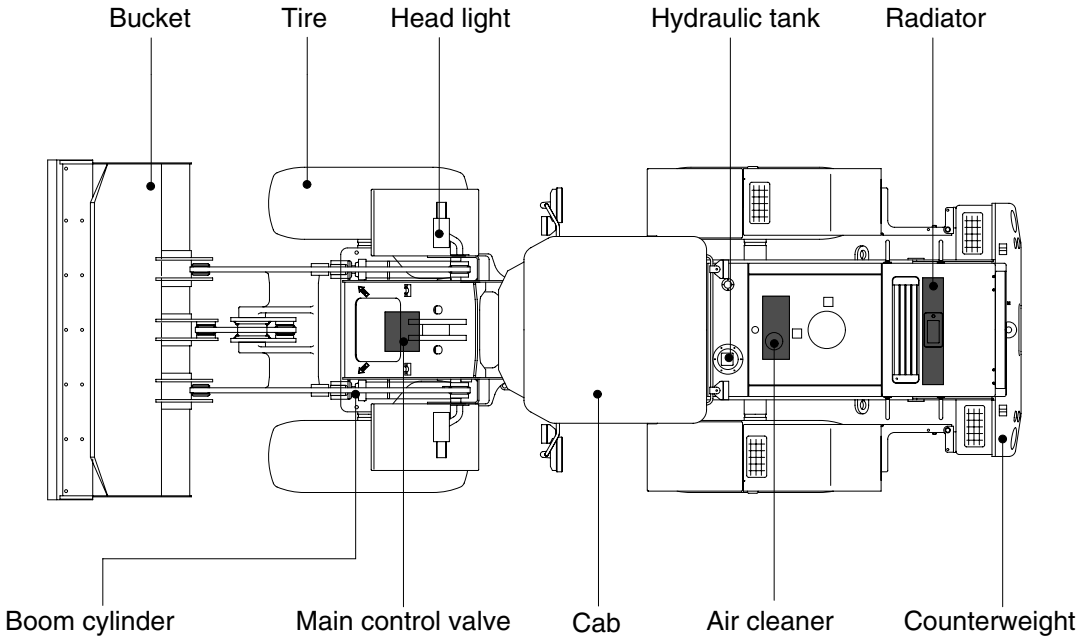
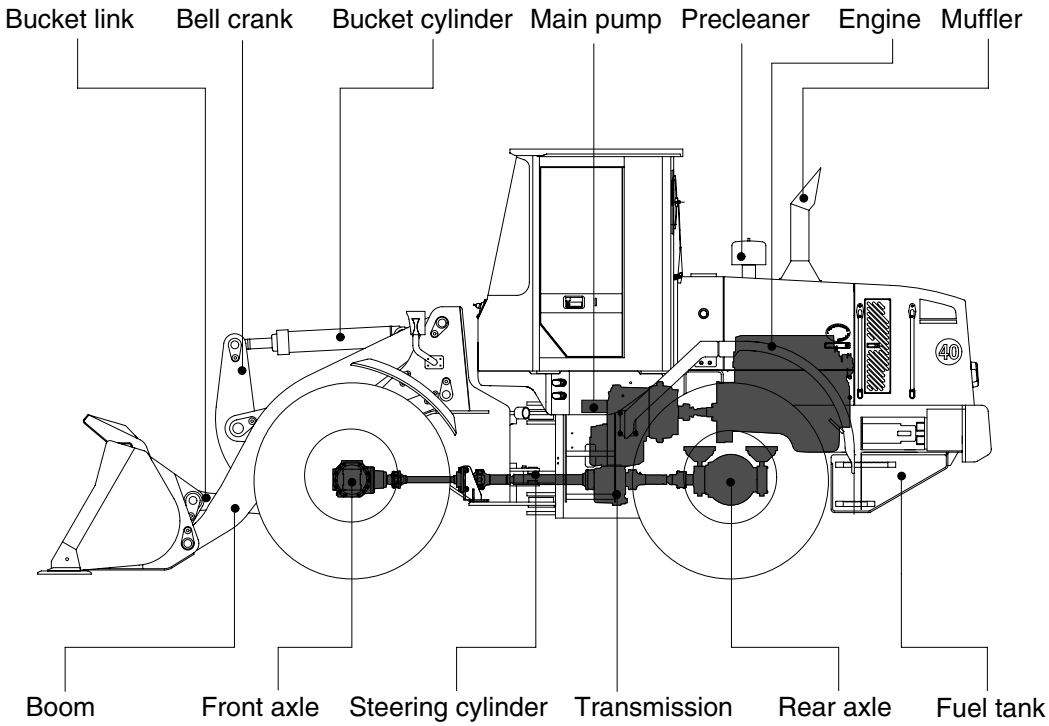
GROUP 2 SPECIFICATION

