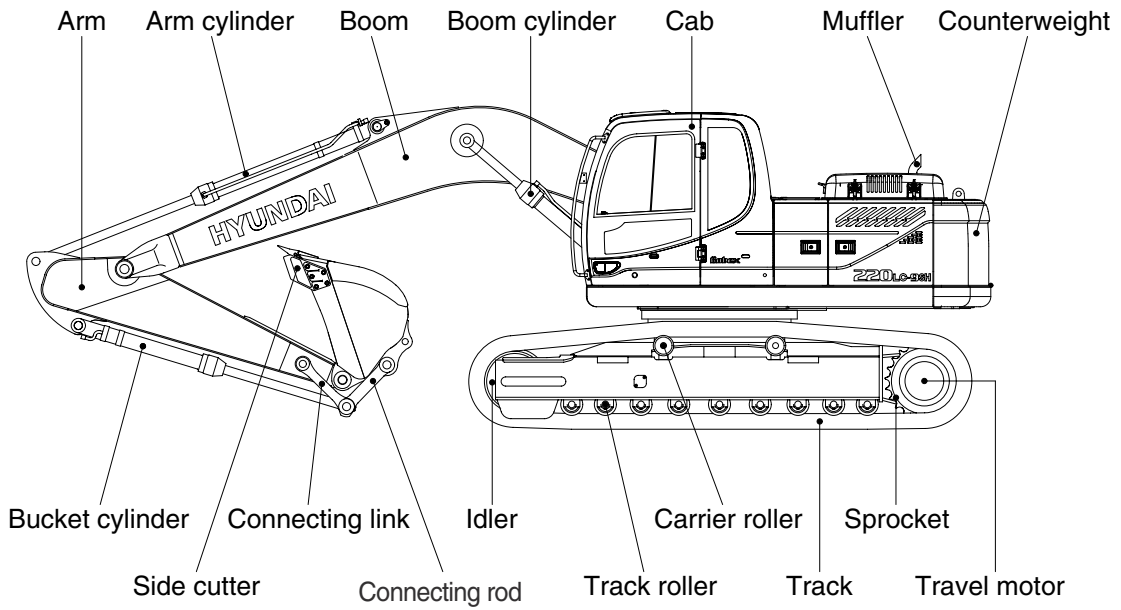
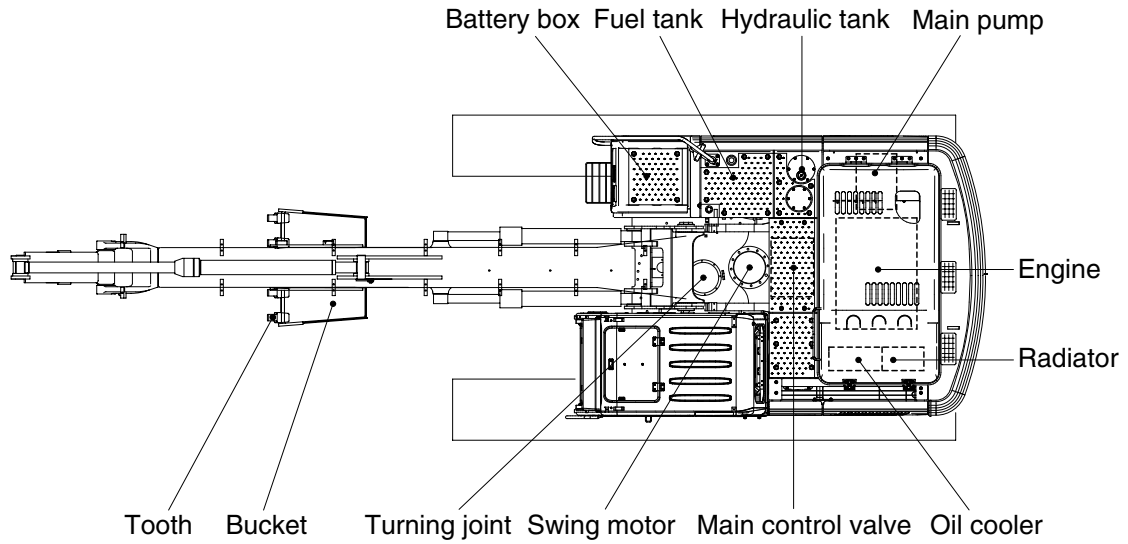


