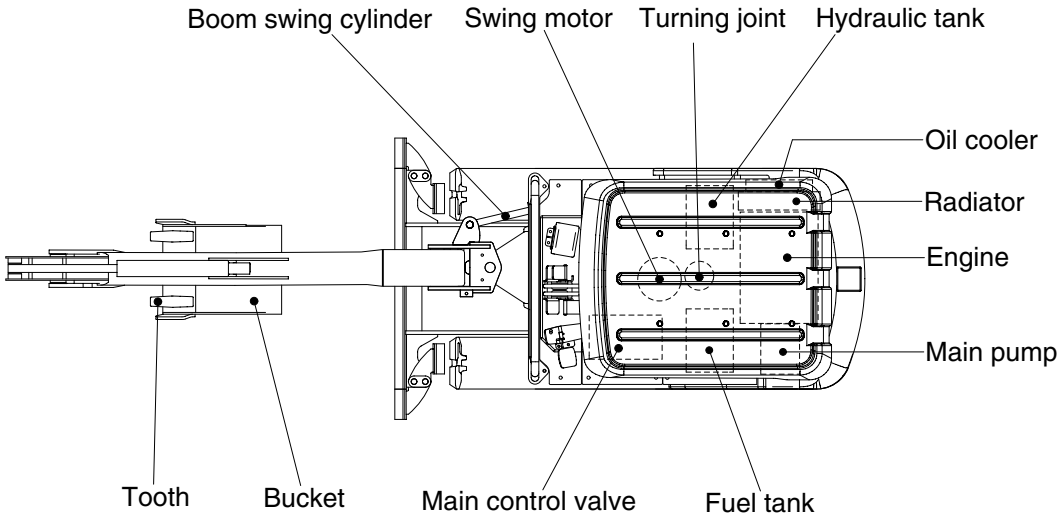
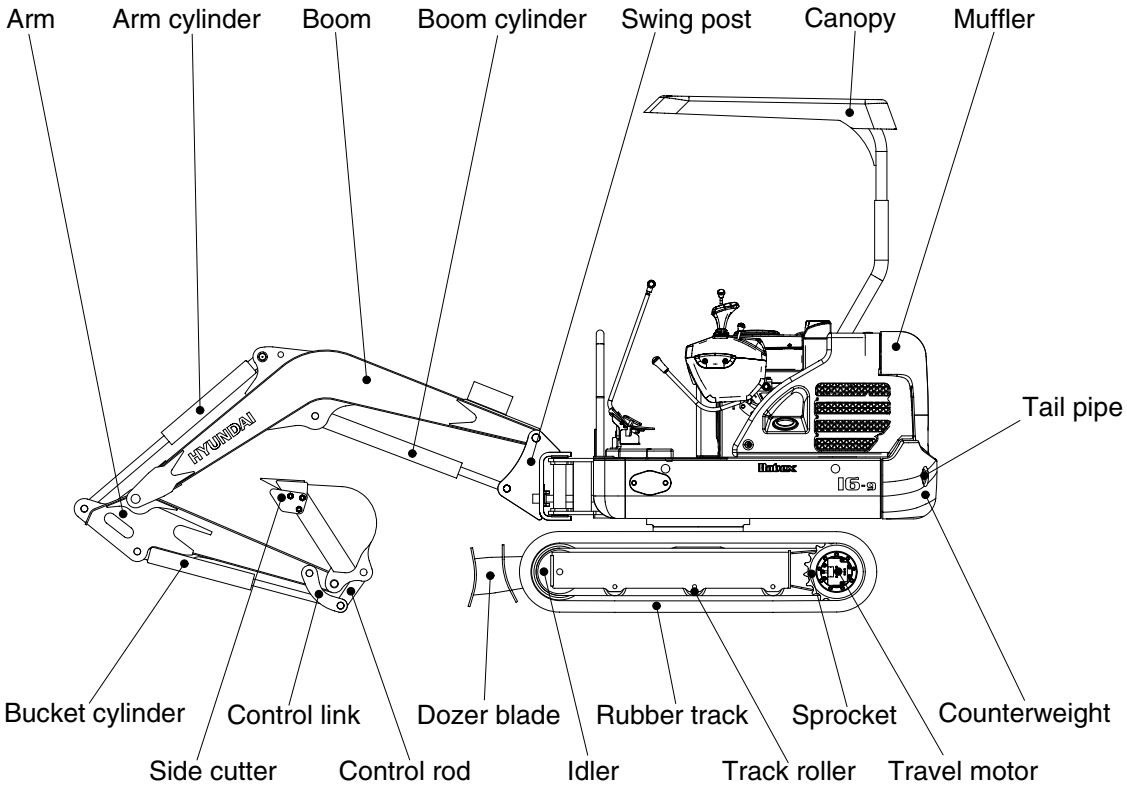
GROUP 2 SPECIFICATIONS