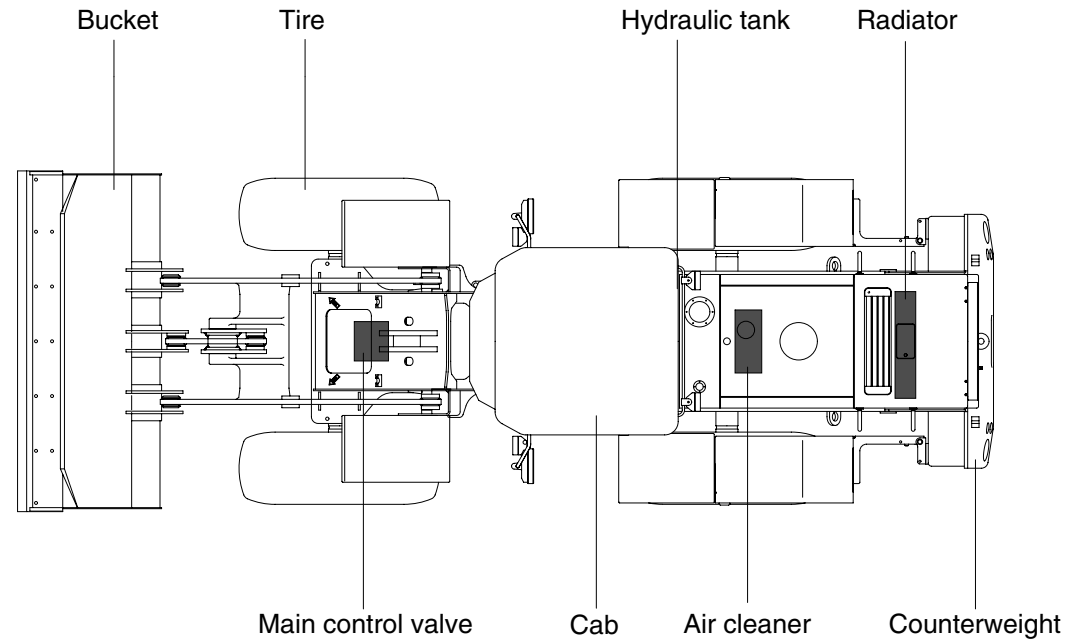
1. MAJOR COMPONENT(HL740-7A, HL740XTD-7A)

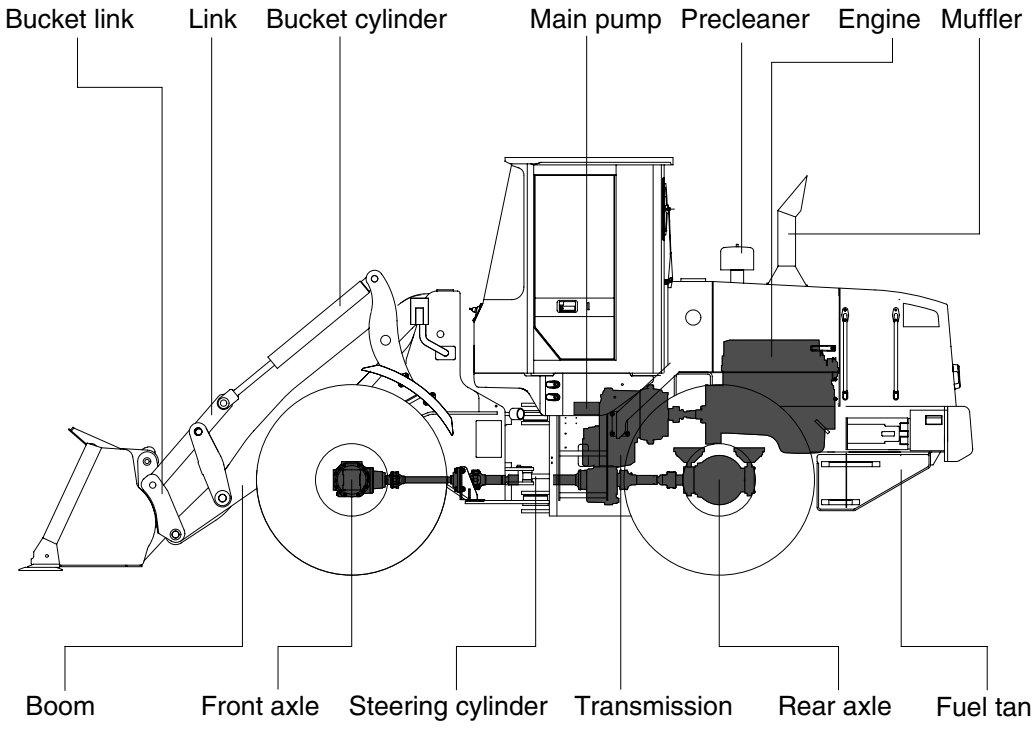




7407A2SP01

MAJOR COMPONENT(HL740TM-7A)

