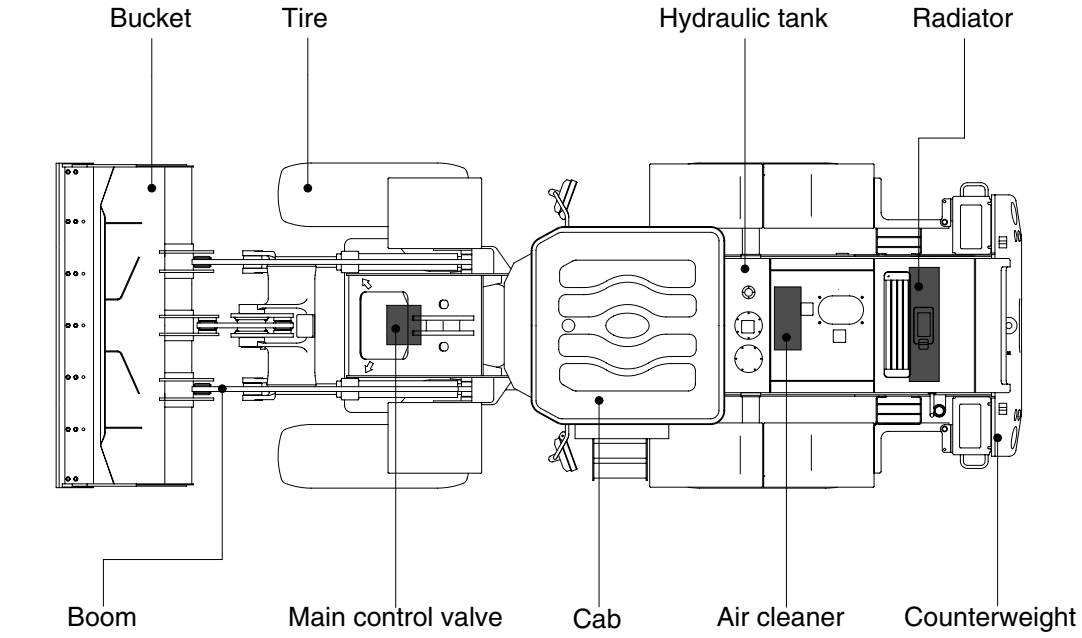
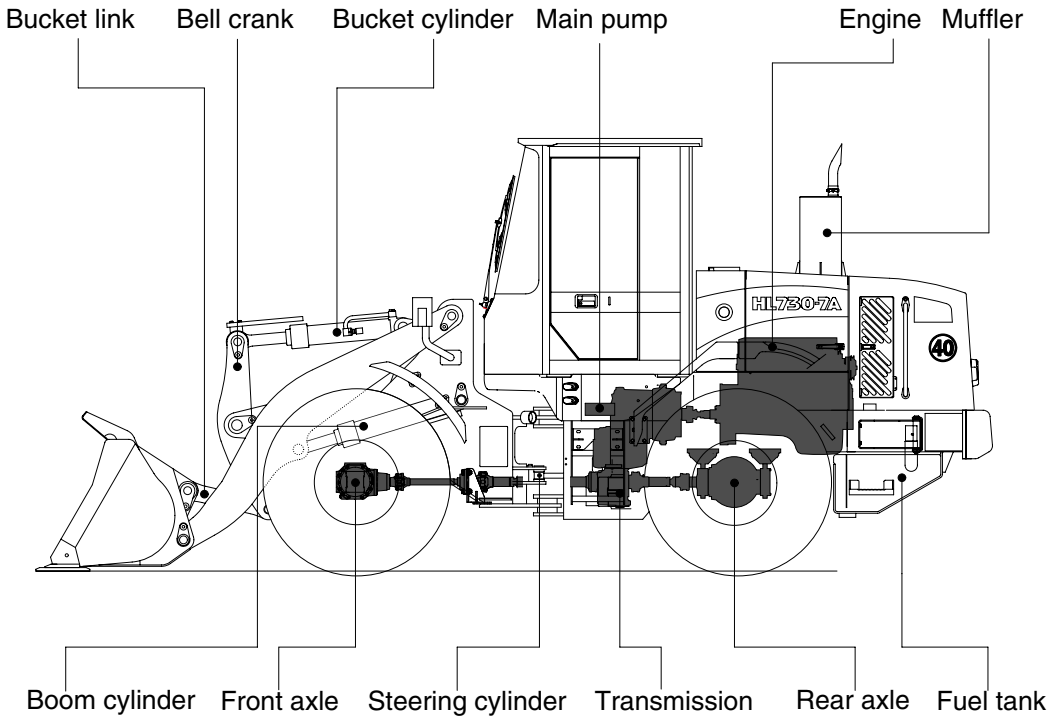
GROUP 2 SPECIFICATION

