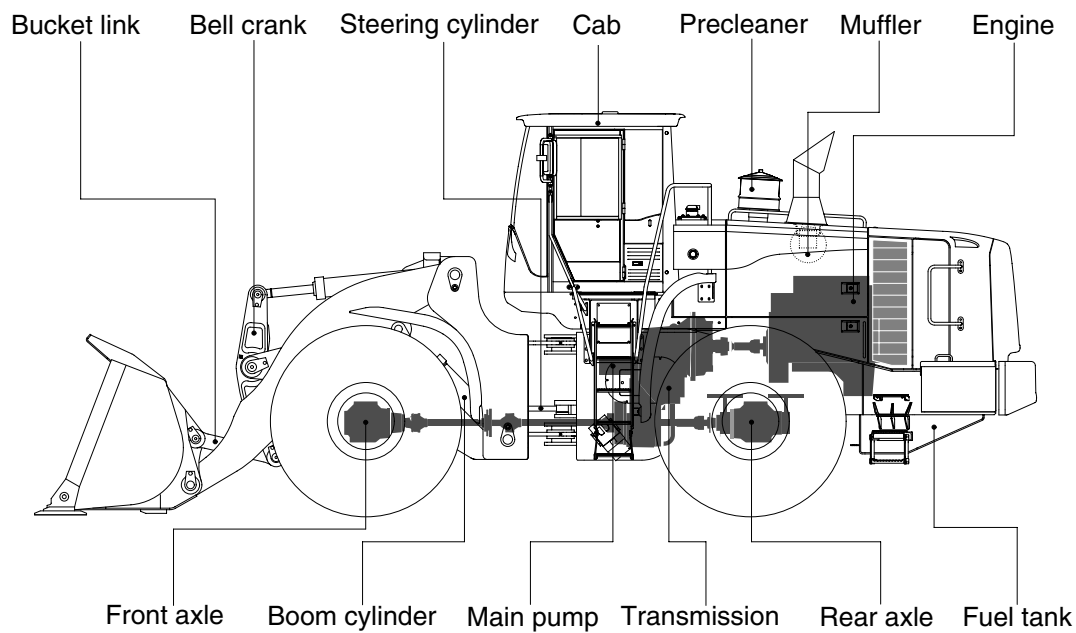
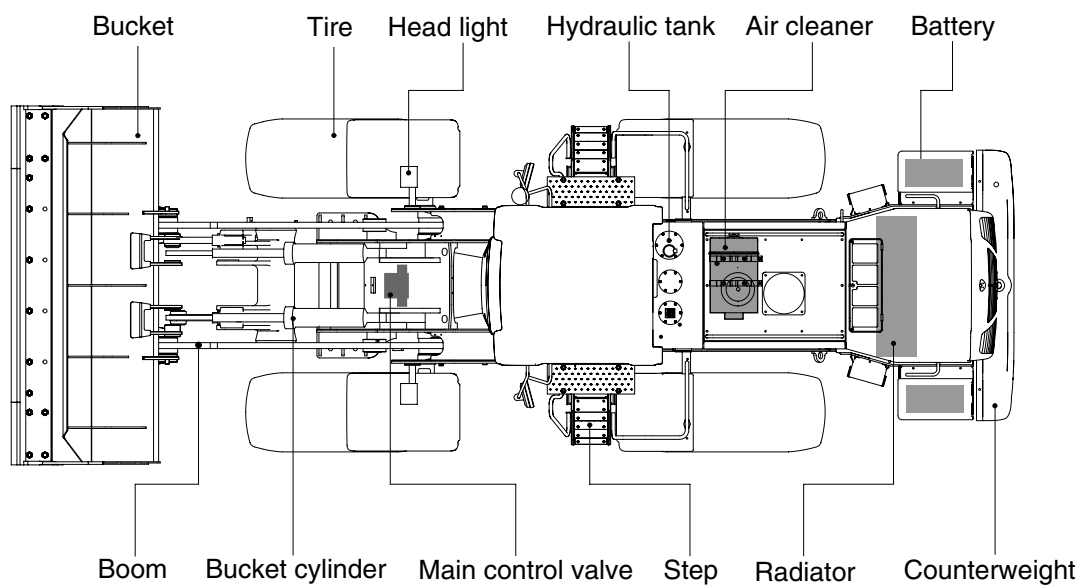