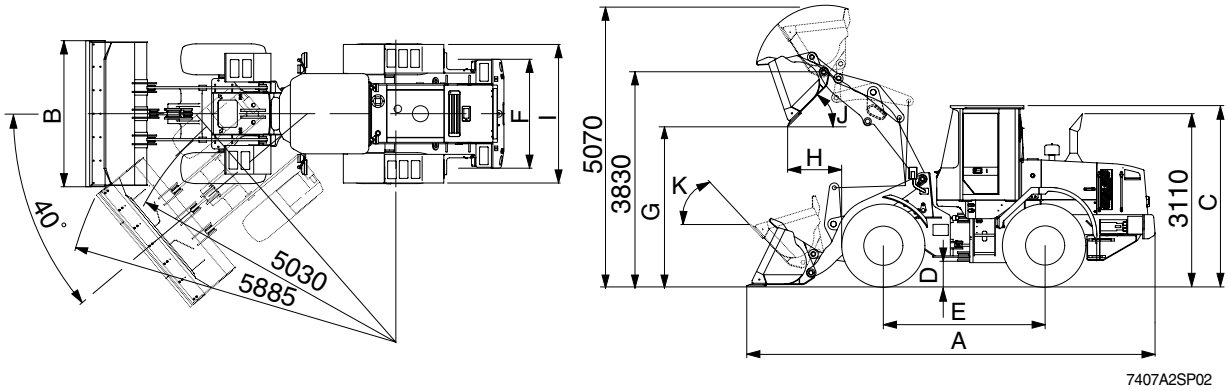




740TM7A2SP01

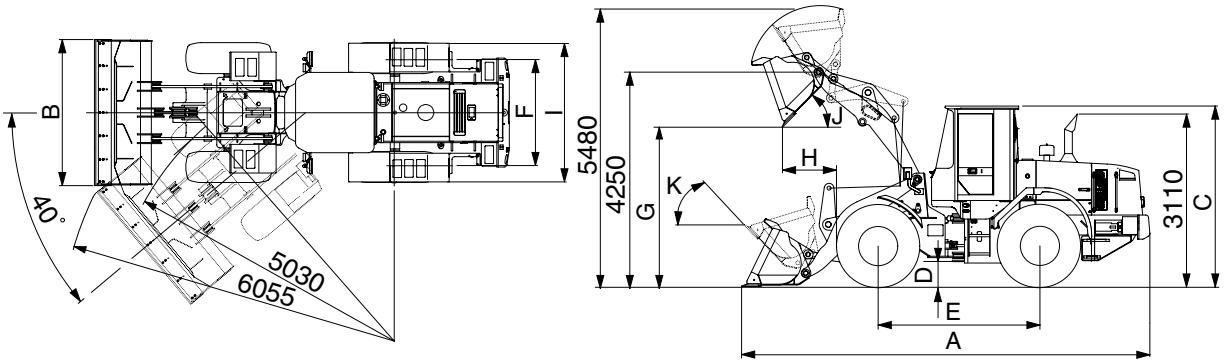
2. SPECIFICATIONS

1) WITH BOLT-ON CUTTING EDGE TYPE BUCKET(HL740-7A)



Description			Unit	Specification
Operating weight			kg(lb)	11550(2550)
Bucket capacity		Struck	$m^3(yd^3)$	1.78(2.3)
		Heaped		2.1(2.7)
Overall length		A	mm(ft-in)	7270(23' 7")
Overall width		B		2550(8' 4")
Overall height		C		3260(10' 8")
Ground clearance		D		417(1' 4")
Wheelbase		E		2900(9' 6")
Tread		F		1900(6' 3")
Dump clearance at 45°		G		2850(9' 4")
Dump reach(Full lift)		H		970(3' 2")
Width over tires		I		2430(8' 0")
Dump angle		J	Degree (°)	48
Roll back angle(Carry position)		K		47
Cycle time		Lift(With load)	sec	5.5
		Dump(With load)		1.2
		Lower(Empty)		2.8
Maximum travel speed			km/hr(mph)	36.3(22.7)
Braking distance			m(ft-in)	12(39' 4")
Minimum turning radius(Center of outside tire)				5.03(16' 6")
Gradability			Degree (°)	30
Travel speed	Forward	First gear	km/hr(mph)	6.4(4.0)
		Second gear		11.7(7.3)
		Third gear		22.3(13.9)
		Fourth gear		36.3(22.7)
	Reverse	First gear		6.8(4.2)
		Second gear		12.4(7.7)
		Third gear		23.4(14.6)

