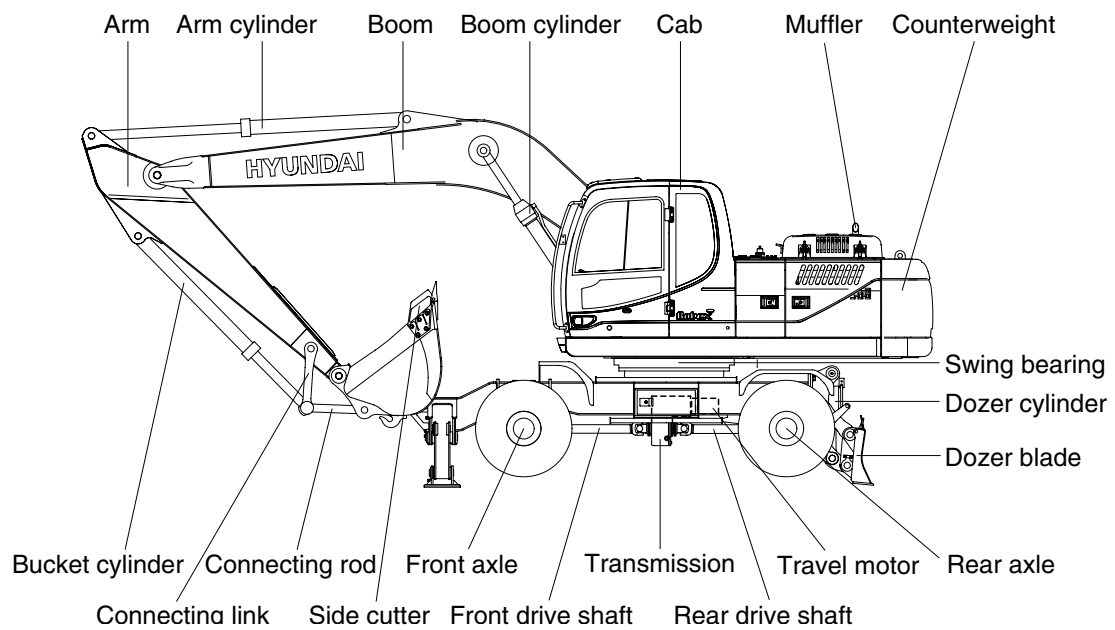
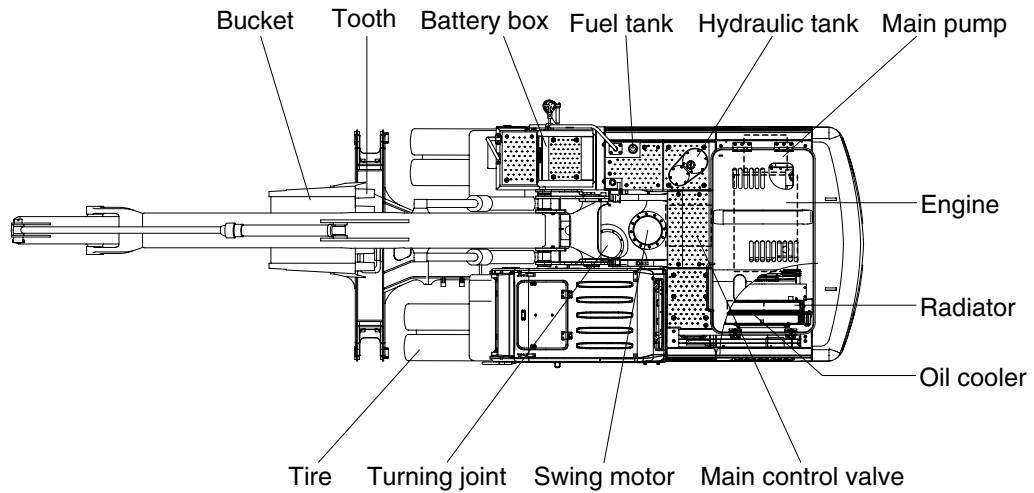


