
5659	Wheel Loader	Cummins	558	19	2	Accelerator Pedal or Lever Idle Validation Switch - Received Network Data In Error
5668	Wheel Loader	Scania	559	2	4	Kickdown signal defect via CAN
5669	Wheel Loader	Scania	559	9	4	Accelerator pedal kickdown CAN message, faulty
5667	Wheel Loader	Scania	559	10	4	Accelerator pedal/kick down switch, EMS and coordinator do not agree
5671	Wheel Loader	Cummins	563	9	4	Anti-Lock Braking (ABS) Controller - Abnormal update rate
5670	Wheel Loader	Cummins	563	31	5	Anti-Lock Braking (ABS) Active - Condition Exists
5672	Wheel Loader	*	573	3	2	Brake Pedal Position - Voltage Above Normal, or Shorted To High Source
5673	Wheel Loader	*	573	4	2	Brake Pedal Position - Voltage Below Normal, or Shorted To Low Source
5674	Wheel Loader	*	579	*	4	(Warning) Front Axle temp High
5675	Wheel Loader	*	580	*	4	(Warning) Rear Axle temp High
5676	Wheel Loader	Perkins	593	31	5	Engine Idle Shutdown has Shutdown Engine
5677	Wheel Loader	Perkins	594	31	5	Engine Idle Shutdown Driver Alert Mode
5679	Wheel Loader	Cummins	596	2	4	Cruise Control Enable Switch - Data erratic, intermittent or incorrect
5680	Wheel Loader	Cummins	596	7	4	Cruise Control Enable Switch - Mechanical system not responding or out of adjustment
5678	Wheel Loader	Cummins	596	13	3	Cruise Control Enable Switch - Out of Calibration
5681	Wheel Loader	Scania	597	2	4	Brake pedal signal defect via CAN
5682	Wheel Loader	Cummins	597	3	3	Brake Switch Circuit - Voltage above normal, or shorted to high source
5683	Wheel Loader	Cummins	597	4	3	Brake Switch Circuit - Voltage below normal, or shorted to low source
5685	Wheel Loader	Scania	598	2	4	Clutch pedal signal defect via CAN
5686	Wheel Loader	Scania	598	7	4	Excessive clutch slip
5684	Wheel Loader	Scania	598	19	3	CAN-signal or engine shut-down command from OPC for automatic clutch failure, timeout
5687	Wheel Loader	Cummins	599	2	4	Cruise Control Set Switch - Data erratic, intermittent or incorrect
5690	Wheel Loader	Cummins	611	2	4	Auxiliary Intermediate (PTO) Speed Switch Validation - Data erratic, intermittent or incorrect
5688	Wheel Loader	Cummins	611	16	3	Fuel Inlet Meter Device - Data Valid but Above Normal Operational Range - Moderately Severe Level
5689	Wheel Loader	Cummins	611	18	3	Fuel Inlet Meter Device flow demand lower than expected - Data Valid but Below Normal Operational Range - Moderately Severe Level
5691	Wheel Loader	Cummins	611	31	3	Operator Interface Mode Transition to Emergency Stop (Due to E-Stop) - Condition Exists

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
5692	Wheel Loader	Cummins	612	2	2	Engine Magnetic Speed/Position Lost Both of Two Signals - Data erratic, intermittent or incorrect
5693	Wheel Loader	Cummins	623	4	3	Red Stop Lamp Driver Circuit - Voltage Below Normal, or Shorted to Low Source
5694	Wheel Loader	Perkins	623	5	3	Red Stop Lamp : Current Below Normal
5695	Wheel Loader	Perkins	623	6	3	Red Stop Lamp : Current Above Normal
5696	Wheel Loader	Perkins	624	5	3	Amber Warning Lamp : Current Below Normal
5697	Wheel Loader	Perkins	624	6	3	Amber Warning Lamp : Current Above Normal
5698	Wheel Loader	Cummins	625	9	2	Proprietary Datalink Error (OEM/Vehicle Datalink) - Abnormal update rate
5701	Wheel Loader	Cummins	626	3	3	Start Enable Device 1 Circuit (Ether Injection) - Voltage above normal, or shorted to high source
5702	Wheel Loader	Cummins	626	4	3	Start Enable Device 1Circuit (Ether Injection) - Voltage below normal, or shorted to low source
5703	Wheel Loader	Perkins	626	5	3	Engine Start Enable Device 1 : Current Below Normal
5704	Wheel Loader	Perkins	626	6	3	Engine Start Enable Device 1 : Current Above Normal
5699	Wheel Loader	Cummins	626	11	4	Intake Air Heater (Relay Enable) #1 Circuit - data incorrect
5700	Wheel Loader	Cummins	626	18	3	Start Enable Device 1 Canister Empty (Ether Injection) - Data Valid But Below Normal Operating Range
5706	Wheel Loader	Cummins	627	2	3	Power Supply Lost With Ignition On - Data Erratic, Intermittent, or Incorrect
5705	Wheel Loader	Cummins	627	12	3	Injector Power Supply - Bad intelligent device or component
5707	Wheel Loader	Cummins	629	12	2	Engine Control Module Critical Internal Failure - Bad intelligent device or component
5708	Wheel Loader	Cummins	629	31	3	At Least One Unacknowledged Moderately Severe Fault - Condition Exists
5712	Wheel Loader	Perkins	630	2	4	Calibration Memory: Erratic, Intermittent, or Incorrect
5709	Wheel Loader	Cummins	630	12	2	Engine Control Module Calibration Memory - Bad intelligent device or component
5710	Wheel Loader	Yanmar	630	12	2	EEPROM memory deletion error
5711	Wheel Loader	Cummins	630	13	3	Electronic Calibration Code Incompatibility - Out of Calibration
5713	Wheel Loader	Cummins	630	31	3	ECM Program Memory (RAM) Corruption - Condition Exists
5714	Wheel Loader	Perkins	631	2	4	Calibration Module : Erratic, Intermittent, or Incorrect
5715	Wheel Loader	Cummins	632	3	4	Fuel Shutoff Valve Circuit - shorted high
5716	Wheel Loader	Cummins	632	4	2	Less than Positive (+) 6 VDC detected at fuel shutoff circuit or an excessive current draw from the electronic control module (ECM) or faulty ECM output circuit.
5717	Wheel Loader	Cummins	632	7	2	Fuel Shutoff Valve - stuck open
5718	Wheel Loader	Yanmar	633	3	2	SCV (MPROP) H side VB short circuit
5720	Wheel Loader	Yanmar	633	5	2	SCV (MPROP) disconnection
5721	Wheel Loader	Yanmar	633	6	2	SCV (MPROP) H side GND short circuit
5722	Wheel Loader	Cummins	633	7	1	Fuel Control Valve - mechanically stuck
5719	Wheel Loader	Cummins	633	31	4	Electronic Fuel Injection Control Valve Circuit - Condition Exists
5723	Wheel Loader	Cummins	635	7	1	Engine Timing Actuator is not responding to ECM commands
5724	Wheel Loader	Scania	636	1	4	Camshaft position sensor, faulty
5725	Wheel Loader	Scania	636	2	4	Camshaft position sensor, intermittent fault
5726	Wheel Loader	Scania	636	3	3	Camshaft position sensor, short circuit to +24V
5727	Wheel Loader	Scania	636	4	3	Camshaft position sensor, short circuit to ground
5728	Wheel Loader	Scania	636	5	3	Camshaft position sensor, open circuit
5729	Wheel Loader	Scania	636	7	4	Engine speed detected by flywheel sensor, but no signal from camshaft sensor
5730	Wheel Loader	Scania	636	8	4	Camshaft Pulse Pattern, Gap or Sync Error or other fault
5731	Wheel Loader	Perkins	637	11	4	Engine Timing Sensor: Other Failure Mode
5734	Wheel Loader	Cummins	639	2	4	J1939 Network #1 - Data erratic, intermittent or incorrect
5735	Wheel Loader	Cummins	639	9	5	SAE J1939 Multiplexing PGN Timeout Error - Abnormal update rate
5736	Wheel Loader	Perkins	639	9	5	J1939 Network #1 : Abnormal Update Rate
5732	Wheel Loader	Cummins	639	13	3	SAE J1939 Multiplexing Configuration Error - Out of Calibration
5733	Wheel Loader	Perkins	639	14	2	J1939 Network #1 : Special Instruction
5737	Wheel Loader	Cummins	640	14	2	Auxiliary Commanded Dual Output Shutdown - Special Instructions
5749	Wheel Loader	Scania	641	2	3	VGT internal temperature sensor stuck
5752	Wheel Loader	Scania	641	4	3	VGT voltage supply open load
5753	Wheel Loader	Scania	641	5	3	VGT internal temperature sensor open circuit
5754	Wheel Loader	Cummins	641	6	4	VGT Actuator Driver Circuit - Current Above Normal or Grounded Circuit
5755	Wheel Loader	Scania	641	6	4	Variable geometry turbocharger control fault
5756	Wheel Loader	Cummins	641	7	3	VGT Actuator Driver Circuit (Motor) - Mechanical system not responding or out of adjustment
5757	Wheel Loader	Scania	641	7	3	VGT motion limited or restricted
5758	Wheel Loader	Scania	641	8	3	VGT reference or position not found
5759	Wheel Loader	Cummins	641	9	3	VGT Actuator Driver Circuit - Abnormal update rate
5760	Wheel Loader	Scania	641	9	3	VGT temperature sensor value not plausible
5738	Wheel Loader	Scania	641	10	3	VGT motion error, span too large
5739	Wheel Loader	Cummins	641	11	3	VGT Actuator Driver Circuit - Root Cause Not Known
5740	Wheel Loader	Scania	641	11	3	VGT actuator faulty
5741	Wheel Loader	Cummins	641	12	3	VGT Actuator Controller - Bad intelligent device or component
5742	Wheel Loader	Scania	641	12	3	VGT internal fault
5743	Wheel Loader	Cummins	641	13	3	VGT Actuator Controller - Out of Calibration
5744	Wheel Loader	Scania	641	13	3	VGT actuator installation procedure was not completed
5745	Wheel Loader	Cummins	641	15	3	VGT Actuator Driver Over Temperature (Calculated) - Data Valid But Above Normal Operating Range - Least Severe Level
5746	Wheel Loader	Scania	641	15	3	VGT error
5747	Wheel Loader	Scania	641	16	3	VGT temperature too high
5748	Wheel Loader	Scania	641	19	3	VGT timeout on CAN
5750	Wheel Loader	Scania	641	20	3	Variable geometry turbocharger control fault
5751	Wheel Loader	Cummins	641	31	2	VGT Actuator Driver Circuit - Condition Exists
5761	Wheel Loader	Cummins	644	2	4	External Speed Command Input (Multiple Unit Synchronization) - Data erratic, intermittent or incorrect
5762	Wheel Loader	Scania	645	19	4	CAN message TCO1 from tachograph timeout

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
5763	Wheel Loader	Cummins	647	3	4	Fan Control Circuit - Voltage above normal, or shorted to high source
5764	Wheel Loader	Cummins	647	4	4	Fan Control Circuit - Voltage below normal, or shorted to low source
5765	Wheel Loader	Cummins	649	3	3	Engine Exhaust Back Pressure Regulator Control Circuit - Voltage Above Normal, or Shorted to High Source
5766	Wheel Loader	Cummins	649	4	3	Engine Exhaust Back Pressure Regulator Control Circuit - Voltage Below Normal, or Shorted to Low Source
5767	Wheel Loader	Cummins	649	5	3	Engine Exhaust Back Pressure Regulator Control Circuit - Current Below Normal or Open Circuit
5768	Wheel Loader	Perkins	649	5	3	Engine Exhaust Back Pressure Regulator Control Command : Current Below Normal
5769	Wheel Loader	Perkins	649	6	3	Engine Exhaust Back Pressure Regulator Control Command : Current Above Normal
5770	Wheel Loader	Perkins	649	7	3	Engine Exhaust Back Pressure Regulator Control Command : Not Responding Properly
5771	Wheel Loader	Scania	651	1	4	Two or more injectors with the same trim code, injector cyl. 1
5777	Wheel Loader	Perkins	651	2	2	Engine Injector Cylinder #01 : Erratic, Intermittent, or Incorrect
5778	Wheel Loader	Scania	651	2	2	Injector trim code, checksum error injector cyl. 1
5783	Wheel Loader	Yanmar	651	3	2	Short circuit
5784	Wheel Loader	Scania	651	4	2	Injector 1 cable short circuit to ground
5785	Wheel Loader	Cummins	651	5	2	Injector Solenoid Driver Cylinder 1 Circuit - Current below normal or open circuit
5786	Wheel Loader	Perkins	651	5	2	Engine Injector Cylinder #01 : Current Below Normal
5787	Wheel Loader	Scania	651	5	2	Injector cyl. 1 cable/injector open load
5788	Wheel Loader	Yanmar	651	5	2	Disconnection (injector-specifiction)
5789	Wheel Loader	Perkins	651	6	2	Engine Injector Cylinder #01 : Current Above Normal
5790	Wheel Loader	Scania	651	6	2	Injector cyl. 1 cable/injector short circuit
5791	Wheel Loader	Yanmar	651	6	2	Coil short circuit
5792	Wheel Loader	Cummins	651	7	2	Injector Solenoid Driver Cylinder 1 - Mechanical system not responding or out of adjustment
5793	Wheel Loader	Scania	651	7	2	Injection error, physical cylinder 1
5794	Wheel Loader	Scania	651	8	2	Injector cyl. 1, over or under fueling
5772	Wheel Loader	Scania	651	10	2	Fault with sensors/actuators for the particulate filter
5773	Wheel Loader	Scania	651	13	2	Injector trim code version error, injector cyl. 1
5774	Wheel Loader	Scania	651	15	2	Cylinder 1 torque error
5775	Wheel Loader	Scania	651	16	2	Cylinder 1 injector fault, high torque
5776	Wheel Loader	Scania	651	18	2	Cylinder 1 injector fault, low torque
5779	Wheel Loader	Perkins	651	20	2	Engine Injector Cylinder #01 : Data Drifted High
5780	Wheel Loader	Scania	651	20	2	Cylinder 1 balancing min or max
5781	Wheel Loader	Perkins	651	21	2	Engine Injector Cylinder #01 : Data Drifted Low
5782	Wheel Loader	Scania	651	21	2	Cylinder balancing, not plausible
5795	Wheel Loader	Scania	652	1	2	Two or more injectors with the same trim code, injector cyl. 2
5801	Wheel Loader	Perkins	652	2	2	Engine Injector Cylinder #02 : Erratic, Intermittent, or Incorrect
5802	Wheel Loader	Scania	652	2	2	Injector trim code, checksum error injector cyl. 2
5806	Wheel Loader	Yanmar	652	3	2	Short circuit
5807	Wheel Loader	Scania	652	4	2	Injector 2 cable short circuit to ground
5808	Wheel Loader	Cummins	652	5	2	Injector Solenoid Driver Cylinder 2 Circuit - Current below normal or open circuit
5809	Wheel Loader	Perkins	652	5	2	Engine Injector Cylinder #02 : Current Below Normal
5810	Wheel Loader	Scania	652	5	2	Injector cyl. 2 cable/injector open load
5811	Wheel Loader	Yanmar	652	5	2	Disconnection (injector-specifiction)
5812	Wheel Loader	Perkins	652	6	2	Engine Injector Cylinder #02 : Current Above Normal
5813	Wheel Loader	Scania	652	6	2	Injector cyl. 2 cable/injector short circuit
5814	Wheel Loader	Yanmar	652	6	2	Coil short circuit
5815	Wheel Loader	Cummins	652	7	2	Injector Solenoid Driver Cylinder 2 - Mechanical system not responding or out of adjustment
5816	Wheel Loader	Scania	652	7	2	Injection error, physical cylinder 2
5817	Wheel Loader	Scania	652	8	2	Injector cyl. 2, over or under fueling
5796	Wheel Loader	Scania	652	10	2	Fault with sensors/actuators for the particulate filter
5797	Wheel Loader	Scania	652	13	2	Injector trim code version error, injector cyl. 2
5798	Wheel Loader	Scania	652	15	2	Cylinder 2 torque error
5799	Wheel Loader	Scania	652	16	2	Cylinder 2 injector fault, high torque
5800	Wheel Loader	Scania	652	18	2	Cylinder 2 injector fault, low torque
5803	Wheel Loader	Perkins	652	20	2	Engine Injector Cylinder #02 : Data Drifted High
5804	Wheel Loader	Scania	652	20	2	Cylinder 2 balancing min or max
5805	Wheel Loader	Perkins	652	21	2	Engine Injector Cylinder #02 : Data Drifted Low
5818	Wheel Loader	Scania	653	1	2	Two or more injectors with the same trim code, injector cyl. 3
5824	Wheel Loader	Perkins	653	2	2	Engine Injector Cylinder #03 : Erratic, Intermittent, or Incorrect
5825	Wheel Loader	Scania	653	2	2	Injector trim code, checksum error injector cyl. 3
5829	Wheel Loader	Yanmar	653	3	2	Short circuit
5830	Wheel Loader	Scania	653	4	2	njector 3 cable short circuit to ground
5831	Wheel Loader	Cummins	653	5	2	Injector Solenoid Driver Cylinder 3 Circuit - Current below normal or open circuit
5832	Wheel Loader	Perkins	653	5	2	Engine Injector Cylinder #03 : Current Below Normal
5833	Wheel Loader	Scania	653	5	2	Injector cyl. 3 cable/injector open load
5834	Wheel Loader	Yanmar	653	5	2	Disconnection (injector-specifiction)
5835	Wheel Loader	Perkins	653	6	2	Engine Injector Cylinder #03 : Current Above Normal
5836	Wheel Loader	Scania	653	6	2	Injector cyl. 3 cable/injector short circuit
5837	Wheel Loader	Yanmar	653	6	2	Coil short circuit
5838	Wheel Loader	Cummins	653	7	2	Injector Solenoid Driver Cylinder 3 - Mechanical system not responding or out of adjustment
5839	Wheel Loader	Scania	653	7	2	Injection error, physical cylinder 3
5840	Wheel Loader	Scania	653	8	2	Injector cyl. 3, over or under fueling
5819	Wheel Loader	Scania	653	10	2	Fault with sensors/actuators for the particulate filter
5820	Wheel Loader	Scania	653	13	2	Injector trim code version error, injector cyl. 3
5821	Wheel Loader	Scania	653	15	2	Cylinder 3 torque error
5822	Wheel Loader	Scania	653	16	2	Cylinder 3 injector fault, high torque
5823	Wheel Loader	Scania	653	18	2	Cylinder 3 injector fault, low torque
5826	Wheel Loader	Perkins	653	20	2	Engine Injector Cylinder #03 : Data Drifted High

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5827	Wheel Loader	Scania	653	20	2	Cylinder 3 balancing min or max
5828	Wheel Loader	Perkins	653	21	2	Engine Injector Cylinder #03 : Data Drifted Low
5841	Wheel Loader	Scania	654	1	2	Two or more injectors with the same trim code, injector cyl. 4
5847	Wheel Loader	Perkins	654	2	2	Engine Injector Cylinder #04 : Erratic, Intermittent, or Incorrect
5848	Wheel Loader	Scania	654	2	2	Injector trim code, checksum error injector cyl. 4
5852	Wheel Loader	Yanmar	654	3	2	Short circuit
5853	Wheel Loader	Scania	654	4	2	Injector 4 cable short circuit to ground
5854	Wheel Loader	Cummins	654	5	2	Injector Solenoid Driver Cylinder 4 Circuit - Current below normal or open circuit
5855	Wheel Loader	Perkins	654	5	2	Engine Injector Cylinder #04 : Current Below Normal
5856	Wheel Loader	Scania	654	5	2	Injector cyl. 4 cable/injector open load
5857	Wheel Loader	Yanmar	654	5	2	Disconnection (injector-specifiction)
5858	Wheel Loader	Perkins	654	6	2	Engine Injector Cylinder #04 : Current Above Normal
5859	Wheel Loader	Scania	654	6	2	Injector cyl. 4 cable/injector short circuit
5860	Wheel Loader	Yanmar	654	6	2	Coil short circuit
5861	Wheel Loader	Cummins	654	7	2	Injector Solenoid Driver Cylinder 4 - Mechanical system not responding or out of adjustment
5862	Wheel Loader	Scania	654	7	2	Injection error, physical cylinder 4
5863	Wheel Loader	Scania	654	8	2	Injector cyl. 4, over or under fueling
5842	Wheel Loader	Scania	654	10	2	Fault with sensors/actuators for the particulate filter
5843	Wheel Loader	Scania	654	13	2	Injector trim code version error, injector cyl. 4
5844	Wheel Loader	Scania	654	15	2	Cylinder 4 torque error
5845	Wheel Loader	Scania	654	16	2	Cylinder 4 injector fault, high torque
5846	Wheel Loader	Scania	654	18	2	Cylinder 4 injector fault, low torque
5849	Wheel Loader	Perkins	654	20	2	Engine Injector Cylinder #04 : Data Drifted High
5850	Wheel Loader	Scania	654	20	2	Cylinder 4 balancing min or max
5851	Wheel Loader	Perkins	654	21	2	Engine Injector Cylinder #04 : Data Drifted Low
5864	Wheel Loader	Scania	655	1	2	Two or more injectors with the same trim code, injector cyl. 5
5870	Wheel Loader	Scania	655	2	2	Injector trim code, checksum error injector cyl. 5
5872	Wheel Loader	Scania	655	4	2	Injector 5 cable short circuit to ground
5873	Wheel Loader	Cummins	655	5	2	Injector Solenoid Driver Cylinder 5 Circuit - Current below normal or open circuit
5874	Wheel Loader	Scania	655	5	2	Injector cyl. 5 cable/injector open load
5875	Wheel Loader	Scania	655	6	2	Injector cyl. 5 cable/injector short circuit
5876	Wheel Loader	Cummins	655	7	2	Injector Solenoid Driver Cylinder 5 - Mechanical system not responding or out of adjustment
5877	Wheel Loader	Scania	655	7	2	Injection error, physical cylinder 5
5878	Wheel Loader	Scania	655	8	2	Injector cyl. 5, over or under fueling
5865	Wheel Loader	Scania	655	10	2	Fault with sensors/actuators for the particulate filter
5866	Wheel Loader	Scania	655	13	2	Injector trim code version error, injector cyl. 5
5867	Wheel Loader	Scania	655	15	2	Cylinder 5 torque error
5868	Wheel Loader	Scania	655	16	2	Cylinder 5 injector fault, high torque
5869	Wheel Loader	Scania	655	18	2	Cylinder 5 injector fault, low torque
5871	Wheel Loader	Scania	655	20	2	Cylinder 5 balancing min or max
5879	Wheel Loader	Scania	656	1	2	Two or more injectors with the same trim code, injector cyl. 6
5884	Wheel Loader	Scania	656	2	2	Injector trim code, checksum error injector cyl. 6
5886	Wheel Loader	Cummins	656	5	2	Injector Solenoid Driver Cylinder 6 Circuit - Current below normal or open circuit
5887	Wheel Loader	Scania	656	5	2	Injector cyl. 6 cable/injector open load
5888	Wheel Loader	Scania	656	6	2	Injector cyl. 6 cable/injector short circuit
5889	Wheel Loader	Cummins	656	7	2	Injector Solenoid Driver Cylinder 6 - Mechanical system not responding or out of adjustment
5890	Wheel Loader	Scania	656	7	2	Injection error, physical cylinder 6
5891	Wheel Loader	Scania	656	8	2	Injector cyl. 6, over or under fueling
5880	Wheel Loader	Scania	656	13	2	Injector trim code version error, injector cyl. 6
5881	Wheel Loader	Scania	656	15	2	Cylinder 6 torque error
5882	Wheel Loader	Scania	656	16	2	Cylinder 6 injector fault, high torque
5883	Wheel Loader	Scania	656	18	2	Cylinder 6 injector fault, low torque
5885	Wheel Loader	Scania	656	20	2	Cylinder 6 balancing min or max
5892	Wheel Loader	Scania	657	1	2	Two or more injectors with the same trim code, injector cyl. 7
5897	Wheel Loader	Scania	657	2	2	Injector trim code, checksum error injector cyl. 7
5899	Wheel Loader	Cummins	657	5	2	Injector Solenoid Driver Cylinder 7 Circuit - Current below normal or open circuit
5900	Wheel Loader	Scania	657	5	2	Injector cyl. 7 cable/injector open load
5901	Wheel Loader	Scania	657	6	2	Injector cyl. 7 cable/injector short circuit
5902	Wheel Loader	Scania	657	7	2	Injection error, physical cylinder 7
5903	Wheel Loader	Scania	657	8	2	Injector cyl. 7, over or under fueling
5893	Wheel Loader	Scania	657	13	2	Injector trim code version error, injector cyl. 7
5894	Wheel Loader	Scania	657	15	2	Cylinder 7 torque error
5895	Wheel Loader	Scania	657	16	2	Cylinder 7 injector fault, high torque
5896	Wheel Loader	Scania	657	18	2	Cylinder 7 injector fault, low torque
5898	Wheel Loader	Scania	657	20	2	Cylinder 7 balancing min or max
5904	Wheel Loader	Scania	658	1	2	Two or more injectors with the same trim code, injector cyl. 8
5909	Wheel Loader	Scania	658	2	2	Injector trim code, checksum error injector cyl. 8
5911	Wheel Loader	Cummins	658	5	2	Injector Solenoid Driver Cylinder 8 Circuit - Current below normal or open circuit
5912	Wheel Loader	Scania	658	5	2	Injector cyl. 8 cable/injector open load
5913	Wheel Loader	Scania	658	6	2	Injector cyl. 8 cable/injector short circuit
5914	Wheel Loader	Scania	658	7	2	Injection error, physical cylinder 8
5915	Wheel Loader	Scania	658	8	2	Injector cyl. 8, over or under fueling
5905	Wheel Loader	Scania	658	13	2	Injector trim code version error, injector cyl. 8
5906	Wheel Loader	Scania	658	15	2	Cylinder 8 torque error
5907	Wheel Loader	Scania	658	16	2	Cylinder 8 injector fault, high torque
5908	Wheel Loader	Scania	658	18	2	Cylinder 8 injector fault, low torque
5910	Wheel Loader	Scania	658	20	2	Cylinder 8 balancing min or max
5916	Wheel Loader	Cummins	659	5	2	Injector Solenoid Driver Cylinder 9 Circuit - Current below normal or open circuit
5917	Wheel Loader	Cummins	660	5	2	Injector Solenoid Driver Cylinder 10 Circuit - Current below normal or open circuit

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
5918	Wheel Loader	Cummins	661	5	2	Injector Solenoid Driver Cylinder 11 Circuit - Current below normal or open circuit
5919	Wheel Loader	Cummins	662	5	2	Injector Solenoid Driver Cylinder 12 Circuit - Current below normal or open circuit
5920	Wheel Loader	Cummins	663	5	2	Injector Solenoid Driver Cylinder 13 Circuit - Current below normal or open circuit
5921	Wheel Loader	Cummins	664	5	2	Injector Solenoid Driver Cylinder 14 Circuit - Current below normal or open circuit
5922	Wheel Loader	Cummins	665	5	2	Injector Solenoid Driver Cylinder 15 Circuit - Current below normal or open circuit
5923	Wheel Loader	Cummins	666	5	2	Injector Solenoid Driver Cylinder 16 Circuit - Current below normal or open circuit
5925	Wheel Loader	Perkins	676	5	3	Engine Glow Plug Relay: Current Below Normal
5926	Wheel Loader	Perkins	676	6	3	Engine Glow Plug Relay: Current Above Normal
5924	Wheel Loader	Perkins	676	19	4	Engine Glow Plug Relay: Data Error
5927	Wheel Loader	Scania	677	0	4	Unintentional starter activation while moving or idling
5929	Wheel Loader	Scania	677	2	4	Starter actuator, faulty
5930	Wheel Loader	Cummins	677	3	3	Starter Relay Driver Circuit - Voltage above normal, or shorted to high source
5931	Wheel Loader	Perkins	677	3	3	Engine Starter Motor Relay : Voltage Above Normal
5932	Wheel Loader	Scania	677	3	3	Starter actuator, short circuit to +24V
5933	Wheel Loader	Cummins	677	4	3	Starter Relay Driver Circuit - Voltage below normal, or shorted to low source
5934	Wheel Loader	Scania	677	4	3	Starter actuator, short circuit to ground
5935	Wheel Loader	Perkins	677	5	3	Engine Starter Motor Relay: Current Below Normal
5936	Wheel Loader	Scania	677	5	3	Starter actuator, open load
5937	Wheel Loader	Perkins	677	6	3	Engine Starter Motor Relay : Current Above Normal
5938	Wheel Loader	Scania	677	7	4	Starter actuator, blind start
5928	Wheel Loader	Scania	677	19	4	Starter motor demand defect via CAN
5939	Wheel Loader	Perkins	678	3	3	ECU 8V DC Supply : Voltage Above Normal
5940	Wheel Loader	Perkins	678	4	3	ECU 8V DC Supply : Voltage Below Normal
5941	Wheel Loader	Cummins	697	3	3	Auxiliary PWM Driver 1 Circuit - Voltage above normal, or shorted to high source
5942	Wheel Loader	Cummins	697	4	3	Auxiliary PWM Driver 1 Circuit - Voltage below normal, or shorted to low source
5944	Wheel Loader	*	701	4	4	Hour-Meter-Voltage Below Normal, Or Shorted To Low Source
5943	Wheel Loader	Cummins	701	14	3	Auxiliary Input/Output 1 - Special Instructions
5945	Wheel Loader	Cummins	702	3	3	Auxiliary Input/Output 2 Circuit - Voltage above normal, or shorted to high source
5946	Wheel Loader	Cummins	702	5	3	Auxiliary Input/Output 2 Circuit - Current below normal or open circuit
5947	Wheel Loader	Cummins	702	6	3	Auxiliary Input/Output 2 Circuit - Current above normal or grounded circuit
5950	Wheel Loader	Cummins	703	3	3	Auxiliary Input/Output 3 Circuit - Voltage above normal, or shorted to high source
5948	Wheel Loader	Cummins	703	11	3	Warning Auxiliary Equipment Sensor Input # 3 (OEM Switch) - Root Cause Not Known
5949	Wheel Loader	Cummins	703	14	2	Auxiliary Equipment Sensor Input 3 Engine Protection Critical - Special Instructions
5951	Wheel Loader	*	705	0	1	(MCU Input)Battery Voltage-Data Valid But Above Normal Operational Range
5952	Wheel Loader	*	705	1	1	(MCU Input)Battery Voltage-Data Valid But Below Normal Operational Range
5953	Wheel Loader	*	706	*	4	(Warning) Battery Voltage Low
5954	Wheel Loader	*	707	1	4	Alternator Voltage-Data Valid But Below Normal Operational Range
5955	Wheel Loader	*	709	*	5	Warning Symbol Lamp
5956	Wheel Loader	Cummins	709	*	5	Warning Symbol Lamp
5957	Wheel Loader	*	714	3	2	Acceleration Dial Voltage-Voltage Above Normal, Or Shorted To High Source
5958	Wheel Loader	*	714	4	2	Acceleration Dial Voltage-Voltage Below Normal, Or Shorted To Low Source
5959	Wheel Loader	*	715	3	4	Rotate Signal Input Voltage-Voltage Above Normal, Or Shorted To High Source
5960	Wheel Loader	*	715	4	4	Rotate Signal Input Voltage-Voltage Below Normal, Or Shorted To Low Source
5961	Wheel Loader	*	716	3	4	Tilt Signal Input Voltage-Voltage Above Normal, Or Shorted To High Source
5962	Wheel Loader	*	716	4	4	Tilt Signal Input Voltage-Voltage Below Normal, Or Shorted To Low Source
5963	Wheel Loader	*	722	3	4	Travel Alarm Buzzer-Voltage Above Normal, Or Shorted To High Source
5964	Wheel Loader	*	722	4	4	Travel Alarm Buzzer-Voltage Below Normal, Or Shorted To Low Source
5965	Wheel Loader	*	722	6	2	Travel Alarm Buzzer-Current Above Normal Or Grounded Circuit
5968	Wheel Loader	Cummins	723	2	3	Engine Camshaft Speed / Position Sensor - Data erratic, intermittent or incorrect
5969	Wheel Loader	Scania	723	2	3	Engine position sensor 2, faulty
5970	Wheel Loader	*	723	3	4	Buzzer-Voltage Above Normal, Or Shorted To High Source
5971	Wheel Loader	*	723	4	4	Buzzer-Voltage Below Normal, Or Shorted To Low Source
5972	Wheel Loader	Scania	723	4	4	Engine position sensor 2, too weak signal
5973	Wheel Loader	Cummins	723	7	3	Engine Speed / Position Camshaft and Crankshaft Misalignment - Mechanical system not responding or out of adjustment
5974	Wheel Loader	Scania	723	7	3	Engine position sensor 2, faulty
5975	Wheel Loader	Perkins	723	8	3	Engine Speed Sensor #2 : Abnormal Frequency, Pulse Width, or Period
5976	Wheel Loader	Scania	723	8	3	Engine position sensor 2, Gap Puls or Sync error
5977	Wheel Loader	Scania	723	9	4	Engine position sensor 2, Time out
5966	Wheel Loader	Scania	723	10	3	Engine position sensor 2, position diff
5967	Wheel Loader	Scania	723	14	3	Engine position sensor 2 error torque limit
5978	Wheel Loader	*	727	4	4	Wiper Relay-Voltage Below Normal, Or Shorted To Low Source
5979	Wheel Loader	*	727	6	4	Wiper Relay-Current Above Normal Or Grounded Circuit
5980	Wheel Loader	*	728	3	4	Boom Link Angle Sensor Signal Voltage-Voltage Above Normal, Or Shorted To High Source
5981	Wheel Loader	*	728	4	4	Boom Link Angle Sensor Signal Voltage-Voltage Below Normal, Or Shorted To Low Source
5982	Wheel Loader	*	729	3	4	Bell Crank Angle Sensor Signal Voltage-Voltage Above Normal, Or Shorted To High Source
5983	Wheel Loader	Cummins	729	3	4	Engine Intake Air Heater 1 Circuit - Voltage above normal, or shorted to high source
5984	Wheel Loader	*	729	4	4	Bell Crank Angle Sensor Signal Voltage-Voltage Below Normal, Or Shorted To Low Source
5985	Wheel Loader	Cummins	729	4	4	Engine Intake Air Heater 1 Circuit - Voltage below normal, or shorted to low source
5988	Wheel Loader	Cummins	730	3	4	Intake Air Heater 2 Circuit - Voltage Above Normal, or Shorted to High Source
5989	Wheel Loader	Cummins	730	4	4	Intake Air Heater 2 Circuit - Voltage Below Normal, or Shorted to Low Source
5986	Wheel Loader	*	730	12	4	MCU Internal Memory Status-Bad Intelligent Device Or Component
5987	Wheel Loader	*	730	19	4	APTC Heater PWM Output Duty-Received Network Data In Error
5990	Wheel Loader	*	739	2	5	Armrest Switch Signal Error
5991	Wheel Loader	Cummins	748	9	5	Transmission Output Retarder - Abnormal update rate
5992	Wheel Loader	*	840	2	4	Cluster Communication Status-Data Erratic, Intermittent Or Incorrect
5993	Wheel Loader	*	841	2	1	ECM Communication Status-Data Erratic, Intermittent Or Incorrect
5994	Wheel Loader	*	842	2	1	TCU Communication Status-Data Erratic, Intermittent Or Incorrect
5995	Wheel Loader	*	843	2	4	A/C Controller Communication Status-Data Erratic, Intermittent Or Incorrect

