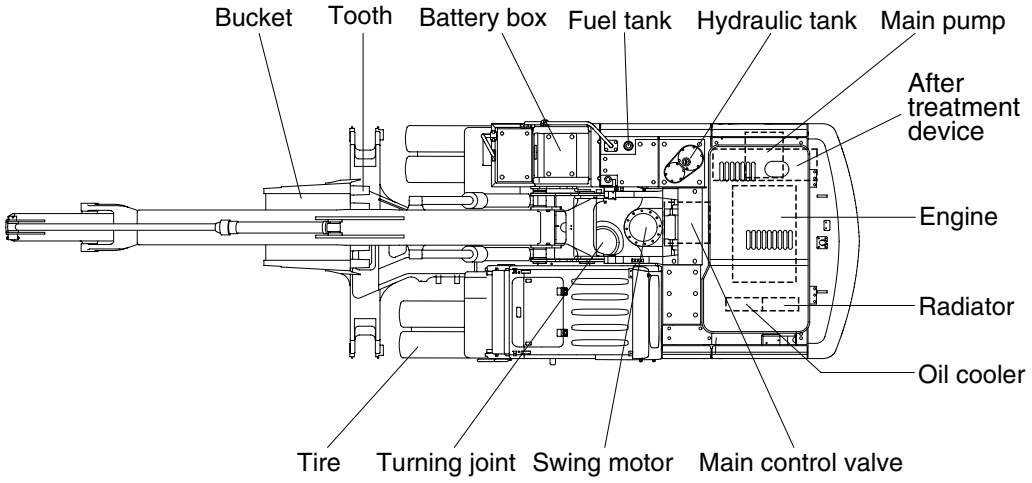
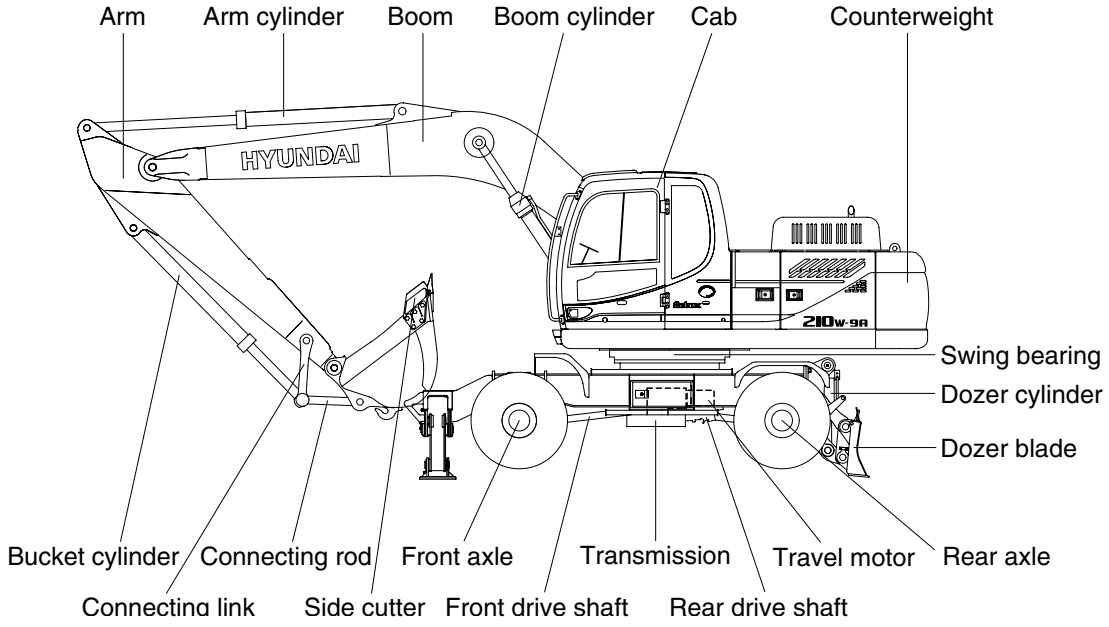
1. MAJOR COMPONENTS