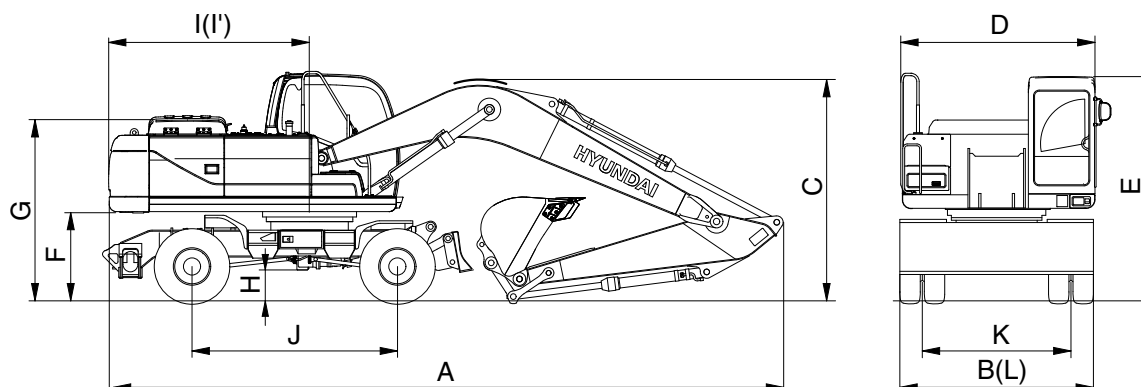
1. MAJOR COMPONENTS



20W92SP01

2. SPECIFICATIONS

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

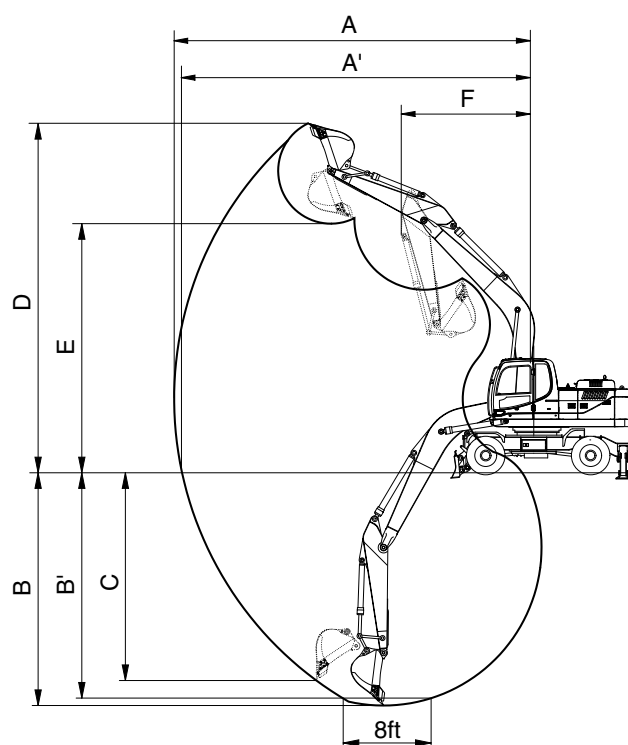


20W92SP02

Description		Unit	Specification
Operating weight		kg (lb)	20500 (45190)
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		3240 (10' 8")
Ground clearance of counterweight	F		1295 (4' 3")
Engine cover height	G		2565 (8' 5")
Minimum ground clearance	H		345 (1' 2")
Rear-end distance	I		2770 (9' 1")
Rear-end swing radius	I'		2800 (9' 2")
Wheel base	J		2800 (9' 2")
Tread	K		1874 (6' 2")
Dozer blade width	L		2490 (8' 2")
Travel speed	Low	km/hr (mph)	9.3 (5.8)
	High		35 (21.7)
Swing speed		rpm	10.3
Gradeability		Degree (%)	31.5 (61)
Max traction force		kgf (lbf)	11900 (26240)