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
5996	Wheel Loader	*	844	2	4	Monitor Communication Status-Data Erratic, Intermittent Or Incorrect
5997	Wheel Loader	*	845	2	4	I/O Controller 1 Communication Status-Data Erratic, Intermittent Or Incorrect
5998	Wheel Loader	*	848	2	4	Haptic Controller or Jog Dial Module Communication Status Data Erratic, Intermittent Or Incorrect
5999	Wheel Loader	*	850	2	4	RMCU Status-Data Erratic, Intermittent Or Incorrect
6000	Wheel Loader	*	861	2	4	EHCU Communication Status-Data Erratic, Intermittent Or Incorrect
6001	Wheel Loader	Cummins	862	3	5	Crankcase Breather Filter Heater Circuit - Voltage above normal, or shorted to high source
6002	Wheel Loader	Cummins	862	4	5	Crankcase Breather Filter Heater Circuit - Voltage below normal, or shorted to low source
6003	Wheel Loader	*	866	2	4	AAVM Communication Status-Data Erratic, Intermittent Or Incorrect
6004	Wheel Loader	*	867	2	4	RDU Communication Status-Data Erratic, Intermittent Or Incorrect
6005	Wheel Loader	*	868	2	4	Switch Controller Communication Status-Data Erratic, Intermittent Or Incorrect
6006	Wheel Loader	*	869	2	4	KCU Communication Status-Data Erratic, Intermittent Or Incorrect
6007	Wheel Loader	*	879	2	4	AVCU Communication Status-Data Erratic, Intermittent Or Incorrect
6008	Wheel Loader	*	897	2	4	PCU Communication Status-Data Erratic, Intermittent Or Incorrect
6009	Wheel Loader	*	900	2	5	MGS(Bucket) Communication Status-Data Erratic, Intermittent Or Incorrect
6010	Wheel Loader	*	901	2	5	MGS(Arm) Communication Status-Data Erratic, Intermittent Or Incorrect
6011	Wheel Loader	*	902	2	5	MGS(Boom) Communication Status-Data Erratic, Intermittent Or Incorrect
6012	Wheel Loader	*	903	2	5	MGS(Body) Communication Status-Data Erratic, Intermittent Or Incorrect
6013	Wheel Loader	*	904	2	2	Shift Lever Communication Status - Data Erratic, Intermittent Or Incorrect
6014	Wheel Loader	*	910	2	4	MGS Laser Communication Status-Data Erratic, Intermittent Or Incorrect
6015	Wheel Loader	*	923	2	5	Radar Sensor Connection Lost - Data Erratic, Intermittent Or Incorrect
6016	Wheel Loader	Cummins	931	7	3	Fuel Supply Pump Actuator – mechanically stuc
6017	Wheel Loader	Perkins	970	31	4	Engine Auxiliary Shutdown Switch
6018	Wheel Loader	Scania	974	0	4	Signal level from redundant gas pedal above high limit
6019	Wheel Loader	Scania	974	1	4	Signal level from redundant gas pedal below low limit
6021	Wheel Loader	Cummins	974	3	2	Remote Accelerator Pedal or Lever Position Sensor 1 Circuit - Voltage above normal, or shorted to high source
6022	Wheel Loader	Cummins	974	4	2	Remote Accelerator Pedal or Lever Position Sensor 1 Circuit - Voltage below normal, or shorted to low source
6020	Wheel Loader	Cummins	974	19	2	SAE J1939 Multiplexing Remote Accelerator Pedal or Lever Position Sensor System - Received Network Data In Error
6023	Wheel Loader	Cummins	976	2	4	Auxiliary Intermediate (PTO) Speed Switch Validation - Data erratic, intermittent or incorrect
6024	Wheel Loader	Perkins	976	2	4	PTO Governor State : Erratic, Intermittent, or Incorrect
6025	Wheel Loader	Scania	986	2	4	Fan actuator, faulty
6026	Wheel Loader	Scania	986	3	3	Fan actuator, short circuit to +24V
6027	Wheel Loader	Scania	986	4	3	Fan actuator, short circuit high to ground
6028	Wheel Loader	Scania	986	5	3	Fan actuator, open load
6029	Wheel Loader	Scania	986	7	4	Fan coupling unit, bad performance
6030	Wheel Loader	Perkins	1041	2	4	Start Signal Indicator: Erratic, Intermittent, or Incorrect
6031	Wheel Loader	Cummins	1072	3	3	Engine Brake Actuator Driver 1 Circuit - Voltage above normal, or shorted to high source
6032	Wheel Loader	Cummins	1072	4	3	Engine Brake Actuator Driver 1 Circuit - Voltage below normal, or shorted to low source
6033	Wheel Loader	Cummins	1073	3	3	Engine Brake Actuator Driver Output 2 Circuit - Voltage above normal, or shorted to high source
6034	Wheel Loader	Cummins	1073	4	3	Engine Brake Actuator Driver Output 2 Circuit - Voltage below normal, or shorted to low source
6035	Wheel Loader	Cummins	1075	3	3	Electric Lift Pump for Engine Fuel Supply Circuit - Voltage above normal, or shorted to high source
6036	Wheel Loader	Cummins	1075	4	3	Electric Lift Pump for Engine Fuel Supply Circuit - Voltage below normal, or shorted to low source
6037	Wheel Loader	Perkins	1075	5	3	Engine Electric Lift Pump for Engine Fuel Supply : Current Below Normal
6038	Wheel Loader	Perkins	1075	6	3	Engine Electric Lift Pump for Engine Fuel Supply : Current Above Normal
6039	Wheel Loader	Perkins	1076	2	4	Engine Fuel Injection Pump Fuel Control Valve: Erratic, Intermittent, or Incorrect
6040	Wheel Loader	Perkins	1076	5	3	Engine Fuel Injection Pump Fuel Control Valve: Current Below Normal
6041	Wheel Loader	Perkins	1076	6	3	Engine Fuel Injection Pump Fuel Control Valve : Current Above Normal
6044	Wheel Loader	Perkins	1081	5	3	Engine Wait to Start Lamp : Current Below Normal
6045	Wheel Loader	Perkins	1081	6	3	Engine Wait to Start Lamp : Current Above Normal
6046	Wheel Loader	Cummins	1081	7	3	Engine Wait to Start Lamp - Mechanical system not responding or out of adjustment
6047	Wheel Loader	Cummins	1081	9	4	Engine Wait to Start Lamp - Abnormal update rate
6042	Wheel Loader	Cummins	1081	19	4	Engine Wait to Start Lamp - Received Network Data In Error
6043	Wheel Loader	Cummins	1081	31	4	Engine Wait to Start Lamp - Condition Exists
6048	Wheel Loader	Scania	1086	2	5	Electrical fault on the parking brake pressure sensor
6049	Wheel Loader	Scania	1108	14	5	Overridden due to other fault
6050	Wheel Loader	Cummins	1109	0	5	Engine Protection System Approaching Shutdown - Data valid but above normal operational range - Most
6051	Wheel Loader	Scania	1110	14	4	Engine Stop due to other fault
6052	Wheel Loader	Perkins	1110	31	5	Engine Protection System has Shutdown Engine
6053	Wheel Loader	Cummins	1112	3	3	Engine Brake Actuator Driver 3 Circuit - Voltage above normal, or shorted to high source
6054	Wheel Loader	Cummins	1112	4	3	Engine Brake Actuator Driver Output 3 Circuit - Voltage below normal, or shorted to low source
6057	Wheel Loader	Cummins	1127	7	3	Engine Turbocharger 1 Boost Pressure - Mechanical system not responding or out of adjustment
6055	Wheel Loader	Perkins	1127	16	3	Engine Turbocharger 1 Boost Pressure : High - moderate severity (2)
6056	Wheel Loader	Perkins	1127	18	3	Engine Turbocharger 1 Boost Pressure: Low - moderate severity (2)
6058	Wheel Loader	Cummins	1136	2	4	Engine ECU Temperature - Data erratic, intermittent or incorrect
6059	Wheel Loader	Cummins	1136	3	3	Engine ECU Temperature Sensor Circuit - Voltage above normal, or shorted to high source
6060	Wheel Loader	Cummins	1136	4	3	Engine ECU Temperature Sensor Circuit - Voltage below normal, or shorted to low source
6062	Wheel Loader	Cummins	1172	2	3	Turbocharger 1 Compressor Intake Temperature - Data erratic, intermittent or incorrect
6063	Wheel Loader	Cummins	1172	3	3	Turbocharger 1 Compressor Intake Temperature Circuit - Voltage above normal, or shorted to high source

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
6064	Wheel Loader	Cummins	1172	4	3	Turbocharger 1 Compressor Intake Temperature Circuit - Voltage below normal, or shorted to low source
6065	Wheel Loader	Cummins	1172	9	3	Turbocharger 1 Compressor Intake Temperature Sensor - Abnormal update rate
6061	Wheel Loader	Cummins	1172	19	3	Turbocharger 1 Compressor Intake Temperature Sensor - Received Network Data In Error
6066	Wheel Loader	Cummins	1176	1	3	Turbocharger 1 Compressor Intake Pressure - Data valid but below normal operational range - Most Severe Level
6069	Wheel Loader	Cummins	1176	2	3	Turbocharger 1 Compressor Intake Pressure - Data erratic, intermittent or incorrect
6070	Wheel Loader	Cummins	1176	3	3	Turbocharger 1 Compressor Intake Pressure Circuit - Voltage above normal, or shorted to high source
6071	Wheel Loader	Cummins	1176	4	3	Turbocharger 1 Compressor Intake Pressure Circuit - Voltage below normal, or shorted to low source
6072	Wheel Loader	Cummins	1176	9	3	Turbocharger 1 Compressor Intake Pressure - Abnormal update rate
6067	Wheel Loader	Cummins	1176	18	3	Turbocharger 1 Compressor Intake Pressure - Data Valid But Below Normal Operating Range - Moderately
6068	Wheel Loader	Cummins	1176	19	3	Turbocharger 1 Compressor Intake Pressure - Received Network Data In Error
6073	Wheel Loader	Perkins	1188	5	3	Engine Turbocharger Wastegate Actuator 1 Position : Current Below Normal
6074	Wheel Loader	Perkins	1188	6	3	Engine Turbocharger Wastegate Actuator 1 Position : Current Above Normal
6075	Wheel Loader	Cummins	1189	3	3	Engine Turbocharger Wastegate Actuator 2 Position Circuit - Voltage Above Normal or Shorted to High Source
6076	Wheel Loader	Cummins	1189	4	3	Engine Turbocharger Wastegate Actuator 2 Position Circuit - Voltage Below Normal or Shorted to Low Source
6077	Wheel Loader	Cummins	1194	13	2	Anti-theft Encryption Seed - Out of Calibration
6078	Wheel Loader	Cummins	1195	2	2	Antitheft Password Valid Indicator - Data erratic, intermittent or incorrect
6079	Wheel Loader	Yanmar	1202	2	2	Immobilizer error (system)
6083	Wheel Loader	Cummins	1209	2	4	Exhaust Gas Pressure 1 - Data erratic, intermittent or incorrect
6084	Wheel Loader	Cummins	1209	3	3	Exhaust Gas Pressure Sensor 1 Circuit - Voltage above normal, or shorted to high source
6085	Wheel Loader	Perkins	1209	3	3	Engine Exhaust Gas Pressure: Voltage Above Normal
6086	Wheel Loader	Yanmar	1209	3	3	EGR high pressure side pressure sensor error (voltage high)
6087	Wheel Loader	Cummins	1209	4	3	Exhaust Gas Pressure Sensor 1 Circuit - Voltage below normal, or shorted to low source
6088	Wheel Loader	Perkins	1209	4	3	Engine Exhaust Gas Pressure: Voltage Below Normal
6089	Wheel Loader	Yanmar	1209	4	3	EGR high pressure side pressure sensor error (voltage low)
6080	Wheel Loader	Yanmar	1209	13	2	EGR high pressure side pressure sensor error (abnormal learning value)
6081	Wheel Loader	Cummins	1209	15	3	Exhaust Pressure 1 - Data Valid But Above Normal Operating Range - Least Severe Level
6082	Wheel Loader	Cummins	1209	16	3	Exhaust Gas Pressure 1 - Data Valid But Above Normal Operating Range - Moderately Severe Level
6090	Wheel Loader	Cummins	1213	9	4	Malfunction Indicator Lamp - Abnormal update rate
6092	Wheel Loader	Perkins	1221	2	4	Continuously Monitored Systems Support/Status ; Erratic, Intermittent, or Incorrect
6091	Wheel Loader	Perkins	1221	14	4	Continuously Monitored Systems Support/Status ; Special Instruction
6093	Wheel Loader	Cummins	1231	2	4	J1939 Network #2 - Data erratic, intermittent or incorrect
6095	Wheel Loader	Cummins	1235	2	4	J1939 Network #3 - Data erratic, intermittent or incorrect
6096	Wheel Loader	Perkins	1235	9	2	J1939 Network #3 - Abnormal Update Rate
6094	Wheel Loader	Perkins	1235	14	2	J1939 Network #3 - Special Instruction
6097	Wheel Loader	Perkins	1239	0	1	Engine Fuel Leakage 1 : High - most severe (3)
6099	Wheel Loader	Scania	1239	7	4	Fuel Rail pressure, small volume leak
6098	Wheel Loader	Cummins	1239	16	2	Engine Fuel Leakage - Data Valid But Above Normal Operating Range - Moderately Severe Level
6100	Wheel Loader	Cummins	1267	3	3	Idle Shutdown Vehicle Accessories Relay Driver Circuit - Voltage above normal, or shorted to high source
6101	Wheel Loader	Cummins	1267	4	3	Idle Shutdown Vehicle Accessories Relay Driver Circuit - Voltage below normal, or shorted to low source
6102	Wheel Loader	Cummins	1279	4	3	Ignition Coil Cylinder 12 - Voltage Below Normal or Shorted to Low Source
6103	Wheel Loader	Perkins	1279	5	3	Engine Ignition Coil #12
6105	Wheel Loader	Scania	1322	7	2	Random/Multiple Cylinder Misfire Detected
6104	Wheel Loader	Cummins	1322	31	2	Engine Misfire for Multiple Cylinders - Condition Exists
6107	Wheel Loader	Scania	1323	7	2	Cylinder 1 Misfire Detected
6106	Wheel Loader	Cummins	1323	31	2	Engine Misfire Cylinder 1 - Condition Exists
6109	Wheel Loader	Scania	1324	7	2	Cylinder 2 Misfire Detected
6108	Wheel Loader	Cummins	1324	31	2	Engine Misfire Cylinder 2 - Condition Exists
6111	Wheel Loader	Scania	1325	7	2	Cylinder 3 Misfire Detected
6110	Wheel Loader	Cummins	1325	31	2	Engine Misfire Cylinder 3 - Condition Exists
6113	Wheel Loader	Scania	1326	7	2	Cylinder 4 Misfire Detected
6112	Wheel Loader	Cummins	1326	31	2	Engine Misfire Cylinder 4 - Condition Exists
6115	Wheel Loader	Scania	1327	7	2	Cylinder 5 Misfire Detected
6114	Wheel Loader	Cummins	1327	31	2	Engine Misfire Cylinder 5 - Condition Exists
6116	Wheel Loader	Cummins	1328	31	2	Engine Misfire Cylinder 6 - Condition Exists
6117	Wheel Loader	Cummins	1347	3	3	Engine Fuel Pump Pressurizing Assembly 1 Circuit - Voltage above normal, or shorted to high source
6118	Wheel Loader	Cummins	1347	4	3	Engine Fuel Pump Pressurizing Assembly 1 Circuit - Voltage below normal, or shorted to low source
6119	Wheel Loader	Cummins	1347	7	3	Engine Fuel Pump Pressurizing Assembly 1 - Mechanical system not responding or out of adjustment
6120	Wheel Loader	Cummins	1349	3	3	Injector Metering Rail 2 Pressure Sensor Circuit - Voltage above normal, or shorted to high source
6121	Wheel Loader	Cummins	1349	4	3	Injector Metering Rail 2 Pressure Sensor Circuit - Voltage below normal, or shorted to low source
6122	Wheel Loader	Cummins	1377	2	4	Multiple Unit Synchronization Switch - Data erratic, intermittent or incorrect
6123	Wheel Loader	Cummins	1378	31	5	Engine Oil Change Interval - Condition Exists
6124	Wheel Loader	Cummins	1383	31	3	Engine Shut Down Hot - Condition Exists
6125	Wheel Loader	Cummins	1384	4	4	Engine Shutdown Commanded by J1939

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
6126	Wheel Loader	Cummins	1387	3	3	Auxiliary Pressure Sensor Input 1 Circuit - Voltage above normal, or shorted to high source
6127	Wheel Loader	Cummins	1387	4	3	Auxiliary Pressure Sensor Input 1 Circuit - Voltage below normal, or shorted to low source
6129	Wheel Loader	Cummins	1388	3	3	Auxiliary Pressure Sensor Input 2 Circuit - Voltage above normal, or shorted to high source
6130	Wheel Loader	Cummins	1388	4	3	Auxiliary Pressure Sensor Input 2 Circuit - Voltage below normal, or shorted to low source
6128	Wheel Loader	Cummins	1388	14	3	Auxiliary Pressure Sensor Input 2 - Special Instructions
6132	Wheel Loader	Scania	1442	2	4	Inlet metering valve 1, faulty
6133	Wheel Loader	Scania	1442	3	3	Inlet metering valve 1, short circuit to +24V
6134	Wheel Loader	Scania	1442	5	3	Inlet metering valve 1, short circuit to ground
6135	Wheel Loader	Scania	1442	7	4	Inlet metering valve 1, stuck
6136	Wheel Loader	Scania	1442	8	4	Inlet metering valve 1, plausible leakage
6131	Wheel Loader	Scania	1442	10	5	Inlet metering valve 1, calculated resistance error
6137	Wheel Loader	Scania	1443	1	3	Mechanical dump dalve, opened
6138	Wheel Loader	Scania	1443	6	3	Mechanical dump valve, tripped
6141	Wheel Loader	Scania	1483	2	3	EMS internal error
6142	Wheel Loader	Scania	1483	8	3	EMS Memory or TPU Error
6143	Wheel Loader	Scania	1483	9	3	Camshaft TPU Supervision Error
6139	Wheel Loader	Scania	1483	11	4	Software Watchdog Reset
6140	Wheel Loader	Scania	1483	12	4	Hardware watchdog error
6151	Wheel Loader	Scania	1484	9	4	CAN message DLN1 from coordinator timeout
6144	Wheel Loader	Scania	1484	10	4	CAN message CRUISE CONTROL/ VEHICLE SPEED from coordinator timeout
6145	Wheel Loader	Scania	1484	16	5	CAN message from EMSX, invalid data
6146	Wheel Loader	Scania	1484	18	4	CAN message from EMSX, invalid data
6147	Wheel Loader	Scania	1484	19	4	CAN message DLN6 from coordinator timeout
6148	Wheel Loader	Scania	1484	20	4	CAN message timout from EMSX
6149	Wheel Loader	Scania	1484	21	4	CAN message timout from EMSX
6150	Wheel Loader	Cummins	1484	31	3	Additional Auxiliary Diagnostic Codes logged - Condition Exists
6155	Wheel Loader	Yanmar	1485	2	4	main relay early opening
6156	Wheel Loader	Perkins	1485	7	3	ECM Main Relay: Not Responding Properly
6157	Wheel Loader	Yanmar	1485	7	3	Main relay contact sticking
6152	Wheel Loader	Perkins	1485	14	3	ECM Main relay: Special Instruction
6153	Wheel Loader	Scania	1485	16	5	SCR main unit, power switched off too early
6154	Wheel Loader	Scania	1485	18	4	SCR main unit, power switched off too late
6158	Wheel Loader	Cummins	1563	2	4	Control Module Identification Input State Error - Data erratic, intermittent or incorrect
6159	Wheel Loader	Cummins	1569	14	2	Engine Protection Torque Derate - Special Instructions
6160	Wheel Loader	Scania	1569	14	3	Torque reduction due to other fault
6161	Wheel Loader	Cummins	1569	31	2	Engine Protection Torque Derate - Condition Exists
6162	Wheel Loader	Cummins	1590	2	4	Adaptive Cruise Control Mode - Data erratic, intermittent or incorrect
6165	Wheel Loader	Cummins	1623	9	4	Tachograph Output Shaft Speed - Abnormal update rate
6163	Wheel Loader	Cummins	1623	13	4	Tachograph Output Shaft Speed - Out of Calibration
6164	Wheel Loader	Cummins	1623	19	4	Tachograph Output Shaft Speed - Received Network Data In Error
6166	Wheel Loader	Cummins	1632	14	3	Engine Torque Limit Feature - Special Instructions
6167	Wheel Loader	Cummins	1632	31	2	Engine Torque Limit Feature - Condition Exists
6168	Wheel Loader	Cummins	1639	0	3	Fan Speed - Data Valid but Above Normal Operational Range - Most Severe Level
6169	Wheel Loader	Cummins	1639	1	4	Fan Speed - Data Valid but Below Normal Operational Range - Most Severe Level
6173	Wheel Loader	Cummins	1639	2	4	Fan Speed- Data Erratic, Intermittent, or Incorrect
6174	Wheel Loader	Scania	1639	3	3	Fan speed sensor, short circuit to +24V
6175	Wheel Loader	Scania	1639	4	3	Fan speed sensor supply too low
6176	Wheel Loader	Scania	1639	8	3	Fan speed sensor circuit no signal
6170	Wheel Loader	Cummins	1639	15	4	Fan Speed - Data Valid but Above Normal Operational Range - Most Severe Level
6171	Wheel Loader	Cummins	1639	17	4	Fan Speed - Data Valid but Below Normal Operational Range - Most Severe Level
6172	Wheel Loader	Perkins	1639	17	4	Fan Speed : Low - least severe(1)
6177	Wheel Loader	Cummins	1661	4	3	Engine Automatic Start Lamp Driver Circuit - Voltage Above Normal, or Shorted to High Source
6178	Wheel Loader	Cummins	1668	2	4	J1939 Network #4 - Data erratic, intermittent or incorrect
6182	Wheel Loader	Scania	1675	2	5	Immobiliser - EMS and EMSX
6184	Wheel Loader	Scania	1675	9	5	Invalid Data Received From Vehicle Control Module
6179	Wheel Loader	Scania	1675	12	5	Immobiliser error
6180	Wheel Loader	Scania	1675	13	5	Software Incompatibility With Vehicle Immoblilizer Control Module
6181	Wheel Loader	Scania	1675	19	5	Lost Communication With Vehicle Immobilizer Control Module
6183	Wheel Loader	Cummins	1675	31	5	Engine Starter Mode Overcrank Protection - Condition Exists
6185	Wheel Loader	Cummins	1761	1	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Level - Data valid but below normal operational range -Most Severe Level
6186	Wheel Loader	Perkins	1761	1	3	Catalyst Tank Level : Low - most severe (3)
6187	Wheel Loader	Scania	1761	1	3	Reductant tank, empty
6200	Wheel Loader	Cummins	1761	2	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Level Sensor - Data erratic, intermittent or incorrect
6201	Wheel Loader	Perkins	1761	2	3	Aftertreatment #1 Diesel Exhaust Fluid Tank Level : Erratic Intermittent or Incorrect
6202	Wheel Loader	Scania	1761	2	3	Reductant tank level sensor, short circuit to ground
6203	Wheel Loader	Cummins	1761	3	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Level Sensor Circuit - Voltage above normal, or shorted to high source
6204	Wheel Loader	Scania	1761	3	3	Reductant tank level sensor, short circuit to +24V
6205	Wheel Loader	Cummins	1761	4	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Level Sensor Circuit - Voltage below normal, or shorted to low source
6206	Wheel Loader	Scania	1761	4	3	Fault in the reductant level sensor.
6207	Wheel Loader	Cummins	1761	5	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Level Sensor Circuit - Current below normal or open circuit
6208	Wheel Loader	Scania	1761	5	3	Reductant tank level sensor, open circuit

