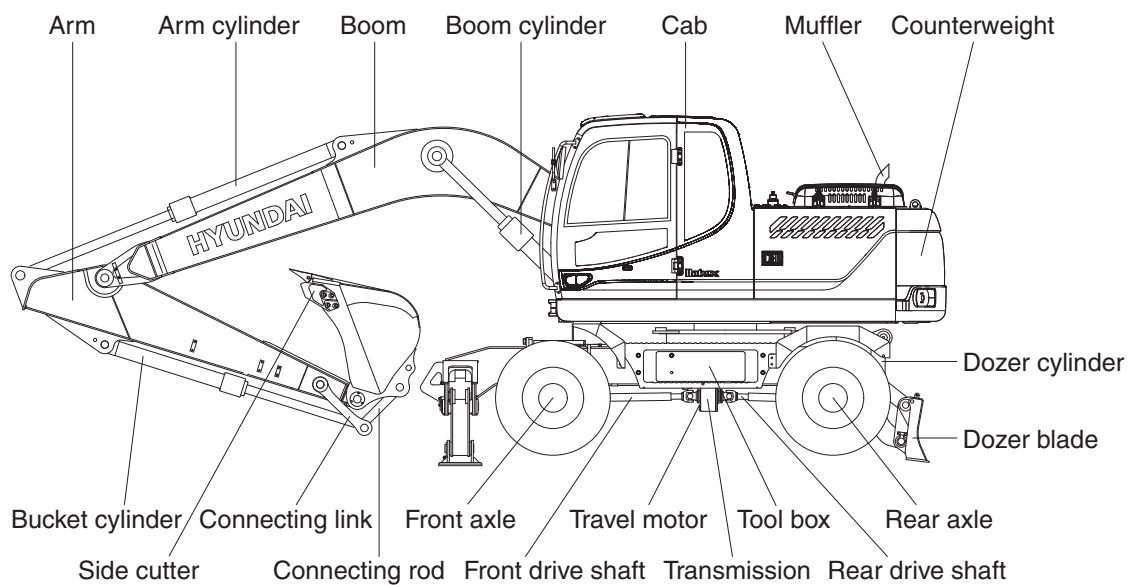
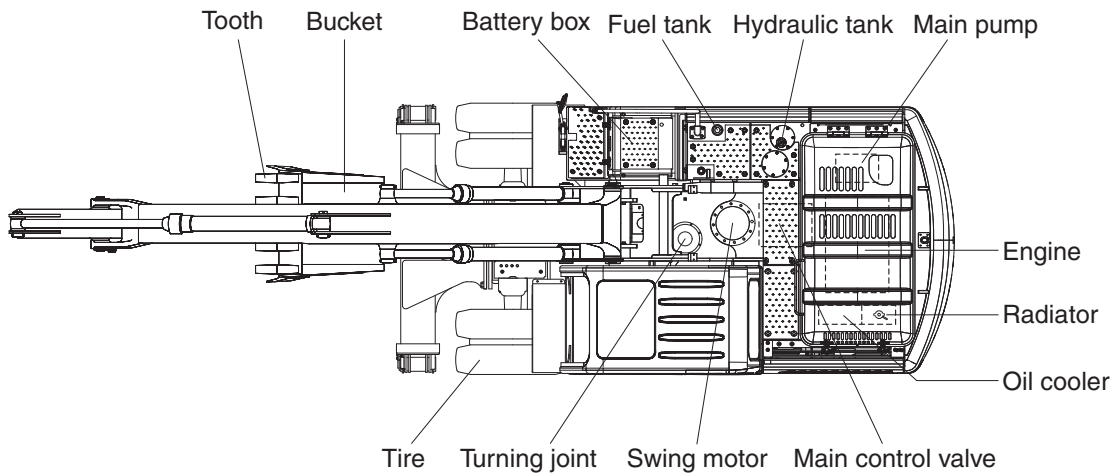