3. WORKING RANGE

5.65 m (18' 6") MONO 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")	9110 mm (29' 11")
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")	5480 mm (17' 12")
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")	5470 mm (17' 11")	4970 mm (16' 4")
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")	9500 mm (31' 2")
Min swing radius	F	3700 mm (12' 2")	3620 mm (11' 11")	3700 mm (12' 2")
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

※ : Standard

4. WEIGHT

Item	kg	lb
Upperstructure assembly	8950	19730
Main frame weld assembly	1760	3880
Engine assembly	560	1240
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	83	180
Turning joint	124	270
Transmission assembly	140	310
Front axle assembly	740	1630
Rear axle assembly	700	1540
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	1480	3260
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-9

(1) 5.65 m (18' 6") boom, 2.92 m (9' 7") arm equipped with 0.80m³ (SAE heaped) bucket and 4 outrigger down with 3400 kg (7500 lb) counterweight.

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 lb											*3410 *7520	*3410 *7520	6.52 (21.4)
7.5 m (25 ft)	kg lb											*3470 *7650	*3470 *7650	7.96 (26.1)
6.0 m (20 ft)	kg lb									*2690 *5930	*2690 *5930	*3580 *7890	3140 6920	8.85 (29.0)
4.5 m (15 ft)	kg lb							*4210 *9280	*4210 *9280	*3980 *8770	*3980 *8770	*3720 *8200	2770 6110	9.37 (30.7)
3.0 m (10 ft)	kg lb			*10720 *23630	*10720 *23630	*6550 *14440	*6550 *14440	*5090 *11220	*5090 *11220	*4410 *9720	3970 8750	*3890 *8580	2600 5730	9.59 (31.5)
1.5 m (5 ft)	kg lb			*8900 *19620	*8900 *19620	*8350 *18410	*8350 *18410	*6020 *13270	5510 12150	*4900 *10800	3820 8420	*4080 *8990	2570 5670	9.54 (31.3)
Ground Line	kg lb			*10210 *22510	*10210 *22510	*9470 *20880	8490 18720	*6730 *14840	5290 11660	*5300 *11680	3710 8180	*4290 *9460	2710 5970	9.21 (30.2)
-1.5 m (-5 ft)	kg lb	*9470 *20880	*9470 *20880	*13480 *29720	*13480 *29720	*9820 *21650	8360 18430	*7060 *15560	5190 11440	*5440 *11990	3660 8070	*4500 *9920	3060 6750	8.56 (28.1)
-3.0 m (-10 ft)	kg lb	*12940 *28530	*12940 *28530	*14070 *31020	*14070 *31020	*9430 *20790	8410 18540	*6830 *15060	5220 11510			*4640 **10230	3860 8510	7.50 (24.6)
-4.5 m (-15 ft)	kg lb			*11670 *25730	*11670 *25730	*7990 *17610	*7990 *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 with 3400 kg (7500 lb) counterweight.