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6209	Wheel Loader	Cummins	1761	6	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Level Sensor Circuit - Current above normal or grounded circuit
6210	Wheel Loader	Scania	1761	6	3	Fault on voltage supply to reductant pick-up unit.
6211	Wheel Loader	Scania	1761	8	3	The reductant level in the reductant tank is falling too quickly.
6212	Wheel Loader	Cummins	1761	9	3	SAE J1939 Multiplexing PGN Timeout Error - Abnormal update rate
6188	Wheel Loader	Cummins	1761	10	4	Aftertreatment 1 Diesel Exhaust Fluid Tank Level Sensor - Abnormal Rate of Change
6189	Wheel Loader	Scania	1761	10	4	The consumption of reductant is low.
6190	Wheel Loader	Cummins	1761	11	4	Aftertreatment 1 Diesel Exhaust Fluid Tank Level Sensor - Root Cause Not Known
6191	Wheel Loader	Perkins	1761	12	3	Aftertreatment #1 Diesel Exhaust Fluid Tank Level : Failure
6192	Wheel Loader	Cummins	1761	13	4	Aftertreatment 1 Diesel Exhaust Fluid Tank Level Sensor - Out of Calibration
6193	Wheel Loader	Cummins	1761	17	4	Aftertreatment 1 Diesel Exhaust Fluid Tank Level - Data Valid But Below Normal Operating Range - Least Severe Level
6194	Wheel Loader	Perkins	1761	17	4	Aftertreatment #1 DEF Tank Volume : Low - least severe (1)
6195	Wheel Loader	Scania	1761	17	4	The level of reductant in the reductant tank is low.
6196	Wheel Loader	Cummins	1761	18	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Level - Data Valid But Below Normal Operating Range - Moderately Severe Level
6197	Wheel Loader	Perkins	1761	18	3	Aftertreatment #1 DEF Tank Volume : Low - moderate severity (1)
6198	Wheel Loader	Scania	1761	18	3	Reductant tank, low level
6199	Wheel Loader	Scania	1761	19	4	CAN communication to the reductant pick-up unit is interrupted.
6213	Wheel Loader	Cummins	1800	16	3	Battery Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
6214	Wheel Loader	Cummins	1800	18	3	Battery Temperature - Data Valid But Below Normal Operating Range - Moderately Severe Level
6215	Wheel Loader	Cummins	1818	31	3	Roll Over Protection Brake Control Active - Condition Exists
6216	Wheel Loader	*	2000	1	5	RMS Step 1-Satellite/mobile communication link failure
6217	Wheel Loader	*	2000	5	5	RMS Step 0-Incorrect satellite/mobile antenna connection
6218	Wheel Loader	*	2001	1	5	RMS Step 1-GPS position update failure
6219	Wheel Loader	*	2001	5	5	RMS Step 0-Incorrect GPS antenna connection
6220	Wheel Loader	*	2002	1	5	RMS Step 2-Test message transmission failure
6222	Wheel Loader	*	2003	2	5	RMS Step 3-Failure in transmitting current gauge reply
6221	Wheel Loader	*	2003	19	5	RMS Step 3-Failure in receiving current gauge request
6223	Wheel Loader	*	2004	0	5	RMS Step 4
6224	Wheel Loader	*	2005	0	5	RMS Step 5
6225	Wheel Loader	Cummins	2006	9	4	Source Address 6 - Abnormal Update Rate
6226	Wheel Loader	*	2304	0	3	Boom Up EPPR Valve Input Value Above Normal Operation Range
6227	Wheel Loader	*	2304	1	3	Boom Up EPPR Valve Input Value Below Normal Operation Range
6229	Wheel Loader	*	2304	5	2	Boom Up EPPR Valve Input Current Below Normal or Open Circuit
6230	Wheel Loader	*	2304	6	2	Boom Up EPPR Valve Input Current Above Normal or Grounded Circuit
6228	Wheel Loader	*	2304	14	3	Boom Up EPPR Valve Block Parameter Invalid
6231	Wheel Loader	*	2305	0	3	Boom Down EPPR Valve Input Value Above Normal Operation Range
6232	Wheel Loader	*	2305	1	3	Boom Down EPPR Valve Input Value Below Normal Operation Range
6234	Wheel Loader	*	2305	5	2	Boom Down EPPR Valve Input Current Below Normal or Open Circuit
6235	Wheel Loader	*	2305	6	2	Boom Down EPPR Valve Input Current Above Normal or Grounded Circuit
6233	Wheel Loader	*	2305	14	3	Boom Down EPPR Valve Block Parameter Invalid
6236	Wheel Loader	*	2306	0	3	Bucket In EPPR Valve Input Value Above Normal Operation Range
6237	Wheel Loader	*	2306	1	3	Bucket In EPPR Valve Input Value Below Normal Operation Range
6239	Wheel Loader	*	2306	5	2	Bucket In EPPR Valve Input Current Below Normal or Open Circuit
6240	Wheel Loader	*	2306	6	2	Bucket In EPPR Valve Input Current Above Normal or Grounded Circuit
6238	Wheel Loader	*	2306	14	3	Bucket In EPPR Valve Block Parameter Invalid
6241	Wheel Loader	*	2307	0	3	Bucket Dump EPPR Valve Input Value Above Normal Operation Range
6242	Wheel Loader	*	2307	1	3	Bucket Dump EPPR Valve Input Value Below Normal Operation Range
6244	Wheel Loader	*	2307	5	2	Bucket Dump EPPR Valve Input Current Below Normal or Open Circuit
6245	Wheel Loader	*	2307	6	2	Bucket Dump EPPR Valve Input Current Above Normal or Grounded Circuit
6243	Wheel Loader	*	2307	14	3	Bucket Dump EPPR Valve Block Parameter Invalid
6246	Wheel Loader	*	2308	0	3	Aux. Up EPPR Valve Input Value Above Normal Operation Range
6247	Wheel Loader	*	2308	1	3	Aux. Up EPPR Valve Input Value Below Normal Operation Range
6249	Wheel Loader	*	2308	5	3	Aux. Up EPPR Valve Input Current Below Normal or Open Circuit
6250	Wheel Loader	*	2308	6	3	Aux. Up EPPR Valve Input Current Above Normal or Grounded Circuit
6248	Wheel Loader	*	2308	14	3	Aux. Up EPPR Valve Block Parameter Invalid
6251	Wheel Loader	*	2309	0	3	Aux. Down EPPR Valve Input Data Above Normal Operation Range
6252	Wheel Loader	*	2309	1	3	Aux. Down EPPR Valve Input Data Below Normal Operation Range
6254	Wheel Loader	*	2309	5	3	Aux. Down EPPR Valve Input Current Below Normal or Open Circuit
6255	Wheel Loader	*	2309	6	3	Aux. Down EPPR Valve Input Current Above Normal or Grounded Circuit
6253	Wheel Loader	*	2309	14	3	Aux. Down EPPR Valve Block Parameter Invalid
6256	Wheel Loader	*	2311	0	2	Boom Joystick Position Input Value Above Normal Operation Range
6257	Wheel Loader	*	2311	1	2	Boom Joystick Position Input Value Below Normal Operation Range
6260	Wheel Loader	*	2311	2	2	Boom Joystick Position Signal Error
6261	Wheel Loader	*	2311	3	2	Boom Joystick Position Input Voltage Above Normal or Shorted to High Source
6263	Wheel Loader	*	2311	4	2	Boom Joystick Position Input Voltage Below Normal or Shorted to Low Source
6258	Wheel Loader	*	2311	13	3	Boom Joystick Position Control Block Out of Calibration
6259	Wheel Loader	*	2311	14	3	Boom Joystick Position Control Block Parameter Invalid
6262	Wheel Loader	*	2311	31	3	Boom Joysitck Position Signal Redundancy Lost
6264	Wheel Loader	*	2313	0	2	Bucket Joystick Position Input Value Above Normal Operation Range
6265	Wheel Loader	*	2313	1	2	Bucket Joystick Position Input Value Below Normal Operation Range
6268	Wheel Loader	*	2313	2	2	Bucket Joystick Position Signal Error
6269	Wheel Loader	*	2313	3	2	Bucket Joystick Position Input Voltage Above Normal or Shorted to High Source
6271	Wheel Loader	*	2313	4	2	Bucket Joystick Position Input Voltage Below Normal or Shorted to Low Source
6266	Wheel Loader	*	2313	13	3	Bucket Joystick Position Control Block Out of Calibration
6267	Wheel Loader	*	2313	14	3	Bucket Joystick Position Control Block Parameter Invalid

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6270	Wheel Loader	*	2313	31	3	Bucket Joysitck Position Signal Redundancy Lost
6272	Wheel Loader	*	2315	0	3	Aux Joystick Position Input Value Above Normal Operation Range
6273	Wheel Loader	*	2315	1	3	Aux Joystick Position Input Value Below Normal Operation Range
6276	Wheel Loader	*	2315	2	3	Aux Joystick Position Signal Error
6277	Wheel Loader	*	2315	3	3	Aux Joystick Position Input Voltage Above Normal or Shorted to High Source
6279	Wheel Loader	*	2315	4	3	Aux Joystick Position Input Voltage Below Normal or Shorted to Low Source
6274	Wheel Loader	*	2315	13	3	Aux Joystick Position Control Block Out of Calibration
6275	Wheel Loader	*	2315	14	3	Aux Joystick Position Control Block Parameter Invalid
6278	Wheel Loader	*	2315	31	3	Aux Joysitck Position Signal Redundancy Lost
6280	Wheel Loader	*	2317	9	5	Communication Timeout between EHCU and Steering Joystick
6281	Wheel Loader	*	2319	2	5	Steering Joystick Position Signal Error
6282	Wheel Loader	*	2320	2	5	Steering Joystick - FNR Enable Switch Error
6283	Wheel Loader	*	2321	2	5	Steering Joystick - Foward Switch Error
6284	Wheel Loader	*	2322	2	5	Steering Joystick - Neutral Switch Error
6285	Wheel Loader	*	2323	2	5	Steering Joystick - Reverse Switch Error
6286	Wheel Loader	*	2324	2	5	Steering Joystick - Kick Down Switch Error
6287	Wheel Loader	*	2325	2	5	Steering Joystick - Steering On Switch Error
6288	Wheel Loader	*	2326	5	5	PVE Coil Power Current Below Normal or Open Circuit
6289	Wheel Loader	*	2326	6	5	PVE Coil Power Current Above Normal or Grounded Circuit
6290	Wheel Loader	*	2327	0	5	PVE Coil PWM Duty Cycle Input Value Above Normal Operation Range
6291	Wheel Loader	*	2327	1	5	PVE Coil PWM Duty Cycle Input Value Below Normal Operation Range
6293	Wheel Loader	*	2327	5	5	PVE Coil PWM Duty Cycle Current Below Normal or Open Circuit
6294	Wheel Loader	*	2327	6	5	PVE Coil PWM Duty Cycle Current Above Normal or Grounded Circuit
6292	Wheel Loader	*	2327	14	5	PVE Coil PWM Duty Cycle Control Block Parameter Invalid
6295	Wheel Loader	*	2328	0	2	EHCU Sensor Power Voltage High
6296	Wheel Loader	*	2328	1	2	EHCU Sensor Power Voltage Low
6297	Wheel Loader	*	2328	3	2	EHCU Sensor Power Voltage Above Normal or Shorted to High Source
6298	Wheel Loader	*	2328	4	2	EHCU Sensor Power Voltage Below Normal or Shorted to Low Source
6299	Wheel Loader	*	2328	6	3	EHI Safety Solenoid Valve Output Pin Open Circuit, Grounded Circuit or Low Resistance.
6300	Wheel Loader	*	2329	0	2	EHCU Power Voltage High
6301	Wheel Loader	*	2329	1	2	EHCU Power Voltage Low
6302	Wheel Loader	*	2329	11	2	EHCU Safety CPU Error
6303	Wheel Loader	*	2331	9	4	Communication Timeout between EHCU and MCU
6304	Wheel Loader	*	2332	9	2	Communication Timeout between EHCU and Working Joystick
6305	Wheel Loader	*	2333	9	5	Communication Timeout between EHCU and TCU
6306	Wheel Loader	*	2334	0	5	Steering Pilot Pressure Sensor Data Above Normal Range
6307	Wheel Loader	*	2334	1	5	Steering Pilot Pressure Sensor Data Below Normal Range
6309	Wheel Loader	*	2335	2	5	Steering Proportional Valve Moving Position Error
6308	Wheel Loader	*	2335	14	5	Steering Proportional Valve Start Position Error
6310	Wheel Loader	*	2345	0	3	Backpressure EPPR Valve Input Data Below Normal Operation Range
6311	Wheel Loader	*	2345	1	3	Backpressure EPPR Valve Input Data Above Normal Operation Range
6313	Wheel Loader	*	2345	5	3	Backpressure EPPR Valve Input Current Below Normal or Open Circuit
6314	Wheel Loader	*	2345	6	3	Backpressure EPPR Valve Current Above Normal or Grounded Circuit
6312	Wheel Loader	*	2345	14	3	Backpressure EPPR Valve Block Parameter Invalid
6316	Wheel Loader	*	2346	9	5	Communication Timeout between EHCU and SASA sensor
6315	Wheel Loader	*	2346	12	5	Inaccuracy of CRC value of SASA sensor CAN data
6317	Wheel Loader	Scania	2609	2	4	AC compressor actuator, faulty
6318	Wheel Loader	Scania	2609	3	3	AC compressor actuator, short circuit to +24V
6319	Wheel Loader	Scania	2609	4	3	AC compressor actuator, short circuit to ground
6320	Wheel Loader	Scania	2609	5	3	AC compressor actuator, open load
6321	Wheel Loader	Cummins	2623	3	3	Accelerator Pedal or Lever Position Sensor 2 Circuit - Voltage above normal, or shorted to high source
6322	Wheel Loader	Cummins	2623	4	3	Accelerator Pedal or Lever Position Sensor 2 Circuit - Voltage below normal, or shorted to low source
6323	Wheel Loader	Cummins	2629	15	3	Turbocharger Compressor Outlet Temperature (Calculated) - Data Valid But Above Normal Operating Range
6324	Wheel Loader	Cummins	2630	2	3	Engine Charge Air Cooler Outlet Temperature - Data erratic, intermittent or incorrect
6325	Wheel Loader	Cummins	2630	3	3	Engine Charge Air Cooler Outlet Temperature - Voltage above normal, or shorted to high source
6326	Wheel Loader	Cummins	2630	4	3	Engine Charge Air Cooler Outlet Temperature - Voltage below normal, or shorted to low source
6327	Wheel Loader	Cummins	2633	7	3	Engine VGT Nozzle Position - Mechanical system not responding or out of adjustment
6328	Wheel Loader	Cummins	2634	3	3	Power Relay Driver Circuit - Voltage above normal, or shorted to high source
6329	Wheel Loader	Cummins	2634	4	3	Power Relay Driver Circuit - Voltage below normal, or shorted to low source
6330	Wheel Loader	Perkins	2659	7	3	Engine Exhaust Gas Recirculation(EGR) Mass Flow Rate - Not Responding Properly
6331	Wheel Loader	Cummins	2789	0	3	Turbocharger Turbine Intake Temperature - Data Valid But Above Normal Operating Range - Most Severe Level
6332	Wheel Loader	Cummins	2789	15	3	Turbocharger Turbine Intake Temperature - Data Valid But Above Normal Operating Range - Least Severe
6333	Wheel Loader	Cummins	2789	16	3	Turbocharger Turbine Intake Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
6334	Wheel Loader	Yanmar	2791	0	3	EGR overvoltage error
6335	Wheel Loader	Yanmar	2791	1	3	EGR low voltage error
6342	Wheel Loader	Scania	2791	2	3	EGR actuator, control error
6345	Wheel Loader	Scania	2791	3	3	EGR actuator, short circuit to +24V

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6346	Wheel Loader	Scania	2791	4	3	EGR actuator, short circuit to ground
6347	Wheel Loader	Cummins	2791	5	3	EGR Valve Control Circuit - Current below normal or open circuit
6348	Wheel Loader	Perkins	2791	5	3	Engine Exhaust Gas Recirculation (EGR) Valve Control: Current Below Normal
6349	Wheel Loader	Scania	2791	5	3	EGR actuator, stuck open
6350	Wheel Loader	Cummins	2791	6	3	EGR Valve Control Circuit - Current above normal or grounded circuit
6351	Wheel Loader	Perkins	2791	6	3	Engine Exhaust Gas Recirculation (EGR) Valve Control: Current Above Normal
6352	Wheel Loader	Cummins	2791	7	3	EGR Valve Control Circuit - Mechanical System Not Responding or Out of Adjustment
6353	Wheel Loader	Perkins	2791	7	3	Engine Exhaust Gas Recirculation (EGR) Valve Control: Not Responding Properly
6354	Wheel Loader	Scania	2791	7	3	EGR actuator, stuck close
6355	Wheel Loader	Yanmar	2791	7	3	EGR feedback error
6356	Wheel Loader	Scania	2791	8	4	The EGR valve is responding too slow
6357	Wheel Loader	Cummins	2791	9	3	EGR Valve Control Circuit - Abnormal update rate
6358	Wheel Loader	Yanmar	2791	9	3	EGR ECM data error
6336	Wheel Loader	Scania	2791	10	3	NOx Exceedence - Incorrect EGR Flow
6337	Wheel Loader	Scania	2791	11	4	EGR system faulty
6338	Wheel Loader	Yanmar	2791	12	3	Disconnection in EGR motor coils
6339	Wheel Loader	Cummins	2791	13	4	EGR Valve Controller - Out of Calibration
6340	Wheel Loader	Cummins	2791	15	3	EGR Valve Control Circuit Over Temperature - Data Valid But Above Normal Operating Range - Least Severe Level
6341	Wheel Loader	Scania	2791	16	3	NOx Exceedence - Deactivation of EGR
6343	Wheel Loader	Scania	2791	20	3	EGR higher than desired
6344	Wheel Loader	Scania	2791	21	3	EGR lower than desired
6360	Wheel Loader	Scania	2797	2	4	Injector group A, short circuit to other bank
6361	Wheel Loader	Scania	2797	3	3	Injector group A, short circuit to +24V
6362	Wheel Loader	Scania	2797	4	3	Injector group A, short circuit to ground
6363	Wheel Loader	Scania	2797	5	3	Injector drive voltage, faulty
6364	Wheel Loader	Perkins	2797	6	3	Engine Injector Group 1 : Current Above Normal
6365	Wheel Loader	Yanmar	2797	6	3	Injector drive circuit (Bank 1) short circuit (4TN : Common circuit for No. 1, No. 4 and all 3TN cylinders)
6366	Wheel Loader	Perkins	2797	7	3	Engine Injector Group 1 : Not Responding Properly
6367	Wheel Loader	Scania	2797	8	4	Injector group A, injection error
6359	Wheel Loader	Cummins	2797	13	4	Engine Injector Bank 1 Barcodes - Out of Calibration
6368	Wheel Loader	Scania	2798	2	3	Injector group B, short circuit to other bank
6369	Wheel Loader	Scania	2798	3	3	Injector group B, short circuit +24V
6370	Wheel Loader	Scania	2798	4	3	Injector group B, short circuit ground
6371	Wheel Loader	Perkins	2798	6	3	Engine Injector Group 2 : Current Above Normal
6372	Wheel Loader	Yanmar	2798	6	3	Injector drive circuit (Bank 2) short circuit (4TN : Circuit for No. 2 and 3 cylinders)
6373	Wheel Loader	Scania	2798	8	4	Injection error, group B
6374	Wheel Loader	Cummins	2802	31	3	Electronic Control Module data lost - Condition Exists
6375	Wheel Loader	Perkins	2840	12	3	ECU Instance: Failure
6376	Wheel Loader	Perkins	2840	14	3	ECU Instance: Special Instruction
6377	Wheel Loader	Scania	2858	13	3	EMS, Default EOL Data in E2
6378	Wheel Loader	Scania	2859	13	3	EMS, Default Barcoding Data in E2
6379	Wheel Loader	Scania	2860	13	4	EMS internal software error
6380	Wheel Loader	Scania	2861	13	4	EMS Configuration for Automatic Clutch Faulty
6381	Wheel Loader	Scania	2862	13	4	Internal software error
6382	Wheel Loader	Perkins	2880	2	4	Engine Operator Primary Intermediate Speed Select: Erratic, Intermittent, or Incorrect
6383	Wheel Loader	Perkins	2880	3	3	Engine Operator Primary Intermediate Speed Select: Voltage Above Normal
6384	Wheel Loader	Perkins	2880	4	3	Engine Operator Primary Intermediate Speed Select: Voltage Below Normal
6385	Wheel Loader	Perkins	2882	2	4	Engine Alternate Rating Select : Erratic, Intermittent, or Incorrect
6386	Wheel Loader	Cummins	2884	9	4	Engine Auxiliary Governor Switch - Abnormal update rate
6388	Wheel Loader	Cummins	2900	9	4	Transmission Engine Crank Enable - Abnormal Update Rate
6387	Wheel Loader	Cummins	2900	19	4	Transmission Engine Crank Enable - Received Network Data in Error
6389	Wheel Loader	Yanmar	2950	3	2	Power short circuit of throttle valve drive H bridge output 1
6390	Wheel Loader	Yanmar	2950	4	2	GND short circuit of throttle valve drive H bridge output 1
6391	Wheel Loader	Yanmar	2950	5	2	No-load of throttle valve drive H bridge circuit
6392	Wheel Loader	Yanmar	2950	6	2	Overload on the drive H bridge circuit of throttle valve
6393	Wheel Loader	Yanmar	2951	3	2	VB Power short circuit of throttle valve drive H bridge output 2
6394	Wheel Loader	Yanmar	2951	4	2	GND short circuit of throttle valve drive H bridge output 2
6395	Wheel Loader	Perkins	2970	2	4	Accelerator Pedal 2 Low Idle Switch : Erratic, Intermittent, or Incorrect
6396	Wheel Loader	Cummins	2978	9	3	Estimated Engine Parasitic Losses - Percent Torque - Abnormal update rate
6398	Wheel Loader	Cummins	2981	3	3	Coolant Pressure 2 Circuit - Voltage Above Normal, or Shorted to High Source
6399	Wheel Loader	Cummins	2981	4	3	Coolant Pressure 2 Circuit - Voltage Below Normal, or Shorted to Low Source
6397	Wheel Loader	Cummins	2981	18	3	Coolant Pressure 2 - Data Valid but Below Normal Operational Range - Moderately Severe Level
6400	Wheel Loader	Scania	3031	0	3	SCR main unit, high temperature low limit exceedence
6401	Wheel Loader	Scania	3031	1	4	The reductant tank temperature sensor indicates incorrect values.
6407	Wheel Loader	Cummins	3031	2	4	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature - Data erratic, intermittent or incorrect
6408	Wheel Loader	Cummins	3031	3	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature Sensor - Voltage above normal, or shorted to high source
6409	Wheel Loader	Scania	3031	3	3	Fault in the reductant tank temperature sensor.
6410	Wheel Loader	Cummins	3031	4	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature Sensor - Voltage below normal, or shorted to low source
6411	Wheel Loader	Scania	3031	4	3	The EEC control unit indicates a short circuit to ground for the pins connected to the reductant tank temperature sensor.
6412	Wheel Loader	Cummins	3031	5	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature Sensor Circuit - Current below normal or open circuit

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
6413	Wheel Loader	Cummins	3031	6	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature Sensor Circuit - Current above normal or grounded circuit
6414	Wheel Loader	Perkins	3031	7	3	Aftertreatment #1 DEF Tant Temperature - Not Responding Properly
6415	Wheel Loader	Cummins	3031	9	4	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature - Abnormal Update Rate
6402	Wheel Loader	Cummins	3031	11	4	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature - Root Cause Not Known
6403	Wheel Loader	Perkins	3031	12	3	Aftertreatment #1 DEF Tant Temperature - Failure
6404	Wheel Loader	Cummins	3031	13	4	Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature Sensor - Out of Calibration
6405	Wheel Loader	Perkins	3031	16	3	Aftertreatment #1 DEF Tant Temperature : High - moderate severity (2)
6406	Wheel Loader	Perkins	3031	18	3	Aftertreatment #1 DEF Tant Temperature : Low - moderate severity (2)
6416	Wheel Loader	Cummins	3060	18	3	Engine Cooling System Monitor - Data Valid But Below Normal Operating Range - Moderately Severe Level
6425	Wheel Loader	Scania	3216	2	3	NOx sensor T131 upstream of the SCR catalytic converter indicates incorrect values.
6426	Wheel Loader	Cummins	3216	2	4	Aftertreatment 1 Intake NOx Sensor - Data erratic, intermittent or incorrect
6430	Wheel Loader	Cummins	3216	4	3	Aftertreatment 1 Intake NOx Sensor Circuit - Voltage below normal, or shorted to low source
6431	Wheel Loader	Scania	3216	4	3	NOx sensor upstream, internal fault or open circuit
6432	Wheel Loader	Perkins	3216	5	3	Aftertreatment #1 Intake NOx - Current Below Normal
6433	Wheel Loader	Scania	3216	5	3	NOx sensor upstream, open circuit
6434	Wheel Loader	Perkins	3216	6	3	Aftertreatment #1 Intake NOx - Current Above Normal
6435	Wheel Loader	Scania	3216	6	3	Fault in the voltage supply to NOx sensor T131 upstream of the SCR catalytic converter.
6436	Wheel Loader	Perkins	3216	7	3	Aftertreatment #1 Intake NOx - Not Responding Properly
6437	Wheel Loader	Scania	3216	7	3	NOx sensor upstream, internal fault
6438	Wheel Loader	Scania	3216	8	3	NOx sensor upstream of catalytic converter
6439	Wheel Loader	Cummins	3216	9	3	Aftertreatment 1 Intake NOx Sensor - Abnormal update rate
6440	Wheel Loader	Scania	3216	9	3	NOx sensor upstream of catalytic converter
6417	Wheel Loader	Cummins	3216	10	3	Aftertreatment 1 Intake NOx Sensor - Abnormal rate of change
6418	Wheel Loader	Scania	3216	10	3	NOx sensor upstream, stuck
6419	Wheel Loader	Perkins	3216	11	3	Aftertreatment #1 Intake NOx - Other Failure Mode
6420	Wheel Loader	Cummins	3216	13	4	Aftertreatment 1 Intake NOx - Out of Calibration
6421	Wheel Loader	Cummins	3216	16	3	Aftertreatment 1 Intake NOx - Data Valid But Above Normal Operating Range - Moderately Severe Level
6422	Wheel Loader	Scania	3216	17	3	NOx sensor upstream, low signal
6423	Wheel Loader	Scania	3216	18	3	NOx sensor upstream, too low value
6424	Wheel Loader	Scania	3216	19	4	NOx sensor upstream error via CAN
6427	Wheel Loader	Cummins	3216	20	3	Aftertreatment 1 Intake NOx Sensor - Data not Rational - Drifted High
6428	Wheel Loader	Scania	3216	20	3	NOx sensor upstream, not plausible
6429	Wheel Loader	Cummins	3216	21	4	Aftertreatment 1 Intake NOx Sensor - Data not Rational - Drifted Low
6445	Wheel Loader	Cummins	3217	2	4	Aftertreatment Intake Oxygen Sensor - Data erratic, intermittent or incorrect
6448	Wheel Loader	Perkins	3217	3	3	Aftertreatment #1 Intake 02 : Voltage Above Normal
6449	Wheel Loader	Perkins	3217	4	3	Aftertreatment #1 Intake 02 : Voltage Below Normal
6450	Wheel Loader	Perkins	3217	5	3	Aftertreatment #1 Intake 02 : Current Below Normal
6451	Wheel Loader	Perkins	3217	6	3	Aftertreatment #1 Intake 02 : Current Above Normal
6441	Wheel Loader	Perkins	3217	12	3	Aftertreatment #1 Intake 02 : Failure
6442	Wheel Loader	Perkins	3217	13	3	Aftertreatment #1 Intake 02 : Out of Calibration
6443	Wheel Loader	Perkins	3217	15	4	Aftertreatment #1 Intake 02 : High - least severe (1)
6444	Wheel Loader	Perkins	3217	16	3	Aftertreatment #1 Intake O2 : High - moderate severity (2)
6446	Wheel Loader	Cummins	3217	20	3	Aftertreatment Intake Oxygen Sensor - Data Not Rational - Drifted High
6447	Wheel Loader	Cummins	3217	21	3	Aftertreatment Intake Oxygen Sensor - Data Not Rational - Drifted Low
6453	Wheel Loader	Cummins	3218	2	4	Aftertreatment 1 Intake NOx Sensor Power Supply - Data erratic, intermittent or incorrect
6452	Wheel Loader	Perkins	3218	12	3	Aftertreatment #1 Intake NOx : failure
6454	Wheel Loader	Perkins	3219	15	3	Aftertreatment #1 Intake Gas Sensor at Temperature: High -least severe (1)
6455	Wheel Loader	Perkins	3219	17	3	Aftertreatment #1 Intake Gas Sensor at Temperature: Low -least severe (1)
6456	Wheel Loader	Perkins	3222	3	3	Aftertreatment #1 Intake Gas Sensor Heater: Voltage Above Normal
6457	Wheel Loader	Perkins	3222	4	3	Aftertreatment #1 Intake Gas Sensor Heater: Voltage Below Normal
6458	Wheel Loader	Perkins	3222	5	3	Aftertreatment #1 Intake Gas Sensor Heater: Current Below Normal
6468	Wheel Loader	Cummins	3226	2	3	Aftertreatment 1 Outlet NOx Sensor - Data not Rational - Drifted High
6469	Wheel Loader	Scania	3226	2	3	Nox sensor downstream, Implausible signal
6473	Wheel Loader	Cummins	3226	4	3	Aftertreatment 1 Outlet NOx Sensor Circuit - Voltage below normal, or shorted to low source
6474	Wheel Loader	Scania	3226	4	3	NOx sensor downstream, internal fault or open circuit
6475	Wheel Loader	Perkins	3226	5	3	Aftertreatment #1 Outlet NOx : Current Below Normal
6476	Wheel Loader	Scania	3226	5	3	NOx sensor downstream, open circuit
6477	Wheel Loader	Perkins	3226	6	3	Aftertreatment #1 Outlet NOx : Current Above Normal
6478	Wheel Loader	Scania	3226	6	3	Fault in the voltage supply to NOx sensor T115 downstream of the SCR catalytic converter.
6479	Wheel Loader	Cummins	3226	7	3	Aftertreatment 1 Outlet NOx Sensor Closed Loop Operation - Condition Exists
6480	Wheel Loader	Perkins	3226	7	3	Aftertreatment #1 Outlet NOx : Not Responding Properly
6481	Wheel Loader	Scania	3226	7	3	NOx sensor downstream, internal fault
6482	Wheel Loader	Scania	3226	8	4	NLev.4 sensor downstream error via CAN
6483	Wheel Loader	Cummins	3226	9	3	Aftertreatment 1 Outlet NOx Sensor - Abnormal update rate
6484	Wheel Loader	Scania	3226	9	3	NOx sensor downstream of the SCR catalytic converter
6459	Wheel Loader	Cummins	3226	10	3	Aftertreatment 1 Outlet NOx Sensor - Abnormal rate of change
6460	Wheel Loader	Scania	3226	10	3	NOx sensor downstream, stuck
6461	Wheel Loader	Cummins	3226	11	3	Aftertreatment 1 Outlet NOx Sensor - Root Cause Not Known
6462	Wheel Loader	Perkins	3226	11	3	Aftertreatment 1 Outlet NOx : Other Failure Mode
6463	Wheel Loader	Perkins	3226	12	3	Aftertreatment 1 Outlet NOx : Failure
6464	Wheel Loader	Cummins	3226	13	4	Aftertreatment 1 Outlet NOx Sensor - Out of Calibration
6465	Wheel Loader	Scania	3226	17	3	NOx sensor downstream, low signal
6466	Wheel Loader	Scania	3226	18	3	NOx sensor downstream, too low value
6467	Wheel Loader	Scania	3226	19	3	NOx sensor downstream of the catalytic converter
6470	Wheel Loader	Cummins	3226	20	3	Aftertreatment 1 Outlet NOx Sensor - Data not Rational - Drifted High
6471	Wheel Loader	Scania	3226	20	3	NOx sensor downstream, not plausible