SPECIFICATIONS

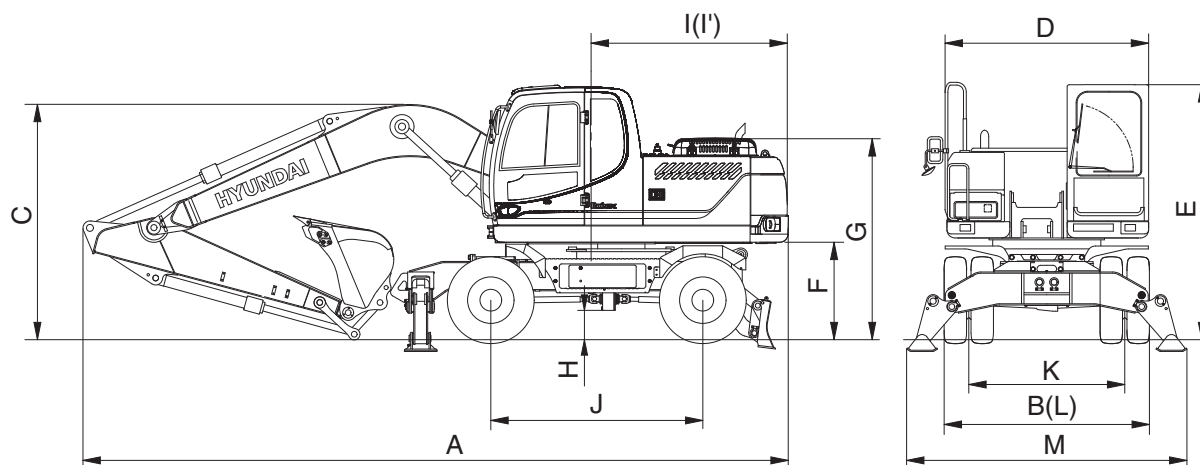
1. MAJOR COMPONENTS



17W92SP01

2. SPECIFICATIONS

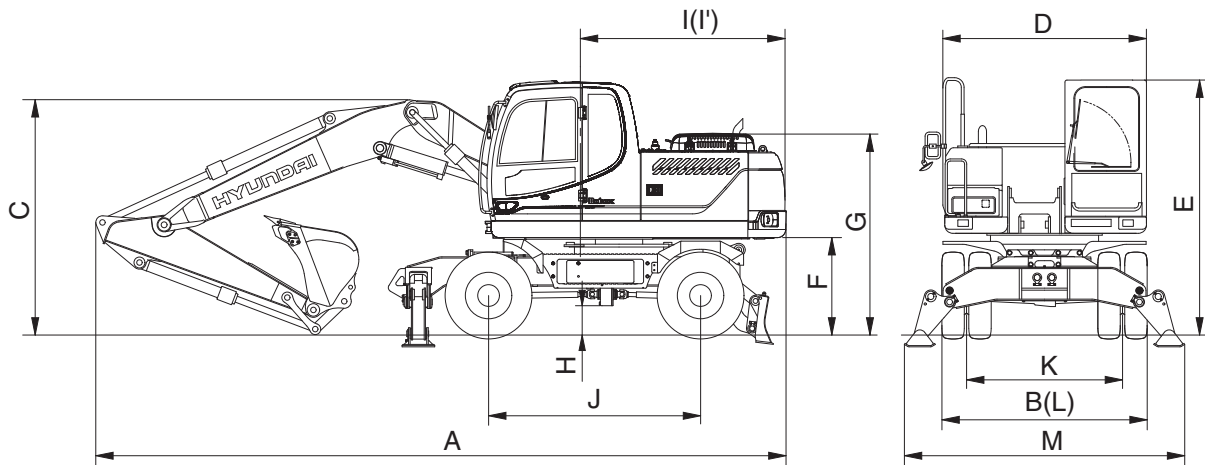
1) 5.1 m (16' 9") ONE PIECE BOOM, 2.2 m (7' 3") ARM, FRONT OUTRIGGER AND REAR DOZER BLADE



18W9S2SP02

Description		Unit	Specification
Operating weight		kg (lb)	18420 (40610)
Bucket capacity (SAE heaped), standard		m ³ (yd ³)	0.76 (0.99)
Overall length	A	mm (ft-in)	8650 (28' 5")
Overall width	B		2500 (8' 2")
Overall height of boom	C		3060 (10' 0")
Upperstructure width	D		2475 (8' 1")
Cab height	E		3190 (10' 6")
Ground clearance of counterweight	F		1270 (4' 2")
Engine cover height	G		2520 (8' 3")
Minimum ground clearance	H		340 (1' 1")
Rear-end distance	I		2480 (8' 2")
Rear-end swing radius	I'		2480 (8' 2")
Wheel base	J		2600 (8' 6")
Tread	K		1914 (6' 3")
Dozer blade width	L		2500 (8' 2")
Outrigger width	M		3650 (12' 0")
Travel speed	Low	km/hr (mph)	8 (5.0)
	High		29 (18.0)
Swing speed		rpm	11.0
Gradeability		Degree (%)	30 (58)
Max traction force		kgf (lbf)	11000 (24250)