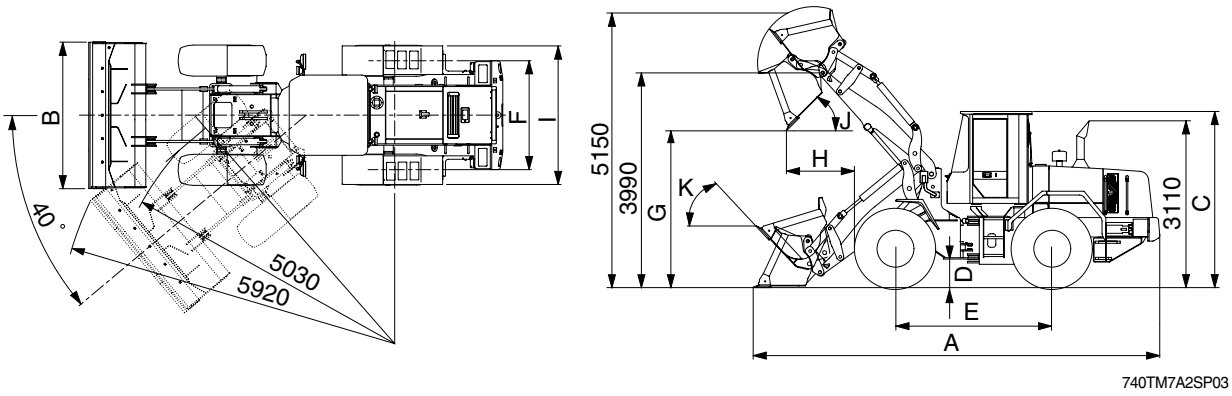
WITH BOLT-ON CUTTING EDGE TYPE BUCKET(HL740XTD-7A)



7407A2SP03

Description			Unit	Specification
Operating weight			kg(lb)	11850(26120)
Bucket capacity		Struck	$m^3(yd^3)$	1.78(2.3)
		Heaped		2.1(2.7)
Overall length		A	mm(ft-in)	7750(25' 5")
Overall width		B		2550(8' 4")
Overall height		C		3260(10' 8")
Ground clearance		D		417(1' 4")
Wheelbase		E		2900(9' 6")
Tread		F		1900(6' 3")
Dump clearance at 45°		G		3270(10' 9")
Dump reach(Full lift)		H		965(3' 2")
Width over tires		I		2430(8' 0")
Dump angle		J	Degree (°)	47
Roll back angle(Carry position)		K		49
Cycle time		Lift(With load)	sec	5.5
		Dump(With load)		1.3
		Lower(Empty)		2.8
Maximum travel speed			km/hr(mph)	36.3(22.7)
Braking distance			m(ft-in)	12(39' 4")
Minimum turning radius(Center of outside tire)				5.03(16' 6")
Gradability			Degree (°)	30
Travel speed	Forward	First gear	km/hr(mph)	6.4(4.0)
		Second gear		11.7(7.3)
		Third gear		22.3(13.9)
		Fourth gear		36.3(22.7)
	Reverse	First gear		6.8(4.2)
		Second gear		12.4(7.7)
		Third gear		23.4(14.6)

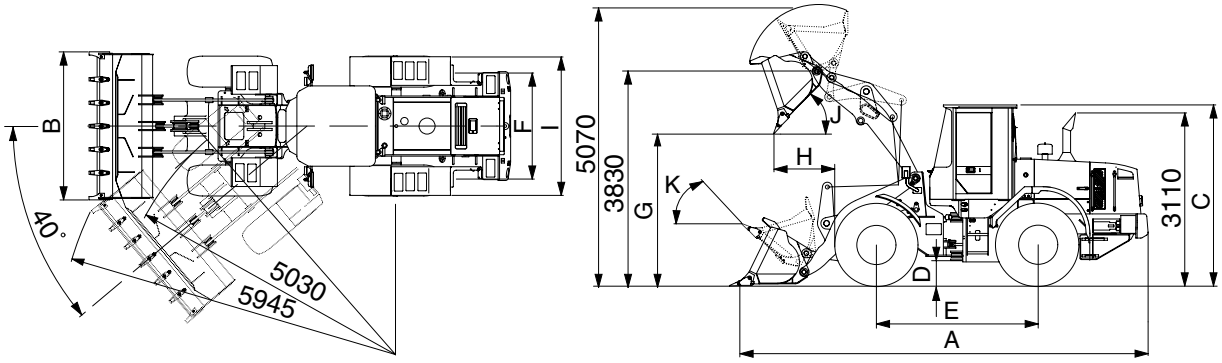
WITH BOLT-ON CUTTING EDGE TYPE BUCKET(HL740TM-7A)



