

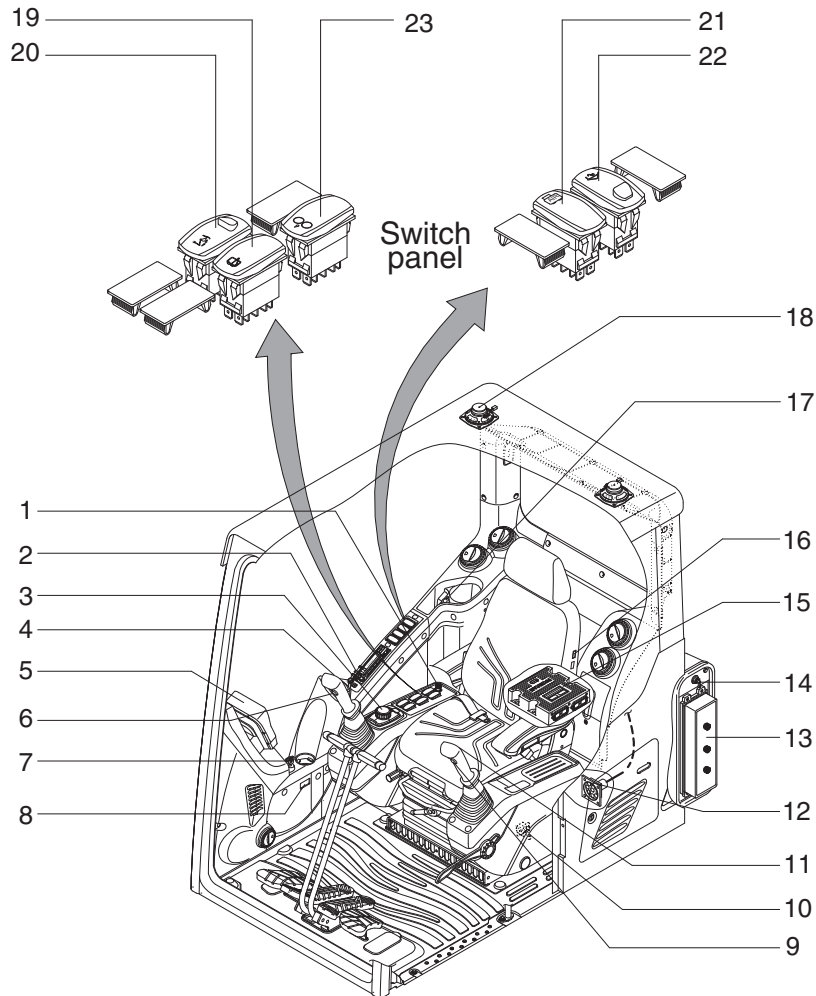
SECTION 4 ELECTRICAL SYSTEM

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SECTION 4 ELECTRICAL SYSTEM

GROUP 1 COMPONENT LOCATION

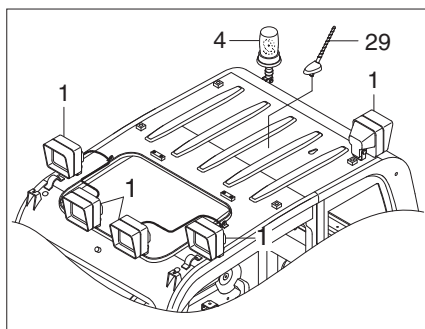
1. LOCATION 1



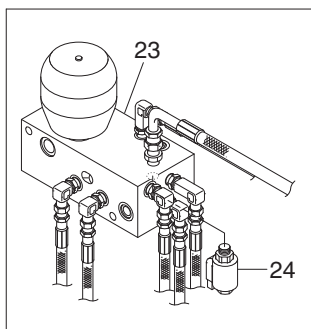
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- | | | |
|----------------------------|---------------------------------|--------------------------------------|
| 1 Cigar lighter | 9 Power max switch | 17 Service socket |
| 2 Radio & USB player | 10 Emergency engine stop switch | 18 Speaker |
| 3 Haptic controller | 11 One touch decel switch | 19 Lower wiper & washer switch |
| 4 Horn switch | 12 RS232 & J1939 service socket | 20 Boom floating switch |
| 5 Cluster | 13 Fuse & relay box | 21 Air compressor switch |
| 6 Breaker operation switch | 14 Master switch | 22 Quick clamp switch |
| 7 Starting switch | 15 Machine control unit | 23 Central grease lubrication switch |
| 8 Service meter | 16 Seat heater switch | |

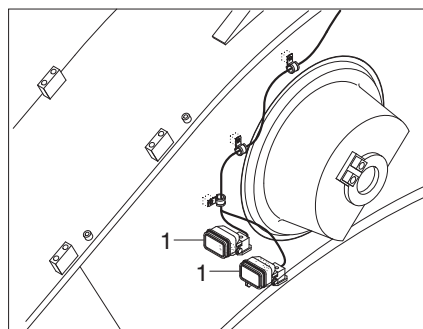
2. LOCATION 2



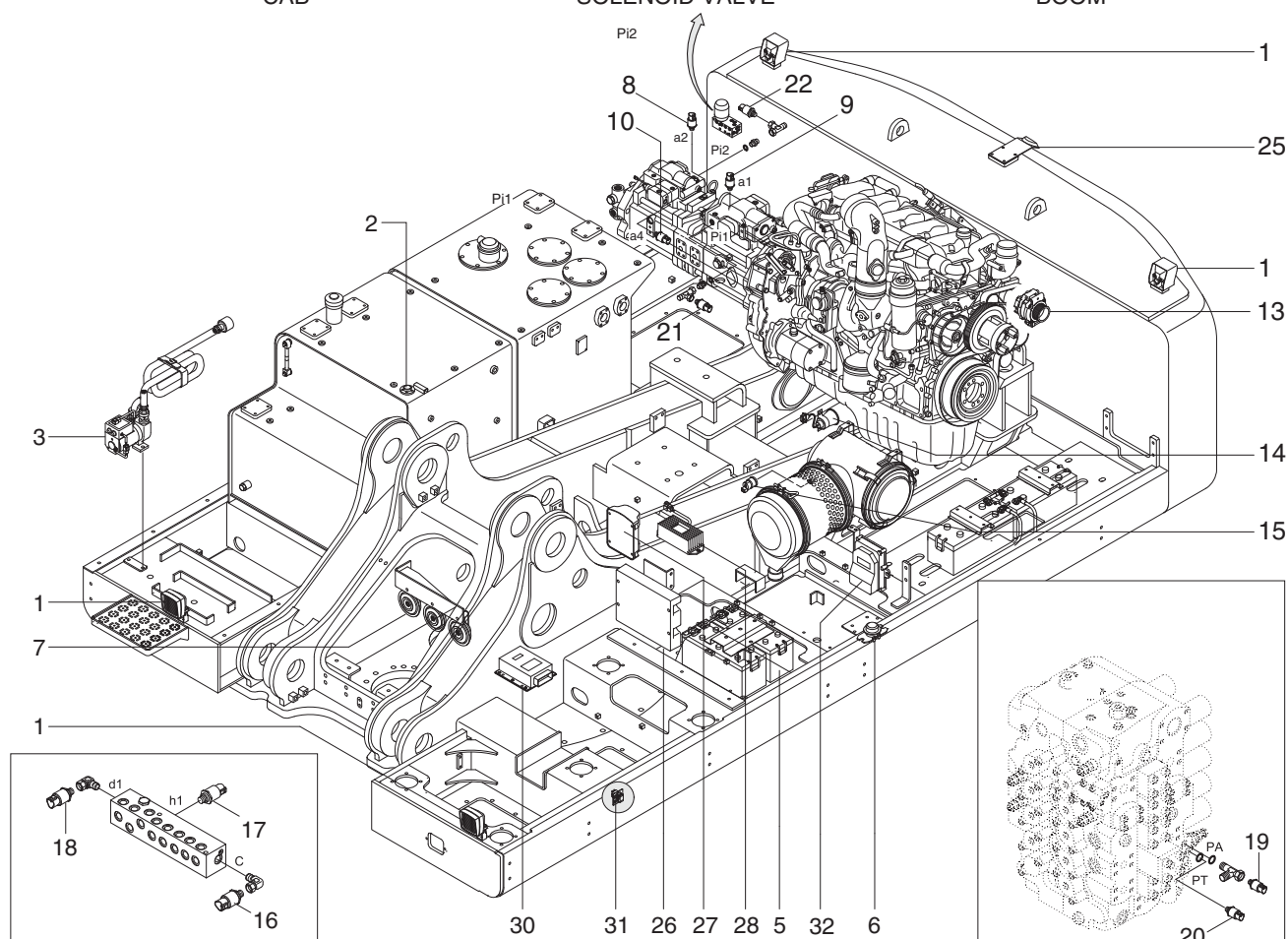
CAB



SOLENOID VALVE



BOOM



SHUTTLE BLOCK

MAIN CONTROL VALVE

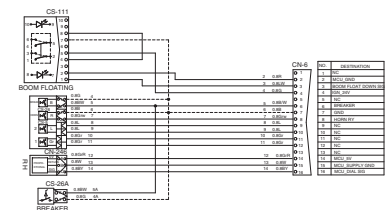
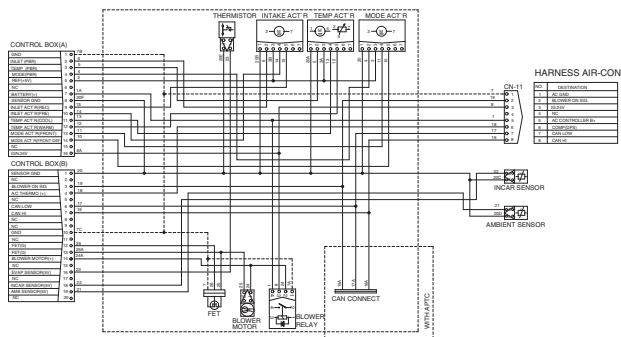
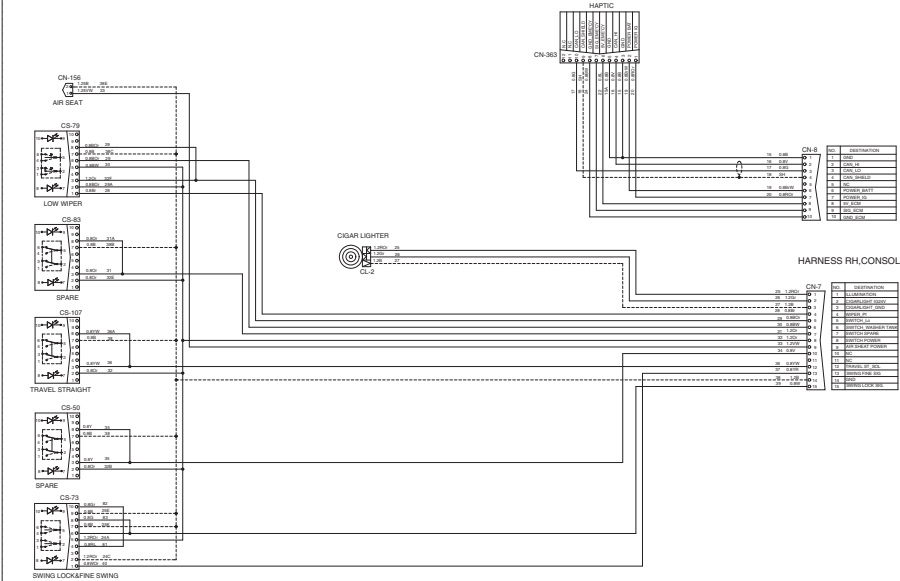
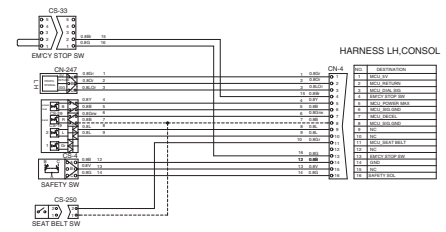
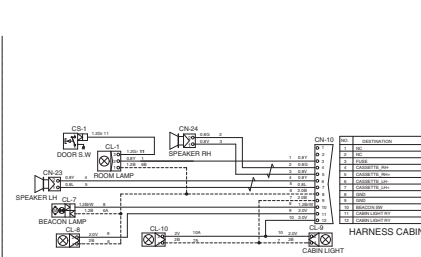
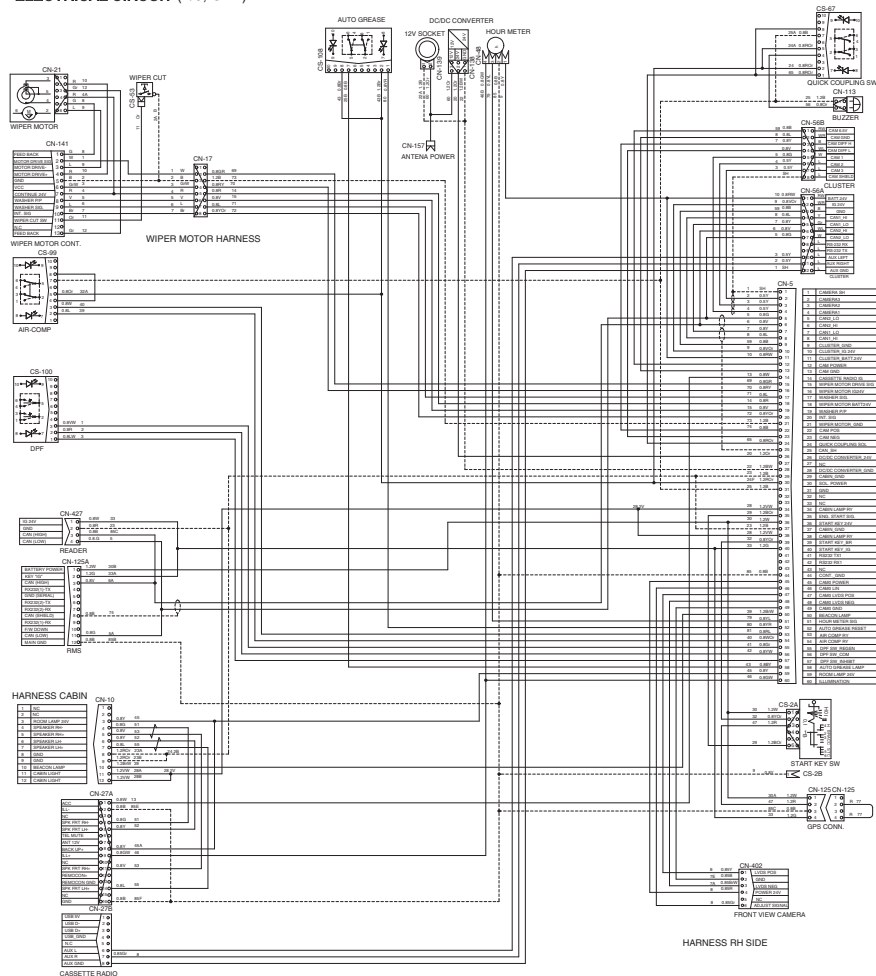
900L4EL02

- | | | |
|----------------------|--------------------------------------|---------------------------------|
| 1 Lamp | 13 Alternator | 23 Solenoid valve |
| 2 Fuel sender | 14 Travel alarm buzzer | 24 Boom priority EPPR valve |
| 3 Fuel filler pump | 15 Air cleaner switch | 25 Rear view camera |
| 4 Beacon lamp | 16 Swing pressure sensor | 26 MCU |
| 5 Battery | 17 Boom down pressure sensor | 27 RMCU |
| 6 Battery relay | 18 Arm out/Bucket in pressure sensor | 28 Converter |
| 7 Horn | 19 Attach pressure sensor | 29 Antenna |
| 8 P1 pressure sensor | 20 Travel pressure sensor | 30 Attachment MCU |
| 9 P2 pressure sensor | 21 Nega control 1 pressure sensor | 31 Engine emergency stop switch |
| 10 EPPR sensor | 22 Nega control 2 pressure sensor | 32 Relay drive unit |

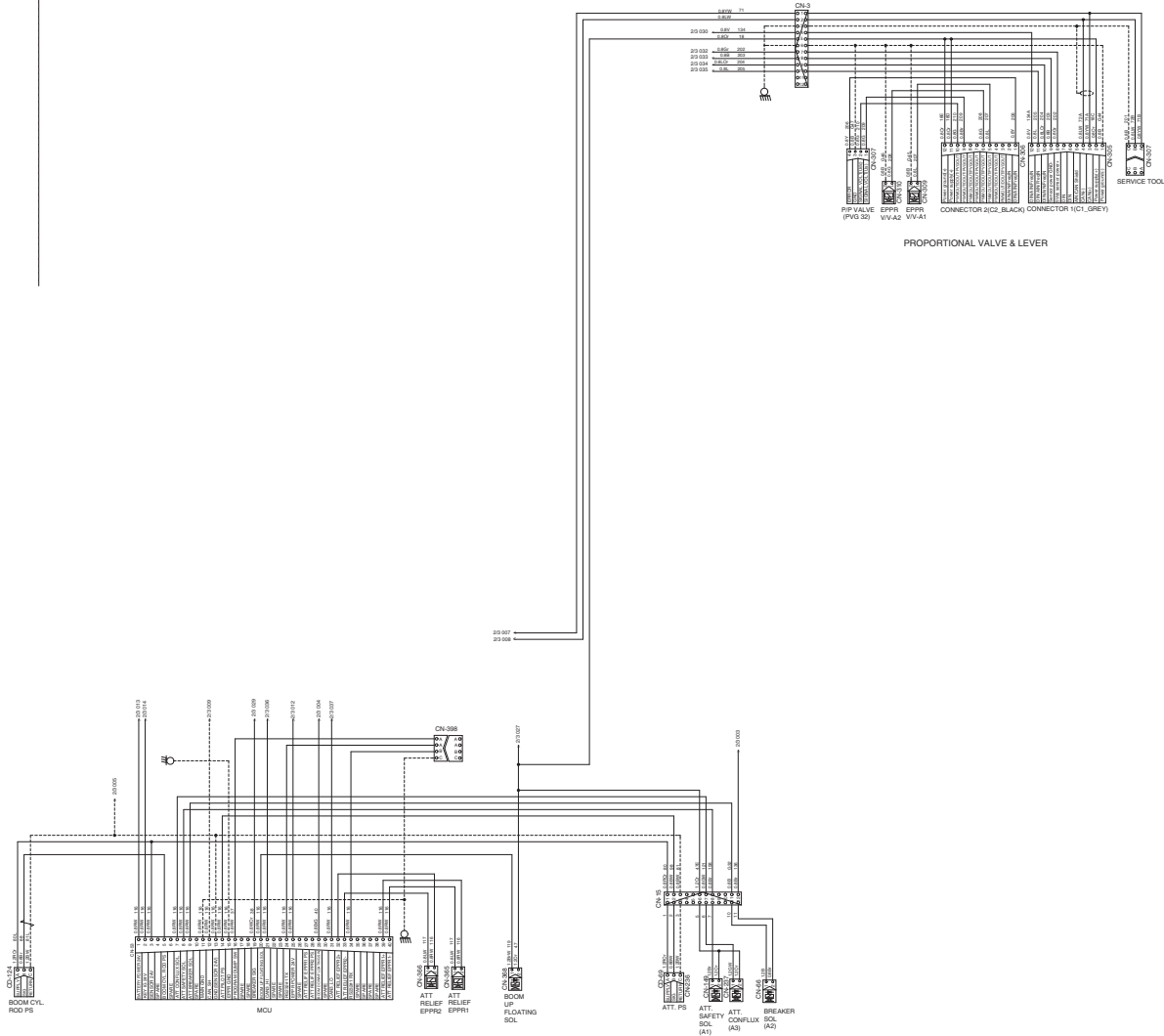
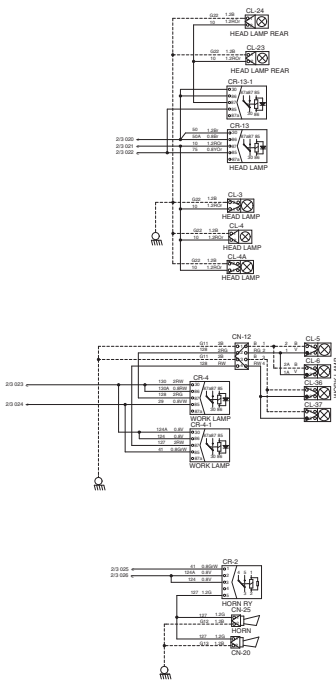
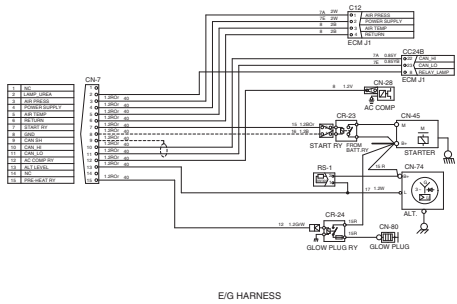
· **ELECTRICAL CIRCUIT** (1/3, OLD)