# GROUP 2 SPECIFICATIONS

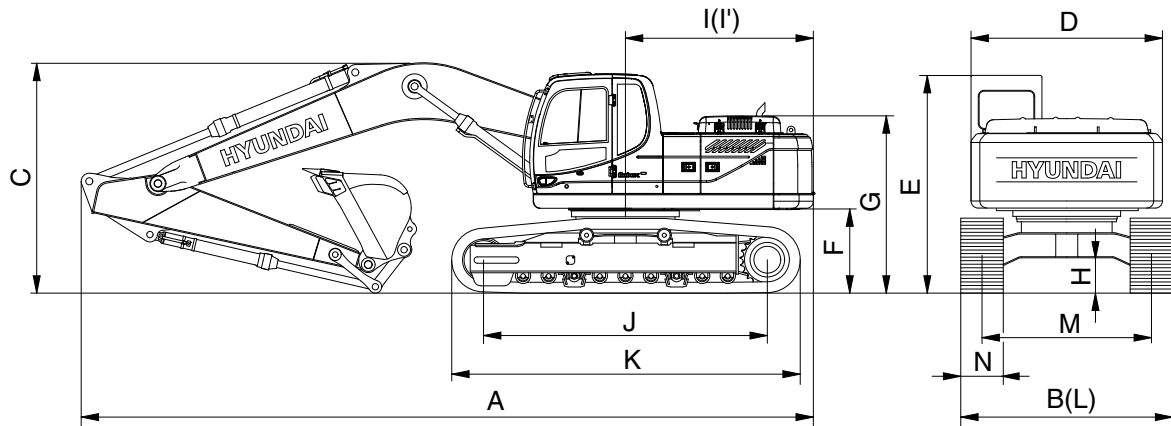


2209SH2SP01

## 2. SPECIFICATIONS

### 1) R220LC-9SH

- 5.68 m (18' 8") BOOM and 2.92 m (9' 7") ARM

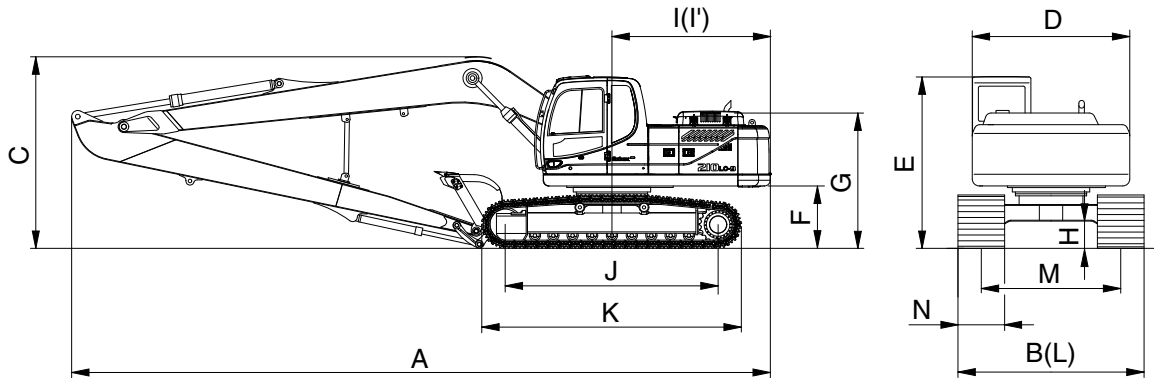


21092SP02

Description		Unit	Specification
Operating weight		kg (lb)	21900 (48280)
Bucket capacity (SAE heaped), standard		m <sup>3</sup> (yd <sup>3</sup> )	0.92 (1.20)
Overall length	A	mm (ft-in)	9530 (31' 3")
Overall width, with 600mm shoe	B		2990 ( 9' 10")
Overall height	C		3030 ( 9' 11")
Superstructure width	D		2740 ( 9' 0")
Overall height of cab	E		2920 ( 9' 7")
Ground clearance of counterweight	F		1060 ( 3' 6")
Engine cover height	G		2320 ( 7' 7")
Minimum ground clearance	H		480 ( 1' 7")
Rear-end distance	I		2770 ( 9' 1")
Rear-end swing radius	I'		2830 ( 9' 3")
Distance between tumblers	J		3650 (12' 0")
Undercarriage length	K		4440 (14' 7")
Undercarriage width	L		2990 ( 9' 10")
Track gauge	M		2390 (7' 10")
Track shoe width, standard	N		600 (24")
Travel speed (low/high)			km/hr (mph)
Swing speed		rpm	11.6
Gradeability		Degree (%)	35 (70)
Ground pressure (600 mm shoe)		kgf/cm <sup>2</sup> (psi)	0.46 (6.54)
Max traction force		kg (lb)	21100 (46500)

## 2) R220LC-9SH LONG REACH

· 8.2 m (26' 11") BOOM and 6.3 m (20' 8") ARM

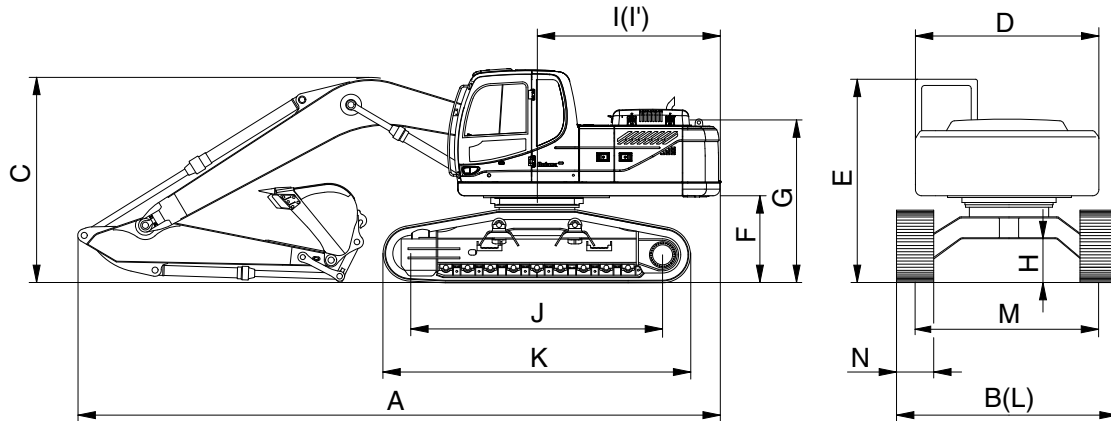


21092SP06

Description		Unit	Specification
Operating weight		kg (lb)	24360 (53700)
Bucket capacity (SAE heaped), standard		m <sup>3</sup> (yd <sup>3</sup> )	0.52 (0.68)
Overall length	A	mm (ft-in)	12030 (39' 6")
Overall width, with 800 mm shoe	B		3190 (10' 6")
Overall height	C		3280 (10' 9")
Superstructure width	D		2740 ( 9' 0")
Overall height of cab	E		2920 ( 9' 7")
Ground clearance of counterweight	F		1060 ( 3' 6")
Engine cover height	G		2320 ( 7' 7")
Minimum ground clearance	H		480 ( 1' 7")
Rear-end distance	I		2770 ( 9' 1")
Rear-end swing radius	I'		2830 ( 9' 3")
Distance between tumblers	J		3650 (12' 0")
Undercarriage length	K		4440 (14' 7")
Undercarriage width	L		3190 (10' 6")
Track gauge	M		2390 ( 7' 10")
Track shoe width, standard	N		800 (32")
Travel speed (low/high)			km/hr (mph)
Swing speed		rpm	11.6
Gradeability		Degree (%)	35 (70)
Ground pressure (800 mm shoe)		kgf/cm <sup>2</sup> (psi)	0.42 (5.97)
Max traction force		kg (lb)	21100 (46500)

### 3) R220LC-9SH HIGH WALKER

- 5.68 m (18' 8") BOOM and 2.92 m (9' 7") ARM



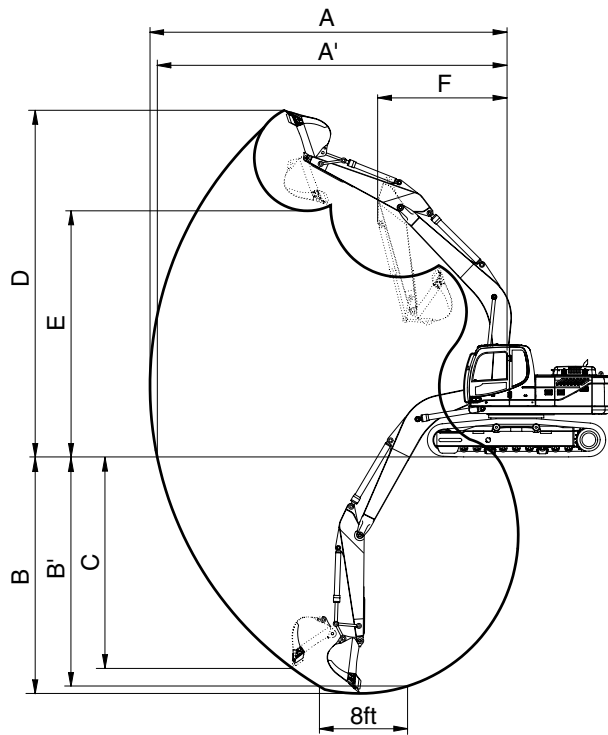
21092SP07

Description		Unit	Specification
Operating weight		kg (lb)	23160 (51060)
Bucket capacity (SAE heaped), standard		m <sup>3</sup> (yd <sup>3</sup> )	0.92 (1.20)
Overall length	A	mm (ft-in)	9470 (31' 1")
Overall width, with 600 mm shoe	B		3395 (11' 2")
Overall height	C		3060 (10' 0")
Superstructure width	D		2740 (9' 0")
Overall height of cab	E		3100 (10' 2")
Ground clearance of counterweight	F		1240 (4' 1")
Engine cover height	G		2500 (8' 2")
Minimum ground clearance	H		660 (2' 2")
Rear-end distance	I		2770 (9' 1")
Rear-end swing radius	I'		2830 (9' 3")
Distance between tumbler	J		3650 (12' 0")
Undercarriage length	K		4440 (14' 7")
Undercarriage width	L		3395 (11' 2")
Track gauge	M		2795 (9' 2")
Track shoe width, standard	N		600 (24")
Travel speed (low/high)			km/hr (mph)
Swing speed		rpm	11.6
Gradeability		Degree (%)	35 (70)
Ground pressure (600 mm shoe)		kgf/cm <sup>2</sup> (psi)	0.49 (6.97)
Max traction force		kg (lb)	21100 (46500)