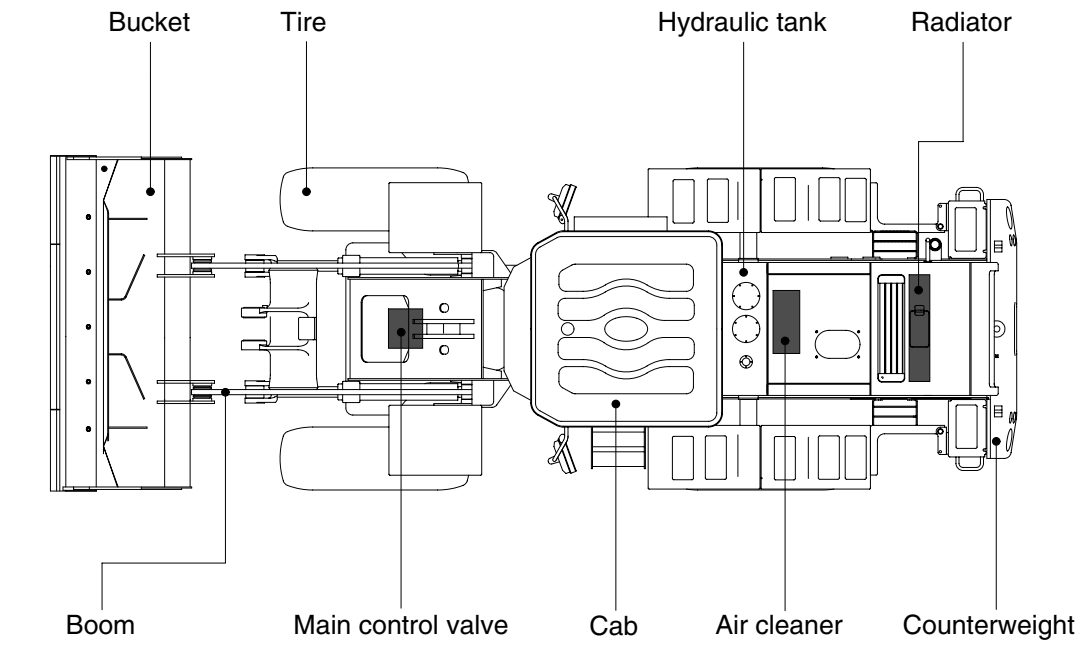
1. MAJOR COMPONENT(HL730-7A, HL730XTD-7A)