2) 5.1 m (16' 9") HYDRAULIC ADJUSTABLE BOOM, 2.6 m (8' 6") ARM, FRONT OUTRIGGER AND REAR DOZER BLADE

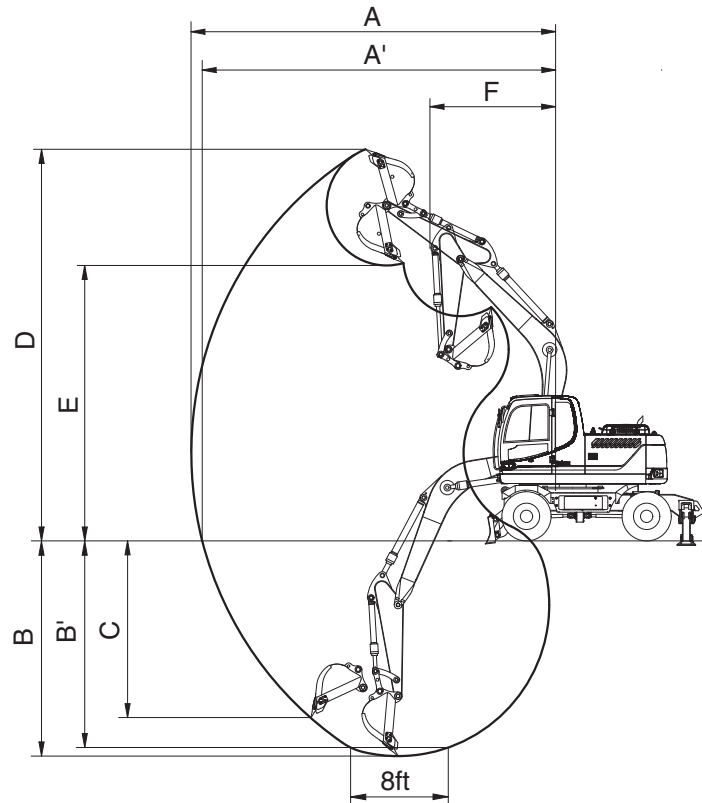


18W9S2SP03

Description		Unit	Specification
Operating weight		kg (lb)	18890 (41650)
Bucket capacity (SAE heaped), standard		m ³ (yd ³)	0.76 (0.99)
Overall length	A	mm (ft-in)	8750 (28' 8")
Overall width	B		2500 (8' 2")
Overall height of boom	C		2920 (9' 7")
Upperstructure width	D		2475 (8' 1")
Cab height	E		3190 (10' 6")
Ground clearance of counterweight	F		1270 (4' 2")
Engine cover height	G		2520 (8' 3")
Minimum ground clearance	H		340 (1' 1")
Rear-end distance	I		2480 (8' 2")
Rear-end swing radius	I'		2480 (8' 2")
Wheel base	J		2600 (8' 6")
Tread	K		1914 (6' 3")
Dozer blade width	L		2500 (8' 2")
Outrigger width	M		3650 (12' 0")
Travel speed	Low	km/hr (mph)	8 (5.0)
	High		29 (18.0)
Swing speed		rpm	11.0
Gradeability		Degree (%)	30 (58)
Max traction force		kgf (lbf)	11000 (24250)