1. MAJOR COMPONENT

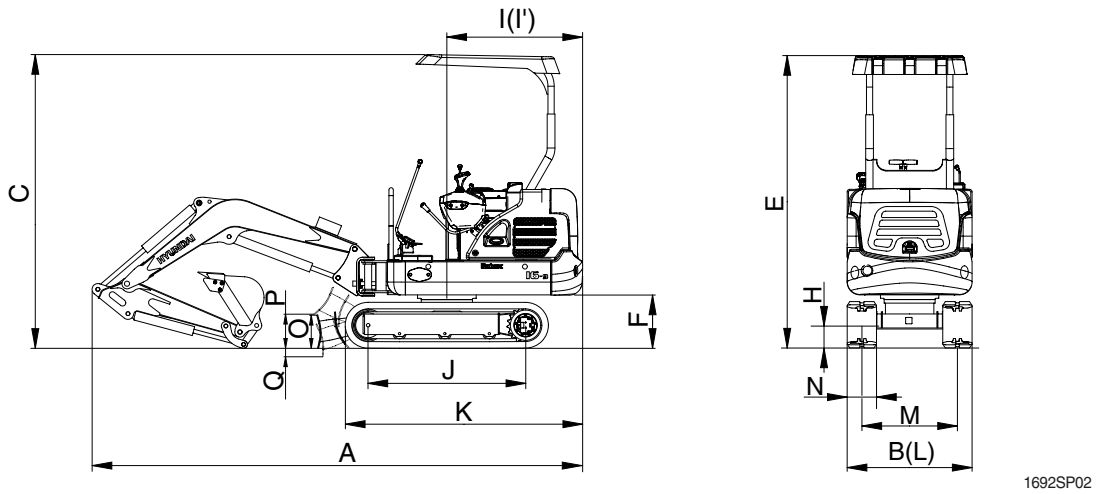




1692SP01

2. SPECIFICATIONS

1) 1.80 m (5' 11") MONO BOOM, 0.96 m (3' 2") ARM, WITH BOOM SWING POST

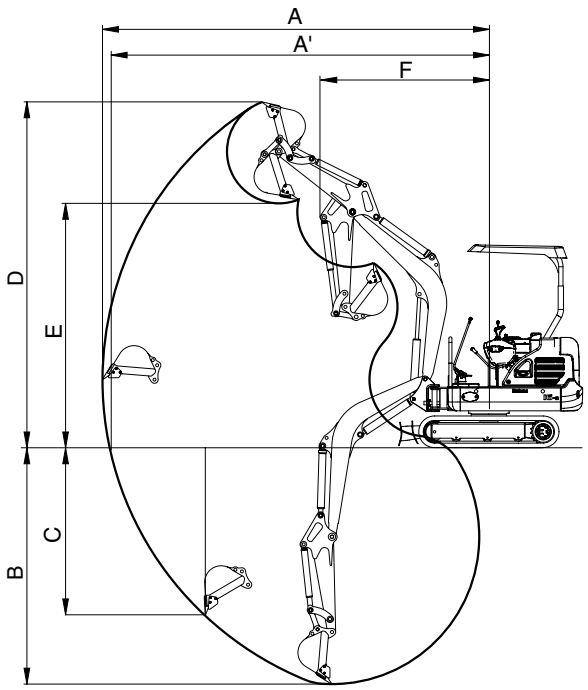


1692SP02

Description		Unit	Specification
Operating weight (canopy)		kg (lb)	1650 (3640)
Bucket capacity (SAE heaped), standard		m^3 (yd^3)	0.04 (0.05)
Overall length	A	mm (ft-in)	3840 (12' 7")
Overall width, with 230 mm shoe (extension crawler)	B		980~1250 (3' 3" ~ 4' 1")
Overall height	C		2300 (7' 7")
Overall height of canopy	E		2300 (7' 7")
Ground clearance of counterweight	F		415 (1' 4")
Minimum ground clearance	H		150 (0' 6")
Rear-end distance	I		1065 (3' 6")
Rear-end swing radius	I'		1065 (3' 6")
Distance between tumblers	J		1230 (4' 0")
Undercarriage length	K		1590 (5' 3")
Undercarriage width (extension crawler)	L		980~1250 (3' 3" ~ 4' 1")
Track gauge (extension crawler)	M		750~1020 (2' 6" ~ 3' 4")
Track shoe width, standard	N		230 (9")
Height of blade	O		250 (0' 10")
Ground clearance of blade up	P		170 (0' 7")
Depth of blade down	Q		240 (0' 9")
Travel speed (low/high)		km/hr (mph)	2.2/4.1 (1.4/2.5)
Swing speed		rpm	9.3
Gradeability		Degree (%)	30 (58)
Ground pressure 230 mm rubber shoe (canopy)		kgf/cm^2 (psi)	0.27 (3.84)
Max traction force		kg (lb)	1550 (3420)

3. WORKING RANGE

1) 1.80 m (5' 11") MONO BOOM WITH BOOM SWING POST



1692SP03

Description		0.96 m (3' 2") Arm
Max digging reach	A	3970 mm (13' 0")
Max digging reach on ground	A'	3880 mm (12' 9")
Max digging depth	B	2250 mm (7' 5")