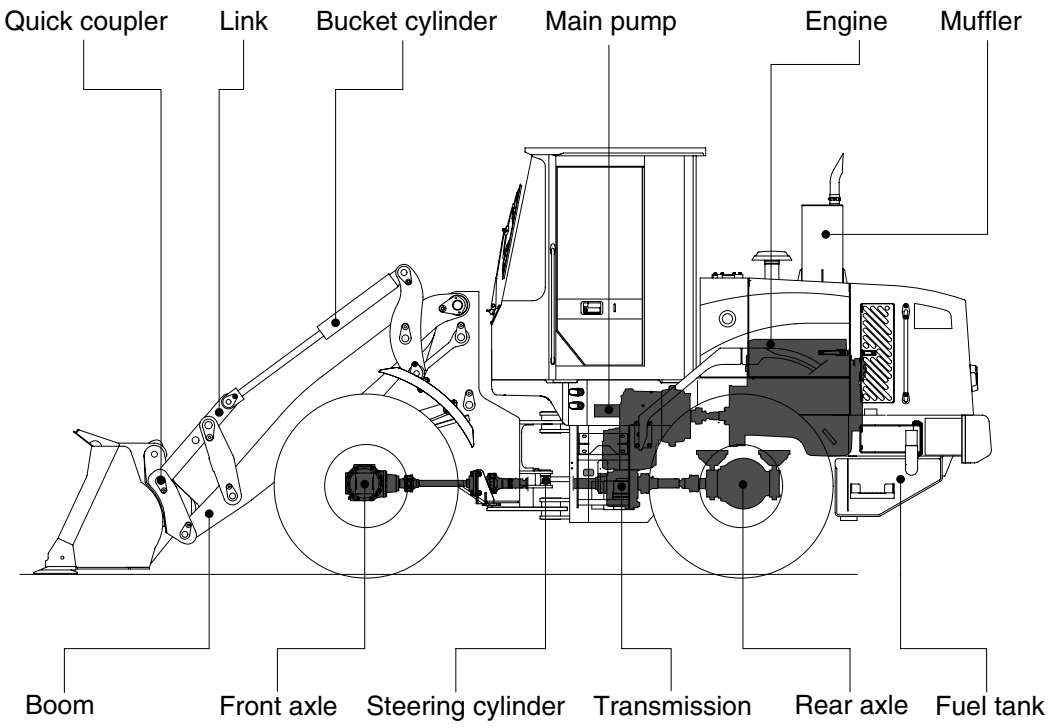




7307A2SP01

MAJOR COMPONENT(HL730TM-7A)

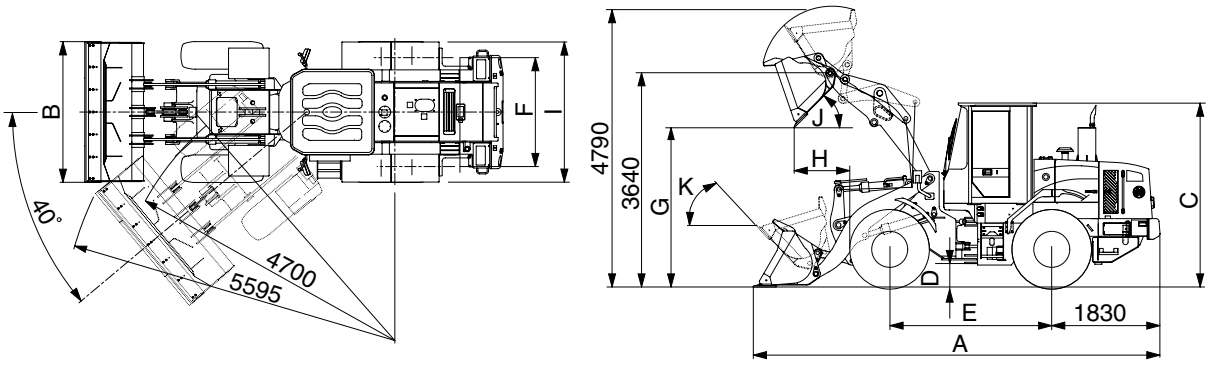




730TM7A2SP01

2. SPECIFICATIONS

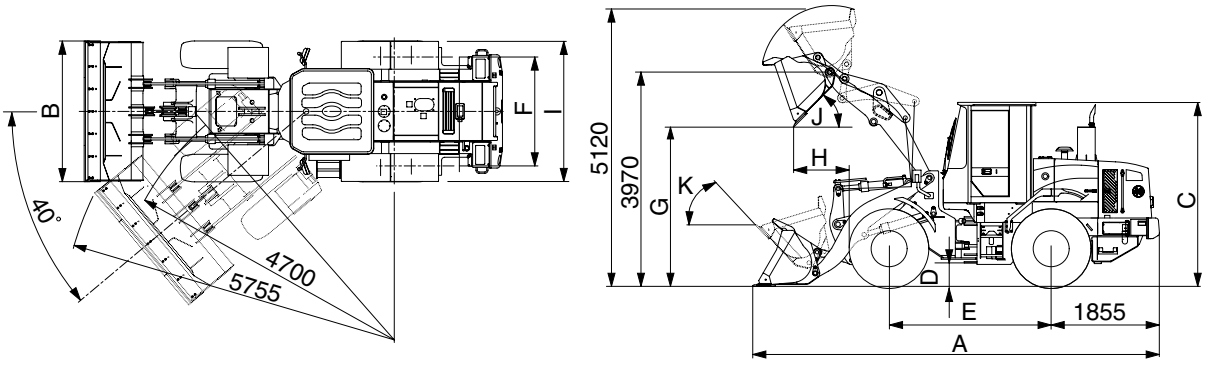
1) WITH BOLT-ON CUTTING EDGE TYPE BUCKET(HL730-7A)