3. WORKING RANGE

1) 5.1 m (16' 9") MONO BOOM

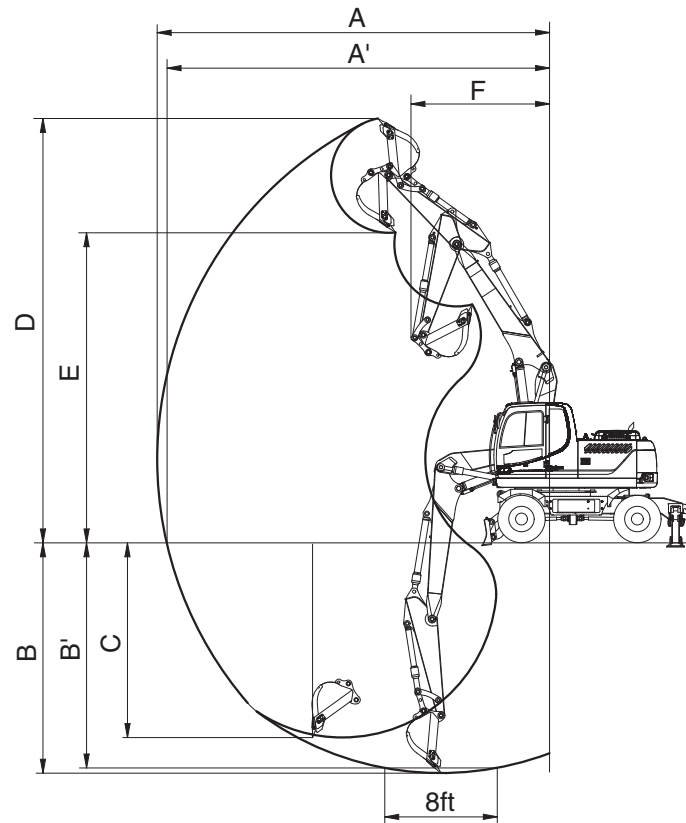


18W9S2SP05

Description		* 2.2 m (7' 3") Arm	2.6 m (8' 6") Arm	3.1 m (10' 2") Arm
Max digging reach	A	8690 mm (28' 6")	9020 mm (29' 7")	9450 mm (31' 0")
Max digging reach on ground	A'	8480 mm (27' 10")	8810 mm (28' 11")	9250 mm (30' 4")
Max digging depth	B	5420 mm (17' 9")	5820 mm (19' 1")	6320 mm (20' 9")
Max digging depth (8 ft level)	B'	5200 mm (17' 1")	5620 mm (18' 5")	6130 mm (20' 1")
Max vertical wall digging depth	C	4890 mm (16' 1")	5140 mm (16' 10")	5470 mm (17' 11")
Max digging height	D	8990 mm (29' 6")	9070 mm (29' 9")	9220 mm (30' 3")
Max dumping height	E	6350 mm (20' 10")	6550 mm (21' 6")	6730 mm (22' 1")
Min swing radius	F	3180 mm (10' 5")	3170 mm (10' 5")	3160 mm (10' 4")
Bucket digging force	SAE	107.9 [117.2] kN	107.9 [117.2] kN	107.9 [117.2] kN
		11000 [11940] kgf	11000 [11940] kgf	11000 [11940] kgf
		24250 [26330] lbf	24250 [26330] lbf	24250 [26330] lbf
	ISO	123.6 [134.2] kN	123.6 [134.2] kN	123.6 [134.2] kN
		12600 [13680] kgf	12600 [13680] kgf	12600 [13680] kgf
		27780 [30160] lbf	27780 [30160] lbf	27780 [30160] lbf
Arm digging force	SAE	87.2 [94.7] kN	77.3 [83.9] kN	69.0 [74.9] kN
		8890 [9650] kgf	7880 [8560] kgf	7030 [7630] kgf
		19600 [21280] lbf	17370 [18860] lbf	15500 [16830] lbf
	ISO	91.0 [98.8] kN	80.3 [87.2] kN	71.4 [77.5] kN
		9280 [10080] kgf	8190 [8890] kgf	7280 [7900] kgf
		20460 [22210] lbf	18060 [19600] lbf	16050 [17430] lbf

* : Standard [] : Power boost

2) 5.1 m (16' 9") HYDRAULIC ADJUSTABLE BOOM



18W9S2SP06

Description		2.2 m (7' 3") Arm	2.6 m (8' 6") Arm
Max digging reach	A	8760 mm (28' 9")	9110 mm (29' 11")
Max digging reach on ground	A'	8550 mm (28' 1")	8910 mm (29' 3")
Max digging depth	B	5220 mm (17' 2")	5620 mm (18' 5")
Max digging depth (8 ft level)	B'	5120 mm (16' 10")	5520 mm (18' 1")
Max vertical wall digging depth	C	4430 mm (14' 6")	4780 mm (15' 8")
Max digging height	D	9630 mm (31' 7")	9820 mm (32' 3")
Max dumping height	E	6930 mm (22' 9")	7130 mm (23' 5")
Min swing radius	F	3100 mm (10' 2")	2970 mm (9' 9")
Bucket digging force	SAE	107.9 [117.2] kN	107.9 [117.2] kN
		11000 [11940] kgf	11000 [11940] kgf
		24250 [26330] lbf	24250 [26330] lbf
	ISO	123.6 [134.2] kN	123.6 [134.2] kN
		12600 [13680] kgf	12600 [13680] kgf
		27780 [30160] lbf	27780 [30160] lbf
Arm digging force	SAE	87.2 [94.7] kN	77.3 [83.9] kN
		8890 [9650] kgf	7880 [8560] kgf
		19600 [21280] lbf	17370 [18860] lbf
	ISO	91.0 [98.8] kN	80.3 [87.2] kN
		9280 [10080] kgf	8190 [8890] kgf
		20460 [22210] lbf	18060 [19600] lbf

