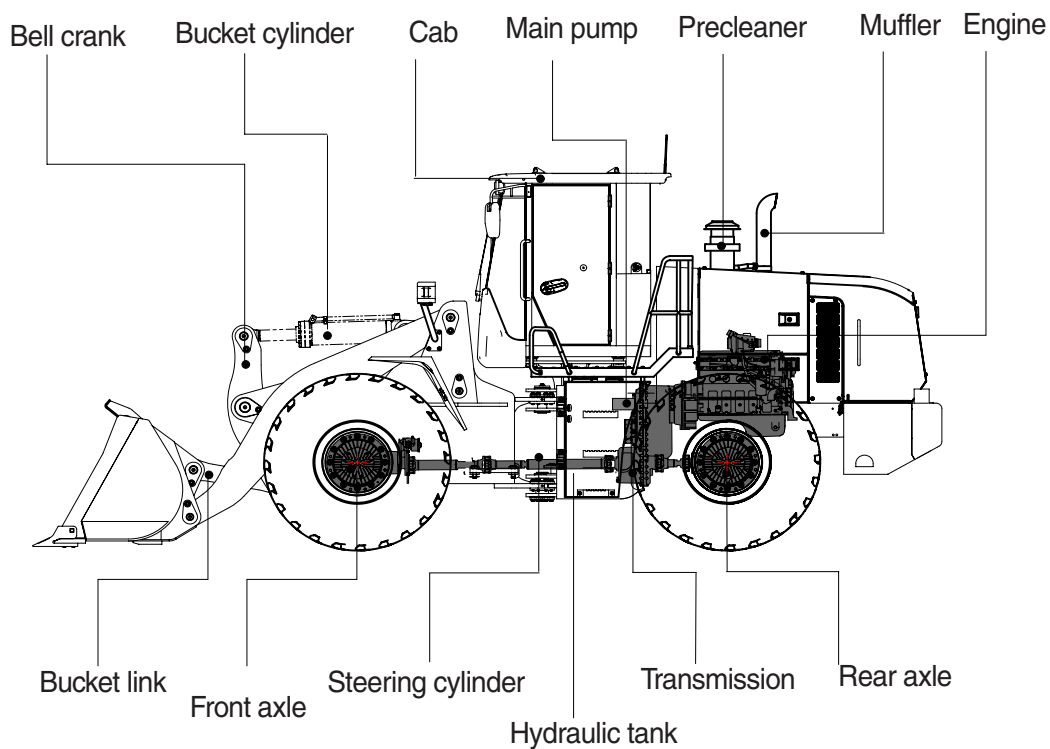
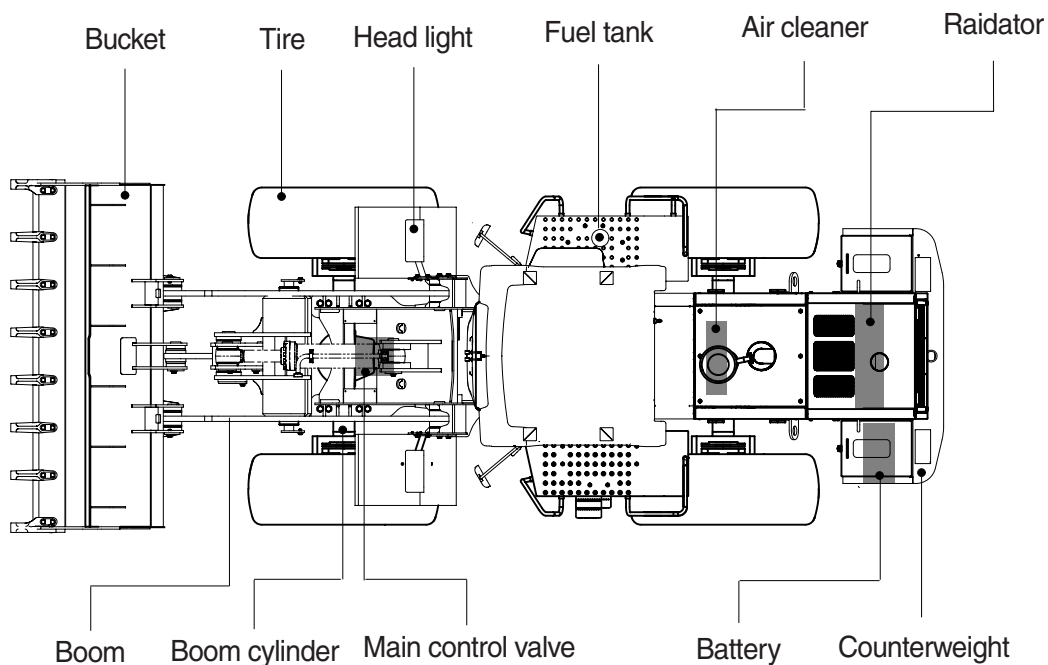