7307A2SP02

Description			Unit	Specification
Operating weight			kg(lb)	9700(21400)
Bucket capacity		Struck	$m^3(yd^3)$	1.5(2.0)
		Heaped		1.8(2.4)
Overall length		A	mm(ft-in)	6850(22' 6")
Overall width		B		2450(8' 0")
Overall height		C		3170(10' 5")
Ground clearance		D		370(1' 3")
Wheelbase		E		2750(9' 0")
Tread		F		1850(6' 0")
Dump clearance at 45°		G		2730(8' 11")
Dump reach(Full lift)		H		1005(3' 4")
Width over tires		I		2295(7' 6")
Dump angle		J	Degree (°)	48
Roll back angle(Carry position)		K		48
Cycle time		Lift(With load)	sec	5.6
		Dump(With load)		1.0
		Lower(Empty)		2.8
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)				4.7(15' 5")
Gradability			Degree (°)	30
Travel speed	Forward	First gear	km/hr(mph)	6.2(3.9)
		Second gear		11.4(7.1)
		Third gear		22.1(13.7)
		Fourth gear		36.0(22.4)
	Reverse	First gear		6.5(4.0)
		Second gear		12.0(7.5)
		Third gear		23.1(14.4)

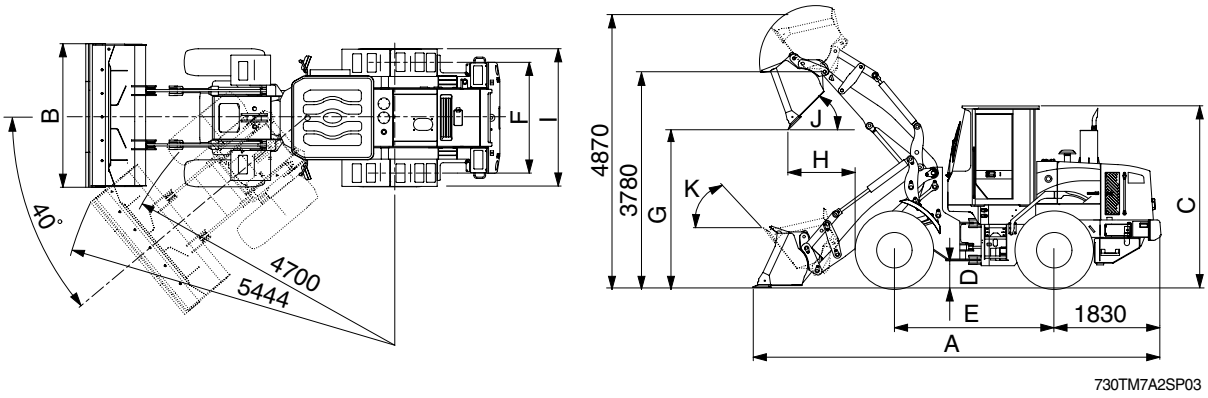
WITH BOLT-ON CUTTING EDGE TYPE BUCKET(HL730XTD-7A)



7307A2SP02-1

Description			Unit	Specification
Operating weight			kg(lb)	9900(21830)
Bucket capacity		Struck	$m^3(yd^3)$	1.5(2.0)
		Heaped		1.8(2.4)
Overall length		A	mm(ft-in)	7200(23' 7")
Overall width		B		2450(8' 0")
Overall height		C		3170(10' 5")
Ground clearance		D		370(1' 3")
Wheelbase		E		2750(9' 0")
Tread		F		1850(6' 0")
Dump clearance at 45°		G		3060(10' 0")
Dump reach(Full lift)		H		1010(3' 4")
Width over tires		I		2295(7' 6")
Dump angle		J	Degree (°)	48
Roll back angle(Carry position)		K		49
Cycle time		Lift(With load)	sec	5.6
		Dump(With load)		1.0
		Lower(Empty)		2.8
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)				4.7(15' 5")
Gradability			Degree (°)	30
Travel speed	Forward	First gear	km/hr(mph)	6.2(3.9)
		Second gear		11.4(7.1)
		Third gear		22.1(13.7)
		Fourth gear		36.0(22.4)
	Reverse	First gear		6.5(4.0)
		Second gear		12.0(7.5)
		Third gear		23.1(14.4)