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 lb											*3410 *7520	2840 6260	6.52 (21.4)
7.5 m (25 ft)	kg lb											*3470 *7650	1870 4120	7.96 (26.1)
6.0 m (20 ft)	kg lb									*2690 *5930	2010 4430	2970 6550	1420 3130	8.85 (29.0)
4.5 m (15 ft)	kg lb							*4210 *9280	2990 6590	3880 8550	1930 4250	2610 5750	1190 2620	9.37 (30.7)
3.0 m (10 ft)	kg lb			*10720 *23630	7970 17570	*6550 *14440	4340 9570	*5090 *11220	2730 6020	3740 8250	1810 3990	2450 5400	1070 2360	9.59 (31.5)
1.5 m (5 ft)	kg lb			*8900 *19620	6830 15060	8180 18030	3840 8470	5160 11380	2470 5450	3590 7910	1670 3680	2420 5340	1040 2290	9.54 (31.3)
Ground Line	kg lb			*10210 *22510	6570 14480	7830 17260	3550 7830	4950 10910	2290 5050	3480 7670	1570 3460	2550 5620	1100 2430	9.21 (30.2)
-1.5 m (-5 ft)	kg lb	*9470 *20880	*9470 *20880	*13480 *29720	6590 14530	7710 17000	3450 7610	4850 10690	2200 4850	3440 7580	1530 3370	2880 6350	1290 2840	8.56 (28.1)
-3.0 m (-10 ft)	kg lb	*12940 *28530	*12940 *28530	*14070 *31020	6740 14860	7760 17110	3790 7690	4870 10740	2220 4890			3630 8000	1700 3750	7.50 (24.6)
-4.5 m (-15 ft)	kg lb			*11670 *25730	7050 15540	7980 17590	3670 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 with 3400 kg (7500 lb) counterweight.

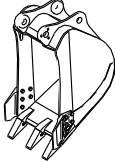
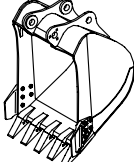
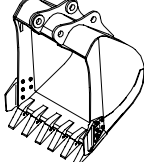
Load point height		Load radius										At max. reach		
		1.5 m (5 ft)		3.0 m (10 ft)		4.5 m (15 ft)		6.0 m (20 ft)		7.5 m (25 ft)		Capacity		Reach
														m (ft)
9.0m (30 ft)	kg lb											*3410 *7520	*3410 *7520	6.52 (21.4)
7.5 m (25 ft)	kg lb											*3470 *7650	3210 7080	7.96 (26.1)
6.0 m (20 ft)	kg lb									*2690 *5930	*2690 *5930	*3580 *7890	2580 5690	8.85 (29.0)
4.5 m (15 ft)	kg lb							*4210 *9280	*4210 *9280	*3980 *8770	3380 7450	*3720 *8200	2250 4960	9.37 (30.7)
3.0 m (10 ft)	kg lb			*10720 *23630	*10720 *23630	*6550 *14440	*6550 *14440	*5090 *11220	4750 10470	*4410 *9720	3250 7170	*3890 *8580	2090 4610	9.59 (31.5)
1.5 m (5 ft)	kg lb			*8900 *19620	*8900 *19620	*8350 *18410	7040 15520	*6020 *13270	4460 9830	*4900 *10800	3100 6830	*4080 *8990	2070 4560	9.54 (31.3)
Ground Line	kg lb			*10210 *22510	*10210 *22510	*9470 *20880	6700 14770	*6730 *14840	4260 9390	*5300 *11680	2990 6590	*4290 *9460	2180 4810	9.21 (30.2)
-1.5 m (-5 ft)	kg lb	*9470 *20880	*9470 *20880	*13480 *29720	*13480 *29720	*9820 *21650	6590 14530	*7060 *15560	4160 9170	*5440 *11990	2950 6500	*4500 *9920	2470 5450	8.56 (28.1)
-3.0 m (-10 ft)	kg lb	*12940 *28530	*12940 *28530	*14070 *31020	14020 30910	*9430 *20790	6640 14640	*6830 *15060	4190 9240			*4640 *10230	3130 6900	7.50 (24.6)
-4.5 m (-15 ft)	kg lb			*11670 *25730	*11670 *25730	*7990 *17610	6850 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 with 3400 kg (7500 lb) counterweight.