ELECTRICAL CIRCUIT (2/3, OLD)



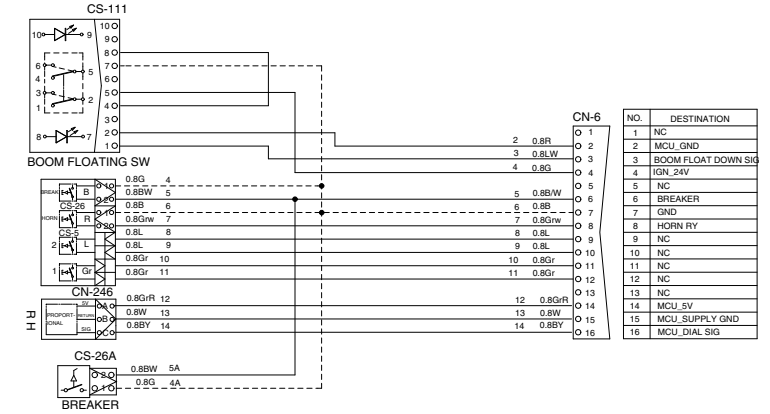
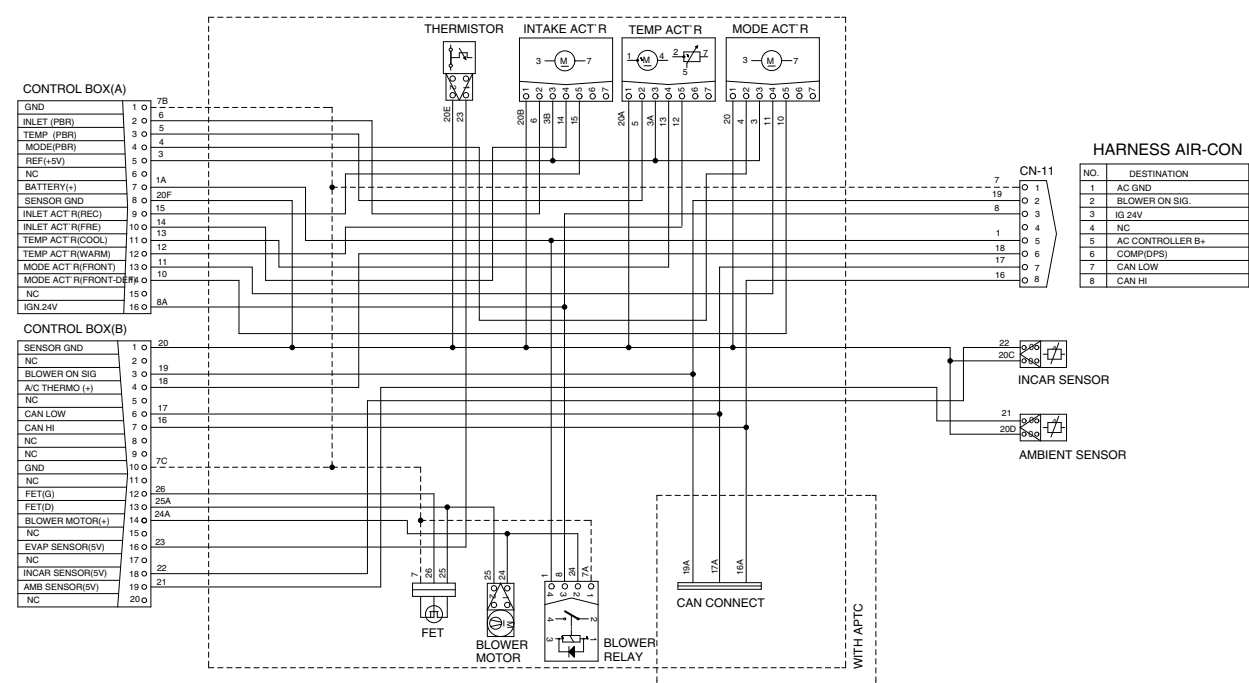
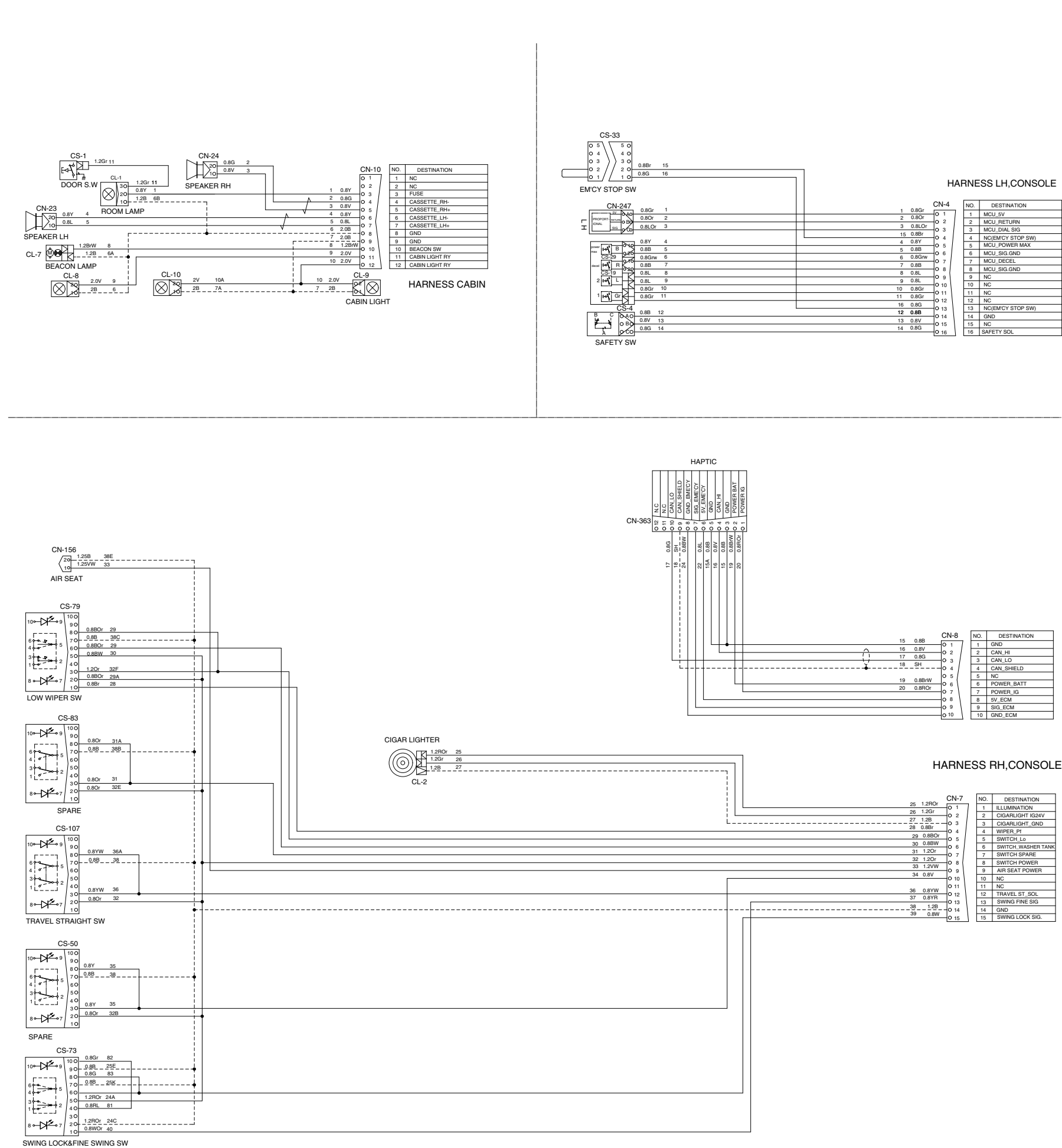
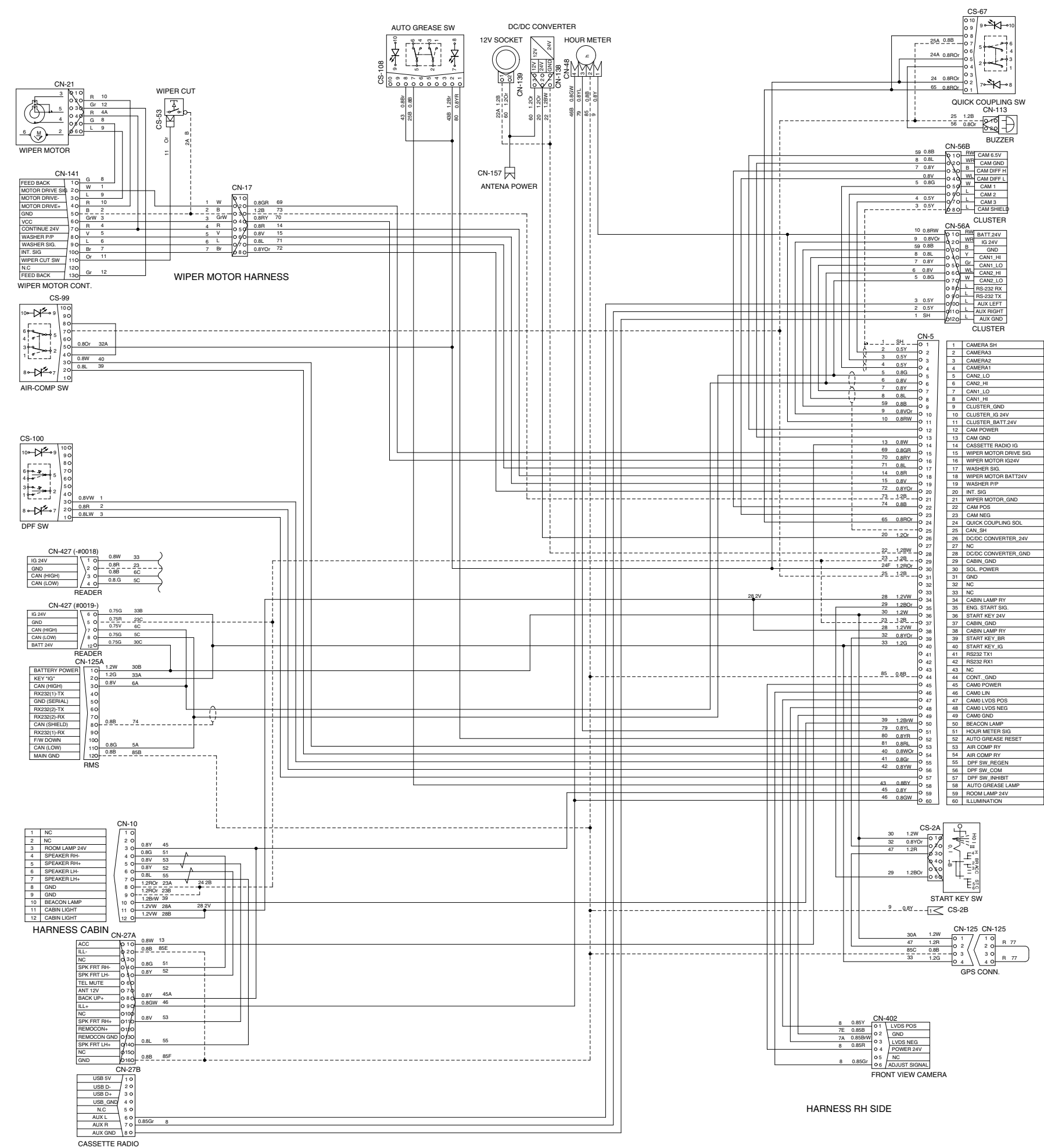
ELECTRICAL CIRCUIT (3/3, OLD)



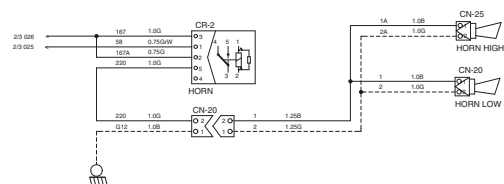
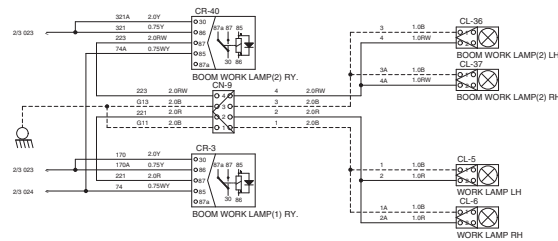
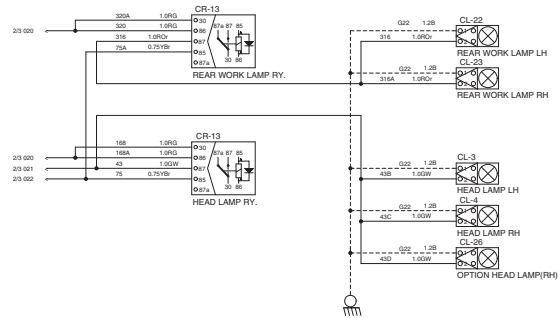
· ELECTRICAL CIRCUIT (1/3, NEW)



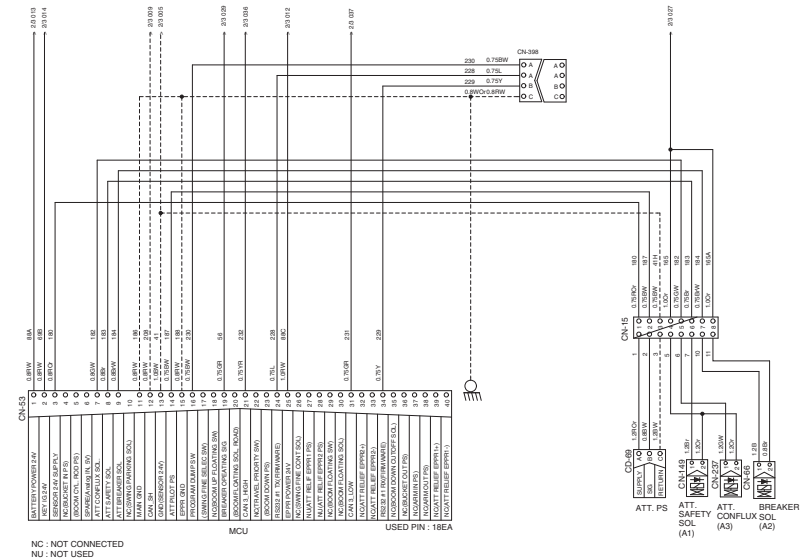
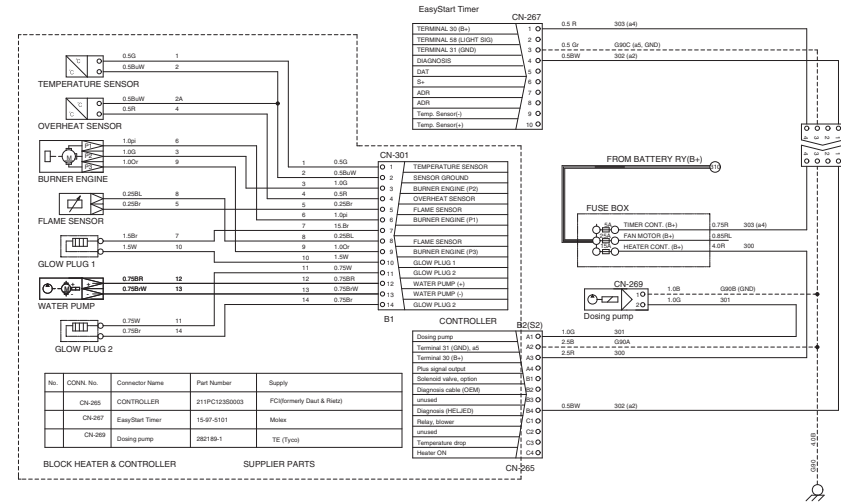
ELECTRICAL CIRCUIT (2/3, NEW)



ELECTRICAL CIRCUIT (3/3, NEW)



Engine Block Heater



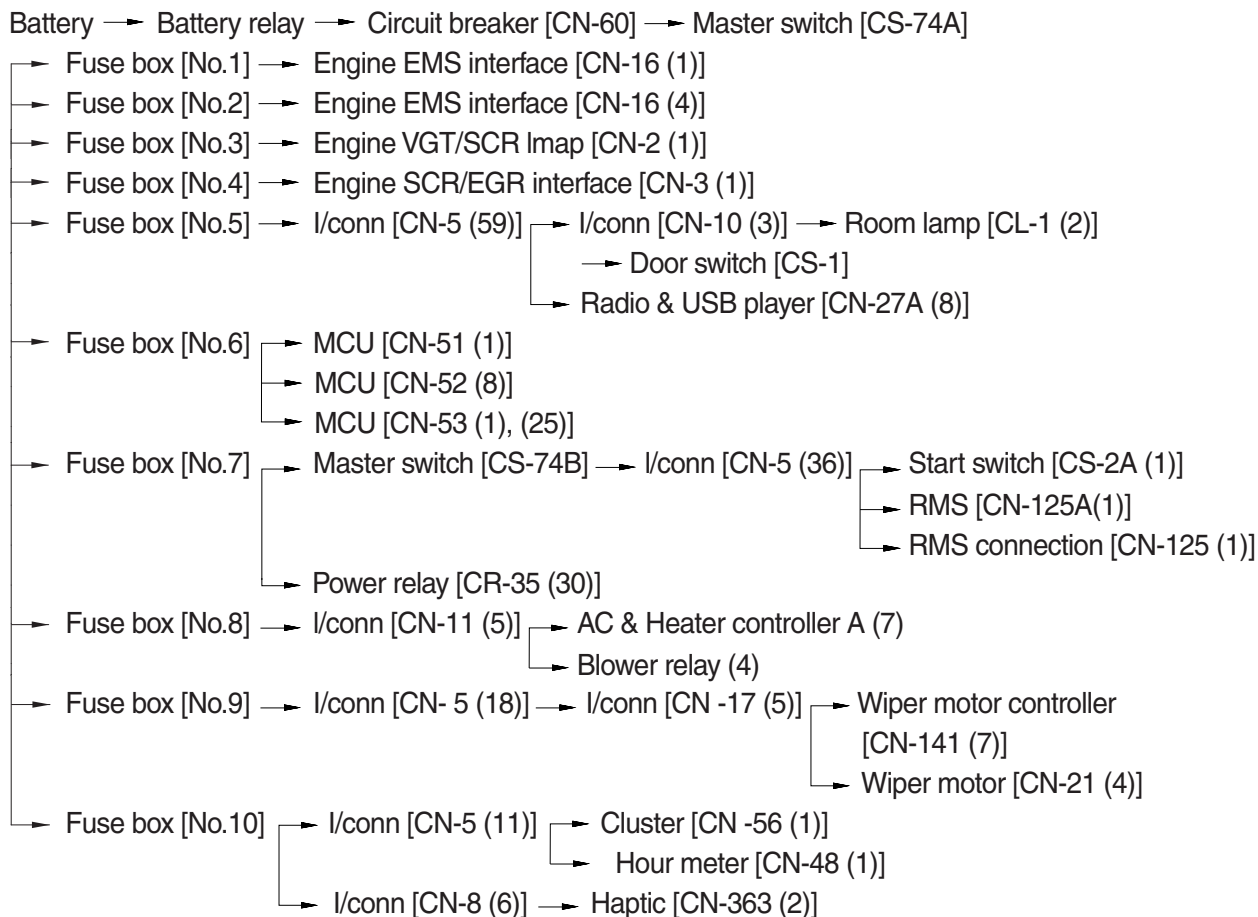
MEMORANDUM

1. POWER CIRCUIT

The negative terminal of battery is grounded to the machine chassis through master switch.

