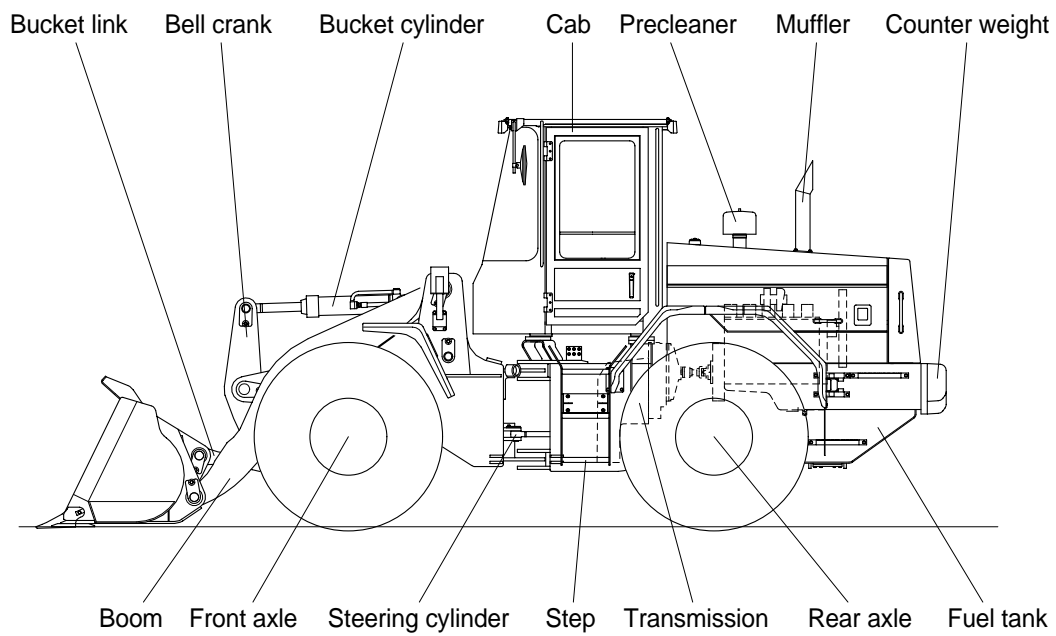
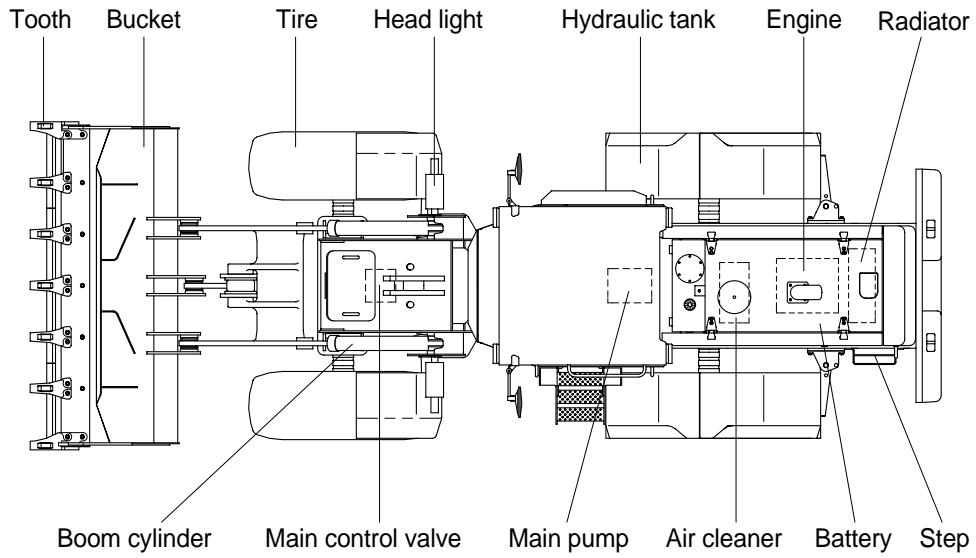