740TM7A2SP03

Description			Unit	Specification
Operating weight			kg(lb)	12100(26700)
Bucket capacity		Struck	$m^3(yd^3)$	1.7(2.2)
		Heaped		2.0(2.6)
Overall length		A	mm(ft-in)	7550(24' 9")
Overall width		B		2550(8' 4")
Overall height		C		3260(10' 8")
Ground clearance		D		417(1' 4")
Wheelbase		E		2900(9' 6")
Tread		F		1900(6' 3")
Dump clearance at 45°		G		2915(9' 7")
Dump reach(Full lift)		H		1275(4' 2")
Width over tires		I		2430(8' 0")
Dump angle		J	Degree (°)	50
Roll back angle(Carry position)		K		54
Cycle time		Lift(With load)	sec	5.5
		Dump(With load)		1.4
		Lower(Empty)		2.7
Maximum travel speed			km/hr(mph)	36.3(22.7)
Braking distance			m(ft-in)	12(39' 4")
Minimum turning radius(Center of outside tire)				5.03(16' 6")
Gradability			Degree (°)	30
Travel speed	Forward	First gear	km/hr(mph)	6.4(4.0)
		Second gear		11.7(7.3)
		Third gear		22.3(13.9)
		Fourth gear		36.3(22.7)
	Reverse	First gear		6.8(4.2)
		Second gear		12.4(7.7)
		Third gear		23.4(14.6)

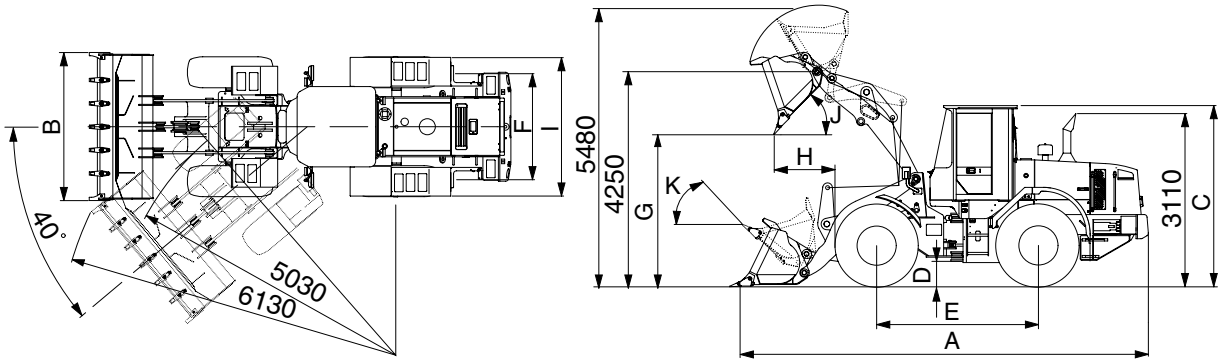
2) WITH TOOTH TYPE BUCKET(HL740-7A)



7407A2SP04

Description			Unit	Specification
Operating weight			kg(lb)	11550(25460)
Bucket capacity		Struck	$m^3(yd^3)$	1.7(2.2)
		Heaped		2.0(2.6)
Overall length		A	mm(ft-in)	7370(24' 2")
Overall width		B		2600(8' 6")
Overall height		C		3260(10' 8")
Ground clearance		D		417(1' 4")
Wheelbase		E		2900(9' 6")
Tread		F		1900(6' 3")
Dump clearance at 45°		G		2770(9'11")
Dump reach(Full lift)		H		1035(3' 5")
Width over tires		I		2430(8' 0")
Dump angle		J	Degree (°)	48
Roll back angle(Carry position)		K		47
Cycle time		Lift(With load)	sec	5.5
		Dump(With load)		1.2
		Lower(Empty)		2.8
Maximum travel speed			km/hr(mph)	36.3(22.7)
Braking distance			m(ft-in)	12(39' 4")
Minimum turning radius(Center of outside tire)				5.03(16' 6")
Gradability			Degree (°)	30
Travel speed	Forward	First gear	km/hr(mph)	6.4(4.0)
		Second gear		11.7(7.3)
		Third gear		22.3(13.9)
		Fourth gear		36.3(22.7)
	Reverse	First gear		6.8(4.2)
		Second gear		12.4(7.7)
		Third gear		23.4(14.6)