### 3. WORKING RANGE

#### 1) R220LC-9SH

· 5.68 m (18' 8") BOOM



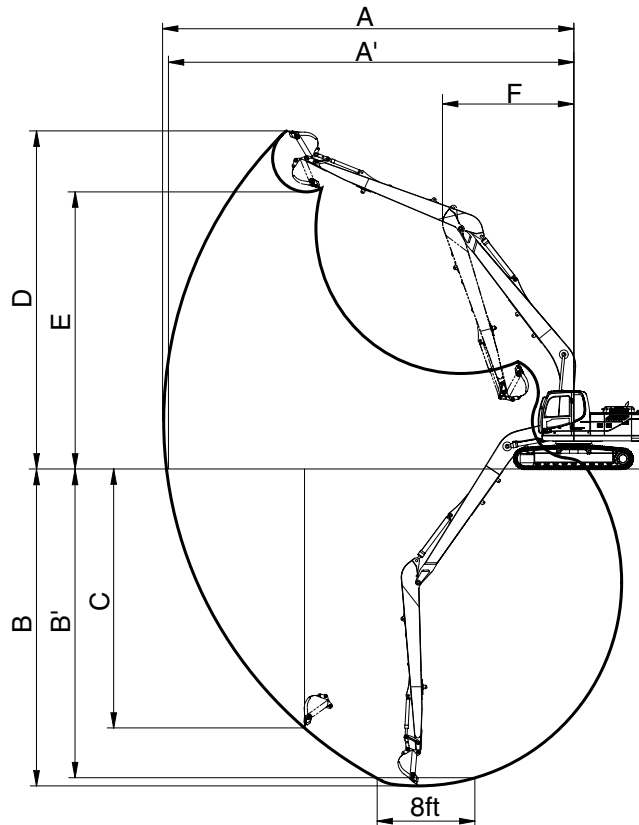
21092SP03

Description		2.0 m (6' 7") Arm	2.40 m (7' 10") Arm	2.92 m (9' 7") Arm	3.90 m (12' 10") Arm
Max digging reach	A	9140 mm (30' 0")	9500 mm (31' 2")	9980 mm (32' 9")	10910 mm (35' 10")
Max digging reach on ground	A'	8960 mm (29' 5")	9330 mm (30' 7")	9820 mm (32' 3")	10770 mm (35' 4")
Max digging depth	B	5820 mm (19' 1")	6220 mm (20' 5")	6730 mm (22' 1")	7720 mm (25' 4")
Max digging depth (8 ft level)	B'	5580 mm (18' 4")	6010 mm (19' 9")	6560 mm (21' 6")	7580 mm (24' 10")
Max vertical wall digging depth	C	5280 mm (17' 4")	5720 mm (18' 9")	6280 mm (20' 7")	7240 mm (23' 9")
Max digging height	D	9140 mm (30' 0")	9340 mm (30' 8")	9600 mm (31' 6")	10110 mm (33' 2")
Max dumping height	E	6330 mm (20' 9")	6520 mm (21' 5")	6780 mm (22' 3")	7290 mm (23' 11")
Min swing radius	F	3750 mm (12' 4")	3740 mm (12' 3")	3740 mm (12' 3")	3650 mm (12' 0")
Bucket digging force	SAE	133.4 [144.8] kN	133.4 [144.8] kN	133.4 [144.8] kN	133.4 [144.8] kN
		13600 [14770] kgf	13600 [14770] kgf	13600 [14770] kgf	13600 [14770] kgf
		29980 [32550] lbf	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	152.0 [165.0] kN
		15500 [16830] kgf	15500 [16830] kgf	15500 [16830] kgf	15500 [16830] kgf
		34170 [37100] lbf	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	84.3 [91.6] kN
		14700 [15960] kgf	12200 [13250] kgf	10400 [11290] kgf	8600 [9340] kgf
		32410 [35190] lbf	26900 [29210] lbf	22930 [24900] lbf	18960 [20590] lbf
	ISO	151.0 [164.0] kN	125.5 [136.3] kN	106.9 [116.1] kN	87.3 [94.8] kN
		15400 [16720] kgf	12800 [13900] kgf	10900 [11830] kgf	8900 [9660] kgf
		33950 [36860] lbf	28220 [30640] lbf	24030 [26090] lbf	19620 [21300] lbf

[ ] : Power boost

## 2) R220LC-9SH LONG REACH

· 8.2 m (26' 11") BOOM

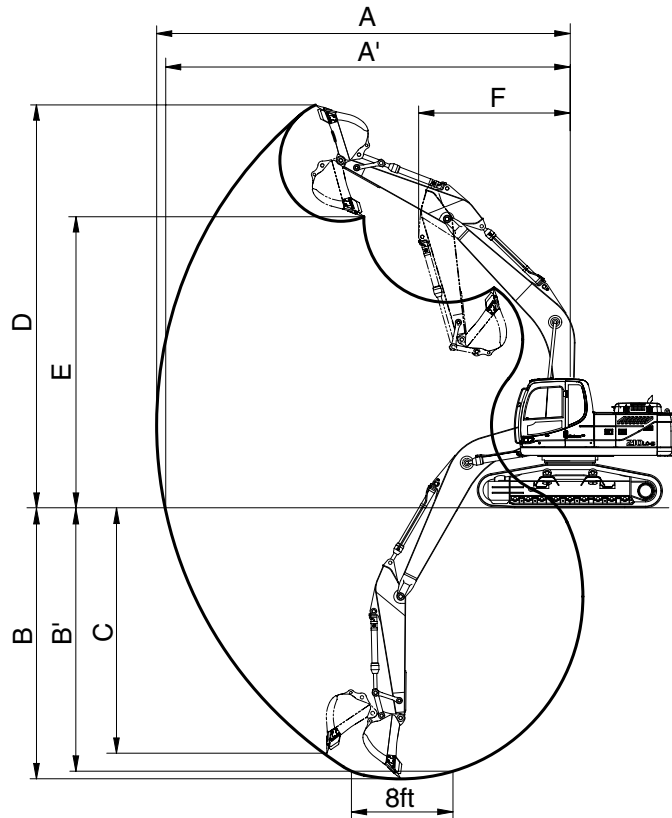


21092SP08

Description		6.3 m (20' 8") Arm	
Max digging reach	A	15220 (50' 0")	
Max digging reach on ground	A'	15120 (49' 7")	
Max digging depth	B	11760 (38' 7")	
Max digging depth (8 ft level)	B'	11650 (38' 3")	
Max vertical wall digging depth	C	9610 (31' 6")	
Max digging height	D	12550 (41' 2")	
Max dumping height	E	10280 (33' 8")	
Min swing radius	F	4870 (16' 0")	
Bucket digging force	SAE	72.6 kN	
		7400 kgf	
		16310 lbf	
	ISO	83.4 kN	
		8500 kgf	
		18740 lbf	
Arm crowd force	SAE	49.0 kN	
		5000 kgf	
		11020 lbf	
	ISO	50.0 kN	
		5100 kgf	
		11240 lbf	

