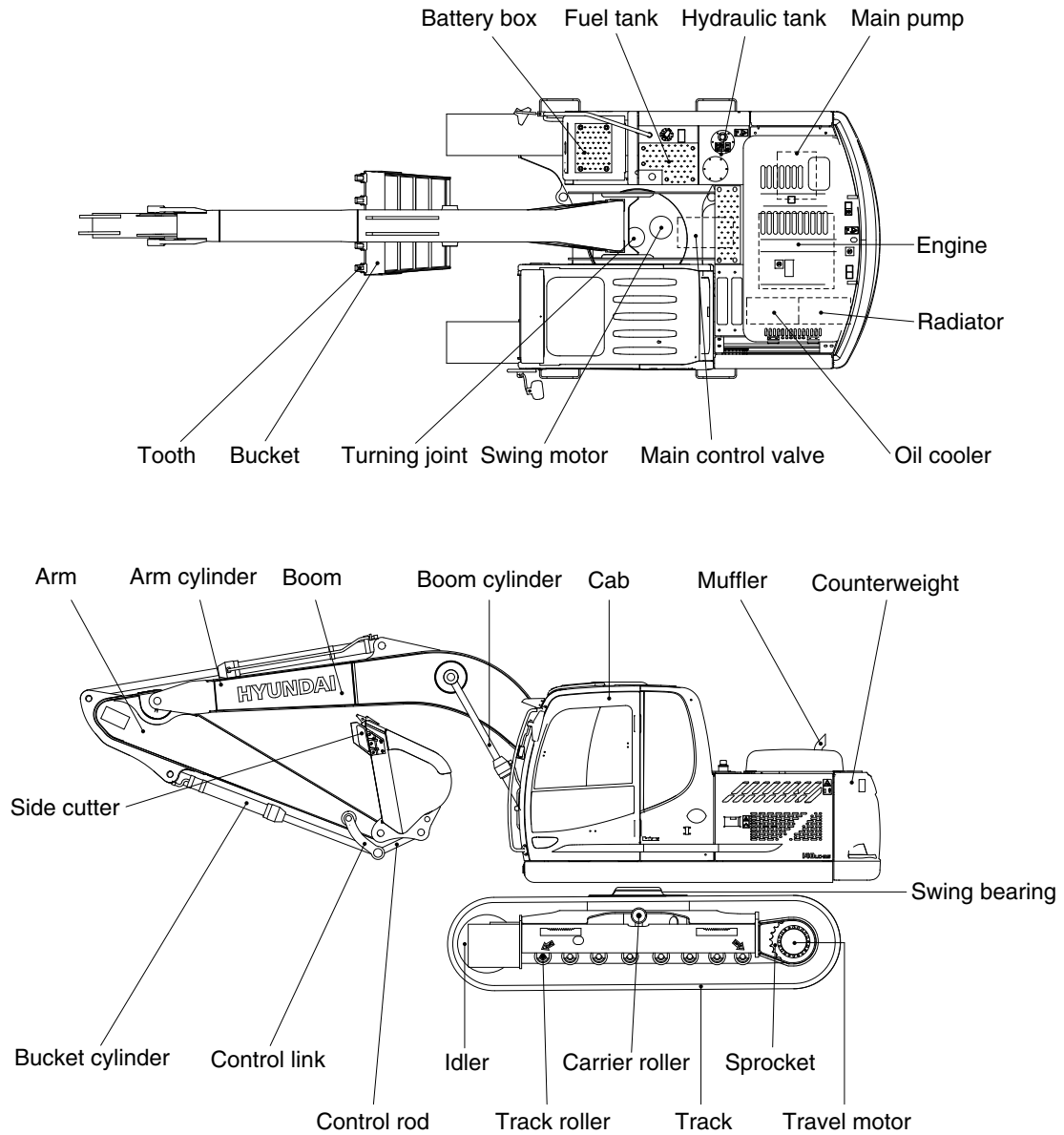


SPECIFICATIONS

1. MAJOR COMPONENT

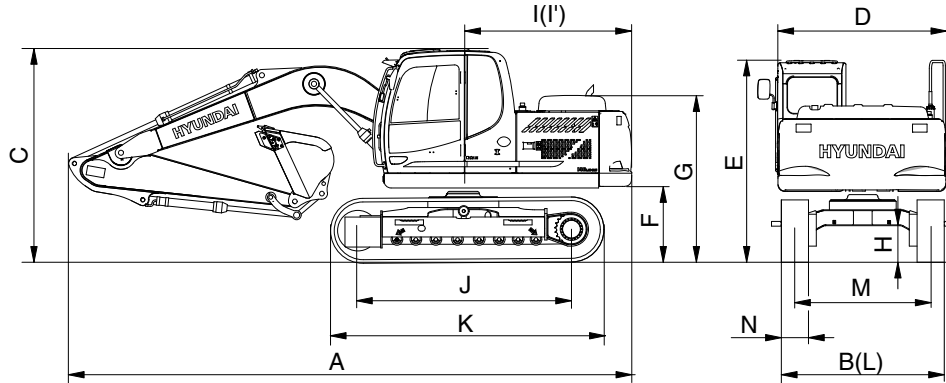


1409SB2SP01B

2. SPECIFICATIONS

1) R150LC-9

· 4.60 m (15' 1") BOOM and 2.50 m (8' 2") ARM

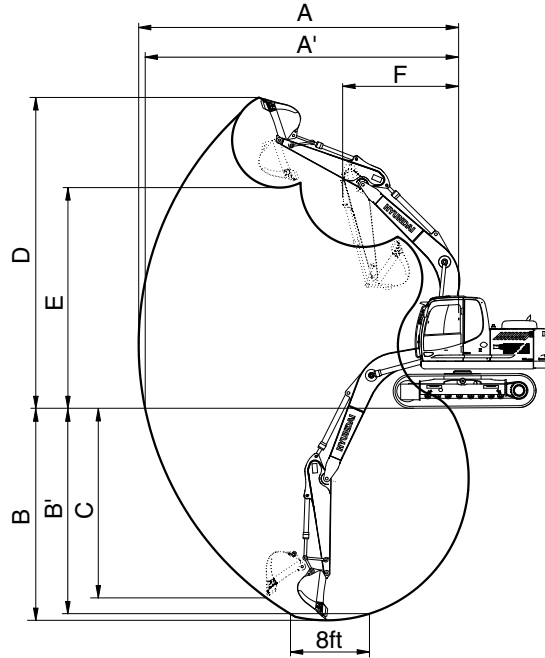


1409SB2SP02

Description		Unit	Specification
Operating weight		kg (lb)	13980 (30820)
Bucket capacity (SAE heaped), standard		m ³ (yd ³)	0.58 (0.76)
Overall length	A	mm (ft-in)	7810 (25' 7")
Overall width, with 600 mm shoe	B		2600 (8' 6")
Overall height of boom	C		2780 (9' 1")
Superstructure width	D		2500 (8' 2")
Overall height of cab	E		2860 (9' 4")
Ground clearance of counterweight	F		935 (3' 1")
Engine cover height	G		2050 (6' 7")
Minimum ground clearance	H		440 (1' 5")
Rear-end distance	I		2280 (7' 6")
Rear-end swing radius	I'		2310 (7' 7")
Distance between tumblers	J		3000 (9' 10")
Undercarriage length	K		3750 (12' 4")
Undercarriage width	L		2600 (8' 6")
Track gauge	M		2000 (6' 7")
Track shoe width, standard	N		600 (24")
Travel speed (low/high)			km/hr (mph)
Swing speed		rpm	12.0
Gradeability		Degree (%)	35 (70)
Ground pressure (600 mm shoe)		kgf/cm ² (psi)	0.36 (5.12)
Max traction force		kgf (lbf)	13300 (29320)

