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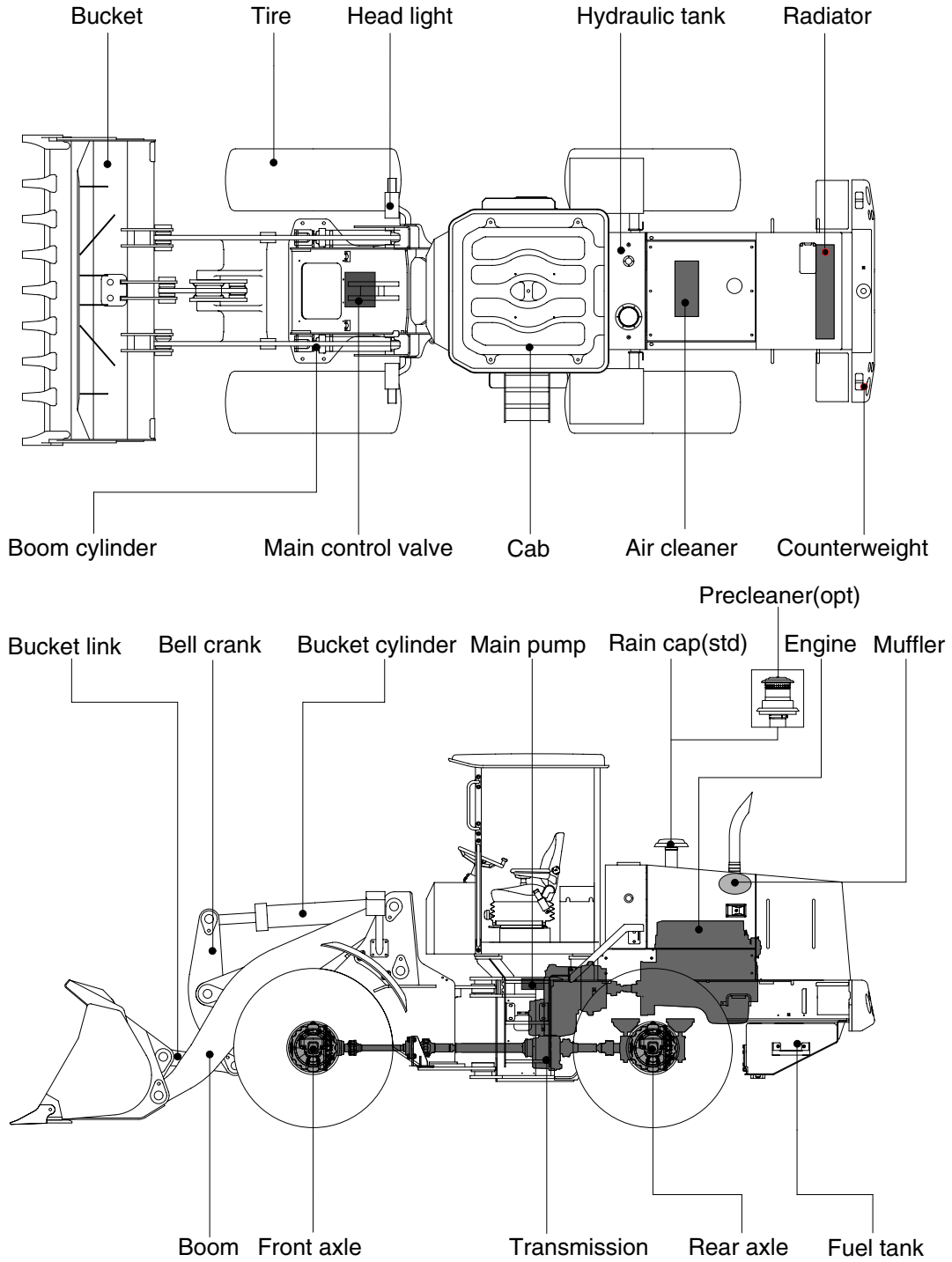
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GROUP 2 SPECIFICATION