[] : Power boost

4. WEIGHT

Item	R180W-9S	
	kg	lb
Upperstructure assembly	4590	10120
Main frame weld assembly	1430	3150
Engine assembly	350	770
Fan clutch assembly	45	100
Main pump assembly	100	220
Main control valve assembly	145	320
Swing motor assembly	250	550
Hydraulic oil tank assembly	165	360
Fuel tank assembly	130	290
Counterweight	3050	6720
Cab assembly	500	1100
Lower frame weld assembly	1640	3615
Swing bearing	260	570
Travel motor assembly	80	176
Turning joint	120	265
Transmission assembly	135	298
Front axle assembly	655	1444
Rear axle assembly	534	1177
Front attachment assembly (5.1m boom, 2.2m arm, 0.76m ³ SAE heaped bucket)	2990	6590
5.1m boom assembly	1040	2290
2.2m arm assembly	480	1050
0.76m ³ SAE heaped bucket assembly	570	1260
Boom cylinder assembly	155×2EA	340×2EA
Arm cylinder assembly	180	400
Bucket cylinder assembly	125	260
Bucket control link assembly	120	265
Oscillating cylinder assembly	30	70
Dozer blade assembly	830	1830
Blade cylinder assembly	55	120
Front outrigger assembly	1000	2200
Rear outrigger assembly	1010	2230
Outrigger cylinder assembly	80	180

5. LIFTING CAPACITIES

1) ROBEX 180W-9S

(1) 5.1 m (16' 9") boom, 2.2 m (7' 3") arm equipped with 0.76 m³ (SAE heaped) bucket, front outrigger, rear dozer blade down and 3050 kg (6720 lb) counterweight.

·  : Rating over-front

·  : Rating over-side or 360 degree

Load point height		Load radius								At max. reach		
		1.5 m (5.0 ft)		3.0 m (10.0 ft)		4.5 m (15.0 ft)		6.0 m (20.0 ft)		Capacity		Reach
												m (ft)
7.0 m (25.0 ft)	kg									*3710	*3710	5.89
	lb									*8180	*8180	(19.3)
6.0 m (20.0 ft)	kg							*3340	*3340	*3660	3110	7.15
	lb							*7360	*7360	*8070	6860	(23.5)
4.5 m (15.0 ft)	kg					*4730	*4730	*4170	4110	*3690	2580	7.86
	lb					*10430	*10430	*9190	9060	*8140	5690	(25.8)
3.0 m (10.0 ft)	kg			*9740	*9740	*6000	*6000	*4690	3950	*3770	2350	8.19
	lb			*21470	*21470	*13230	*13230	*10340	8710	*8310	5180	(26.9)
1.5 m (5.0 ft)	kg					*7180	5940	*5230	3790	*3860	2300	8.19
	lb					*15830	13100	*11530	8360	*8510	5070	(26.9)
Ground Line	kg			*7660	*7660	*7720	5740	*5540	3670	*3940	2430	7.87
	lb			*16890	*16890	*17020	12650	*12210	8090	*8690	5360	(25.8)
-1.5 m (-5.0 ft)	kg	*7650	*7650	*11110	*11110	*7510	5690	*5380	3640	*3950	2830	7.18
	lb	*16870	*16870	*24490	*24490	*16560	12540	*11860	8020	*8710	6240	(23.6)
-3.0 m (-10.0 ft)	kg	*12010	*12010	*9250	*9250	*6410	5780			*3660	*3660	5.95
	lb	*26480	*26480	*20390	*20390	*14130	12740			*8070	*8070	(19.5)

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

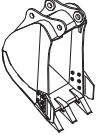
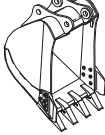
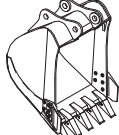
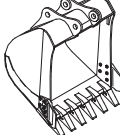
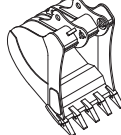
2. Lifting capacity of the ROBEX series does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.