When the start switch is in the OFF position, the current flows from the positive battery terminal as shown below.

1) OPERATING FLOW



※ I/conn : Intermediate connector

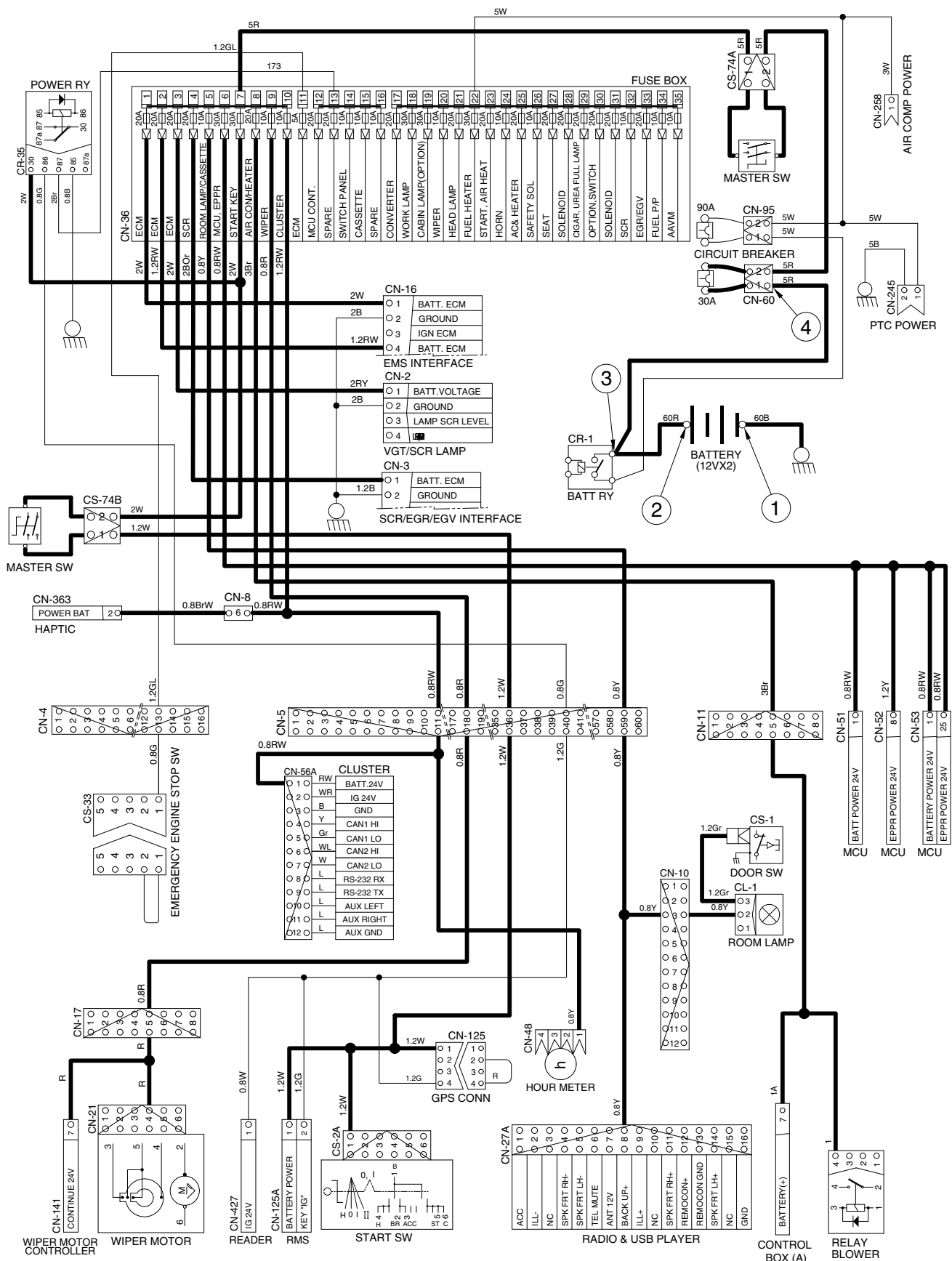
2) CHECK POINT

Engine	Start switch	Check point	Voltage
STOP	OFF	① - GND (battery 1EA)	10~12.5V
		② - GND (battery 2EA)	20~25V
		③ - GND (battery 2EA)	20~25V
		④ - GND (fusible link)	20~25V

※ GND : Ground

※ The circuit diagram may differ from the equipment, so please check before a repair.

POWER CIRCUIT



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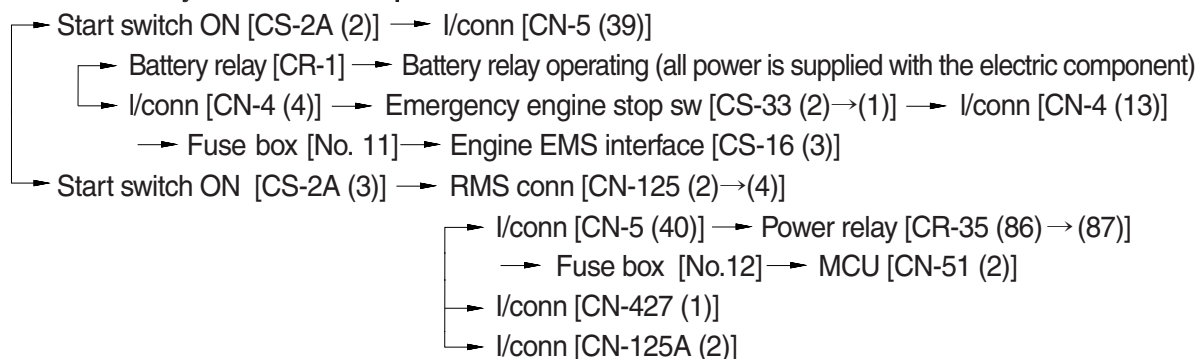
※ The circuit diagram may differ from the equipment, so please check before a repair.

2. STARTING CIRCUIT

1) OPERATING FLOW

Battery (+) terminal → Battery relay [CR-1] → Circuit breaker [CN-60] → Master switch [CS-74A]
 → Fuse box [No.7] → Master switch [CS-74B] → I/conn [CN-5(36)] → Start switch [CS-2A(1)]

(1) When start key switch is in ON position



(2) When start key switch is in START position

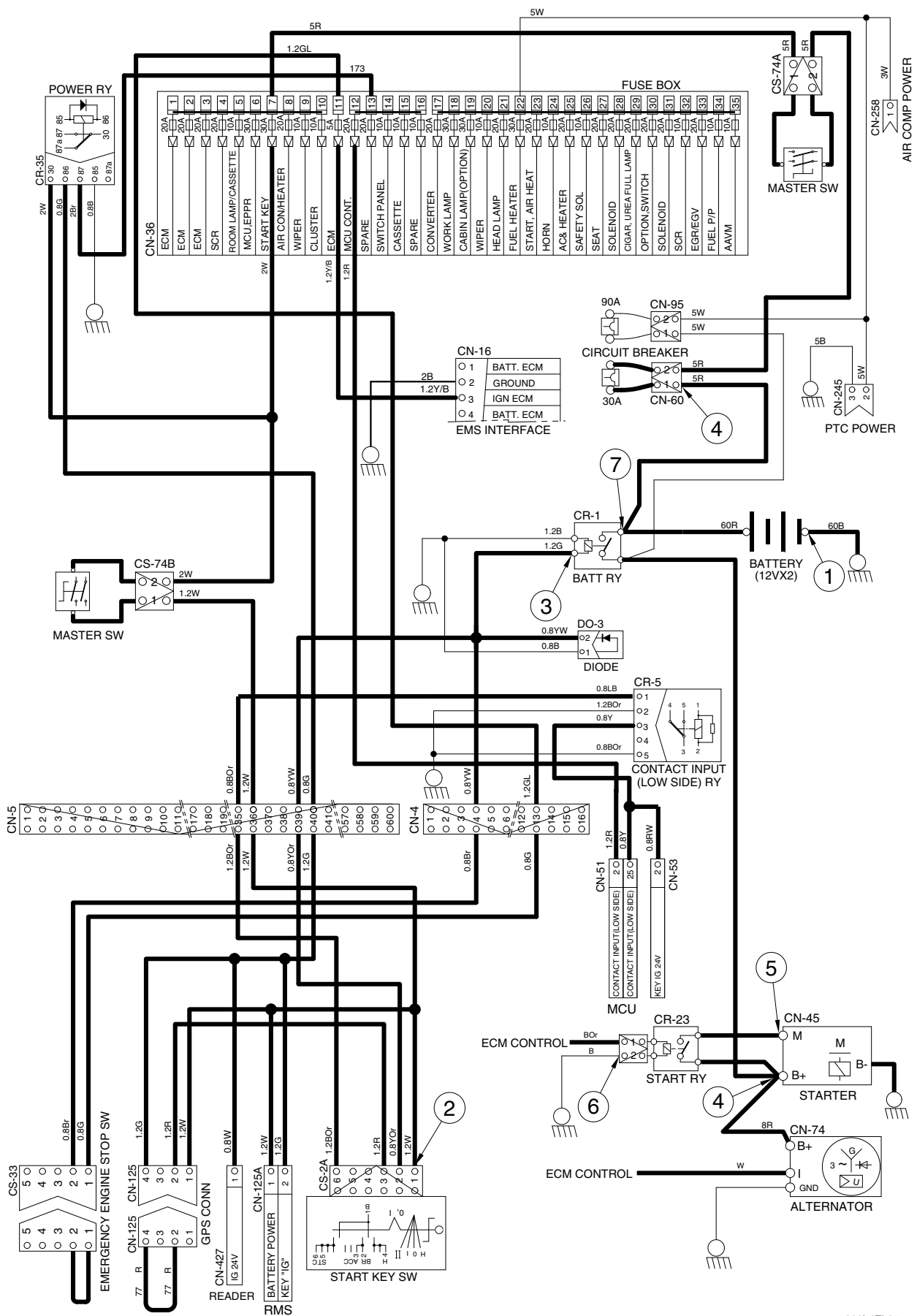
Start switch START [CS-2A (6)] → I/conn [CN-5 (35)] → Coutact input relay [CR-5 (1) → (3)]
 → MCU [CN-51 (25)] → ECM control → Start relay [CR-23(1)] → Starter operating

2) CHECK POINT

Engine	Start switch	Check point	Voltage
OPERATING	START	① - GND (battery) ② - GND (start key) ③ - GND (battery relay M4) ④ - GND (starter B ⁺) ⑤ - GND (starter M) ⑥ - GND (start relay) ⑦ - GND (battery relay M8)	20~25V

※ The circuit diagram may differ from the equipment, so please check before a repair.

STARTING CIRCUIT



900L4EL07

※ The circuit diagram may differ from the equipment, so please check before a repair.

3. CHARGING CIRCUIT

When the starter is activated and the engine is started, the operator releases the start switch to the ON position.

Charging current generated by operating alternator flows into the battery through the battery relay [CR-1].

The current also flows from alternator to each electrical component and controller through the fuse box.

1) OPERATING FLOW

(1) Warning flow

Alternator "I" terminal → ECM control

→ Cluster charging warning lamp (Via serial interface)

(2) Charging flow

Alternator "B⁺" terminal → Battery relay(M8) → Battery (+) terminal
→ Circuit breaker [CN-60] → Master switch [CS-74A]
→ Fuse box [No. 1~10]
→ Circuit breaker [CN-60] → Fuse box [No. 17~35]

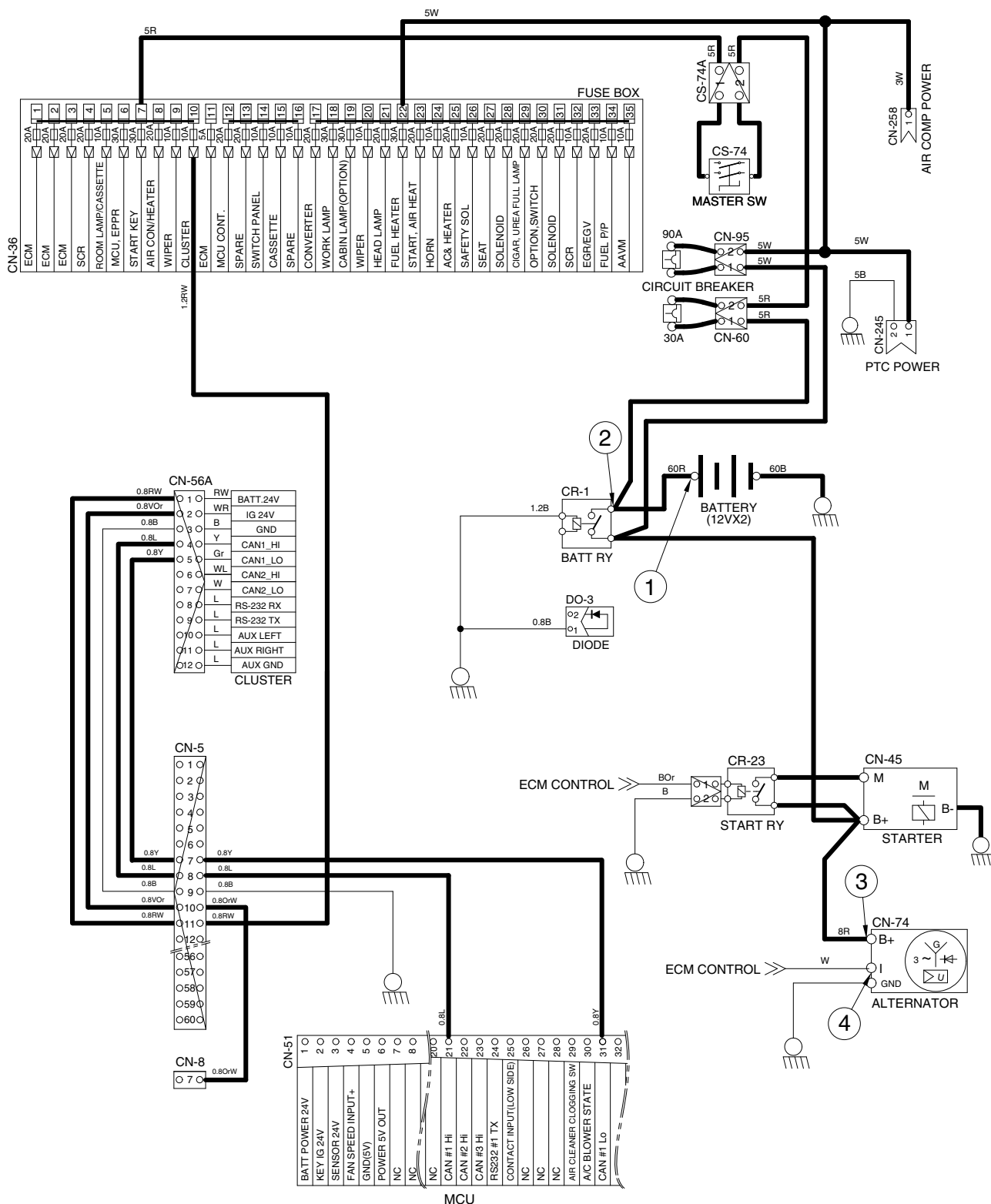
2) CHECK POINT

Engine	Start switch	Check point	Voltage
Run	ON	① - GND (battery voltage) ② - GND (battery relay) ③ - GND (alternator B ⁺ terminal) ④ - GND (alternator I terminal)	20~25V

※ GND : Ground

※ The circuit diagram may differ from the equipment, so please check before a repair.

CHARGING CIRCUIT

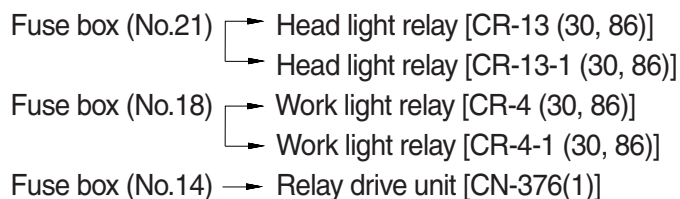


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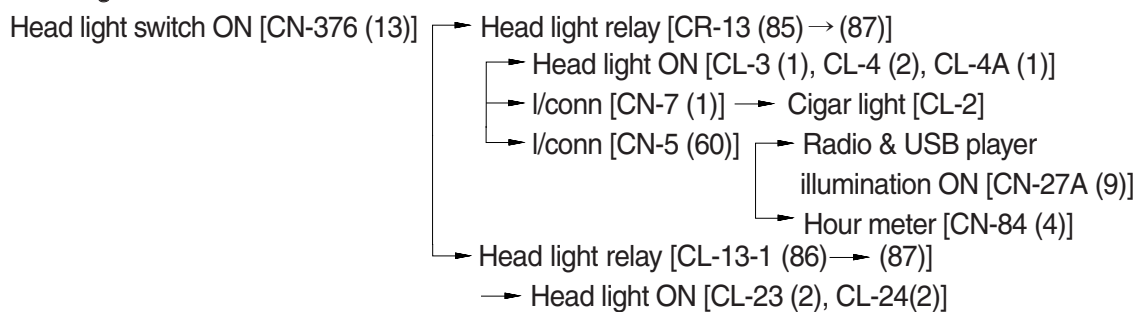
※ The circuit diagram may differ from the equipment, so please check before a repair.