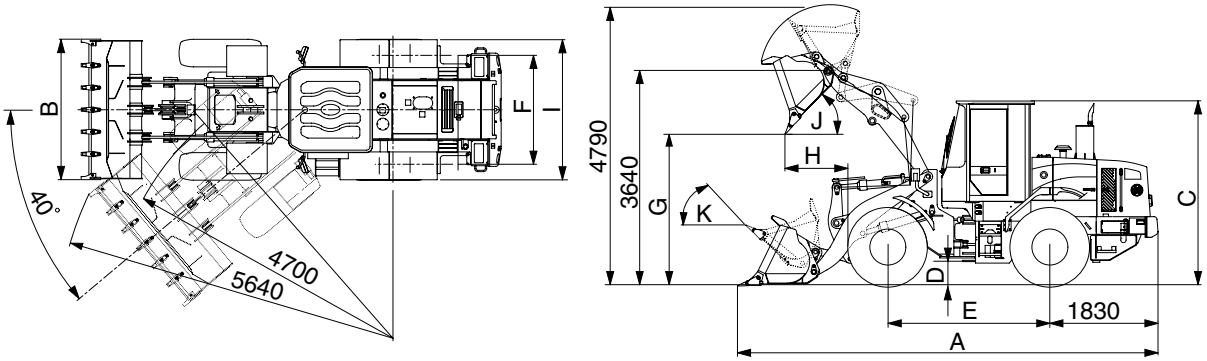
WITH BOLT-ON CUTTING EDGE TYPE BUCKET(HL730TM-7A)



730TM7A2SP03

Description		Unit	Specification
Operating weight		kg(lb)	10000(22050)
Bucket capacity	Struck	$m^3(yd^3)$	1.4(1.8)
	Heaped		1.6(2.1)
Overall length	A	mm(ft-in)	7000(23' 0")
Overall width	B		2400(7'10")
Overall height	C		3170(10' 5")
Ground clearance	D		370(1' 3")
Wheelbase	E		2750(9' 0")
Tread	F		1850(6' 0")
Dump clearance at 45°	G		2785(9' 2")
Dump reach(Full lift)	H		1140(3' 9")
Width over tires	I		2295(7' 6")
Dump angle	J	Degree (°)	50
Roll back angle(Carry position)	K		54
Cycle time	Lift(With load)	sec	5.4
	Dump(With load)		1.4
	Lower(Empty)		2.4
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)			4.7(15' 5")
Gradability		Degree (°)	30
Travel speed	Forward - First gear	km/hr(mph)	6.2(3.9)
	Forward - Second gear		11.4(7.1)
	Forward - Third gear		22.1(13.7)
	Forward - Fourth gear		36.0(22.4)
	Reverse - First gear		6.5(4.0)
	Reverse - Second gear		12.0(7.5)
	Reverse - Third gear		23.1(14.4)

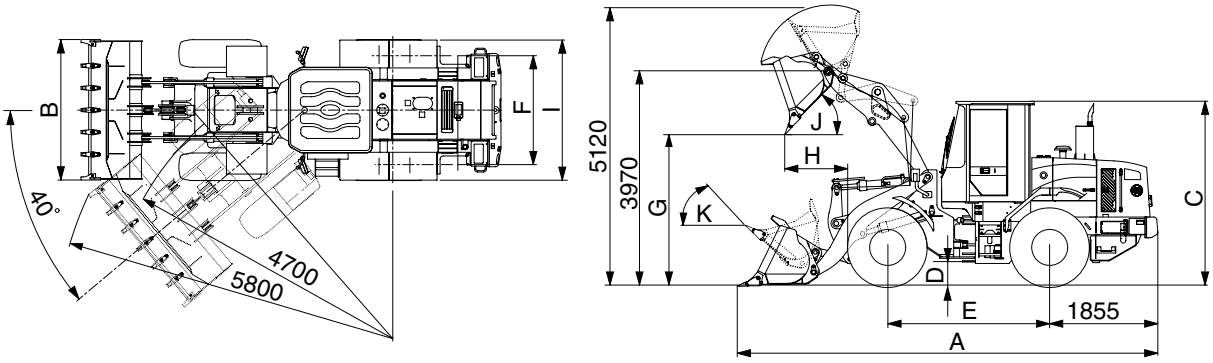
2) WITH TOOTH TYPE BUCKET(HL730-7A)



