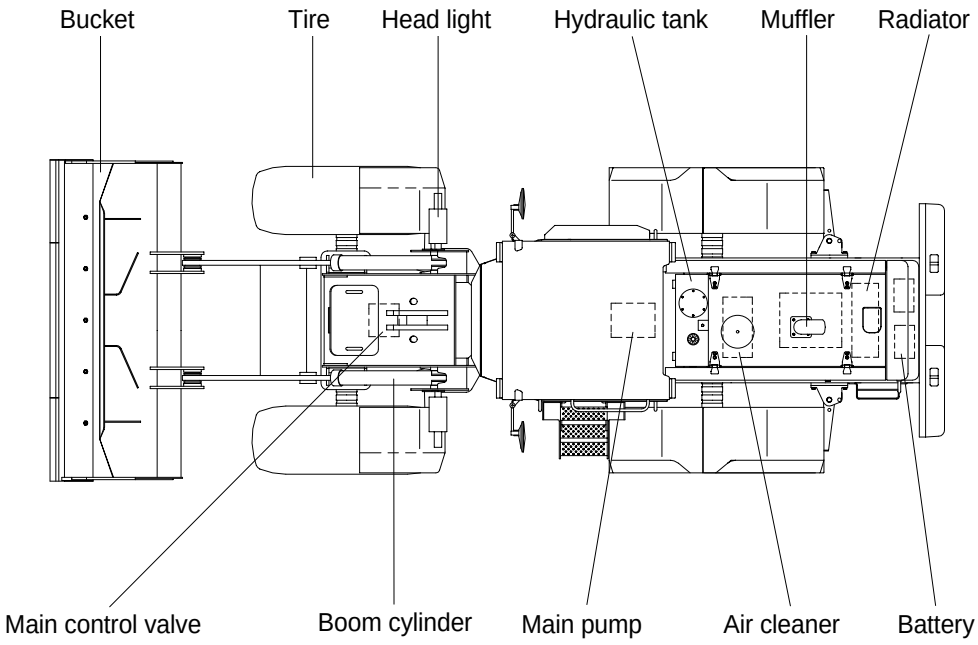
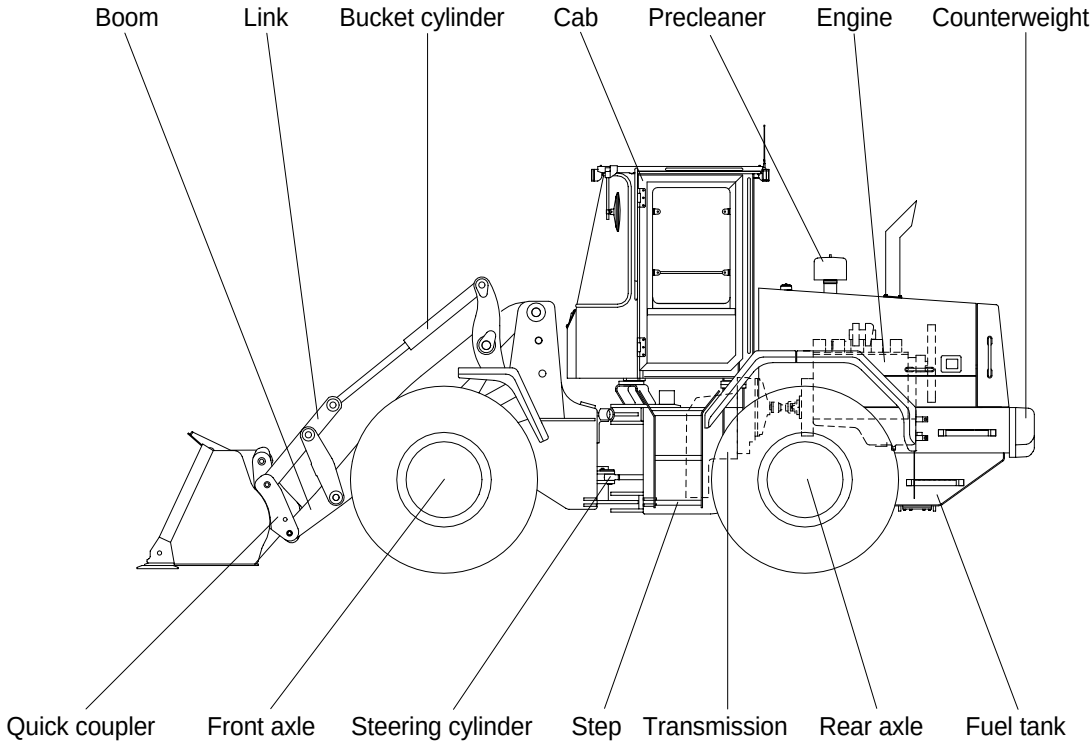
GROUP 2 SPECIFICATION