WITH TOOTH TYPE BUCKET(HL740XTD-7A)



7407A2SP05

Description			Unit	Specification
Operating weight			kg(lb)	11850(26120)
Bucket capacity		Struck	$m^3(yd^3)$	1.7(2.2)
		Heaped		2.0(2.6)
Overall length		A	mm(ft-in)	7890(25' 11")
Overall width		B		2600(8' 6")
Overall height		C		3260(10' 8")
Ground clearance		D		417(1' 4")
Wheelbase		E		2900(9' 6")
Tread		F		1900(6' 3")
Dump clearance at 45°		G		3170(10' 5")
Dump reach(Full lift)		H		1045(3' 5")
Width over tires		I		2430(8' 0")
Dump angle		J	Degree (°)	47
Roll back angle(Carry position)		K		49
Cycle time		Lift(With load)	sec	5.5
		Dump(With load)		1.3
		Lower(Empty)		2.8
Maximum travel speed			km/hr(mph)	36.3(22.7)
Braking distance			m(ft-in)	12(39' 4")
Minimum turning radius(Center of outside tire)				5.03(16' 6")
Gradability			Degree (°)	30
Travel speed	Forward	First gear	km/hr(mph)	6.4(4.0)
		Second gear		11.7(7.3)
		Third gear		22.3(13.9)
		Fourth gear		36.3(22.7)
	Reverse	First gear		6.8(4.2)
		Second gear		12.4(7.7)
		Third gear		23.4(14.6)

3. WEIGHT

Item		kg	lb
Front frame assembly		850	1870
Rear frame assembly		1228	2710
Front fender(LH & RH)		11	24
Counterweight	HL740-7A	520	1150
	HL740XTD-7A / TM-7A	770	1700
Cab assembly		820	1810
Engine assembly		475	1050
Transmission assembly		397	875
Drive shaft(Front)		18	40
Drive shaft(Center)		16	35
Drive shaft(Rear)		13	29
Drive shaft(Upper)		7	15
Front axle(Include differential)		575	1268
Rear axle(Include differential)		560	1235
Tire(20.5-25, 16PR, L3)		203	448
Hydraulic tank assembly		170	375
Fuel tank assembly		306	675
Main pump assembly		32	71
Fan & brake pump assembly		7	15
Main control valve		22	49
Boom assembly	HL740-7A / XTD-7A	725 / 815	1600 / 1800
	HL740TM-7A	663	1460
Bell crank assembly		230	510
Bucket link		37	80
2.1m^3 bucket, with bolt on cutting edge		975	2150
2.0m^3 bucket, with tooth		920	2030
Boom cylinder assembly		97	214
Bucket cylinder assembly		115	254
Steering cylinder assembly		19	42
Seat		40	88
Battery		28	62

4. SPECIFICATION FOR MAJOR COMPONENTS

1) ENGINE

Item	Specification
Model	Cummins QSB6.7
Type	4-cycle turbocharged and charge air-cooled diesel engine.
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	104×132mm(4.1"×5.2")
Piston displacement	6730cc(409cu in)
Compression ratio	17.2 : 1
Rated gross horse power	145hp at 2100rpm
Maximum gross torque at 1400rpm	69kgf · m(500lbf · ft)
Engine oil quantity	16 ℓ (4.2 U.S. gal)
Dry weight	485kg(1069lb)
High idling speed	2230 ± 50rpm
Low idling speed	950 ± 25rpm
Rated fuel consumption	254g/kw · hr
Starting motor	Nippondenso 228000-7902 (24V)
Alternator	Delco Remy 24SI(24V-70Amp)
Battery	2×12V×100Ah

2) MAIN PUMP

Item	Specification
Type	Fixed displacement tandem helical gear pump
Capacity	46+41cc/rev
Maximum operating pressure	220kgf/cm^2(3129psi)
Rated operating speed	2100rpm
Rated output flow	179 ℓ /min(47.3U.S.gpm)

3) FAN AND BRAKE PUMP

Item	Specification	
	Fan	Brake
Type	Fixed displacement tandem helical gear pump	
Capacity	16.8cc/rev	8.2cc/rev
Maximum operating pressure	85kgf/cm^2(1210psi)	150kgf/cm^2(2130psi)
Rated operating speed	2100rpm	
Rated output flow	29 ℓ /min(7.7U.S.gpm)	17 ℓ /min(4.5U.S.gpm)

4) MAIN CONTROL VALVE

Item	Specification
Type	2 spool(sectional block)
Operating method	Hydraulic pilot assist
Main relief valve set pressure	220kgf/cm^2(3129psi)
Overload relief valve set pressure	240kgf/cm^2(3414psi)