### 3) R220LC-9SH HIGH WALKER

· 5.68 m (18' 8") BOOM



21092SP09

Description		2.0 m (6' 7") Arm	2.40 m (7' 10") Arm	2.92 m (9' 7") Arm	3.90 m (12'10") Arm
Max digging reach	A	9140 mm (30' 0")	9500 mm (31' 2")	9980 mm (32' 9")	10910 mm (35'10")
Max digging reach on ground	A'	8920 mm (29' 3")	9290 mm (30' 6")	9820 mm (32' 3")	10730 mm (35' 2")
Max digging depth	B	5630 mm (18' 6")	6010 mm (19' 9")	6550 mm (21' 6")	7530 mm (24' 8")
Max digging depth (8 ft level)	B'	5390 mm (17' 8")	5820 mm (19' 1")	6380 mm (20'11")	7390 mm (24' 3")
Max vertical wall digging depth	C	5090 mm (16' 8")	5630 mm (18' 6")	6100 mm (20' 0")	7050 mm (23' 1")
Max digging height	D	9330 mm (30' 7")	9530 mm (31' 3")	9780 mm (32' 1")	10300 mm (33' 9")
Max dumping height	E	6520 mm (21' 5")	6710 mm (22' 0")	6960 mm (22'10")	7480 mm (24' 6")
Min swing radius	F	3750 mm (12' 4")	3740 mm (12' 3")	3740 mm (12' 3")	3650 mm (12' 0")
Bucket digging force	SAE	133.4 [144.8] kN	133.4 [144.8] kN	133.4 [144.8] kN	133.4 [144.8] kN
		13600 [14770] kgf	13600 [14770] kgf	13600 [14770] kgf	13600 [14770] kgf
		29980 [32550] lbf	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	152.0 [165.0] kN
		15500 [16830] kgf	15500 [16830] kgf	15500 [16830] kgf	15500 [16830] kgf
		34170 [37100] lbf	34170 [37100] lbf	34170 [37100] lbf	34170 [37100] lbf
Arm crowd force	SAE	144.2 [156.5] kN	119.6 [129.9] kN	102.0 [110.7] kN	84.3 [91.6] kN
		14700 [15960] kgf	12200 [13250] kgf	10400 [11290] kgf	8600 [9340] kgf
		32410 [35190] lbf	26900 [29210] lbf	22930 [24900] lbf	18960 [20590] lbf
	ISO	151.0 [164.0] kN	125.5 [136.3] kN	106.9 [116.1] kN	87.3 [94.8] kN
		15400 [16720] kgf	12800 [13900] kgf	10900 [11830] kgf	8900 [9660] kgf
		33950 [36860] lbf	28220 [30640] lbf	24030 [26090] lbf	19620 [21300] lbf

[ ] : Power boost

## 4. WEIGHT

### 1) R220LC-9SH

Item	R220LC-9SH	
	kg	lb
Upperstructure assembly	9400	20720
Main frame weld assembly	1920	4230
Engine assembly	530	1170
Main pump assembly	140	310
Main control valve assembly	220	485
Swing motor assembly	240	530
Hydraulic oil tank assembly	240	530
Fuel tank assembly	195	430
Counterweight	3800	8380
Cab assembly	440	970
Lower chassis assembly	8700	19180
Track frame weld assembly	2720	6000
Swing bearing	290	640
Travel motor assembly	300	660
Turning joint	55	120
Track recoil spring	140	310
Idler	170	370
Carrier roller	20	45
Track roller	40	90
Track-chain assembly (600 mm standard triple grouser shoe)	1350	2980
Front attachment assembly (5.68 m boom, 2.92 m arm, 0.92 m <sup>3</sup> SAE heaped bucket)	4030	8880
5.68 m boom assembly	1520	3350
2.92 m arm assembly	750	1650
0.92 m <sup>3</sup> SAE heaped bucket	765	1690
Boom cylinder assembly	180	400
Arm cylinder assembly	290	640
Bucket cylinder assembly	175	390
Bucket control link assembly	170	370



## 2) R220LC-9SH LONG REACH

Item	R220LC-9SH LONG REACH	
	kg	lb
Upperstructure assembly	9400	20720
Main frame weld assembly	1920	4230
Engine assembly	530	1170
Main pump assembly	140	310
Main control valve assembly	220	485
Swing motor assembly	240	530
Hydraulic oil tank assembly	240	530
Fuel tank assembly	195	430
Counterweight	5300	11680
Cab assembly	440	970
Lower chassis assembly	8700	19180
Track frame weld assembly	2720	6000
Swing bearing	290	640
Travel motor assembly	300	660
Turning joint	55	120
Track recoil spring	140	310
Idler	170	370
Carrier roller	20	45
Track roller	40	90
Track-chain assembly (800 mm standard triple grouser shoe)	1660	3660
Front attachment assembly (8.2 m boom, 6.3 m arm, 0.52 m <sup>3</sup> SAE heaped bucket)	4600	10140
8.2 m boom assembly	2105	4640
6.3 m arm assembly	1100	2430
0.52 m <sup>3</sup> SAE heaped bucket	465	1030
Boom cylinder assembly	180	400
Arm cylinder assembly	270	600
Bucket cylinder assembly	130	290
Bucket control rod assembly	170	370













### 3) R220LC-9SH HIGH WALKER

Item	R220LC-9SH HIGH WALKER	
	kg	lb
Upperstructure assembly	9430	20790
Main frame weld assembly	1950	4300
Engine assembly	530	1170
Main pump assembly	140	310
Main control valve assembly	220	485
Swing motor assembly	240	530
Hydraulic oil tank assembly	240	530
Fuel tank assembly	195	430
Counterweight	3800	8380
Cab assembly	440	970
Lower chassis assembly	9015	19870
Track frame weld assembly	3730	8220
Swing bearing	290	640
Travel motor assembly	300	660
Turning joint	55	120
Track recoil spring	140	310
Idler	170	370
Carrier roller	20	45
Track roller	40	90
Track-chain assembly (600 mm standard triple grouser shoe)	1350	2980
Front attachment assembly (5.68 m boom, 2.92 m arm, 0.92 m <sup>3</sup> SAE heaped bucket)	4030	8880
5.68 m boom assembly	1520	3350
2.92 m arm assembly	750	1650
0.92 m <sup>3</sup> SAE heaped bucket	765	1690
Boom cylinder assembly	180	400
Arm cylinder assembly	290	640
Bucket cylinder assembly	175	390
Bucket control rod assembly	170	370

## 5. LIFTING CAPACITIES













### 1) ROBEX 220LC-9SH

(1) 5.68 m (18' 8") boom, 2.92 m (9' 7") arm equipped with 0.92 m<sup>3</sup> (SAE heaped) bucket, 600 mm (24") triple grouser shoe.