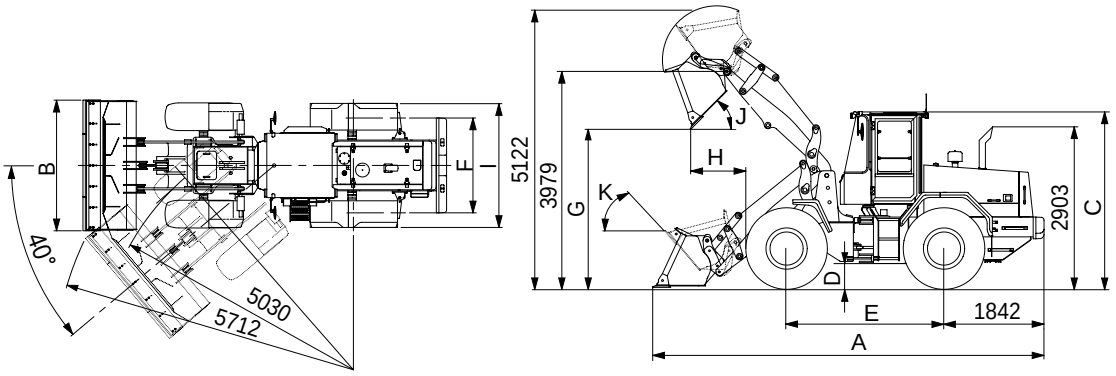
1. MAJOR COMPONENT





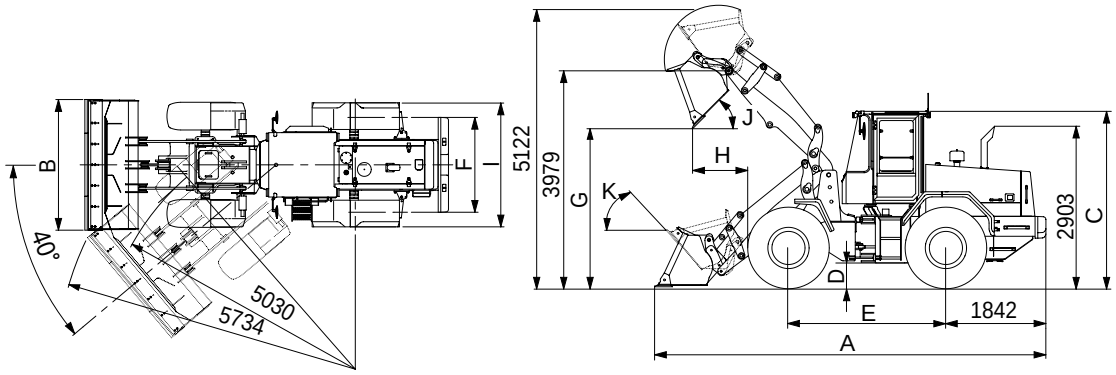
2. SPECIFICATIONS

1) WITHOUT CUTTING EDGE TYPE BUCKET



Description			Unit	Specification
Operating weight			kg(lb)	11530(25410)
Bucket capacity		Struck	$m^3(yd^3)$	1.6(2.1)
		Heaped		1.9(2.5)
Overall length		A	mm(ft-in)	7125(23' 5")
Overall width		B		2550(8' 4")
Overall height		C		3237(10' 7")
Ground clearance		D		417(1' 4")
Wheelbase		E		2900(9' 6")
Tread		F		1900(6' 3")
Dump clearance at 45°		G		2972(9' 9")
Dump reach		H		991(3' 3")
Width over tires		I		2430(8' 0")
Dump angle		J	Degree (°)	45
Roll back angle(Carry position)		K		56
Cycle time		Lift(With load)	sec	5.6
		Dump(With load)		1.4
		Lower(Empty)		2.7
Maximum travel speed			km/hr(mph)	39(24.2)
Braking distance			m(ft-in)	13(42' 8")
Minimum turning radius(Center of outside tire)				5.03(16' 6")
Gradability			Degree (°)	30
Travel speed	Forward	First gear	km/hr(mph)	6.5(4.0)
		Second gear		13.5(8.4)
		Third gear		27.1(16.8)
		Fourth gear		39(24.2)
	Reverse	First gear		6.5(4.0)
		Second gear		13.5(8.4)
		Third gear		27.1(16.8)

2) BOLT-ON CUTTING EDGE TYPE BUCKET



Description			Unit	Specification
Operating weight			kg(lb)	11650(25680)
Bucket capacity		Struck	$m^3(yd^3)$	1.7(2.2)
		Heaped		2.0(2.6)
Overall length		A	mm(ft-in)	7208(23' 8")
Overall width		B		2550(8' 4")
Overall height		C		3237(10' 7")
Ground clearance		D		417(1' 4")
Wheelbase		E		2900(9' 6")
Tread		F		1900(6' 3")
Dump clearance at 45°		G		2911(9' 7")
Dump reach		H		1015(3' 4")
Width over tires		I		2430(8' 0")
Dump angle		J	Degree (°)	45
Roll back angle(Carry position)		K		56
Cycle time		Lift(With load)	sec	5.6
		Dump(With load)		1.4
		Lower(Empty)		2.7
Maximum travel speed			km/hr(mph)	39(24.2)
Braking distance			m(ft-in)	13(42' 8")