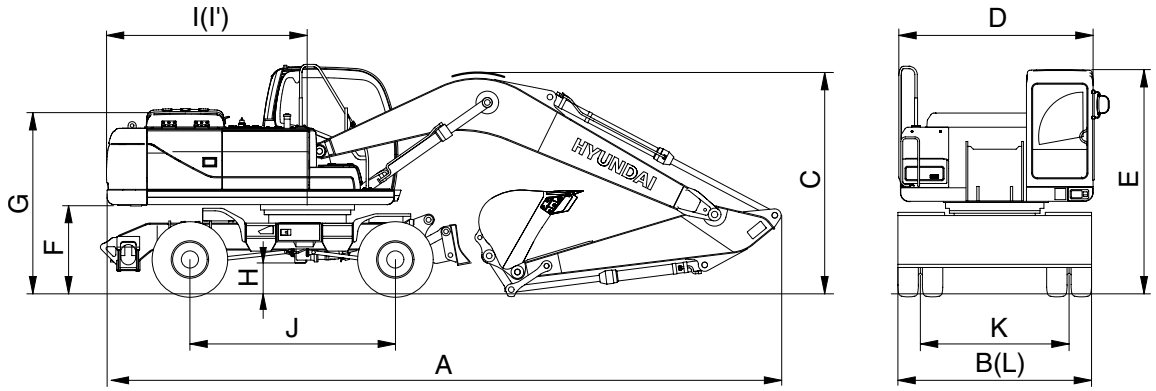




210W9A2SP01

2. SPECIFICATIONS

1) 5.65 m (18' 6") MONO BOOM, 2.92 m (9' 7") ARM, FRONT OUTRIGGER AND REAR DOZER BLADE

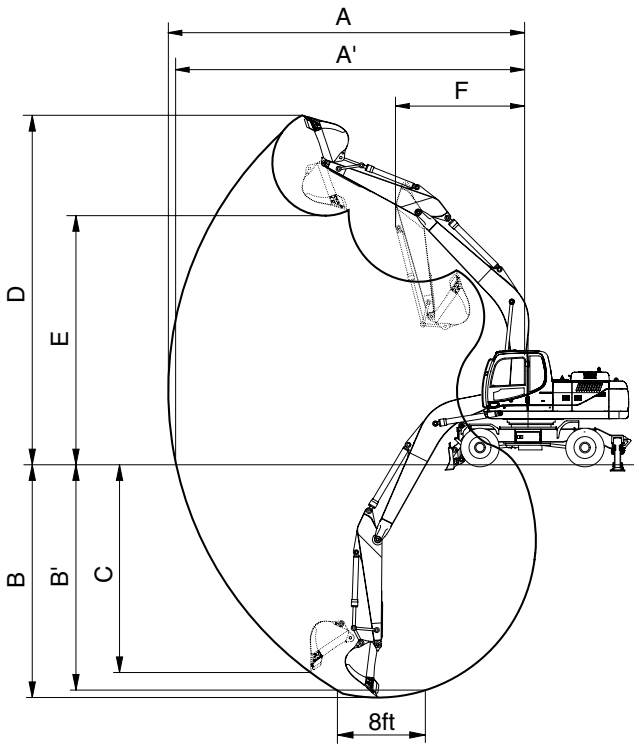


20W92SP02

Description		Unit	Specification
Operating weight		kg (lb)	20500 (45200)
Bucket capacity (SAE heaped)		m^3 (yd^3)	0.80 (1.05)
Overall length (travel / shipping)	A	mm (ft-in)	9520 (31' 3") / 9500 (31' 2")
Overall width	B		2530 (8' 4")
Overall height of boom (travel / shipping)	C		3440 (11' 3") / 3150 (10' 4")
Upperstructure width	D		2530 (8' 4")
Cab height	E		3180 (10' 5")
Ground clearance of counterweight	F		1305 (4' 3")
Engine cover height	G		2767 (9' 1")
Minimum ground clearance	H		345 (1' 2")
Rear-end distance	I		2765 (9' 1")
Rear-end swing radius	I'		2790 (9' 2")
Wheel base	J		2800 (9' 2")
Tread	K		1914 (6' 3")
Dozer blade width	L		2490 (8' 2")
Travel speed	Low	km/hr (mph)	8.5 (5.3)
	High		35 (21.8)
Swing speed		rpm	10.3
Gradeability		Degree (%)	31.5 (61)
Max traction force		kgf (lbf)	10800 (23810)