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
														kg
7.5 m (25 ft)	kg											*3360	3150	7.78
	lb											*7410	6940	(25.5)
6.0 m (20 ft)	kg									*2340	*2340	*3450	2460	8.74
	lb									*5160	*5160	*7610	5420	(28.7)
4.5 m (15 ft)	kg							*4010	*4010	*3830	3180	*3580	2100	9.32
	lb							*8840	*8840	*8440	7010	*7890	4630	(30.6)
3.0 m (10 ft)	kg			*9780	*9780	*6150	*6150	*4840	4460	*4230	3040	3440	1930	9.59
	lb			*21560	*21560	*13560	*13560	*10670	9830	*9330	6700	7580	4250	(31.5)
1.5 m (5 ft)	kg			*8810	*8810	*7960	6490	*5750	4160	*4710	2880	3390	1880	9.59
	lb			*19420	*19420	*17550	14310	*12680	9170	*10380	6350	7470	4140	(31.5)
Ground Line	kg			*9550	*9550	*9160	6090	*6490	3920	4930	2750	3520	1950	9.31
	lb			*21050	*21050	*20190	13430	*14310	8640	10870	6060	7760	4300	(30.5)
-1.5 m (-5 ft)	kg	*8810	*8810	*12610	11870	*9600	5940	*6870	3800	4860	2690	3920	2190	8.72
	lb	*19420	*19420	*27800	26170	*21160	13100	*15150	8380	10710	5930	8640	4830	(28.6)
-3.0 m (-10 ft)	kg	*12190	*12190	*13980	12040	*9320	5960	*6740	3800			*4460	2710	7.75
	lb	*26870	*26870	*30820	26540	*20550	13140	*14860	8380			*9830	5970	(25.4)
-4.5 m (-15 ft)	kg			*11860	*11860	*8120	6140					*4330	4080	6.16
	lb			*26150	*26150	*17900	13540					*9550	8990	(20.2)

- 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.

(2) 5.68 m (18' 8") boom, 2.40 m (7' 10") arm equipped with 0.92 m<sup>3</sup> (SAE heaped) bucket, 600 mm (24") triple grouser shoe.











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
														kg
7.5 m (25 ft)	kg											*3700	3640	7.15
	lb											*8160	8020	(23.5)
6.0 m (20 ft)	kg											*3780	2760	8.20
	lb											*8330	6080	(26.9)
4.5 m (15 ft)	kg									*4490	*4490	*4230	3130	8.82
	lb									*9900	*9900	*9330	6900	(28.9)
3.0 m (10 ft)	kg					*6900	*6900	*5280	4400	*4560	3010	3760	2130	9.11
	lb					*15210	*15210	*11640	9700	*10050	6640	8290	4700	(29.9)
1.5 m (5 ft)	kg					*8560	6380	*6120	4130	*4970	2880	3710	2080	9.10
	lb					*18870	14070	*13490	9110	*10960	6350	8180	4590	(29.9)
Ground Line	kg			*8790	*8790	*9490	6080	*6740	3930	4950	2780	3890	2180	8.81
	lb			*19380	*19380	*20920	13400	*14860	8660	10910	6130	8580	4810	(28.9)
-1.5 m (-5 ft)	kg	*9760	*9760	*13510	12060	*9650	6000	*6960	3850			4390	2480	8.18
	lb	*21520	*21520	*29780	26590	*21270	13230	*15340	8490			9680	5470	(26.8)
-3.0 m (-10 ft)	kg	*14150	*14150	*13240	12280	*9090	6080	*6590	3900			*4700	3190	7.12
	lb	*31200	*31200	*29190	27070	*20040	13400	*14530	8600			*10360	7030	(23.4)
-4.5 m (-15 ft)	kg			*10630	*10630	*7400	6330							
	lb			*23440	*23440	*16310	13960							

## 2) R220LC-9SH LONG REACH

(1) 8.2 m (26' 11") boom, 6.3 m (20' 8") arm equipped with 0.52 m<sup>3</sup>(0.68yd<sup>3</sup>)(SAE heaped) bucket, 800 mm (32") triple grouser shoe.

•  : Rating over-front













•  : Rating over-side or 360 degree

Load point height		Load radius								At max. reach		
		3.0 m (10.0 ft)		6.0 m (20.0 ft)		9.0 m (30.0 ft)		12.0 m (40.0 ft)		Capacity		Reach
												m (ft)
9.0 m (30.0 ft)	kg							*830	*830	*1330	*1330	13.11
	lb							*1830	*1830	*2930	*2930	(43.0)
6.0 m (20.0 ft)	kg							*1430	*1430	*1410	1160	14.37
	lb							*3150	*3150	*3110	2560	(47.1)
3.0 m (10.0 ft)	kg					*1990	*1990	*1670	1630	*1520	980	14.89
	lb					*4390	*4390	*3680	3590	*3350	2160	(48.9)
Ground Line	kg	*4560	*4560	*4330	*4330	*2650	2430	*1980	1440	*1670	930	14.75
	lb	*10050	*10050	*9550	*9550	*5840	5360	*4370	3170	*3680	2050	(48.4)
-3.0 m (-10 ft)	kg	*5710	*5710	*5250	3920	*3150	2140	*2220	1310	*1860	1020	13.92
	lb	*12590	*12590	*11570	8640	*6940	4720	*4890	2890	*4100	2250	(45.7)
-6.0 m (-20 ft)	kg	*7790	*7790	*5370	3840	*3280	2060			*2090	1330	12.25
	lb	*17170	*17170	*11840	8470	*7230	4540			*4610	2930	(40.2)
-9.0 m (-30 ft)	kg	*8780	*8780	*4510	4110	*2620	2260					
	lb	*19360	*19360	*9940	9060	*5780	4980					

- 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.













### 3) R220LC-9SH HIGH WALKER

(1) 5.68 m (18' 8") boom, 2.92 m (9' 7") arm equipped with 0.92 m<sup>3</sup> (SAE heaped) bucket, 600 mm (24") triple grouser shoe.

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)
7.5 m (25 ft)	kg lb											*3370 *7430	*3370 *7430	7.93 (26.0)
6.0 m (20 ft)	kg lb									*2700 *5950	*2700 *5950	*3460 *7630	3130 6900	8.83 (29.0)
4.5 m (15 ft)	kg lb							*4110 *9060	*4110 *9060	*3870 *8530	*3870 *8530	*3600 *7940	2740 6040	9.37 (30.7)
3.0 m (10 ft)	kg lb			*10440 *23020	*10440 *23020	*6400 *14110	*6400 *14110	*4960 *10930	*4960 *10930	*4290 *9460	3930 8660	3680 8110	2560 5640	9.60 (31.5)
1.5 m (5 ft)	kg lb			*8610 *18980	*8610 *18980	*8150 *17970	*8150 *17970	*5860 *12920	5380 11860	*4760 *10490	3770 8310	3650 8050	2530 5580	9.57 (31.4)
Ground Line	kg lb			*9870 *21760	*9870 *21760	*9260 *20410	8080 17810	*6560 *14460	5150 11350	*5150 *11350	3640 8020	3820 8420	2650 5840	9.25 (30.3)
-1.5 m (-5 ft)	kg lb	*9210 *20300	*9210 *20300	*13090 *28860	*13090 *28860	*9600 *21160	7940 17500	*6880 *15170	5040 11110	5200 11460	3590 7910	4280 9440	2980 6570	8.62 (28.3)
-3.0 m (-10 ft)	kg lb	*12660 *27910	*12660 *27910	*13780 *30380	*13780 *30380	*9230 *20350	7990 17610	*6670 *14700	5060 11160			*4470 *9850	3710 8180	7.59 (24.9)
-4.5 m (-15 ft)	kg lb			*11470 *25290	*11470 *25290	*7860 *17330	*7860 *17330					*4250 *9370	*4250 *9370	5.89 (19.3)