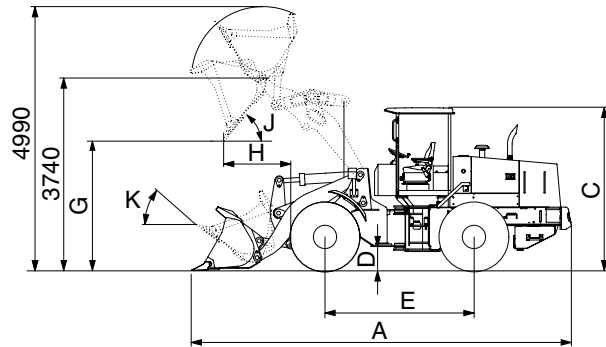
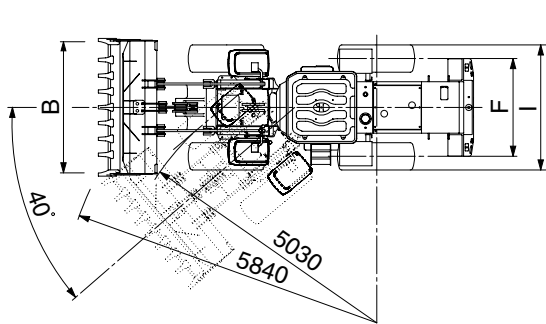
1. MAJOR COMPONENT



7407B2SE01

2. SPECIFICATIONS

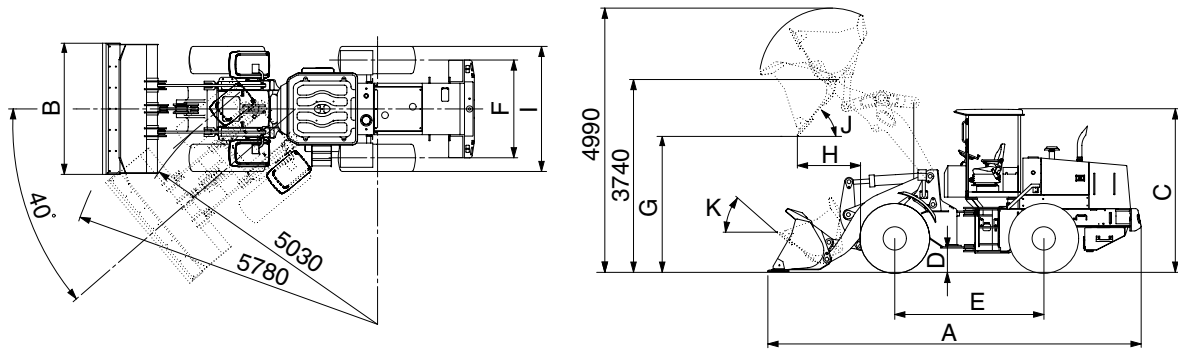
1) WITH TOOTH TYPE BUCKET



7407B2SE02

Description		Unit	Specification
Operating weight (canopy/cab)		kg (lb)	10500/10730 (23100/23650)
Bucket capacity	Struck	m ³ (yd ³)	1.7 (2.2)
	Heaped		2.0 (2.6)
Overall length	A	mm (ft-in)	7385 (24' 3")
Overall width	B		2600 (8' 6")
Overall height	C		3190 (10' 6")
Ground clearance	D		350 (1' 2")
Wheelbase	E		2900 (9' 6")
Tread	F		1900 (6' 3")
Dump clearance at 45°	G		2675 (8' 9")
Dump reach (full lift)	H		1120 (3' 8")
Width over tires	I		2350 (7' 9")
Dump angle	J		Degree (°)
Roll back angle (carry position)	K	49	
Cycle time	Lift(With load)	sec	5.5
	Dump(With load)		1.2
	Lower(Empty)		2.8
Maximum travel speed		km/hr (mph)	37.8 (23.5)
Braking distance		m (ft-in)	11 (36' 1")
Minimum turning radius (center of outside tire)			5.03 (16' 6")
Gradeability		Degree (°)	30
Travel speed	Forward	First gear	6.2 (3.9)
		Second gear	11.4 (7.1)
		Third gear	22.5 (14.0)
		Fourth gear	37.8 (23.5)
	Reverse	First gear	6.5 (4.0)
		Second gear	12.0 (7.5)
Third gear		23.8 (14.8)	