3. WORKING RANGE

1) R150LC-9, MONO BOOM



1409SB2SP06

Description	m (ft-in)	Boom	4.60 (15' 1")	
		Arm	2.50 (8' 2")	3.0 (9' 10")
Max digging reach	mm (ft-in)	A	8330 (27' 4")	8790 (28' 10")
Max digging reach on ground		A'	8180 (26' 10")	8650 (28' 4")
Max digging depth		B	5550 (18' 3")	6050 (19' 10")
Max digging depth (8 ft level)		B'	5340 (17' 6")	5870 (19' 3")
Max vertical wall digging depth		C	5330 (17' 6")	5850 (19' 2")
Max digging height		D	8500 (27' 11")	8780 (28' 10")
Max dumping height		E	6060 (19' 11")	6330 (20' 9")
Min swing radius		F	2650 (8' 8")	2680 (8' 10")
Bucket digging force	kN	SAE	87.3 [94.8]	87.3 [94.8]
	kgf		8900 [9660]	8900 [9660]
	lbf		19620 [21300]	19620 [21300]
	kN	ISO	102 [110.8]	102 [110.8]
	kgf		10400 [11290]	10400 [11290]
	lbf		22930 [24890]	22930 [24890]
Arm digging force	kN	SAE	62.8 [68.2]	55.9 [60.7]
	kgf		6400 [6950]	5700 [6190]
	lbf		14110 [15320]	12570 [13640]
	kN	ISO	65.7 [71.4]	57.9 [62.8]
	kgf		6700 [7270]	5900 [6410]
	lbf		14770 [16040]	13010 [14120]

[] : Power boost

4. WEIGHT

1) R150LC-9

Item	R150LC-9	
	kg	lb
Upper structure assembly	5630	12420
Main frame weld assembly	1160	2560
Engine assembly	420	930
Main pump assembly	100	220
Main control valve assembly	140	310
Swing motor assembly	120	260
Hydraulic oil tank assembly	160	350
Fuel tank assembly	130	290
Counterweight	2000	4410
Cab assembly	500	1100
Lower chassis assembly	5340	11760
Track frame weld assembly	1590	3510
Swing bearing	190	410
Travel motor assembly	480	1060
Turning joint	50	110
Track recoil spring	210	460
Idler	250	550
Carrier roller	40	90
Track roller	490	1080
Track-chain assembly (600 mm standard triple grouser shoe)	1010	2230
Front attachment assembly (4.6 m boom, 2.5 m arm, 0.58 m ³ SAE heaped bucket)	2420	5330
4.6 m boom assembly	830	1830
2.5 m arm assembly	435	960
0.58 m ³ SAE heaped bucket	480	1060
Boom cylinder assembly	130	290
Arm cylinder assembly	160	350
Bucket cylinder assembly	100	220
Bucket control rod assembly	90	200



※ This information is different with operating weight and transportation weight because it is not including harness, pipe, oil, fuel so on.











※ Refer to Transportation for actual weight information and Specifications for operating weight.

5. LIFTING CAPACITIES

1) R150LC-9

(1) 4.60 m (15' 1") boom, 2.50 m (8' 2") arm equipped with 0.58 m³ (SAE heaped) bucket and 600 mm (24") triple grouser shoe and 2000 kg (4410 lb) counterweight.

