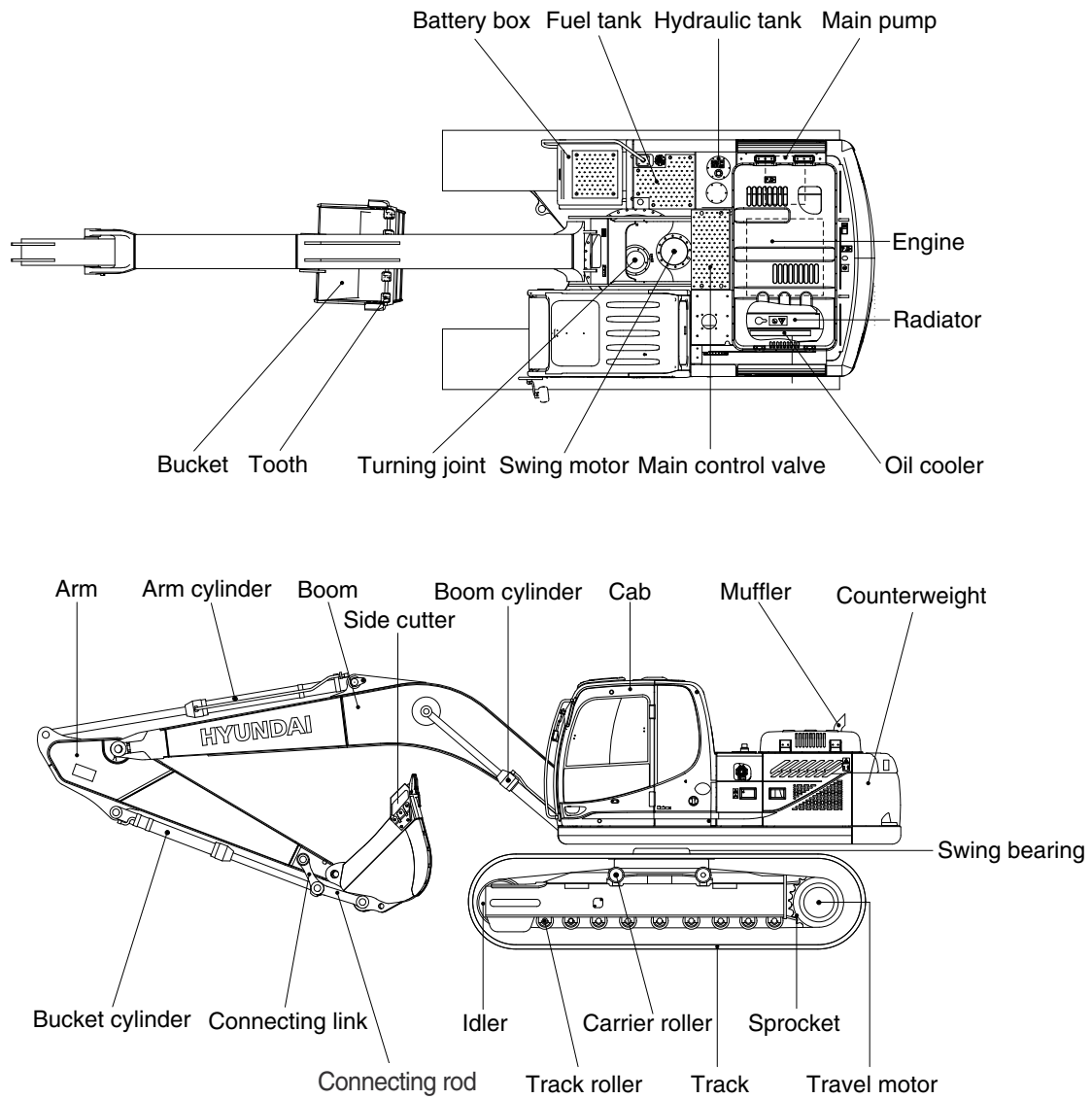


SPECIFICATIONS

1. MAJOR COMPONENT

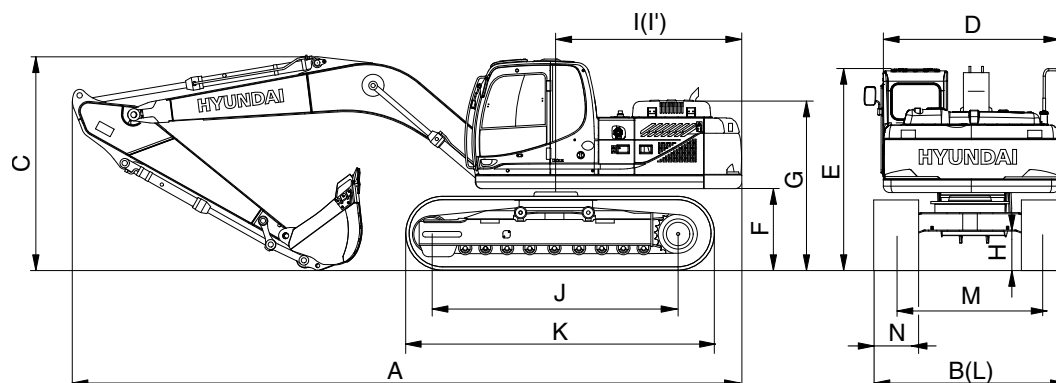


R2209SB2SP01

2. SPECIFICATIONS

1) R220LC-9SB

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

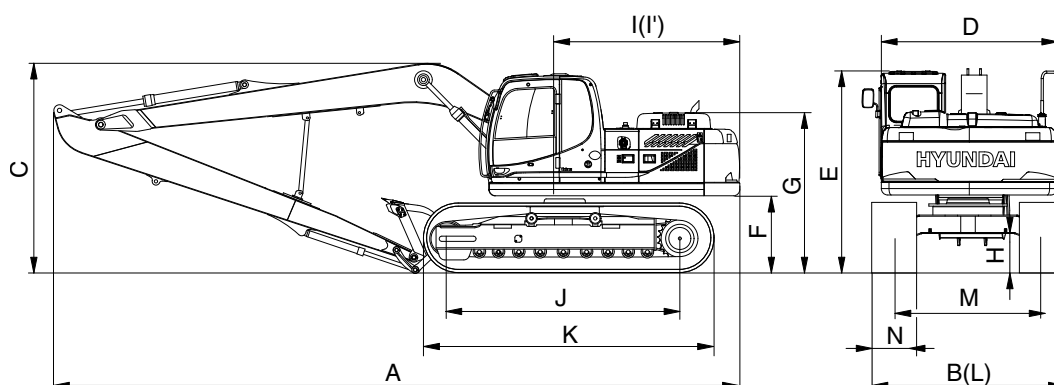


R2209SB2SP02

Description		Unit	Specification
Operating weight		kg (lb)	21900 (48280)
Bucket capacity (SAE heaped), standard		m ³ (yd ³)	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		3000 (9' 10")
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'		2840 (9' 3")
Distance between tumblers	J		3650 (12' 0")
Undercarriage length	K		4404 (14' 4")
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)	3.8/5.4 (2.4/3.4)
Swing speed		rpm	11.6
Gradeability		Degree (%)	35 (70)
Ground pressure (600 mm shoe)		kgf/cm ² (psi)	0.47 (6.68)
Max traction force		kg (lb)	21100 (46500)