## 2. SPECIFICATIONS

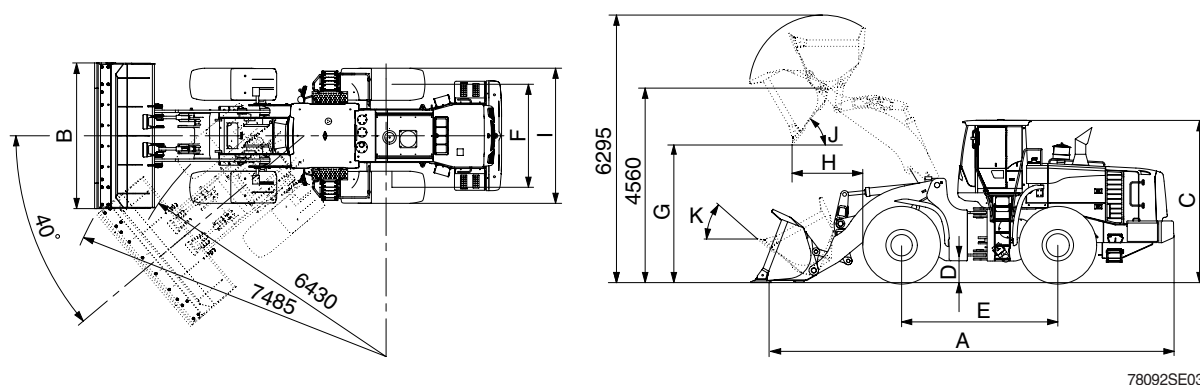
### 1. MAJOR COMPONENTS



78092SE01

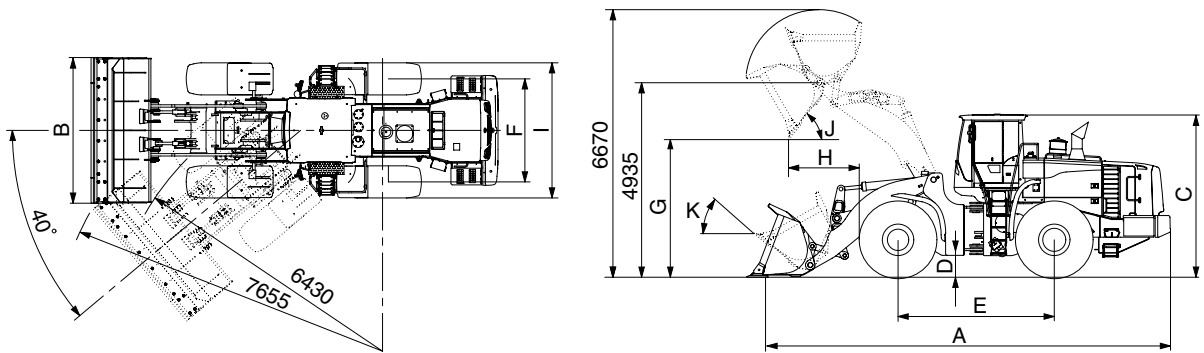
## 2. SPECIFICATIONS

### 1) WITH BOLT-ON CUTTING EDGE TYPE BUCKET (HL780-9)



Description			Unit	Specification
Operating weight			kg (lb)	30000 (66100)
Bucket capacity	Struck		m³ (yd³)	4.6 (6.0)
	Heaped			5.4 (7.1)
Overall length	A		mm (ft-in)	9630 (31' 7")
Overall width	B			3450 (11' 4")
Overall height	C			3865 (12' 8")
Ground clearance	D			495 (1' 7")
Wheelbase	E			3700 (12' 2")
Tread	F			2440 (8' 0")
Dump clearance at 45°	G			3300 (10' 10")
Dump reach (full lift)	H			1430 (4' 8")
Width over tires	I			3220 (10' 7")
Dump angle	J			degree (°)
Roll back angle (carry position)	K		48	
Cycle time	Lift (with load)		sec	6.0
	Dump (with load)			1.4
	Lower (empty)			3.7
Maximum travel speed			km/hr (mph)	36.5
Braking distance			m (ft-in)	12 (39' 4")
Minimum turning radius (center of outside tire)				6.43 (21' 1")
Gradeability			degree (°)	30
Travel speed	Forward	First gear	km/hr (mph)	6.1 (3.8)
		Second gear		11.5 (7.2)
		Third gear		18.0 (11.2)
		Fourth gear		36.5 (22.7)
	Reverse	First gear		6.1 (3.8)
		Second gear		11.5 (7.2)
		Third gear		25.0 (15.6)