·  : Rating over-front ·  : Rating over-side or 360 degree

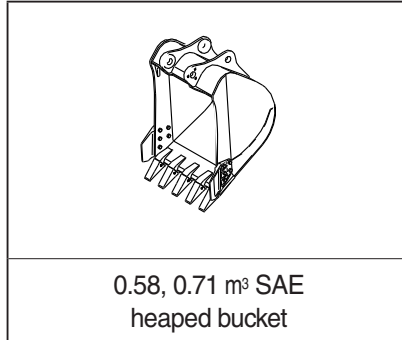
Load point height		Load radius								At max. reach		
		1.5 m (5 ft)		3.0 m (10 ft)		4.5 m (15 ft)		6.0 m (20 ft)		Capacity		Reach
												m (ft)
6.0 m (20.0 ft)	kg lb									*2810 *6190	1920 4230	6.69 (21.9)
4.5 m (15.0 ft)	kg lb							*2770 *6110	2270 5000	2440 5380	1500 3310	7.53 (24.7)
3.0 m (10.0 ft)	kg lb			*4930 *10870	*4930 *10870	*3830 *8440	3570 7870	*3380 *7450	2190 4830	2170 4780	1310 2890	7.95 (26.1)
1.5 m (5.0 ft)	kg lb			*8030 *17700	6240 13760	*5010 *11050	3300 7280	3380 7450	2070 4560	2100 4630	1250 2760	8.03 (26.3)
Ground Line	kg lb			*8780 *19360	5800 12790	5200 11460	3090 6810	3270 7210	1970 4340	2180 4810	1300 2870	7.77 (25.5)
-1.5 m (-5.0 ft)	kg lb	*5740 *12650	*5740 *12650	*9910 *21850	5700 12570	5080 11200	2990 6590	3220 7100	1920 4230	2500 5510	1500 3310	7.15 (23.5)
-3.0 m (-10 ft)	kg lb	*8760 *19310	*8760 *19310	*9040 *19930	5770 12720	5100 11240	3000 6610			3340 7360	2030 4480	6.01 (19.7)
-4.5 m (-15.0 ft)	kg lb			*6590 *14530	6030 13290							

- 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) R150LC-9

(1) General bucket



Capacity		Width		Weight	Recommendation					
					4.6 m (15' 1") boom				4.1 m (13' 5") boom	
SAE heaped	CECE heaped	Without side cutter	With side cutter		1.9 m arm (6' 3")	2.1 m arm (6' 11")	2.5 m arm (8' 2")	3.0 m arm (9' 10")	1.9 m arm (6' 3")	2.1 m arm (6' 11")
0.58 m ³ (0.76 yd ³)	0.50 m ³ (0.65 yd ³)	1030 mm (40.6")	1130 mm (44.5")	480 kg (1060 lb)						
0.71 m ³ (0.93 yd ³)	0.60 m ³ (0.78 yd ³)	1205 mm (47.4")	1305 mm (51.4")	540 kg (1190 lb)						

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

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

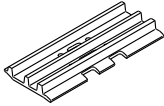
Applicable for materials with density of 1100 kg/m³ (1850 lb/yd³) or less

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	
				
R150LC-9	Shoe width	mm (in)	600 (24)	700 (28)
	Operating weight	kg (lb)	13980 (30820)	14210 (31330)
	Ground pressure	kgf/cm ² (psi)	0.36 (5.12)	0.32 (4.55)
	Overall width	mm (ft-in)	2600 (8' 6")	2700 (8' 10")

3) NUMBER OF ROLLERS AND SHOES ON EACH SIDE

Item	Quantity
	R150LC-9
Carrier rollers	1 EA
Track rollers	7 EA
Track shoes	46 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

※ Table 2

Category	Applications	Applications
A	Rocky ground, river beds, normal soil	<ul style="list-style-type: none"> · Travel at low speed on rough ground with large obstacles such as boulders or fallen trees
B	Normal soil, soft ground	<ul style="list-style-type: none"> · 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
Maker / Model	Cummins / QSB4.5
Type	4-cycle, turbocharged, charge air cooled, electronic controlled diesel engine
Cooling method	Water cooled
Number of cylinders and arrangement	4 cylinders, in-line
Firing order	1-3-4-2
Combustion chamber type	Direct injection type
Cylinder bore × stroke	107 × 124 mm (4.21" × 4.88")
Displacement	4.5 ℓ (272 cu in)
Compression ratio	17.2 : 1
Gross power	130 Hp (97 kW) at 2200 rpm
Net power	127 Hp (95 kW) at 2200 rpm
Max. power	140 Hp (104 kW) at 2000 rpm
Peak Torque	622 N · m (459 lbf · ft) at 15300 rpm
Engine oil quantity	11 ℓ (2.9 U.S. gal)
Wet weight	371 kg (818 lb)
Starter motor	24 V-4.8 kW
Alternator	24 V-70 A