2) R220LC-9SB LONG REACH

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



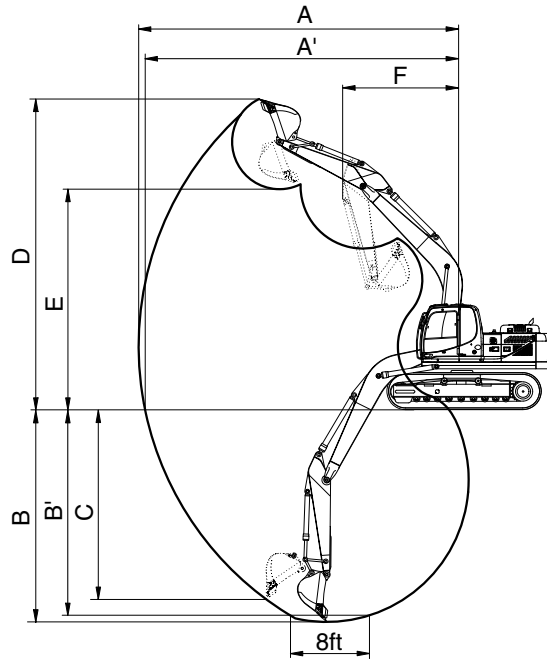
R2209SB2SP06

Description		Unit	Specification
Operating weight		kg (lb)	24360 (53700)
Bucket capacity (SAE heaped), standard		m ³ (yd ³)	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		3000 (9' 10")
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'		2840 (9' 3")
Distance between tumblers	J		3650 (12' 0")
Undercarriage length	K		4404 (14' 4")
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)	3.8/5.4 (2.4/3.4)
Swing speed		rpm	11.6
Gradeability		Degree (%)	35 (70)
Ground pressure (800 mm shoe)		kgf/cm ² (psi)	0.39 (5.55)
Max traction force		kg (lb)	21100 (46500)

3. WORKING RANGE

1) R220LC-9SB

· 5.68 m (18' 8") BOOM



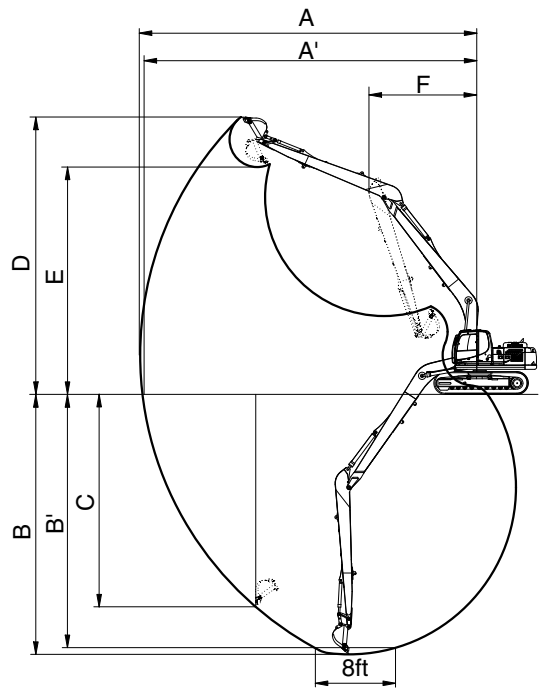
R2209SB2SP03

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-9SB LONG REACH

· 8.2 m (26' 11") BOOM



R2209SB2SP08

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

4. WEIGHT

1) R220LC-9SB

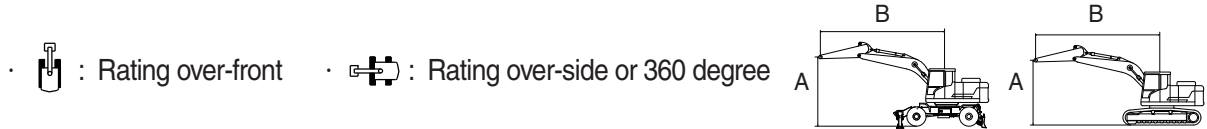
Item	R220LC-9SB	
	kg	lb
Upperstructure assembly	9400	20720
Main frame weld assembly	1920	4230
Engine assembly	520	1146
Main pump assembly	136	300
Main control valve assembly	220	485
Swing motor assembly	236	520
Hydraulic oil tank assembly	250	545
Fuel tank assembly	205	450
Counterweight	3800	8380
Cab assembly	440	970
Lower chassis assembly	8700	19180
Track frame weld assembly	2720	6000
Swing bearing	284	626
Travel motor assembly type 1	305	672
Travel motor assembly type 2, 3	360	794
Turning joint	53	116
Track recoil spring	141.5	312
Idler	150.5	332
Carrier roller	23.2	51.1
Track roller	47.5	104.7
Track-chain assembly (600 mm standard triple grouser shoe)	1451	3199
Sprocket	56	123.5
Front attachment assembly (5.68 m boom, 2.92 m arm, 0.92 m³ SAE heaped bucket)	4030	8880
5.68 m boom assembly	1520	3350
2.92 m arm assembly	750	1650
0.92 m³ 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-9SB LONG REACH