Minimum turning radius(Center of outside tire)				5.03(16' 6")
Gradability			Degree (°)	30
Travel speed	Forward	First gear	km/hr(mph)	6.5(4.0)
		Second gear		13.5(8.4)
		Third gear		27.1(16.8)
		Fourth gear		39(24.2)
	Reverse	First gear		6.5(4.0)
		Second gear		13.5(8.4)
		Third gear		27.1(16.8)

3. WEIGHT

Item	kg	lb
Front frame assembly	916	2019
Rear frame assembly	1223	2696
Front fender	23	51
Rear fender	34	75
Counterweight	805	1775
Cab assembly	1000	2205
Engine assembly	435	959
Transmission	350	772
Drive shaft(Engine to transmission)	5.9	13
Drive shaft(Front)	14	31
Drive shaft(Center)	11	24
Drive shaft(Rear)	10	22
Front axle(Include differential)	575	1268
Rear axle(Include differential)	560	1235
Tire(4EA)	1320	2910
Hydraulic tank	100	220
Fuel tank	220	485
Main pump assembly	20	44
Main control valve	22	49
Boom	638	1407
Bucket link	40	88
Quick coupler assy	210	463
2.0m^3 bucket, with bolt on cutting edge	895	1973
1.9m^3 bucket, without cutting edge	775	1709
Boom cylinder assembly(2EA)	132	291
Bucket cylinder assembly(2EA)	94	207
Steering cylinder assembly(2EA)	36	80
Quick coupler cylinder assembly(1EA)	5.5	12
Seat	40	88
Battery	44	97

4. SPECIFICATION FOR MAJOR COMPONENTS

1) ENGINE

Item	Specification
Model	Cummins B5.9-C
Type	4-cycle turbocharged 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	102 × 120mm(4.02" × 4.72")
Piston displacement	5880cc(352.8cu in)
Compression ratio	17.5 : 1
Rated gross horse power	137ps at 2200rpm
Maximum gross torque at 1600rpm	58kgf · m(419lbf · ft)
Engine oil quantity	16.4 ℓ (4.3 U.S. gal)
Dry weight	400kg(881.8lb)
High idling speed	2370 ± 50rpm
Low idling speed	950 ± 50rpm
Rated fuel consumption	157.3g/ps.h
Starting motor	Delco Remy 37MT(24V)
Alternator	DAC HC60(24V-60AMP)
Battery	2 × 12V × 160Ah