3. The load point is a hook located on the back of the bucket.

4. * indicates load limited by hydraulic capacity.

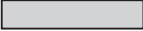
6. BUCKET SELECTION GUIDE

1) GENERAL BUCKET

				
0.39 m³ SAE heaped bucket	0.50 m³ SAE heaped bucket	0.64 m³, ※0.76 m³ SAE heaped bucket	0.89 m³, 1.05 m³ SAE heaped bucket	◆0.69 m³ SAE heaped bucket

Capacity		Width		Weight	Recommendation				
					5.1 m (16' 9") Mono boom			5.1 m (16' 9") Hyd adjustable boom	
SAE heaped	CECE heaped	Without side cutter	With side cutter		2.2 m arm (7' 3")	2.6 m arm (8' 6")	3.1 m arm (10' 2")	2.2 m arm (7' 3")	2.6 m arm (8' 6")
0.39 m³ (0.51 yd³)	0.34 m³ (0.44 yd³)	620 mm (24.4")	740 mm (29.1")	410 kg (900 lb)					
0.50 m³ (0.65 yd³)	0.44 m³ (0.58 yd³)	760 mm (29.9")	880 mm (34.6")	470 kg (1040 lb)					
0.64 m³ (0.84 yd³)	0.55 m³ (0.72 yd³)	920 mm (36.2")	1040 mm (40.9")	510 kg (1120 lb)					
※0.76 m³ (0.99 yd³)	0.65 m³ (0.85 yd³)	1060 mm (41.7")	1180 mm (46.5")	570 kg (1260 lb)					
0.89 m³ (1.16 yd³)	0.77 m³ (1.01 yd³)	1220 mm (48.0")	1340 mm (52.8")	610 kg (1340 lb)					
1.05 m³ (1.37 yd³)	0.90 m³ (1.18 yd³)	1400 mm (55.1")	1520 mm (59.8")	680 kg (1500 lb)					

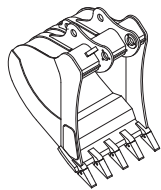
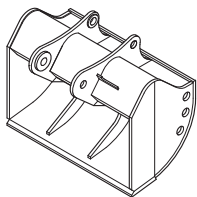
※ : Standard bucket

 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) SPECIAL BUCKET

Heavy duty bucket 	Ditch cleaning bucket 
◆ 0.69 m³ SAE heaped bucket	★ 0.75 m³ SAE heaped bucket

Capacity		Width		Weight	Recommendation		
					5.1 m (16' 9") Mono boom		
SAE heaped	CECE heaped	Without side cutter	With side cutter		2.2 m arm (7' 3")	2.6 m arm (8' 6")	3.1 m arm (10' 2")
◆ 0.69 m ³ (0.9 yd ³)	0.62 m ³ (0.81 yd ³)	990 mm (39.0")	-	700 kg (1540 lb)			
★ 0.75 m ³ (0.98 yd ³)	0.65 m ³ (0.85 yd ³)	1800 mm (70.9")	-	540 kg (1190 lb)			

◆ : Heavy duty bucket

★ : Ditch cleaning 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	Mitsubishi S6S-DT
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 bore × stroke	94 × 120 mm (3.7" × 4.7")
Piston displacement	4996 cc (305 cu in)
Compression ratio	19.5 : 1
Rated gross horse power (SAE J1995)	126 Hp (94 kW) at 2100 rpm
Maximum torque	42.5 kgf · m (307 lbf · ft) at 1400 rpm
Engine oil quantity	16.5 l (4.4 U.S. gal)
Dry weight	355 kg (783 lb)
High idling speed	2200 ± 50 rpm
Low idling speed	950 ± 100 rpm
Rated fuel consumption	160.2 g/Hp · hr at 2100 rpm
Starting motor	Mitsubishi (24 V - 5.0 kW)
Alternator	Mitsubishi (24 V - 50 A)
Battery	2 × 12 V × 100 Ah

2) MAIN PUMP

Item	Specification
Type	Variable displacement tandem axis piston pumps
Capacity	2 × 80 cc/rev
Maximum pressure	350 kgf/cm ² (4980 psi) [380 kgf/cm ² (5400 psi)]
Rated oil flow	2 × 168 l /min (44.4 U.S. gpm / 37.0 U.K. gpm)
Rated speed	2100 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	31.5 l /min (8.3 U.S. gpm/6.9 U.K. gpm)