Item	R220LC-9SB LONG REACH	
	kg	lb
Upperstructure assembly	9400	20720
Main frame weld assembly	1920	4230
Engine assembly	520	1146
Main pump assembly	166	366
Main control valve assembly	220	485
Swing motor assembly	236	520
Hydraulic oil tank assembly	205	450
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	284	626
Travel motor assembly type 1	305	672
Travel motor assembly type 2, 3	360	794
Turning joint	53	116
Track recoil spring	141.5	312
Idler	150.5	332
Carrier roller	23.2	51.1
Track roller	47.5	104.7
Track-chain assembly (800 mm standard triple grouser shoe)	1734	3822.8
Sprocket	56	123.5
Front attachment assembly (8.2 m boom, 6.3 m arm, 0.52 m³ SAE heaped bucket)	4600	10140
8.2 m boom assembly	2105	4640
6.3 m arm assembly	1100	2430
0.52 m³ 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

5. LIFTING CAPACITIES

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outtriger	
R220LC-9SB	MONO BOOM	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		5680	2000	3800	-	600	-	-	-	-



Lift-point height (A)		Lift-point radius (B)										At max. reach		
		3.0 m (9.8 ft)		4.5 m (14.8 ft)		6.0 m (19.7 ft)		7.5 m (24.6 ft)		9.0 m (29.5 ft)		Capacity		Reach
														m (ft)
7.5 m	kg											*5600	*5600	4.98
(24.6 ft)	lb											*12350	*12350	(16.3)
6.0 m	kg							*5370	4950			*5460	4510	6.34
(19.7 ft)	lb							*11840	10910			*12040	9940	(20.8)
4.5 m	kg					*6750	*6750	*5720	4830			*5520	3690	7.13
(14.8 ft)	lb					*14880	*14880	*12610	10650			*12170	8140	(23.4)
3.0 m	kg					*8590	6970	*6480	4640	5450	3350	5400	3330	7.54
(9.8 ft)	lb					*18940	15370	*14290	10230	12020	7390	11900	7340	(24.7)
1.5 m	kg							*7240	4470	5380	3290	5240	3210	7.64
(4.9 ft)	lb							*15960	9850	11860	7250	11550	7080	(25.1)
Ground Line	kg					*10550	6560	7410	4390			5430	3320	7.43
	lb					*23260	14460	16340	9680			11970	7320	(24.4)
-1.5 m	kg					*10310	6620	7430	4410			6100	3700	6.89
(-4.9 ft)	lb					*22730	14590	16380	9720			13450	8160	(22.6)
-3.0 m	kg			*12620	*12620	*9270	6800					*6760	4660	5.92
(-9.8 ft)	lb			*27820	*27820	*20440	14990					*14900	10270	(19.4)

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

- Lifting capacity of the HX series does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.
- The Lift-point is bucket pivot mounting pin on the arm (without bucket mass).
- *Indicates load limited by hydraulic capacity.

※ Lifting capacities are based upon a standard machine conditions.

Lifting capacities will vary with different work tools, ground conditions and attachments.

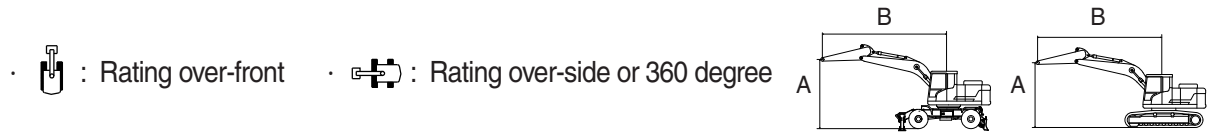
The difference between the weight of a work tool attachment must be subtracted.

Consult your Hyundai dealer regarding the lifting capacities for specific work tools and attachments.

▲ Failure to comply to the rated load can cause possible personal injury or property damage.

Make adjustments to the rated load as necessary for non-standard configurations.