2) MAIN PUMP

Item	Specification
Type	Variable displacement tandem axis piston pumps
Capacity	2 × 65 cc/rev
Maximum pressure	350 kgf/cm ² (4980 psi) [380 kgf/cm ² (5400 psi)]
Rated oil flow	2 × 123.5 ℓ /min (32.6 U.S. gpm / 27.2 U.K. gpm)
Rated speed	2000 rpm

[]: Power boost

3) GEAR PUMP

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

4) MAIN CONTROL VALVE

Item	Specification
Type	11 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	72 cc/rev
Relief pressure	285 kgf/cm ² (4054 psi)
Braking system	Automatic, spring applied hydraulic released
Braking torque	Minimum 30 kgf · m (217 lbf · ft)
Brake release pressure	15~50 kgf/cm ² (213~711 psi)
Reduction gear type	2 - stage planetary

6) TRAVEL MOTOR

Item	Specification		
	Type 1	Type 2	Type 3, 4
Type	Variable displacement axial piston motor		
Relief pressure	350 kgf/cm ² (4980 psi)	365 kgf/cm ² (5190 psi)	350 kgf/cm ² (4980 psi)
Capacity (max / min)	77/45 cc/rev	76.6/44.6 cc/rev	77/44.5 cc/rev
Reduction gear type	2-stage planetary		
Braking system	Automatic, spring applied hydraulic released		
Brake release pressure	9.5 kgf/cm ² (135 psi)	8.75 kgf/cm ² (125 psi)	15.9 kgf/cm ² (226 psi)
Braking torque	Min. 33.1 kgf · m (239 lbf · ft)		

7) CYLINDER

Item		Specification
Boom cylinder	Bore dia × Rod dia × Stroke	Ø 105 × Ø 75 × 1075 mm
	Cushion	Extend only
Arm cylinder	Bore dia × Rod dia × Stroke	Ø 115 × Ø 80 × 1138 mm
	Cushion	Extend and retract
Bucket cylinder	Bore dia × Rod dia × Stroke	Ø 100 × Ø 70 × 850 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.

8) SHOE

Item		Width	Ground pressure	Link quantity	Overall width
R150LC-9	Standard	600 mm (24")	0.36 kgf/cm ² (5.12 psi)	46	2600 mm (8' 6")
	Option	700 mm (28")	0.31 kgf/cm ² (4.41 psi)	46	2700 mm (8' 10")

9) BUCKET

Item		Capacity		Tooth quantity	Width	
		SAE heaped	CECE heaped		Without side cutter	With side cutter
R150LC-9	Standard	0.58 m ³ (0.76 yd ³)	0.50 m ³ (0.65 yd ³)	5	1000 mm (39.4")	1100 mm (43.3")
	Option	0.71 m ³ (0.93 yd ³)	0.60 m ³ (0.78 yd ³)	5	1190 mm (46.9")	1290 mm (50.8")

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)
Engine oil pan	Engine oil	11 (2.9)	★SAE OW-30							
			SAE 5W-40							
			SAE 10W-30							
			SAE 15W-40							
Swing drive	Gear oil	2.5 (0.7)	★SAE 75W-90							
Final drive		2.3×2 (0.6×2)	SAE 80W-90							
Hydraulic tank	Hydraulic oil	Tank; 124 (32.8) System; 210 (55.5)	★ISO VG 15							
			ISO VG 32							
			ISO VG 46							
			ISO VG 68							
Fuel tank	Diesel fuel	270 (71.0)	★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	21 (5.5)	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