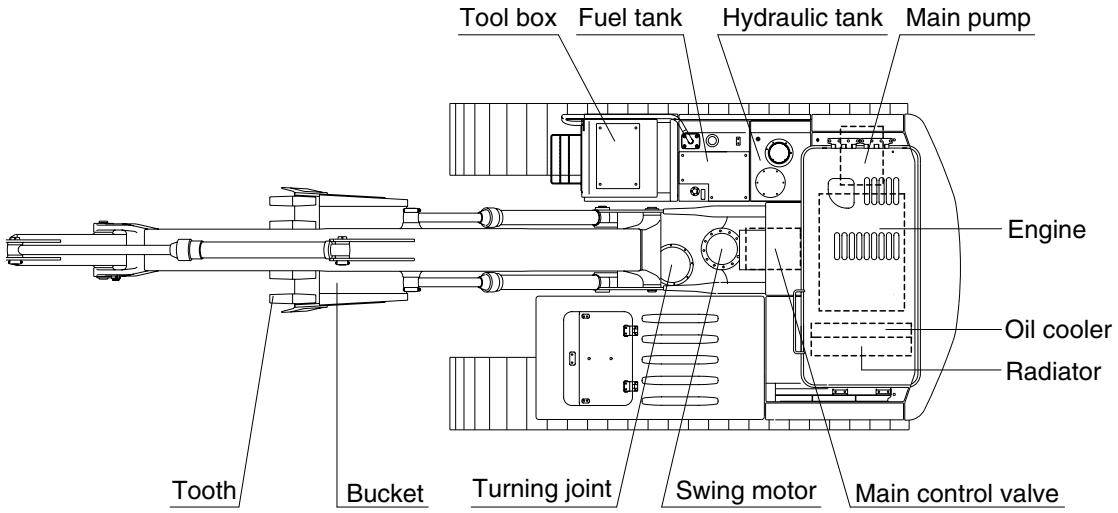
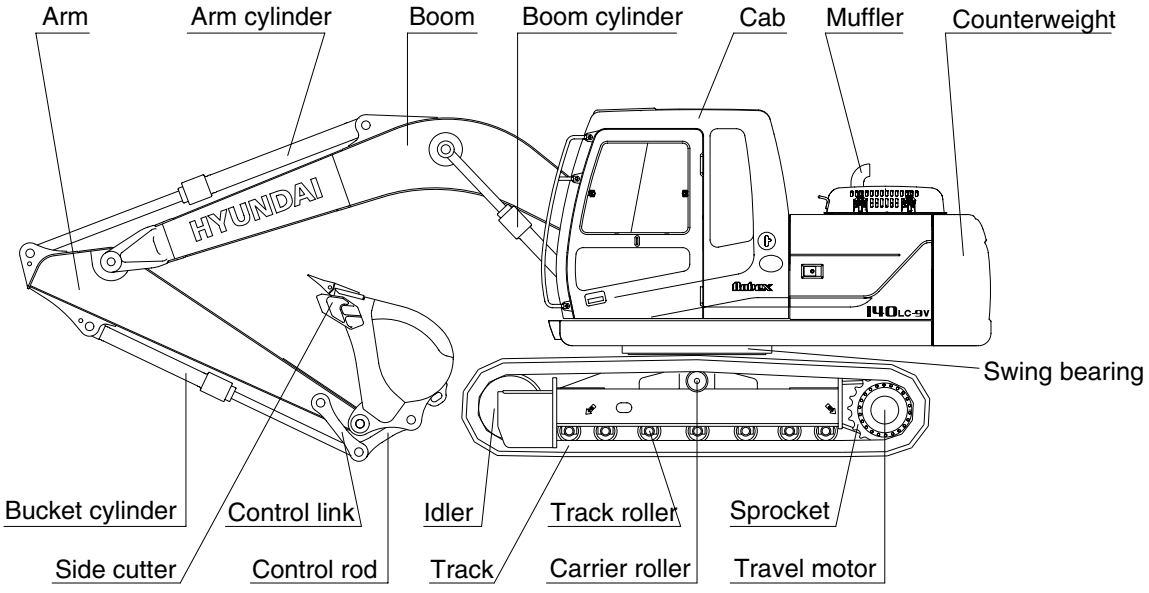
1. MAJOR COMPONENT