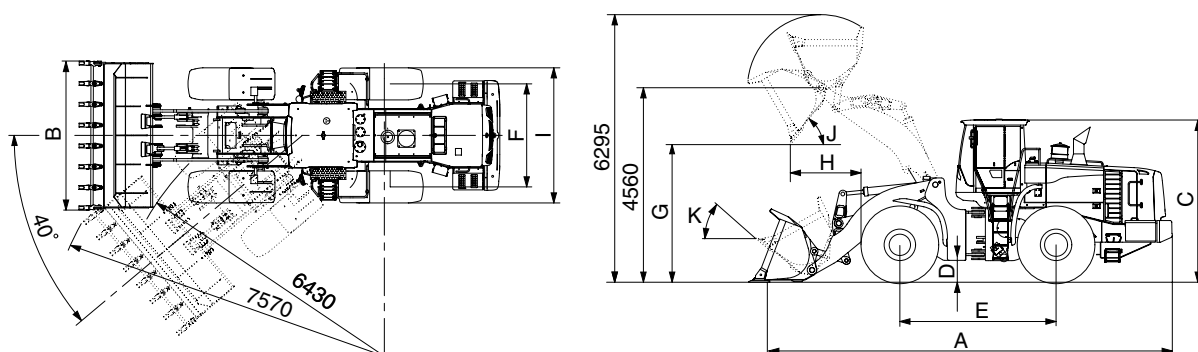
# WITH BOLT-ON CUTTING EDGE TYPE BUCKET (HL780XTD-9)



78092SE03-1

Description			Unit	Specification
Operating weight			kg (lb)	30800 (67900)
Bucket capacity	Struck		m³ (yd³)	4.6 (6.0)
	Heaped			5.4 (7.1)
Overall length	A		mm (ft-in)	10060 (33' 0")
Overall width	B			3450 (11' 4")
Overall height	C			3865 (12' 8")
Ground clearance	D			485 (1' 7")
Wheelbase	E			3700 (12' 2")
Tread	F			2440 (8' 0")
Dump clearance at 45°	G			3670 (12' 0")
Dump reach (full lift)	H			1480 (4' 10")
Width over tires	I			3220 (10' 7")
Dump angle	J			degree (°)
Roll back angle (carry position)	K		49	
Cycle time	Lift (with load)		sec	6.0
	Dump (with load)			1.4
	Lower (empty)			3.7
Maximum travel speed			km/hr (mph)	36.5
Braking distance			m (ft-in)	12 (39' 4")
Minimum turning radius (center of outside tire)				6.43 (21' 1")
Gradeability			degree (°)	30
Travel speed	Forward	First gear	km/hr (mph)	6.1 (3.8)
		Second gear		11.5 (7.2)
		Third gear		18.0 (11.2)
		Fourth gear		36.5 (22.7)
	Reverse	First gear		6.1 (3.8)
		Second gear		11.5 (7.2)
		Third gear		25.0 (15.6)

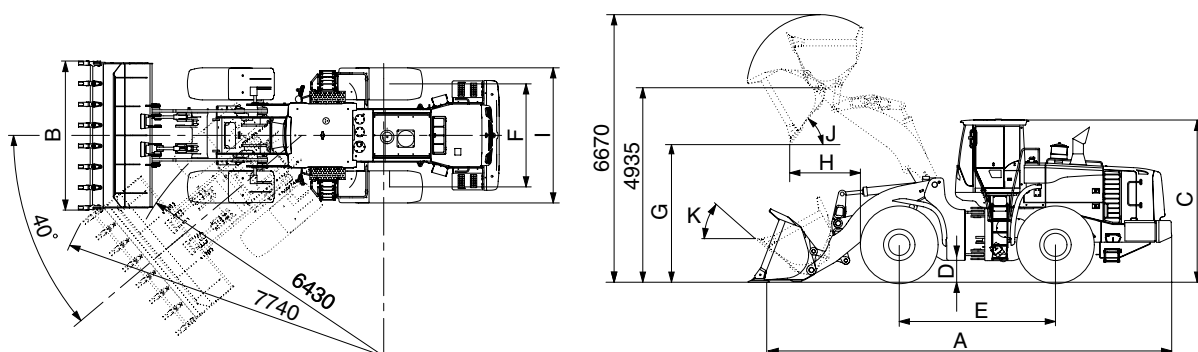
## 2) WITH TOOTH TYPE BUCKET (HL780-9)