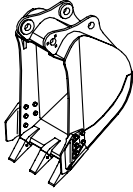
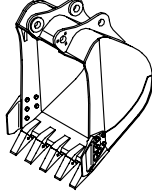
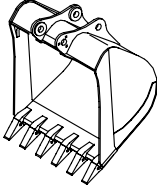
- Note
1. Lifting capacity are based on SAE J1097 and ISO 10567.
  2. Lifting capacity of the ROBEX series does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.
  3. The load point is a hook located on the back of the bucket.
  4. \*indicates load limited by hydraulic capacity.

(2) 5.68 m (18' 8") boom, 2.4 m (7' 10") arm equipped with 0.92 m<sup>3</sup> (SAE heaped) bucket, 600 mm (24") triple grouser shoe.

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)		
7.5 m (25 ft)	kg lb											*3700 *8160	*3700 *8160	7.31 (24.0)		
6.0 m (20 ft)	kg lb									*4050 *8930	*4050 *8930			*3790 *8360	3480 7670	8.30 (27.2)
4.5 m (15 ft)	kg lb							*5360 *11820	*5360 *11820	*4580 *10100	*4580 *10100	*4260 *9390	4030 8880	*3920 *8640	3020 6660	8.87 (29.1)
3.0 m (10 ft)	kg lb							*7130 *15720	*7130 *15720	*5390 *11880	*5390 *11880	*4610 *10160	3900 8600	4010 8840	2810 6190	9.12 (29.9)
1.5 m (5 ft)	kg lb							*8720 *19220	8370 18450	*6220 *13710	5360 11820	*5020 *11070	3770 8310	3990 8800	2780 6130	9.08 (29.8)
Ground Line	kg lb			*9350 *20610	*9350 *20610	*9550 *21050	8080 17810	*6790 *14970	5170 11400	5290 11660	3670 8090	4210 9280	2940 6480	8.75 (28.7)		
-1.5 m (-5 ft)	kg lb	*10290 *22690	*10290 *22690	*14180 *31260	*14180 *31260	*9620 *21210	8020 17680	*6950 *15320	5100 11240			*4650 *10250	3360 7410	8.07 (26.5)		
-3.0 m (-10 ft)	kg lb	*14760 *32540	*14760 *32540	*12990 *28640	*12990 *28640	*8950 *19730	8120 17900	*6470 *14260	5170 11400			*4690 *10340	4350 9590	6.94 (22.8)		
-4.5 m (-15 ft)	kg lb			*10150 *22380	*10150 *22380	*7020 *15480	*7020 *15480									

## 6. BUCKET SELECTION GUIDE

### 1) GENERAL BUCKET

		
0.51 m <sup>3</sup> SAE heaped bucket	※0.92, ★0.52, 0.80, 0.87, 1.10, 1.20 m <sup>3</sup> SAE heaped bucket	1.34 m <sup>3</sup> SAE heaped bucket

Capacity		Width		Weight	Recommendation				
					5.68 m (18' 8") boom				8.2m (26' 11") 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")	3.90 m arm (12' 10")	6.3 m arm (20' 8")
0.51 m <sup>3</sup> (0.67 yd <sup>3</sup> )	0.45 m <sup>3</sup> (0.59 yd <sup>3</sup> )	700 mm (27.6")	820 mm (32.3")	570 kg (1260 lb)					
★0.52 m <sup>3</sup> (0.68 yd <sup>3</sup> )	0.45 m <sup>3</sup> (0.59 yd <sup>3</sup> )	935 mm (36.8")	1035 mm (40.7")	460 kg (1010 lb)					
0.80 m <sup>3</sup> (1.05 yd <sup>3</sup> )	0.70 m <sup>3</sup> (0.92 yd <sup>3</sup> )	1000 mm (39.4")	1120 mm (44.1")	700 kg (1540 lb)					
0.87 m <sup>3</sup> (1.14 yd <sup>3</sup> )	0.75 m <sup>3</sup> (0.98 yd <sup>3</sup> )	1090 mm (42.9")	1210 mm (47.6")	740 kg (1630 lb)					
※0.92 m <sup>3</sup> (1.20 yd <sup>3</sup> )	0.80 m <sup>3</sup> (1.05 yd <sup>3</sup> )	1150 mm (45.3")	1270 mm (50.0")	770 kg (1700 lb)					
1.10 m <sup>3</sup> (1.44 yd <sup>3</sup> )	0.96 m <sup>3</sup> (1.26 yd <sup>3</sup> )	1320 mm (52.0")	1440 mm (56.7")	830 kg (1830 lb)					
1.20 m <sup>3</sup> (1.57 yd <sup>3</sup> )	1.00 m <sup>3</sup> (1.31 yd <sup>3</sup> )	1400 mm (55.1")	1520 mm (59.8")	850 kg (1870 lb)					
1.34 m <sup>3</sup> (1.75 yd <sup>3</sup> )	1.15 m <sup>3</sup> (1.50 yd <sup>3</sup> )	1550 mm (61.0")	1670 mm (65.7")	920 kg (2030 lb)					

※ : Standard bucket

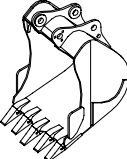
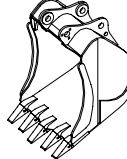
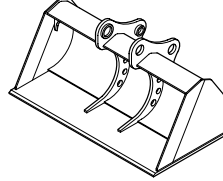
★ : Long reach bucket

Applicable for materials with density of 2000 kgf/m<sup>3</sup> (3370 lbf/yd<sup>3</sup>) or less

Applicable for materials with density of 1600 kgf/m<sup>3</sup> (2700 lbf/yd<sup>3</sup>) or less

Applicable for materials with density of 1100 kgf/m<sup>3</sup> (1850 lbf/yd<sup>3</sup>) 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 <sup>3</sup> SAE heaped bucket	◎ 0.87, 1.20 m <sup>3</sup> SAE heaped bucket	■ 0.75 m <sup>3</sup> SAE heaped bucket