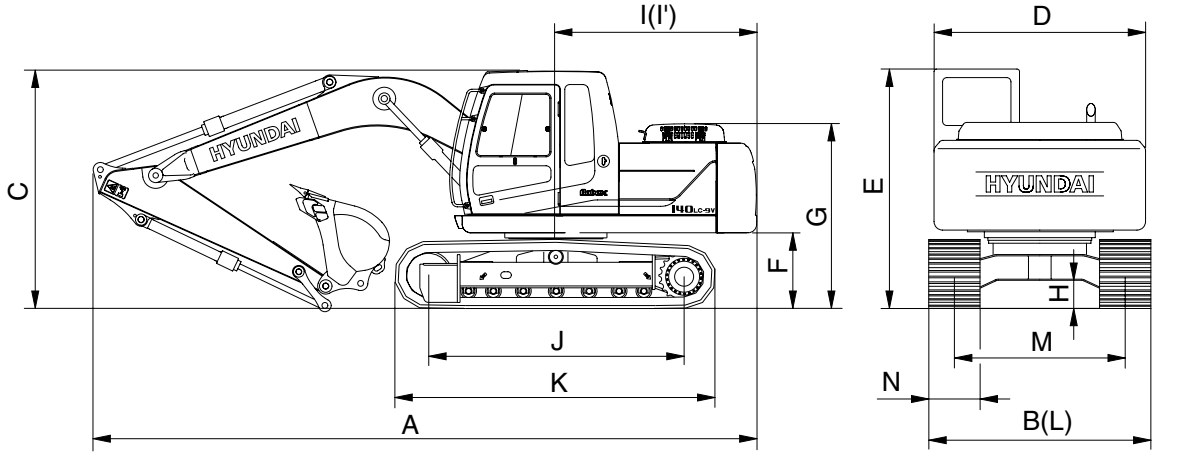


140V92SP01

2. SPECIFICATIONS

1) R140LC-9V

· 4.60 m (15' 1") BOOM and 2.10 m (6' 11") ARM



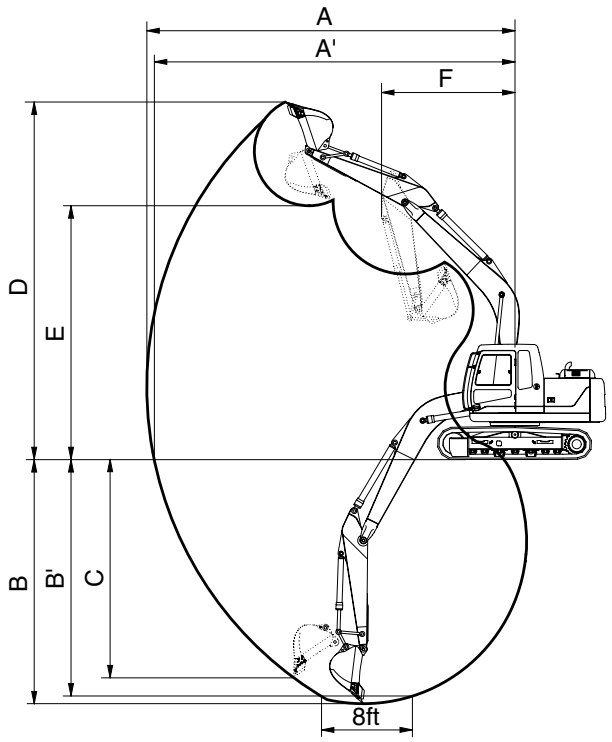
140V92SP02

Description		Unit	Specification
Operating weight		kg (lb)	13300 (29320)
Bucket capacity (SAE heaped), standard		m^3 (yd^3)	0.65 (0.85)
Overall length	A	mm (ft-in)	7850 (25' 8")
Overall width, with 500 mm shoe	B		2500 (8' 2")
Overall height	C		2760 (9' 1")
Superstructure width	D		2600 (8' 6")
Overall height of cab	E		2860 (9' 5")
Ground clearance of counterweight	F		940 (3' 1")
Engine cover height	G		2210 (7' 3")
Minimum ground clearance	H		440 (1' 5")
Rear-end distance	I		2330 (7' 8")
Rear-end swing radius	I'		2330 (7' 8")
Distance between tumblers	J		3000 (9' 10")
Undercarriage length	K		3750 (12' 4")
Undercarriage width	L		2500 (8' 2")
Track gauge	M		2000 (6' 7")
Track shoe width, standard	N		500 (20")
Travel speed (low/high)		km/hr (mph)	3.2/5.5 (2.0/3.4)
Swing speed		rpm	12.0
Gradeability		Degree (%)	35 (70)
Ground pressure (500 mm shoe)		kgf/cm^2(psi)	0.34 (4.84)
Max traction force		kgf (lbf)	12540 (27700)