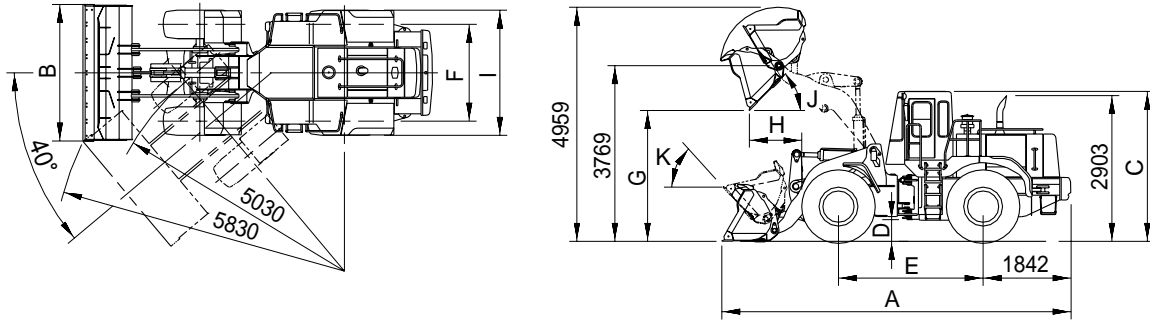
GROUP 2 SPECIFICATION

1. MAJOR COMPONENT



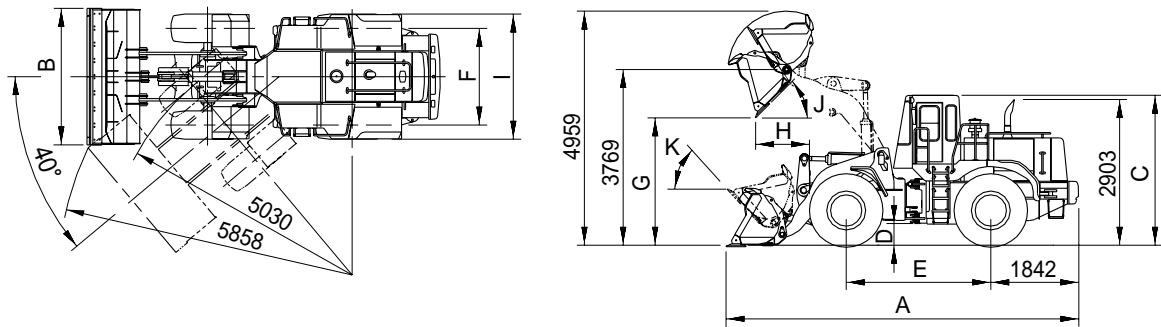
2. SPECIFICATIONS

1) WITHOUT TOOTH AND CUTTING EDGE TYPE BUCKET



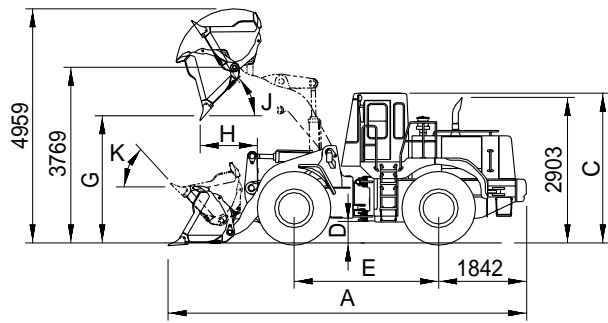
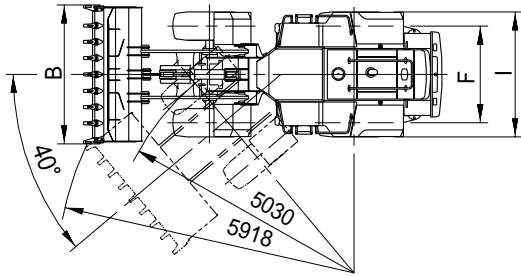
Description		Unit	Specification
Operating weight		kg(lb)	10940(24119)
Bucket capacity	Struck	m ³ (yd ³)	1.6(2.1)
	Heaped		1.9(2.5)
Overall length	A	mm(ft-in)	7025(23' 1")
Overall width	B		2550(8' 4")
Overall height	C		3237(10' 7")
Ground clearance	D		417(1' 4")
Wheelbase	E		2900(9' 6")
Tread	F		1900(6' 3")
Dump clearance at 45°	G		2871(9' 5")
Dump reach	H		850(2' 9")
Width over tires	I		2430(8' 0")
Dump angle	J		Degree (°)
Roll back angle(Carry position)	K	47	
Cycle time	Lift(With load)	sec	5.9
	Dump(With load)		1.1
	Lower(Empty)		2.6
Maximum travel speed		km/hr(mph)	42(26.2)
Braking distance		m(ft-in)	14.5(47' 7")
Minimum turning radius(Center of outside tire)			5.03(16' 6")
Gradability		Degree (°)	30
Travel speed	Forward	First gear	6.4(4.0)
		Second gear	13.5(8.4)
		Third gear	27.2(17.0)
	Reverse	Fourth gear	42(26.2)
		First gear	6.4(4.0)
		Second gear	13.5(8.4)
		Third gear	27.2(17.0)