5) REMOTE CONTROL VALVE

Item		Specification
Type		Joystick(or with aux lever)
Control pressure	Minimum	3.7kgf/cm^2(52.6psi)
	Maximum	30kgf/cm^2(427psi)

6) CYLINDER

Item		Specification
Boom cylinder	Bore dia × Rod dia × Stroke	ø 120 × ø 70 × 738mm
Bucket cylinder	Bore dia × Rod dia × Stroke	ø 140 × ø 75 × 505mm
Steering cylinder	Bore dia × Rod dia × Stroke	ø 65 × ø 40 × 429mm

7) DYNAMIC POWER TRANSMISSION DEVICES

Item		Specification
Torque converter	Model	ZF 4WG160
	Type	Single-stage, single-phase
Transmission	Type	Full-automatic power shift
	Gear shift	Forward fourth gear, reverse third gear
	Adjustment	Electrical single lever type, kick-down system
Axle	Drive devices	4-wheel drive
	Front	Front fixed location
	Rear	Oscillation ±12° of center pin-loaded
Wheels	Tires	20.5-25, 16PR(L3)
Brakes	Travel	Four-wheel, wet-disc type, full hydraulic
	Parking	Spring applied, hydraulic released brake on front axle
Steering	Type	Full hydraulic, articulated
	Steering angle	40° to both right and left angle, respectively

5. TIGHTENING TORQUE OF MAJOR COMPONENT

No	Items		Size	kgf · m	lbf · ft
1	Engine	Engine mounting bolt(2EA)	M20×2.5	57.9±8.7	419±62.9
2		Engine mounting bolt(Bracket)	M12×1.75	10.7±1.6	77.4±11.6
3		Radiator mounting bolt	M16×2.0	29.7±4.5	215±32.5
4		Fuel tank mounting bolt	M16×2.5	29.7±4.5	215±32.5
5		Air cleaner mounting bolt(4EA)	M10×1.5	6.9±1.4	49.9±10.1
6	Hydraulic system	Main pump housing mounting bolt	M12×1.75	12.8±3.0	92.6±21.7
7		Main control valve mounting bolt	M12×1.75	12.8±3.0	92.6±21.7
8		Steering unit mounting bolt	M10×1.5	6.9±1.4	49.9±10.1
9		Priority valve	M 8×1.25	2.5±0.5	18.1±3.6
10		Brake valve mounting bolt	M10×1.5	6.9±1.4	49.9±10.1
11		Fan and brake pump mounting bolt	M10×1.5	6.9±1.4	49.9±10.1
12		Cut-off valve mounting bolt	M12×1.75	12.8±3.0	92.6±21.7
13		Remote control lever mounting bolt	M 6×1.0	1.1±0.2	8.0±1.4
14		Pilot supply unit mounting bolt	M 8×1.25	2.5±0.5	18.1±3.6
15		Safety valve	M 8×1.25	2.5±0.5	18.1±3.6
16		Hydraulic oil tank mounting bolt	M16×2.0	29.7±4.5	215±32.5
17		Transmission mounting bolt(Bracket, front)	M20×2.5	57.9±8.7	419±62.9
18	Power train system	Transmission mounting bolt(Bracket, rear)	M16×2.0	18.4±2.0	133±14.5
19		Front axle mounting bolt, nut	M24×2.0	100±15	723±109
20		Rear axle support mounting bolt, nut	M24×2.0	100±15	723±109
21		Tire mounting nut(20.5-25 16PR, L3)	M22×1.5	70±2.0	506±15
22		Drive shaft joint mounting bolt	3/8-24UNF	6.0±0.8	43.4±5.8
23		Counterweight mounting bolt, nut	M30×3.5	199±29.9	1439±216
24	Others	Operator's seat mounting bolt	M 8×1.25	3.4±0.8	24.6±5
25		ROPS Cab mounting bolt(4EA)	M27×2.0	55±5	397±36.2

6. TORQUE CHART

Use following table for unspecified torque.