3. WORKING RANGE

5.65 m (18' 6") BOOM



20W92SP03

Description		2.0 m (6' 7") Arm	2.40 m (7' 10") Arm	2.92 m (9' 7") Arm
Max digging reach	A	9110 mm (29'11")	9480 mm (31' 1")	9960 mm (32' 8")
Max digging reach on ground	A'	8870 mm (29' 1")	9260 mm (30' 5")	9750 mm (32' 0")
Max digging depth	B	5480 mm (18' 0")	5880 mm (19' 3")	6380 mm (20'11")
Max digging depth (8ft level)	B'	5240 mm (17' 2")	5670 mm (18' 7")	6210 mm (20' 4")
Max vertical wall digging depth	C	4970 mm (16' 4")	5440 mm (17'10")	5990 mm (19' 8")
Max digging height	D	9500 mm (31' 2")	9730 mm (31'11")	10000 mm (32' 10")
Max dumping height	E	6670 mm (21'11")	6900 mm (22' 8")	7160 mm (23' 6")
Min swing radius	F	3700 mm (12' 2")	3620 mm (11'11")	3580 mm (11' 9")
Bucket digging force	SAE	133.4 [144.8] kN	133.4 [144.8] kN	133.4 [144.8] kN
		13600 [14770] kgf	13600 [14770] kgf	13600 [14770] kgf
		29980 [32550] lbf	29980 [32550] lbf	29980 [32550] lbf
	ISO	152.0 [165.0] kN	152.0 [165.0] kN	152.0 [165.0] kN
		15500 [16830] kgf	15500 [16830] kgf	15500 [16830] kgf
		34170 [37100] lbf	34170 [37100] lbf	34170 [37100] lbf
Arm digging force	SAE	144.2 [156.5] kN	119.6 [129.9] kN	102.0 [110.7] kN
		14700 [15960] kgf	12200 [13250] kgf	10400 [11290] kgf
		32410 [35190] lbf	26900 [29210] lbf	22930 [24900] lbf
	ISO	151.0 [164.0] kN	125.5 [136.3] kN	106.9 [116.1] kN
		15400 [16720] kgf	12800 [13900] kgf	10900 [11830] kgf
		33950 [36860] lbf	28220 [30640] lbf	24030 [26090] lbf

[ ] : Power boost

4. WEIGHT

Item	kg	lb
Upperstructure assembly	8950	19730
Main frame weld assembly	1760	3880
Engine assembly	520	1150
Main pump assembly	170	370
Main control valve assembly	220	490
Swing motor assembly	240	530
Hydraulic oil tank weld assembly	165	360
Fuel tank weld assembly	123	270
Counterweight	3400	7500
Cab assembly	500	1100
Lower frame weld assembly	2450	5400
Swing bearing	285	630
Travel motor assembly	80	176
Turning joint	120	265
Transmission assembly	135	300
Front axle assembly	755	1665
Rear axle assembly	585	1290
Front attachment assembly (5.65 m boom, 2.92 m arm, 0.80 m^3 SAE heaped bucket)	3935	8680
5.65 m boom assembly	1360	3000
2.92 m arm assembly	750	1650
0.80 m^3 SAE heaped bucket assembly	710	1570
Boom cylinder assembly	180/1EA	400/1EA
Arm cylinder assembly	290	640
Bucket cylinder assembly	175	390
Bucket control link assembly	170	370
Oscillating cylinder assembly	30/1EA	70/1EA
Dozer blade assembly	920	2030
Front outrigger assembly	390	860
Rear outrigger assembly	1020	2250
Outrigger cylinder assembly	100/1EA	220/1EA
Blade cylinder assembly	82/1EA	180/1EA

5. LIFTING CAPACITIES

1) ROBEX 210W-9A

(1) 5.65 m (18' 6") boom, 2.92 m (9' 7") arm equipped with 0.80m³ (SAE heaped) bucket and 4 outrigger down.