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outtriger	
R220LC-9SB	MONO BOOM	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		5680	2400	3800	-	600	-	-	-	-

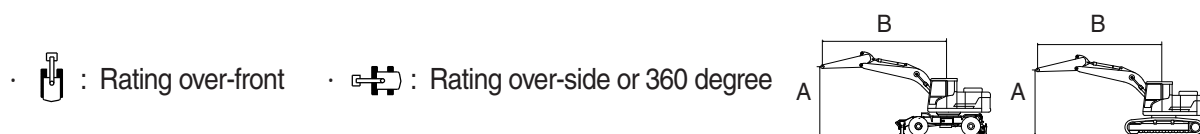


Lift-point height (A)		Lift-point radius (B)										At max. reach		
		3.0 m (9.8 ft)		4.5 m (14.8 ft)		6.0 m (19.7 ft)		7.5 m (24.6 ft)		9.0 m (29.5 ft)		Capacity		Reach
														m (ft)
7.5 m (24.6 ft)	kg lb											*5090 *11220	*5090 *11220	5.56 (18.2)
6.0 m (19.7 ft)	kg lb							*4910 *10820	*4910 *10820			*4620 *10190	4040 8910	6.80 (22.3)
4.5 m (14.8 ft)	kg lb					*6190 *13650	*6190 *13650	*5360 *11820	4860 10710	*4940 *10890	3410 7520	*4490 *9900	3380 7450	7.55 (24.8)
3.0 m (9.8 ft)	kg lb					*8030 *17700	7050 15540	*6160 *13580	4650 10250	*5390 *11880	3350 7390	*4570 *10080	3060 6750	7.94 (26.0)
1.5 m (4.9 ft)	kg lb					*9660 *21300	6660 14680	*6990 *15410	4460 9830	5360 11820	3260 7190	4850 10690	2970 6550	8.03 (26.3)
Ground Line	kg lb					*10420 *22970	6510 14350	7370 16250	4350 9590	5310 11710	3220 7100	5000 11020	3050 6720	7.83 (25.7)
-1.5 m (-4.9 ft)	kg lb			*10740 *23680	*10740 *23680	*10400 *22930	6540 14420	7360 16230	4340 9570			5530 12190	3360 7410	7.32 (24.0)
-3.0 m (-9.8 ft)	kg lb			*13480 *29720	13100 28880	*9620 *21210	6680 14730	*7060 *15560	4460 9830			*6380 *14070	4100 9040	6.42 (21.1)
-4.5 m (-14.8 ft)	kg lb			*10430 *22990	*10430 *22990	*7350 *16200	7020 15480					*6470 *14260	6220 13710	4.91 (16.1)

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outtriger	
R220LC-9SB	MONO BOOM	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		5680	2920	3800	-	600	-	-	-	-

Lift-point height (A)		Lift-point radius (B)														At max. reach		
		1.5 m (4.9 ft)		3.0 m (9.8 ft)		4.5 m (14.8 ft)		6.0 m (19.7 ft)		7.5 m (24.6 ft)		9.0 m (29.5 ft)		9.0 m (29.5 ft)		Capacity		Reach
																		m (ft)
7.5 m (24.6 ft)	kg lb							*4430 *9770	*4430 *9770							*3370 *7430	*3370 *7430	6.27 (20.6)
6.0 m (19.7 ft)	kg lb							*4340 *9570	*4340 *9570							*3100 *6830	*3100 *6830	7.39 (24.2)
4.5 m (14.8 ft)	kg lb							*4860 *10710	*4860 *10710	*4640 *10230	3590 7910					*3020 *6660	*3020 *6660	8.07 (26.5)
3.0 m (9.8 ft)	kg lb					*7280 *16050	*7280 *16050	*5710 *12590	4880 10760	*5010 *11050	3490 7690					*3070 *6770	2900 6390	8.43 (27.7)
1.5 m (4.9 ft)	kg lb					*9060 *19970	7010 15450	*6610 *14570	4650 10250	5190 11440	3380 7450					*3250 *7170	2810 6190	8.51 (27.9)
Ground Line	kg lb			*5950 *13120	*5950 *13120	*10100 *22270	6780 14950	7110 15670	4510 9940	5120 11290	3310 7300					*3590 *7910	2880 6350	8.32 (27.3)
-1.5 m (-4.9 ft)	kg lb	*6530 *14400	*6530 *14400	*10420 *22970	*10420 *22970	*10360 *22840	6740 14860	7060 15560	4460 9830	5110 11270	3310 7300					*4200 *9260	3130 6900	7.84 (25.7)
-3.0 m (-9.8 ft)	kg lb	*11150 *24580	*11150 *24580	*14280 *31480	13490 29740	*9870 *21760	6850 15100	7140 15740	4530 9990							*5430 *11970	3720 8200	7.00 (23.0)
-4.5 m (-14.8 ft)	kg lb			*11760 *25930	*11760 *25930	*8270 *18230	7120 15700									*6160 *13580	5190 11440	5.64 (18.5)