Max vertical wall digging depth	C	1785 mm (5' 10")
Max digging height	D	3670 mm (12' 0")
Max dumping height	E	2550 mm (8' 4")
Min swing radius	F	1615 mm (5' 4")
Boom swing radius (left/right)		60°/60°
Bucket digging force	SAE	13.1 kN
		1340 kgf
		2950 lbf
	ISO	15.1 kN
		1540 kgf
		3400 lbf
Arm crowd force	SAE	9.0 kN
		920 kgf
		2030 lbf
	ISO	9.4 kN
		960 kgf
		2120 lbf

4. WEIGHT

Item	kg	lb
Upperstructure assembly	1640	3615
Main frame weld assembly	230	510
Engine assembly	75	165
Main pump assembly	17	37
Main control valve assembly	25	55
Swing motor assembly	23	50
Hydraulic oil tank assembly	20	44
Fuel tank assembly	15	33
Boom swing post	35	80
Counterweight	60	130
Canopy assembly	47	104
Front guard	12	26
Lower chassis assembly	530	1170
Track frame weld assembly	150	330
Swing bearing	20	44
Travel motor assembly	18	40
Turning joint	20	44
Track recoil spring	11	24
Idler	15	33
Track roller	3	7
Sprocket	4	9
Rubber track (230 ㎜)	66	146
Dozer blade assembly	60	130
Front attachment assembly (1.8 ㎡ boom, 0.96 ㎡ arm, 0.04 $㎥$ SAE heaped bucket)	200	440
1.8 ㎡ boom assembly	65	140
0.96 ㎡ arm assembly	30	70
0.04 $㎥$ SAE heaped bucket	40	90
Boom cylinder assembly	17	37
Arm cylinder assembly	15	33
Bucket cylinder assembly	11	24
Bucket control link assembly	10	22
Dozer cylinder assembly	11	24
Boom swing cylinder assembly	11	24
Extension cylinder assembly	8	18

5. LIFTING CAPACITIES

1) 1.8 m (5' 11") boom, 0.96 m (3' 2") arm equipped with 0.04 m³ (SAE heaped) bucket and 230 mm (9") rubber track, the dozer blade up with 60 kg (130 lb) counterweight.