4) MAIN CONTROL VALVE

Item	Specification
Type	11 spools two-block
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	117.8 cc/rev
Relief pressure	285 kgf/cm ² (4050 psi)
Braking system	Automatic, spring applied hydraulic released
Braking torque	59 kgf · m (427 lbf · ft)
Brake release pressure	33~50 kgf/cm ² (469~711 psi)
Reduction gear type	2 - stage planetary

6) TRAVEL MOTOR

Item	Specification
Type	Variable displacement bent-axis axial piston motor
Relief pressure	380 kgf/cm ² (5400 psi)
Counter balance valve	Applied
Capacity	140 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		3044 kgf · m (22020 lbf · ft)
Axle	Type		4 wheel drive with differential
	Gear ratio		22.11
	Brake		Multi disc brake

8) CYLINDER

Item		Specification
Boom cylinder	Bore dia × Rod dia × Stroke	ø 115 × ø 80 × 1090mm
	Cushion	Extend only
Arm cylinder	Bore dia × Rod dia × Stroke	ø 120 × ø 85 × 1355mm
	Cushion	Extend and retract
Bucket cylinder	Bore dia × Rod dia × Stroke	ø 110 × ø 75 × 995mm
	Cushion	Extend only
Dozer cylinder	Bore dia × Rod dia × Stroke	ø 110 × ø 65 × 235mm
	Cushion	Extend only
Outrigger cylinder	Bore dia × Rod dia × Stroke	ø 125 × ø 75 × 463mm
	Cushion	-
Boom cylinder (adjust boom)	Bore dia × Rod dia × Stroke	ø 115 × ø 80 × 960mm
	Cushion	Extend only
Adjust cylinder	Bore dia × Rod dia × Stroke	ø 160 × ø 95 × 650mm
	Cushion	Extended only

9) BUCKET

Item	Capacity		Tooth quantity	Width	
	SAE heaped	CECE heaped		Without side cutter	With side cutter
R180W-9S	0.76 m ³ (0.99 yd ³)	0.65 m ³ (0.85 yd ³)	5	1060 mm (41.7")	1180 mm (46.5")
	0.39 m ³ (0.51 yd ³)	0.34 m ³ (0.44 yd ³)	3	620 mm (24.4")	740 mm (29.1")
	0.50 m ³ (0.65 yd ³)	0.44 m ³ (0.58 yd ³)	4	760 mm (29.9")	880 mm (34.6")
	0.64 m ³ (0.84 yd ³)	0.55 m ³ (0.72 yd ³)	5	920 mm (36.2")	1040 mm (40.9")
	0.89 m ³ (1.16 yd ³)	0.77 m ³ (1.01 yd ³)	6	1220 mm (48.0")	1340 mm (52.8")
	1.05 m ³ (1.37 yd ³)	0.90 m ³ (1.18 yd ³)	6	1400 mm (55.1")	1520 mm (59.8")
	◆0.69 m ³ (0.90 yd ³)	0.62 m ³ (0.81 yd ³)	5	990 mm (39.0")	-
	★0.75 m ³ (0.98 yd ³)	0.65 m ³ (0.85 yd ³)	-	1800 mm (70.9")	-

◆ : Heavy duty bucket

★ : Ditch cleaning 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	16.5 (4.4)	★SAE 5W-40									
							SAE 30					
				SAE 10W								
Transmission case			3.0 (0.79)	SAE 10W-30								
			SAE 15W-40									
Swing drive	Gear oil	5.0 (1.32)	★SAE 75W-90									
				SAE 85W-140								
	Grease	1.2 (0.32)	★NLGI NO.1									
					NLGI NO.2							
Front axle	Gear oil	Center : 10.5 (2.77) Hub : 2.5 × 2 (0.66 × 2)	SAE 85W-90 LSD or UTTO									
Rear axle		Center : 15.1 (4.0) Hub : 2.5 × 2 (0.66 × 2)										
Hydraulic tank	Hydraulic oil		★ISO VG 15									
				ISO VG 32								
				ISO VG 46								
				ISO VG 68								
Fuel tank	Diesel fuel	260 (68.7)	★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	17.5 (4.6)	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

★ : Cold region

Russia, CIS, Mongolia

★1 : Soft water

City water or distilled water