2) MAIN PUMP

Item	Specification
Type	Fixed displacement tandem gear pump
Capacity	41+37cc/rev
Maximum operating pressure	220kgf/cm^2(3129psi)
Rated oil quantity	163 ℓ /min(43U.S.gpm)
Rated speed	2200rpm

3) BRAKE PUMP

Item	Specification
Type	Fixed displacement tandem gear pump
Capacity	8cc/rev
Maximum operating pressure	150kgf/cm^2(2130psi)
Rated oil quantity	17 ℓ /min(4.5U.S.gpm)

4) MAIN CONTROL VALVE

Item	Specification
Type	3 spool
Operating method	Hydraulic pilot assist
Main relief valve pressure	220kgf/cm^2(3129psi)
Overload relief valve pressure	240kgf/cm^2(3414psi)

5) REMOTE CONTROL VALVE

Item		Specification
Type		Pressure reducing type
Operating	Minimum	3.7kgf/cm^2(52.6psi)
	Maximum	30kgf/cm^2(427psi)
Single operation stroke	Lever	77mm(3.0in)

6) CYLINDER

Item		Specification
Boom cylinder	Bore dia × Rod dia ×	ø 120 × ø 70 × 684mm
Bucket cylinder	Stroke	ø 100 × ø 50 × 750mm
Steering cylinder	Bore dia × Rod dia ×	ø 65 × ø 40 × 429mm
Quick coupler cylinder	Stroke	ø 50 × ø 25 × 79mm

7) DYNAMIC POWER TRANSMISSION DEVICES

Item		Specification
Torque converter	Model	Clark 13.2 HR24423
	Type	Single-stage, single-phase
Transmission	Type	Semi-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 13° 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, nut	M20 × 2.5	57.9 ± 8.7	419± 63
2		Radiator mounting bolt, nut	M12 × 1.75	12.3 ± 2.5	89.0± 18
3	Hydraulic system	Main pump housing mounting bolt	1/2-13UNC	19.6 ± 2.9	142± 21
4		Main control valve mounting bolt	M12 × 1.75	12.8± 3	92.6± 22
5		Steering unit mounting bolt	3/8-16UNC	3.3± 0.8	23.9± 5.8
6		Priority valve mounting bolt	M 8 × 1.25	2.5 ± 0.5	18.1± 3.6
7		Brake valve mounting bolt	M 8 × 1.25	2.5 ± 0.5	18.1± 3.6
8		Fuel tank mounting bolt	M16 × 2.0	27.9 ± 4.5	202± 33
9		Hydraulic oil tank mounting bolt	M12 × 1.75	12.3 ± 2.5	89.0± 18
10	Power train system	Transmission mounting bolt	M20 × 2.5	57.9 ± 8.7	419± 63
11		Front axle mounting bolt	M20 × 2.0	100± 15	723±108
12		Rear axle support mounting bolt, nut	M24 × 2.0	100± 15	723±108
13		Tire mounting nut	M22 × 1.5	60± 2	434± 15
14		Drive shaft joint mounting bolt, nut	3/8-24UNF	6 ± 0.8	43.4± 5.8
15	Others	Counterweight mounting bolt	M30 × 2.0	199 ± 29.9	1439±216
16		Operator's seat mounting bolt	M 8 × 1.25	3.4 ± 0.8	24.6± 5.8
17		ROPS Cab mounting bolt(4EA)	M24 × 3.0	28± 2.6	203± 19

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

Thread size	Width across flat(mm)	kgf · m	lbf · ft
1/4"	19	3	21.7
3/8"	22	4	28.9
1/2"	27	5	36.2
3/4"	36	12	86.8
1"	41	14	101

3) 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	6	43.4
3/4"	36	13	94.0
1"	41	15	109

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	16.4(4.3)	SAE 30 SAE 10W SAE 10W-30 SAE 15W-40
Torque converter Transmission	Oil	25(6.6)	DEXRON II
Axle	Gear oil	Front : 40(10.6) Rear : 40(10.6)	SAE 80W-90LSD/API GL-5
Hydraulic tank	Hydraulic oil	Tank: 75(19.8) System: 120(31.7)	ISO VG 32 ISO VG 46 ISO VG 68
Fuel tank	Diesel fuel	200(52.8)	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