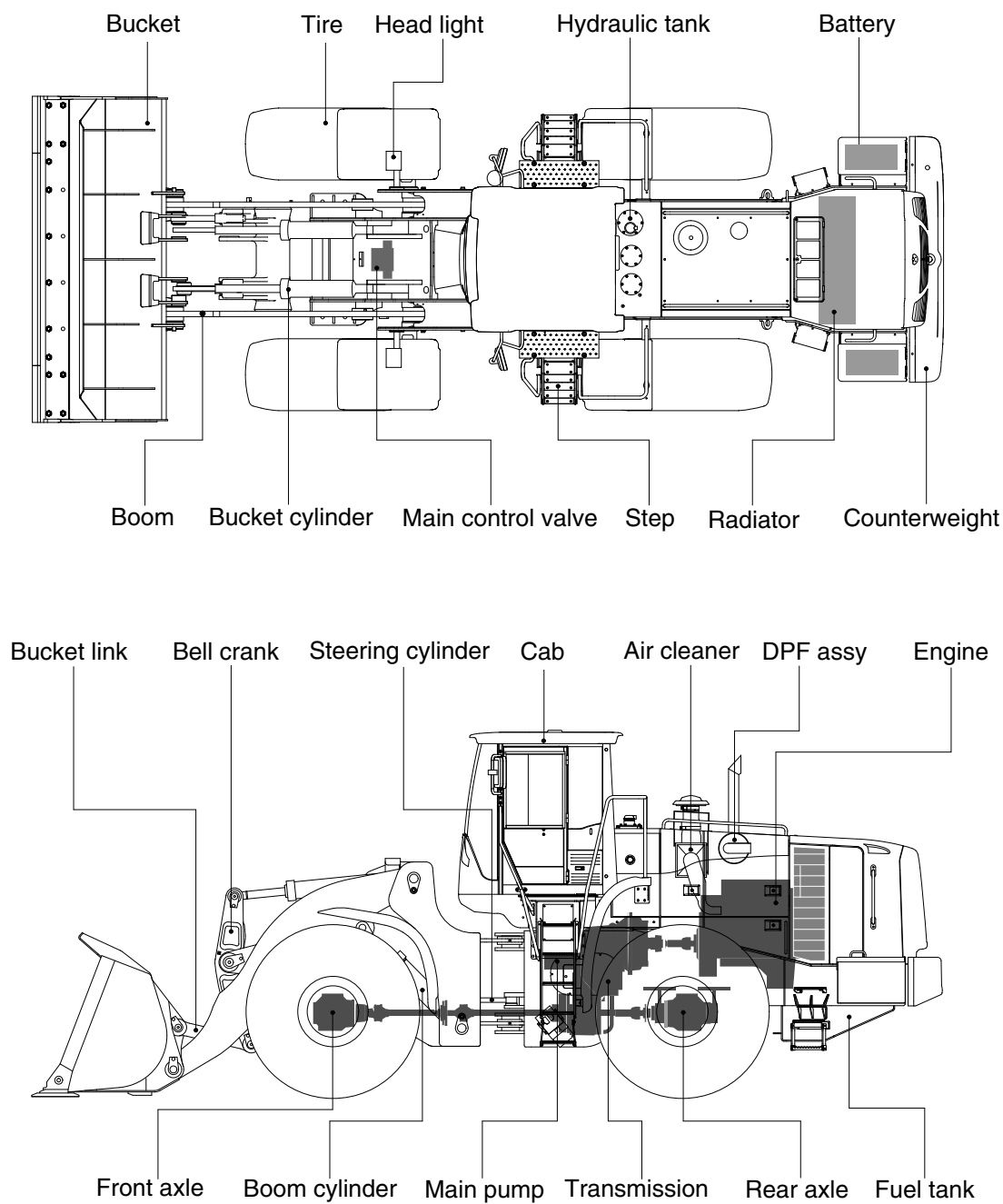


2. SPECIFICATIONS

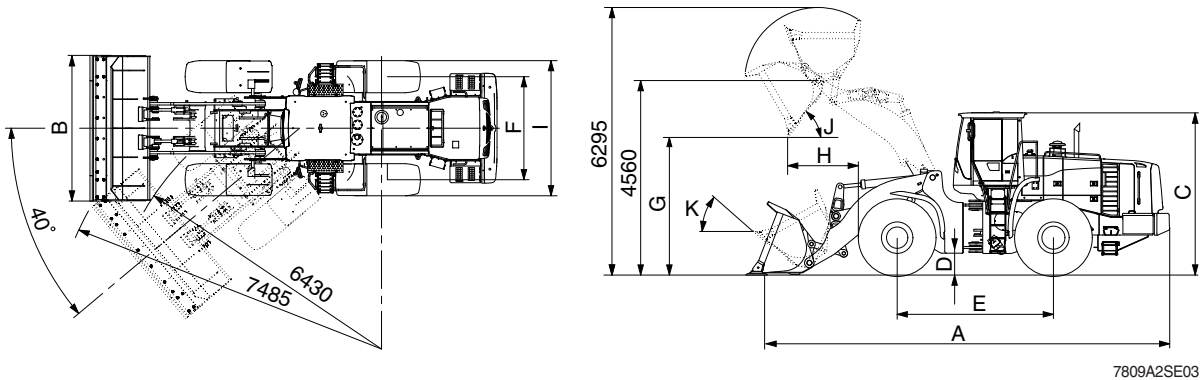
1. MAJOR COMPONENTS



7809A2SE01

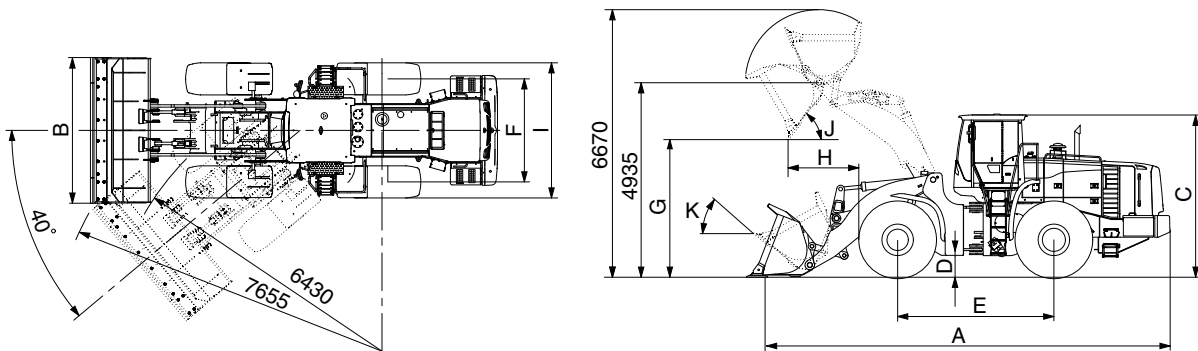
2. SPECIFICATIONS

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



Description			Unit	Specification
Operating weight			kg (lb)	30300 (66800)
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	6.1
	Dump (with load)			1.4
	Lower (empty)			4.1
Maximum travel speed			km/hr (mph)	36.0 (22.4)