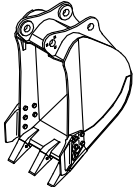
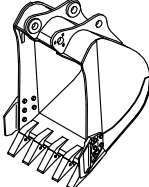
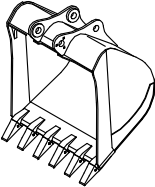
Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outtriger	
R220LC-9SB	MONO BOOM	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		5680	3900	3800	-	600	-	-	-	-



Lift-point height (A)		Lift-point radius (B)										At max. reach		
		3.0 m (9.8 ft)		4.5 m (14.8 ft)		6.0 m (19.7 ft)		7.5 m (24.6 ft)		9.0 m (29.5 ft)		Capacity		Reach
														m (ft)
7.5 m (24.6 ft)	kg											*2330	*2330	7.47
	lb											*5140	*5140	(24.5)
6.0 m (19.7 ft)	kg									*3610	3540	*2170	*2170	8.43
	lb									*7960	7800	*4780	*4780	(27.7)
4.5 m (14.8 ft)	kg									*3840	3460	*2120	*2120	9.04
	lb									*8470	7630	*4670	*4670	(29.7)
3.0 m (9.8 ft)	kg					*5730	*5730	*4780	4730	*4310	3320	*2150	*2150	9.37
	lb					*12630	*12630	*10540	10430	*9500	7320	*4740	*4740	(30.7)
1.5 m (4.9 ft)	kg			*8720	*8720	*7730	6800	*5800	4440	*4880	3180	*2250	2210	9.45
	lb			*19220	*19220	*17040	14990	*12790	9790	*10760	7010	*4960	4870	(31.0)
Ground Line	kg			*7200	*7200	*9270	6390	*6700	4220	5150	3060	*2440	2240	9.28
	lb			*15870	*15870	*20440	14090	*14770	9300	11350	6750	*5380	4940	(30.4)
-1.5 m (-4.9 ft)	kg	*5400	*5400	*9330	*9330	*10050	6220	7120	4100	5090	3000	*2780	2390	8.85
	lb	*11900	*11900	*20570	*20570	*22160	13710	15700	9040	11220	6610	*6130	5270	(29.0)
-3.0 m (-9.8 ft)	kg	*8470	*8470	*12990	12230	*10110	6230	7120	4100	5110	3020	*3380	2730	8.13
	lb	*18670	*18670	*28640	26960	*22290	13730	15700	9040	11270	6660	*7450	6020	(26.7)
-4.5 m (-14.8 ft)	kg	*12320	*12320	*13750	12580	*9350	6400	*6820	4220			*4640	3450	7.01
	lb	*27160	*27160	*30310	27730	*20610	14110	*15040	9300			*10230	7610	(23.0)

6. BUCKET SELECTION GUIDE

1) GENERAL BUCKET

		
0.51 m³ SAE heaped bucket	0.80, 0.92, 1.10, 1.20, ★0.52 m³ SAE heaped bucket	1.34 m³ SAE heaped bucket

Capacity		Width		Weight	Recommendation				
					5.68 m (18' 8") boom				8.2 m (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 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")	770 kg (1700 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)	⊙	⊙	●		
★0.52 m³ (0.68 yd³)	0.45 m³ (0.59 yd³)	935 mm (36.8")	1035 mm (40.7")	460 kg (1010 lb)					⊙