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
6472	Wheel Loader	Cummins	3226	21	4	Aftertreatment 1 Outlet NOx Sensor - Data not Rational - Drifted High
6488	Wheel Loader	Cummins	3227	9	3	Aftertreatment Outlet Oxygen Sensor Circuit - Abnormal update rate
6485	Wheel Loader	Perkins	3227	16	3	Aftertreatment #1 Outlet O2 : High - moderate severity (2)
6486	Wheel Loader	Cummins	3227	20	3	Aftertreatment Outlet Oxygen - Data Not Rational - Drifted High
6487	Wheel Loader	Cummins	3227	21	3	Aftertreatment Outlet Oxygen - Data Not Rational - Drifted Low
6489	Wheel Loader	Cummins	3228	2	4	Aftertreatment 1 Outlet NOx Sensor Power Supply - Data erratic, intermittent or incorrect
6496	Wheel Loader	Scania	3241	2	3	Upstream catalyst temperature sensor not plausible, not plausible
6497	Wheel Loader	Scania	3241	3	4	Upstream catalyst temperature sensor not plausible, to high
6498	Wheel Loader	Scania	3241	4	3	Upstream catalyst temperature sensor not plausible, short circuit
6499	Wheel Loader	Scania	3241	5	3	Upstream catalyst temperature sensor not plausible, open circuit
6500	Wheel Loader	Scania	3241	6	4	The exhaust gas temperature sensor upstream of the oxidation catalytic converter indicates incorrect values.
6501	Wheel Loader	Scania	3241	8	3	Upstream catalyst temperature sensor not plausible, to high
6490	Wheel Loader	Scania	3241	10	3	Upstream catalyst temperature sensor not plausible, not plausible
6491	Wheel Loader	Scania	3241	11	4	The exhaust gas temperature sensor upstream of the oxidation catalytic converter indicates incorrect values.
6492	Wheel Loader	Scania	3241	12	4	The exhaust gas temperature sensor upstream of the oxidation catalytic converter indicates incorrect values.
6493	Wheel Loader	Scania	3241	16	4	Upstream catalyst temperature too high
6494	Wheel Loader	Scania	3241	18	4	Upstream catalyst temperature sensor not plausible, to low
6495	Wheel Loader	Scania	3241	19	4	CAN Error from Exhaust Temperature Sensors
6502	Wheel Loader	Cummins	3242	0	2	Aftertreatment 1 Diesel Particulate Filter Intake Temperature - Data valid but above normal operation
6503	Wheel Loader	Perkins	3242	0	2	Particulate Trap Intake Gas Temperature : High - most severe (3)
6504	Wheel Loader	Scania	3242	0	2	Upstream DPF temperature sensor, to high
6505	Wheel Loader	Yanmar	3242	0	2	DPF inlet temperature sensor error (high temperature)
6515	Wheel Loader	Cummins	3242	2	3	Aftertreatment 1 Diesel Particulate Filter Intake Temperature - Data erratic, intermittent or incorrect
6516	Wheel Loader	Cummins	3242	3	3	Aftertreatment 1 Diesel Particulate Filter Intake Temperature Sensor Circuit - Voltage above normal, or shorted to high source
6517	Wheel Loader	Perkins	3242	3	3	Particulate Trap Intake Gas Temperature : Voltage Above Normal
6518	Wheel Loader	Scania	3242	3	3	The exhaust gas temperature sensor upstream of the particulate filter indicates incorrect values.
6519	Wheel Loader	Yanmar	3242	3	3	DPF inlet temperature sensor error (voltage high)
6520	Wheel Loader	Cummins	3242	4	3	Aftertreatment 1 Diesel Particulate Filter Intake Temperature Sensor Circuit - Voltage below normal, or shorted to low source
6521	Wheel Loader	Perkins	3242	4	3	Particulate Trap Intake Gas Temperature : Voltage Below Normal
6522	Wheel Loader	Scania	3242	4	3	The exhaust gas temperature sensor upstream of the particulate filter indicates incorrect values.
6523	Wheel Loader	Yanmar	3242	4	3	DPF inlet temperature sensor error (voltage low)
6524	Wheel Loader	Scania	3242	5	4	The exhaust gas temperature sensor upstream of the particulate filter indicates incorrect values.
6525	Wheel Loader	Scania	3242	6	4	The exhaust gas temperature sensor upstream of the particulate filter indicates incorrect values.
6526	Wheel Loader	Scania	3242	7	3	Upstream DPF temperature sensor, not plausible
6527	Wheel Loader	Scania	3242	9	3	Upstream DPF temperature sensor, not plausible
6506	Wheel Loader	Scania	3242	10	4	Upstream DPF temperature too high during normal condition
6507	Wheel Loader	Scania	3242	11	4	The exhaust gas temperature sensor upstream of the particulate filter indicates incorrect values.
6508	Wheel Loader	Scania	3242	12	4	The exhaust gas temperature sensor upstream of the particulate filter indicates incorrect values.
6509	Wheel Loader	Cummins	3242	15	3	Aftertreatment 1 Diesel Particulate Filter Intake Temperature - Data Valid But Above Normal Operating Range - Least Severe Level
6510	Wheel Loader	Cummins	3242	16	3	Aftertreatment 1 Diesel Particulate Filter Intake Temperature - Data Valid But Above Normal Operating Range
6511	Wheel Loader	Scania	3242	16	3	Upstream DPF temperature too high during regeneration
6512	Wheel Loader	Perkins	3242	17	4	Aftertreatment #1 DPF Intake Gas Temperature : Low - least severe (1)
6513	Wheel Loader	Perkins	3242	18	3	Aftertreatment #1 DPF Intake Gas Temperature : Low - moderate severity (2)
6514	Wheel Loader	Scania	3242	19	3	The exhaust gas temperature sensor upstream of the particulate filter indicates incorrect values.
6529	Wheel Loader	Scania	3245	6	3	Fault in the voltage supply to the exhaust gas temperature sensors for exhaust gas aftertreatment.
6528	Wheel Loader	Scania	3245	19	4	Auxiliary Temperature Sensor Error on CAN
6530	Wheel Loader	Cummins	3246	0	2	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature - Data valid but above normal operation
6538	Wheel Loader	Cummins	3246	2	3	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature - Data erratic, intermittent or incorrect
6539	Wheel Loader	Scania	3246	2	4	Downstream DPF temperature sensor error
6540	Wheel Loader	Cummins	3246	3	3	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature Sensor Circuit - Voltage above normal, or shorted to high source
6541	Wheel Loader	Scania	3246	3	3	Exhaust temperature sensor after SCR catalytic converter, short circuit
6542	Wheel Loader	Cummins	3246	4	3	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature Sensor Circuit - Voltage below normal, or shorted to low source
6543	Wheel Loader	Scania	3246	4	3	Exhaust temperature sensor after SCR catalytic converter, open circuit
6544	Wheel Loader	Scania	3246	5	4	The exhaust gas temperature sensor downstream of the particulate filter indicates incorrect values.
6545	Wheel Loader	Scania	3246	6	4	The exhaust gas temperature sensor downstream of the particulate filter indicates incorrect values.
6546	Wheel Loader	Scania	3246	9	4	Downstream exhaust temperature sensor, not plausible

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
6531	Wheel Loader	Scania	3246	11	4	The exhaust gas temperature sensor downstream of the particulate filter indicates incorrect values.
6532	Wheel Loader	Scania	3246	12	4	The exhaust gas temperature sensor downstream of the particulate filter indicates incorrect values.
6533	Wheel Loader	Cummins	3246	15	3	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature - Data Valid But Above Normal Operating Range - Least Severe Level
6534	Wheel Loader	Scania	3246	15	3	Downstream DPF temperature too high during normal condition
6535	Wheel Loader	Cummins	3246	16	3	Aftertreatment 1 Diesel Particulate Filter Outlet Temperature - Data Valid But Above Normal Operating Range
6536	Wheel Loader	Scania	3246	16	3	Downstream DPF temperature too high during regeneration
6537	Wheel Loader	Scania	3246	19	3	The exhaust gas temperature sensor downstream of the particulate filter indicates incorrect values.
6549	Wheel Loader	Scania	3249	3	3	Fault on the exhaust gas temperature sensor upstream of the SCR catalytic converter.
6550	Wheel Loader	Scania	3249	4	3	Fault on the exhaust gas temperature sensor upstream of the SCR catalytic converter.
6547	Wheel Loader	Cummins	3249	17	4	Aftertreatment Exhaust Gas Temperature 2 - Data Valid But Below Normal Operating Range - Least Severe Level
6548	Wheel Loader	Cummins	3249	18	3	Aftertreatment Exhaust Gas Temperature 2 - Data Valid But Below Normal Operating Range - Moderately Severe Level
6551	Wheel Loader	Yanmar	3250	0	2	DPF intermediate temperature sensor temperature rise error (post-injection failure)
6552	Wheel Loader	Yanmar	3250	1	2	DPF intermediate temperature sensor temperature too low
6553	Wheel Loader	Yanmar	3250	3	2	DPF intermediate temperature sensor error (voltage high)
6554	Wheel Loader	Yanmar	3250	4	2	DPF intermediate temperature sensor error (voltage low)
6555	Wheel Loader	Cummins	3251	0	2	Aftertreatment Diesel Particulate Filter Differential Pressure - Data valid but above normal Operating Range
6556	Wheel Loader	Perkins	3251	0	2	Particulate Trap Differential Pressure : High - most severe (3)
6557	Wheel Loader	Yanmar	3251	0	2	DPF differential pressure sensor differential pressure rise error
6566	Wheel Loader	Scania	3251	2	3	Particulate filter is missing
6567	Wheel Loader	Cummins	3251	2	4	Aftertreatment Diesel Particulate Filter Differential Pressure Sensor - Data erratic, intermittent or incorrect
6568	Wheel Loader	Cummins	3251	3	3	Aftertreatment Diesel Particulate Filter Differential Pressure Sensor Circuit - Voltage above normal
6569	Wheel Loader	Perkins	3251	3	3	Particulate Trap Differential Pressure : Voltage Above Normal
6570	Wheel Loader	Scania	3251	3	3	Fault in the particulate filter differential pressure sensor
6571	Wheel Loader	Yanmar	3251	3	3	DPF differential pressure sensor error (voltage high)
6572	Wheel Loader	Cummins	3251	4	3	Aftertreatment Diesel Particulate Filter Differential Pressure Sensor Circuit - Voltage below normal
6573	Wheel Loader	Perkins	3251	4	3	Particulate Trap Differential Pressure : Voltage Below Normal
6574	Wheel Loader	Scania	3251	4	3	Fault in the particulate filter differential pressure sensor
6575	Wheel Loader	Yanmar	3251	4	3	DPF differential pressure sensor error (voltage low)
6576	Wheel Loader	Perkins	3251	7	2	Particulate Trap Differential Pressure : Not Responding Properly
6577	Wheel Loader	Scania	3251	7	2	Differential pressure sensor over particulate filter, faulty
6578	Wheel Loader	Scania	3251	8	4	Differential pressure sensor not plausible
6579	Wheel Loader	Scania	3251	9	4	Differential pressure sensor over particulate filter, not plausible
6558	Wheel Loader	Cummins	3251	10	4	Aftertreatment 1 Diesel Particulate Filter Differential Pressure - Abnormal Rate of Change
6559	Wheel Loader	Perkins	3251	10	4	Particulate Trap Differential Pressure : Abnormal Rate of Change
6560	Wheel Loader	Yanmar	3251	13	2	DPF differential pressure sensor error (abnormal learning value)
6561	Wheel Loader	Cummins	3251	15	4	Aftertreatment Diesel Particulate Filter Differential Pressure - Data valid but above normal Operating Range
6562	Wheel Loader	Cummins	3251	16	3	Aftertreatment Diesel Particulate Filter Differential Pressure - Data Valid But Above Normal Operating Range
6563	Wheel Loader	Perkins	3251	16	3	Particulate Trap Differential Pressure : High - moderate severity (2) —
6564	Wheel Loader	Perkins	3251	17	4	Particulate Trap Differential Pressure : Low - least severe (1)
6565	Wheel Loader	Perkins	3251	18	3	Particulate Trap Differential Pressure : Low - moderate severity (2)
6580	Wheel Loader	Cummins	3255	9	3	Aftertreatment 2 Intake NOx Sensor - Abnormal update rate
6581	Wheel Loader	Cummins	3265	9	3	Aftertreatment 2 Outlet NOx - Abnormal Update Rate
6582	Wheel Loader	Scania	3275	19	3	The EEC control unit for exhaust gas aftertreatment has lost contact with the exhaust gas temperature sensor upstream of the SCR catalytic converter.
6584	Wheel Loader	Scania	3279	2	3	Electrical fault in the exhaust gas temperature sensors for exhaust gas aftertreatment.
6585	Wheel Loader	Scania	3279	8	4	The exhaust gas temperature sensors for exhaust gas aftertreatment indicate incorrect values.
6586	Wheel Loader	Scania	3279	9	4	The exhaust gas temperature sensors for exhaust gas aftertreatment indicate incorrect values.
6583	Wheel Loader	Scania	3279	19	3	The EEC control unit for exhaust gas aftertreatment has lost contact with the exhaust gas temperature sensors.
6587	Wheel Loader	Scania	3340	1	4	Intercooler temperature, too low
6593	Wheel Loader	Scania	3340	3	3	Intercooler pressure sensor, short circuit to ground
6594	Wheel Loader	Scania	3340	4	3	Intercooler pressure sensor, short circuit to +24
6595	Wheel Loader	Scania	3340	7	4	Intercooler pressure sensor, stuck
6596	Wheel Loader	Scania	3340	9	4	Intercooler pressure sensor, not plausible
6588	Wheel Loader	Scania	3340	10	4	Intercooler pressure sensor, not plausible
6589	Wheel Loader	Scania	3340	15	4	Intercooler pressure, above normal
6590	Wheel Loader	Scania	3340	16	4	Intercooler pressure, above normal
6591	Wheel Loader	Scania	3340	20	4	Intercooler pressure too high
6592	Wheel Loader	Scania	3340	21	4	Intercooler pressure too low
6597	Wheel Loader	Cummins	3353	3	3	Alternator 1 Status - Voltage Above Normal, or Shorted to High Source
6598	Wheel Loader	Cummins	3353	4	3	Alternator 1 Status - Voltage Below Normal, or Shorted to Low Source
6601	Wheel Loader	Perkins	3358	3	3	Engine Exhaust Gas Recirculation Inlet Pressure : Voltage Above Normal
6602	Wheel Loader	Perkins	3358	4	3	Engine Exhaust Gas Recirculation Inlet Pressure : Voltage Below Normal
6599	Wheel Loader	Perkins	3358	10	3	Engine Exhaust Gas Recirculation 1 Intake Pressure : Abnormal Rate of Change
6600	Wheel Loader	Perkins	3358	13	3	Engine Exhaust Gas Recirculation Inlet Pressure : Out of Calibration

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
6603	Wheel Loader	Scania	3360	0	3	SCR system adaptation have reached max values
6604	Wheel Loader	Scania	3360	1	3	SCR system adaptation have reached min values
6610	Wheel Loader	Scania	3360	2	4	EEC3 System has demanded SCR Hazardous major functional failure actions
6611	Wheel Loader	Perkins	3360	3	3	Aftertreatment #1 DEF Controller : Voltage Above Normal
6612	Wheel Loader	Scania	3360	3	3	SCR main unit, ventilation valve test, short to battery
6613	Wheel Loader	Perkins	3360	4	4	Aftertreatment #1 DEF Controller : Voltage Below Normal
6614	Wheel Loader	Scania	3360	4	4	SCR main unit, internal supply voltage low
6615	Wheel Loader	Scania	3360	5	3	SCR main unit, ventilation valve test, open load
6616	Wheel Loader	Scania	3360	6	3	SCR main unit, system voltage error
6617	Wheel Loader	Scania	3360	7	4	SCR main unit, ignition switch plausible error
6618	Wheel Loader	Perkins	3360	9	3	Aftertreatment #1 DEF Controller : Abnormal Update Rate
6619	Wheel Loader	Scania	3360	9	3	EEC3 has demanded SCR Major functional failure reductant dosing stopped actions
6605	Wheel Loader	Scania	3360	10	3	EEC3 System has demanded SCR minor functional failure actions
6606	Wheel Loader	Scania	3360	12	4	SCR main unit, error
6607	Wheel Loader	Perkins	3360	14	3	Aftertreatment #1 DEF Controller : Special Instruction
6608	Wheel Loader	Scania	3360	16	3	SCR main unit, internal supply voltage high
6609	Wheel Loader	Scania	3360	19	3	SCR main unit, communication error
6621	Wheel Loader	Cummins	3361	2	4	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Temperature - Data erratic, intermittent or incorrect
6622	Wheel Loader	Scania	3361	2	4	Fault in reductant doser injection valve.
6623	Wheel Loader	Cummins	3361	3	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit - Voltage above normal, or shorted to high source
6624	Wheel Loader	Scania	3361	3	3	SCR reductant dosing valve, short circuit to battery
6625	Wheel Loader	Cummins	3361	4	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit - Voltage below normal, or shorted to low source
6626	Wheel Loader	Scania	3361	4	3	Fault in reductant doser injection valve.
6627	Wheel Loader	Perkins	3361	5	3	Aftertreatment #1 DEF Dosing Unit : Current Below Normal
6628	Wheel Loader	Scania	3361	5	3	SCR reductant dosing valve, open circuit
6629	Wheel Loader	Perkins	3361	6	3	Aftertreatment #1 DEF Dosing Unit : Current Above Normal
6630	Wheel Loader	Scania	3361	6	3	Fault in reductant doser injection valve.
6620	Wheel Loader	Scania	3361	10	4	SCR main unit, reductant pressure not plausible
6631	Wheel Loader	Scania	3362	0	3	The reductant pressure has been above the permitted level.
6632	Wheel Loader	Scania	3362	1	3	Required reductant pressure cannot be reached.
6633	Wheel Loader	Scania	3362	2	3	SCR reductant pressure, error
6634	Wheel Loader	Cummins	3362	31	4	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Input Lines - Condition Exists
6635	Wheel Loader	Scania	3363	0	3	SCR main unit, reductant heater, circuit high
6642	Wheel Loader	Scania	3363	2	3	SCR main unit, reductant heater, open load
6643	Wheel Loader	Cummins	3363	3	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater - Voltage above normal, or shorted to high source
6644	Wheel Loader	Scania	3363	3	3	SCR main unit, internal heating pump, short circuit to battery
6645	Wheel Loader	Cummins	3363	4	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater - Voltage below normal, or shorted to low source
6646	Wheel Loader	Scania	3363	4	3	SCR main unit, reductant temperature sensor circuit low
6647	Wheel Loader	Perkins	3363	5	3	Aftertreatment #1 DEF Tank Heater : Current Below Normal
6648	Wheel Loader	Scania	3363	5	3	SCR main unit, internal heating pump, open load
6649	Wheel Loader	Perkins	3363	6	3	Aftertreatment #1 DEF Tank Heater : Current Above Normal
6650	Wheel Loader	Scania	3363	6	3	The heater of the reductant doser has consumed more power than permitted.
6651	Wheel Loader	Cummins	3363	7	4	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater - Mechanical system not responding or out of adjustment
6652	Wheel Loader	Scania	3363	8	3	SCR main unit, reductant heater, circuit performance
6636	Wheel Loader	Scania	3363	15	4	SCR reagent tank temperature too high
6637	Wheel Loader	Cummins	3363	16	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater - Data Valid But Above Normal Operating Range - Moderately Severe Level
6638	Wheel Loader	Scania	3363	16	3	SCR main unit, high temperature high limit exceeded
6639	Wheel Loader	Scania	3363	17	3	SCR reductant tank temperatur too low
6640	Wheel Loader	Cummins	3363	18	3	Aftertreatment 1 Diesel Exhaust Fluid Tank Heater - Data Valid But Below Normal Operating Range - Moderately Severe Level
6641	Wheel Loader	Scania	3363	18	3	SCR main unit, low temperature limit exceeded
6653	Wheel Loader	Cummins	3364	1	1	Aftertreatment Diesel Exhaust Fluid Quality - Data valid but below normal operational range - Most Severe Level
6660	Wheel Loader	Cummins	3364	2	2	Aftertreatment Diesel Exhaust Fluid Quality - Data erratic, intermittent or incorrect
6661	Wheel Loader	Cummins	3364	3	2	Aftertreatment Diesel Exhaust Fluid Quality Sensor Circuit - Voltage above normal, or shorted to high source
6662	Wheel Loader	Cummins	3364	4	2	Aftertreatment Diesel Exhaust Fluid Quality Sensor Circuit - Voltage below normal, or shorted to low source
6663	Wheel Loader	Cummins	3364	5	3	Aftertreatment Diesel Exhaust Fluid Quality Sensor Circuit - Current below normal or open circuit
6664	Wheel Loader	Cummins	3364	6	2	Aftertreatment Diesel Exhaust Fluid Quality Sensor Circuit - Current above normal or grounded circuit
6665	Wheel Loader	Cummins	3364	7	2	Aftertreatment Diesel Exhaust Fluid Quality Sensor - Mechanical system not responding or out of adjustment
6666	Wheel Loader	Cummins	3364	9	2	Aftertreatment Diesel Exhaust Fluid Quality - Abnormal update rate
6654	Wheel Loader	Cummins	3364	10	2	Aftertreatment Diesel Exhaust Fluid Quality - Abnormal Rate of Change
6655	Wheel Loader	Cummins	3364	11	2	Aftertreatment Diesel Exhaust Fluid Quality - Root Cause Not Known
6656	Wheel Loader	Cummins	3364	12	2	Aftertreatment Diesel Exhaust Fluid Quality Sensor - Bad intelligent device or component
6657	Wheel Loader	Cummins	3364	13	2	Aftertreatment Diesel Exhaust Fluid Quality - Out of Calibration
6658	Wheel Loader	Cummins	3364	15	2	Aftertreatment Diesel Exhaust Fluid Quality - Data Valid But Above Normal Operating Range - Least Severe Level

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6659	Wheel Loader	Cummins	3364	18	2	Aftertreatment Diesel Exhaust Fluid Quality - Data Valid But Below Normal Operating Range - Moderately Severe Level
6667	Wheel Loader	*	3427	1	4	AAVM Communication Error -AAVM
6674	Wheel Loader	*	3427	2	4	AAVM Communication Error -Front Camera
6675	Wheel Loader	*	3427	3	4	AAVM Communication Error -Rear Camera
6676	Wheel Loader	*	3427	4	4	AAVM Communication Error -Left Camera
6677	Wheel Loader	*	3427	5	4	AAVM Communication Error -Right Camera
6678	Wheel Loader	*	3427	6	4	Manual Setting Fail
6679	Wheel Loader	*	3427	7	4	No MCU CID
6680	Wheel Loader	*	3427	8	4	MCU CID Format Error
6681	Wheel Loader	*	3427	9	4	AAVM Hardware Error -AAVM
6668	Wheel Loader	*	3427	10	4	AAVM Hardware Error -Front Camera
6669	Wheel Loader	*	3427	11	4	AAVM Hardware Error -Rear Camera
6670	Wheel Loader	*	3427	12	4	AAVM Hardware Error -Left Camera
6671	Wheel Loader	*	3427	13	4	AAVM Hardware Error -Right Camera
6672	Wheel Loader	*	3427	14	4	MCU CID Model is not registered
6673	Wheel Loader	*	3427	15	4	MCU CID Model can't be applied
6682	Wheel Loader	Scania	3464	2	4	Throttle, control error
6683	Wheel Loader	Cummins	3464	3	3	Electronic Throttle Control Actuator Driver Circuit - Voltage Above Normal or Shorted to High Source
6684	Wheel Loader	Scania	3464	3	3	Throttle Actuator, short circuit to +24V
6685	Wheel Loader	Cummins	3464	4	3	Electronic Throttle Control Actuator Driver Circuit - Voltage Below Normal or Shorted to Low Source
6686	Wheel Loader	Scania	3464	4	3	Throttle Actuator, short circuit
6687	Wheel Loader	Cummins	3464	5	3	Electronic Throttle Control Actuator Driver Circuit-Voltage above normal, or shorted to high source
6688	Wheel Loader	Scania	3464	5	3	Throttle Actuator, slow response
6689	Wheel Loader	Scania	3464	6	3	Throttle Actuator Control System - Forced Limited Power
6690	Wheel Loader	Cummins	3464	7	3	Electronic Throttle Control Actuator - Mechanical System Not Responding or Out of Adjustment
6691	Wheel Loader	Scania	3464	7	3	Throttle, stuck in open position
6692	Wheel Loader	Scania	3464	8	3	Throttle, stuck in closed position
6694	Wheel Loader	Scania	3471	2	3	Electrical fault in the fuel valve circuit.
6695	Wheel Loader	Scania	3471	3	3	Electrical fault in the fuel valve circuit. Short circuit to battery voltage in the circuit.
6696	Wheel Loader	Scania	3471	4	3	Electrical fault in the fuel valve circuit. Short circuit to ground in the circuit.
6697	Wheel Loader	Scania	3471	5	3	Electric fault on the fuel valve in valve block V184. The circuit is open.
6698	Wheel Loader	Scania	3471	9	3	The fuel pressure in the valve block for exhaust gas aftertreatment V184 does not increase compared to the air pressure in the system when the fuel valve has been opened.
6693	Wheel Loader	Scania	3471	10	3	The fuel pressure in the valve block for exhaust gas aftertreatment is too high when the fuel valve for the fuel injection nozzle is open.
6699	Wheel Loader	Scania	3472	2	3	Electrical fault in the circuit for the air control valve.
6700	Wheel Loader	Scania	3472	3	3	Electrical fault in the circuit for the air control valve. Short circuit to battery voltage in the circuit.
6701	Wheel Loader	Scania	3472	4	3	Electrical fault in the circuit for the air control valve to the fuel injection nozzle. Short circuit to ground in the circuit.
6702	Wheel Loader	Scania	3472	5	3	Electrical fault in the circuit for the air control valve to the fuel injection nozzle. The circuit is open.
6703	Wheel Loader	Scania	3472	9	3	The air pressure in the valve block for exhaust gas aftertreatment is not increasing even though the air control valve is open.
6706	Wheel Loader	Cummins	3480	2	3	Aftertreatment Fuel Pressure Sensor - Data erratic, intermittent or incorrect
6707	Wheel Loader	Scania	3480	2	3	Fault in the sensor which measures the air and fuel pressure in the valve block for exhaust gas aftertreatment.
6708	Wheel Loader	Cummins	3480	3	3	Aftertreatment Fuel Pressure Sensor Circuit - Voltage above normal, or shorted to high source
6709	Wheel Loader	Scania	3480	3	3	Fault in the pressure sensor which measures the air and fuel pressure in the valve block for exhaust gas aftertreatment V184.
6710	Wheel Loader	Cummins	3480	4	3	Aftertreatment Fuel Pressure Sensor Circuit - Voltage below normal, or shorted to low source
6711	Wheel Loader	Scania	3480	4	3	Fault in the pressure sensor which measures the air and fuel pressure in the valve block for exhaust gas aftertreatment V184.
6712	Wheel Loader	Scania	3480	8	3	The air pressure is too high when the air control valve in the valve block for exhaust gas aftertreatment is open.
6713	Wheel Loader	Scania	3480	9	3	The air pressure in the valve block for exhaust gas aftertreatment is not increasing even though the air control valve is open.
6704	Wheel Loader	Scania	3480	10	3	The air and fuel pressure sensor in the valve block V184 displays too low a value compared to the atmospheric pressure sensor and differential pressure sensors.
6705	Wheel Loader	Cummins	3480	17	3	Aftertreatment Fuel Pressure Sensor - Data Valid But Below Normal Operating Range - Least Severe Level
6714	Wheel Loader	Cummins	3481	16	3	Aftertreatment Fuel Rate - Data Valid But Above Normal Operating Range - Moderately Severe Level
6717	Wheel Loader	Cummins	3482	2	3	Aftertreatment Fuel Shutoff Valve - Data erratic, intermittent or incorrect
6718	Wheel Loader	Cummins	3482	3	3	Aftertreatment Fuel Shutoff Valve Circuit - Voltage above normal, or shorted to high source
6719	Wheel Loader	Cummins	3482	4	3	Aftertreatment Fuel Shutoff Valve Circuit - Voltage below normal, or shorted to low source
6720	Wheel Loader	Cummins	3482	7	3	Aftertreatment Fuel Shutoff Valve - Mechanical system not responding or out of adjustment
6715	Wheel Loader	Cummins	3482	13	3	Aftertreatment Fuel Shutoff Valve Swapped - Out of Calibration
6716	Wheel Loader	Cummins	3482	16	3	Aftertreatment Fuel Shutoff Valve - Data Valid But Above Normal Operating Range - Moderately Severe
6721	Wheel Loader	Scania	3485	1	4	SCR main unit, air pressure too low
6723	Wheel Loader	Scania	3485	2	3	SCR main unit, air pressure sensor after orifice circuit supply
6725	Wheel Loader	Scania	3485	3	3	SCR main unit, air pressure sensor after orifice circuit high

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6726	Wheel Loader	Scania	3485	4	3	SCR main unit, air pressure sensor after orifice circuit low
6727	Wheel Loader	Scania	3485	7	3	SCR, air circuit blocked
6728	Wheel Loader	Scania	3485	9	4	SCR main unit, air pressure sensor after orifice performance
6722	Wheel Loader	Scania	3485	18	4	EEC, air supply low
6724	Wheel Loader	Scania	3485	20	4	SCR main unit, air pressure sensor after orifice plausible error
6729	Wheel Loader	Cummins	3490	3	3	Aftertreatment Purge Air Actuator Circuit - Voltage above normal, or shorted to high source
6730	Wheel Loader	Cummins	3490	4	3	Aftertreatment Purge Air Actuator Circuit - Voltage below normal, or shorted to low source
6731	Wheel Loader	Cummins	3490	7	3	Aftertreatment Purge Air Actuator - Mechanical system not responding or out of adjustment
6732	Wheel Loader	Perkins	3509	2	5	Sensor Supply Voltage 1 : Erratic, Intermittent, or Incorrect
6733	Wheel Loader	Cummins	3509	3	5	Sensor Supply 1 Circuit - Voltage above normal, or shorted to high source
6734	Wheel Loader	Perkins	3509	3	5	Sensor Supply Voltage 1 : Voltage Above Normal
6735	Wheel Loader	Cummins	3509	4	5	Sensor Supply 1 Circuit - Voltage below normal, or shorted to low source
6736	Wheel Loader	Perkins	3509	4	5	Sensor Supply Voltage 1 : Voltage Below Normal
6737	Wheel Loader	Perkins	3510	2	5	Sensor Supply Voltage 2 : Erratic, Intermittent, or Incorrect
6738	Wheel Loader	Cummins	3510	3	5	Sensor Supply 2 Circuit - Voltage above normal, or shorted to high source
6739	Wheel Loader	Perkins	3510	3	5	Sensor Supply Voltage 2 : Voltage Above Normal
6740	Wheel Loader	Cummins	3510	4	5	Sensor Supply 2 Circuit - Voltage below normal, or shorted to low source
6741	Wheel Loader	Perkins	3510	4	5	Sensor Supply Voltage 2 : Voltage Below Normal
6742	Wheel Loader	Perkins	3511	2	5	Sensor Supply Voltage 3 : Erratic, Intermittent, or Incorrect
6743	Wheel Loader	Cummins	3511	3	5	Sensor Supply 3 Circuit - Voltage above normal, or shorted to high source
6744	Wheel Loader	Perkins	3511	3	5	Sensor Supply Voltage 3 : Voltage Above Normal
6745	Wheel Loader	Cummins	3511	4	5	Sensor Supply 3 Circuit - Voltage below normal, or shorted to low source
6746	Wheel Loader	Perkins	3511	4	5	Sensor Supply Voltage 3 : Voltage Below Normal
6747	Wheel Loader	Cummins	3512	3	5	Sensor Supply 4 Circuit - Voltage above normal, or shorted to high source
6748	Wheel Loader	Perkins	3512	3	5	Sensor Supply Voltage 4 : Voltage Above Normal
6749	Wheel Loader	Cummins	3512	4	5	Sensor Supply 4 Circuit - Voltage below normal, or shorted to low source
6750	Wheel Loader	Perkins	3512	4	5	Sensor Supply Voltage 4 : Voltage Below Normal
6751	Wheel Loader	Cummins	3513	3	5	Sensor Supply 5 - Voltage above normal, or shorted to high source
6752	Wheel Loader	Cummins	3513	4	5	Sensor Supply 5 - Voltage below normal, or shorted to low source
6753	Wheel Loader	Cummins	3514	3	5	Sensor Supply 6 Circuit - Voltage above normal, or shorted to high source
6754	Wheel Loader	Cummins	3514	4	5	Sensor Supply 6 Circuit - Voltage below normal, or shorted to low source
6757	Wheel Loader	Cummins	3515	2	3	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2 - Data erratic, intermittent or incorrect
6758	Wheel Loader	Scania	3515	2	3	Fault in the reductant doser temperature sensor and pressure sensor.
6759	Wheel Loader	Cummins	3515	3	3	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2 Sensor Circuit - Voltage above normal, or shorted to high source
6760	Wheel Loader	Cummins	3515	4	3	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2 Sensor Circuit - Voltage below normal, or shorted to low source
6761	Wheel Loader	Cummins	3515	5	3	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2 Sensor Circuit - Current below normal or open circuit
6762	Wheel Loader	Cummins	3515	6	3	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2 Sensor Circuit - Current above normal or grounded
6755	Wheel Loader	Cummins	3515	10	4	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2 - Abnormal Rate of Change
6756	Wheel Loader	Cummins	3515	11	3	Aftertreatment 1 Diesel Exhaust Fluid Temperature 2 - Root Cause Not Known
6766	Wheel Loader	Perkins	3516	2	3	Aftertreatment #1 DEF Concentration : Erratic, Intermittent, or Incorrect
6767	Wheel Loader	Scania	3516	2	3	The reductant pick-up unit indicates an internal fault in the reductant sensor.
6763	Wheel Loader	Perkins	3516	12	3	Aftertreatment #1 DEF Concentration : Failure
6764	Wheel Loader	Perkins	3516	16	3	Aftertreatment #1 DEF Concentration : High - moderate severity (2)
6765	Wheel Loader	Perkins	3516	18	3	Aftertreatment #1 DEF Concentration : Low - moderate severity (2)
6768	Wheel Loader	Cummins	3521	11	3	Aftertreatment 1 Diesel Exhaust Fluid Property - Root Cause Not Known
6769	Wheel Loader	Cummins	3521	31	3	Aftertreatment 1 Diesel Exhaust Fluid Property - Condition Exists
6770	Wheel Loader	Cummins	3555	17	4	Ambient Air Density - Data Valid But Below Normal Operating Range - Least Severe Level
6772	Wheel Loader	Cummins	3556	2	3	Aftertreatment Doser - Data erratic, intermittent or incorrect
6773	Wheel Loader	Cummins	3556	5	3	Aftertreatment Doser Circuit - Current below normal or open circuit.
6774	Wheel Loader	Cummins	3556	7	3	Aftertreatment Doser - Mechanical system not responding or out of adjustment
6771	Wheel Loader	Cummins	3556	18	3	Aftertreatment Doser - Data Valid But Below Normal Operating Range - Moderately Severe Level
6779	Wheel Loader	Perkins	3563	3	3	Engine Intake Manifold #1 Absolute Pressure : Voltage Above Normal
6780	Wheel Loader	Perkins	3563	4	3	Engine Intake Manifold #1 Absolute Pressure : Voltage Below Normal
6775	Wheel Loader	Scania	3563	11	4	Boost pressure sensor and ambient pressure sensor do not correlate
6776	Wheel Loader	Perkins	3563	13	3	Engine Intake Manifold #1 Absolute Pressure : Out of Calibration
6777	Wheel Loader	Scania	3563	15	4	Boost pressure sensor and ambient pressure sensor do not correlate
6778	Wheel Loader	Scania	3563	17	3	Boost pressure sensor and ambient pressure sensor do not correlate
6781	Wheel Loader	Perkins	3583	21	3	Common AC Auxiliaries Breaker
6785	Wheel Loader	Cummins	3597	2	5	Power Supply Lost With Ignition On - Data erratic, intermittent or incorrect
6786	Wheel Loader	Cummins	3597	3	3	ECU Power Output Supply Voltage 1 - Voltage above normal, or shorted to high source
6787	Wheel Loader	Cummins	3597	4	3	ECU Power Output Supply Voltage 1 - Voltage below normal, or shorted to low source
6782	Wheel Loader	Cummins	3597	12	4	Injector Power Supply - Bad intelligent device or component
6783	Wheel Loader	Cummins	3597	17	3	ECU Power Output Supply Voltage 1 - Data Valid But Below Normal Operating Range - Moderately Severe Level
6784	Wheel Loader	Cummins	3597	18	3	ECU Power Output Supply Voltage 1 - Data Valid But Below Normal Operating Range - Moderately Severe Level
6788	Wheel Loader	Scania	3607	2	3	Incorrect EMS shutdown
6789	Wheel Loader	Scania	3607	8	3	The EEC control unit has been shut down incorrectly.
6790	Wheel Loader	Yanmar	3609	3	2	DPF high pressure side pressure sensor error (voltage high)
6791	Wheel Loader	Yanmar	3609	4	2	DPF high pressure side pressure sensor error (voltage low)
6793	Wheel Loader	Cummins	3610	2	3	Aftertreatment 1 Diesel Particulate Filter Outlet Pressure - Data erratic, intermittent or incorrect
6794	Wheel Loader	Cummins	3610	3	3	Aftertreatment 1 Diesel Particulate Filter Outlet Pressure Sensor Circuit - Voltage above normal, or shorted to high source