Braking distance			m (ft-in)	12 (39' 4")
Minimum turning radius (center of outside tire)				6.43 (21' 1")
Gradeability			degree (°)	30
Breakeout force			kg (lb)	23750 (52360)
Travel speed	Forward	First gear	km/hr (mph)	6.1 (3.8)
		Second gear		11.4 (7.1)
		Third gear		17.9 (11.1)
		Fourth gear		36.0 (22.4)
	Reverse	First gear		6.1 (3.8)
		Second gear		11.4 (7.1)
		Third gear		24.8 (15.4)

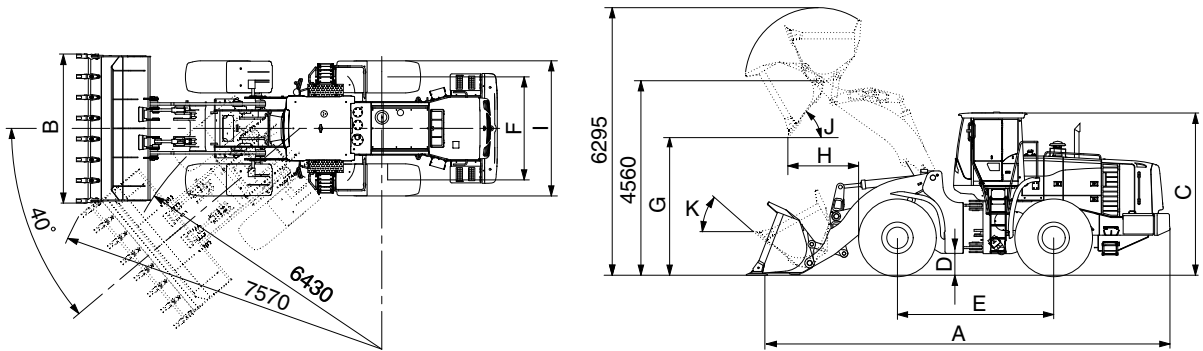
WITH BOLT-ON CUTTING EDGE TYPE BUCKET (HL780XTD-9A)



