

SECTION 1 GENERAL

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SECTION 1 GENERAL

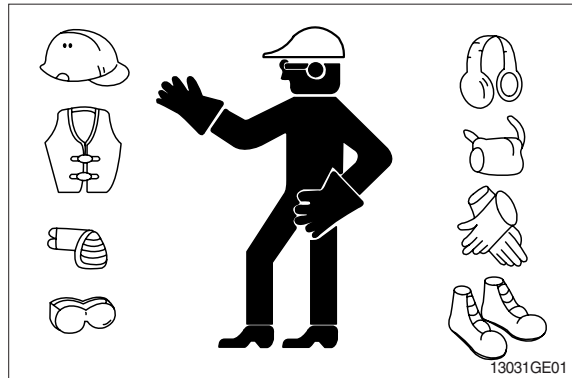
GROUP 1 SAFETY

FOLLOW SAFE PROCEDURE

Unsafe work practices are dangerous. Understand service procedure before doing work; Do not attempt shortcuts.

WEAR PROTECTIVE CLOTHING

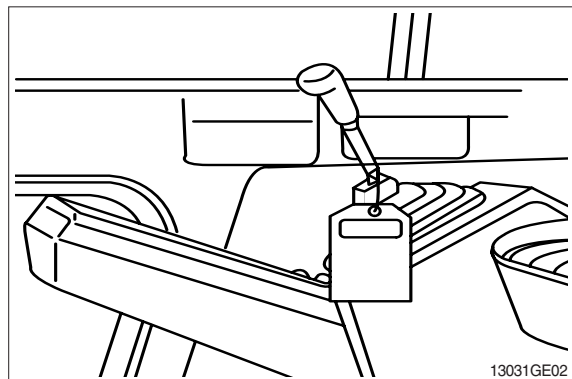
Wear close fitting clothing and safety equipment appropriate to the job.



WARN OTHERS OF SERVICE WORK

Unexpected machine movement can cause serious injury.

Before performing any work on the excavator, attach a 'Do Not Operate' tag on the right side control lever.



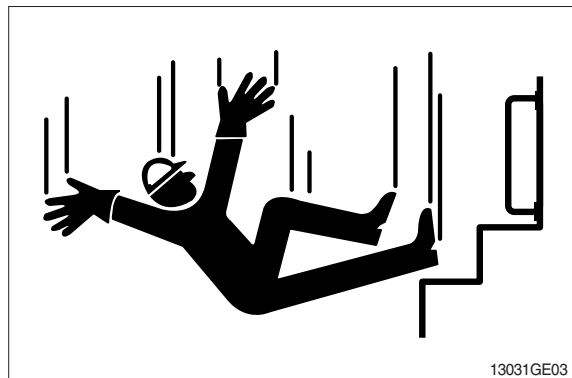
USE HANDHOLDS AND STEPS

Falling is one of the major causes of personal injury.

When you get on and off the machine, always maintain a three point contact with the steps and handrails and face the machine. Do not use any controls as handholds.

Never jump on or off the machine. Never mount or dismount a moving machine.

Be careful of slippery conditions on platforms, steps, and handrails when leaving the machine.

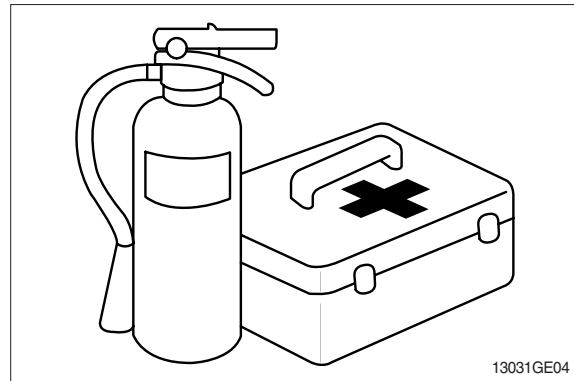


PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

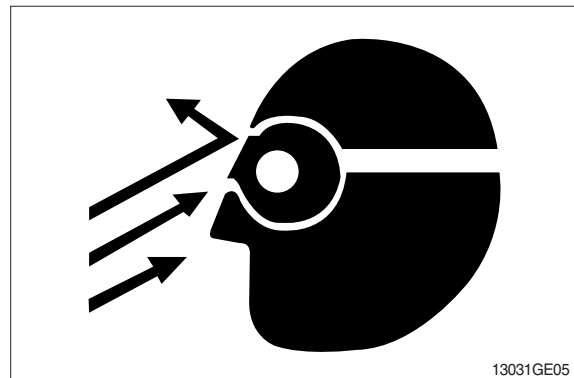
Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.