GROUP 2 SPECIFICATION

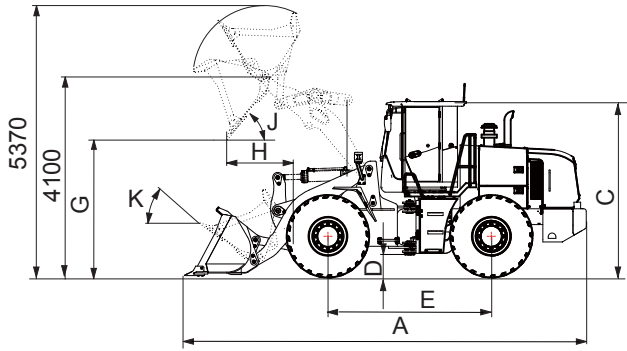
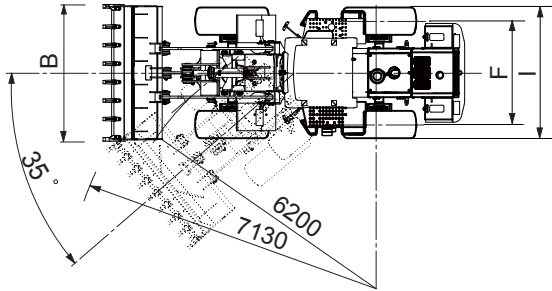
1. MAJOR COMPONENT



850S2SE01

2. SPECIFICATIONS

WITH TOOTH TYPE BUCKET



850S2SE02

Description		Unit	Specification	
Operating weight		kg (lb)	16500 (36380)	
Bucket capacity	Struck	m ³ (yd ³)	2.6 (3.4)	
	Heaped(Filled)		3.0 (3.9)	
Overall length	A	mm (ft-in)	7900 (25' 11")	
Overall width	B		2980 (9' 9")	
Overall height	C		3420 (11' 3")	
Ground clearance	D		410 (1' 4")	
Wheelbase	E		3200 (10' 6")	
Tread	F		2250 (7' 5")	
Dump clearance at 45°	G		3100 (10' 2")	
Dump reach (full lift)	H		1240 (4' 1")	
Width over tires	I		2845 (9' 4")	
Dump angle	J		degree (°)	45
Roll back angle (carry position)	K			49
Cycle time	Lift (with load)	sec	5.6	
	Dump (with load)		1.1	
	Lower (empty)		3.5	
Maximum travel speed		km/hr(mph)	39.0 (24.2)	
Braking distance		m(ft-in)	12.5 (41' 0")	
Minimum turning radius (center of outside tire)			6.2 (20' 4")	
Gradeability		degree (°)	30	
Travel speed	Forward	First gear	10.6 (6.6)	
		Second gear	39.0 (24.2)	
	Reverse	First gear	14.5 (9.0)	

3. SPECIFICATION FOR MAJOR COMPONENTS

1) ENGINE

Item	Specification
Model	Weichai Power WD10G220E23
Type	4-cycle turbocharged diesel engine.
Control type	Mechanical 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	126 × 130 mm (5.0" × 5.1")
Piston displacement	9726 cc (594 cu in)
Compression ratio	17 : 1
Rated gross horse power	162 kW / 2000 rpm
Maximum gross torque at 1300~1500 rpm	900 N · m
Engine oil quantity	20 ℓ (5.3 U.S. gal)
Dry weight	1000 kg (2200 lb)
High idling speed	2200 ± 20 rpm
Low idling speed	750 ± 20 rpm
Rated fuel consumption (at rated)	208 g/kW · hr
Starting motor	24 V-8.1 kW
Alternator	24 V-55 Amp
Battery	2 × 12 V × 120 Ah

2) MAIN PUMP

Item	Specification
Type	Gear pump
Capacity	100 cc/rev
Maximum operating pressure	230 kgf/cm ²
Rated oil quantity	200l/min
Rated speed	2000 rpm

3) STEERING PUMP + PILOT PUMP

	Specification	
	Steering pump	Pilot pump
Type	Gear pump	
Capacity	80cc/rev	10cc/rev
Maximum operating pressure	200kgf/cm ²	30kgf/cm ²
Rated oil quantity	200 l /min	23.5/min