7809A2SE03-1

Description			Unit	Specification
Operating weight			kg (lb)	31100 (68560)
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	6.1
	Dump (with load)			1.4
	Lower (empty)			4.1
Maximum travel speed			km/hr (mph)	36.0 (22.4)
Braking distance			m (ft-in)	12 (39' 4")
Minimum turning radius (center of outside tire)				6.43 (21' 1")
Gradeability			degree (°)	30
Brokeout force			kg (lb)	23130 (50990)
Travel speed	Forward	First gear	km/hr (mph)	6.1 (3.8)
		Second gear		11.4 (7.1)
		Third gear		17.9 (11.1)
		Fourth gear		36.0 (22.4)
	Reverse	First gear		6.1 (3.8)
		Second gear		11.4 (7.1)
		Third gear		24.8 (15.4)

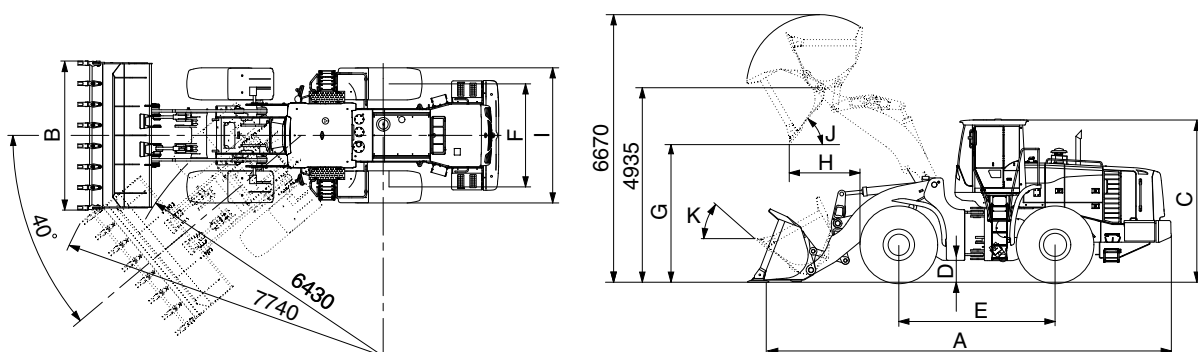
2) WITH TOOTH TYPE BUCKET (HL780-9A)



7809A2SE04

Description			Unit	Specification
Operating weight			kg (lb)	30300 (66800)
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	6.1
	Dump (with load)			1.4
	Lower (empty)			4.1
Maximum travel speed			km/hr (mph)	36.0 (22.4)
Braking distance			m (ft-in)	12 (39' 4")
Minimum turning radius (center of outside tire)				6.43 (21' 1")
Gradeability			degree (°)	30
Brokeout force			kg (lb)	25280 (55730)
Travel speed	Forward	First gear	km/hr (mph)	6.1 (3.8)
		Second gear		11.4 (7.1)
		Third gear		17.9 (11.1)
		Fourth gear		36.0 (22.4)
	Reverse	First gear		6.1 (3.8)
		Second gear		11.4 (7.1)
		Third gear		24.8 (15.4)

WITH TOOTH TYPE BUCKET (HL780XTD-9A)



7809A2SE04-1

Description			Unit	Specification
Operating weight			kg (lb)	31100 (68560)
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	6.1
	Dump (with load)			1.4
	Lower (empty)			4.1
Maximum travel speed			km/hr (mph)	36.0 (22.4)
Braking distance			m (ft-in)	12 (39' 4")
Minimum turning radius (center of outside tire)				6.43 (21' 1")
Gradeability			degree (°)	30
Brokeout force			kg (lb)	24630 (54300)
Travel speed	Forward	First gear	km/hr (mph)	6.1 (3.8)
		Second gear		11.4 (7.1)
		Third gear		17.9 (11.1)
		Fourth gear		36.0 (22.4)
	Reverse	First gear		6.1 (3.8)
		Second gear		11.4 (7.1)
		Third gear		24.8 (15.4)