Load point height		Load radius										At max. reach		
		1.5 m (5 ft)		3.0 m (10 ft)		4.5 m (15 ft)		6.0 m (20 ft)		7.5 m (25 ft)		Capacity		Reach
														m (ft)
9.0 m (30 ft)	kg											*3410	*3410	6.52
	lb											*7520	*7520	(21.4)
7.5 m (25 ft)	kg											*3470	*3470	7.96
	lb											*7650	*7650	(26.1)
6.0 m (20 ft)	kg									*2690	*2690	*3580	3140	8.85
	lb									*5930	*5930	*7890	6920	(29.0)
4.5 m (15 ft)	kg							*4210	*4210	*3980	*3980	*3720	2770	9.37
	lb							*9280	*9280	*8770	*8770	*8200	6110	(30.7)
3.0 m (10 ft)	kg			*10720	*10720	*6550	*6550	*5090	*5090	*4410	3970	*3890	2600	9.59
	lb			*23630	*23630	*14440	*14440	*11220	*11220	*9720	8750	*8580	5730	(31.5)
1.5 m (5 ft)	kg			*8900	*8900	*8350	*8350	*6020	5510	*4900	3820	*4080	2570	9.54
	lb			*19620	*19620	*18410	*18410	*13270	12150	*10800	8420	*8990	5670	(31.3)
Ground Line	kg			*10210	*10210	*9470	8490	*6730	5290	*5300	3710	*4290	2710	9.21
	lb			*22510	*22510	*20880	18720	*14840	11660	*11680	8180	*9460	5970	(30.2)
-1.5 m (-5 ft)	kg	*9470	*9470	*13480	*13480	*9820	8360	*7060	5190	*5440	3660	*4500	3060	8.56
	lb	*20880	*20880	*29720	*29720	*21650	18430	*15560	11440	*11990	8070	*9920	6750	(28.1)
-3.0 m (-10 ft)	kg	*12940	*12940	*14070	*14070	*9430	8410	*6830	5220			*4640	3860	7.50
	lb	*28530	*28530	*31020	*31020	*20790	18540	*15060	11510			**10230	8510	(24.6)
-4.5 m (-15 ft)	kg			*11670	*11670	*7990	*7990							
	lb			*25730	*25730	*17610	*17610							

Note 1. Lifting capacity are based on SAE J1097 and ISO 10567.

2. Lifting capacity of the ROBEX series does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.

3. The load point is a hook (standard equipment) located on the back of the bucket.

4. *indicates load limited by hydraulic capacity.

(2) 5.65 m (18' 6") boom, 2.92 m (9' 7") arm equipped with 0.80m³ (SAE heaped) bucket and 4 outrigger up.

Load point height		Load radius										At max. reach		
		1.5 m (5 ft)		3.0 m (10 ft)		4.5 m (15 ft)		6.0 m (20 ft)		7.5 m (25 ft)		Capacity		Reach
														m (ft)
9.0m (30 ft)	kg											*3410	2840	6.52
	lb											*7520	6260	(21.4)
7.5 m (25 ft)	kg											*3470	1870	7.96
	lb											*7650	4120	(26.1)
6.0 m (20 ft)	kg									*2690	2010	2970	1420	8.85
	lb									*5930	4430	6550	3130	(29.0)
4.5 m (15 ft)	kg							*4210	2990	3880	1930	2610	1190	9.37
	lb							*9280	6590	8550	4250	5750	2620	(30.7)
3.0 m (10 ft)	kg			*10720	7970	*6550	4340	*5090	2730	3740	1810	2450	1070	9.59
	lb			*23630	17570	*14440	9570	*11220	6020	8250	3990	5400	2360	(31.5)
1.5 m (5 ft)	kg			*8900	6830	8180	3840	5160	2470	3590	1670	2420	1040	9.54
	lb			*19620	15060	18030	8470	11380	5450	7910	3680	5340	2290	(31.3)
Ground Line	kg			*10210	6570	7830	3550	4950	2290	3480	1570	2550	1100	9.21
	lb			*22510	14480	17260	7830	10910	5050	7670	3460	5620	2430	(30.2)
-1.5 m (-5 ft)	kg	*9470	*9470	*13480	6590	7710	3450	4850	2200	3440	1530	2880	1290	8.56
	lb	*20880	*20880	*29720	14530	17000	7610	10690	4850	7580	3370	6350	2840	(28.1)
-3.0 m (-10 ft)	kg	*12940	*12940	*14070	6740	7760	3790	4870	2220			3630	1700	7.50
	lb	*28530	*28530	*31020	14860	17110	7690	10740	4890			8000	3750	(24.6)
-4.5 m (-15 ft)	kg			*11670	7050	7980	3670							
	lb			*25730	15540	17590	8090							

(3) 5.65 m (18' 6") boom, 2.92 m (9' 7") arm equipped with 0.80m³ (SAE heaped) bucket, front outrigger and rear dozer blade down.