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6795	Wheel Loader	Cummins	3610	4	3	Aftertreatment 1 Diesel Particulate Filter Outlet Pressure Sensor Circuit - Voltage below normal, or shorted to low source
6792	Wheel Loader	Cummins	3610	10	4	Aftertreatment 1 Diesel Particulate Filter Outlet Pressure - Abnormal Rate of Change
6796	Wheel Loader	Cummins	3667	2	2	Engine Air Shutoff Status - Data erratic, intermittent or incorrect
6797	Wheel Loader	Cummins	3667	3	3	Engine Air Shutoff Circuit - Voltage above normal, or shorted to high source
6799	Wheel Loader	Cummins	3667	4	3	Engine Air Shutoff Circuit - Voltage below normal, or shorted to low source
6800	Wheel Loader	Cummins	3667	7	2	Engine Air Shutoff - Mechanical System Not Responding or Out of Adjustment
6798	Wheel Loader	Cummins	3667	31	3	Engine Air Shutoff - Condition Exists
6801	Wheel Loader	Scania	3673	3	3	Throttle Position Sensor 2, short circuit to +24V
6802	Wheel Loader	Scania	3673	4	3	Throttle Position Sensor 2, short circuit to ground
6804	Wheel Loader	Cummins	3695	2	4	Aftertreatment Regeneration Inhibit Switch - Data erratic, intermittent or incorrect
6803	Wheel Loader	Yanmar	3695	14	4	Reset regeneration is inhibited
6805	Wheel Loader	Perkins	3697	5	3	Particulate Trap Lamp Command: Current Below Normal
6806	Wheel Loader	Perkins	3697	6	3	Particulate Trap Lamp Command : Current Above Normal
6807	Wheel Loader	Perkins	3698	5	3	Exhaust System High Temperature Lamp Command: Current Below Normal
6808	Wheel Loader	Perkins	3698	6	3	Exhaust System High Temperature Lamp Command : Current Above Normal
6809	Wheel Loader	Perkins	3702	5	3	Diesel Particulate Filter Active Regeneration Inhibited Status : Current Below Normal
6810	Wheel Loader	Perkins	3702	6	3	Diesel Particulate Filter Active Regeneration Inhibited Status : Current Above Normal
6811	Wheel Loader	Cummins	3703	31	3	Particulate Trap Active Regeneration Inhibited Due to Inhibit Switch - Condition Exists
6812	Wheel Loader	Cummins	3713	31	4	Diesel Particulate Filter Active Regeneration Inhibited Due to System Timeout - Condition Exists
6813	Wheel Loader	Perkins	3719	0	2	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent: High - most severe (3》
6814	Wheel Loader	Yanmar	3719	0	2	backup mode
6817	Wheel Loader	Yanmar	3719	7	1	Recovery regeneration is inhibited
6818	Wheel Loader	Yanmar	3719	9	1	Recovery regeneration failure
6815	Wheel Loader	Perkins	3719	16	3	Aftertreatment 1 Diesel Particulate Filter Soot Load Percent: High - moderate severity (2)
6816	Wheel Loader	Yanmar	3719	16	3	Stationary regeneration standby
6819	Wheel Loader	Yanmar	3720	0	3	Ash cleaning request 2
6820	Wheel Loader	Cummins	3720	15	3	Aftertreatment 1 Diesel Particulate Filter Ash Load Percent - Data Valid But Above Normal Operating Range - Least Severe Level
6821	Wheel Loader	Yanmar	3720	16	3	Ash cleaning request 1
6822	Wheel Loader	Cummins	3750	14	4	Aftertreatment 1 Diesel Particulate Filter Conditions Not Met for Active Regeneration - Special Instructions
6823	Wheel Loader	Cummins	3750	31	3	Diesel Particulate Filter 1 Conditions Not Met for Active Regeneration - Condition Exists
6830	Wheel Loader	Scania	3822	2	3	The EGR valve actuator M28 reports that the damper does not move as expected or does not move at all.
6833	Wheel Loader	Scania	3822	3	3	EGR position sensor, short circuit to +24V
6834	Wheel Loader	Scania	3822	4	3	EGR position sensor, short circuit to ground
6835	Wheel Loader	Scania	3822	7	4	EGR SRA reports a warning during Learn Stops.
6836	Wheel Loader	Scania	3822	8	4	EGR position sensor, outside the permitted range
6837	Wheel Loader	Scania	3822	9	2	The actuator for EGR valve M28 reports that the engine performance has been limited.
6824	Wheel Loader	Scania	3822	12	4	EGR SRA reports it has a continuous fault.
6825	Wheel Loader	Scania	3822	13	4	EGR position sensor, not plausible
6826	Wheel Loader	Scania	3822	15	3	The electric motor temperature for the actuator for EGR valve M28 has been above 125°C for more than 10 minutes or above 130°C for more than 3 seconds.
6827	Wheel Loader	Scania	3822	16	3	EGR SRA reports a running conditions warning for high temp or low voltage.
6828	Wheel Loader	Scania	3822	18	3	The actuator for EGR valve M28 reports that the supply voltage is too low.
6829	Wheel Loader	Scania	3822	19	4	EGR CAN timeout
6831	Wheel Loader	Scania	3822	20	3	EGR position sensor, voltage shows large variation in open position
6832	Wheel Loader	Scania	3822	21	3	EGR position sensor, voltage shows large variation in closed position
6838	Wheel Loader	Cummins	3826	18	3	Aftertreatment 1 Diesel Exhaust Fluid Average Consumption - Data Valid But Below Normal Operating Range
6842	Wheel Loader	Scania	3936	2	3	Particulate filter, clogged
6843	Wheel Loader	Scania	3936	6	3	Particulate filter, ash level too high
6844	Wheel Loader	Cummins	3936	7	3	Aftertreatment 1 Diesel Particulate Filter System - Mechanical system not responding or out of adjustment
6839	Wheel Loader	Scania	3936	10	3	Exhaust temperature sensors, not plausible
6840	Wheel Loader	Cummins	3936	14	2	Aftertreatment Diesel Particulate Filter System - Special Instructions
6841	Wheel Loader	Cummins	3936	15	3	Aftertreatment 1 Diesel Particulate Filter System - Data Valid But Above Normal Operating Range - Level
6845	Wheel Loader	Scania	4090	0	3	NOx level after catalytic converter too high
6846	Wheel Loader	Scania	4090	11	4	NOx Exceedence - Root Cause Unknown
6847	Wheel Loader	Scania	4090	16	3	SCR main unit, NOx level too high
6848	Wheel Loader	Cummins	4094	31	3	NOx limits exceeded due to Insufficient Reagent Quality - Condition Exists
6849	Wheel Loader	Scania	4095	2	3	NOx Exceedence - Interruption of Reagent Dosing Activity
6850	Wheel Loader	Scania	4096	2	3	NOx Exceedence - Empty Reagent Tank
6851	Wheel Loader	Cummins	4096	31	3	Aftertreatment Diesel Exhaust Fluid Tank Empty - Condition Exists
6852	Wheel Loader	Cummins	4097	3	3	Aftertreatment Fuel Drain Valve Circuit - Voltage above normal, or shorted to high source
6853	Wheel Loader	Cummins	4097	4	3	Aftertreatment Fuel Drain Valve Circuit - Voltage below normal, or shorted to low source
6854	Wheel Loader	Cummins	4097	7	3	Aftertreatment Fuel Drain Valve - Mechanical system not responding or out of adjustment
6855	Wheel Loader	Cummins	4182	4	3	Generator Output Frequency Adjust Potentiometer Circuit - Voltage below normal, or shorted to low source
6856	Wheel Loader	Cummins	4183	4	3	Droop Adjust Potentiometer Circuit - Voltage below normal, or shorted to low source
6857	Wheel Loader	Cummins	4184	4	3	Gain Adjust Potentiometer Circuit - Voltage below normal, or shorted to low source
6858	Wheel Loader	Cummins	4185	31	4	Overspeed Shutdown Relay Driver Diagnostic has detected an error - Condition Exists
6859	Wheel Loader	Cummins	4186	31	4	Low Oil Pressure (LOP) Shutdown Relay Driver Diagnostic has detected an error - Condition Exists
6860	Wheel Loader	Cummins	4187	31	4	High Engine Temperature (HET) Shutdown Relay Driver Diagnostic has detected an error - Condition Exists

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
6861	Wheel Loader	Cummins	4188	31	4	Pre-Low Oil Pressure Warning Relay Driver Diagnostic has detected an error - Condition Exists
6863	Wheel Loader	Scania	4201	2	3	Engine position sensor 1, faulty
6864	Wheel Loader	Scania	4201	4	4	Engine position sensor 1, too weak signal
6865	Wheel Loader	Scania	4201	7	3	Engine position sensor 1, faulty
6866	Wheel Loader	Scania	4201	8	4	Engine position sensor 1, Gap Puls or Sync error
6867	Wheel Loader	Scania	4201	9	4	Engine position sensor 1, time out
6862	Wheel Loader	Scania	4201	10	3	Engine position sensor 1, position diff
6868	Wheel Loader	Scania	4202	2	3	Engine speed sensor faulty
6869	Wheel Loader	Cummins	4223	31	4	Pre-High Engine Temperature Warning Relay Driver Diagnostic has detected an error - Condition Exists
6870	Wheel Loader	Scania	4225	2	3	Failure in the NOx control monitoring system
6871	Wheel Loader	Yanmar	4257	12	2	Injector drive IC error
6873	Wheel Loader	Scania	4301	2	3	Fault in injection valve for exhaust gas aftertreatment V185.
6874	Wheel Loader	Scania	4301	3	3	Fault in injection valve for exhaust gas aftertreatment V185.
6875	Wheel Loader	Scania	4301	4	3	Fault in injection valve for exhaust gas aftertreatment V185.
6876	Wheel Loader	Scania	4301	5	3	Fault in injection valve for exhaust gas aftertreatment V185.
6877	Wheel Loader	Scania	4301	6	3	Fault in injection valve for exhaust gas aftertreatment V185.
6878	Wheel Loader	Scania	4301	7	3	Leakage in the injection valve V185 or in the pipes to the injection valve.
6879	Wheel Loader	Scania	4301	9	3	The fuel pressure in the valve block for exhaust gas aftertreatment does not fall when the fuel injection valve has been opened.
6872	Wheel Loader	Scania	4301	10	3	The fuel pressure in the exhaust gas aftertreatment valve block V184 is too high when the fuel injection valve V185 is open.
6880	Wheel Loader	Cummins	4331	18	3	Aftertreatment SCR Actual Dosing Reagent Quantity - Data Valid But Below Normal Operating Range - Mo
6881	Wheel Loader	Scania	4334	0	3	SCR reductant pressure error
6882	Wheel Loader	Scania	4334	1	3	EEC3 has demanded SCR Hazardous functional failure reductant dosing stopped actions
6891	Wheel Loader	Cummins	4334	2	3	Aftertreatment 1 Diesel Exhaust Fluid Pressure Sensor - Data erratic, intermittent or incorrect
6892	Wheel Loader	Scania	4334	2	3	Urea pressure sensor, plausible error during start-up
6895	Wheel Loader	Cummins	4334	3	3	Aftertreatment 1 Diesel Exhaust Fluid Pressure Sensor - Voltage above normal, or shorted to high source
6896	Wheel Loader	Perkins	4334	3	3	Aftertreatment #1 DEF#1 Pressure(absolute) : Voltage Above Normal
6897	Wheel Loader	Scania	4334	3	3	Urea pressure sensor, SRC high
6898	Wheel Loader	Cummins	4334	4	3	Aftertreatment 1 Diesel Exhaust Fluid Pressure Sensor - Voltage below normal, or shorted to low source
6899	Wheel Loader	Perkins	4334	4	3	Aftertreatment #1 DEF#1 Pressure(absolute) : Voltage Below Normal
6900	Wheel Loader	Scania	4334	4	3	Urea pressure sensor, SRC low
6901	Wheel Loader	Cummins	4334	5	3	Aftertreatment 1 Diesel Exhaust Fluid Pressure Sensor Circuit - Current Below Normal or Open Circuit
6902	Wheel Loader	Cummins	4334	7	3	Aftertreatment 1 Diesel Exhaust Fluid Pressure - Mechanical System Not Responding or Out of Adjustment
6903	Wheel Loader	Scania	4334	8	3	Urea pressure sensor, pressure too high not plausible
6883	Wheel Loader	Scania	4334	10	3	The reductant pressure is too low or too high when the reductant pump is shut off.
6884	Wheel Loader	Cummins	4334	15	3	Aftertreatment 1 Diesel Exhaust Fluid Pressure - Data Valid But Above Normal Operating Range - Least Severe Level
6885	Wheel Loader	Scania	4334	15	3	The reductant pressure is too high even though the reductant pump is shut off.
6886	Wheel Loader	Cummins	4334	16	3	Aftertreatment 1 Diesel Exhaust Fluid Pressure Sensor - Data Valid But Above Normal Operating Range
6887	Wheel Loader	Perkins	4334	16	3	Aftertreatment #1 DEF#1 Pressure(absolute) : High - moderate severity (2)
6888	Wheel Loader	Scania	4334	17	3	The reductant pressure is too low when the reductant pump is shut off.
6889	Wheel Loader	Cummins	4334	18	3	Aftertreatment 1 Diesel Exhaust Fluid Pressure Sensor - Data Valid But Below Normal Operating Range
6890	Wheel Loader	Perkins	4334	18	3	Aftertreatment #1 DEF#1 Pressure(absolute) : Low - moderate severity (2)
6893	Wheel Loader	Perkins	4334	20	4	Aftertreatment #1 DEF#1 Pressure(absolute) : Data Drifted High
6894	Wheel Loader	Perkins	4334	21	3	Aftertreatment #1 DEF#1 Pressure(absolute) : Data Drifted Low
6904	Wheel Loader	Scania	4337	1	3	The reductant doser temperature sensor indicates values which are too low.
6906	Wheel Loader	Cummins	4337	2	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Temperature - Data erratic, intermittent or incorrect
6907	Wheel Loader	Cummins	4337	3	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Temperature Sensor - Voltage Above Normal, or Shorted to High Source
6908	Wheel Loader	Scania	4337	3	3	The reductant doser temperature sensor indicates incorrect values.
6909	Wheel Loader	Cummins	4337	4	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Temperature Sensor - Voltage below normal, or shorted to low source
6905	Wheel Loader	Cummins	4337	10	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Temperature - Abnormal Rate of Change
6911	Wheel Loader	Cummins	4339	7	3	Aftertreatment 1 SCR Feedback Control Status - Mechanical System Not Responding or Out of Adjustment
6910	Wheel Loader	Cummins	4339	31	3	Aftertreatment 1 SCR Feedback Control Status - Condition Exists
6912	Wheel Loader	Cummins	4340	3	3	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 1 Circuit - Voltage above normal, or shorted to high source
6913	Wheel Loader	Cummins	4340	4	3	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 1 Circuit - Voltage below normal, or shorted to low source
6914	Wheel Loader	Cummins	4340	5	3	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 1 Circuit - Current below normal or open circuit
6915	Wheel Loader	Scania	4341	2	3	Fault in the reductant heater for reductant hose 1 (H25).
6916	Wheel Loader	Scania	4341	3	3	Fault in the reductant heater for reductant hose 1 (H25).
6917	Wheel Loader	Scania	4341	4	3	Fault in the reductant heater for reductant hose 1 (H25).
6918	Wheel Loader	Scania	4341	5	3	Fault in the reductant heater for reductant hose 1 (H25).
6919	Wheel Loader	Scania	4341	6	3	The reductant heater for reductant hose 1 (H25) has consumed more power than permitted.

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
6920	Wheel Loader	Cummins	4342	3	3	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 2 Circuit - Voltage above normal, or shorted to high source
6921	Wheel Loader	Cummins	4342	4	3	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 2 Circuit - Voltage below normal, or shorted to low source
6922	Wheel Loader	Cummins	4342	5	3	Aftertreatment 1 Diesel Exhaust Fluid Line Heater 2 Circuit - Current below normal or open circuit
6923	Wheel Loader	Scania	4343	2	3	Fault in the reductant heater for reductant hose 2 (H26).
6924	Wheel Loader	Scania	4343	3	3	Fault in the reductant heater for reductant hose 2 (H26).
6925	Wheel Loader	Scania	4343	4	3	Fault in the reductant heater for reductant hose 2 (H26).
6926	Wheel Loader	Scania	4343	5	3	Fault in the reductant heater for reductant hose 2 (H26).
6927	Wheel Loader	Scania	4343	6	3	The reductant heater for reductant hose 2 (H26) has consumed more power than permitted.
6928	Wheel Loader	Cummins	4344	3	3	Aftertreatment Diesel Exhaust Fluid Line Heater 3 Circuit - Voltage above normal, or shorted to high source
6929	Wheel Loader	Cummins	4344	4	3	Aftertreatment Diesel Exhaust Fluid Line Heater 3 Circuit - Voltage below normal, or shorted to low source
6930	Wheel Loader	Cummins	4344	5	3	Aftertreatment Diesel Exhaust Fluid Line Heater 3 Circuit - Current below normal or open circuit
6931	Wheel Loader	Scania	4345	2	3	Fault in the reductant heater for reductant hose 3 (H27).
6932	Wheel Loader	Scania	4345	3	3	Fault in the reductant heater for reductant hose 3 (H27).
6933	Wheel Loader	Scania	4345	4	3	Fault in the reductant heater for reductant hose 3 (H27).
6934	Wheel Loader	Scania	4345	5	3	Fault in the reductant heater for reductant hose 3 (H27).
6935	Wheel Loader	Scania	4345	6	3	The reductant heater for reductant hose 3 (H27) has consumed more power than permitted.
6936	Wheel Loader	Scania	4347	2	3	Electrical fault in the reductant heater for reductant hose 4 (H28).
6937	Wheel Loader	Scania	4347	3	3	Fault in the reductant heater for reductant hose 4 (H28).
6938	Wheel Loader	Scania	4347	4	3	Fault in the reductant heater for reductant hose 4 (H28).
6939	Wheel Loader	Scania	4347	5	3	Fault in the reductant heater for reductant hose 4 (H28).
6940	Wheel Loader	Scania	4347	6	3	The reductant heater for reductant hose 4 (H28) has consumed more power than permitted.
6941	Wheel Loader	Cummins	4353	31	2	Aftertreatment 1 Diesel Exhaust Fluid Doser Heating Mode Request - Condition Exists
6942	Wheel Loader	Perkins	4354	5	3	Aftertreatment #1 DEF Line Heater #1 : Current Below Normal
6943	Wheel Loader	Perkins	4354	6	3	Aftertreatment #1 DEF Line Heater #1 : Current Above Normal
6944	Wheel Loader	Perkins	4355	5	3	Aftertreatment #1 DEF Line Heater #2 : Current Below Normal
6945	Wheel Loader	Perkins	4355	6	3	Aftertreatment #1 DEF Line Heater #2 : Current Above Normal
6946	Wheel Loader	Perkins	4356	5	3	Aftertreatment #1 DEF Line Heater #3 : Current Below Normal
6947	Wheel Loader	Perkins	4356	6	3	Aftertreatment #1 DEF Line Heater #3 : Current Above Normal
6948	Wheel Loader	Cummins	4360	0	2	Aftertreatment 1 SCR Intake Temperature - Data valid but above normal operational range - Most Severe Level
6954	Wheel Loader	Cummins	4360	2	4	Aftertreatment 1 SCR Intake Temperature Sensor - Data erratic, intermittent or incorrect
6956	Wheel Loader	Cummins	4360	3	3	Aftertreatment 1 SCR Intake Temperature Sensor Circuit - Voltage above normal, or shorted to high source
6957	Wheel Loader	Perkins	4360	3	3	Aftertreatment #1 SCR Catalyst Intake Gas Temperature : Voltage Above Normal
6958	Wheel Loader	Cummins	4360	4	3	Aftertreatment 1 SCR Intake Temperature Sensor Circuit - Voltage below normal, or shorted to low source
6959	Wheel Loader	Perkins	4360	4	3	Aftertreatment #1 SCR Catalyst Intake Gas Temperature : Voltage Below Normal
6949	Wheel Loader	Cummins	4360	15	4	Aftertreatment 1 SCR Intake Temperature - Data Valid But Above Normal Operating Range - Least Severe
6950	Wheel Loader	Cummins	4360	16	3	Aftertreatment 1 SCR Intake Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
6951	Wheel Loader	Perkins	4360	16	3	Aftertreatment #1 SCR Catalyst Intake Gas Temperature : High - moderate severity (2)
6952	Wheel Loader	Perkins	4360	17	4	Aftertreatment #1 SCR Catalyst Intake Gas Temperature : Low - least severe (1)
6953	Wheel Loader	Perkins	4360	18	3	Aftertreatment #1 SCR Catalyst Intake Gas Temperature : Low - moderate severity (2)
6955	Wheel Loader	Perkins	4360	20	4	Aftertreatment #1 SCR Catalyst Intake Gas Temperature : Data Drifted High
6960	Wheel Loader	Cummins	4363	0	2	Aftertreatment 1 SCR Outlet Temperature - Data valid but above normal operational range - Most Severe
6962	Wheel Loader	Cummins	4363	2	4	Aftertreatment 1 SCR Outlet Temperature Sensor - Data erratic, intermittent or incorrect
6963	Wheel Loader	Cummins	4363	3	3	Aftertreatment 1 SCR Outlet Temperature Sensor Circuit - Voltage above normal, or shorted to high source
6964	Wheel Loader	Cummins	4363	4	3	Aftertreatment 1 SCR Outlet Temperature Sensor Circuit - Voltage below normal, or shorted to low source
6961	Wheel Loader	Cummins	4363	16	2	Aftertreatment 1 SCR Outlet Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
6968	Wheel Loader	Perkins	4364	2	4	Aftertreatment #1 SCR Catalyst Conversion Efficiecy : Erratic, Intermittent ,or Incorrcet
6965	Wheel Loader	Cummins	4364	17	4	Aftertreatment SCR Catalyst Conversion Efficiency - Data Valid But Below Normal Operating Range - Moderately Severe Level
6966	Wheel Loader	Cummins	4364	18	3	Aftertreatment SCR Catalyst Conversion Efficiency - Data Valid But Below Normal Operating Range - Moderately Severe Level
6967	Wheel Loader	Perkins	4364	18	3	Aftertreatment #1 SCR Catalyst Conversion Efficiecy : Low - moderate severity (2)
6969	Wheel Loader	Cummins	4364	31	3	Aftertreatment 1 SCR Conversion Efficiency - Condition Exists
6970	Wheel Loader	Scania	4374	0	3	Reductant pump fault, pump speed too high
6971	Wheel Loader	Scania	4374	1	3	Reductant pump fault, pump speed too low
6974	Wheel Loader	Scania	4374	2	3	The EEC control unit for exhaust gas aftertreatment does not receive a signal from the reductant pump about the current rotational speed.
6975	Wheel Loader	Cummins	4374	3	3	Aftertreatment 1 Diesel Exhaust Fluid Pump 1 Motor Speed Circuit - Voltage Above Normal or Shorted to High Source
6976	Wheel Loader	Cummins	4374	4	3	Aftertreatment 1 Diesel Exhaust Fluid Pump 1 Motor Speed Circuit - Voltage Below Normal or Shorted to Low Source
6977	Wheel Loader	Scania	4374	4	3	Short circuit to ground in the voltage supply circuit for the reductant pump.
6978	Wheel Loader	Cummins	4374	5	3	Aftertreatment 1 Diesel Exhaust Fluid Pump 1 Motor Speed Circuit - Current Below Normal or Open Circuit
6979	Wheel Loader	Perkins	4374	5	3	Aftertreatment #1 DEF Pump #1 Motor Speed : Current Below Normal

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
6980	Wheel Loader	Scania	4374	5	3	Fault in the reductant pump control and voltage supply circuit.
6981	Wheel Loader	Perkins	4374	6	3	Aftertreatment #1 DEF Pump #1 Motor Speed : Current Above Normal
6982	Wheel Loader	Scania	4374	6	3	Fault in the reductant pump voltage supply circuit.
6983	Wheel Loader	Scania	4374	7	3	The reductant pressure does not increase and the reductant pump rotational speed sensor indicates too low a value.
6972	Wheel Loader	Scania	4374	16	3	The reductant pump needs to run more slowly than expected to maintain the correct reductant pressure.
6973	Wheel Loader	Scania	4374	17	3	The reductant pump needs to run more quickly than expected to maintain the correct reductant pressure.
6984	Wheel Loader	Cummins	4375	3	3	Aftertreatment 1 Diesel Exhaust Fluid Pump Command Circuit - Voltage Above Normal or Shorted to High Source
6985	Wheel Loader	Cummins	4375	4	3	Aftertreatment 1 Diesel Exhaust Fluid Pump Command Circuit - Voltage Below Normal or Shorted to Low Source
6986	Wheel Loader	Cummins	4376	3	3	Aftertreatment Diesel Exhaust Fluid Return Valve - Voltage above normal, or shorted to high source
6987	Wheel Loader	Cummins	4376	4	3	Aftertreatment Diesel Exhaust Fluid Return Valve - Voltage below normal, or shorted to low source
6988	Wheel Loader	Cummins	4376	7	3	Aftertreatment Diesel Exhaust Fluid Return Valve - Mechanical system not responding or out of adjust
6989	Wheel Loader	Perkins	4377	12	3	Aftertreatment #1 Outlet NH3 : Failure
6990	Wheel Loader	Perkins	4380	2	4	Aftertreatment 1 Outlet NH3 Gas Sensor Power In Range : Erratic, Intermittent, or Incorrect
6991	Wheel Loader	Scania	4427	2	3	The reductant pick-up unit indicates an internal fault in the temperature sensor.
6993	Wheel Loader	Cummins	4490	9	3	Specific Humidity Sensor - Abnormal update rate
6992	Wheel Loader	Cummins	4490	19	4	Specific Humidity Sensor - Received Network Data In Error
6997	Wheel Loader	Cummins	4765	2	4	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature - Data erratic, intermittent or incorrect
6998	Wheel Loader	Cummins	4765	3	3	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature Sensor Circuit - Voltage above normal, or shorted to high source
6999	Wheel Loader	Perkins	4765	3	3	Aftertreatment #1 Diesel Oxidation Catalyst Intake Gas Temperature : Voltage Above Normal
7000	Wheel Loader	Cummins	4765	4	3	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature Sensor Circuit - Voltage below normal, or shorted to low source
7001	Wheel Loader	Perkins	4765	4	3	Aftertreatment #1 Diesel Oxidation Catalyst Intake Gas Temperature : Voltage Below Normal
6994	Wheel Loader	Cummins	4765	13	3	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature Swapped - Out of Calibration
6995	Wheel Loader	Cummins	4765	16	2	Aftertreatment 1 Diesel Oxidation Catalyst Intake Temperature - Data Valid But Above Normal Operating Range
6996	Wheel Loader	Perkins	4765	17	4	Aftertreatment #1 Diesel Oxidation Catalyst Intake Gas Temperature : Low - least severe (1)
7002	Wheel Loader	Cummins	4766	0	2	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Gas Temperature - Data Valid But Above Normal Operating Range - Most Severe Level
7005	Wheel Loader	Cummins	4766	2	4	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Gas Temperature - Data Erratic, Intermittent, or Incorrect
7006	Wheel Loader	Cummins	4766	3	3	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Gas Temperature Sensor Circuit - Voltage above normal, or shorted to high source
7007	Wheel Loader	Cummins	4766	4	3	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Gas Temperature Sensor Circuit - Voltage below normal, or shorted to low source
7003	Wheel Loader	Cummins	4766	15	4	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Gas Temperature - Data Valid But Above Normal Operating Range - Least Severe Level
7004	Wheel Loader	Cummins	4766	16	2	Aftertreatment 1 Diesel Oxidation Catalyst Outlet Gas Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
7008	Wheel Loader	Scania	4782	0	3	Particulate filter is clogged, hazardous
7009	Wheel Loader	Scania	4782	16	3	Particulate filter is clogged, major
7014	Wheel Loader	Perkins	4783	3	3	DPF #1 Average Soot Signal : Voltage Above Normal
7015	Wheel Loader	Perkins	4783	4	3	DPF #1 Average Soot Signal : Voltage Below Normal
7016	Wheel Loader	Perkins	4783	9	3	Diesel Particulate Filter #1 Mean Soot Sognal : Abnormal update Rate
7010	Wheel Loader	Perkins	4783	12	3	DPF #1 Average Soot Signal : Failure
7011	Wheel Loader	Perkins	4783	13	3	Diesel Particulate Filter #1 Mean Soot Sognal : Calibration Required
7012	Wheel Loader	Perkins	4783	19	3	Diesel Particulate Filter #1 Mean Soot Sognal : Data Error
7013	Wheel Loader	Perkins	4783	21	4	DPF #1 Average Soot Signal : Data Drifted Low
7018	Wheel Loader	Cummins	4792	7	3	Aftertreatment SCR Catalyst System - Mechanical system not responding or out of adjustment
7017	Wheel Loader	Cummins	4792	14	2	Aftertreatment 1 SCR Catalyst System - Special Instructions
7019	Wheel Loader	Cummins	4793	31	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Missing - Condition Exists
7020	Wheel Loader	Cummins	4794	31	4	Aftertreatment 1 SCR Catalyst System Missing - Condition Exists
7021	Wheel Loader	Cummins	4795	31	4	Aftertreatment 1 Diesel Particulate Filter Missing - Condition Exists
7022	Wheel Loader	Cummins	4796	31	4	Aftertreatment 1 Diesel Oxidation Catalyst Missing - Condition Exists
7027	Wheel Loader	Cummins	4809	2	4	Aftertreatment Warm Up Diesel Oxidation Catalyst Intake Temperature - Data erratic, intermittent or incorrect
7028	Wheel Loader	Scania	4809	2	4	Upstream exhaust temperature sensor error
7029	Wheel Loader	Cummins	4809	3	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Intake Temperature Sensor Circuit - Voltage above normal
7030	Wheel Loader	Cummins	4809	4	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Intake Temperature Sensor Circuit - Voltage below normal
7031	Wheel Loader	Scania	4809	7	3	Upstream exhaust temperature sensor, stuck
7032	Wheel Loader	Scania	4809	8	4	Upstream exhaust temperature sensor error
7033	Wheel Loader	Scania	4809	9	4	Upstream exhaust temperature sensor, not plausible
7023	Wheel Loader	Cummins	4809	13	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Intake Temperature Sensor Swapped - Out of Calibration
7024	Wheel Loader	Cummins	4809	16	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Intake Temperature - Data Valid But Above Normal Operating Range
7025	Wheel Loader	Scania	4809	16	3	Upstream exhaust temperature sensor, above limit