★ : Long reach bucket



Applicable for materials with density of 2000 kgf/m³ (3370 lbf/yd³) or less

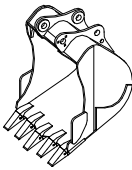
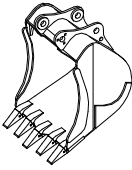
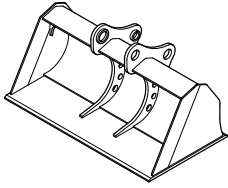


Applicable for materials with density of 1600 kgf/m³ (2700 lbf/yd³) or less



Applicable for materials with density of 1100 kgf/m³ (1850 lbf/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, 1.20 m³ SAE heaped bucket	■ 0.75 m³ SAE heaped bucket

Capacity		Width		Weight	Recommendation			
					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 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)	1095 mm (43.1")	-	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)	○	○	○	●
◆1.20 m³ (1.57 yd³)	1.00 m³ (1.31 yd³)	1410 mm (55.5")	-	1030 kg (2270 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

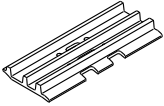
- Applicable for materials with density of 2000 kgf/m³ (3370 lbf/yd³) or less
- ⊙ Applicable for materials with density of 1600 kgf/m³ (2700 lbf/yd³) or less
- Applicable for materials with density of 1100 kgf/m³ (1850 lbf/yd³) or less

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-9SB	Shoe width	mm (in)	600 (24)	700 (28)	800 (32)	900 (36)
	Operating weight	kg (lb)	21900 (48280)	22180 (48900)	22465 (49530)	22475 (50140)
	Ground pressure	kgf/cm ² (psi)	0.47 (6.68)	0.41 (5.83)	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-9SB LONG REACH	Shoe width	mm (in)	-	-	800 (32)	-
	Operating weight	kg (lb)	-	-	24360 (53740)	-
	Ground pressure	kgf/cm ² (psi)	-	-	0.39 (5.55)	-
	Overall width	mm (ft-in)	-	-	3190 (10' 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	Applications
A	Rocky ground, river beds, normal soil	· Travel at low speed on rough ground with large obstacles such as boulders or fallen trees
B	Normal soil, soft ground	· These shoes cannot be used on rough ground with large obstacles such as boulders or fallen trees · Travel at high speed only on flat ground · Travel slowly at low speed if it is impossible to avoid going over obstacles
C	Extremely soft ground (swampy ground)	· Use the shoes only in the conditions that the machine sinks and it is impossible to use the shoes of category A or B · These shoes cannot be used on rough ground with large obstacles such as boulders or fallen trees · Travel at high speed only on flat ground · Travel slowly at low speed if it is impossible to avoid going over obstacles

8. SPECIFICATIONS FOR MAJOR COMPONENTS

1) ENGINE

Item	Specification
Model	Cummins QSB 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 bore × stroke	107 × 124 mm (4.21" × 4.88")
Piston displacement	6700 cc (409 cu in)
Compression ratio	17.2 : 1
Rated gross horse power (SAE J1995)	155 Hp at 2000 rpm (116 kW at 2000 rpm)
Maximum torque at 1500 rpm	63 kgf · m (456 lbf · ft)
Engine oil quantity	24.4 l (6.4 U.S. gal)
Dry weight	520 kg (1146 lb)
High idling speed	2135 ± 50 rpm
Low idling speed	700 ± 100 rpm
Fuel consumption	172 g/Hp · hr at 2000 rpm
Starting motor	Nippon denso (24 V-4.8 kW)
Alternator	Delco Remy (24 V-70 A)
Battery	2 × 12 V × 100 Ah

2) MAIN PUMP

Item	Specification
Type	Variable displacement tandem axis piston pumps
Capacity	2 × 117cc/rev
Maximum pressure	350kgf/cm ² (4980psi) [380 kgf/cm ² (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 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	
		R220LC-9SB	R220LC-9SB Long reach
Type		10 spools two-block	
Operating method		Hydraulic pilot system	
Main relief valve pressure		350 kgf/cm ² (4980 psi) [380 kgf/cm ² (5400 psi)]	
Port relief valve pressure	Boom	400 kgf/cm ² (5690 psi)	400 kgf/cm ² (5690 psi)
	Arm	400 kgf/cm ² (5690 psi)	300 kgf/cm ² (4270 psi)
	Bucket	400 kgf/cm ² (5690 psi)	280 kgf/cm ² (3980 psi)