7307A2SP04

Description			Unit	Specification
Operating weight			kg(lb)	9700(21400)
Bucket capacity		Struck	$m^3(yd^3)$	1.4(1.9)
		Heaped		1.7(2.2)
Overall length		A	mm(ft-in)	6950(22' 10")
Overall width		B		2480(8' 2")
Overall height		C		3170(10' 5")
Ground clearance		D		370(1' 3")
Wheelbase		E		2750(9' 0")
Tread		F		1850(6' 0")
Dump clearance at 45°		G		2640(8' 8")
Dump reach(Full lift)		H		1075(3' 6")
Width over tires		I		2295(7' 6")
Dump angle		J	Degree (°)	48
Roll back angle(Carry position)		K		48
Cycle time		Lift(With load)	sec	5.6
		Dump(With load)		1.0
		Lower(Empty)		2.8
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)				4.7(15' 5")
Gradability			Degree (°)	30
Travel speed	Forward	First gear	km/hr(mph)	6.2(3.9)
		Second gear		11.4(7.1)
		Third gear		22.1(13.7)
		Fourth gear		36.0(22.4)
	Reverse	First gear		6.5(4.0)
		Second gear		12.0(7.5)
		Third gear		23.1(14.4)

WITH TOOTH TYPE BUCKET(HL730XTD-7A)



7307A2SP04-1

Description			Unit	Specification
Operating weight			kg(lb)	9900(21830)
Bucket capacity		Struck	$m^3(yd^3)$	1.4(1.9)
		Heaped		1.7(2.2)
Overall length		A	mm(ft-in)	7300(23' 11")
Overall width		B		2480(8' 2")
Overall height		C		3170(10' 5")
Ground clearance		D		370(1' 3")
Wheelbase		E		2750(9' 0")
Tread		F		1850(6' 0")
Dump clearance at 45°		G		2970(9' 9")
Dump reach(Full lift)		H		1090(3' 7")
Width over tires		I		2295(7' 6")
Dump angle		J	Degree (°)	48
Roll back angle(Carry position)		K		49
Cycle time		Lift(With load)	sec	5.6
		Dump(With load)		1.0
		Lower(Empty)		2.8
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)				4.7(15' 5")
Gradability			Degree (°)	30
Travel speed	Forward	First gear	km/hr(mph)	6.2(3.9)
		Second gear		11.4(7.1)
		Third gear		22.1(13.7)
		Fourth gear		36.0(22.4)
	Reverse	First gear		6.5(4.0)
		Second gear		12.0(7.5)
		Third gear		23.1(14.4)

3. WEIGHT

Item		kg	lb
Front frame assembly	HL730-7A, HL730XTD-7A	750	1650
	HL730TM-7A	775	1710
Rear frame assembly		1000	2200
Front fender(LH & RH)		20	44
Rear fender(LH & RH)		33	73
Counterweight	HL730-7A	300	660
	HL730XTD-7A, HL730TM-7A	410	900
Cab assembly		820	1810
Engine assembly		370	820
Transmission assembly		380	840
Drive shaft(Upper, engine to transmission)		7	15
Drive shaft(Front)		17	37
Drive shaft(Center)		17	37
Drive shaft(Rear)		9	20
Front axle(Include differential)		480	1060
Rear axle(Include differential)		490	1080
Tire(17.5-25, 12PR L3)		130	290
Hydraulic tank assembly		165	360
Fuel tank assembly		240	530
Main pump assembly		26	57
Main control valve		22	49
Boom assembly	HL730-7A / HL730XTD-7A	540 / 620	1190 / 1370
	HL730TM-7A	510	1120
Bell crank assembly		140	310
Bucket link		27	60
1.8m^3 bucket, with bolt on cutting edge		710	1570
1.7m^3 bucket, with tooth		780	1720
Boom cylinder assembly		70	150
Bucket cylinder assembly	HL730-7A, HL730XTD-7A	78	170
	HL730TM-7A	62	140
Steering cylinder assembly		15	30
Seat		40	88
Battery		28	62
Quick coupler assembly		210	460

4. SPECIFICATION FOR MAJOR COMPONENTS

1) ENGINE

Item	Specification
Model	Cummins QSB4.5
Type	4-cycle turbocharged and after cooled diesel engine
Cooling method	Water cooling
Number of cylinders and arrangement	4 cylinders, in-line
Firing order	1-3-2-4
Combustion chamber type	Direct injection type
Cylinder bore × stroke	107×124mm(4.21"×4.88")
Piston displacement	4500cc(275cu in)
Compression ratio	17.2 : 1
Rated gross horse power	125hp at 2100rpm
Maximum gross torque at 1400rpm	56kgf · m(408lbf · ft)
Engine oil quantity	11 ℓ (2.9 U.S. gal)
Dry weight	371kg(818lb)
High idling speed	2230 ± 50rpm
Low idling speed	950 ± 25rpm
Rated fuel consumption	237g/kw · hr
Starting motor	Nippondenso 228000-7902 (24V-3.7kw)
Alternator	Delco Remy 24SI(24V-70Amp)
Battery	2×12V×100Ah