2) BOLT-ON CUTTING EDGE TYPE BUCKET



Description		Unit	Specification	
Operating weight		kg(lb)	11100(24471)	
Bucket capacity	Struck	m ³ (yd ³)	1.7(2.2)	
	Heaped		2.0(2.6)	
Overall length	A	mm(ft-in)	7095(23' 3")	
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		2804(9' 2")	
Dump reach	H		882(2' 11")	
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	5.9	
	Dump(With load)		1.1	
	Lower(Empty)		2.6	
Maximum travel speed		km/hr(mph)	42(26.2)	
Braking distance		m(ft-in)	14.5(47' 7")	
Minimum turning radius(Center of outside tire)			5.03(16' 6")	
Gradability		Degree (°)	30	
Travel speed	Forward	First gear	6.4(4.0)	
		Second gear	13.5(8.4)	
		Third gear	27.2(17.0)	
		Fourth gear	42(26.2)	
	Reverse	First gear	6.4(4.0)	
		Second gear	13.5(8.4)	
Third gear		27.2(17.0)		

3) WITH TOOTH TYPE BUCKET



Description		Unit	Specification	
Operating weight		kg(lb)	11010(24273)	
Bucket capacity	Struck	m ³ (yd ³)	1.6(2.1)	
	Heaped		1.9(2.5)	
Overall length	A	mm(ft-in)	7218(23' 8")	
Overall width	B		2600(8' 6")	
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		2714(8' 11")	
Dump reach	H		954(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	5.9	
	Dump(With load)		1.1	
	Lower(Empty)		2.6	
Maximum travel speed		km/hr(mph)	42(26.2)	
Braking distance		m(ft-in)	14.5(47' 7")	
Minimum turning radius(Center of outside tire)			5.03(16' 6")	
Gradability		Degree (°)	30	
Travel speed	Forward	First gear	6.4(4.0)	
		Second gear	13.5(8.4)	
		Third gear	27.2(17.0)	
	Reverse	First gear	6.4(4.0)	
		Second gear	13.5(8.4)	
		Third gear	27.2(17.0)	

3. WEIGHT

Item	kg	lb
Front frame assembly	794	1750
Rear frame assembly	1212	2672
Front fender	23	51
Rear fender	34	75
Counterweight	555	1224
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	705	1554
Bell crank	204	450
Bucket link	30	66
1.9m ³ bucket, with bolt on cutting edge	940	2072
2.0m ³ bucket, with tooth	1010	2227
Without tooth and cutting edge	850	1874
Boom cylinder assembly(2EA)	170	375
Bucket cylinder assembly	85	187
Steering cylinder assembly(2EA)	36	79
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	
	up to #0052	#0053 and up
Type	Fixed displacement tandem gear pump	Fixed displacement tandem gear pump
Capacity	2 × 36.65cc/rev	41+37cc/rev
Maximum operating pressure	220kg/cm ² (3129psi)	220kg/cm ² (3129psi)
Rated oil quantity	2 × 77 l /min(20.3U.S.gpm)	163 l /min(43U.S.gpm)
Rated speed	2200rpm	2200rpm

3) BRAKE PUMP

Item	Specification	
	up to #0052	#0053 and up
Type	Fixed displacement tandem gear pump	Fixed displacement tandem gear pump
Capacity	8.4cc/rev	8cc/rev
Maximum operating pressure	150kg/cm ² (2130psi)	150kg/cm ² (2130psi)
Rated oil quantity	18 l /min(4.75U.S.gpm)	17 l /min(4.5U.S.gpm)

4) MAIN CONTROL VALVE

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

5) REMOTE CONTROL VALVE

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

6) CYLINDER

Item	Specification
Boom cylinder	Bore dia × Rod dia × Stroke ∅ 120 × ∅ 70 × 708mm
Bucket cylinder	Bore dia × Rod dia × Stroke ∅ 130 × ∅ 70 × 485mm
Steering cylinder	Bore dia × Rod dia × Stroke ∅ 65 × ∅ 40 × 419mm

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	kg · m	lb · 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 ± 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	93 ± 22
5		Steering unit mounting bolt	3/8-16UNC	3.3 ± 0.8	24 ± 6
6		Priority valve mounting bolt	M 8×1.25	2.5 ± 0.5	18 ± 3.6
7		Brake valve mounting bolt	M 8×1.25	2.5 ± 0.5	18 ± 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 ± 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 ± 5.8
15	Others	Counterweight mounting bolt	M24×2.0	107 ± 16.1	774 ± 116
16		Operator's seat mounting bolt	M 8×1.25	3.4 ± 0.8	25 ± 5
17		ROPS Cab mounting bolt(4EA)	M24×3.0	28 ± 2.6	37 ± 3

6. TORQUE CHART

Use following table for unspecified torque.

1) BOLT AND NUT

(1) Coarse thread

Bolt size	8T		10T	
	kg · m	lb · ft	kg · m	lb · 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	
	kg · m	lb · ft	kg · m	lb · 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)	kg · m	lb · 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)	kg · m	lb · 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 °C (°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								