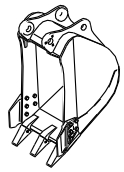
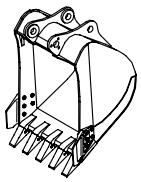
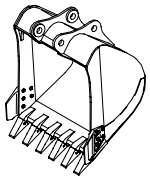
Load point height		Load radius										At max. reach		
		1.5 m (5 ft)		3.0 m (10 ft)		4.5 m (15 ft)		6.0 m (20 ft)		7.5 m (25 ft)		Capacity		Reach
														m (ft)
9.0m (30 ft)	kg											*3410	*3410	6.52
	lb											*7520	*7520	(21.4)
7.5 m (25 ft)	kg											*3470	3210	7.96
	lb											*7650	7080	(26.1)
6.0 m (20 ft)	kg									*2690	*2690	*3580	2580	8.85
	lb									*5930	*5930	*7890	5690	(29.0)
4.5 m (15 ft)	kg							*4210	*4210	*3980	3380	*3720	2250	9.37
	lb							*9280	*9280	*8770	7450	*8200	4960	(30.7)
3.0 m (10 ft)	kg			*10720	*10720	*6550	*6550	*5090	4750	*4410	3250	*3890	2090	9.59
	lb			*23630	*23630	*14440	*14440	*11220	10470	*9720	7170	*8580	4610	(31.5)
1.5 m (5 ft)	kg			*8900	*8900	*8350	7040	*6020	4460	*4900	3100	*4080	2070	9.54
	lb			*19620	*19620	*18410	15520	*13270	9830	*10800	6830	*8990	4560	(31.3)
Ground Line	kg			*10210	*10210	*9470	6700	*6730	4260	*5300	2990	*4290	2180	9.21
	lb			*22510	*22510	*20880	14770	*14840	9390	*11680	6590	*9460	4810	(30.2)
-1.5 m (-5 ft)	kg	*9470	*9470	*13480	*13480	*9820	6590	*7060	4160	*5440	2950	*4500	2470	8.56
	lb	*20880	*20880	*29720	*29720	*21650	14530	*15560	9170	*11990	6500	*9920	5450	(28.1)
-3.0 m (-10 ft)	kg	*12940	*12940	*14070	14020	*9430	6640	*6830	4190			*4640	3130	7.50
	lb	*28530	*28530	*31020	30910	*20790	14640	*15060	9240			*10230	6900	(24.6)
-4.5 m (-15 ft)	kg			*11670	*11670	*7990	6850							
	lb			*25730	*25730	*17610	15100							

(4) 5.65 m (18' 6") boom, 2.92 m (9' 7") arm equipped with 0.80m³ (SAE heaped) bucket, front outrigger and rear dozer blade up.

Load point height		Load radius										At max. reach		
		1.5 m (5 ft)		3.0 m (10 ft)		4.5 m (15 ft)		6.0 m (20 ft)		7.5 m (25 ft)		Capacity		Reach
														m (ft)
9.0m (30 ft)	kg											*3410	2840	6.52
	lb											*7520	6260	(21.4)
7.5 m (25 ft)	kg											*3470	1870	7.96
	lb											*7650	4120	(26.1)
6.0 m (20 ft)	kg									*2690	2010	2970	1420	8.85
	lb									*5930	4430	6550	3130	(29.0)
4.5 m (15 ft)	kg							*4210	2990	3880	1930	2610	1190	9.37
	lb							*9280	6590	8550	4250	5750	2620	(30.7)
3.0 m (10 ft)	kg			*10720	7970	*6550	4340	*5090	2730	3740	1810	2450	1070	9.59
	lb			*23630	17570	*14440	9570	*11220	6020	8250	3990	5400	2360	(31.5)
1.5 m (5 ft)	kg			*8900	6830	8180	3840	5160	2470	3590	1670	2420	1040	9.54
	lb			*19620	15060	18030	8470	11380	5450	7910	3680	5340	2290	(31.3)
Ground Line	kg			*10210	6570	7830	3550	4950	2290	3480	1570	2550	1100	9.21
	lb			*22510	14480	17260	7830	10910	5050	7670	3460	5620	2430	(30.2)
-1.5 m (-5 ft)	kg	*9470	*9470	*13480	6590	7710	3450	4850	2200	3440	1530	2880	1290	8.56
	lb	*20880	*20880	*29720	14530	17000	7610	10690	4850	7580	3370	6350	2840	(28.1)
-3.0 m (-10 ft)	kg	*12940	*12940	*14070	6740	7760	3490	4870	2220			3630	1700	7.50
	lb	*28530	*28530	*31020	14860	17110	7690	10740	4890			8000	3750	(24.6)
-4.5 m (-15 ft)	kg			*11670	7050	7980	3670							
	lb			*25730	15540	17590	8090							