4. HEAD AND WORK LIGHT CIRCUIT

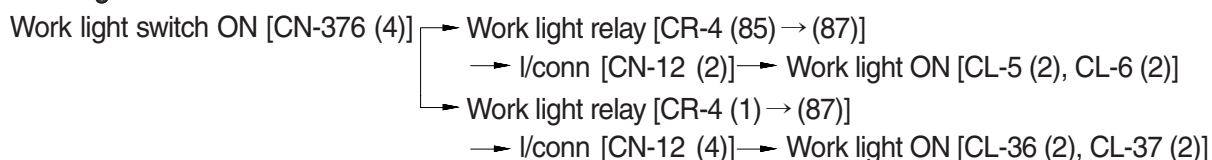
1) OPERATING FLOW



(1) Head light switch ON



(2) Work light switch ON



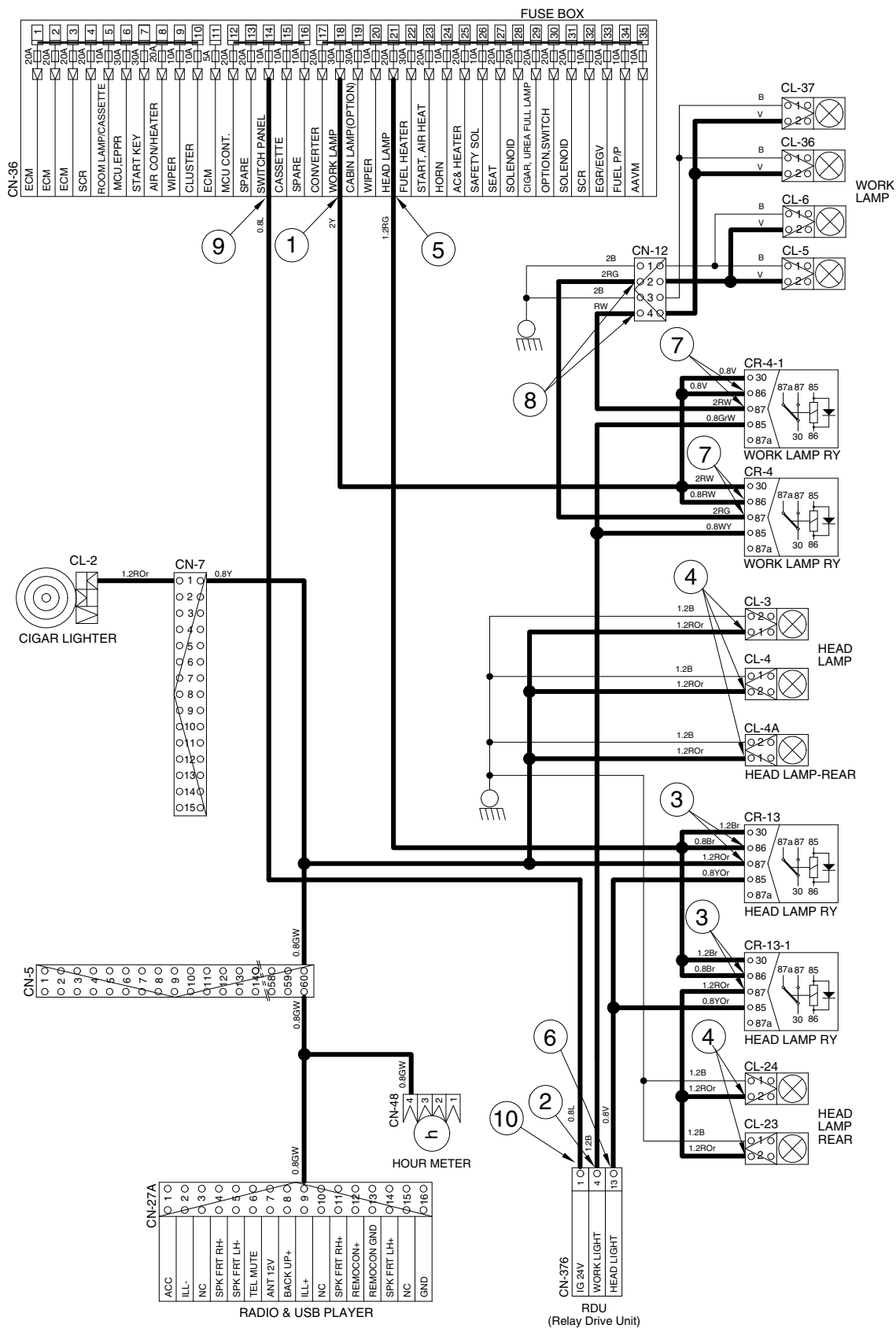
2) CHECK POINT

Engine	Start switch	Check point	Voltage
STOP	ON	① - GND (fuse box) ② - GND (switch power output) ③ - GND (head light relay) ④ - GND (head light) ⑤ - GND (fuse box) ⑥ - GND (switch power output) ⑦ - GND (work light relay) ⑧ - GND (work light) ⑨ - GND (fuse box) ⑩ - GND (relay drive unit power input)	20~25V

※ GND : Ground

※ The circuit diagram may differ from the equipment, so please check before a repair.

HEAD AND WORK LIGHT CIRCUIT



※ The circuit diagram may differ from the equipment, so please check before a repair.

5. BEACON LAMP AND CAB LIGHT CIRCUIT

1) OPERATING FLOW

Fuse box (No.30) → Beacon lamp relay [CR-36 (2, 3)]

Fuse box (No.19) → Cab light relay [CR-9 (30, 86)]

Fuse box (No.14) → Relay drive unit [CN-376 (1)]

(1) Beacon lamp switch ON

Beacon lamp switch ON [CN-376 (15)] → Beacon lamp relay [CR-36 (1)→ (5)]

→ I/conn [CN-5 (50)] → I/conn [CN-10 (10)] → Beacon lamp ON [CL-7]

(2) Cab light switch ON

Cab light switch ON [CN-376 (5)] → Cab lamp relay [CR-9 (85)→ (87)]

→ I/conn [CN-5 (34, 38)] → I/conn [CN-10 (11)] → Cab light ON [CL-8 (2)]

→ I/conn [CN-10 (12)] → Cab light ON [CL-9 (2), CL-10 (2)]

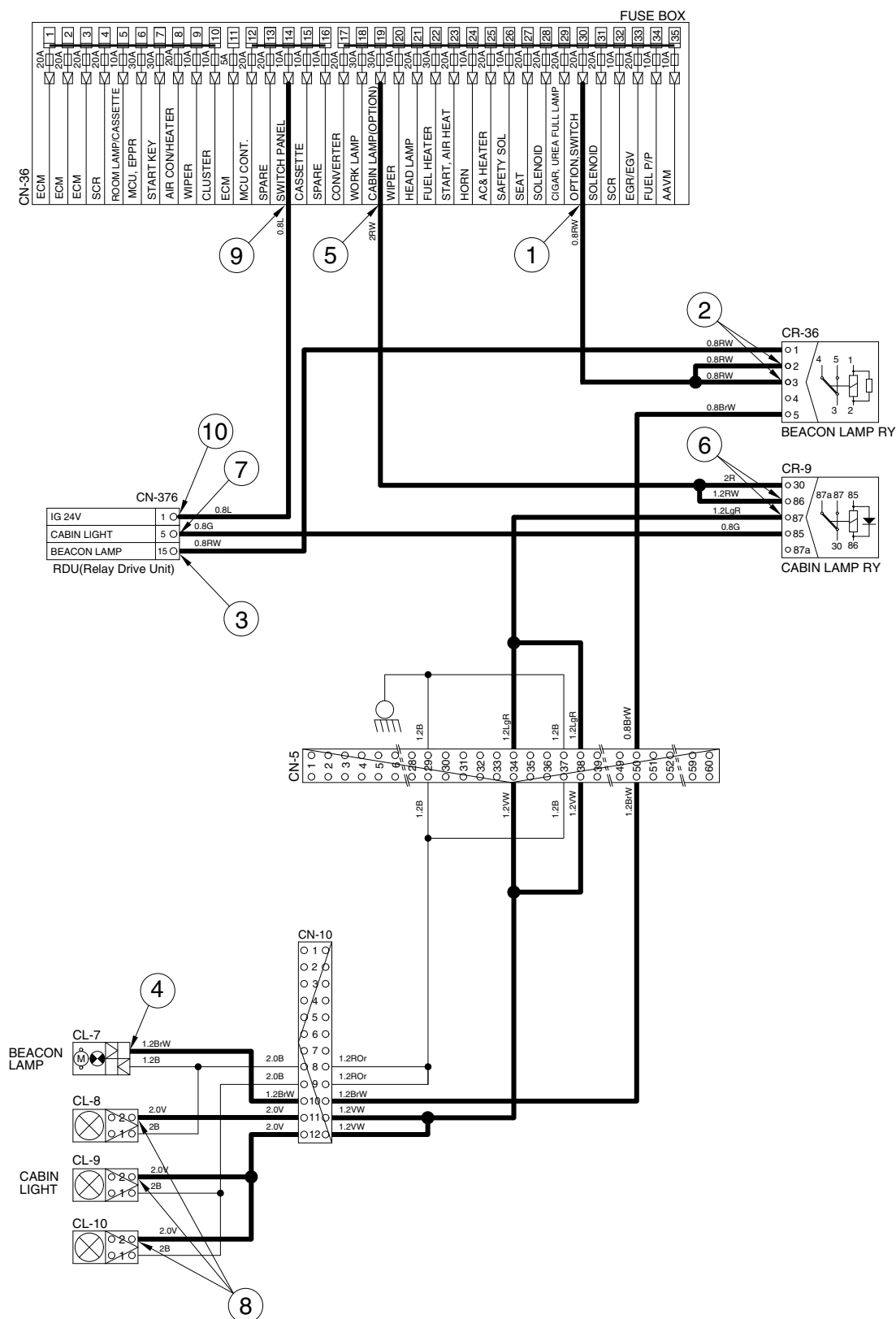
2) CHECK POINT

Engine	Start switch	Check point	Voltage
STOP	ON	① - GND (fuse box) ② - GND (beacon lamp relay) ③ - GND (switch power output) ④ - GND (beacon lamp) ⑤ - GND (fuse box) ⑥ - GND (cabin light relay) ⑦ - GND (switch power output) ⑧ - GND (cab light) ⑨ - GND (fuse box) ⑩ - GND (relay drive unit power input)	20~25V

※ GND : Ground

※ The circuit diagram may differ from the equipment, so please check before a repair.

BEACON LAMP AND CAB LIGHT CIRCUIT



900L4EL10

※ The circuit diagram may differ from the equipment, so please check before a repair.

6. WIPER AND WASHER CIRCUIT

1) OPERATING FLOW

(1) Key switch ON

Fuse box (No.14) → Relay drive unit [CN-376 (1)]

Fuse box (No.9) → I/conn [CN-5 (18)] → I/conn [CN-17 (5)] → Wiper motor controller [CN-141(7)]
 → Wiper motor [CN-21(4)]

Fuse box (No.20) → I/conn [CN-5 (16)] → I/conn [CN-17 (4)] → Wiper motor controller [CN-141 (6)]
 → Washer pump [CN-22 (2)]

(2) Intermittent wiper switch ON

Wiper switch ON [CN-376 (12)] → I/conn [CN-5 (20)] → I/conn [CN-17 (8)]

→ Wiper motor controller [CN-141 (10)→(3)] → Wiper motor [CN-21 (6)] → Intermittently operating

(3) Wiper switch ON

Wiper switch ON [CN-376 (3)] → I/conn[CN-5 (15)] → I/conn[CN-17 (2)]

→ Wiper motor controller [CN-141 (2) → (4)] → Wiper motor [CN-21 (2)] → Continual operating

(4) Washer switch ON

Washer switch ON [CN-376 (11)] → I/conn [CN-5 (17)] → I/conn [CN-17 (7)]

→ Wiper motor controller [CN-141 (9) → (8)] → I/conn [CN-17 (6)] → I/conn [CN-5 (19)]

→ Washer pump [CN-22 (1)] → Washer operating

Wiper switch ON [CN-376 (3)] → I/conn[CN-5 (15)] → I/conn[CN-17 (2)]

→ Wiper motor controller [CN-141 (2) → (4)] → Wiper motor [CN-21 (2)] → Continual operating

(5) Auto parking (when switch OFF)

Switch OFF [CN-376 (3)] → Wiper motor parking position by wiper motor controller

2) OPERATING FLOW (LOW WIPER)

(1) Key switch ON

Fuse box (No. 30) → I/conn [CN-7 (8)] → Low wiper switch [CS-79 (1, 5)]

(2) Wiper switch ON (1st)

Wiper switch ON [CS-79 (1 → 2)] → I/conn [CN-7 (5)] → Wiper motor [CN-407 (4)] → Wiper operating

(3) Wiper switch ON (2nd)

Wiper switch ON [CS-79 (5 → 4)] → I/conn [CN-7 (6)] → Washer pump [CN-407 (2)] → Washer operating

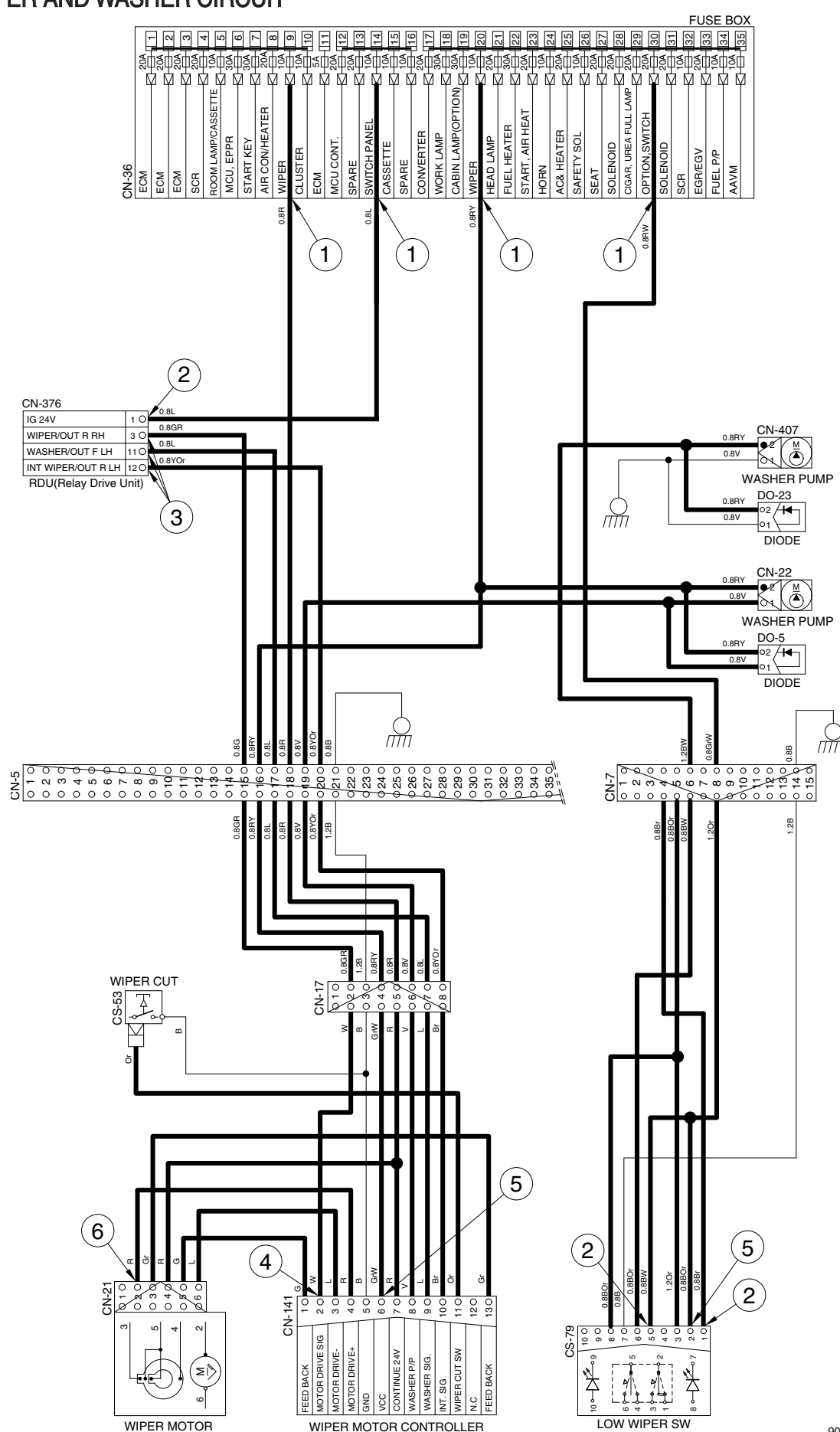
3) CHECK POINT

Engine	Start switch	Check point	Voltage
STOP	ON	① - GND (fuse box)	20~25V
		② - GND (switch power input)	
		③ - GND (switch power output)	0 ~ 5V
		④ - GND (wiper power input)	
		⑤ - GND (wiper power output)	24V
		⑥ - GND (wiper motor)	0 or 24V

※ GND : Ground

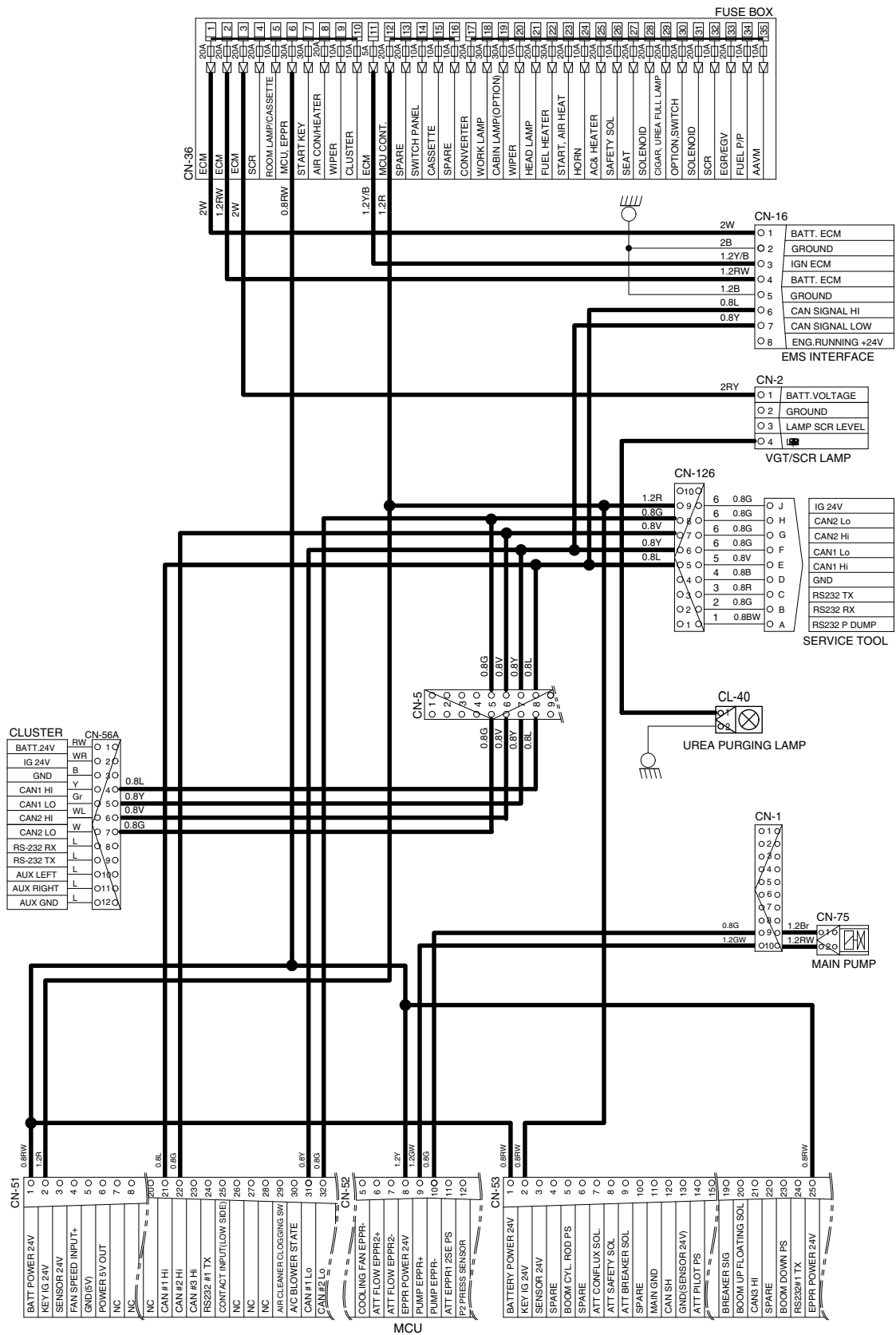
※ The circuit diagram may differ from the equipment, so please check before a repair.