Capacity		Width		Weight	5.68 m (18' 8") 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")	3.90 m arm (12' 10")
◆0.74 m <sup>3</sup> (0.97 yd <sup>3</sup> )	0.65 m <sup>3</sup> (0.85 yd <sup>3</sup> )	985 mm (38.8")	-	770 kg (1700 lb)				
◆0.90 m <sup>3</sup> (1.18 yd <sup>3</sup> )	0.80 m <sup>3</sup> (1.05 yd <sup>3</sup> )	1070 mm (42.0")	-	810 kg (1790 lb)				
◆1.05 m <sup>3</sup> (1.37 yd <sup>3</sup> )	0.92 m <sup>3</sup> (1.20 yd <sup>3</sup> )	1290 mm (50.8")	-	890 kg (1960 lb)				
◎0.87 m <sup>3</sup> (1.14 yd <sup>3</sup> )	0.75 m <sup>3</sup> (0.98 yd <sup>3</sup> )	1140 mm (44.9")	-	900 kg (1980 lb)				
◎1.20 m <sup>3</sup> (1.57 yd <sup>3</sup> )	1.00 m <sup>3</sup> (1.31 yd <sup>3</sup> )	1410 mm (55.5")	-	1030 kg (2270 lb)				
■0.75 m <sup>3</sup> (0.98 yd <sup>3</sup> )	0.65 m <sup>3</sup> (0.85 yd <sup>3</sup> )	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 kgf/m<sup>3</sup> (3370 lbf/yd<sup>3</sup>) or less

 Applicable for materials with density of 1600 kgf/m<sup>3</sup> (2700 lbf/yd<sup>3</sup>) or less

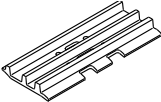
 Applicable for materials with density of 1100 kgf/m<sup>3</sup> (1850 lbf/yd<sup>3</sup>) or less

## 7. UNDERCARRIAGE

### 1) TRACKS

X-leg type center frame is integrally welded with reinforced box-section track frames. The design includes dry tracks, lubricated rollers, idlers, sprockets, hydraulic track adjusters with shock absorbing springs and assembled track-type tractor shoes with triple grousers.

### 2) TYPES OF SHOES

Model	Shapes		Triple grouser			
						
R220LC-9SH	Shoe width	mm (in)	600 (24)	700 (28)	800 (32)	900 (36)
	Operating weight	kg (lb)	21900 (48280)	22250 (49050)	22515 (49640)	22760 (50180)
	Ground pressure	kgf/cm <sup>2</sup> (psi)	0.46 (6.54)	0.40 (5.69)	0.36 (5.12)	0.32 (4.55)
	Overall width	mm (ft-in)	2990 (9' 10")	3090 (10' 2")	3190 (10' 6")	3290 (10' 10")
R220LC-9SH LONG REACH	Shoe width	mm (in)	-	-	800 (32)	-
	Operating weight	kg (lb)	-	-	24605 (54240)	-
	Ground pressure	kgf/cm <sup>2</sup> (psi)	-	-	0.39 (5.55)	-
	Overall width	mm (ft-in)	-	-	3190 (10' 6")	-
R220LC-9SH HIGH WALKER	Shoe width	mm (in)	600 (24)	700 (28)	800 (32)	710 (28)*
	Operating weight	kg (lb)	23360 (51500)	23710 (52270)	23975 (52860)	24220 (53400)
	Ground pressure	kgf/cm <sup>2</sup> (psi)	0.50 (7.11)	0.43 (6.11)	0.38 (5.40)	0.43 (6.11)
	Overall width	mm (ft-in)	3395 (11' 2")	3495 (11' 6")	3595 (11' 10")	3505 (11' 6")

\* : Double grouser

### 3) NUMBER OF ROLLERS AND SHOES ON EACH SIDE

Item	Quantity
Carrier rollers	2 EA
Track rollers	9 EA
Track shoes	49 EA



#### 4) SELECTION OF TRACK SHOE

Suitable track shoes should be selected according to operating conditions.

##### Method of selecting shoes

Confirm the category from the list of applications in **table 2**, then use **table 1** to select the shoe. Wide shoes (categories B and C) have limitations on applications. Before using wide shoes, check the precautions, then investigate and study the operating conditions to confirm if these shoes are suitable.

Select the narrowest shoe possible to meet the required flotation and ground pressure. Application of wider shoes than recommendations will cause unexpected problem such as bending of shoes, crack of link, breakage of pin, loosening of shoe bolts and the other various problems.

※ **Table 1**

Track shoe	Specification	Category
600 mm triple grouser	Standard	A
700 mm triple grouser	Option	B
800 mm triple grouser	Option	C
800 mm triple grouser (long reach)	Standard	C
900 mm triple grouser	Option	C

※ **Table 2**

Category	Applications	Precautions
A	Rocky ground, river beds, normal soil	<ul style="list-style-type: none"> <li>Travel at low speed on rough ground with large obstacles such as boulders or fallen trees</li> </ul>
B	Normal soil, soft ground	<ul style="list-style-type: none"> <li>These shoes cannot be used on rough ground with large obstacles such as boulders or fallen trees</li> <li>Travel at high speed only on flat ground</li> <li>Travel slowly at low speed if it is impossible to avoid going over obstacles</li> </ul>
C	Extremely soft ground (swampy ground)	<ul style="list-style-type: none"> <li>Use the shoes only in the conditions that the machine sinks and it is impossible to use the shoes of category A or B</li> <li>These shoes cannot be used on rough ground with large obstacles such as boulders or fallen trees</li> <li>Travel at high speed only on flat ground</li> <li>Travel slowly at low speed if it is impossible to avoid going over obstacles</li> </ul>

## 8. SPECIFICATIONS FOR MAJOR COMPONENTS

### 1) ENGINE

Item	Specification
Model	HYUNDAI D6BV-C
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	118 × 115 mm (4.65" × 4.53")
Piston displacement	7545 cc (460 cu in)
Compression ratio	16 : 1
Rated gross horse power (SAE J1995)	148 Hp at 1950 rpm (110 kW at 1950 rpm)
Maximum torque at 1600 rpm	58 kgf · m (420 lbf · ft)
Engine oil quantity	16.3 l (4.3 U.S. gal)
Dry weight	530 kg (1168 lb)
High idling speed	2150 ± 100 rpm
Low idling speed	900 ± 100 rpm
Rated fuel consumption	151.6 g/Hp · hr at 1950 rpm
Starting motor	24 V - 5 kW
Alternator	24 V - 70 A
Battery	2 × 12 V × 100 Ah, *2 × 12V × 200Ah

\* : Arctic machinery

### 2) MAIN PUMP

Item	Specification
Type	Variable displacement tandem axis piston pumps
Capacity	2 × 117cc/rev
Maximum pressure	350kgf/cm <sup>2</sup> (4980psi) [380 kgf/cm <sup>2</sup> (5400 psi)]
Rated oil flow	2 × 222 l /min (58.6U.S. gpm/ 48.8U.K. gpm)
Rated speed	1900 rpm

[ ] : Power boost

### 3) GEAR PUMP

Item	Specification
Type	Fixed displacement gear pump single stage
Capacity	15 cc/rev
Maximum pressure	40 kgf/cm <sup>2</sup> (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	
	R220LC-9SH	R220LC-9SH Long reach
Type	9 spools two-block	
Operating method	Hydraulic pilot system	
Main relief valve pressure	350 kgf/cm <sup>2</sup> (4980 psi) [380 kgf/cm <sup>2</sup> (5400 psi)]	
Port relief valve pressure	Boom	400 kgf/cm <sup>2</sup> (5690 psi)
	Arm	400 kgf/cm <sup>2</sup> (5690 psi)      300 kgf/cm <sup>2</sup> (4270 psi)
	Bucket	400 kgf/cm <sup>2</sup> (5690 psi)      280 kgf/cm <sup>2</sup> (3980 psi)