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
7026	Wheel Loader	Scania	4809	18	3	Upstream exhaust temperature sensor, below limit
7034	Wheel Loader	Cummins	4810	0	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Outlet Temperature - Data valid but above normal operating Range ?Most Severe level
7038	Wheel Loader	Cummins	4810	2	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Outlet Temperature - Data erratic, intermittent or incorrect
7039	Wheel Loader	Cummins	4810	3	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Outlet Temperature Sensor Circuit - Voltage above normal
7040	Wheel Loader	Cummins	4810	4	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Outlet Temperature Sensor Circuit - Voltage below normal
7041	Wheel Loader	Scania	4810	9	5	Particulate filter, temperature drop not plausible
7035	Wheel Loader	Cummins	4810	15	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Outlet Temperature - Data Valid But Above Normal Operating Range
7036	Wheel Loader	Cummins	4810	16	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Outlet Temperature - Data Valid But Above Normal Operating Range
7037	Wheel Loader	Scania	4810	18	5	Upstream exhaust temperature too low during regeneration
7043	Wheel Loader	Scania	4814	2	3	Coolant water pump actuator, faulty
7044	Wheel Loader	Scania	4814	3	3	Coolant water pump actuator, short circiut on high side
7045	Wheel Loader	Scania	4814	4	3	Coolant water pump actuator, short circiut on low side
7046	Wheel Loader	Scania	4814	7	3	Coolant pump speed sensor, stuck
7047	Wheel Loader	Scania	4814	8	4	Electrically controlled coolant pump
7042	Wheel Loader	Scania	4814	10	3	Coolant pump speed sensor, no signal
7048	Wheel Loader	Perkins	4863	21	3	Special Ignitor Loop 36 - Resistance
7049	Wheel Loader	Cummins	5018	11	4	Aftertreatment 1 Diesel Oxidation Catalyst Face Plugged - Root Cause Not Known
7050	Wheel Loader	Cummins	5019	2	4	Engine Exhaust Gas Recirculation Outlet Pressure - Data erratic, intermittent or incorrect
7051	Wheel Loader	Cummins	5019	3	3	Engine Exhaust Gas Recirculation Outlet Pressure Sensor Circuit - Voltage above normal, or shorted to high source
7052	Wheel Loader	Cummins	5019	4	3	Engine Exhaust Gas Recirculation Outlet Pressure Sensor Circuit - Voltage below normal, or shorted to low source
7053	Wheel Loader	Cummins	5024	10	4	Aftertreatment 1 Intake NOx Sensor Heater - Abnormal rate of change
7054	Wheel Loader	Cummins	5031	10	4	Aftertreatment 1 Outlet NOx Sensor Heater - Abnormal rate of change
7055	Wheel Loader	Perkins	5055	17	4	Engine Oil Viscosity : Low - least severe (1)
7056	Wheel Loader	Perkins	5055	18	3	Engine Oil Viscosity : Low - moderate severity (2)
7057	Wheel Loader	Cummins	5097	3	3	Engine Brake Active Lamp - Voltage Above Normal, or Shorted to High Source
7058	Wheel Loader	Cummins	5097	4	3	Engine Brake Active Lamp - Voltage below normal, or shorted to low source
7059	Wheel Loader	Perkins	5099	5	3	Engine Oil Pressure Low Lamp Data - Current Below Normal
7060	Wheel Loader	Perkins	5099	6	3	Engine Oil Pressure Low Lamp Data - Current Above Normal
7061	Wheel Loader	Cummins	5125	3	3	Sensor Supply 7 Circuit - Voltage above normal, or shorted to high source
7062	Wheel Loader	Cummins	5125	4	3	Sensor Supply 7 Circuit - Voltage below normal, or shorted to low source
7063	Wheel Loader	Cummins	5245	31	3	Aftertreatment SCR Operator Inducement Active - Condition Exists
7064	Wheel Loader	Cummins	5246	0	2	Aftertreatment SCR Operator Inducement - Data valid but above normal operational range - Most Severe level
7065	Wheel Loader	Perkins	5246	0	2	Aftertreatment SCR Operator Inducement Severity : High - most severe (3)
7066	Wheel Loader	Perkins	5246	15	3	Aftertreatment SCR Operator Inducement Severity: High - least severe(1)
7067	Wheel Loader	Perkins	5246	16	3	Aftertreatment SCR Operator Inducement Severity: High - moderate severity (2)
7068	Wheel Loader	Scania	5285	1	3	Boost temperature to high, not plausible
7069	Wheel Loader	Cummins	5298	17	3	Aftertreatment 1 Diesel Oxidation Catalyst Conversion Efficiency - Data Valid But Below Normal Operating Range - Moderately Severe Level
7070	Wheel Loader	Perkins	5298	17	3	Aftertreatment 1 Diesel Oxidation Catalyst Conversion Efficiency : Low - least severe (1)
7071	Wheel Loader	Cummins	5298	18	3	Aftertreatment 1 Diesel Oxidation Catalyst Conversion Efficiency - Data Valid But Below Normal Operating Range - Moderately Severe Level
7072	Wheel Loader	Cummins	5319	31	2	Aftertreatment Diesel Particulate Filter Incomplete Regeneration - Condition Exists
7073	Wheel Loader	Perkins	5319	31	2	Aftertreatment 1 Diesel Particulate Filter Incomplete Regeneration
7074	Wheel Loader	Perkins	5324	7	3	Engine Glow Plug 1 : Not Responding Properly
7075	Wheel Loader	Perkins	5325	7	3	Engine Glow Plug 2 : Not Responding Properly
7076	Wheel Loader	Perkins	5326	7	3	Engine Glow Plug 3 : Not Responding Properly
7077	Wheel Loader	Perkins	5327	7	3	Engine Glow Plug 4 : Not Responding Properly
7078	Wheel Loader	Cummins	5357	31	3	Engine Fuel Injection Quantity Error for Multiple Cylinders - Condition Exists
7079	Wheel Loader	Perkins	5357	31	3	Engine Fuel Injection Quantity Error for Multiple Cylinders
7080	Wheel Loader	Cummins	5380	11	3	Engine Fuel Valve 1 - Root Cause Not Known
7081	Wheel Loader	Cummins	5380	13	3	Engine Fuel Valve 1 - Out of Calibration
7082	Wheel Loader	Perkins	5392	31	3	Aftertreatment Diesel Exhaust Fluid Dosing Unit Loss of Prime
7083	Wheel Loader	Cummins	5394	2	4	Aftertreatment Diesel Exhaust Fluid Dosing Valve - Data erratic, intermittent or incorrect
7084	Wheel Loader	Cummins	5394	3	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Valve 1 Circuit - Voltage Above Normal or Shorted to High Source
7085	Wheel Loader	Cummins	5394	5	3	Aftertreatment Diesel Exhaust Fluid Dosing Valve - Current below normal or open circuit
7086	Wheel Loader	Cummins	5394	7	3	Aftertreatment Diesel Exhaust Fluid Dosing Valve - Mechanical system not responding or out of adjustment
7087	Wheel Loader	Cummins	5395	16	3	Engine Idle Fuel Quantity - Data Valid But Above Normal Operating Range - Moderately Severe Level
7088	Wheel Loader	Cummins	5395	18	3	Engine Idle Fuel Quantity - Data Valid But Below Normal Operating Range - Moderately Severe Level
7089	Wheel Loader	Cummins	5396	31	3	Engine Crankcase Ventilation Hose Disconnected - Condition Exists
7090	Wheel Loader	Cummins	5397	31	4	Aftertreatment Diesel Particulate Filter Regeneration too Frequent - Condition Exists
7091	Wheel Loader	Scania	5401	2	3	EGR bypass actuator, faulty
7092	Wheel Loader	Scania	5401	3	3	EGR bypass actuator, short circuit high to +24V
7093	Wheel Loader	Scania	5401	4	3	EGR bypass actuator, short circuit high to ground
7094	Wheel Loader	Scania	5401	5	3	EGR bypass actuator, open load
7102	Wheel Loader	Scania	5419	2	4	Throttle M42, CAN interface fault
7103	Wheel Loader	Scania	5419	3	4	Throttle M42, supply voltage fault

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
7105	Wheel Loader	Perkins	5419	5	5	Engine Throttle Actuator #1 : Current Below Normal
7106	Wheel Loader	Scania	5419	5	5	Throttle M42, current limited
7107	Wheel Loader	Perkins	5419	6	5	Engine Throttle Actuator #1 : Current Above Normal
7108	Wheel Loader	Scania	5419	6	5	Throttle M42, overload
7109	Wheel Loader	Perkins	5419	7	3	Engine Throttle Actuator #1 : Not Responding Properlyl
7110	Wheel Loader	Scania	5419	9	4	Throttle M42 has detected a CAN timeout
7095	Wheel Loader	Scania	5419	10	4	Throttle M42, control error
7096	Wheel Loader	Scania	5419	11	4	Throttle M42, internal fault
7097	Wheel Loader	Scania	5419	12	4	Throttle M42, software execution error
7098	Wheel Loader	Scania	5419	13	4	Throttle M42, unsuccessful learning of the reference position
7099	Wheel Loader	Scania	5419	14	4	Throttle M42 has detected a CAN timeout
7100	Wheel Loader	Scania	5419	16	4	Throttle M42, too high temperature
7101	Wheel Loader	Scania	5419	19	4	Throttle M42, CAN timeout
7104	Wheel Loader	Scania	5419	31	4	Throttle M42, service mode enabled
7111	Wheel Loader	Scania	5421	3	3	Wastegate actuator, short circuit to +24V
7112	Wheel Loader	Scania	5421	4	3	Wastegate actuator, short circuit
7113	Wheel Loader	Cummins	5421	5	3	Engine Turbocharger 1 Wastegate Actuator 1 - Current Below Normal or Open Circuit
7114	Wheel Loader	Scania	5421	5	3	Wastegate actuator, short circuit to ground
7115	Wheel Loader	Scania	5421	6	3	Wastegate actuator, short circuit
7116	Wheel Loader	Cummins	5484	3	3	Engine Fan Clutch 2 Control Circuit - Voltage above normal, or shorted to high source
7117	Wheel Loader	Cummins	5484	4	3	Engine Fan Clutch 2 Control Circuit - Voltage below normal, or shorted to low source
7118	Wheel Loader	Cummins	5491	3	3	Aftertreatment Diesel Exhaust Fluid Line Heater Relay - Voltage above normal, or shorted to high source
7120	Wheel Loader	Cummins	5491	4	3	Aftertreatment Diesel Exhaust Fluid Line Heater Relay - Voltage below normal, or shorted to low source
7121	Wheel Loader	Cummins	5491	7	3	Aftertreatment 1 Diesel Exhaust Fluid Line Heater Relay - Mechanical system not responding or out of adjustment
7119	Wheel Loader	Cummins	5491	31	3	Aftertreatment 1 Diesel Exhaust Fluid Line Heater Relay - Condition Exists
7128	Wheel Loader	Scania	5543	2	3	Exhaust brake actuator, control fault
7130	Wheel Loader	Scania	5543	3	3	Exhaust brake actuator, short circuit to +24V
7131	Wheel Loader	Scania	5543	4	3	Exhaust brake actuator, short circuit to ground
7132	Wheel Loader	Scania	5543	5	3	Exhaust brake actuator, stuck in open position
7133	Wheel Loader	Scania	5543	6	3	Exhaust brake actuator, faulty
7134	Wheel Loader	Scania	5543	7	3	Exhaust brake actuator, stuck in closed position
7135	Wheel Loader	Scania	5543	9	3	The electric motor temperature for the actuator for exhaust brake M4000 has been above 125°C for more than 10 minutes or above 130°C for more than 3 seconds.
7122	Wheel Loader	Scania	5543	12	3	Exhaust brake actuator, control fault
7123	Wheel Loader	Scania	5543	13	3	Exhaust brake actuator, fault with stop position
7124	Wheel Loader	Scania	5543	15	3	Actuator for exhaust brake M4000 reports that the supply voltage is too low.
7125	Wheel Loader	Scania	5543	16	3	Exhaust brake actuator, over temperature
7126	Wheel Loader	Scania	5543	18	3	The electric motor temperature for the actuator for exhaust brake M4000 has been above 125°C for more than 10 minutes or above 130°C for more than 3 seconds.
7127	Wheel Loader	Scania	5543	19	4	Exhaust brake actuator, CAN timeout
7129	Wheel Loader	Scania	5543	21	3	Exhaust brake actuator, error
7136	Wheel Loader	Cummins	5571	0	3	High Pressure Common Rail Fuel Pressure Relief Valve - Data valid but above normal operational range
7137	Wheel Loader	Perkins	5571	0	3	High Pressure Common Rail Fuel Pressure Relief Valve : High - most severe (3)
7143	Wheel Loader	Perkins	5571	2	3	High Pressure Common Rail Fuel Pressure Relief Valve : Erratic, Intermittent, or Incorrect
7144	Wheel Loader	Cummins	5571	3	3	High Pressure Common Rail Fuel Pressure Relief Valve - Voltage Above Normal, or Shorted to High Source
7146	Wheel Loader	Cummins	5571	4	3	High Pressure Common Rail Fuel Pressure Relief Valve - Voltage below normal, or shorted to low source
7147	Wheel Loader	Cummins	5571	7	2	High Pressure Common Rail Fuel Pressure Relief Valve - Mechanical system not responding or out of adjustment
7148	Wheel Loader	Perkins	5571	7	2	High Pressure Common Rail Fuel Pressure Relief Valve : Not Responding Properly
7138	Wheel Loader	Perkins	5571	10	3	High Pressure Common Rail Fuel Pressure Relief Valve : Abnormal Rate of Change
7139	Wheel Loader	Cummins	5571	11	4	High Pressure Common Rail Fuel Pressure Relief Valve - Root Cause Not Known
7140	Wheel Loader	Perkins	5571	14	3	High Pressure Common Rail Fuel Pressure Relief Valve : Special Instruction
7141	Wheel Loader	Cummins	5571	15	3	High Pressure Common Rail Fuel Pressure Relief Valve - Data Valid But Above Normal Operating Range - Least Severe Level
7142	Wheel Loader	Perkins	5571	16	3	High Pressure Common Rail Fuel Pressure Relief Valve : High -moderate severity (2)
7145	Wheel Loader	Cummins	5571	31	4	High Pressure Common Rail Fuel Pressure Relief Valve - Condition Exists
7150	Wheel Loader	Perkins	5576	2	3	Aftertreatment #1 Identification : Erratic, Intermittent, or Incorrect
7151	Wheel Loader	Perkins	5576	8	3	Aftertreatment #1 Identification : Abnormal Frequency, Pulse Width, or Perod
7149	Wheel Loader	Perkins	5576	14	3	Aftertreatment #1 Identification : Special Instruction
7152	Wheel Loader	Cummins	5585	18	3	Engine Injector Metering Rail 1 Cranking Pressure - Data Valid But Below Normal Operating Range - Mo
7153	Wheel Loader	Perkins	5588	14	3	Propretary Network #2 : Special Instruction
7155	Wheel Loader	Cummins	5603	9	5	Cruise Control Disable Command - Abnormal update rate
7154	Wheel Loader	Cummins	5603	31	5	Cruise Control Disable Command - Condition Exists
7156	Wheel Loader	Cummins	5605	31	5	Cruise Control Pause Command - Condition Exists
7157	Wheel Loader	Cummins	5607	7	3	Cruise Control System Command State - Mechanical System Not Responding or Out of Adjustment
7158	Wheel Loader	Cummins	5625	2	3	Engine Exhaust Back Pressure Regulator Position - Data Erratic, Intermittent or Incorrect
7159	Wheel Loader	Cummins	5625	3	3	Engine Exhaust Back Pressure Regulator Position Sensor Circuit - Voltage Above Normal, or Shorted to High Source
7160	Wheel Loader	Perkins	5625	3	3	Engine Exhaust Back Pressure Regulator Position : Voltage Above Normal
7161	Wheel Loader	Cummins	5625	4	3	Engine Exhaust Back Pressure Regulator Position Sensor Circuit - Voltage Below Normal, or Shorted to Low Source

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
7162	Wheel Loader	Perkins	5625	4	3	Engine Exhaust Back Pressure Regulator Position : Voltage Below Normal
7164	Wheel Loader	Cummins	5626	7	3	Engine Exhaust Back Pressure Regulator - Mechanical System Not Responding or Out of Adjustment
7163	Wheel Loader	Cummins	5626	13	4	Engine Exhaust Back Pressure Regulator - Out of Calibration
7165	Wheel Loader	Perkins	5631	0	3	Engine Throttle Valve 1 Differential Pressure
7166	Wheel Loader	Scania	5706	3	3	Fault in reductant pump control.
7167	Wheel Loader	Scania	5706	4	3	Fault in reductant pump control.
7168	Wheel Loader	Perkins	5706	5	3	Aftertreatment #1 Diesel Exhaust Fluid Pump Heater : Current Below Normal
7169	Wheel Loader	Perkins	5706	6	3	Aftertreatment #1 Diesel Exhaust Fluid Pump Heater : Current Above Normal
7170	Wheel Loader	Scania	5706	6	3	Fault in reductant pump control.
7171	Wheel Loader	Cummins	5741	2	3	Aftertreatment 1 Outlet Soot - Data erratic, intermittent or incorrect
7172	Wheel Loader	Cummins	5741	3	3	Aftertreatment 1 Outlet Soot Sensor - Voltage Above Normal, or Shorted to High Source
7173	Wheel Loader	Cummins	5741	4	3	Aftertreatment 1 Outlet Soot Sensor - Voltage below normal, or shorted to low source
7177	Wheel Loader	Cummins	5742	3	3	Aftertreatment Diesel Particulate Filter Temperature Sensor Module - Voltage Above Normal, or Shorted to high source
7178	Wheel Loader	Cummins	5742	4	3	Aftertreatment Diesel Particulate Filter Temperature Sensor Module - Voltage below normal, or shorted to low source
7179	Wheel Loader	Cummins	5742	9	4	Aftertreatment Diesel Particulate Filter Temperature Sensor Module - Abnormal update rate
7174	Wheel Loader	Cummins	5742	11	4	Aftertreatment Diesel Particulate Filter Temperature Sensor Module - Root Cause Not Known
7175	Wheel Loader	Cummins	5742	12	4	Aftertreatment Diesel Particulate Filter Temperature Sensor Module - Bad intelligent device or component
7176	Wheel Loader	Cummins	5742	16	4	Aftertreatment Diesel Particulate Filter Temperature Sensor Module- Data Valid But Above Normal Operating Range
7183	Wheel Loader	Scania	5743	2	3	Reductant tank temperature sensor, not plausible
7184	Wheel Loader	Cummins	5743	3	3	Aftertreatment Selective Catalytic Reduction Temperature Sensor Module - Voltage Above Normal, or Shorted to high source
7185	Wheel Loader	Cummins	5743	4	3	Aftertreatment Selective Catalytic Reduction Temperature Sensor Module - Voltage below normal, or Shorted to low source
7186	Wheel Loader	Scania	5743	4	3	Reductant tank temperature sensor, short circuit
7187	Wheel Loader	Scania	5743	5	3	Reductant tank temperature sensor, open load
7188	Wheel Loader	Cummins	5743	9	4	Aftertreatment Selective Catalytic Reduction Temperature Sensor Module - Abnormal update rate
7180	Wheel Loader	Cummins	5743	11	4	Aftertreatment Selective Catalytic Reduction Temperature Sensor Module - Root Cause Not Known
7181	Wheel Loader	Cummins	5743	12	4	Aftertreatment Selective Catalytic Reduction Temperature Sensor Module - Bad intelligent device or component
7182	Wheel Loader	Cummins	5743	16	4	Aftertreatment Selective Catalytic Reduction Temperature Sensor Module - Data Valid But Above Normal
7191	Wheel Loader	Cummins	5745	3	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Heater - Voltage Above Normal, or Shorted to High
7192	Wheel Loader	Scania	5745	3	3	SCR water valve, short circuit to battery
7193	Wheel Loader	Cummins	5745	4	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Heater - Voltage below normal, or shorted to low source
7194	Wheel Loader	Scania	5745	5	3	SCR water valve, open load
7189	Wheel Loader	Cummins	5745	17	4	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Heater - Data Valid But Below Normal Operating Range
7190	Wheel Loader	Cummins	5745	18	4	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit 1 Heater - Data Valid But Below Normal Operating Range - Moderately Severe Level
7195	Wheel Loader	Cummins	5746	3	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Heater Relay - Voltage Above Normal, or Shorted to high source
7196	Wheel Loader	Cummins	5746	4	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Heater Relay - Voltage below normal, or shorted to low source
7198	Wheel Loader	Cummins	5747	3	3	Aftertreatment 1 Outlet Soot Sensor Heater - Voltage Above Normal, or Shorted to High Source
7199	Wheel Loader	Cummins	5747	4	3	Aftertreatment 1 Outlet Soot Sensor Heater - Voltage below normal, or shorted to low source
7197	Wheel Loader	Cummins	5747	10	3	Aftertreatment 1 Outlet Soot Sensor Heater - Abnormal rate of change
7200	Wheel Loader	Perkins	5758	11	3	Aftertreatment #1 Intake Gas Sensor Power Supply : Other Failure Mode
7201	Wheel Loader	Perkins	5759	11	3	Aftertreatment #1 Outlet Gas Sensor Power Supply : Other Failure Mode
7202	Wheel Loader	Cummins	5793	9	3	Desired Engine Fueling State - Abnormal Update Rate
7206	Wheel Loader	Cummins	5797	3	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Temperature Sensor Module - Voltage Above Normal, or shorted to high source
7207	Wheel Loader	Cummins	5797	4	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Temperature Sensor Module - Voltage below normal, or shorted to low source
7203	Wheel Loader	Cummins	5797	11	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Temperature Sensor Module - Root Cause Not Known
7204	Wheel Loader	Cummins	5797	12	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Temperature Sensor Module - Bad intelligent device
7205	Wheel Loader	Cummins	5797	16	3	Aftertreatment Warm Up Diesel Oxidation Catalyst Temperature Sensor Module - Data Valid But Above Normal Operating Range ? Moderately Severe Level
7209	Wheel Loader	Cummins	5798	2	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Heater Temperature - Data erratic, intermittent or incorrect
7208	Wheel Loader	Cummins	5798	10	4	Aftertreatment 1 Diesel Exhaust Fluid Dosing Unit Heater Temperature - Abnormal Rate of Change
7210	Wheel Loader	Perkins	5826	15	3	Emission Control System Operator Inducement Severity: High -least severe (1)
7211	Wheel Loader	Perkins	5826	16	2	Emission Control System Operator Inducement Severity: High -moderate severity (2)
7212	Wheel Loader	Cummins	5835	3	3	Aftertreatment 1 Outlet Soot Sensor - Voltage Above Normal, or Shorted to High Source
7213	Wheel Loader	Cummins	5835	4	3	Aftertreatment 1 Outlet Soot Sensor - Voltage below normal, or shorted to low source
7214	Wheel Loader	Cummins	5838	31	3	EGR Valve Malfunction - Condition Exists
7215	Wheel Loader	Cummins	5839	31	3	Diesel Exhaust Fluid Consumption Malfunction - Condition Exists

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7216	Wheel Loader	Cummins	5840	31	3	Diesel Exhaust Fluid Dosing Malfunction - Condition Exists
7217	Wheel Loader	Scania	5841	1	4	SCR main unit, reductant quality too low
7218	Wheel Loader	Cummins	5841	31	3	Diesel Exhaust Fluid Quality Malfunction - Condition Exists
7219	Wheel Loader	Cummins	5842	14	3	SCR Monitoring System Malfunction - Special Instructions
7220	Wheel Loader	Cummins	5842	31	3	SCR Monitoring System Malfunction - Condition Exists
7223	Wheel Loader	Cummins	5848	4	3	Aftertreatment 1 SCR Intermediate NH3 Sensor - Voltage Below Normal or Shorted to Low Source
7221	Wheel Loader	Cummins	5848	12	3	Aftertreatment 1 SCR Intermediate NH3 Sensor - Bad Intelligent Device or Component
7222	Wheel Loader	Cummins	5848	13	3	Aftertreatment 1 SCR Intermediate NH3 Sensor - Out of Calibration
7224	Wheel Loader	Cummins	5851	16	3	Aftertreatment 1 SCR Intermediate NH3 Gas Sensor Power Supply - Data Valid But Above Normal Operating Range - Moderately Severe Level
7225	Wheel Loader	Cummins	5851	18	3	Aftertreatment 1 SCR Intermediate NH3 Gas Sensor Power Supply - Data Valid But Below Normal Operating Range - Moderately Severe Level
7226	Wheel Loader	Perkins	5965	5	3	Aftertreatment #1 DEF Control Module Relay Control : Current Below Normal
7227	Wheel Loader	Perkins	5965	6	3	Aftertreatment #1 DEF Control Module Relay Control : Current Above Normal
7228	Wheel Loader	Perkins	5966	5	3	Aftertreatment #1 DEF Control Module Power Supply : Current Below Normal
7229	Wheel Loader	Perkins	5966	6	3	Aftertreatment #1 DEF Control Module Power Supply : Current Above Normal
7230	Wheel Loader	Cummins	6301	3	3	Water in Fuel Indicator 2 Sensor Circuit - Voltage above normal, or shorted to high source
7231	Wheel Loader	Cummins	6301	4	3	Water in Fuel Indicator 2 Sensor Circuit - Voltage below normal, or shorted to low source
7232	Wheel Loader	Perkins	6309	5	3	Aftertreatment 1 Diesel Exhaust Fluid Control Module Power Supply 2 : Current Below Normal
7233	Wheel Loader	Perkins	6309	6	3	Aftertreatment 1 Diesel Exhaust Fluid Control Module Power Supply 2 : Current Above Normal
7235	Wheel Loader	Cummins	6326	3	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Valve 1 Heater - Voltage Above Normal, or Shorted to High Source
7236	Wheel Loader	Cummins	6326	4	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Valve 1 Heater - Voltage Below Normal, or Shorted to Low Source
7234	Wheel Loader	Cummins	6326	18	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Valve 1 Heater - Data Valid But Below Normal Operating Range - Moderately Severe Level
7237	Wheel Loader	Cummins	6385	3	3	Engine Starter Motor Relay Control Circuit - Voltage Above Normal or Shorted to High Source
7238	Wheel Loader	Cummins	6385	4	3	Engine Starter Motor Relay Control Circuit - Voltage Below Normal or Shorted to Low Source
7239	Wheel Loader	Cummins	6653	16	3	Cold Start Injector Metering Rail 1 Pressure - Data Valid But Above Normal Operating Range - Moderate Severe Level
7240	Wheel Loader	Cummins	6655	3	3	Maintain ECU Power Lamp - Voltage Above Normal, or Shorted to High Source
7241	Wheel Loader	Cummins	6655	4	3	Maintain ECU Power Lamp - Voltage Below Normal, or Shorted to Low Source
7244	Wheel Loader	Cummins	6713	9	3	VGT Actuator Driver Circuit - Abnormal update rate
7242	Wheel Loader	Cummins	6713	13	2	Variable Geometry Turbocharger Actuator Software - Out of Calibration
7243	Wheel Loader	Cummins	6713	31	2	Variable Geometry Turbocharger Actuator Software - Condition Exists
7245	Wheel Loader	Cummins	6799	2	5	Fan Blade Pitch - Mechanical system not responding or out of adjustment
7246	Wheel Loader	Cummins	6799	3	3	Fan Blade Pitch Position Sensor Circuit - Voltage Above Normal, or Shorted to High Source
7247	Wheel Loader	Cummins	6799	4	3	Fan Blade Pitch Position Sensor Circuit - Voltage Below Normal, or Shorted to Low Source
7248	Wheel Loader	Cummins	6799	7	3	Fan Blade Pitch - Mechanical system not responding or out of adjustment
7249	Wheel Loader	Cummins	6802	31	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing System Frozen - Condition Exists
7251	Wheel Loader	Cummins	6881	9	4	SCR Operator Inducement Override Switch - Abnormal Update Rate
7250	Wheel Loader	Cummins	6881	13	4	SCR Operator Inducement Override Switch - Out of Calibration
7255	Wheel Loader	Cummins	6882	3	3	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Voltage Above Normal or Shorted to High Source
7256	Wheel Loader	Cummins	6882	4	3	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Voltage Below Normal or Shorted to Low Source
7257	Wheel Loader	Cummins	6882	9	4	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Abnormal Update Rate
7252	Wheel Loader	Cummins	6882	11	4	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Root Cause Not Known
7253	Wheel Loader	Cummins	6882	12	4	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Bad Intelligent Device or Component
7254	Wheel Loader	Cummins	6882	16	3	Aftertreatment Diesel Oxidation Catalyst Temperature Sensor Module - Data Valid But Above Normal Operating Range - Moderately Severe Level
7258	Wheel Loader	Cummins	6918	31	4	SCR System Cleaning Inhibited Due to Inhibit Switch - Condition Exists
7259	Wheel Loader	Cummins	6928	31	3	SCR System Cleaning Inhibited Due to System Timeout - Condition Exists
7260	Wheel Loader	Cummins	7026	11	3	Engine Fuel Valve 1 - Root Cause Not Known
7261	Wheel Loader	Cummins	7026	13	3	Engine Fuel Valve 1 - Out of Calibration
7262	Wheel Loader	Cummins	7321	3	3	Aftertreatment 1 Outlet Soot Sensor Heater - Voltage Above Normal, or Shorted to High Source
7263	Wheel Loader	Cummins	7323	4	3	Aftertreatment 1 Outlet Soot Sensor Heater - Voltage below normal, or shorted to low source
7264	Wheel Loader	Perkins	7343	31	3	SCR Operator Inducement Override Renewal Required
7265	Wheel Loader	Perkins	7440	31	3	Aftertreatment Active Regeneration Inhibited Due to Low Exhaust Pressure
7266	Wheel Loader	Perkins	7441	3	3	Aftertreatment Ambient Air Temperature : Voltage Above Normal
7267	Wheel Loader	Perkins	7441	4	3	Aftertreatment Ambient Air Temperature : Voltage Below Normal
7268	Wheel Loader	Cummins	7576	12	3	Glow Plug Module - Bad intelligent device or component
7270	Wheel Loader	Cummins	7745	9	1	Engine Start Request - Abnormal Update Rate
7269	Wheel Loader	Cummins	7745	13	1	Engine Start Request - Out of Calibration
7271	Wheel Loader	Cummins	7746	13	1	Engine Start Consent - Out of Calibration
7272	Wheel Loader	Cummins	7848	14	4	Aftertreatment 1 SCR System Conditions Not Met for Active Cleaning - Special Instructions
7273	Wheel Loader	Cummins	520199	3	3	Cruise Control (Resistive) Signal Circuit - Voltage above normal, or shorted to high source
7274	Wheel Loader	Cummins	520199	4	3	Cruise Control (Resistive) Signal Circuit - Voltage below normal, or shorted to low source
7275	Wheel Loader	Cummins	520320	7	3	Crankcase Depression Valve - Mechanical system not responding or out of adjustment
7276	Wheel Loader	Cummins	520332	3	3	Cruise Control (Resistive) #2 Signal Circuit - Voltage above normal, or shorted to high source
7277	Wheel Loader	Cummins	520332	4	3	Cruise Control (Resistive) #2 Signal Circuit - Voltage below normal, or shorted to low source