3. WORKING RANGE

1) R140LC-9V

(1) 4.60 m (15' 1") MONO BOOM



14092SP06

Description		※2.10 m (6' 11") Arm
Max digging reach	A	7920 mm (25'11")
Max digging reach on ground	A'	7780 mm (25' 6")
Max digging depth	B	5200 mm (17' 1")
Max digging depth (8ft level)	B'	4950 mm (16' 3")
Max vertical wall digging depth	C	4590 mm (15' 1")
Max digging height	D	8140 mm (26' 8")
Max dumping height	E	5710 mm (18' 9")
Min swing radius	F	2680 mm (8'10")
Bucket digging force	SAE	87.3 kN
		8900 kgf
		19620 lbf
	ISO	102 kN
		10400 kgf
		22930 lbf
Arm crowd force	SAE	73.6 kN
		7500 kgf
		16530 lbf
	ISO	77.5 kN
		7900 kgf
		17420 lbf

※ : STD

4. WEIGHT

1) R140LC-9V

Item	R140LC-9V	
	kg	lb
Upper structure assembly	5760	12300
Main frame weld assembly	1270	2800
Engine assembly	550	1210
Main pump assembly	90	200
Main control valve assembly	130	260
Swing motor assembly	120	260
Hydraulic oil tank assembly	160	350
Fuel tank assembly	130	290
Counterweight	1900	4190
Cab assembly	310	680
Lower chassis assembly	5160	11380
Track frame weld assembly	1590	3510
Swing bearing	215	475
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 (500 mm standard triple grouser shoe)	920	2030
Front attachment assembly (4.6 m boom, 2.1 m arm, 0.65 m^3 SAE heaped bucket)	2380	5250
4.6 m boom assembly	830	1830
2.1 m arm assembly	370	820
0.65 m^3 SAE heaped bucket	560	1235
Boom cylinder assembly	130	290
Arm cylinder assembly	160	350
Bucket cylinder assembly	100	220
Bucket control rod assembly	90	200

5. LIFTING CAPACITIES

1) R140LC-9V

(1) 4.60 m (15' 1") boom, 2.10 m (6' 11") arm equipped with 0.65 m³ (SAE heaped) bucket and 500 mm (20") triple grouser shoe and 1900 kg (4190 lb) counterweight.

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

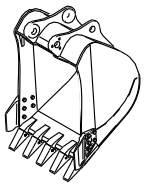
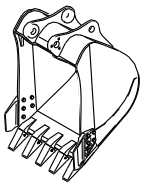
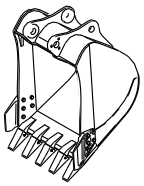
Load point height		Load radius								At max. reach		
		1.5 m (5 ft)		3.0 m (10 ft)		4.5 m (15 ft)		6.0 m (20 ft)		Capacity		Reach
												m (ft)
6.0 m (20.0 ft)	kg					*3080	*3080			*3020	2160	6.17
	lb					*6790	*6790			*6660	4760	(20.2)
4.5 m (15.0 ft)	kg					*3330	*3330	*2890	2180	2640	1630	7.09
	lb					*7340	*7340	*6370	4810	5820	3590	(23.3)
3.0 m (10.0 ft)	kg			*5800	*5800	*4220	3450	3420	2120	2330	1410	7.54
	lb			*12790	*12790	*9300	7610	7540	4670	5140	3110	(24.7)
1.5 m (5.0 ft)	kg			*8750	5960	5300	3190	3310	2010	2240	1340	7.62
	lb			*19290	13140	11680	7030	7300	4430	4940	2950	(25.0)
Ground Line	kg			*8480	5630	5090	3000	3210	1930	2350	1400	7.35
	lb			*18700	12410	11220	6610	7080	4250	5180	3090	(24.1)
-1.5 m (-5.0 ft)	kg	*6380	*6380	*9770	5600	5010	2940	3180	1900	2740	1650	6.68
	lb	*14070	*14070	*21540	12350	11050	6480	7010	4190	6040	3640	(21.9)
-3.0 m (-10 ft)	kg	*10300	*10300	*8570	5720	5060	2980			*3690	2370	5.41
	lb	*22710	*22710	*18890	12610	11160	6570			*8140	5220	(17.7)

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) R140LC-9V

(1) General bucket

		
0.52 m³ SAE heaped bucket	※ 0.65 m³ SAE heaped bucket	0.71 m³ SAE heaped bucket

Capacity		Width		Weight	Recommendation
					4.6 m (15' 1") boom
SAE heaped	CECE heaped	Without side cutter	With side cutter		2.1 m arm (6' 11")
0.52 m³ (0.68 yd³)	0.45 m³ (0.59 yd³)	935 mm (36.8")	1035 mm (40.8")	460 kg (1010 lb)	
※ 0.65 m³ (0.85 yd³)	0.55 m³ (0.72 yd³)	1110 mm (43.7")	1210 mm (47.6")	560 kg (1235 lb)	
0.71 m³ (0.93 yd³)	0.60 m³ (0.78 yd³)	1205 mm (47.4")	1305 mm (51.4")	540 kg (1190 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