6. BUCKET SELECTION GUIDE

1) GENERAL BUCKET

		
0.51 m³ SAE heaped bucket	0.80, 0.87, 0.92, 1.10, 1.20 m³ SAE heaped bucket	1.34 m³ SAE heaped bucket

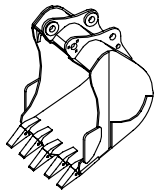
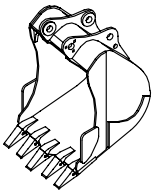
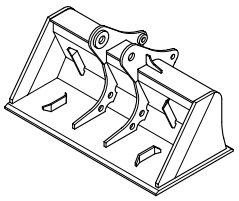
Capacity		Width		Weight	Recommendation		
					5.65 m (18' 6") Mono boom		
SAE heaped	CECE heaped	Without side cutter	With side cutter		2.0 m arm (6' 7")	2.4 m arm (7' 10")	2.92 m arm (9' 7")
0.51 m³ (0.67 yd³)	0.45 m³ (0.59 yd³)	700 mm (27.6")	820 mm (32.3)	570 kg (1260 lb)			
0.80 m³ (1.05 yd³)	0.70 m³ (0.92 yd³)	1000 mm (39.4")	1120 mm (44.1")	700 kg (1540 lb)			
0.87 m³ (1.14 yd³)	0.75 m³ (0.98 yd³)	1090 mm (42.9")	1210 mm (47.6")	740 kg (1630 lb)			
0.92 m³ (1.20 yd³)	0.80 m³ (1.05 yd³)	1150 mm (45.3")	1270 mm (50.0")	770 kg (1700 lb)			
1.10 m³ (1.44 yd³)	0.96 m³ (1.26 yd³)	1320 mm (52.0")	1440 mm (56.7")	830 kg (1830 lb)			
1.20 m³ (1.57 yd³)	1.00 m³ (1.31 yd³)	1400 mm (55.1")	1520 mm (59.8")	850 kg (1870 lb)			
1.34 m³ (1.75 yd³)	1.15 m³ (1.50 yd³)	1550 mm (61.0")	1670 mm (65.7")	920 kg (2030 lb)			

Applicable for materials with density of 2000 kg/m³ (3370 lb/yd³) or less

Applicable for materials with density of 1600 kg/m³ (2700 lb/yd³) or less

Applicable for materials with density of 1100 kg/m³ (1850 lb/yd³) or less

2) HEAVY DUTY, ROCK-HEAVY DUTY AND SLOPE FINISHING BUCKET

Heavy duty bucket	Rock-Heavy duty bucket	Slope finishing bucket
		
◈ 0.74, 0.90, 1.05 m³ SAE heaped bucket	⊙ 0.87 m³ SAE heaped bucket	▣ 0.75 m³ SAE heaped bucket

Capacity		Width		Weight	Recommendation		
					5.65 m (18' 6") boom		
SAE heaped	SAE heaped	Without side cutter	With side cutter		2.0 m arm (6' 7")	2.4 m arm (7' 10")	2.92 m arm (9' 7")
◈ 0.74 m³ (0.97 yd³)	0.65 m³ (0.85 yd³)	985 mm (38.8")	-	770 kg (1700 lb)			
◈ 0.90 m³ (1.18 yd³)	0.80 m³ (1.05 yd³)	1070 mm (42.1")	-	810 kg (1790 lb)			
◈ 1.05 m³ (1.37 yd³)	0.92 m³ (1.20 yd³)	1290 mm (50.8")	-	890 kg (1960 lb)			
⊙ 0.87 m³ (1.14 yd³)	0.75 m³ (0.98 yd³)	1140 mm (44.9")	-	900 kg (1980 lb)			
▣ 0.75 m³ (0.98 yd³)	0.65 m³ (0.85 yd³)	1790 mm (70.5")	-	880 kg (1940 lb)			