WILLY AND WASHLET CIRCUIT



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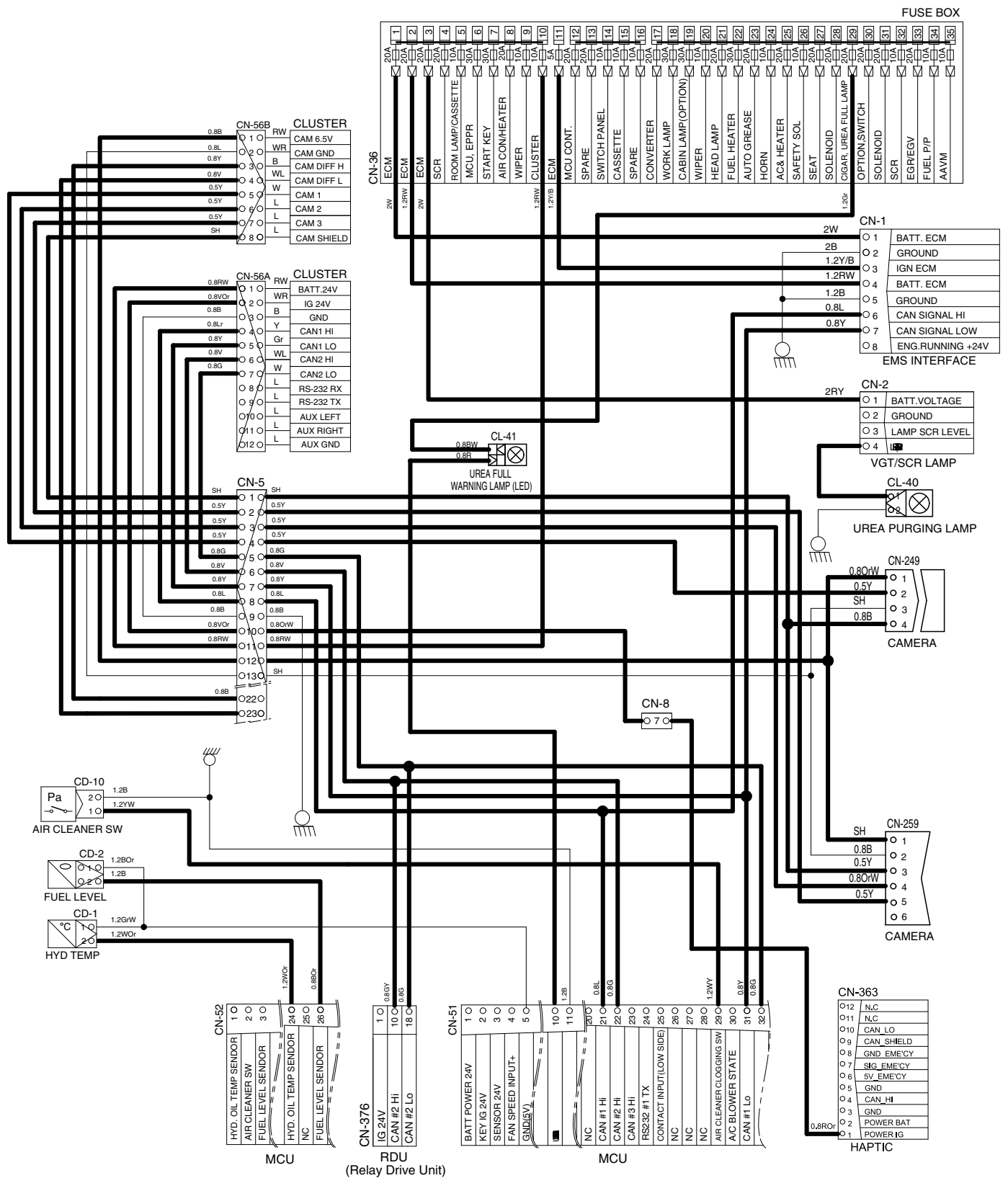
CONTROLLER CIRCUIT



900L4EL12

※ The circuit diagram may differ from the equipment, so please check before a repair.

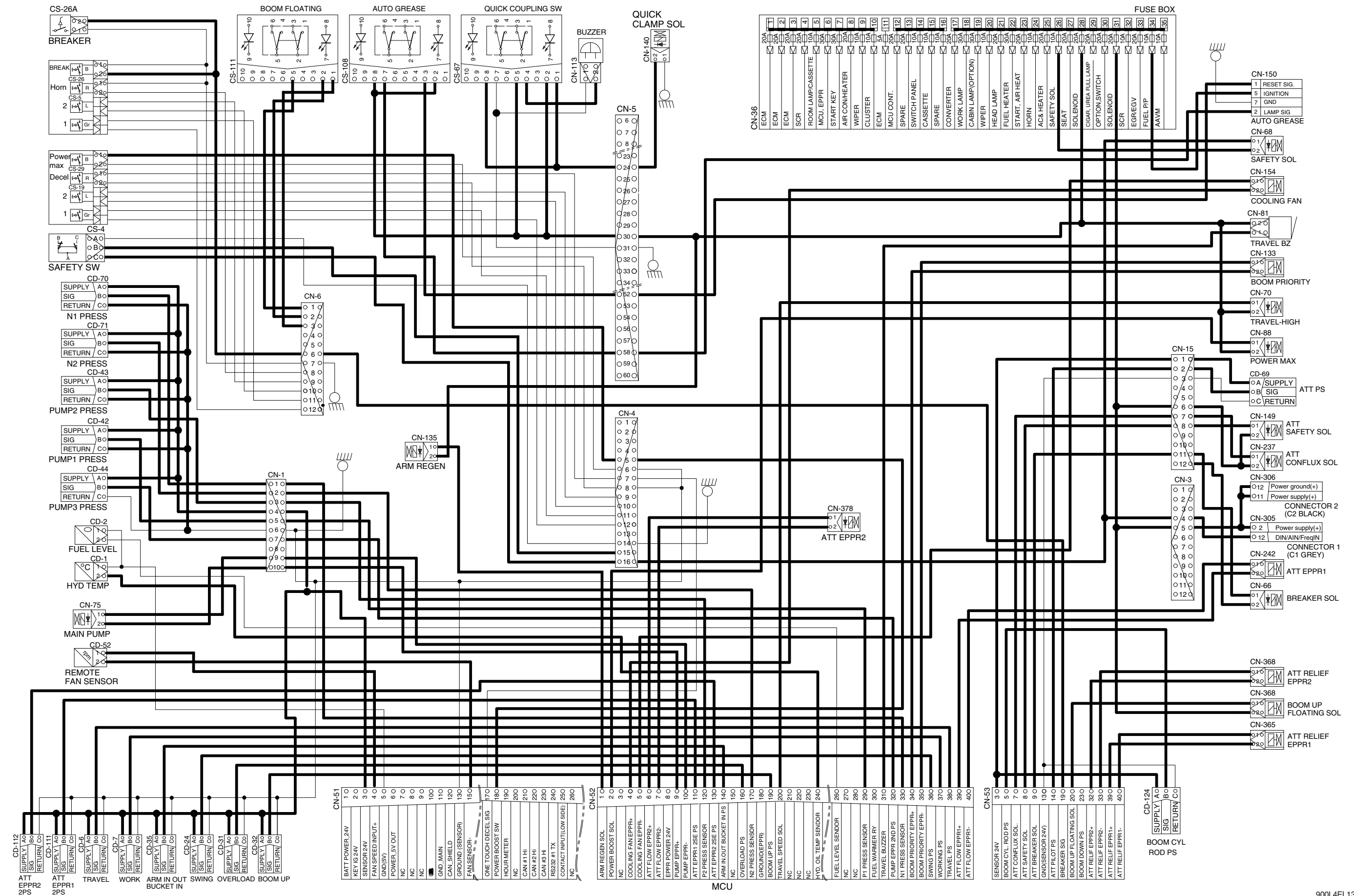
MONITORING CIRCUIT



900L4EL14

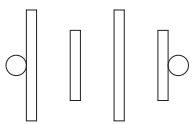
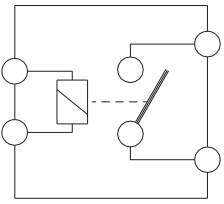
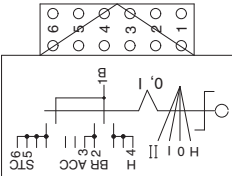
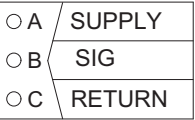
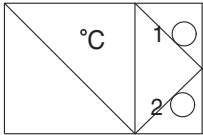
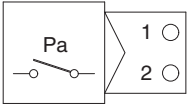
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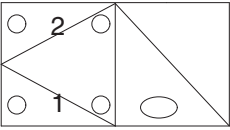
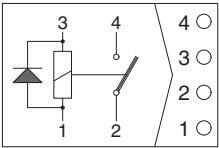
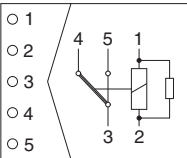
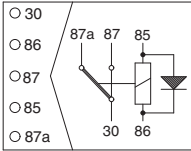
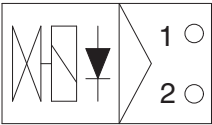
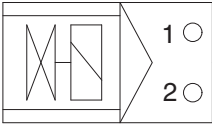
ELECTRIC CIRCUIT FOR HYDRAULIC

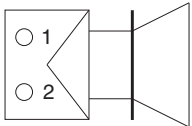
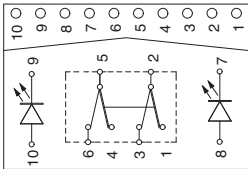
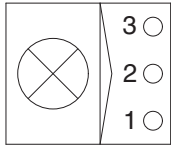
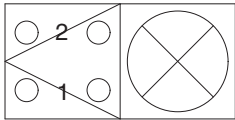
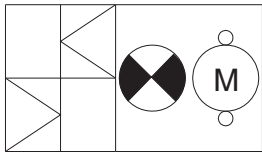
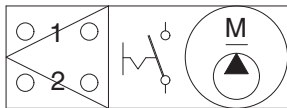


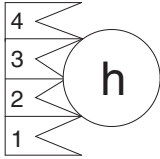
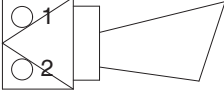
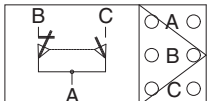
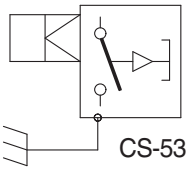
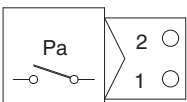
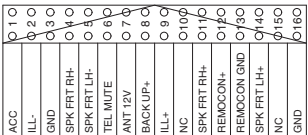
※ The circuit diagram may differ from the equipment, so please check before a repair.

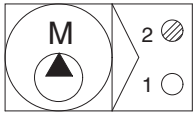
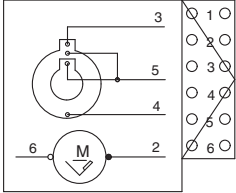
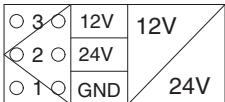
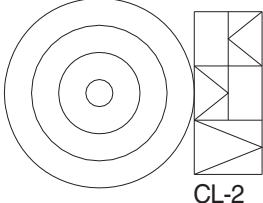
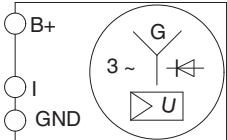
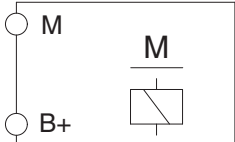
GROUP 3 ELECTRICAL COMPONENT SPECIFICATION

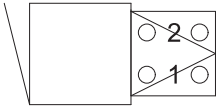
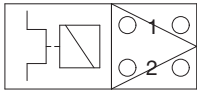
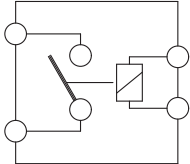
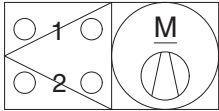
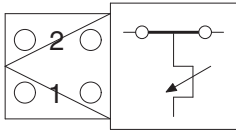
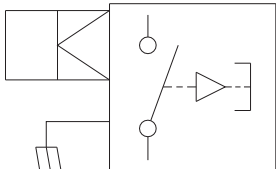
Part name	Symbol	Specifications	Check
Battery		12V × 160Ah (4EA)	※ Check specific gravity 1.280 over : Over charged 1.280 ~ 1.250 : Normal 1.250 below : Recharging
Battery relay	 CR-1	Rated load : 100A (continuity) 1000A (30seconds)	※ Check coil resistance(M4 to M4) Normal : About 50Ω ※ Check contact Normal : ∞Ω
Start switch	 CS-2A	B-BR : 24V 1A B-ACC : 24V 10A B-ST : 24V 40A	※ Check contact OFF : ∞Ω (for each terminal) ON : 0Ω (for terminal 1-3 and 1-2) START : 0Ω (for terminal 1-5)
Pressure sensor	 CD-6 CD-7 CD-24 CD-31 CD-32 CD-35 CD-42 CD-43 CD-44 CD-69 CD-70 CD-71 CD-111 CD-112 CD-124	8~30V	※ Check contact Normal : 0.1Ω
Temperature sensor (hydraulic)	 CD-1	-	※ Check resistance 50°C : 804Ω 80°C : 310Ω 100°C : 180Ω
Air cleaner pressure switch	 CD-10	(N.O TYPE)	※ Check contact High level : ∞Ω Low level : 0Ω

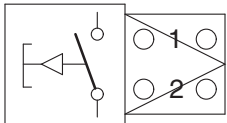
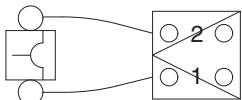
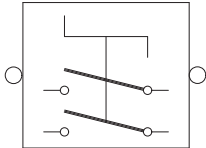
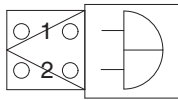
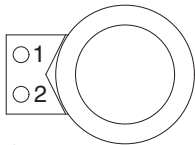
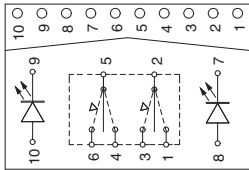
Part name	Symbol	Specifications	Check
Fuel level sender	 CD-2	-	※ Check resistance Full : 50Ω 6/12 : 350Ω 11/12 : 100Ω 5/12 : 400Ω 10/12 : 150Ω 4/12 : 450Ω 9/12 : 200Ω 3/12 : 500Ω 8/12 : 250Ω 2/12 : 550Ω 7/12 : 300Ω 1/12 : 600Ω Empty warning : 700Ω
Relay (air con blower)		24V 20A	※ Check resistance Normal : About 200Ω (for terminal 1-3) 0Ω (for terminal 2-4)
Relay	 CR-2 CR-5 CR-36	24V 16A	※ Check resistance Normal : About 160 Ω (for terminal 1-2) 0Ω (for terminal 3-4) ∞Ω (for terminal 3-5)
Relay	 CR-4 CR-4-1 CR-7 CR-9 CR-13 CR-13-1 CR-35 CR-46	24V 16A	※ Check resistance Normal : About 160 Ω (for terminal 85-86) 0Ω (for terminal 30-87a) ∞Ω (for terminal 30-87)
Solenoid valve	 CN-66 CN-68 CN-70 CN-88 CN-135 CN-140 CN-149 CN-237 CN-367 CN-368	24V 1A	※ Check resistance Normal : 15~25Ω (for terminal 1-2)
EPPR valve	 CN-75 CN-133 CN-154 CN-242 CN-309 CN-310 CN-365 CN-366 CN-378	700mA	※ Check resistance Normal : 15~25Ω (for terminal 1-2)

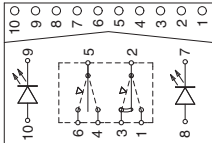
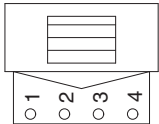
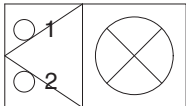
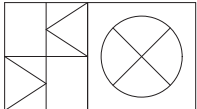
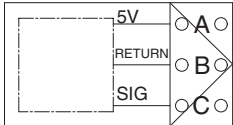
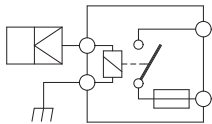
Part name	Symbol	Specifications	Check
Speaker	 CN-23(LH) CN-24(RH)	20W	※ Check resistance Normal : A few Ω
Switch (locking type)	 CS-50 CS-67 CS-83 CS-99 CS-107 CS-108 CS-111	24V 1.5A	※ Check contact Normal ON : 0 Ω (for terminal 2-3,) $\infty \Omega$ (for terminal 2-1) OFF : $\infty \Omega$ (for terminal 2-3) 0 Ω (for terminal 2-1)
Room lamp	 CL-1	24V 10W	※ Check disconnection Normal : 1.0 Ω ON : 0 Ω (For terminal 1-2) $\infty \Omega$ (For terminal 1-3) OFF : $\infty \Omega$ (For terminal 1-2) 0 Ω (For terminal 1-3)
Head lamp, Work lamp, Cab lamp	 CL-3 CL-4 CL-4A CL-5 CL-6 CL-8 CL-9 CL-10 CL-23 CL-24 CL-36 CL-37	24V 65W (H3 Type)	※ Check disconnection Normal : 1.2 Ω
Beacon lamp	 CL-7	24V 70W (H1 Type)	※ Check disconnection Normal : A few Ω
Fuel filler pump	 CN-61	24V 10A 35 ℓ /min	※ Check resistance Normal : 1.0 Ω

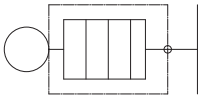
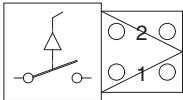
Part name	Symbol	Specifications	Check
Hour meter	 CN-48	16~32V	※ Check operation Supply power (24V) to terminal No.2 and connect terminal No.1 and ground
Horn	 CN-20 CN-25	DC22~28V 2A	※ Check operation Supply power (24V) to each terminal and connect ground.
Safety switch	 CS-4	24V 15A (N.C TYPE)	※ Check contact Normal : 0Ω (for terminal 1-2) ∞Ω (for terminal 1-3) Operating : ∞Ω (for terminal 1-2) 0Ω (for terminal 1-3)
Wiper cut switch	 CS-53	24V (N.O TYPE)	※ Check contact Normal : 0Ω (one pin to ground)
Receiver dryer	 CN-29	24V 2.5A	※ Check contact Normal : ∞Ω
Radio & USB player	 CL-27A	24V 2A	※ Check voltage 20~25V (for terminal 1-3, 3-8)

Part name	Symbol	Specifications	Check
Washer pump	 CN-22	24V 3.8A	※ Check contact Normal : 10.7Ω (for terminal 1-2)
Wiper motor	 CN-21	24V 2A	※ Check disconnection Normal : 7Ω (for terminal 2-6)
DC/DC Converter	 CN-138	12V 3A	※ Check voltage 24V (for terminal 1-2) 12V (for terminal 1-3)
Cigar lighter	 CL-2	24V 5A 1.4W	※ Check coil resistance Normal : About 1MΩ ※ Check contact Normal : ∞Ω Operating time : 5~15sec
Alternator		24V 100A	※ Check contact Normal : 0Ω (for terminal B ⁺ -I) Normal : 24~27.5V
Starter	 CN-45	24V 7kW	※ Check contact Normal : 0.1Ω

Part name	Symbol	Specifications	Check
Travel alarm	 CN-81	24V 0.5A	※ Check contact Normal : 5.2Ω
Aircon compressor	 CN-28	24V 79W	※ Check contact Normal : 13.4Ω
Start relay	 CR-23	24V 300A	※ Check contact Normal : 0.94Ω (for terminal 1-2)
Air conditioner blower motor		24V 9.5A	※ Check resistance Normal : 2.5Ω (for terminal 1-2)
Air conditioner duct sensor (switch)		1°C OFF 4°C ON	※ Check resistance Normal : 0Ω (for terminal 1-2), the atmosphere temp : Over 4°C
Door switch	 CS-1	24V 2W	※ Check resistance Normal : About 5MΩ