4) MAIN CONTROL VALVE

Item	Specification
Type	2 spool
Operating method	Mechanical control
Main relief valve set pressure	180kgf/cm ²
Overload relief valve set pressure (bucket in)	200kgf/cm ²

5) CYLINDER

Item		Specification
Boom cylinder	Bore dia × Rod dia × Stroke	∅ 160 × ∅ 80 × 835mm
Bucket cylinder	Bore dia × Rod dia × Stroke	∅ 180 × ∅ 100 × 565mm
Steering cylinder	Bore dia × Rod dia × Stroke	∅ 90 × ∅ 50 × 340mm

6) DYNAMIC POWER TRANSMISSION DEVICES

Item		Specification	
Transmission	Model	ZL50	
	Type	Converter	Double-stage, Double-phase
		Transmission	Mechanical, hydraulic
	Gear shift	Forward second gear, reverse first gear	
	Control	Mechanical single lever type	
Axle	Drive devices	4-wheel drive	
	Front	Front fixed location	
	Rear	Oscillation $\pm 11^\circ$ of center pin-loaded	
Wheels	Tires	23.5-25, 16PR (L3)	
Brakes	Travel	Single line gas oil caliper disc brake	
	Parking	Drum type brake on transmission, mechanical control	
Steering	Type	Hydraulic, articulated	
	Steering angle	35° to both right and left angle, respectively	

4. 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 (PF)	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 (UNF)	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

5. TIGHTENING TORQUE OF MAJOR COMPONENT

No.	Descriptions	Bolt size	kgf · m
1	Engine	Engine mounting bolt (2EA)	30.4 ± 4.6
2		Engine mounting bolt (bracket)	9.03 ± 1.8
3		Radiator mounting bolt	21.9 ± 3.3
4		Fuel tank mounting bolt	21.9 ± 3.3
5	Hydraulic system	Main pump housing mounting bolt	9.03 ± 1.8
6		Main control valve mounting bolt	12.3 ± 2.5
7		Steering unit mounting bolt	5.0 ± 1.0
8		Steering valve mounting bolt	5.0 ± 1.0
9		Brake valve mounting bolt	2.5 ± 0.5
10		Control lever mounting bolt	5.0 ± 1.0
11		Hydraulic oil tank mounting bolt	21.9 ± 3.3
12	Power train	Transmission mounting bolt	73.5 ± 11.0
13		Transmission mounting bolt (bracket)	32.7 ± 4.9
14		Torque converter mounting bolt	9.03 ± 1.8
15		Front and rear axle mounting bolt, nut	161 ± 24.2
16		Tire mounting nut	79 ± 2.5
17		Drive shaft joint mounting bolt, nut	13.3 ± 2.7
18	Others	Counterweight mounting bolt	199 ± 29.9
19		Cab mounting bolt	70 ± 10

6. RECOMMENDED OILS

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)							
			-50 (-58)	-30 (-22)	-20 (-4)	-10 (14)	0 (32)	10 (50)	20 (68)	30 (86)
Engine oil pan	Engine oil	20 (5.3)	★ ¹ SAE 5W-40							
			SAE 30							
			SAE 10W							
			SAE 10W-30							
			SAE 15W-40							
Transmission	Gear oil	60 (15.9)	AFT DEXRON III							
Axle	Gear oil	Front : 29 (7.7) Rear : 29 (7.7)	SAE 80W-90							
			SAE 85W-90							
Hydraulic tank	Hydraulic oil	Tank; 170 (44.9) System; 230 (60.8)	★ ¹ ISO VG 15							
			ISO VG 46							
			ISO VG 68							
Fuel tank	Diesel fuel	260 (68.7)	★ ¹ ASTM D975 NO.1							
			ASTM D975 NO.2							
Fitting (grease nipple)	Grease	As required	★ ¹ NLGI NO.1							
			NLGI NO.2							
Radiator (reservoir tank)	Mixture of antifreeze and soft water★ ²	44 (11.6)	Ethylene glycol base permanent type (50 : 50)							
			★ ¹ Ethylene glycol base permanent type (60 : 40)							
Brake (air booster)	Brake oil	Front : 1.0 (0.3) Rear : 1.0 (0.3)	DOT-3 synthetic brake fluid							

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

UTTO : Universal Tractor Transmission Oil

★¹ Cold region

Russia, CIS, Mongolia

★² Soft water

City water or distilled water