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

Load point height		Load radius						At max. reach		
		2.0 m (6.6 ft)		2.5 m (8.2 ft)		3.0 m (10.0 ft)		Capacity		Reach
										m (ft)
3.0 m (10.0 ft)	kg							300	270	2.72
	lb							660	600	(8.9)
2.5 m (8.2 ft)	kg			340	310			220	200	3.22
	lb			750	680			490	440	(10.6)
2.0 m (6.6 ft)	kg			330	300	240	220	180	170	3.52
	lb			730	660	530	490	400	370	(11.5)
1.5 m (5.0 ft)	kg	470	420	320	290	240	220	170	150	3.69
	lb	1040	930	710	640	530	490	370	330	(12.1)
1.0 m (3.3 ft)	kg	450	400	310	280	230	210	160	140	3.76
	lb	990	880	680	620	510	460	350	310	(12.3)
0.5 m (1.6 ft)	kg	420	380	300	270	220	200	160	140	3.74
	lb	930	840	660	600	490	440	350	310	(12.3)
Ground Line	kg	410	370	290	260	220	200	160	150	3.62
	lb	900	820	640	570	490	440	350	330	(11.9)
-0.5 m (-1.6 ft)	kg	410	360	290	260	220	200	180	170	3.39
	lb	900	790	640	570	490	440	400	370	(11.1)
-1.0 m (-3.3 ft)	kg	410	370	290	260			230	200	3.00
	lb	900	820	640	570			510	440	(9.8)
-1.5 m (-5.0 ft)	kg	430	380							
	lb	950	840							
-2.5 m (-8.2 ft)	kg							230	210	3.14
	lb							510	460	(10.3)

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.

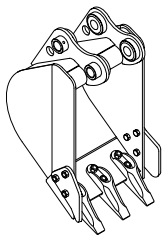
2) 1.8 m (5' 11") boom, 0.96 m (3' 2") arm equipped with 0.04 m³ (SAE heaped) bucket and 230 mm (9") rubber track, the dozer blade down with 60 kg (130 lb) counterweight.

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

Load point height		Load radius						At max. reach		
		2.0 m (6.6 ft)		2.5 m (8.2 ft)		3.0 m (10.0 ft)		Capacity		Reach
										m (ft)
3.0 m (10.0 ft)	kg							*480	290	2.72
	lb							*1060	640	(8.9)
2.5 m (8.2 ft)	kg			*490	320			*430	210	3.22
	lb			*1080	710			*950	460	(10.6)
2.0 m (6.6 ft)	kg			*610	320	*410	230	*410	180	3.52
	lb			*1340	710	*900	510	*900	400	(11.5)
1.5 m (5.0 ft)	kg	*970	450	790	310	560	230	390	160	3.69
	lb	*2140	990	1740	680	1230	510	860	350	(12.1)
1.0 m (3.3 ft)	kg	1210	420	770	300	560	220	380	150	3.76
	lb	2670	930	1700	660	1230	490	840	330	(12.3)
0.5 m (1.6 ft)	kg	1180	400	760	290	550	220	380	150	3.74
	lb	2600	880	1680	640	1210	490	840	330	(12.3)
Ground Line	kg	1170	390	750	280	540	210	400	160	3.62
	lb	2580	860	1650	620	1190	460	880	350	(11.9)
-0.5 m (-1.6 ft)	kg	1160	390	740	280	540	210	450	180	3.39
	lb	2560	860	1630	620	1190	460	990	400	(11.1)
-1.0 m (-3.3 ft)	kg	1170	390	750	280			550	220	3.00
	lb	2580	860	1650	620			1210	490	(9.8)
-1.5 m (-5.0 ft)	kg	1180	400							
	lb	2600	880							
-2.5 m (-8.2 ft)	kg							*480	220	3.14
	lb							*1060	490	(10.3)

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.

6. BUCKET SELECTION GUIDE



0.04 m^3 SAE
heaped bucket

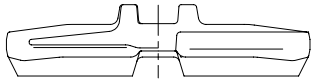
Capacity		Width		Weight	Recommendation
					1.8 m (5' 11") boom
SAE heaped	CECE heaped	Without side cutter	With side cutter		0.96 m (3' 2") arm
0.04m^3 (0.05 yd^3)	0.03 m^3 (0.04 yd^3)	390 mm (15.4")	440 mm (17.3")	40 kg (88 lb)	Applicable for materials with density of 1600 kgf/m^3 (2700 lb /yd^3) or 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		Rubber track
			