Part name	Symbol	Specifications	Check
Switch (power max, one touch decel, horn, breaker)	 CS-5 CS-19 CS-26 CS-29	24V 6A	※ Check resistance Normal : $\infty \Omega$
Circuit breaker	 CS-60 CS-95	CN-60 : 30A CN-95 : 90A	※ Check disconnection Normal : 0Ω (connect ring terminal and check resist between terminal 1 and 2)
Master switch	 CS-74A, CS-74B	6-36V	※ Check disconnection Normal : 0.1Ω
Quick clamp buzzer	 CN-113	24V 200mA $107 \pm 4\text{dB}$	
Socket	 CN-139	12V 10A	
Switch	 CS-73 CS-100	24V 8A	※ Check contact Normal OFF : $\infty \Omega$ (for terminal 2-1, 2-3, 5-4, 5-6) 0Ω (for terminal 7-9, 8-10)

Part name	Symbol	Specifications	Check
Switch	 CS-79	24V 8A	※ Check contact Normal OFF : $\infty \Omega$ (for terminal 2-1, 5-4, 5-6)
Fuel heater	 CN-147	-	
DEF/AdBlue® fill up warning lamp (LED)	 CL-40	-	
DEF/AdBlue® full warning lamp (LED)	 CL-41	-	
Proportional valve sensor	 CN-246 CN-247	-	
Glow plug relay	 CR-24	24V 200A	※ Check disconnection Normal : 0.942A (for terminal - GND)

Part name	Symbol	Specifications	Check
Glow plug	 CN-80	24V -200A	※ Check resistance Normal : 0.25~0.12Ω
Breaker switch	 CS-26A	-	

GROUP 4 CONNECTORS

1. CONNECTOR DESTINATION

Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
CN-1	AMP	10	I/conn (Frame harness-Pump PS harness)	S816-010002	S816-110002
CN-2	DEUTSCH	4	I/conn (Frame harness-Engine harness)	DT06-4S-EP06	DT06-4P-E005
CN-3	DEUTSCH	6	I/conn (Frame harness-Engine harness)	DT06-6S-EP06	DT06-6P-E005
CN-4	AMP	16	I/conn (Console harness LH-Frame harness)	368047-1	368050-1
CN-5	DEUTSCH	60	I/conn (Side harness RH-Frame harness)	DRB16-60SAE-L018	DRB12-60P-L018
CN-6	AMP	16	I/conn (Console harness RH-Frame harness)	368047-1	368050-1
CN-7	AMP	15	I/conn (Console harness RH-Frame harness)	2-85262-1	368301-1
CN-8	AMP	10	I/conn (Console harness RH-Frame harness)	S816-010002	S816-110002
CN-10	DEUTSCH	12	I/conn (Cab harness-Side harness RH)	DT06-12S-EP06	DT04-12PA-P021
CN-11	DEUTSCH	8	I/conn (Frame harness-Aircon harness)	DT06-8S-EP06	-
CN-12	DEUTSCH	4	I/conn (Frame harness-Boom wire harness)	DT06-4S-P012	DT04-4P-E005
CN-15	AMP	8	I/conn (Frame harness-Breaker sol)	S816-008002	S816-108002
CN-16	DEUTSCH	8	I/conn (Frame harness-Engine harness)	DT06-8S-EP06	-
CN-17	AMP	8	I/conn (Side harness RH-Wiper harness)	S816-008002	S816-108002
CN-20	TYCO	2	Horn	174352-2	174354-2
CN-21	AMP	6	Wiper motor	S810-006202	-
CN-22	KET	2	Washer pump	MG640605	-
CN-23	KET	2	Speaker-LH	MG610070	-
CN-24	KET	2	Speaker-RH	MG610070	-
CN-25	DEUTSCH	2	Horn	DT06-2S-EP06	-
CN-27A	KUM	16	Radio & USB player	PK145-16017	-
CN-27B	AMP	8	Radio & USB player	-	174984-2
CN-28	DEUTSCH	2	Aircon compressor	-	DT04-2P-E005
CN-29	KET	2	Receiver dryer	MG640795	-
CN-36	-	-	Fuse & relay box	21Q7-10910	-
CN-45	RING-TERM	-	Starter motor B+	S820-108000	-
CN-48	KET	1	Hour meter	2-520193-2	-
CN-51	DEUTSCH	40	MCU	DRC26-40SA	-
CN-52	DEUTSCH	40	MCU	DRC26-40SB	-
CN-53	DEUTSCH	40	MCU	DRC26-40SA	-
CN-56A	AMP	12	Cluster	-	174663-2
CN-56B	AMP	8	Cluster	-	174984-2
CN-60	KET	2	Circuit breaker	-	MG620558-5
CN-61	DEUTSCH	2	Fuel filler pump	DT06-2S-EP06	DT04-2P-E005
CN-66	DEUTSCH	2	Breaker solenoid	DT06-2S-EP06	-

Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
CN-68	DEUTSCH	2	Safety solenoid	DT06-2S-EP06	-
CN-70	DEUTSCH	2	Travel high solenoid	DT06-2S-EP06	-
CN-74	RING-TERM	1	Alternator "I" terminal	S820-108000	-
CN-75	AMP	2	Pump EPPR	S816-002002	-
CN-81	DEUTSCH	2	Travel buzzer solenoid	DT06-2S-EP06	-
CN-88	DEUTSCH	2	Power max solenoid	DT06-2S-EP06	-
CN-95	YAZAKI	2	Circuit breaker	-	7222-4220-30
CN-113	KET	2	Buzzer	MG651205-5	-
CN-125	Econoseal J	4	GPS connector	S816-004002	S816-104002
CN-125A	DEUTSCH	12	RMS	DT06-12S-P021	DT04-12PA-P021
CN-126	AMP	10	Service tool	S816-010002	S816-110002
CN-133	DEUTSCH	2	Boom priority solenoid	DT06-2S-EP06	-
CN-138	FASTEN	3	DC/DC Converter	S810-003202	-
CN-139	FASTEN	2	12V socket	172434-2	-
CN-140	DEUTSCH	2	Quick clamp solenoid	DT06-2S-EP06	DT04-2P-E005
CN-141	AMP	13	Wiper motor controller	172498-1	-
CN-147	AMP	4	Fuel heater	2-967325-3	-
CN-149	DEUTSCH	2	Attach safety solenoid	DT06-2S-EP06	-
CN-150	TYCO	4	Auto grease	174257-2	174259-2
CN-154	DEUTSCH	2	Cooling fan	DT06-2S-EP06	DT04-2P-E005
CN-156	DEUTSCH	2	Air seat	DT06-2S	DT04-2P
CN-157	AMP	1	Antena power	S822-014002	-
CN-236	DEUTSCH	2	Attach pressure switch	DT06-2S-EP06	-
CN-237	DEUTSCH	2	Attach conflus solenoid	DT06-2S-EP06	-
CN-242	DEUTSCH	2	Attach EPPR 1	DT06-2S-EP06	DT04-2P-E005
CN-243	DEUTSCH	2	Attach EPPR 2	DT06-2S-EP06	-
CN-245	KET	4	PTC power	MG610557-5	MG620558-5
CN-246	DEUTSCH	3	Proportional valve-RH	DT06-3S	DT04-3P
CN-247	DEUTSCH	3	Proportional valve-LH	DT06-3S	DT04-3P
CN-249	DEUTSCH	6	Rear view camera	DT06-6S-EP06	DT04-6P-E005
CN-258	KET	1	Air compressor power	MG640944-5	MG650943-5
CN-259	DEUTSCH	6	Camera	DT06-6S-EP06	DT04-6P-E005
CN-263	DEUTSCH	2	Air compressor relay	DT06-2S-EP06	DT04-2P-E005
CN-305	DEUTSCH	12	Proportional-Connector-1	DTM06-12SA	-
CN-306	DEUTSCH	12	Proportional-Connector-2	DTM06-12SB	-
CN-307	DEUTSCH	3	Proportional-Service tool	DT06-3S-E006	DT04-3P-E005
CN-308	AMP	4	Proportional-PVG32	2-967056-1	-
CN-309	DEUTSCH	2	Proportional-EPPR valve-A1	DT06-2S-EP06	-
CN-310	DEUTSCH	2	Proportional-EPPR valve-A2	DT06-2S-EP06	-

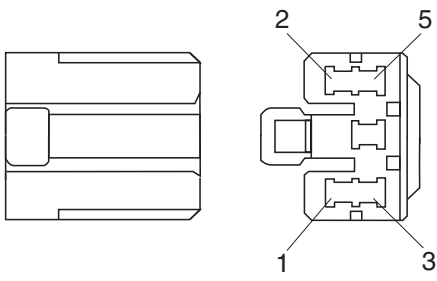
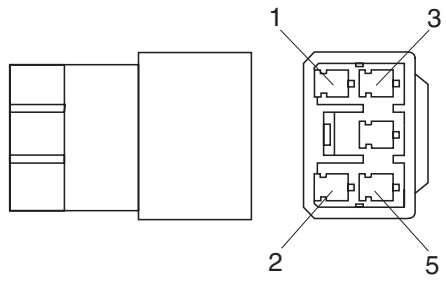
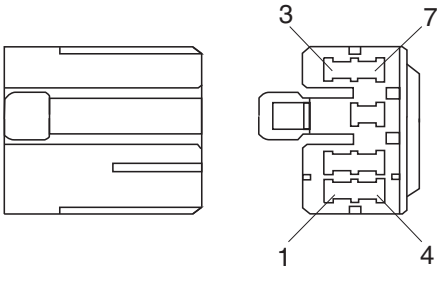
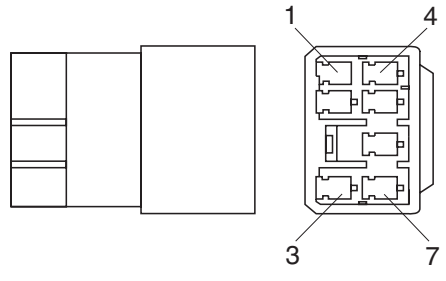
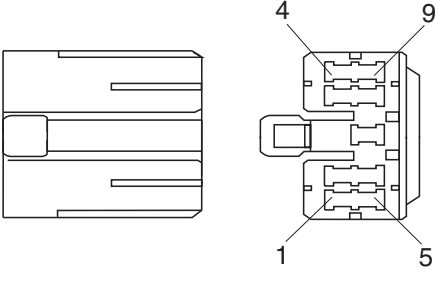
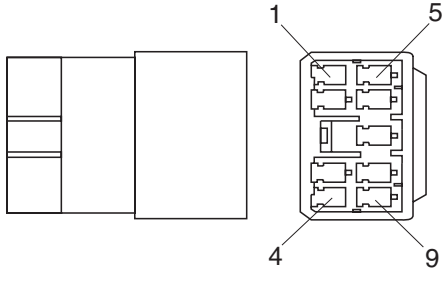
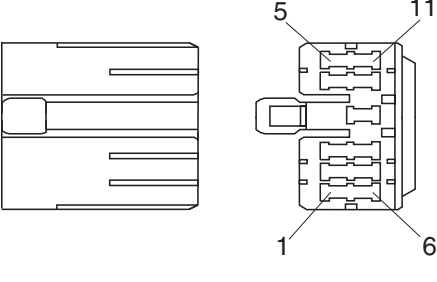
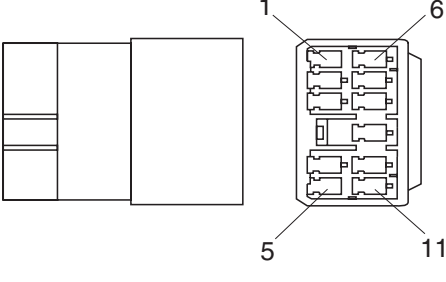
Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
CN-363	AMP	12	Haptic controller	174045-2	-
CN-365	DEUTSCH	2	Attach EPPR valve1	DT06-2S-EP06	DT04-2P-E005
CN-366	DEUTSCH	2	Attach EPPR valve2	DT06-2S-EP06	DT04-2P-E005
CN-367	DEUTSCH	2	Boom down floating solenoid	DT06-2S-EP06	DT04-2P-E005
CN-368	DEUTSCH	2	Boom up floating solenoid	DT06-2S-EP06	DT04-2P-E005
CN-369	DEUTSCH	2	Boom down cut off solenoid	DT06-2S-EP06	DT04-2P-E005
CN-376	TYCO	34	Relay drive unit	4-1437290-1	-
CN-378	DEUTSCH	2	Attach EPPR 2	DT06-2S-EP06	-
CN-398	DEUTSCH	4	RS232	DT06-4S-EP06	DT04-4P-E005
CN-399	TYCO	4	DEF/AdBlue® tank level sensor	1-967325-1	-
CN-402	DEUTSCH	6	Front view camera	DT06-6S-P021	DT04-6P-P021
CN-403	DEUTSCH	6	Rear view camera	DT06-6S-EP06	DT04-6P-EP14
CN-404	DEUTSCH	6	RH view camera	DT06-6S-EP06	DT04-6P-EP14
CN-405	DEUTSCH	6	LH view camera	DT06-6S-EP06	DT04-6P-EP14
CN-406	DEUTSCH	3	RS232	DT06-3S-EP06	DT06-3P-E005
CN-407	FCI	4	Low wiper motor	180900-0	-
CN-408	FCI	4	Washer tank	MG640795	-
CN-427	MOLEX	4	Reader-RMS	039012040	026013096
		12		5557-12R	5559-12P
· Relay					
CR-1	KET	1	Battery relay	ST710289-2	-
CR-2	-	5	Horn relay	-	-
CR-4	-	5	Work lamp relay	-	-
CR-4-1	-	5	Contact input relay	-	-
CR-5	-	5	Anti restart relay	-	-
CR-7	-	5	Aircon compressor relay	-	-
CR-9	-	5	Cabin lamp relay	-	-
CR-13	-	5	Head lamp relay	-	-
CR-13-1	-	5	Head lamp relay - rear	-	-
CR-23	KET	2	Start relay	S814-002001	S814-102001
CR-24	-	2	Glow plug relay	-	-
CR-35	-	5	Power relay	-	-
CR-36	-	5	Beacon relay	-	-
CR-46	-	5	Fuel warmer relay	-	-
· Switch					
CS-1	SHUR	1	Door switch	S822-014002	S822-114002
CS-2A	WP	6	Start switch	S814-006100	-
CS-2B	DEUTSCH	3	Reader	DT06-3S-EP06	DT04-2P-E005
CS-4	DEUTSCH	3	Safety switch	DT06-3S-EP06	-
CS-5	DEUTSCH	2	Horn switch	DT06-3S-EP06	DT04-2P

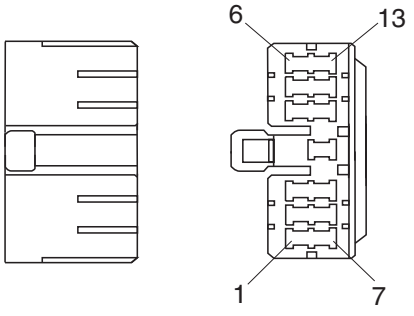
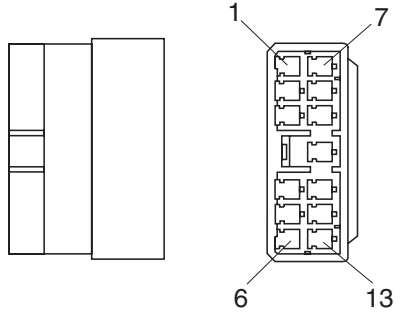
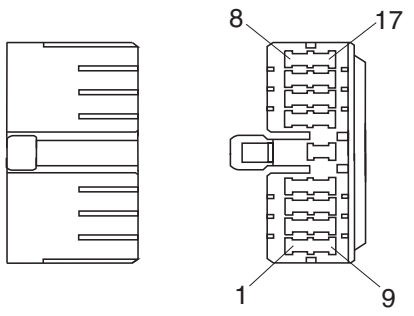
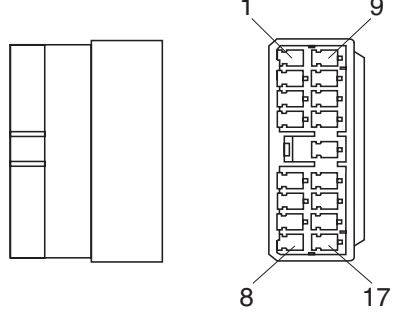
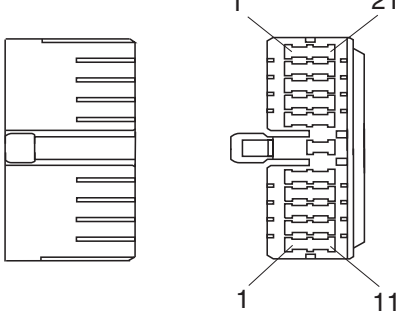
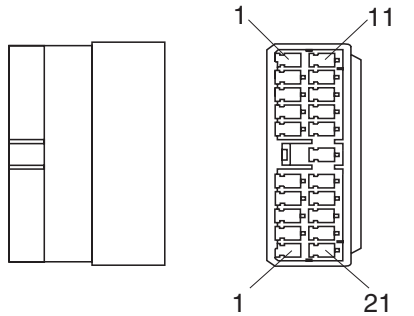
Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
CS-19	DEUTSCH	2	One touch decel switch	DT06-3S-EP06	DT04-2P-E005
CS-26	DEUTSCH	2	Breaker switch	DT06-2S	DT04-2P-E005
CS-26A	AMP	2	Breaker pedal switch	S816-002002	S816-102002
CS-29	DEUTSCH	2	Power max switch	DT06-2S-EP06	DT04-2P-E005
CS-33	AMP	6	Emergency engine stop switch	S816-006002	S816-106002
CS-50	CARLING	10	Travel priority switch	VC2-01	-
CS-53	AMP	1	Wiper cut switch	S822-014002	-
CS-67	CARLING	10	Quick clamp switch	VC2-01	-
CS-73	CARLING	10	Swing lock & fine switch	VC2-01	-
CS-73A	CARLING	10	Swing fine switch	VC2-01	-
CS-74A	KET	2	Master switch	MG610557-5	S813-130201
	DEUTSCH	2		-	DT04-2P-E005
CS-74B	DEUTSCH	2	Master switch	DT06-2S-EP06	DT04-2P-E005
CS-79	CARLING	10	Lower wiper switch	VC2-01	-
CS-83	CARLING	10	Spare switch	VC2-01	-
CS-99	CARLING	10	Air compressor switch	VC2-01	-
CS-100	CARLING	10	SCR system cleaning switch	VC2-01	-
CS-107	CARLING	10	Travel straight switch	VC2-01	-
CS-108	CARLING	10	Auto grease switch	VC2-01	-
CS-111	CARLING	10	Boom floating switch	VC2-01	-
· Light					
CL-1	KET	3	Room lamp	MG651032	-
CL-2	AMP	1	Cigar lighter	S822-014002	S822-114002
				S810-001202	-
CL-3	DEUTSCH	2	Head lamp-LH	DT06-2S-EP06	DT04-2P-E005
CL-4	DEUTSCH	2	Head lamp-RH	DT06-2S-EP06	DT04-2P-E005
CL-4A	DEUTSCH	2	Head lamp-RH	DT06-2S-EP06	DT04-2P-E005
CL-5	DEUTSCH	2	Work lamp-LH	DT06-2S-EP06	DT04-2P-E005
CL-6	DEUTSCH	2	Work lamp-RH	DT06-2S-EP06	DT04-2P-E005
CL-7	SHUR	1	Beacon lamp	S822-014002	S822-114002
CL-8	DEUTSCH	2	Cab light-LH	DT06-2S-EP06	DT04-2P
CL-9	DEUTSCH	2	Cab light-RH	DT06-2S-EP06	DT04-2P
CL-10	DEUTSCH	2	Cab light-RH	DT06-2S-EP06	DT04-2P
CL-23	DEUTSCH	2	Head lamp	DT06-2S-EP06	-
CL-24	DEUTSCH	2	Head lamp-rear	DT06-2S-EP06	DT04-2P-E005
CL-36	DEUTSCH	2	Work lamp-LH	DT06-2S-EP06	DT04-2P-E005
CL-37	DEUTSCH	2	Work lamp-RH	DT06-2S-EP06	DT04-2P-E005
CL-40	DEUTSCH	2	DEF/AdBlue® lamp	DT06-2S-EP06	DT04-2P-E005
CL-41	-	2	DEF/AdBlue® full warming lamp	-	-

Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
· Sensor, sendor					
CD-1	AMP	2	Hydraulic oil temp sender	85202-1	-
CD-2	DEUTSCH	2	Fuel sender	DT06-2S-EP06	DT06-4P-E005
CD-6	DEUTSCH	3	Travel pressure switch	DT06-3S-EP06	DT06-4P-E005
CD-7	DEUTSCH	3	Working pressure switch	DT06-3S-EP06	DT06-4P-E005
CD-10	AMP	2	Air cleaner switch	85202-1	-
CD-24	DEUTSCH	3	Swing pressure sensor	DT06-3S-EP06	DT06-4P-E005
CD-31	DEUTSCH	3	Overload pressure sensor	DT06-3S-EP06	DT06-4P-E005
CD-32	DEUTSCH	3	Boom up pressure sensor	DT06-3S-EP06	DT06-4P-E005
CD-35	DEUTSCH	3	Arm & bucket in pressure sensor	DT06-3S-EP06	DT06-4P-E005
CD-42	DEUTSCH	3	Pump pressure 1	DT06-3S-EP06	DT06-4P-E005
CD-43	DEUTSCH	3	Pump pressure 2	DT06-3S-EP06	DT06-4P-E005
CD-44	DEUTSCH	3	Pump pressure 3	DT06-3S-EP06	DT06-4P-E005
CD-52	AMP	2	Fan speed sensor	S816-002002	-
CD-69	DEUTSCH	3	Attach pressure sensor	DT06-3S-EP06	DT06-4P-E005
CD-70	DEUTSCH	3	N1 pressure sensor	DT06-3S-EP06	DT06-4P-E005
CD-71	DEUTSCH	3	N2 pressure sensor	DT06-3S-EP06	DT06-4P-E005
CD-85	DEUTSCH	3	Boom down pressure sensor	DT06-3S-EP06	DT06-3P-E005
CD-90	DEUTSCH	3	Arm in pressure sensor	DT06-3S-EP06	DT06-3P-E005
CD-111	DEUTSCH	3	Attach EPPR 1 pressure sensor	DT06-3S-EP06	DT06-4P-E005
CD-112	DEUTSCH	3	Attach EPPR 2 pressure sensor	DT06-3S-EP06	DT06-4P-E005
CD-124	DEUTSCH	3	Boom cylinder rod pressure snensor	DT06-3S-EP06	DT06-3P-E005

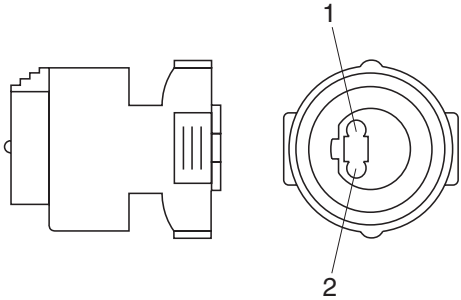
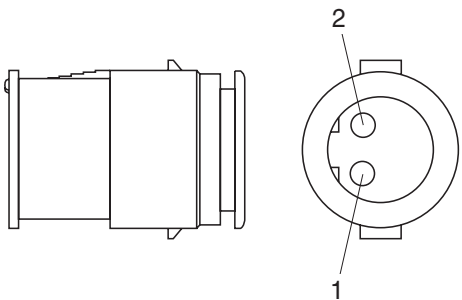
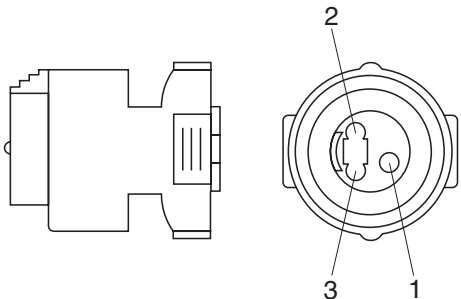
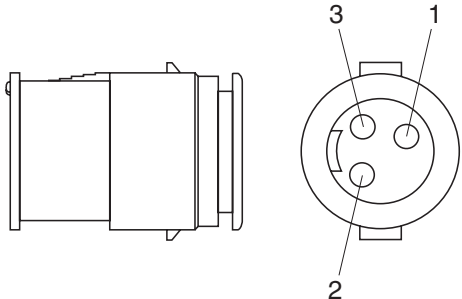
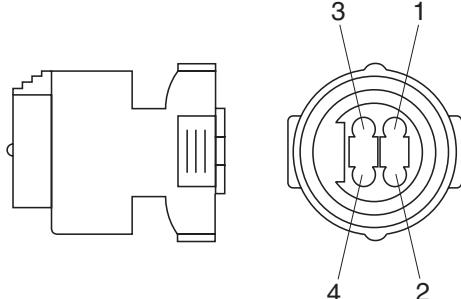
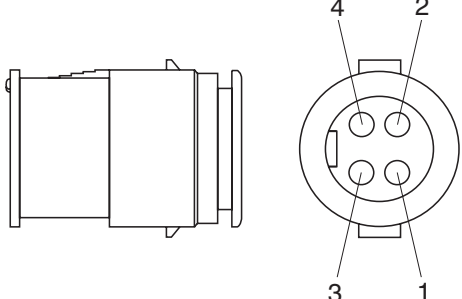
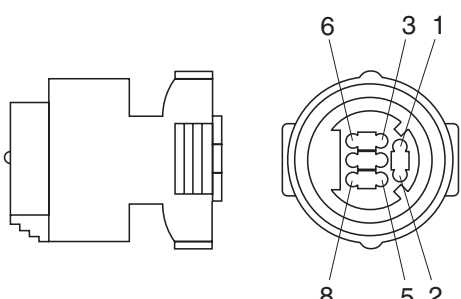
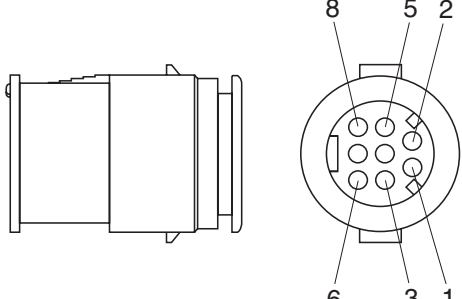
2. CONNECTION TABLE FOR CONNECTORS

1) PA TYPE CONNECTOR

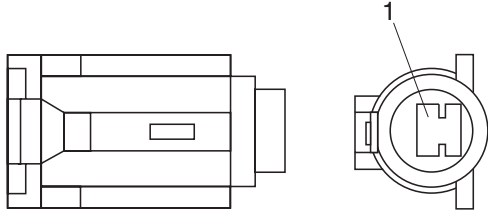
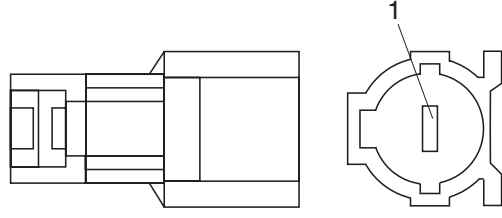
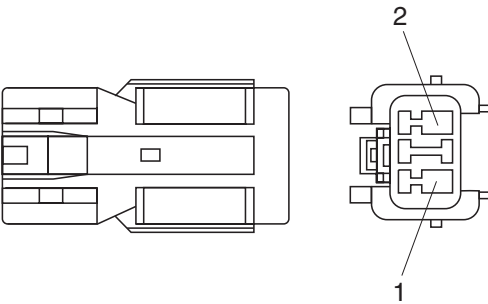
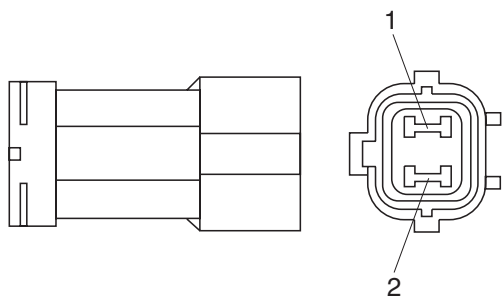
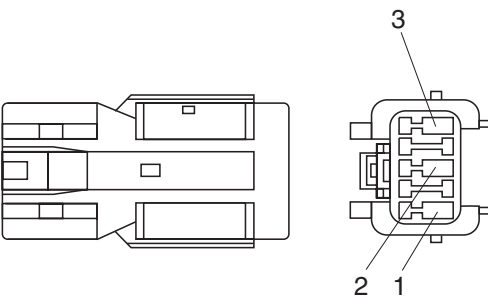
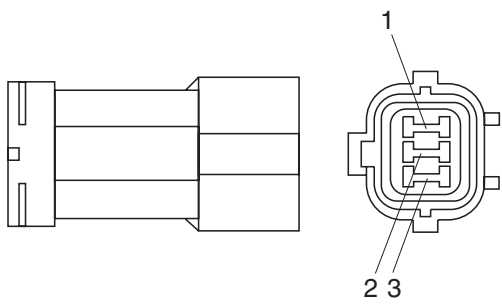
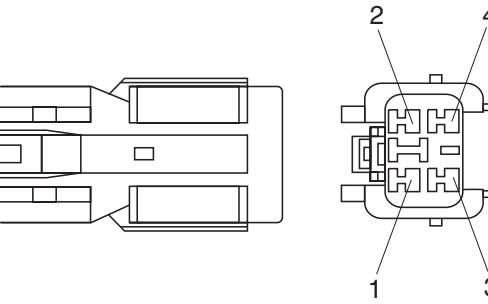
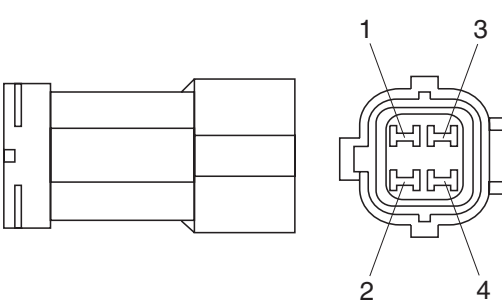
No. of pin	Receptacle connector (female)	Plug connector (male)
5	 S811-005002	 S811-105002
7	 S811-007002	 S811-107002
9	 S811-009002	 3S811-109002
11	 S811-011002	 S811-111002

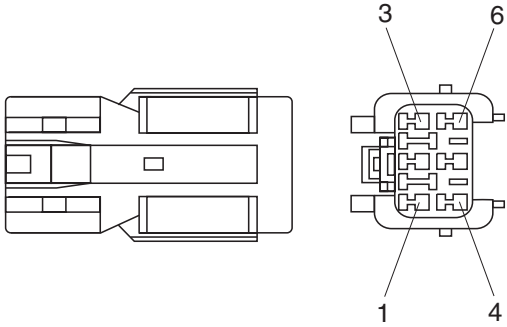
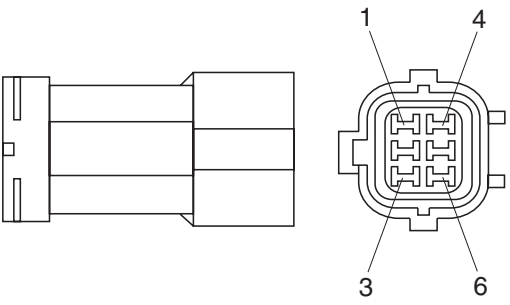
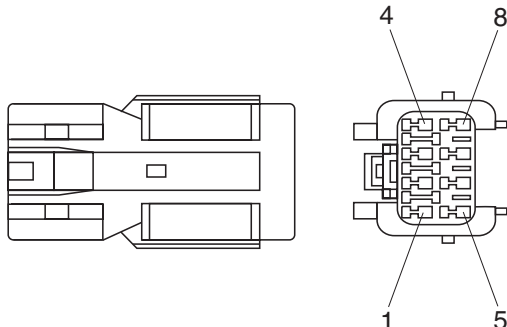
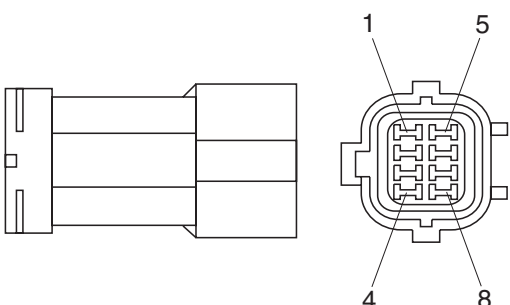
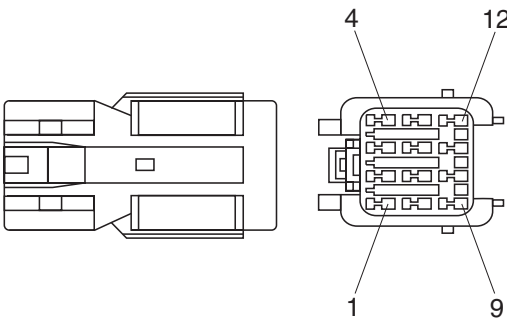
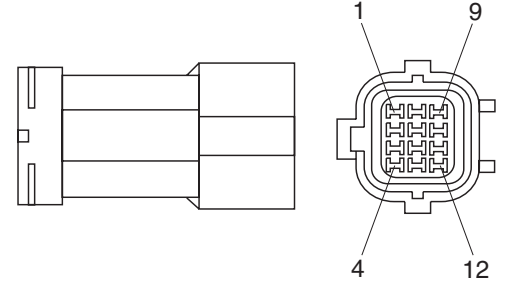
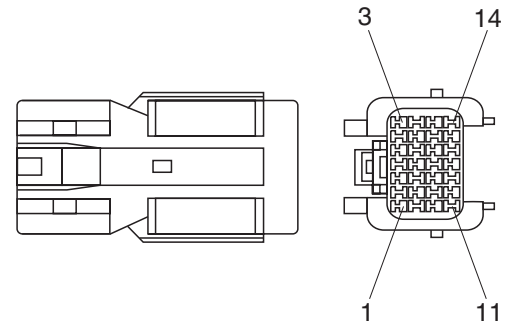
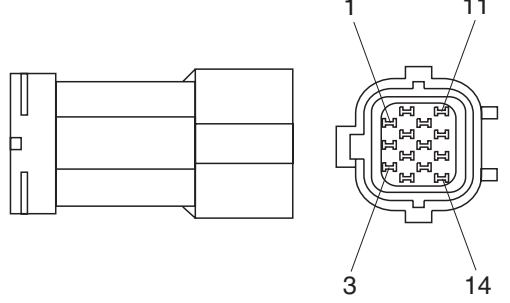
No. of pin	Receptacle connector (female)	Plug connector (male)
13	 S811-013002	 S811-113002
17	 S811-017002	 S811-117002
21	 S811-021002	 S811-121002

2) J TYPE CONNECTOR

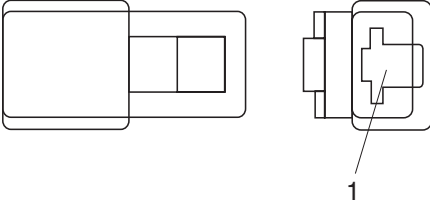
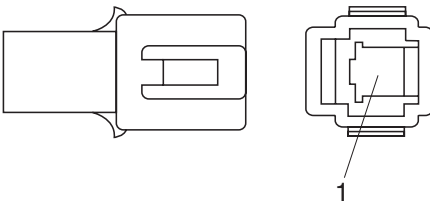
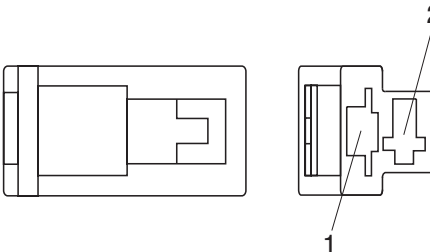
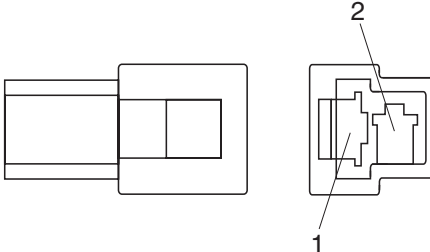
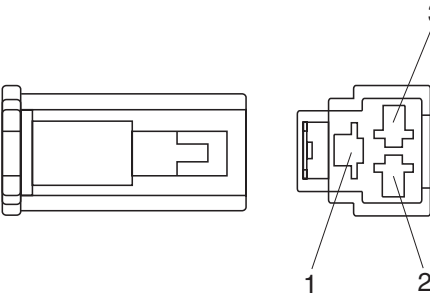
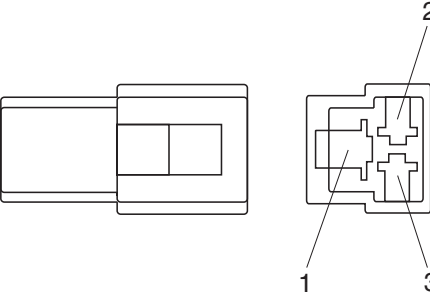
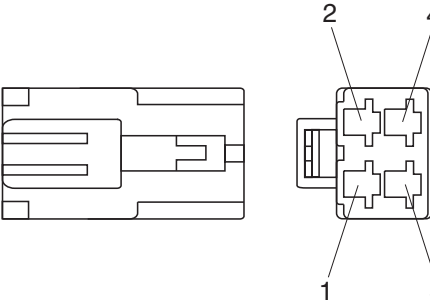
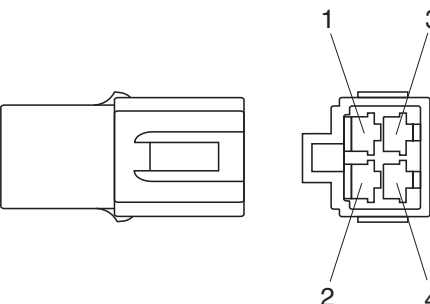
No. of pin	Receptacle connector (female)	Plug connector (male)
2	 S816-002001	 S816-102001
3	 S816-003001	 S816-103001
4	 S816-004001	 S816-104001
8	 S816-008001	 S816-108001

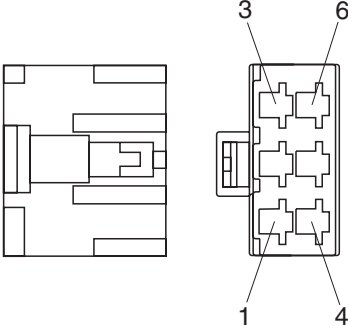
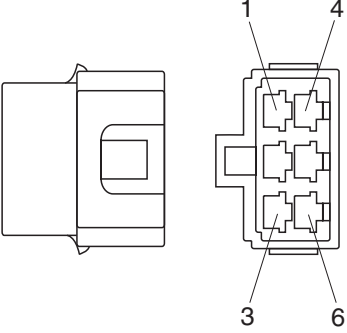
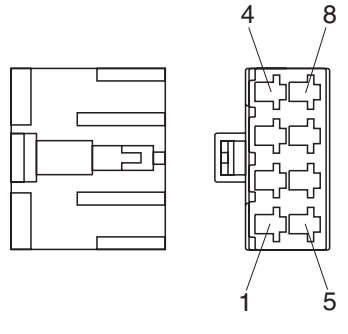
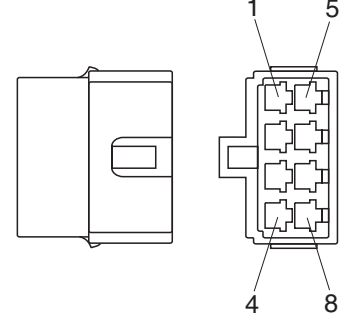
3) SWP TYPE CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
1	 S814-001000	 S814-101000
2	 S814-002000	 S814-102000
3	 S814-003000	 S814-103000
4	 S814-004000	 S814-104000