78092SE04

Description			Unit	Specification
Operating weight			kg (lb)	30000 (66100)
Bucket capacity	Struck		m³ (yd³)	4.4 (5.8)
	Heaped			5.2 (6.8)
Overall length	A		mm (ft-in)	9820 (32' 3")
Overall width	B			3500 (11' 6")
Overall height	C			3865 (12' 8")
Ground clearance	D			495 (1' 7")
Wheelbase	E			3700 (12' 2")
Tread	F			2440 (8' 0")
Dump clearance at 45°	G			3145 (10' 4")
Dump reach (full lift)	H			1560 (5' 1")
Width over tires	I			3220 (10' 7")
Dump angle	J		degree (°)	47
Roll back angle (carry position)	K			48
Cycle time	Lift (with load)		sec	6.0
	Dump (with load)			1.4
	Lower (empty)			3.7
Maximum travel speed			km/hr (mph)	36.5
Braking distance			m (ft-in)	12 (39' 4")
Minimum turning radius (center of outside tire)				6.43 (21' 1")
Gradeability			degree (°)	30
Travel speed	Forward	First gear	km/hr (mph)	6.1 (3.8)
		Second gear		11.5 (7.2)
		Third gear		18.0 (11.2)
		Fourth gear		36.5 (22.7)
	Reverse	First gear		6.1 (3.8)
		Second gear		11.5 (7.2)
		Third gear		25.0 (15.6)

## WITH TOOTH TYPE BUCKET (HL780XTD-9)



78092SE04-1

Description			Unit	Specification
Operating weight			kg (lb)	30800 (67900)
Bucket capacity	Struck		m³ (yd³)	4.4 (5.8)
	Heaped			5.2 (6.8)
Overall length	A		mm (ft-in)	10250 (33' 8")
Overall width	B			3500 (11' 6")
Overall height	C			3865 (12' 8")
Ground clearance	D			495 (1' 7")
Wheelbase	E			3700 (12' 2")
Tread	F			2440 (8' 0")
Dump clearance at 45°	G			3520 (11' 7")
Dump reach (full lift)	H			1600 (5' 3")
Width over tires	I			3220 (10' 7")
Dump angle	J			degree (°)
Roll back angle (carry position)	K		49	
Cycle time	Lift (with load)		sec	6.0
	Dump (with load)			1.4
	Lower (empty)			3.7
Maximum travel speed			km/hr (mph)	36.5
Braking distance			m (ft-in)	12 (39' 4")
Minimum turning radius (center of outside tire)				6.43 (21' 1")
Gradeability			degree (°)	30
Travel speed	Forward	First gear	km/hr (mph)	6.1 (3.8)
		Second gear		11.5 (7.2)
		Third gear		18.0 (11.2)
		Fourth gear		36.5 (22.7)
	Reverse	First gear		6.1 (3.8)
		Second gear		11.5 (7.2)
		Third gear		25.0 (15.6)

### 3. WEIGHT

Item		kg	lb
Front frame assembly		2712	5980
Rear frame assembly		3595	7930
Front fender (LH & RH)		48	106
Counterweight		1300	2870
Additional counterweight (HL780XTD-9)		552	1220
Cab assembly		1050	2320
Engine assembly		984	2170
Transmission assembly		835	1840
Drive shaft (front)		25	55
Drive shaft (center)		48	106
Drive shaft (rear)		30	66
Front axle (include differential)		1814	4000
Rear axle (include differential)		1805	3980
Tire (29.5-25, 22PR, L3)		430	948
Hydraulic tank assembly		270	595
Fuel tank assembly		483	1060
Main pump		45	99
Steering pump		45	99
Fan & brake pump assembly		7	15
Main control valve (3 spool)		104	229
Flow amplifier		29	64
Boom assembly	HL780-9	2050	4520
	HL780XTD-9	2260	4980
Bell crank assembly		282	620
Bucket link		60	132
5.4 m <sup>3</sup> bucket, with bolt on cutting edge		2750	6060
5.2 m <sup>3</sup> bucket, with tooth		2585	2430
Boom cylinder assembly (2EA)		290	639
Bucket cylinder assembly (2EA)		130	287
Steering cylinder assembly (2EA)		60	132
Seat		40	88
Battery		55	121