3. WEIGHT

Item		kg	lb
Front frame assembly		2695	5940
Rear frame assembly		3282	7240
Front fender (LH & RH)		48	106
Counterweight (HL780-9A)		1200	2650
Additional counterweight (3EA, HL780XTD-9A)		550	1210
Cab assembly		1050	2320
Engine assembly		1269	2800
Transmission assembly		835	1840
Drive shaft (front)		25	55
Drive shaft (center)		62	137
Drive shaft (rear)		30	66
Drive shaft (upper)		13	29
Front axle (include differential)		1814	4000
Rear axle (include differential)		1820	4010
Tire (29.5-25, 22PR, L3)		430	948
Hydraulic tank assembly		280	617
Fuel tank assembly		485	1070
Main pump		45	99
Steering pump		45	99
Fan & brake pump assembly		12	26
Main control valve (2/3 spool)		88/104	194/229
Flow amplifier		29	64
Boom assembly	HL780-9A	2050	4520
	HL780XTD-9A	2260	4980
Bell crank assembly		282	620
Bucket link		60	132
5.4 m³ bucket, with bolt on cutting edge		2750	6060
5.2 m³ 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 QSX 11.9
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	130 × 150 mm (5.12" × 5.91")
Piston displacement	11900 cc (726 cu in)
Compression ratio	16.6
Rated gross horse power	360 ps at 2000 rpm
Maximum gross torque at 1400 rpm	173 kgf · m (1250 lbf · ft)
Engine oil quantity	43 l (11.4 U.S. gal)
Wet weight	1269 kg (2797 lb)
High idling speed	2030 ± 50 rpm
Low idling speed	800 ± 25 rpm
Rated fuel consumption	162 g/ps-hr
Starting motor	Delco Remy 39MT HO (24 V-7.5 kW)
Alternator	Delco Remy 28SI (24 V-80 Amp)
Battery	2 × 12V × 220Ah

2) STEERING PUMP / MAIN PUMP

Item	Specification	
	Steering pump	Main pump
Type	Variable piston pump	
Capacity	110 cc/rev	100 cc/rev
Maximum operating pressure	280 kgf/cm ² (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
Type	Piston pump
Capacity	45 cc/rev
Maximum operating pressure	250 kgf/cm ² (3560 psi)
Rated oil quantity	90 l /min (23.8 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 ² (3980 psi)
Overload relief valve pressure	340 kgf/cm ² (4840 psi)
Overload relief valve pressure (dump)	310 kgf/cm ² (4410 psi)

5) REMOTE CONTROL VALVE

Item		Specification
Type		Pressure reducing type
Operating	Minimum	5 kgf/cm ² (71 psi)
	Maximum	30 kgf/cm ² (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	HL780-9A	Bore dia × Rod dia × Stroke ø 140 × ø 75 × 575 mm
	HL780XTD-9A	Bore dia × Rod dia × Stroke ø 140 × ø 75 × 570 mm
Steering cylinder		Bore dia × Rod dia × Stroke ø 105 × ø 55 × 480 mm

7) DYNAMIC POWER TRANSMISSION DEVICES

Item			Specification
4-speed transmission (std)	Model		ZF 4WG 310
	Type	Converter	Single-stage, double-phase
		Transmission	Full-automatic power shift
	Converter stall ratio		2.51 : 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		135 ℓ /min (35.7 U.S.gpm) at 2000 rpm
	Travel speed		See the page 2-2.
5-speed transmission (opt)	Model		ZF 5WG 310
	Type	Converter	Single-stage, double-phase (with lock up clutch)
		Transmission	Full-automatic power shift
	Converter stall ratio		2.51 : 1
	Gear shift		Forward fifth 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		135 ℓ /min (35.7 U.S.gpm) at 2000 rpm
	Travel speed	Forward 1/2/3/4/5	6.1 / 11.8 / 18.3 / 26.6 / 41.0 km/hr
		Reverse 1/2/3	6.1 / 11.8 / 26.6 km/hr
Axle	Drive devices		4-wheel drive
	Front		Front fixed location
	Rear		Oscillation $\pm 13^\circ$ 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 on T/M
Steering	Type		Full hydraulic, articulated
	Steering angle		40° to both right and left angle, respectively