R16-9	Shoe width	mm (in)	230 (9")
	Operating weight	kg (lb)	1650 (3640)
	Ground pressure	kgf/cm^2 (psi)	0.27 (3.84)
	Overall width	mm (ft-in)	1250 (4' 1")

(3) NUMBER OF ROLLERS AND SHOES ON EACH SIDE

Item	Quantity
Track rollers	3 EA

8. SPECIFICATIONS FOR MAJOR COMPONENTS

1) ENGINE

Item	Specification
Model	Mitsubishi L3E
Type	4-cycle vertical overhead valve, diesel fuel
Cooling method	Water cooling
Number of cylinders and arrangement	3 cylinders, in-line
Firing order	1-3-2
Combustion chamber type	Swirl chamber type
Cylinder bore × stroke	76 × 70 mm (2.99" × 2.76")
Piston displacement	952 cc (58.1 cu in)
Compression ratio	23 : 1
Rated gross horse power (SAE J1995)	16.8 Hp at 2300 rpm (12.5 kW at 2300 rpm)
Maximum torque at 1600 rpm	5.4 kgf · m (39 lbf · ft)
Engine oil quantity	4.2 ℓ (1.1 U.S. gal)
Dry weight	75 kg (165 lb)
High idling speed	2500+ 30 rpm
Low idling speed	1600± 25 rpm
Rated fuel consumption	208 g/Hp · hr at 2300 rpm (279 g/kW · hr at 2300 rpm)
Starting motor	12V-1.7 kW
Alternator	12V-40 A
Battery	1 × 12 V × 80 Ah

2) MAIN PUMP

Item	Specification
Type	Variable displacement tandem axis piston pumps
Capacity	2 × 7.4 cc/rev
Rated oil flow	2 × 17.0 ℓ /min (4.5 U.S. gpm / 3.7 U.K. gpm)
Rated speed	2300 rpm

3) GEAR PUMP

Item	Specification
Type	Fixed displacement gear pump single stage
Capacity	4.5/2.7 cc/rev
Rated oil flow	10.4/6.2 ℓ /min (2.7/1.6 U.S. gpm / 2.3/1.4 U.K. gpm)

4) MAIN CONTROL VALVE

Item	Specification
Type	Sectional, 9 spools (12 blocks)
Operating method	Hydraulic pilot system
Main relief valve pressure	210 kgf/cm^2 (2990 psi)
Overload relief valve pressure	230 kgf/cm^2 (3270 psi)

5) SWING MOTOR

Item	Specification
Type	Fixed displacement axial piston motor
Capacity	18.1 cc/rev
Relief pressure	165 kgf/cm^2 (2350 psi)
Reduction gear type	1 - stage planetary

6) TRAVEL MOTOR

Item	Specification
Type	Variable displacement axial piston motor
Relief pressure	210 kgf/cm^2 (2990 psi)
Reduction gear type	2-stage planetary

7) CYLINDER

Item		Specification
Boom cylinder	Bore dia × Rod dia × Stroke	ø60× ø40× 465 mm
	Cushion	Extend only
Arm cylinder	Bore dia × Rod dia × Stroke	ø60× ø40× 400 mm
	Cushion	Extend and retract
Bucket cylinder	Bore dia × Rod dia × Stroke	ø55× ø35× 345 mm
	Cushion	-
Boom swing cylinder	Bore dia × Rod dia × Stroke	ø55× ø30× 355 mm
	Cushion	-
Dozer cylinder	Bore dia × Rod dia × Stroke	ø65× ø30× 93 mm
	Cushion	-

※ **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) BUCKET

Item	Capacity		Tooth quantity	Width	
	SAE heaped	CECE heaped		Without side cutter	With side cutter
Standard	0.04 m^3 (0.05 yd^3)	0.03 m^3 (0.04 yd^3)	3	390 mm (15.4")	440 mm (17.3")

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	4.2 (1.1)	SAE 30 SAE 10W SAE 10W-30 SAE 15W-40
Final drive	Gear oil	0.33 × 2 (0.09 × 2)	SAE 30
Hydraulic tank	Hydraulic oil	Tank: 20 (5.3) System: 30 (7.9)	ISO VG 32 ISO VG 46 ISO VG 68
Fuel tank	Diesel fuel	25 (6.6)	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	3.5 (0.9)	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