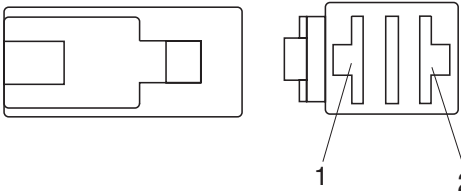
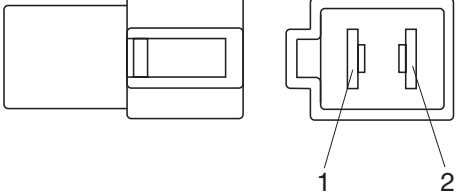
No. of pin	Receptacle connector (female)	Plug connector (male)
6	 S814-006000	 S814-106000
8	 S814-008000	 S814-108000
12	 S814-012000	 S814-112000
14	 S814-014000	 S814-114000

4) CN TYPE CONNECTOR

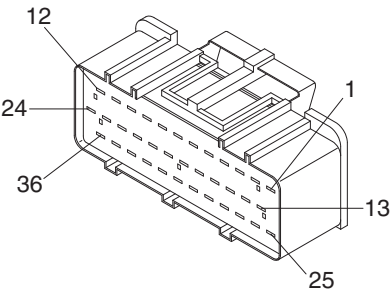
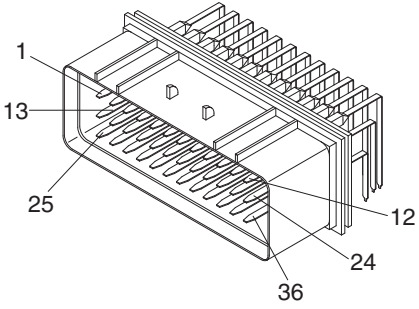
No. of pin	Receptacle connector (female)	Plug connector (male)
1	 S810-001202	 S810-101202
2	 S810-002202	 S810-102202
3	 S810-003202	 S810-103202
4	 S810-004202	 S810-104202

No. of pin	Receptacle connector (female)	Plug connector (male)
6	 S810-006202	 S810-106202
8	 S810-008202	 S810-108202

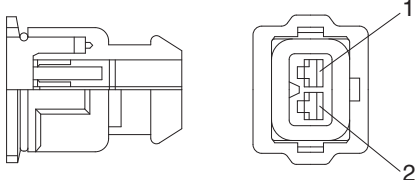
5) 375 FASTEN TYPE CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
2	 S810-002402	 S810-102402

6) AMP ECONOSEAL CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
36	 344111-1	 344108-1

7) AMP TIMER CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
2	 85202-1	

8) AMP 040 MULTILOCK CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
12	174045-2	

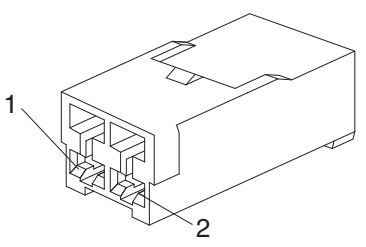
9) AMP 070 MULTILOCK CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
14	173852	

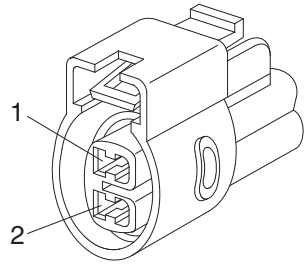
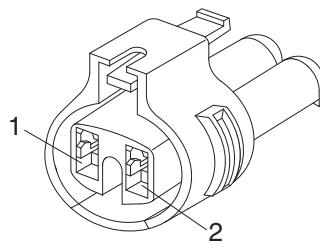
10) AMP FASTIN - FASTON CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
6	925276-0	480003-9

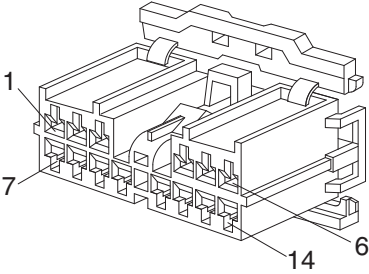
11) KET 090 CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
2	 MG610070	

12) KET 090 WP CONNECTORS

No. of pin	Receptacle connector (female)	Plug connector (male)
2	 MG640605	
2	 MG640795	

13) KET SDL CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
14	 MG610406	

14) DEUTSCH DT CONNECTORS

DT 06 - 3S - ★★☆☆

DT ————— Deutsch connectors
 06 ————— 06 : Receptacle, 04 : Plug
 3S ————— Number of contacts (P : Pin, S : Socket)
 ★★☆☆ ————— Modifications (see below)

※ Modification

E003 : Standard end cap - gray

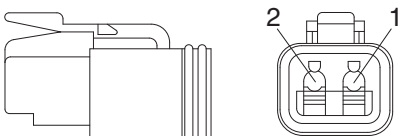
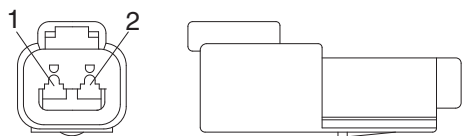
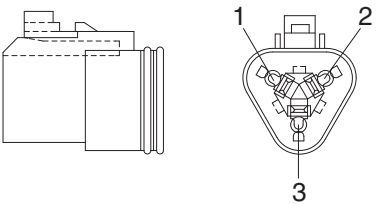
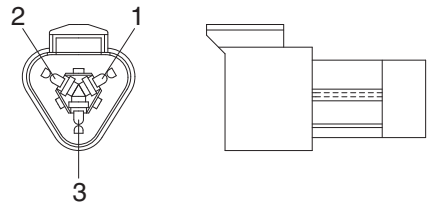
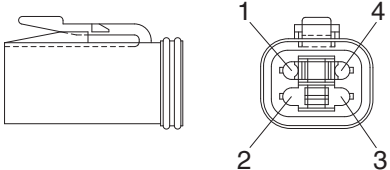
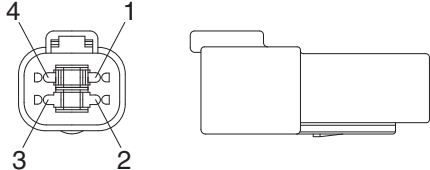
E004 : Color of connector to be black

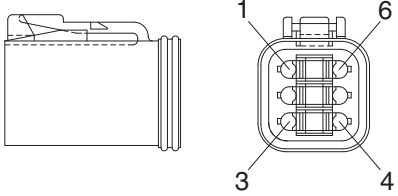
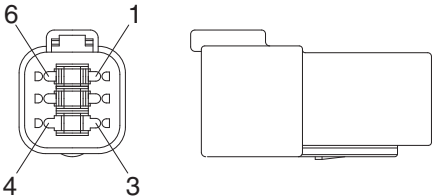
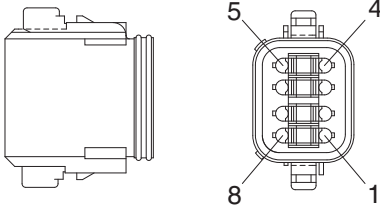
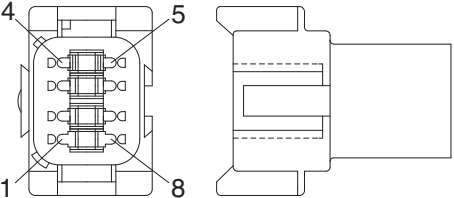
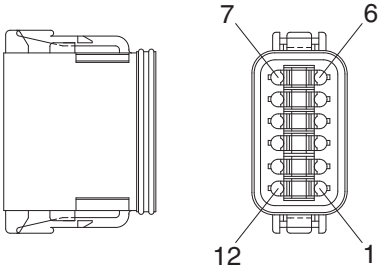
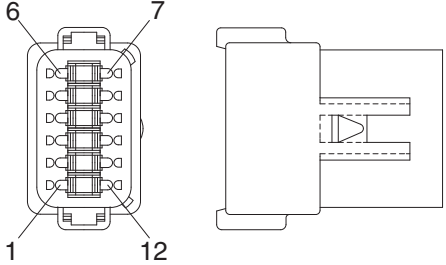
E005 : Combination - E004 & E003

EP04 : End cap

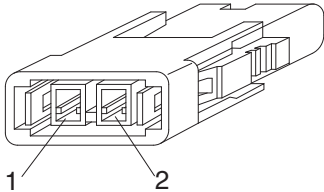
EP06 : Combination P012 & EP04

P012 : Front seal enhancement - connectors color to black for 2, 3, 4 & 6pin

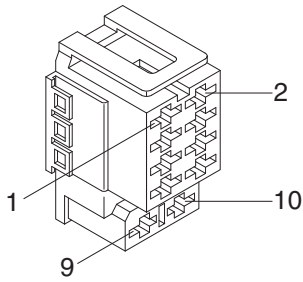
No. of pin	Receptacle connector (female)	Plug connector (male)
2	 DT06-2S	 DT04-2P
3	 DT06-3S	 DT04-3P
4	 DT06-4S	 DT04-4P

No. of pin	Receptacle connector (female)	Plug connector (male)
6	 DT06-6S	 DT04-6P
8	 DT06-8S	 DT04-8P
12	 DT06-12S	 DT04-12P

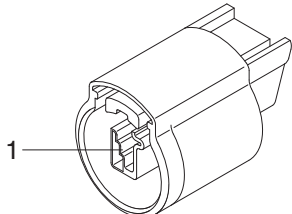
15) MOLEX 2CKTS CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
2	 35215-0200	

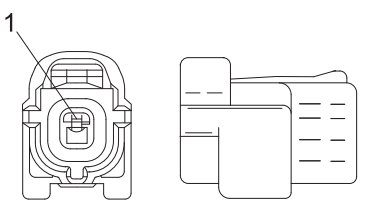
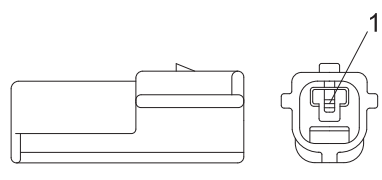
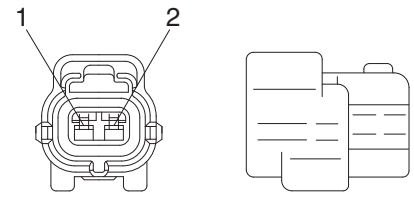
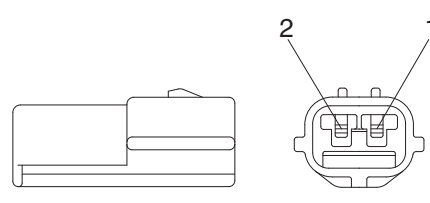
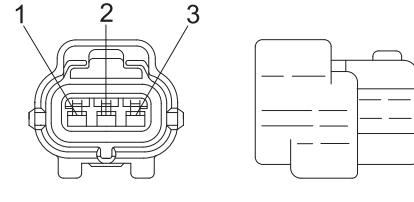
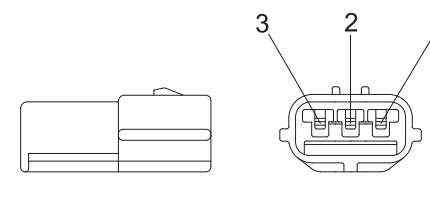
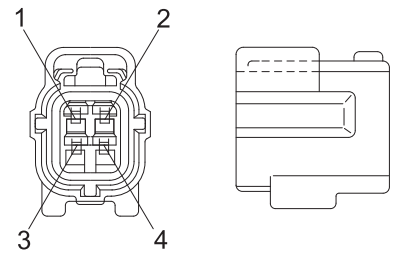
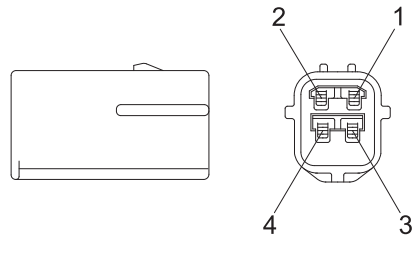
16) ITT SWF CONNECTOR

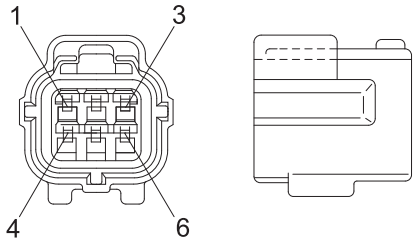
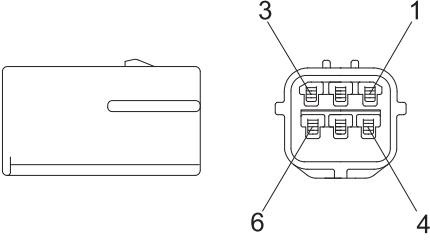
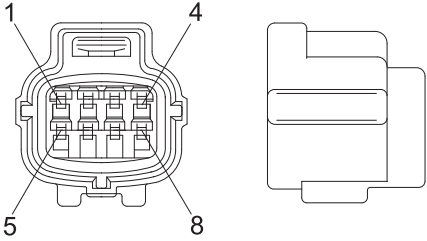
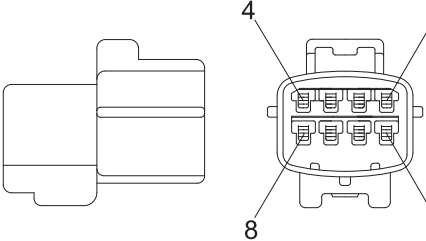
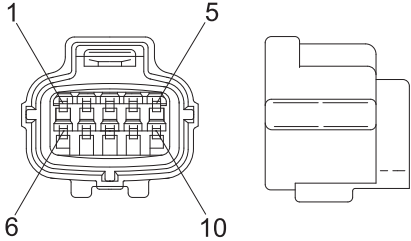
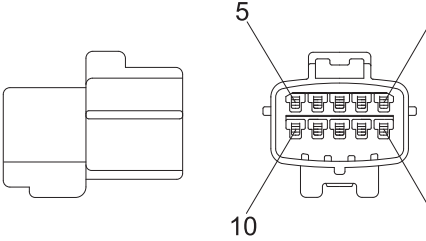
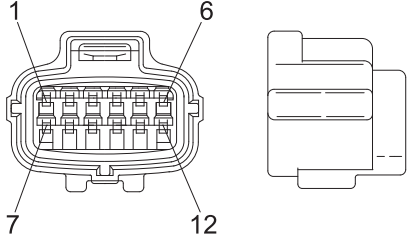
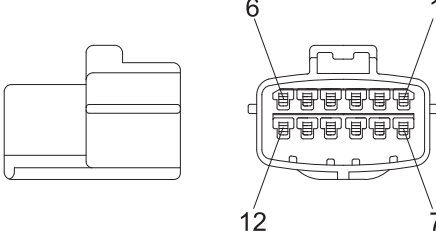
No. of pin	Receptacle connector (female)	Plug connector (male)
10	 SWF593757	

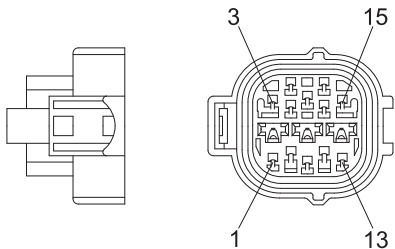
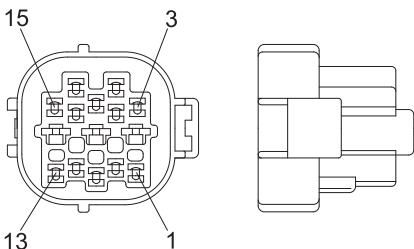
17) MWP NMWP CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
1	 NMWP01F-B	

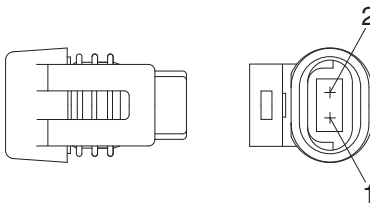
18) ECONOSEAL J TYPE CONNECTORS

No. of pin	Receptacle connector (female)	Plug connector (male)
1	 S816-001002	 S816-101002
2	 S816-002002	 S816-102002
3	 S816-003002	 S816-103002
4	 S816-004002	 S816-104002

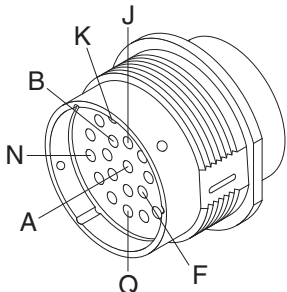
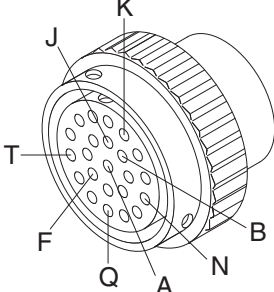
No. of pin	Receptacle connector (female)	Plug connector (male)
6	 S816-006002	 S816-106002
8	 S816-008002	 S816-108002
10	 S816-010002	 S816-110002
12	 S816-012002	 S816-112002

No. of pin	Receptacle connector (female)	Plug connector (male)
15	 368301-1	 2-85262-1

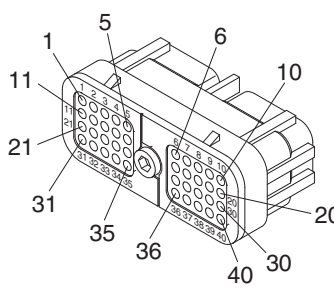
19) METRI-PACK TYPE CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
2	 12040753	

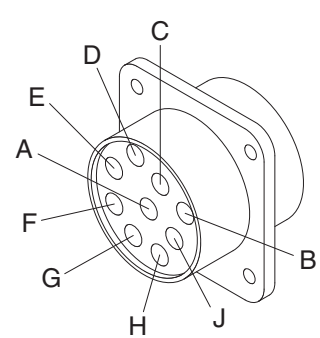
20) DEUTSCH HD30 CONNECTOR

No. of pin	Receptacle connector (female)	Plug connector (male)
23	 HD36-24-23SN	 HD34-24-23PN

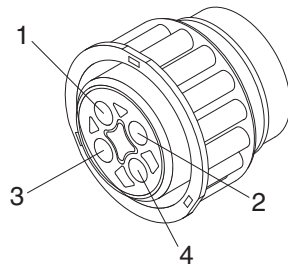
21) DEUTSCH MCU CONNECTOR

No. of pin	Receptacle connector (Female)	Plug connector (Male)
40	 DRC26-40SA/B	

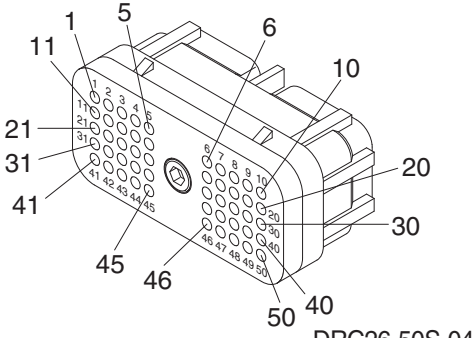
22) DEUTSCH SERVICE TOOL CONNECTOR

No. of pin	Receptacle connector (Female)	Plug connector (Male)
9	 HD10-9-96P	

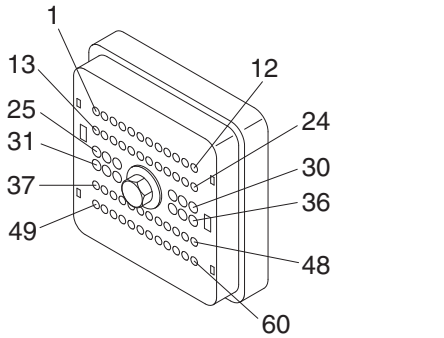
23) AMP FUEL WARMER CONNECTOR

No. of pin	Receptacle connector (Female)	Plug connector (Male)
4	 2-967325-3	

24) DEUTSCH ENGINE ECM CONNECTOR

No. of pin	Receptacle connector (Female)	Plug connector (Male)
50	 DRC26-50S-04	

25) DEUTSCH INTERMEDIATE CONNECTOR

No. of pin	Receptacle connector (Female)	Plug connector (Male)
60	 DRB16-60SAE-L018	