[ ]: Power boost

### 5) SWING MOTOR

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

### 6) TRAVEL MOTOR

Item	Specification
Type	Variable displacement axial piston motor
Relief pressure	350 kgf/cm <sup>2</sup> (4980 psi)
Reduction gear type	2-stage planetary
Braking system	Automatic, spring applied hydraulic released
Brake release pressure	11 kgf/cm <sup>2</sup> (156 psi)
Braking torque	49.3 kgf · m (357 lbf · ft)

## 7) REMOTE CONTROL VALVE

Item		Specification
Type		Pressure reducing type
Operating pressure	Minimum	6.5 kgf/cm <sup>2</sup> (92 psi)
	Maximum	25 kgf/cm <sup>2</sup> (356 psi)
Single operation stroke	Lever	90 mm (3.5 in)
	Pedal	130 mm (4.4 in)

## 8) CYLINDER

Item		Specification
Boom cylinder	Bore dia × Rod dia × Stroke	∅ 120 × ∅ 85 × 1290 mm
	Cushion	Extend only
Arm cylinder	Bore dia × Rod dia × Stroke	∅ 140 × ∅ 100 × 1510 mm # ∅ 140 × ∅ 100 × 1460 mm
	Cushion	Extend and retract
Bucket cylinder	Bore dia × Rod dia × Stroke	∅ 120 × ∅ 85 × 1055 mm # ∅ 100 × ∅ 70 × 870 mm
	Cushion	Extend only

※ Discoloration of cylinder rod can occur when the friction reduction additive of lubrication oil spreads on the rod surface.

※ Discoloration does not cause any harmful effect on the cylinder performance.

# : LONG REACH

## 9) SHOE

Item		Width	Ground pressure	Link quantity	Overall width
R220LC-9SH	Standard	600 mm (24")	0.46 kgf/cm <sup>2</sup> (6.54 psi)	49	2990 mm (9' 10")
	Option	700 mm (28")	0.40 kgf/cm <sup>2</sup> (5.69 psi)	49	3090 mm (10' 2")
		800 mm (32")	0.36 kgf/cm <sup>2</sup> (5.12 psi)	49	3190 mm (10' 6")
		900 mm (36")	0.32 kgf/cm <sup>2</sup> (4.55 psi)	49	3290 mm (10' 10")
R220LC-9SH LONG REACH	Standard	800 mm (32")	0.39 kgf/cm <sup>2</sup> (5.55 psi)	49	3190 mm (10' 6")
R220LC-9SH HIGH WALKER	Standard	600 mm (24")	0.50 kgf/cm <sup>2</sup> (7.11 psi)	49	3395 mm (11' 2")
	Option	700 mm (28")	0.43 kgf/cm <sup>2</sup> (6.11 psi)	49	3495 mm (11' 6")
		800 mm (32")	0.38 kgf/cm <sup>2</sup> (5.40 psi)	49	3595 mm (11' 10")
		※ 710 mm (28")	0.43 kgf/cm <sup>2</sup> (6.11 psi)	49	3505 mm (11' 6")

※ : Double grouser

## 10) BUCKET

Item	Capacity		Tooth quantity	Width	
	SAE heaped	CECE heaped		Without side cutter	With side cutter
R220LC-9SH	0.51 m <sup>3</sup> (0.67 yd <sup>3</sup> )	0.45 m <sup>3</sup> (0.59 yd <sup>3</sup> )	3	700 mm (27.6")	820 mm (32.3")
	0.80 m <sup>3</sup> (1.05 yd <sup>3</sup> )	0.70 m <sup>3</sup> (0.92 yd <sup>3</sup> )	5	1000 mm (39.4")	1120 mm (44.1")
	0.87 m <sup>3</sup> (1.14 yd <sup>3</sup> )	0.75 m <sup>3</sup> (0.98 yd <sup>3</sup> )	5	1090 mm (42.9")	1210 mm (47.6")
	0.92 m <sup>3</sup> (1.20 yd <sup>3</sup> )	0.80 m <sup>3</sup> (1.05 yd <sup>3</sup> )	5	1150 mm (45.3")	1270 mm (50.0")
	1.10 m <sup>3</sup> (1.44 yd <sup>3</sup> )	0.96 m <sup>3</sup> (1.26 yd <sup>3</sup> )	5	1320 mm (52.0")	1440 mm (56.7")
	1.20 m <sup>3</sup> (1.57 yd <sup>3</sup> )	1.00 m <sup>3</sup> (1.31 yd <sup>3</sup> )	5	1400 mm (55.1")	1520 mm (59.8")
	1.34 m <sup>3</sup> (1.75 yd <sup>3</sup> )	1.15 m <sup>3</sup> (1.50 yd <sup>3</sup> )	6	1550 mm (61.0")	1670 mm (65.7")
	★0.52 m <sup>3</sup> (0.68 yd <sup>3</sup> )	0.45 m <sup>3</sup> (0.59 yd <sup>3</sup> )	5	935 mm (36.8")	1035 mm (40.7")
	◆0.74 m <sup>3</sup> (0.97 yd <sup>3</sup> )	0.65 m <sup>3</sup> (0.85 yd <sup>3</sup> )	5	985 mm (38.8")	-
	◆0.90 m <sup>3</sup> (1.18 yd <sup>3</sup> )	0.80 m <sup>3</sup> (1.05 yd <sup>3</sup> )	5	1070 mm (42.0")	-
	◆1.05 m <sup>3</sup> (1.37 yd <sup>3</sup> )	0.92 m <sup>3</sup> (1.20 yd <sup>3</sup> )	5	1290 mm (50.8")	-
	◎0.87 m <sup>3</sup> (1.14 yd <sup>3</sup> )	0.75 m <sup>3</sup> (0.98 yd <sup>3</sup> )	5	1140 mm (44.9")	-
	◎1.20 m <sup>3</sup> (1.57 yd <sup>3</sup> )	1.00 m <sup>3</sup> (1.31 yd <sup>3</sup> )	5	1410 mm (55.5")	-
	■0.75 m <sup>3</sup> (0.98 yd <sup>3</sup> )	0.65 m <sup>3</sup> (0.85 yd <sup>3</sup> )	-	1790 mm (70.5")	-

★ : Long reach bucket

◆ : Heavy duty bucket

◎ : Rock-heavy duty bucket

■ : Slope finishing bucket

## 9. RECOMMENDED OILS

Use only oils listed below. Do not mix different brand oil.

Please use HYUNDAI genuine oil and grease.

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)
Engine oil pan	Engine oil	16.3 (4.3)	*SAE 5W-40						
			SAE 30						
			SAE 10W						
			SAE 10W-30						
			SAE 15W-40						
Swing drive	Gear oil	5.0 (1.3)	*SAE 75W-90						
Final drive		5.8×2 (1.5×2)	SAE 80W-90						
Hydraulic tank	Hydraulic oil	Tank; 160 (42) System; 275 (73)	*ISO VG 15						
			ISO VG 32						
			ISO VG 46						
			ISO VG 68						
Fuel tank	Diesel fuel	400 (106)	*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

\*1 : Soft water

City water or distilled water

\* : Cold region

Russia, CIS, Mongolia