◈ : Heavy duty bucket ⊙ : Rock-Heavy duty bucket ▣ : Slope finishing bucket

Applicable for materials with density of 2000 kg/m³ (3370 lb/yd³) or less

Applicable for materials with density of 1600 kg/m³ (2700 lb/yd³) or less

Applicable for materials with density of 1100 kg/m³ (1850 lb/yd³) or less

7. SPECIFICATIONS FOR MAJOR COMPONENTS

1) ENGINE

Item	Specification
Model	Cummins QSB6.7
Type	4-cycle turbocharged charger air cooled 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	107×124 mm (4.2"×4.9")
Piston displacement	6700 cc (409 cu in)
Compression ratio	17.3 : 1
Rated gross horse power (SAE J1995)	173 Hp at 2100 rpm (129 kW at 2100 rpm)
Maximum torque at 1400 rpm	81.7 kgf·m (591 lbf·ft)
Engine oil quantity	24 l (6.3 U.S. gal)
Wet weight	520 kg (1150 lb)
High idling speed	2100±50 rpm
Low idling speed	800±100 rpm
Rated fuel consumption	165.9 g/Hp·hr at 1900 rpm
Starting motor	Denso (24 V-4.8 kW)
Alternator	Denso (24 V-95 A)
Battery	2×12 V×100 Ah

2) MAIN PUMP

Item	Specification
Type	Variable displacement parallel axis piston pumps
Capacity	2 × 117 cc/rev
Maximum pressure	350 kgf/cm^2 (4980 psi) [380 kgf/cm^2 (5400 psi)]
Rated oil flow	2 × 222 l /min (58.6 U.S. gpm / 48.8 U.K. gpm)
Rated speed	1950 rpm

[ ] : Power boost

3) GEAR PUMP

Item	Specification
Type	Fixed displacement gear pump single stage
Capacity	15cc/rev
Maximum pressure	40 kgf/cm^2 (570 psi)
Rated oil flow	28.5 ℓ /min (7.5 U.S. gpm/6.3 U.K. gpm)

4) MAIN CONTROL VALVE

Item	Specification
Type	9 spools
Operating method	Hydraulic pilot system
Main relief valve pressure	350 kgf/cm^2 (4980 psi) [380 kgf/cm^2 (5400 psi)]
Overload relief valve pressure	400 kgf/cm^2 (5690 psi)

[ ] : Power boost

5) SWING MOTOR

Item	Specification
Type	Fixed displacement axial piston motor
Capacity	151 cc/rev
Relief pressure	265 kgf/cm^2 (3770 psi)
Braking system	Automatic, spring applied hydraulic released
Braking torque	59 kgf · m (427 lbf · ft)
Brake release pressure	33~50 kgf/cm^2 (470~711 psi)
Reduction gear type	2 - stage planetary

6) TRAVEL MOTOR

Item	Specification
Type	Variable displacement bent-axis axial piston motor
Rated pressure	380 kgf/cm^2 (5400 psi)
Counter balance valve	Applied
Capacity	160/61 cc/rev

7) POWER TRAIN

Item	Description		Specification
Transmission	Type		2 speed power shift transmission
	Gear ratio	1st	4.87
		2nd	1.20
	Clutch pressure		30~32 kgf/cm^2 (427~455 psi)
Parking brake	Type		Multi disc brake integrated in transmission
	Maximum braking torque		2937 kgf · m (21240 lbf · ft)
Axle	Type		4 wheel drive with differential
	Gear ratio		16.0
	Brake		Multi disc brake
	Brake pressure		80 kgf/cm^2 (1140 psi)
	Steering pressure		185 kgf/cm^2 (2630 psi)

8) REMOTE CONTROL VALVE

Item	Description	Specification
Type		Pressure reducing
Operating pressure	Maximum	6.5 kgf/ cm^2 (92 psi)
	Maximum	25 kgf/ cm^2 (360 psi)
Single operation stroke	Lever (1, 3 port)	90 mm (3.5 in)
	Lever (2, 4 port)	130 mm (4.4 in)