[]: Power boost

5) SWING MOTOR

Item	Specification	
	Type 1	Type 2
Type	Fixed displacement axial piston motor	
Capacity	151 cc/rev	142.8 cc/rev
Relief pressure (working pressure)	265 kgf/cm ² (3770 psi)	
Braking system	Automatic, spring applied hydraulic released	
Braking torque	59 kgf · m (427 lbf · ft)	63.3 kgf · m (458 lbf · ft)
Brake release pressure	33~50 kgf/cm ² (470~711 psi)	20.9~35.5 kgf/cm ² (297~505 psi)
Reduction gear type	2 - stage planetary	

6) TRAVEL MOTOR

Item	Specification	
	Type 1	Type 2, 3
Type	Two fixed displacement axial piston motor	
Relief pressure	350 kgf/cm ² (4980 psi)	
Reduction gear type	2-stage planetary	
Braking system	Automatic, spring applied hydraulic released	
Brake release pressure	11 kgf/cm ² (156 psi)	15.2 kgf/cm ² (216 psi)
Braking torque	49.3 kgf · m (357 lbf · ft)	65.4 kgf · m (473 lbf · ft)

7) REMOTE CONTROL VALVE

Item		Specification
Type		Pressure reducing type
Operating pressure	Minimum	6.5 kgf/cm ² (92 psi)
	Maximum	25 kgf/cm ² (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	ø 120 × ø 85 × 1290 mm
	Cushion	Extend only
Arm cylinder	Bore dia × Rod dia × Stroke	ø 140 × ø 100 × 1510 mm # ø 140 × ø 100 × 1460 mm
	Cushion	Extend and retract
Bucket cylinder	Bore dia × Rod dia × Stroke	ø 120 × ø 85 × 1055 mm # ø 100 × ø 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-9	Standard	600 mm (24")	0.47 kgf/cm ² (6.68psi)	49	2990 mm (9' 10")
	Option	700 mm (28")	0.41 kgf/cm ² (5.83 psi)	49	3090 mm (10' 2")
		800 mm (32")	0.36 kgf/cm ² (5.12 psi)	49	3190 mm (10' 6")
		900 mm (36")	0.32 kgf/cm ² (4.55 psi)	49	3290 mm (10' 10")
R220LC-9 LONG REACH	Standard	800 mm (32")	0.39 kgf/cm ² (5.55 psi)	49	3190 mm (10' 6")

10) BUCKET

Item	Capacity		Tooth quantity	Width	
	SAE heaped	CECE heaped		Without side cutter	With side cutter
R220LC-9	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")
	0.80 m ³ (1.05 yd ³)	0.70 m ³ (0.92 yd ³)	5	1000 mm (39.4")	1120 mm (44.1")
	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 (59.8")
	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")
	★0.52 m ³ (0.68 yd ³)	0.45 m ³ (0.59 yd ³)	5	935 mm (36.8")	1035 mm (40.7")
	◆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	1095 mm (43.1")	-
	◆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")	-
	⊙1.20 m ³ (1.57 yd ³)	1.00 m ³ (1.31 yd ³)	5	1410 mm (55.5")	-
	■0.75 m ³ (0.98 yd ³)	0.65 m ³ (0.85 yd ³)	-	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 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	24.4 (6.4)	★SAE 5W-40							
			SAE 30							
			SAE 10W							
			SAE 10W-30							
			SAE 15W-40							
Swing drive (type 1)	Gear oil	5.0 (1.3)								
Swing drive (type 2)		6.2 (1.6)	★SAE 80W-90							
Final drive (type 1)		5.8 × 2 (1.5 × 2)	SAE 85W-140							
Final drive (type 2)		4.5 × 2 (1.2 × 2)								
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 water	35 (9.2)	Ethylene glycol base permanent type (50 : 50)							
			★Ethylene glycol base permanent type (60 : 40)							

SAE : Society of Automotive Engineers

★ : Cold region

API : American Petroleum Institute

ISO : International Organization for Standardization

NLGI : National Lubricating Grease Institute

ASTM : American Society of Testing and Material