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
7278	Wheel Loader	Cummins	520435	12	3	Glow Plug Module - Bad intelligent device or component
7279	Wheel Loader	Cummins	520595	2	4	Closed Crankcase Ventilation System Pressure - Data erratic, intermittent or incorrect
7280	Wheel Loader	Cummins	520595	3	3	Closed Crankcase Ventilation System Pressure Sensor - Voltage Above Normal, or Shorted to High Source
7281	Wheel Loader	Cummins	520595	4	3	Closed Crankcase Ventilation System Pressure Sensor - Voltage below normal, or shorted to low source
7282	Wheel Loader	Cummins	520668	31	3	Aftertreatment 1 Outlet NOx Sensor Closed Loop Operation- Condition Exists
7283	Wheel Loader	Cummins	520716	3	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Valve 1 Heater - Voltage Above Normal, or Shorted to High Source
7284	Wheel Loader	Cummins	520716	4	3	Aftertreatment 1 Diesel Exhaust Fluid Dosing Valve 1 Heater - Voltage Below Normal, or Shorted to Low Source
7285	Wheel Loader	Cummins	520791	2	4	Engine Boost Curve Selection - Data erratic, intermittent or incorrect
7286	Wheel Loader	Cummins	520808	31	4	Engine Emergency Shutdown Switch Actived - Condition Exists
7287	Wheel Loader	Cummins	520809	31	4	Excessive Time Since Last Engine Air Shutoff Maintenance Test - Condition Exists
7288	Wheel Loader	Cummins	520953	3	3	Aftertreatment Diesel Exhaust Fluid Dosing Unit Relay Feedback - Voltage Above Normal or Shorted to High Source
7289	Wheel Loader	Cummins	520953	4	3	Aftertreatment Diesel Exhaust Fluid Dosing Unit Relay Feedback- Voltage Below Normal or Shorted to Low Source.
7291	Wheel Loader	Cummins	520968	9	4	Machine Constrained Operation- Abnormal Update Rate. No Communication or an invalid data transfer rate has been detected on the J1939 data link between the ECM and the machine electronic control unit.
7290	Wheel Loader	Cummins	520968	19	4	Machine Constrained Operation- Received Network Data in Error. The received J1939 datalink message was not valid.
7292	Wheel Loader	Cummins	521002	31	1	Engine Cranks Slowly - Condition Exists
7293	Wheel Loader	Cummins	521032	14	3	Aftertreatment System Assembly - Special Instructions
7294	Wheel Loader	Yanmar	522183	1	3	EGR high temperature thermistor error
7295	Wheel Loader	Yanmar	522184	1	3	EGR low temperature thermistor error
7296	Wheel Loader	Yanmar	522243	5	4	Starting aid relay disconnection
7297	Wheel Loader	Yanmar	522243	6	4	Starting aid relay GND short circuit
7298	Wheel Loader	Yanmar	522323	0	3	Air cleaner clogged alarm
7299	Wheel Loader	Yanmar	522329	0	3	Water separator alarm
7300	Wheel Loader	Yanmar	522400	2	2	Crankshaft signal error
7301	Wheel Loader	Yanmar	522400	5	2	No signal from crankshaft
7302	Wheel Loader	Yanmar	522401	2	4	Camshaft signal error
7303	Wheel Loader	Yanmar	522401	5	4	No signal from camshft
7304	Wheel Loader	Yanmar	522401	7	4	Angle offset error
7305	Wheel Loader	Yanmar	522571	3	2	SCV (MPROP) L side VB short circuit
7306	Wheel Loader	Yanmar	522571	6	2	SCV (MPROP) L side GND short circuit
7308	Wheel Loader	Yanmar	522572	6	2	SCV (MPROP) drive current (high level)
7307	Wheel Loader	Yanmar	522572	11	2	SCV (MPROP) pump overload error
7309	Wheel Loader	Yanmar	522573	0	4	Excessive PM accumulation (method C)
7310	Wheel Loader	Yanmar	522574	0	4	Excessive PM accumulation (method P)
7311	Wheel Loader	Yanmar	522575	7	4	Regeneration failure (stationary regeneration failure)
7312	Wheel Loader	Yanmar	522576	12	3	EEPROM memory reading error
7313	Wheel Loader	Yanmar	522577	11	4	Regeneration failure (stationary regeneration not performed)
7314	Wheel Loader	Yanmar	522578	12	3	EEPROM memory writing error
7315	Wheel Loader	Yanmar	522579	12	3	Short circuit in EGR motor coils
7316	Wheel Loader	Yanmar	522580	12	3	EGR position sensor error
7317	Wheel Loader	Yanmar	522581	7	2	EGR valve sticking error
7318	Wheel Loader	Yanmar	522582	7	2	EGR initialization error
7319	Wheel Loader	Yanmar	522585	12	1	CY 146 SPI communication fault
7320	Wheel Loader	Yanmar	522588	12	1	Excessive voltage of supply1
7321	Wheel Loader	Yanmar	522589	12	1	Insufficient voltage of supply 1
7322	Wheel Loader	Yanmar	522590	12	4	Sensor supply voltage error 1
7323	Wheel Loader	Yanmar	522591	12	4	Sensor supply voltage error 2
7324	Wheel Loader	Yanmar	522592	12	4	Sensor supply voltage error 3
7325	Wheel Loader	Yanmar	522596	9	4	TSC1 (SA1) reception timeout
7326	Wheel Loader	Yanmar	522597	9	4	TSC1 (SA2) reception timeout
7327	Wheel Loader	Yanmar	522599	9	4	Y_ECR1 reception timeout
7328	Wheel Loader	Yanmar	522600	9	4	Y_EC reception timeout
7329	Wheel Loader	Yanmar	522601	9	4	Y_RSS reception timeout
7330	Wheel Loader	Yanmar	522609	9	4	Y_ETCP1 reception time out
7331	Wheel Loader	Yanmar	522610	9	3	CAN 1 (for EGR) : Reception time out
7332	Wheel Loader	Yanmar	522611	9	3	CAN 1 (for exhaust throttle) : Reception time out
7333	Wheel Loader	Yanmar	522617	12	3	EGR target value out of range
7334	Wheel Loader	Yanmar	522618	9	4	EBC1 reception timeout
7335	Wheel Loader	Yanmar	522619	9	4	Y_DPFIF reception timeout
7336	Wheel Loader	Yanmar	522623	7	4	Dual accelerator sensor error (open position)
7337	Wheel Loader	Yanmar	522624	7	4	Dual accelerator sensor error (closed position)
7338	Wheel Loader	Yanmar	522730	12	2	Immobilizer error (CAN communication)
7339	Wheel Loader	Yanmar	522744	4	2	Actuator drive circuit 1 short to ground
7340	Wheel Loader	Yanmar	522746	12	3	Exhaust throttle (voltage fault)
7341	Wheel Loader	Yanmar	522747	12	1	Exhaust throttle (motor fault)
7342	Wheel Loader	Yanmar	522748	12	1	Exhaust throttle (sensor system fault)
7343	Wheel Loader	Yanmar	522749	12	3	Exhaust throttle (MPU fault)
7344	Wheel Loader	Yanmar	522750	12	4	Exhaust throttle (PCB fault)
7345	Wheel Loader	Yanmar	522751	19	3	Exhaust throttle (CAN fault)
7346	Wheel Loader	Yanmar	522994	4	2	Actuator drive circuit 2 short to ground
7347	Wheel Loader	*	523000	1	1	Battery low undervoltage

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7348	Wheel Loader	LV1TCU	523000	1	2	Battery low undervoltage
7349	Wheel Loader	*	523000	3	1	Battery overvoltage
7350	Wheel Loader	LV1TCU	523000	3	2	Battery overvoltage
7351	Wheel Loader	*	523000	4	2	Battery undervoltage
7352	Wheel Loader	LV1TCU	523000	4	2	Battery undervoltage
7353	Wheel Loader	*	523001	1	4	Battery undervoltage during engine start
7354	Wheel Loader	*	523010	3	1	EC-II internal 5V power supply overvoltage
7355	Wheel Loader	*	523010	4	1	EC-II internal 5V power supply undervoltage
7356	Wheel Loader	*	523011	4	1	EC-II internal 7V power supply undervoltage
7357	Wheel Loader	*	523020	3	2	Supply for speed sensors (AU3) overvoltage
7358	Wheel Loader	*	523020	4	2	Supply for speed sensors (AU3) undervoltage
7359	Wheel Loader	*	523020	6	2	Supply for speed sensors (AU3) short to ground
7360	Wheel Loader	*	523021	3	2	Supply for temperature sensors, oil filter restriction switch and the ECIIb high pressure sensors (AU2) overvoltage
7361	Wheel Loader	LV1TCU	523021	3	2	Supply for speed sensors (AU2) overvoltage
7362	Wheel Loader	*	523021	4	2	Supply for temperature sensors, oil filter restriction switch and the ECIIb high pressure sensors (AU2) undervoltage
7363	Wheel Loader	LV1TCU	523021	4	2	Supply for speed sensors (AU2) undervoltage
7364	Wheel Loader	*	523021	6	2	Supply for temperature sensors, oil filter restriction switch and the ECIIb high pressure sensors (AU2) short to ground
7365	Wheel Loader	LV1TCU	523021	6	2	Supply for speed sensors (AU2) short to ground
7366	Wheel Loader	*	523022	3	2	Voltage output 1 (AU1) overvoltage
7367	Wheel Loader	LV1TCU	523022	3	4	Supply for oil filter restriction switch (AU1) overvoltage
7368	Wheel Loader	*	523022	4	2	Voltage output 1 (AU1) undervoltage
7369	Wheel Loader	LV1TCU	523022	4	4	Supply for oil filter restriction switch (AU1) undervoltage
7370	Wheel Loader	*	523022	6	2	Voltage output 1 (AU1) short to ground
7371	Wheel Loader	LV1TCU	523022	6	4	Supply for oil filter restriction switch (AU1) short to ground
7372	Wheel Loader	LV1TCU	523023	3	3	Supply for temperature sensors (AU_ER) overvoltage
7373	Wheel Loader	LV1TCU	523023	4	3	Supply for temperature sensors (AU_ER) undervoltage
7374	Wheel Loader	*	523030	3	1	Propvalve power supply 1 overvoltage
7375	Wheel Loader	LV1TCU	523030	3	1	Propvalve power supply 1 (VPS1) overvoltage
7376	Wheel Loader	*	523030	4	1	Propvalve power supply 1 undervoltage
7377	Wheel Loader	*	523031	3	1	Propvalve power supply 2 overvoltage
7378	Wheel Loader	LV1TCU	523031	3	1	Propvalve power supply 2 (VPS2) overvoltage
7379	Wheel Loader	*	523031	4	1	Propvalve power supply 2 undervoltage
7380	Wheel Loader	*	523040	0	4	TCU overtemperature
7381	Wheel Loader	LV1TCU	523040	0	4	TCU overtemperature
7382	Wheel Loader	*	523040	2	1	TCU temperature invalid value
7383	Wheel Loader	LV1TCU	523040	2	1	TCU temperature invalid value
7384	Wheel Loader	LV1TCU	523044	12	1	Internal TCU Error 5
7385	Wheel Loader	*	523045	12	1	Internal TCU Error: CRC
7386	Wheel Loader	LV1TCU	523045	12	1	Internal TCU Error 1
7387	Wheel Loader	*	523046	12	1	Internal TCU Error: watchdog/power supply
7388	Wheel Loader	LV1TCU	523046	12	1	Internal TCU Error 2
7389	Wheel Loader	*	523047	12	1	Internal TCU Error: reset
7390	Wheel Loader	LV1TCU	523047	12	1	Internal TCU Error 3
7391	Wheel Loader	*	523048	12	1	Internal TCU Error: software robustness
7392	Wheel Loader	*	523049	12	1	Unknown transmission controller hardware detected
7393	Wheel Loader	LV1TCU	523049	12	1	Unknown transmission controller hardware detected
7394	Wheel Loader	*	523050	0	1	Invalid Transmission Identification
7395	Wheel Loader	LV1TCU	523050	0	1	Internal TCU Error 6
7398	Wheel Loader	*	523100	2	2	Unknown electrical component at nKR speed sensor input
7399	Wheel Loader	*	523100	3	3	nKR speed sensor overvoltage
7400	Wheel Loader	LV1TCU	523100	3	3	Speed sensor input 1 (EF1) overvoltage: Turbine speed
7401	Wheel Loader	*	523100	6	3	nKR speed sensor open or short to ground
7402	Wheel Loader	LV1TCU	523100	6	3	Speed sensor input 1 (EF1) open or short to ground: Turbine speed
7403	Wheel Loader	*	523100	7	3	nKR speed does not match with other speeds
7404	Wheel Loader	LV1TCU	523100	7	3	EF1 speed does not match with other speeds
7405	Wheel Loader	*	523100	8	3	nKR direction of rotation unknown
7406	Wheel Loader	LV1TCU	523100	8	3	Speed sensor input 1 (EF1) direction of rotation unknown: Turbine speed
7407	Wheel Loader	*	523100	9	3	nKR speed unknown
7408	Wheel Loader	LV1TCU	523100	9	3	Speed sensor input 1 (EF1) speed unknown: Turbine speed
7396	Wheel Loader	*	523100	11	3	nKR direction of rotation does not match with other directions of rotation
7397	Wheel Loader	LV1TCU	523100	11	3	EF1 direction of rotation does not match with other directions of rotation
7411	Wheel Loader	*	523105	2	2	Unknown electrical component at nSo2 speed sensor input
7412	Wheel Loader	*	523105	3	3	nSo2 speed sensor overvoltage
7413	Wheel Loader	LV1TCU	523105	3	3	Speed sensor input 2 (EF2) overvoltage: Internal speed
7414	Wheel Loader	*	523105	6	3	nSo2 speed sensor open or short to ground
7415	Wheel Loader	LV1TCU	523105	6	3	Speed sensor input 2 (EF2) open or short to ground: Internal speed
7416	Wheel Loader	*	523105	7	3	nSo2 speed does not match with other speeds
7417	Wheel Loader	LV1TCU	523105	7	3	EF2 speed does not match with other speeds
7418	Wheel Loader	*	523105	8	3	nSo2 direction of rotation unknown
7419	Wheel Loader	LV1TCU	523105	8	3	Speed sensor input 2 (EF2) direction of rotation unknown: Internal speed
7420	Wheel Loader	*	523105	9	3	nSo2 speed unknown
7421	Wheel Loader	LV1TCU	523105	9	3	Speed sensor input 2 (EF2) speed unknown: Internal speed
7409	Wheel Loader	*	523105	11	3	nSo2 direction of rotation does not match with other directions of rotation
7410	Wheel Loader	LV1TCU	523105	11	3	EF2 direction of rotation does not match with other directions of rotation
7424	Wheel Loader	*	523110	2	2	Unknown electrical component at output speed sensor input
7425	Wheel Loader	*	523110	3	2	Output speed sensor overvoltage

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7426	Wheel Loader	LV1TCU	523110	3	3	Speed sensor input 3 (EF3) overvoltage: Output speed
7427	Wheel Loader	*	523110	6	2	Output speed sensor open or short to ground
7428	Wheel Loader	LV1TCU	523110	6	3	Speed sensor input 3 (EF3) open or short to ground: Output speed
7429	Wheel Loader	*	523110	7	1	Output speed does not match with other speeds
7430	Wheel Loader	LV1TCU	523110	7	3	EF3 speed does not match with other speeds
7431	Wheel Loader	*	523110	8	2	Output speed direction of rotation unknown
7432	Wheel Loader	LV1TCU	523110	8	3	Speed sensor input 3 (EF3) direction of rotation unknown: Output speed
7433	Wheel Loader	*	523110	9	2	Output speed unknown
7434	Wheel Loader	LV1TCU	523110	9	3	Speed sensor input 3 (EF3) speed unknown: Output speed
7422	Wheel Loader	*	523110	11	1	Output speed direction of rotation does not match with other directions of rotation
7423	Wheel Loader	LV1TCU	523110	11	4	EF3 direction of rotation does not match with other directions of rotation
7436	Wheel Loader	*	523115	2	2	Unknown electrical component at speed sensor input 4
7437	Wheel Loader	LV1TCU	523115	3	3	Speed sensor input 4 (EF4) overvoltage: Engine speed
7438	Wheel Loader	LV1TCU	523115	6	3	Speed sensor input 4 (EF4) open or short to ground: Engine speed
7439	Wheel Loader	LV1TCU	523115	7	3	EF4 speed does not match with other speeds
7440	Wheel Loader	LV1TCU	523115	8	3	Speed sensor input 4 (EF4) direction of rotation unknown: Engine speed
7441	Wheel Loader	LV1TCU	523115	9	3	Speed sensor input 4 (EF4) speed unknown: Engine speed
7435	Wheel Loader	LV1TCU	523115	11	4	EF4 direction of rotation does not match with other directions of rotation
7442	Wheel Loader	LV1TCU	523118	11	2	More than one internal speed sensors are defective
7444	Wheel Loader	*	523125	2	2	Unknown electrical component at voltage input 1 (EU1)
7445	Wheel Loader	*	523125	3	3	overvoltage at voltage input 1 (EU1)
7446	Wheel Loader	LV1TCU	523125	3	3	Voltage sensor input 1 (EU1) overvoltage
7447	Wheel Loader	*	523125	6	3	open circuit or short to gnd at voltage input 1 (EU1)
7448	Wheel Loader	LV1TCU	523125	6	3	Voltage sensor input 1 (EU1) open or short to ground
7443	Wheel Loader	LV1TCU	523125	12	3	Voltage sensor input 1 (EU1) defect
7450	Wheel Loader	*	523130	2	2	Unknown electrical component at voltage input 2 (EU2)
7451	Wheel Loader	*	523130	3	3	overvoltage at voltage input 2 (EU2)
7452	Wheel Loader	LV1TCU	523130	3	3	Voltage sensor input 2 (EU2) overvoltage
7453	Wheel Loader	*	523130	6	3	open circuit or short to gnd at voltage input 2 (EU2)
7454	Wheel Loader	LV1TCU	523130	6	3	Voltage sensor input 2 (EU2) open or short to ground
7449	Wheel Loader	LV1TCU	523130	12	3	Voltage sensor input 2 (EU2) defect
7455	Wheel Loader	*	523140	2	2	Unknown electrical component at sump temperature input (input resistance 1)
7456	Wheel Loader	*	523140	3	3	Sump temperature sensor open circuit or shorted to high source
7457	Wheel Loader	LV1TCU	523140	3	4	Resistance sensor input 1 (ER1) open circuit or short to high source: Sump temperature
7458	Wheel Loader	*	523140	5	3	Sump temperature sensor overvoltage
7459	Wheel Loader	*	523140	6	3	Sump temperature sensor short to ground
7460	Wheel Loader	LV1TCU	523140	6	4	Resistance sensor input 1 (ER1) short to ground: Sump temperature
7461	Wheel Loader	*	523145	2	2	Unknown component at resistance input 2
7462	Wheel Loader	LV1TCU	523145	3	4	Resistance sensor input 2 (ER2) open circuit or short to high source: Torque converter temperature
7463	Wheel Loader	LV1TCU	523145	6	4	Resistance sensor input 2 (ER2) short to ground: Torque converter temperature
7464	Wheel Loader	*	523155	2	2	Unknown electrical component at current input 2
7465	Wheel Loader	*	523155	3	4	Oil Filter Restriction Switch overvoltage
7466	Wheel Loader	LV1TCU	523155	3	4	Current sensor input 2 (EI2) overvoltage: Oil Filter Restriction Switch
7467	Wheel Loader	*	523155	4	4	Oil Filter Restriction Switch undervoltage
7468	Wheel Loader	*	523155	6	4	Oil Filter Restriction Switch open circuit or short to ground
7469	Wheel Loader	LV1TCU	523155	6	4	Current seonsr input 2 (EI2) open circuit or short to ground: Oil Filter Restriction Switch
7471	Wheel Loader	*	523160	2	2	Unknown electrical component at voltage input 3 (EU3)
7472	Wheel Loader	LV1TCU	523160	3	1	Voltage sensor input 3 (EU3) overvoltage
7473	Wheel Loader	*	523160	3	3	overvoltage at ECIIb high pressure sensor AB (EU3)
7474	Wheel Loader	LV1TCU	523160	6	1	Voltage sensor input 3 (EU3) open or short to ground
7475	Wheel Loader	*	523160	6	3	open circuit or short to gnd at ECIIb high pressure sensor AB (EU3)
7470	Wheel Loader	LV1TCU	523160	12	1	Voltage sensor input 3 (EU3) defect
7477	Wheel Loader	*	523165	2	2	Unknown electrical component at voltage input 4 (EU4)
7478	Wheel Loader	*	523165	3	3	overvoltage at ECIIb high pressure sensor A (EU4)
7479	Wheel Loader	LV1TCU	523165	3	4	Voltage sensor input 4 (EU4) overvoltage
7480	Wheel Loader	*	523165	6	3	open circuit or short to gnd at ECIIb high pressure sensor A (EU4)
7481	Wheel Loader	LV1TCU	523165	6	4	Voltage sensor input 4 (EU4) open or short to ground
7476	Wheel Loader	LV1TCU	523165	12	4	Voltage sensor input 4 (EU4) defect
7482	Wheel Loader	LV1TCU	523171	11	4	CCO or inch pedal signal fault during CCO or inching
7483	Wheel Loader	LV1TCU	523171	12	4	CCO or inch pedal signals missmatch
7484	Wheel Loader	LV1TCU	523171	13	4	Inchpedal calibration failed
7485	Wheel Loader	*	523200	0	2	Clutch KV slipping unintentionally
7486	Wheel Loader	*	523200	2	2	Unknown electrical component at current output 1
7487	Wheel Loader	LV1TCU	523200	2	2	Current output driver 1 (AIM01) unknown electrical component
7488	Wheel Loader	*	523200	3	3	Propvalve for Clutch KV short to battery
7489	Wheel Loader	LV1TCU	523200	3	3	Current output driver 1 (AIM01) short to battery
7490	Wheel Loader	*	523200	5	3	Propvalve for Clutch KV open circuit
7491	Wheel Loader	LV1TCU	523200	5	3	Current output driver 1 (AIM01) open circuit
7492	Wheel Loader	*	523200	6	1	Propvalve for Clutch KV short to ground
7493	Wheel Loader	LV1TCU	523200	6	1	Current output driver 1 (AIM01) short to ground
7494	Wheel Loader	*	523200	8	1	Propvalve for Clutch KV: short circuit to another valve
7495	Wheel Loader	LV1TCU	523200	8	2	Current output driver 1 (AIM01) short to another valve
7496	Wheel Loader	*	523205	0	2	Clutch KR slipping unintentionally
7497	Wheel Loader	*	523205	2	2	Unknown electrical component at current output 2
7498	Wheel Loader	LV1TCU	523205	2	2	Current output driver 2 (AIM02) unknown electrical component
7499	Wheel Loader	*	523205	3	3	Propvalve for Clutch KR short to battery
7500	Wheel Loader	LV1TCU	523205	3	3	Current output driver 2 (AIM02) short to battery
7501	Wheel Loader	*	523205	5	3	Propvalve for Clutch KR open circuit

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7502	Wheel Loader	LV1TCU	523205	5	3	Current output driver 2 (AIM02) open circuit
7503	Wheel Loader	*	523205	6	1	Propvalve for Clutch KR short to ground
7504	Wheel Loader	LV1TCU	523205	6	1	Current output driver 2 (AIM02) short to ground
7505	Wheel Loader	*	523205	8	1	Propvalve for Clutch KR short circuit to another valve
7506	Wheel Loader	LV1TCU	523205	8	2	Current output driver 2 (AIM02) short circuit to another valve
7507	Wheel Loader	*	523210	2	2	Unknown electrical component at current output 3
7508	Wheel Loader	LV1TCU	523210	2	2	Current output driver 3 (AIM03) unknown electrical component
7509	Wheel Loader	*	523210	3	3	Propvalve for internal DiffLock: Short to battery
7510	Wheel Loader	LV1TCU	523210	3	3	Current output driver 3 (AIM03) short to battery
7511	Wheel Loader	LV1TCU	523210	5	3	Current output driver 3 (AIM03) open circuit
7512	Wheel Loader	*	523210	5	4	Propvalve for internal DiffLock: open circuit
7513	Wheel Loader	LV1TCU	523210	6	1	Current output driver 3 (AIM03) short to ground
7514	Wheel Loader	*	523210	6	2	Propvalve for internal DiffLock: short to ground
7515	Wheel Loader	*	523210	8	1	Propvalve for internal DiffLock: short circuit to another valve
7516	Wheel Loader	LV1TCU	523210	8	2	Current output driver 3 (AIM03) short circuit to another valve
7517	Wheel Loader	*	523215	0	2	Clutch K1 slipping unintentionally
7518	Wheel Loader	*	523215	2	2	Unknown electrical component at current output 4
7519	Wheel Loader	LV1TCU	523215	2	2	Current output driver 4 (AIM04) unknown electrical component
7520	Wheel Loader	*	523215	3	3	Propvalve for Clutch K1 short to battery
7521	Wheel Loader	LV1TCU	523215	3	3	Current output driver 4 (AIM04) short to battery
7522	Wheel Loader	*	523215	5	2	Propvalve for Clutch K1 open circuit
7523	Wheel Loader	LV1TCU	523215	5	3	Current output driver 4 (AIM04) open circuit
7524	Wheel Loader	*	523215	6	1	Propvalve for Clutch K1 short to ground
7525	Wheel Loader	LV1TCU	523215	6	1	Current output driver 4 (AIM04) short to ground
7526	Wheel Loader	*	523215	8	1	Propvalve for Clutch K1: short circuit to another valve
7527	Wheel Loader	LV1TCU	523215	8	2	Current output driver 4 (AIM04) short circuit to another valve
7528	Wheel Loader	*	523220	0	3	Clutch K2 slipping unintentionally
7529	Wheel Loader	*	523220	2	2	Unknown electrical component at current output 5
7530	Wheel Loader	LV1TCU	523220	2	2	Current output driver 5 (AIM05) unknown electrical component
7531	Wheel Loader	*	523220	3	3	Propvalve for Clutch K2 short to battery
7532	Wheel Loader	LV1TCU	523220	3	3	Current output driver 5 (AIM05) short to battery
7533	Wheel Loader	*	523220	5	3	Propvalve for Clutch K2 open circuit
7534	Wheel Loader	LV1TCU	523220	5	3	Current output driver 5 (AIM05) open circuit
7535	Wheel Loader	*	523220	6	1	Propvalve for Clutch K2 short to ground
7536	Wheel Loader	LV1TCU	523220	6	1	Current output driver 5 (AIM05) short to ground
7537	Wheel Loader	*	523220	8	1	Propvalve for Clutch K2: short circuit to another valve
7538	Wheel Loader	LV1TCU	523220	8	2	Current output driver 5 (AIM05) short circuit to another valve
7539	Wheel Loader	*	523225	2	2	Unknown electrical component at current output 6
7540	Wheel Loader	LV1TCU	523225	2	2	Current output driver 6 (AIM06) unknown electrical component
7541	Wheel Loader	*	523225	3	3	Propvalve for internal Axle Disconnect (AA) short to battery
7542	Wheel Loader	LV1TCU	523225	3	3	Current output driver 6 (AIM06) short to battery
7543	Wheel Loader	*	523225	5	3	Propvalve for internal Axle Disconnect (AA) open circuit
7544	Wheel Loader	LV1TCU	523225	5	3	Current output driver 6 (AIM06) open circuit
7545	Wheel Loader	LV1TCU	523225	6	1	Current output driver 6 (AIM06) short to ground
7546	Wheel Loader	*	523225	6	3	Propvalve for internal Axle Disconnect (AA) short to ground
7547	Wheel Loader	*	523225	8	1	Propvalve for internal Axle Disconnect (AA): short circuit to another valve
7548	Wheel Loader	LV1TCU	523225	8	2	Current output driver 6 (AIM06) short circuit to another valve
7549	Wheel Loader	*	523230	2	1	Unknown electrical component at current output 7
7550	Wheel Loader	LV1TCU	523230	2	2	Current output driver 7 (AIM07) unknown electrical component
7551	Wheel Loader	*	523230	3	3	Propvalve for current output 7 (AIM7) short to battery
7552	Wheel Loader	LV1TCU	523230	3	3	Current output driver 7 (AIM07) short to battery
7553	Wheel Loader	LV1TCU	523230	5	3	Current output driver 7 (AIM07) open circuit
7554	Wheel Loader	*	523230	5	4	Propvalve for current output 7 (AIM7) open circuit
7555	Wheel Loader	LV1TCU	523230	6	1	Current output driver 7 (AIM07) short to ground
7556	Wheel Loader	*	523230	6	4	Propvalve for current output 7 (AIM7) short to ground
7557	Wheel Loader	*	523230	8	1	Propvalve forcurrent output 7 (AIM7): short circuit to another valve
7558	Wheel Loader	LV1TCU	523230	8	2	Current output driver 7 (AIM07) short circuit to another valve
7559	Wheel Loader	*	523235	0	3	Clutch K3 slipping unintentionally
7560	Wheel Loader	*	523235	2	2	Unknown electrical component at current output 8
7561	Wheel Loader	*	523235	3	3	Propvalve for Clutch K3 short to battery
7562	Wheel Loader	*	523235	5	3	Propvalve for Clutch K3 open circuit
7563	Wheel Loader	*	523235	6	1	Propvalve for Clutch K3 short to ground
7564	Wheel Loader	*	523235	8	1	Propvalve for Clutch K3: short circuit to another valve
7565	Wheel Loader	*	523240	2	2	Unknown electrical component at current output 9
7566	Wheel Loader	*	523240	3	3	Propvalve for external Differential Lock (DL) short to battery
7567	Wheel Loader	*	523240	5	3	Propvalve for external Differential Lock (DL) open circuit
7568	Wheel Loader	*	523240	6	3	Propvalve for external Differential Lock (DL) short to ground
7569	Wheel Loader	*	523240	8	1	Propvalve for external DL: short circuit to another valve
7570	Wheel Loader	*	523245	2	2	Unknown electrical component at current output 10
7571	Wheel Loader	*	523245	3	3	Propvalve for external Axle Disconnect (AA) short to battery
7572	Wheel Loader	*	523245	5	3	Propvalve for external Axle Disconnect (AA) open circuit
7573	Wheel Loader	*	523245	6	3	Propvalve for external Axle Disconnect (AA): short to ground
7574	Wheel Loader	*	523245	8	1	Propvalve for external Axle Disconnect (AA): short circuit to another valve
7575	Wheel Loader	Yanmar	523249	5	1	Nosignal on both crankshaft and camshaft speed sensor
7576	Wheel Loader	*	523250	2	1	Unknown electrical component at current output 11
7577	Wheel Loader	*	523250	3	1	Propvalve for position control (PRV) short to battery
7578	Wheel Loader	*	523250	5	1	Propvalve for position control (PRV) open circuit
7579	Wheel Loader	*	523250	6	1	Propvalve for position control (PRV) short to ground