2) WITH BOLT-ON CUTTING EDGE TYPE



7407B2SE03

Description			Unit	Specification		
Operating weight (canopy/cabin)			kg (lb)	10500/ 10730 (23100/23650)		
Bucket capacity	Struck		m ³ (yd ³)	1.8 (2.3)		
	Heaped			2.1 (2.7)		
Overall length	A	mm (ft-in)		7265 (23' 10")		
Overall width	B			2550 (8' 4")		
Overall height	C			3190 (10' 6")		
Ground clearance	D			350 (1' 2")		
Wheelbase	E			2900 (9' 6")		
Tread	F			1900 (6' 3")		
Dump clearance at 45°	G			2760 (9' 1")		
Dump reach (full lift)	H			1045 (3' 5")		
Width over tires	I			2350 (7' 9")		
Dump angle	J			Degree (°)		48
Roll back angle (carry position)	K					49
Cycle time	Lift(With load)		sec	5.5		
	Dump(With load)			1.2		
	Lower(Empty)			2.8		
Maximum travel speed			km/hr (mph)	37.8 (23.5)		
Braking distance			m (ft-in)	11 (36' 1")		
Minimum turning radius (center of outside tire)				5.03 (16' 6")		
Gradeability			Degree (°)	30		
Travel speed	Forward	First gear	km/hr (mph)	6.2 (3.9)		
		Second gear		11.4 (7.1)		
		Third gear		22.5 (14.0)		
		Fourth gear		37.8 (23.5)		
	Reverse	First gear		6.5 (4.0)		
		Second gear		12.0 (7.5)		
Third gear		23.8 (14.8)				

3. WEIGHT

Item	kg	lb
Front frame assembly	870	1920
Rear frame assembly	1210	2670
Front fender (LH & RH)	22	49
Counterweight	530	1170
Canopy assembly	360	790
Cab assembly	585	1290
Engine assembly	453	1000
Transmission assembly	380	840
Drive shaft (upper)	7	15
Drive shaft (front)	18	40
Drive shaft (center)	16	35
Drive shaft (rear)	13	29
Front axle (include differential)	970	2140
Rear axle (include differential)	980	2160
Tire (17.5-25, 12PR, L3)	130	290
Hydraulic tank assembly	170	370
Fuel tank assembly	200	440
Main pump assembly	37	82
Brake pump assembly	7	15
Main control valve	51	112
Boom assembly	770	1700
Bell crank assembly	205	450
Bucket link	38	84
2.1 m ³ bucket, with bolt on cutting edge	940	2070
2.0 m ³ bucket, with tooth	890	1960
2.0 m ³ bucket, without tooth and cutting edge	830	1830
Boom cylinder assembly	100	220
Bucket cylinder assembly	112	250
Steering cylinder assembly	20	44
Seat	40	88
Battery	28	62

4. SPECIFICATION FOR MAJOR COMPONENTS

1) ENGINE

Item	Specification
Model	Cummins 6BTA5.9
Type	4-cycle turbocharged, aftercooled 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	102 × 120 mm (4.02" × 4.72")
Piston displacement	5900 cc (360 cu in)
Compression ratio	17.3 : 1
Rated gross horse power	152 ps at 2200 rpm
Maximum gross torque at 1300 rpm	68 kgf · m (494 lbf · ft)
Engine oil quantity	15 ℓ (3.96 U.S. gal)
Wet weight	453 kg (1000 lb)
High idling speed	2300 ± 50 rpm
Low idling speed	900 ± 50 rpm
Rated fuel consumption	164 g/ps · hr
Starting motor	Prestolite electric (24V-6 kW)
Alternator	Prestolite electric (24V-70 Amp)
Battery	2 × 12V × 120Ah

2) MAIN PUMP

Item	Specification	
	Steering	Loader
Type	Fixed displacement tandem gear pump	
Capacity	40.4 cc/rev	40.4 cc/rev
Maximum operating pressure	210 kgf/cm ² (2990 psi)	
Rated oil quantity	89 ℓ /min (23.5 U.S.gpm)	89 ℓ /min (23.5 U.S.gpm)
Rated speed	2200 rpm	

3) BRAKE PUMP

Item	Specification
Type	Fixed displacement gear pump
Capacity	9 cc/rev
Maximum operating pressure	180 kgf/cm ² (2560 psi)
Rated oil quantity	20 ℓ /min (5.3 U.S.gpm)
Rated speed	2200 rpm

4) MAIN CONTROL VALVE

Item	Specification
Type	2 spool
Operating method	Hydraulic pilot assist
Main relief valve pressure	210 kgf/cm ² (2990 psi)
Overload relief valve pressure	240 kgf/cm ² (3410 psi)