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

6. BUCKET SELECTION GUIDE

1) GENERAL BUCKET

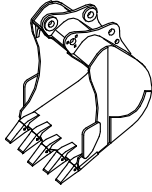
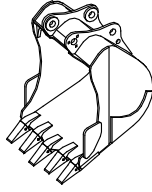
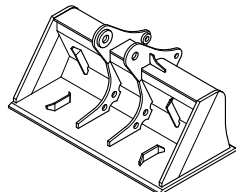
		
0.51 m³ SAE heaped bucket	※ 0.80, 0.87, 0.92, 1.10, 1.20 m³ SAE heaped bucket	1.34 m³ SAE heaped bucket

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)			

※ : Standard bucket

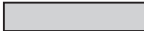
-  Applicable for materials with density of 2000 kg/m³ (3370 lb/yd³) or less
-  Applicable for materials with density of 1600 kg/m³ (2700 lb/yd³) or less
-  Applicable for materials with density of 1100 kg/m³ (1850 lb/yd³) or less

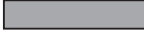
2) HEAVY DUTY, ROCK-HEAVY DUTY AND SLOPE FINISHING BUCKET

Heavy duty bucket	Rock-Heavy duty bucket	Slope finishing bucket
		
◆ 0.74, 0.90, 1.05 m ³ SAE heaped bucket	◎ 0.87 m ³ SAE heaped bucket	■ 0.75 m ³ 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 m ³ (0.97 yd ³)	0.65 m ³ (0.85 yd ³)	985 mm (38.8")	-	770 kg (1700 lb)			
◆ 0.90 m ³ (1.18 yd ³)	0.80 m ³ (1.05 yd ³)	1095 mm (43.1")	-	810 kg (1790 lb)			
◆ 1.05 m ³ (1.37 yd ³)	0.92 m ³ (1.20 yd ³)	1290 mm (50.8")	-	890 kg (1960 lb)			
◎ 0.87 m ³ (1.14 yd ³)	0.75 m ³ (0.98 yd ³)	1140 mm (44.9")	-	900 kg (1980 lb)			
■ 0.75 m ³ (0.98 yd ³)	0.65 m ³ (0.85 yd ³)	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 / HYUNDAI HE 6.7
Type	4-cycle turbocharged diesel engine, low emission
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 borexstroke	107×124 mm (4.2"×4.9")
Piston displacement	6700 cc (409 cu in)
Compression ratio	17.2 : 1
Rated gross horse power (SAE J1995)	176 Hp at 1900 rpm (131 kW at 1900 rpm)
Maximum torque at 1400 rpm	82.0 kgf·m (593 lbf·ft)
Engine oil quantity	24l (6.3 U.S. gal)
Dry weight	556 kg (1226 lb)
High idling speed	2000±50 rpm
Low idling speed	850±100 rpm
Rated fuel consumption	165.9 g/Hp·hr at 1900 rpm
Starting motor	Nippon denso (24 V-4.5 kW)
Alternator	Delco Remy (24 V-50 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 × 228 l /min (60.2 U.S. gpm / 50.2 U.K. gpm)
Rated speed	1900 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	29.3 l /min (7.7 U.S. gpm/6.4 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
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

8) REMOTE CONTROL VALVE

Item	Description	Specification
Type		Pressure reducing
Operating pressure	Minimum	6.5 kgf / cm² (92 psi)
	Maximum	25 kgf / cm² (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 120 × ø 85 × 1055mm
	Cushion	Extend only
Dozer cylinder	Bore dia × Rod dia × Stroke	ø 125 × ø 75 × 222mm
	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 170 × ø 105 × 754mm
	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)
Engine oil pan	Engine oil	24 (6.3)	★SAE 5W-40							
							SAE 30			
Transmission case		2.5 (0.66)	SAE 10W							
			SAE 10W-30							
			SAE 15W-40							
Swing drive	Gear oil	5.0 (1.3)★ ²	★SAE 75W-90							
		6.2 (1.7)	SAE 85W-140							
	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		Center : 13.1(3.5) Hub : 2.5×2 (0.7×2)								
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	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★ ¹	35 (9.2)	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 Material

UTTO : Universal Tractor Transmission Oil

^{★2} : Service when the grease intent exists on the equipment

^{★1} : Soft water
City water or distilled water

[★] : Cold region
Russia, CIS, Mongolia