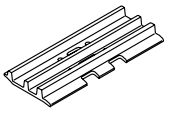
Applicable for materials with density of 1100 kg/m³ (1850 lb/yd³) or less

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
			
R140LC-9V	Shoe width	mm (in)	500 (20)
	Operating weight	kg (lb)	13300 (29320)
	Ground pressure	kgf/cm^2 (psi)	0.34 (4.84)
	Overall width	mm (ft-in)	2500 (8' 2")

※ : Standard

3) NUMBER OF ROLLERS AND SHOES ON EACH SIDE

Item	Quantity
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.
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
500 mm triple grouser	Standard	A

※ **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

8. SPECIFICATIONS FOR MAJOR COMPONENTS

1) ENGINE

Item	Specification
Model	Kirloskar 4R 1040T
Type	4-cycle turbocharged diesel engine
Cooling method	Water cooling
Number of cylinders and arrangement	4 cylinders, in-line
Firing order	1-3-4-2
Combustion chamber type	Direct injection type
Cylinder bore × stroke	105 × 120 mm
Piston displacement	4160 cc (254 cu in)
Compression ratio	17 : 1
Rated gross horse power (SAE J1995)	105 Hp (77.2 kW) at 2200 rpm
Maximum torque	38.2 kgf · m (276 lbf · ft) at 1400 rpm
Engine oil quantity	17.5 ℓ (4.6 U.S. gal)
Dry weight	550 kg (1210 lb)
High idling speed	2400 ± 50 rpm
Low idling speed	850 ± 50 rpm
Rated fuel consumption	162.8 g/Hp · hr at 1400 rpm
Starting motor	24 V-4.5 kW
Alternator	24 V-55 A
Battery	2 × 12 V × 80 Ah

2) MAIN PUMP

Item	Specification
Type	Variable displacement tandem axis piston pumps
Capacity	2 × 57.5 cc/rev
Maximum pressure	330 kgf/cm^2 (4690 psi)
Rated oil flow	2 × 112 ℓ /min (2 × 29.6 U.S. gpm)
Rated speed	1950 rpm

3) GEAR PUMP

Item	Specification
Type	Fixed displacement gear pump single stage
Capacity	15cc/rev
Maximum pressure	35 kgf/cm^2 (500 psi)
Rated oil flow	29.3 ℓ /min (7.7 U.S. gpm)

4) MAIN CONTROL VALVE

Item	Specification
Type	11 spools mono block
Operating method	Hydraulic pilot system
Main relief valve pressure	330 kgf/cm^2 (4690 psi)
Overload relief valve pressure	380 kgf/cm^2 (5400 psi)

5) SWING MOTOR

Item	Specification
Type	Fixed displacement axial piston motor
Capacity	72 cc/rev
Relief pressure	285 kgf/cm^2 (4050 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	Two kinds of displacement axial piston motor	
Relief pressure	350 kgf/cm^2 (4980 psi)	365 kgf/cm^2 (5190 psi)
Capacity (max / min)	77/45 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)
Braking torque	Min 19.7 kgf · m (143 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 × 840 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
R140LC-9V	Standard	500 mm (20")	0.34 kgf/cm^2 (4.84 psi)	46	2500 mm (8' 2")

9) BUCKET

Item		Capacity		Tooth quantity	Width	
		SAE heaped	CECE heaped		Without side cutter	With side cutter
R140LC-9V	Standard	0.65 m^3 (0.85 yd^3)	0.55 m^3 (0.72 yd^3)	5	1105 mm (43.5")	1205 mm (47.4")
	Option	0.52 m^3 (0.68 yd^3)	0.45 m^3 (0.59 yd^3)	5	915 mm (36.0")	1015 mm (40.0")
		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) -20 (-4) / -10 (14) / 0 (32) / 10 (50) / 20 (68) / 30 (86) / 40 (104)
Engine oil pan	Engine oil	17.5 (4.6)	SAE 30 SAE 10W SAE 10W-30 SAE 15W-40
Swing drive	Grease	0.35 (0.09)	NLGI NO.1 NLGI NO.2
Swing drive	Gear oil	2.5 (0.7)	SAE 85W-140
Final drive	Gear oil	2.2 × 2 (0.6 × 2)	SAE 85W-140
Hydraulic tank	Hydraulic oil	Tank : 124 (32.8) System : 210 (55.5)	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 50 : 50	15.5 (4.1)	Ethylene glycol base permanent type

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