## 4. SPECIFICATION FOR MAJOR COMPONENTS

### 1) ENGINE

Item	Specification
Model	Cummins QSM 11
Type	4-cycle turbocharged, charge air cooled diesel engine
Control type	Electronic control
Cooling method	Water cooling
Number of cylinders and arrangement	6 cylinders, in-line
Firing order	1-5-3-6-2-4
Combustion chamber type	Direct injection type
Cylinder bore × stroke	125 × 147 mm (4.92" × 5.79")
Piston displacement	10800 cc (659 cu in)
Compression ratio	16.3 : 1
Rated gross horse power	353 ps at 2000 rpm
Maximum gross torque at 1400 rpm	171 kgf · m (1237 lbf · ft)
Engine oil quantity	38 l (10 U.S. gal)
Wet weight	984 kg (2170 lb)
High idling speed	2130 ± 50 rpm
Low idling speed	800 ± 50 rpm
Rated fuel consumption	162 g/ps·hr
Starting motor	Delco Remy 42MT (24 V)
Alternator	Delco Remy 22SI (24 V - 70 Amp)
Battery	2 × 12V × 220Ah

## 2) MAIN PUMP

Item	Specification	
	Steering pump	Loader pump
Type	Variable double piston pump	
Capacity	110 cc/rev	100 cc/rev
Maximum operating pressure	280 kgf/cm <sup>2</sup> (3980 psi)	
Rated oil quantity	220 l /min (58.1 U.S.gpm)	200 l /min (52.8 U.S.gpm)
Rated speed	2000 rpm	

## 3) FAN + BRAKE PUMP

Item	Specification	
	Fan pump	Brake pump
Type	Fixed displacement tandem gear pump	
Capacity	26.7 cc/rev	26.4 cc/rev
Maximum operating pressure	120 kgf/cm <sup>2</sup> (1710 psi)	150 kgf/cm <sup>2</sup> 2130 psi)
Rated oil quantity	53.4 l /min (14.1 U.S.gpm)	52.8 l /min (13.9 U.S.gpm)
Rated speed	2000 rpm	

## 4) MAIN CONTROL VALVE

Item	Specification
Type	2 spool
Operating method	Hydraulic pilot assist
Main relief valve pressure	280 kgf/cm <sup>2</sup> (3980 psi)
Overload relief valve pressure	340 kgf/cm <sup>2</sup> (4840 psi)
Overload relief valve pressure (dump)	310 kgf/cm <sup>2</sup> (4410 psi)

## 5) REMOTE CONTROL VALVE

Item		Specification
Type		Pressure reducing type
Operating	Minimum	5 kgf/cm <sup>2</sup> (71 psi)
	Maximum	30 kgf/cm <sup>2</sup> (427 psi)
Single operation angle	degree	17

## 6) CYLINDER

Item		Specification
Boom cylinder	Bore dia × Rod dia × Stroke	ø 180 × ø 105 × 863 mm
Bucket cylinder	Bore dia × Rod dia × Stroke	ø 140 × ø 75 × 575 mm
Steering cylinder	Bore dia × Rod dia × Stroke	ø 105 × ø 55 × 480 mm

## 7) DYNAMIC POWER TRANSMISSION DEVICES

Item			Specification
Transmission	Model		ZF 4WG310
	Type	Converter	Single-stage, double-phase
		Transmission	Full-automatic power shift
	Converter stall ratio		2.987 : 1
	Gear shift		Forward fourth gear, reverse third gear
	Control		Electrical single lever type, kick-down system, Automatic kick down from 2nd to 1st gear FNR Switch on joystick lever (option)
	Pump rated flow		105 ℓ /min (27.7 U.S.gpm) at 2000 rpm
Axle	Drive devices		4-wheel drive
	Front		Front fixed location
	Rear		Oscillation 13° of center pin-loaded
Wheels	Tires		29.5-25, 22PR (L3)
Brakes	Travel		Four-wheel, wet-disc type, full hydraulic
	Parking		Spring applied, hydraulic released brake
Steering	Type		Full hydraulic, articulated
	Steering angle		40° to both right and left angle, respectively