5) REMOTE CONTROL VALVE

Item	Specification	
Type	Pressure reducing type	
Operating	Minimum	5.8 kgf/cm ² (82.5 psi)
	Maximum	19 kgf/cm ² (270 psi)
Single operation stroke	Lever	70 mm (2.8 in)

6) CYLINDER

Item		Specification
Boom cylinder	Bore dia × Rod dia × Stroke	∅ 120 × ∅ 70 × 728 mm
Bucket cylinder	Bore dia × Rod dia × Stroke	∅ 140 × ∅ 75 × 505 mm
Steering cylinder	Bore dia × Rod dia × Stroke	∅ 65 × ∅ 40 × 429 mm

7) DYNAMIC POWER TRANSMISSION DEVICES

Item		Specification	
Transmission	Model	ZF 4WG130	
	Type	Converter	Single-stage, single-phase
		Transmission	Full-automatic power shift
	Torque converter stall ratio	1.87 : 1	
	Gear shift	Forward fourth gear, reverse third gear	
	Adjustment	Electrical single lever type, kick-down system	
	Pump rated flow	95 ℓ /min (25.1 U.S.gpm) at 2000 rpm	
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 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 (rubber, 2EA)	M16×2.0	29.7 ± 4.5	215 ± 32.5
2		Engine mounting bolt, nut (rubber, 2EA)	M20×2.5	57.9 ± 8.7	419 ± 62.9
3		Engine mounting bolt (bracket, 14EA)	M12×1.75	10.7 ± 1.6	77.4 ± 11.6
4		Radiator mounting bolt	M16×2.0	29.7 ± 4.5	215 ± 32.5
5		Fuel tank mounting bolt, nut	M16×2.0	29.7 ± 4.5	215 ± 32.5
6	Hydraulic system	Main pump housing mounting bolt	M12×1.75	12.8 ± 3.0	92.6 ± 21.7
7		Brake pump housing mounting bolt	M10×1.5	6.9 ± 1.4	49.9 ± 10.1
8		Main control valve mounting bolt	M12×1.75	12.8 ± 3.0	92.6 ± 21.7
9		Steering unit mounting bolt	M10×1.5	6.9 ± 1.4	49.9 ± 10.1
10		Priority valve mounting bolt	M8×1.25	2.5 ± 0.5	18.1 ± 3.6
11		Brake valve mounting bolt	M8×1.25	2.5 ± 0.5	18.1 ± 3.6
12		Cut-off valve mounting bolt	M12×1.75	12.8 ± 3.0	92.6 ± 21.7
13		Remote control lever mounting bolt	M6×1.0	1.1 ± 0.2	8.0 ± 1.4
14		Pilot supply unit mounting bolt	M8×1.25	2.5 ± 0.5	18.1 ± 3.6
15		Safety valve mounting bolt	M8×1.25	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, nut (rubber, 4EA)	M20×2.5	57.9 ± 8.7	419 ± 62.9
18		Transmission mounting bolt (bracket, T/C side)	M16×2.0	18.4 ± 2.0	133 ± 14.5
19		Front axle mounting bolt, nut	M24×2.0	100 ± 15	723 ± 108
20		Rear axle support mounting bolt, nut	M24×2.0	100 ± 15	723 ± 108
21		Tire mounting nut	M22×1.5	79 ± 2.5	571 ± 18
22		Drive shaft joint mounting bolt, nut	3/8-24UNF	6 ± 0.8	43.4 ± 5.8
23	Others	Counterweight mounting bolt	M30×3.5	199 ± 29.9	1439 ± 216
24		Operator's seat mounting bolt	M8×1.25	3.4 ± 0.7	24.6 ± 5.1
25		Canopy mounting bolt (4EA)	M27×3.0	55 ± 5	398 ± 36.2
26		Cabin mounting bolt (4EA)	M27×3.0	55 ± 5	398 ± 36.2

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	19.5 ~ 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 × 3.0	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 (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						
Transmission	Oil	26 (6.7)	SAE 10W-30						
			SAE 15W-40						
Axle	UTTO	Front : 17.7 (4.7) Rear : 17.7 (4.7)	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	223 (58.9)	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 (8.0)	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
- UTTO : Universal Tractor Transmission Oil

★ Recommended oil list

- BP TERRAC SUPER TRANSMISSION 10W-30
- CASTROL AGRI TRANS PLUS 10W-30
- MOBILFLUID 426
- SHELL DONAX TD 10W-30
- TOTAL DYNATRANS MPV

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