1) BOLT AND NUT

(1) Coarse thread

Bolt size	8T		10T	
	kgf · m	lbf · ft	kgf · m	lbf · ft
M 6 × 1.0	0.85 ~ 1.25	6.15 ~ 9.04	1.14 ~ 1.74	8.2 ~ 12.6
M 8 × 1.25	2.0 ~ 3.0	14.5 ~ 21.7	2.73 ~ 4.12	19.7 ~ 29.8
M10 × 1.5	4.0 ~ 6.0	28.9 ~ 43.4	5.5 ~ 8.3	39.8 ~ 60
M12 × 1.75	7.4 ~ 11.2	53.5 ~ 79.5	9.8 ~ 15.8	71 ~ 114
M14 × 2.0	12.2 ~ 16.6	88.2 ~ 120	16.7 ~ 22.5	121 ~ 167
M16 × 2.0	18.6 ~ 25.2	135 ~ 182	25.2 ~ 34.2	182 ~ 247
M18 × 2.5	25.8 ~ 35.0	187 ~ 253	35.1 ~ 47.5	254 ~ 343
M20 × 2.5	36.2 ~ 49.0	262 ~ 354	49.2 ~ 66.6	356 ~ 482
M22 × 2.5	48.3 ~ 63.3	350 ~ 457	65.8 ~ 98.0	476 ~ 709
M24 × 3.0	62.5 ~ 84.5	452 ~ 611	85.0 ~ 115	615 ~ 832
M30 × 3.5	124 ~ 168	898 ~ 1214	169 ~ 229	1223 ~ 1655
M36 × 4.0	174 ~ 236	1261 ~ 1703	250 ~ 310	1808 ~ 2242

(2) Fine thread

Bolt size	8T		10T	
	kgf · m	lbf · ft	kgf · m	lbf · ft
M 8 × 1.0	2.17 ~ 3.37	15.7 ~ 24.3	3.04 ~ 4.44	22.0 ~ 32.0
M10 × 1.25	4.46 ~ 6.66	32.3 ~ 48.2	5.93 ~ 8.93	42.9 ~ 64.6
M12 × 1.25	7.78 ~ 11.58	76.3 ~ 83.7	10.6 ~ 16.0	76.6 ~ 115
M14 × 1.5	13.3 ~ 18.1	96.2 ~ 130	17.9 ~ 24.1	130 ~ 174
M16 × 1.5	19.9 ~ 26.9	144 ~ 194	26.6 ~ 36.0	193 ~ 260
M18 × 1.5	28.6 ~ 43.6	207 ~ 315	38.4 ~ 52.0	278 ~ 376
M20 × 1.5	40.0 ~ 54.0	289 ~ 390	53.4 ~ 72.2	386 ~ 522
M22 × 1.5	52.7 ~ 71.3	381 ~ 515	70.7 ~ 95.7	512 ~ 692
M24 × 2.0	67.9 ~ 91.9	491 ~ 664	90.9 ~ 123	658 ~ 890
M30 × 2.0	137 ~ 185	990 ~ 1338	182 ~ 248	1314 ~ 1795
M36 × 3.0	192 ~ 260	1389 ~ 1879	262 ~ 354	1893 ~ 2561

2) PIPE AND HOSE(FLARE TYPE)

Thread size	Width across flat(mm)	kgf · m	lbf · ft
1/4"	19	4	28.9
3/8"	22	5	36.2
1/2"	27	9.5	68.7
3/4"	36	18	130
1"	41	21	152
1-1/4"	50	35	253

3) PIPE AND HOSE(ORFS TYPE)

Thread size	Width across flat(mm)	kgf · m	lbf · ft
9/16-18	19	4	28.9
11/16-16	22	5	36.2
13/16-16	27	9.5	68.7
1-3/16-12	36	18	130
1-7/16-12	41	21	152
1-11/16-12	50	35	253

4) FITTING

Thread size	Width across flat(mm)	kgf · m	lbf · ft
1/4"	19	4	28.9
3/8"	22	5	36.2
1/2"	27	9.5	68.7
3/4"	36	18	130
1"	41	21	152
1-1/4"	50	35	253

7. RECOMMENDED LUBRICANTS

Use only oils listed below or equivalent.
Do not mix different brand oil.

Service point	Kind of fluid	Capacity ℓ (U.S. gal)	Ambient temperature ˚C(˚F)
			-20 (-4) / -10 (14) / 0 (32) / 10 (50) / 20 (68) / 30 (86) / 40 (104)
Engine oil pan	Engine oil	16(4.2)	SAE 30 SAE 10W SAE 10W-30 SAE 15W-40
Torque converter Transmission	Oil	26(6.7)	SAE 10W-30 SAE 15W-40
Axle	Gear oil	Front : 21.2(5.6) Rear : 21.2(5.6)	SAE 80W-90LS/API GL-5
Hydraulic tank	Hydraulic oil	Tank: 105(27.7) System: 165(44)	ISO VG 32 ISO VG 46 ISO VG 68
Fuel tank	Diesel fuel	228(60.2)	ASTM D975 NO. 1 ASTM D975 NO. 2
Fitting (Grease nipple)	Grease	As required	NLGI NO. 1 NLGI NO. 2
Radiator	Mixture of antifreeze and water 50 : 50	35(9.2)	Ethylene glycol base permanent type