9) CYLINDER

Item		Specification
Boom cylinder	Bore dia × Rod dia × Stroke	ø 120 × ø 85 × 1290 mm
	Cushion	Extend only
Arm cylinder	Bore dia × Rod dia × Stroke	ø 140 × ø 100 × 1510mm
	Cushion	Extend and retract
Bucket cylinder	Bore dia × Rod dia × Stroke	ø 125 × ø 85 × 1055mm
	Cushion	Extend only
Dozer cylinder	Bore dia × Rod dia × Stroke	ø 125 × ø 75 × 206mm
	Cushion	Extend only
Outrigger cylinder	Bore dia × Rod dia × Stroke	ø 130 × ø 80 × 427mm
	Cushion	-
Adjust boom cylinder	Bore dia × Rod dia × Stroke	ø 120 × ø 85 × 1010mm
	Cushion	Extend only

10) BUCKET

Item	Capacity		Tooth quantity	Width	
	SAE heaped	CECE heaped		Without side cutter	With side cutter
Standard	0.80 m^3 (1.05 yd^3)	0.70 m^3 (0.92 yd^3)	5	1000 mm (39.4")	1120 mm (44.1")
Option	0.51 m^3 (0.67 yd^3)	0.45 m^3 (0.59 yd^3)	3	700 mm (27.6")	820 mm (32.3")
	0.87 m^3 (1.14 yd^3)	0.75 m^3 (0.98 yd^3)	5	1090 mm (42.9")	1120 mm (47.6")
	0.92 m^3 (1.20 yd^3)	0.80 m^3 (1.05 yd^3)	5	1150 mm (45.3")	1270 mm (50.0")
	1.10 m^3 (1.44 yd^3)	0.96 m^3 (1.26 yd^3)	5	1320 mm (52.0")	1440 mm (56.7")
	1.20 m^3 (1.57 yd^3)	1.00 m^3 (1.31 yd^3)	5	1400 mm (55.1")	1520 mm (60.0")
	1.34 m^3 (1.75 yd^3)	1.15 m^3 (1.50 yd^3)	6	1550 mm (61.0")	1670 mm (65.7")
	◈0.74 m^3 (0.97 yd^3)	0.65 m^3 (0.85 yd^3)	5	985 mm (38.8")	-
	◈0.90 m^3 (1.18 yd^3)	0.80 m^3 (1.05 yd^3)	5	1070 mm (42.1")	-
	◈1.05 m^3 (1.37 yd^3)	0.92 m^3 (1.20 yd^3)	5	1290 mm (50.8")	-
	⊙0.87 m^3 (1.14 yd^3)	0.75 m^3 (0.98 yd^3)	5	1140 mm (44.9")	-
	▣0.75 m^3 (0.98 yd^3)	0.65 m^3 (0.85 yd^3)	-	1790 mm (70.5")	-

◈ : Heavy duty bucket

⊙ : Rock-Heavy duty bucket

▣ : Slope finishing bucket

8. 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) 40 (104)
Engine oil pan	Engine oil	23.1 (6.1)	★SAE 5W-40 SAE 30 SAE 10W
Transmission case	Engine oil	2.5 (0.66)	SAE 10W-30 SAE 15W-40
Swing drive	Gear oil	5.0 (1.3)	★SAE 75W-90 SAE 85W-140
Swing drive	Grease	1.2 (0.3)	★NLGI NO.1 NLGI NO.2
Front axle	Gear oil	Center : 9.6 (2.5) Hub : 2.5×2 (0.7×2)	SAE 85W-90 LSD or UTTO
Rear axle	Gear oil	Center : 13.5(3.6) Hub : 2.5×2 (0.7×2)	SAE 85W-90 LSD or UTTO
Hydraulic tank	Hydraulic oil	Tank: 165 (43.6) System: 340 (89.8)	★ISO VG 15 ISO VG 32 ISO VG 46 ISO VG 68
Fuel tank	Diesel fuel★1	310 (81.9)	★ASTM D975 NO.1 ASTM D975 NO.2
Fitting (Grease nipple)	Grease	As required	★NLGI NO.1 NLGI NO.2
Radiator (Reservoir tank)	Mixture of antifreeze and soft water★2	40 (10.6)	Ethylene glycol base permanent type (50 : 50) ★Ethylene glycol base permanent type (60 : 40)

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 Materia
UTTO : Universal Tractor Transmission Oil

★1 : Ultra low sulfur diesel
- sulfur content ≤ 15 ppm

★2 : Soft water
City water or distilled water

★ : Cold region
Russia, CIS, Mongolia