2) MAIN PUMP

Item	Specification
Type	Fixed displacement helical gear pump
Capacity	36+32.3cc/rev
Maximum operating pressure	210kgf/cm^2(2990psi)
Rated operating speed	2100rpm
Rated output flow	140 ℓ /min(40U.S.gpm)

3) FAN AND BRAKE PUMP

Item	Specification	
	Fan	Brake
Type	Fixed displacement tandem helical gear pump	
Capacity	14cc/rev	8.7cc/rev
Maximum operating pressure	100kgf/cm^2(1420psi)	150kgf/cm^2(2130psi)
Rated operating speed	2100rpm	
Rated output flow	29 ℓ /min(7.7U.S.gpm)	18 ℓ /min(4.8U.S.gpm)

4) MAIN CONTROL VALVE

Item	Specification
Type	2 spool(sectional block)
Operating method	Hydraulic pilot assist
Main relief valve set pressure	210kgf/cm^2(2990psi)
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 105 × ø 65 × 772mm
Bucket cylinder	Bore dia × Rod dia × Stroke	ø 120 × ø 70 × 510mm
Steering cylinder	Bore dia × Rod dia × Stroke	ø 60 × ø 35 × 412mm

7) DYNAMIC POWER TRANSMISSION DEVICES

Item		Specification
Torque converter	Model	ZF 4WG130
	Type	Single-stage, single-phase
Transmission	Type	Full-automatic power shift
	Gear shift	Forward fourth gear, reverse third gear
	Control	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	17.5-25, 12PR(L3)
Brakes	Travel	Four-wheel, wet-disc type, full hydraulic
	Parking	Spring applied, hydraulic released brake in 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, nut(4EA)	M16×2.0	29.7±4.5	215±32.5
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	M16×2.0	29.7±4.5	215±32.5
5		Air cleaner mounting bolt(4EA)	M 8×1.25	2.5±0.5	18.1±3.6
6	Hydraulic system	Main pump housing mounting bolt	M14×2.0	19.6±2.9	142±20.9
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	M 8×1.25	2.5±0.5	18.1±3.6
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	Power train system	Transmission mounting bolt(Bracket, front)	M20×2.5	57.9±8.7	419±62.9
18		Transmission mounting bolt(Bracket, rear)	M16×2.0	18.4±2.0	133±14.5
19		Front axle mounting bolt, nut	M24×2.5	100±15	723±109
20		Rear axle support mounting bolt, nut	M24×2.0	100±15	723±109
21		Tire mounting nut(17.5-25, 12PR, L3)	M22×1.5	79±2.5	570±18.1
22		Drive shaft joint mounting bolt	3/8-24UNF	6.0±0.8	43.4±5.8
23	Others	Counterweight mounting bolt, nut	M24×3.0	100±15	723±108
24		Operator's seat mounting bolt	M 8×1.25	3.4±0.8	24.6±5
25		ROPS Cab mounting bolt(4EA)	M24×3.0	27.5±2.5	199±18.1

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 ℃(°F) -20 (-4) / -10 (14) / 0 (32) / 10 (50) / 20 (68) / 30 (86) / 40 (104)
Engine oil pan	Engine oil	11(2.9)	SAE 30 SAE 10W SAE 10W-30 SAE 15W-40
Torque converter Transmission	Oil	20(5.3)	SAE 10W-30 SAE 15W-40
Axle	Gear oil	Front : 18.4(4.9) Rear : 18.4(4.9)	SAE 80W-90LSD/API GL-5
Hydraulic tank	Hydraulic oil	Tank: 90(24) System: 125(33)	ISO VG 32 ISO VG 46 ISO VG 68
Fuel tank	Diesel fuel	202(53)	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	30(7.9)	Ethylene glycol base permanent type

SAE : Society of Automotive Engineers
API : American Petroleum Institute
ISO : International Organization for Standardization
NLGI : National Lubricating Grease Institute
ASTM : American Society of Testing and Material