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
7580	Wheel Loader	*	523250	8	1	Propvalve for position control (PRV) short circuit to another valve
7582	Wheel Loader	LV1TCU	523280	3	2	Digital current output driver 1 (ADM1) short to battery
7583	Wheel Loader	LV1TCU	523280	5	2	Digital current output driver 1 (ADM1) open circuit
7584	Wheel Loader	LV1TCU	523280	6	2	Digital current output driver 1 (ADM1) short to ground
7581	Wheel Loader	LV1TCU	523280	12	2	Digital current output driver 1 (ADM1) defect
7586	Wheel Loader	LV1TCU	523281	3	2	Digital current output driver 2 (ADM2) short to battery
7587	Wheel Loader	LV1TCU	523281	5	2	Digital current output driver 2 (ADM2) open circuit
7588	Wheel Loader	LV1TCU	523281	6	2	Digital current output driver 2 (ADM2) short to ground
7585	Wheel Loader	LV1TCU	523281	12	2	Digital current output driver 2 (ADM2) defect
7589	Wheel Loader	*	523300	0	3	Transmission Sump Oil most severe overtemperature
7590	Wheel Loader	LV1TCU	523300	0	3	Transmission sump oil most severe overtemperature
7591	Wheel Loader	*	523300	15	4	Transmission Sump Oil least severe overtemperature
7592	Wheel Loader	LV1TCU	523300	16	3	Transmission sump oil moderately severe overtemperature
7593	Wheel Loader	*	523300	16	4	Transmission Sump Oil moderately severe overtemperature
7594	Wheel Loader	LV1TCU	523302	0	4	Torque converter oil temperature critical
7595	Wheel Loader	LV1TCU	523302	16	4	Torque converter oil overtemperature
7596	Wheel Loader	LV1TCU	523305	0	3	Oil Filter contaminated
7597	Wheel Loader	*	523305	0	4	Oil Filter contaminated
7598	Wheel Loader	LV1TCU	523310	0	3	Transmission input torque too high
7599	Wheel Loader	*	523310	0	4	Transmission input torque too high
7600	Wheel Loader	LV1TCU	523311	0	3	Transmission input power too high
7601	Wheel Loader	*	523320	15	4	Overspeed at transmission output
7602	Wheel Loader	LV1TCU	523320	15	4	Transmission output speed too high
7603	Wheel Loader	*	523321	9	4	Transmission Output speed gradient too high
7604	Wheel Loader	*	523330	15	4	Overspeed at transmission input
7605	Wheel Loader	LV1TCU	523330	15	4	Transmission input speed too high
7606	Wheel Loader	*	523340	0	4	Implausible high pressure signals detected
7607	Wheel Loader	LV1TCU	523340	0	4	Transmission output torque too high
7608	Wheel Loader	*	523350	9	1	Hydrostat does not follow
7609	Wheel Loader	*	523351	13	4	Drift compensation of high pressure sensor AB not available
7610	Wheel Loader	*	523352	13	4	Drift compensation of high pressure sensor A not available
7611	Wheel Loader	*	523353	9	4	High pressure value too high
7612	Wheel Loader	*	523355	0	4	Clutch KV more severe temperature exceeded
7613	Wheel Loader	LV1TCU	523355	0	4	Clutch KV temperature critical
7614	Wheel Loader	*	523355	15	4	Clutch KV less severe temperature exceeded
7615	Wheel Loader	*	523356	0	4	Clutch KR more severe temperature exceeded
7616	Wheel Loader	LV1TCU	523356	0	4	Clutch KR temperature critical
7617	Wheel Loader	*	523356	15	4	Clutch KR less severe temperature exceeded
7618	Wheel Loader	*	523360	9	4	Calibration Data Lost. TCU was not able to read correct calibration parameters
7619	Wheel Loader	LV1TCU	523360	9	4	Clutch adjustment data invalid
7620	Wheel Loader	LV1TCU	523361	13	4	Clutch calibration process failed
7621	Wheel Loader	*	523365	0	4	Coldstart aborted unexpectedly
7622	Wheel Loader	*	523365	1	4	Sumptemperature too low for normal operation
7623	Wheel Loader	*	523365	2	1	High pressure failure while active cold start
7624	Wheel Loader	*	523365	3	4	Cold start phase time out
7625	Wheel Loader	*	523365	4	4	Unexpected engine speed during cold start
7626	Wheel Loader	*	523370	0	4	Unexpected vehicle motion from standstill
7627	Wheel Loader	*	523371	0	2	Driveline engagement failed
7628	Wheel Loader	LV1TCU	523385	0	4	Upshift by engine overspeed not supported in limphome
7629	Wheel Loader	*	523400	9	3	Vehicle CAN failure
7630	Wheel Loader	LV1TCU	523400	9	3	Vehicle CAN failure
7631	Wheel Loader	*	523401	9	4	Service CAN failure
7632	Wheel Loader	LV1TCU	523402	9	3	ECU connection loss
7633	Wheel Loader	LV1TCU	523403	9	2	VCU connection loss
7634	Wheel Loader	LV1TCU	523405	9	2	I/O-Extension connection loss
7635	Wheel Loader	*	523411	9	4	Message ZFTC1 invalid or timeout
7636	Wheel Loader	LV1TCU	523411	9	4	Message ZFTC1 invalid or timeout
7637	Wheel Loader	*	523412	9	4	Message ZFTC8 invalid or timeout
7638	Wheel Loader	LV1TCU	523413	9	3	Message EEC1 invalid or timeout
7639	Wheel Loader	*	523413	9	4	Message EEC1 invalid or timeout
7640	Wheel Loader	LV1TCU	523414	9	3	Message EEC2 invalid or timeout
7641	Wheel Loader	*	523414	9	4	Message EEC2 invalid or timeout
7642	Wheel Loader	LV1TCU	523415	9	3	Message EEC3 invalid or timeout
7643	Wheel Loader	*	523415	9	4	Message EEC3 invalid or timeout
7644	Wheel Loader	LV1TCU	523416	9	3	Message EC1 invalid or timeout
7645	Wheel Loader	*	523416	9	4	Message EC1 invalid or timeout
7646	Wheel Loader	*	523417	9	3	Message B invalid or timeout
7647	Wheel Loader	LV1TCU	523417	9	4	Message B invalid or timeout
7648	Wheel Loader	*	523418	9	3	Message EBC1 invalid or timeout
7649	Wheel Loader	LV1TCU	523418	9	4	Message EBC1 invalid or timeout
7650	Wheel Loader	LV1TCU	523419	9	3	Signal actual engine torque or signal engine speed (EEC1) are defective
7651	Wheel Loader	*	523420	9	4	Message CCVS invalid or timeout
7652	Wheel Loader	LV1TCU	523420	9	4	Message CCVS invalid or timeout
7653	Wheel Loader	LV1TCU	523421	9	4	No response to request of Time and Date message
7654	Wheel Loader	*	523425	9	2	Message ZFIMPinvalid or timeout
7655	Wheel Loader	LV1TCU	523426	9	3	Message JBERC1 invalid or timeout
7656	Wheel Loader	LV1TCU	523427	9	3	Message JBRC invalid or timeout
7657	Wheel Loader	LV1TCU	523431	19	3	Message ZFTC2 invalid or timed out
7658	Wheel Loader	LV1TCU	523432	19	4	Message ZFSL1_FNR invalid or timed out

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
7659	Wheel Loader	LV1TCU	523450	19	3	Engine reference torque signal invalid
7660	Wheel Loader	LV1TCU	523451	19	3	Actual engine torque signal invalid
7661	Wheel Loader	LV1TCU	523452	19	4	Engine nominal friction torque signal invalid
7662	Wheel Loader	LV1TCU	523454	19	4	Launch gear request invalid
7663	Wheel Loader	LV1TCU	523455	19	3	Message ZFSL1 invalid or timed out
7664	Wheel Loader	LV1TCU	523456	19	4	Invalid FNR extension switches signal
7665	Wheel Loader	Yanmar	523460	7	1	Rail pressure fault (Operation time error during RPS limp home)
7666	Wheel Loader	Yanmar	523462	13	1	Injector (No. 1 cylinder) correction value error
7667	Wheel Loader	Yanmar	523463	13	1	Injector (No. 2 cylinder) correction value error
7668	Wheel Loader	Yanmar	523468	9	1	Rail pressure fault (Controlled rail pressure error after PLV valve opening)
7669	Wheel Loader	Yanmar	523469	0	2	Rail pressure fault (The times of PLV valve opening error)
7670	Wheel Loader	Yanmar	523470	0	2	Rail pressure fault (The time of PLV valve opening error)
7671	Wheel Loader	*	523470	19	2	Operation Mode command invalid
7672	Wheel Loader	LV1TCU	523470	19	2	Operation Mode command invalid
7675	Wheel Loader	Yanmar	523471	6	2	Actuator drive circuit 3 short to ground
7673	Wheel Loader	*	523471	19	2	Transmission Control command invalid
7674	Wheel Loader	LV1TCU	523471	19	2	Transmission command invalid
7676	Wheel Loader	*	523472	19	2	Hydrostatic Unit command invalid
7677	Wheel Loader	Yanmar	523473	12	1	AD converter fault 1
7678	Wheel Loader	*	523473	19	3	Axle Disconnect command invalid
7679	Wheel Loader	Yanmar	523474	12	1	AD converter fault 2
7680	Wheel Loader	*	523474	19	4	Difflock command invalid
7681	Wheel Loader	Yanmar	523475	12	1	External monitoring IC and CPU fault 1
7682	Wheel Loader	Yanmar	523476	12	1	External monitoring IC and CPU fault 2
7683	Wheel Loader	Yanmar	523477	12	1	ROM fault
7684	Wheel Loader	Yanmar	523478	12	1	Shutoff path fault 1
7685	Wheel Loader	Yanmar	523479	12	3	Shutoff path fault 2
7687	Wheel Loader	*	523480	9	4	Machine Configuration invalid
7688	Wheel Loader	LV1TCU	523480	9	4	Machine configuration invalid
7686	Wheel Loader	Yanmar	523480	12	1	Shutoff path fault 3
7689	Wheel Loader	LV1TCU	523481	0	4	Testmode requested but conditions not complied
7690	Wheel Loader	Yanmar	523481	12	1	Shutoff path fault 4
7691	Wheel Loader	Yanmar	523482	12	1	Shutoff path fault 5
7692	Wheel Loader	Yanmar	523483	12	1	Shutoff path fault 6
7693	Wheel Loader	Yanmar	523484	12	1	Shutoff path fault 7
7694	Wheel Loader	Yanmar	523485	12	1	Shutoff path fault 8
7695	Wheel Loader	Yanmar	523486	12	1	Shutoff path fault 9
7696	Wheel Loader	Yanmar	523487	12	1	Shutoff path fault 10
7697	Wheel Loader	Yanmar	523488	0	1	Recognition error of engine speed
7698	Wheel Loader	Yanmar	523489	0	2	Rail pressure fault (The actual rail pressure is too high during PRV limp home)
7699	Wheel Loader	Yanmar	523491	0	2	Rail pressure fault (Injector B/F temperature error during PLV4 limp home)
7700	Wheel Loader	*	523500	0	4	Overspeed engine
7701	Wheel Loader	LV1TCU	523500	0	4	Overspeed engine
7702	Wheel Loader	*	523501	0	4	Engine Speed Limitation is not effective
7703	Wheel Loader	LV1TCU	523501	0	4	Engine speed limit request does not take effect
7704	Wheel Loader	*	523502	0	4	Engine Speed Demand is not effective
7705	Wheel Loader	LV1TCU	523502	0	4	Engine speed control request does not take effect
7706	Wheel Loader	LV1TCU	523503	0	4	Engine torque limit request does not take effect
7707	Wheel Loader	LV1TCU	523504	0	4	Engine torque control request does not take effect
7708	Wheel Loader	*	523505	0	4	Neutral shift to protect engine from stalling
7709	Wheel Loader	*	523600	0	3	Protection Function Error
7710	Wheel Loader	LV1TCU	523600	0	3	Protection related error detected
7711	Wheel Loader	LV1TCU	523600	1	2	Protection Function 1 (SF01) Unwanted driveaway
7712	Wheel Loader	*	523600	1	4	SF01 Avoid unwanted driveaway Verhinderung unerwarteter Anlauf
7721	Wheel Loader	*	523600	2	4	SF02 Safe Direction Sichere Bewegungsrichtung Anfahren Schalten Verbleiben falsche Fahrtrichtung
7722	Wheel Loader	LV1TCU	523600	2	4	Protection Function 2 (SF02) Unwanted driving direction
7723	Wheel Loader	*	523600	3	4	SF03 Safely limited acceleration Sicher begrenzte Beschleunigung Blockierter Abtrieb
7724	Wheel Loader	LV1TCU	523600	3	4	Protection Function 3 (SF03) Safely limited acceleration (blocked Transmission)
7725	Wheel Loader	LV1TCU	523600	4	4	Protection Function 4 (SF04) Safely limited acceleration (Downshift)
7726	Wheel Loader	*	523600	5	4	SF05 Safe Output Sichere Ausgabe Warnung Rueckwaertsfahrt
7727	Wheel Loader	LV1TCU	523600	5	4	Protection Function 5 (SF05) Safe Output at reverse driving
7728	Wheel Loader	LV1TCU	523600	6	4	Protection Function 6 (SF06) Safely limited speed in Reverse
7729	Wheel Loader	*	523600	7	4	SF07 Safely limited speed Sicher begrenzte Geschwindigkeit Verhinderung Richtungswechsel
7730	Wheel Loader	LV1TCU	523600	7	4	Protection Function 7 (SF07) Unwanted direction change
7731	Wheel Loader	LV1TCU	523600	8	4	Protection Function 8 (SF08)
7732	Wheel Loader	LV1TCU	523600	9	4	Protection Function 9 (SF09) Safely limited torque
7713	Wheel Loader	*	523600	10	4	SF10 Protection limited delayed get into gear Verhinderung eines verzoegerten Anfahrens
7714	Wheel Loader	LV1TCU	523600	10	4	Protection Function 10 (SF10) Delayed gear engagement
7715	Wheel Loader	*	523600	11	3	SF11 Safe Lock
7716	Wheel Loader	LV1TCU	523600	11	3	Protection Function 11 (SF11) Safe Difflock
7717	Wheel Loader	*	523600	12	3	SF12 Safe Transmission Output Shaft Speed
7718	Wheel Loader	LV1TCU	523600	12	3	Protection Function 12 (SF12) Safe Transmission Output Signals
7719	Wheel Loader	*	523600	14	1	SF14 Safe current on PRV valve
7720	Wheel Loader	LV1TCU	523600	16	4	Protection Function 16 (SF16) Safe Inching Exit
7733	Wheel Loader	LV1TCU	523601	0	1	Protection related error in transmission detected
7734	Wheel Loader	*	523601	0	2	Protection related error in Transmission detected
7735	Wheel Loader	LV1TCU	523602	0	1	Protection related error in vehicle communication detected
7736	Wheel Loader	*	523602	0	2	Protection related error in Vehicle Communication detected

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
7737	Wheel Loader	*	523603	0	1	Protection Error Reaction failed
7738	Wheel Loader	LV1TCU	523603	0	1	Protection error reaction failed
7739	Wheel Loader	LV1TCU	523650	0	4	Neutral selected while vehicle moves with overspeed
7740	Wheel Loader	LV1TCU	523700	0	3	Clutch K1 slipping unintendedly
7741	Wheel Loader	LV1TCU	523705	0	3	Clutch K2 slipping unintendedly
7742	Wheel Loader	LV1TCU	523710	0	3	Clutch K3 slipping unintendedly
7743	Wheel Loader	LV1TCU	523715	0	3	Clutch KV slipping unintendedly
7744	Wheel Loader	LV1TCU	523720	0	3	Clutch K4 slipping unintendedly
7745	Wheel Loader	LV1TCU	523725	0	3	Clutch KR slipping unintendedly
7746	Wheel Loader	LV1TCU	523730	0	4	LUC slipping unintendedly
7747	Wheel Loader	Cummins	524286	31	3	Reserved for temporary use - Condition Exists
7748	Wheel Loader	Yanmar	623464	13	1	Injector (No. 3 cylinder) correction value error
7749	Wheel Loader	Yanmar	623465	13	1	Injector (No. 4 cylinder) correction value error
7750	Wheel Loader	*	1A	*	3	S.C. TO GROUND AT CUSTOMER SPECIFIC FUNCTION NO. 2
7751	Wheel Loader	*	1B	*	3	S.C. TO BATTERY VOLTAGE AT CUSTOMER SPECIFIC FUNCTION NO. 2
7752	Wheel Loader	*	1C	*	3	O.C. AT CUSTOMER SPECIFIC FUNCTION NO. 2
7753	Wheel Loader	*	1D	*	3	S.C. TO GROUND AT CUSTOMER SPECIFIC FUNCTION NO. 3
7754	Wheel Loader	*	1E	*	3	S.C. TO BATTERY VOLTAGE AT CUSTOMER SPECIFIC FUNCTION NO. 3
7755	Wheel Loader	*	1F	*	3	O.C. AT CUSTOMER SPECIFIC FUNCTION NO. 3
7756	Wheel Loader	*	2A	*	3	S.C. TO GROUND PARKING BRAKE SENSOR INPUT
7757	Wheel Loader	*	2B	*	3	INCHSENSOR-SIGNAL MISMATCH
7758	Wheel Loader	*	2C	*	3	S.C. TO BATTERY VOLTAGE OR O.C. AT DLM TRACTION ADJUST DASHBOARD DEVICE INPUT
7759	Wheel Loader	*	2D	*	3	S.C. TO GROUND DLM TRACTION ADJUST DASHBOARD DEVICE INPUT
7760	Wheel Loader	*	2E	*	3	S.C. TO BATTERY VOLTAGE OR O.C. AT DLM STEERING ANGLE SENSOR INPUT
7761	Wheel Loader	*	2F	*	3	S.C. TO GROUND DLM STEERING ANGLE SENSOR INPUT
7762	Wheel Loader	*	3A	*	3	S.C. TO BATTERY VOLTAGE OR O.C. AT OUTPUT SPEED INPUT
7763	Wheel Loader	*	3B	*	3	S.C. TO GROUND AT OUTPUT SPEED INPUT
7764	Wheel Loader	*	3C	*	3	LOGICAL ERROR AT OUTPUT SPEED INPUT
7765	Wheel Loader	*	3D	*	3	TURBINE SPEED ZERO DOESN'T FIT TO OTHER SPEED SIGNALS
7766	Wheel Loader	*	3E	*	3	OUTPUT SPEED ZERO DOESN'T FIT TO OTHER PEED SIGNALS
7767	Wheel Loader	*	5A	*	3	PARKBRAKE STATUS SIGNAL
7768	Wheel Loader	*	5B	*	3	SHIFT QUALITY SEL SIGNAL
7769	Wheel Loader	*	5C	*	3	AUTO DOWNSHIFT SIGNAL
7770	Wheel Loader	*	5D	*	3	MANUAL DOWNSHIFT SIGNAL
7771	Wheel Loader	*	5E	*	3	CCO REQUEST SIGNAL
7772	Wheel Loader	*	5F	*	3	SHIFT LEVER SIGNAL
7773	Wheel Loader	*	6A	*	3	ACTUAL ENGINE TORQUE SIGNAL
7774	Wheel Loader	*	6B	*	3	NOM FRICTION TORQUE SIGNAL
7775	Wheel Loader	*	6E	*	3	EEC2 TIMEOUT
7776	Wheel Loader	*	7A	*	2	S.C. TO BATTERY VOLTAGE AT CONVERTER CLUTCH no reaction
7777	Wheel Loader	*	7B	*	2	S.C. TO GROUND AT CONVERTER CLUTCH
7778	Wheel Loader	*	7C	*	2	O.C. AT CONVERTER CLUTCH
7779	Wheel Loader	*	7D	*	2	S.C. TO GROUND AT ENGINE DERATING DEVICE
7780	Wheel Loader	*	7E	*	2	S.C. TO BATTERY VOLTAGE AT ENGINE DERATING DEVICE
7781	Wheel Loader	*	7F	*	2	O.C. AT ENGINE DERATING DEVICE
7782	Wheel Loader	*	8A	*	3	S.C. TO GROUND AT DLM TRANSVERSAL OUTPUT
7783	Wheel Loader	*	8B	*	3	S.C. TO BATTERY VOLTAGE AT DLM TRANSVERSAL
7784	Wheel Loader	*	8C	*	3	O.C. AT DLM TRANSVERSAL OUTPUT
7785	Wheel Loader	*	8D	*	3	S.C. TO GROUND AT DLM INDICATOR LAMP OUTPUT
7786	Wheel Loader	*	8E	*	3	S.C. TO BATTERY VOLTAGE AT DLM INDICATOR LAMP OUTPUT
7787	Wheel Loader	*	8F	*	3	O.C. DLM INDICATOR LAMP OUTPUT
7788	Wheel Loader	*	9A	*	3	S.C. TO GROUND AT CONVERTER LOCK UP CLUTCH SOLENOID
7789	Wheel Loader	*	9B	*	3	O.C. AT CONVERTER LOCK UP CLUTCH SOLENOID
7790	Wheel Loader	*	9C	*	3	S.C. TO BATTERY VOLTAGE AT CONVERTER LOCK UP CLUTCH SOLENOID
7791	Wheel Loader	*	9D	*	3	S.C. TO GROUND AT RETARDER SOLENOID
7792	Wheel Loader	*	9E	*	3	O.C. AT RETARDER SOLENOID
7793	Wheel Loader	*	9F	*	3	S.C. TO BATTERY VOLTAGE AT RETARDER SOLENOID
7794	Wheel Loader	*	A1	*	3	S.C. TO GROUND AT DIFFLOCK OR AXLE CONNECTION SOLENOID
7795	Wheel Loader	*	A2	*	3	S.C. TO BATTERY VOLTAGE AT DIFFLOCK OR AXLE CONNECTION SOLENOID
7796	Wheel Loader	*	A3	*	3	O.C. AT DIFFLOCK OR AXLE CONNECTION SOLENOID
7797	Wheel Loader	*	A4	*	3	S.C. TO GROUND AT WARNING SIGNAL OUTPUT
7798	Wheel Loader	*	A5	*	3	O.C. AT WARNING SIGNAL OUTPUT
7799	Wheel Loader	*	A6	*	3	S.C. TO BATTERY VOLTAGE AT WARNING SIGNAL OUTPUT
7800	Wheel Loader	*	A7	*	3	S.C. TO GROUND AT CUSTOMER SPECIFIC FUNCTION NO. 4
7801	Wheel Loader	*	A8	*	3	S.C. TO BATTERY VOLTAGE AT CUSTOMER SPECIFIC FUNCTION NO. 4
7802	Wheel Loader	*	A9	*	3	O.C. AT CUSTOMER SPECIFIC FUNCTION NO. 4
7803	Wheel Loader	*	AA	*	3	S.C. TO GROUND AT CUSTOMER SPECIFIC FUNCTION NO. 5
7804	Wheel Loader	*	AB	*	3	S.C. TO BATTERY VOLTAGE AT CUSTOMER SPECIFIC FUNCTION NO. 5
7805	Wheel Loader	*	AC	*	3	O.C. AT CUSTOMER SPECIFIC FUNCTION NO. 5
7806	Wheel Loader	*	AD	*	3	S.C. TO GROUND AT CUSTOMER SPECIFIC FUNCTION NO. 6
7807	Wheel Loader	*	AE	*	3	S.C. TO BATTERY VOLTAGE AT CUSTOMER SPECIFIC FUNCTION NO. 6
7808	Wheel Loader	*	AF	*	3	O.C. AT CUSTOMER SPECIFIC FUNCTION NO. 6
7809	Wheel Loader	*	B1	*	2	SLIPPAGE AT CLUTCH K1
7810	Wheel Loader	*	B2	*	2	SLIPPAGE AT CLUTCH K2
7811	Wheel Loader	*	B3	*	2	SLIPPAGE AT CLUTCH K3
7812	Wheel Loader	*	B4	*	2	SLIPPAGE AT CLUTCH K4
7813	Wheel Loader	*	B5	*	2	SLIPPAGE AT CLUTCH KV
7814	Wheel Loader	*	B6	*	2	SLIPPAGE AT CLUTCH KR
7815	Wheel Loader	*	B7	*	2	OVERTEMP SUMP

No.	MACHINE_TYPE	ENGINE_MAKER	SPN	FMI	LEV	MESSAGE_TXT
7816	Wheel Loader	*	B8	*	2	OVERTEMP RETARDER
7817	Wheel Loader	*	B9	*	2	OVERSPEED ENGINE
7818	Wheel Loader	*	BA	*	4	Differential Pressure TM Oil Filter (Clogging)
7819	Wheel Loader	*	BB	*	2	SLIPPAGE AT CONVERTER LOCKUP CLUTCH
7820	Wheel Loader	*	BC	*	2	OVERSPEED OUTPUT
7821	Wheel Loader	*	BD	*	3	S.C. TO GROUND AT ENGINE BRKAE SOLENOID
7822	Wheel Loader	*	BE	*	3	S.C. TO BATTERY VOLTAGE AT ENGINE BRAKE
7823	Wheel Loader	*	BF	*	3	O.C. AT ENGINE BRAKE
7824	Wheel Loader	*	C0	*	3	ENGINE TORQUE OR ENGINE POWER OVERLOAD
7825	Wheel Loader	*	C1	*	3	TRANSMISSION OUTPUT TORQUE OVERLOAD
7826	Wheel Loader	*	C2	*	3	TRANSMISSION INPUT TORQUE OVERLOAD
7827	Wheel Loader	*	C3	*	3	OVERTEMP CONVERTER OUTPUT
7828	Wheel Loader	*	C4	*	3	S.C. TO GROUND AT JOYSTICK STATUS INDICATOR
7829	Wheel Loader	*	C5	*	3	S.C. TO BATTERY VOLTAGE AT JOYSTICK STATUS INDICATOR
7830	Wheel Loader	*	C6	*	3	O.C. AT JOYSTICK STATUS INDICATOR
7831	Wheel Loader	*	C7	*	3	S.C. TO GROUND AT OVERTEMP NEUTRAL
7832	Wheel Loader	*	C8	*	3	S.C. TO BATTERY VOLTAGE AT OVERTEMP NEUTRAL INDICATOR
7833	Wheel Loader	*	C9	*	3	O.C. AT OVERTEMP NEUTRAL INDICATOR
7834	Wheel Loader	*	CA	*	3	ENGINE_RETARDER CONFIG_TIMEOUT
7835	Wheel Loader	*	CB	*	3	ERC1 TIMEOUT
7836	Wheel Loader	*	D1	*	3	S.C. TO BATTERY VOLTAGE AT POWER SUPPLY FOR SENSORS
7837	Wheel Loader	*	D2	*	3	S.C. TO GROUND AT POWER SUPPLY FOR SENSORS
7838	Wheel Loader	*	D3	*	3	LOW VOLTAGE AT BATTERY
7839	Wheel Loader	*	D4	*	3	HIGH VOLTAGE AT BATTERY
7840	Wheel Loader	*	D5	*	3	ERROR AT VALVE POWER SUPPLY VPS1
7841	Wheel Loader	*	D6	*	3	ERROR VALVE POWER SUPPLY VPS2
7842	Wheel Loader	*	D7	*	3	S.C. TO GROUND AT DLM LONGITUDINAL OUTPUT
7843	Wheel Loader	*	D8	*	3	S.C. TO BATTERY VOLTAGE AT DLM LONGITUDINAL OUTPUT
7844	Wheel Loader	*	D9	*	3	O.C. AT DLM LONGITUDINAL OUTPUT
7845	Wheel Loader	*	E1	*	3	OPEN CIRCUIT AT DIRECTION SELECT SIGNALS
7846	Wheel Loader	*	E2	*	3	OPEN CIRCUIT AT DIRECTION SELECT SIGNALS OF SHIFTER 2
7847	Wheel Loader	*	E3	*	3	S.C. TO BATTERY VOLTAGE AT DISPLAY OUTPUT
7848	Wheel Loader	*	E4	*	3	S.C. TO GROUND AT DISPLAY OUTPUT
7849	Wheel Loader	*	E5	*	3	DISPID1_TIMEOUT
7850	Wheel Loader	*	E6	*	3	ILLEGAL ID REQUEST VIA CAN
7851	Wheel Loader	*	F1	*	3	GENERAL EEPROM FAULT
7852	Wheel Loader	*	F2	*	4	CONFIGURATION LOST
7853	Wheel Loader	*	F3	*	4	APPLICATION ERROR
7854	Wheel Loader	*	F4	*	3	LIMP HOME REQUEST
7855	Wheel Loader	*	F5	*	2	CLUTCH FAILURE
7856	Wheel Loader	*	F6	*	4	CLUTCH ADJUSTMENT DATA LOST OR INCHPEDAL CALIBRATION DATA LOST
7857	Wheel Loader	*	F7	*	3	SUSBTITUTE CLUTCH CONTROL