PROTECT AGAINST FLYING DEBRIS

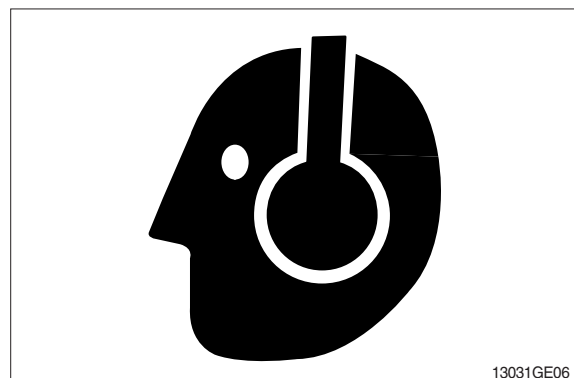
Guard against injury from flying pieces of metal or debris; Wear goggles or safety glasses.



PROTECT AGAINST NOISE

Prolonged exposure to loud noise can cause impairment or loss of hearing.

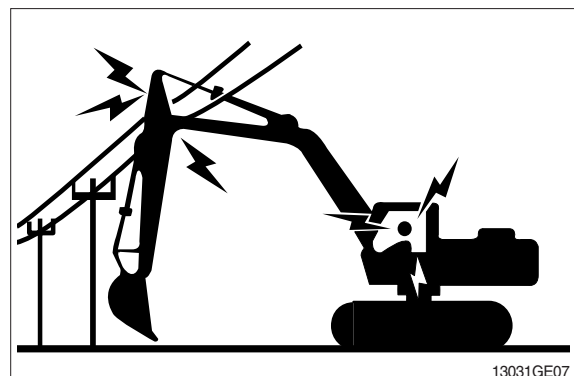
Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.



AVOID POWER LINES

Serious injury or death can result from contact with electric lines.

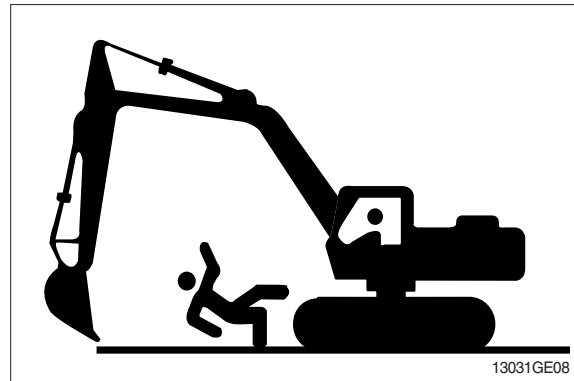
Never move any part of the machine or load closer to electric line than 3m(10ft) plus twice the line insulator length.



KEEP RIDERS OFF EXCAVATOR

Only allow the operator on the excavator. Keep riders off.

Riders on excavator are subject to injury such as being struck by foreign objects and being thrown off the excavator. Riders also obstruct the operator's view resulting in the excavator being operated in an unsafe manner.

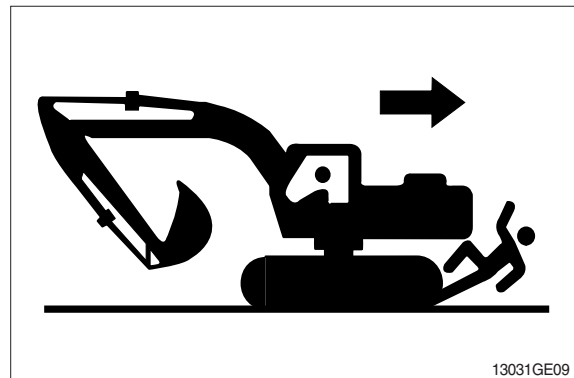


MOVE AND OPERATE MACHINE SAFELY

Bystanders can be run over. Know the location of bystanders before moving, swinging, or operating the machine.

Always keep the travel alarm in working condition. It warns people when the excavator starts to move.

Use a signal person when moving, swinging, or operating the machine in congested areas. Coordinate hand signals before starting the excavator.



OPERATE ONLY FROM OPERATOR'S SEAT

Avoid possible injury machine damage. Do not start engine by shorting across starter terminals.

NEVER start engine while standing on ground. Start engine only from operator's seat.



PARK MACHINE SAFELY

Before working on the machine:

- Park machine on a level surface.
- Lower bucket to the ground.
- Turn auto idle switch off.
- Run engine at 1/2 speed without load for 2 minutes.
- Turn key switch to OFF to stop engine.
Remove key from switch.
- Move pilot control shutoff lever to locked position.
- Allow engine to cool.

Always lower the attachment or implement to the ground before you work on the machine. If you must work on a lifted machine or attachment, securely support the machine or attachment.

Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.



Explosive release of fluids from pressurized cooling system can cause serious burns.



Handle fuel with care; It is highly flammable. Do not refuel the machine while smoking or when near open flame or sparks. Always stop engine before refueling machine. Fill fuel tank outdoors.



Do not store oily rags; They can ignite and burn spontaneously.



BEWARE OF EXHAUST FUMES

Prevent asphyxiation. Engine exhaust fumes can cause sickness or death.

If you must operate in a building, be positive there is adequate ventilation. Either use an exhaust pipe extension to remove the exhaust fumes or open doors and windows to bring enough outside air into the area.

REMOVE PAINT BEFORE WELDING OR HEATING

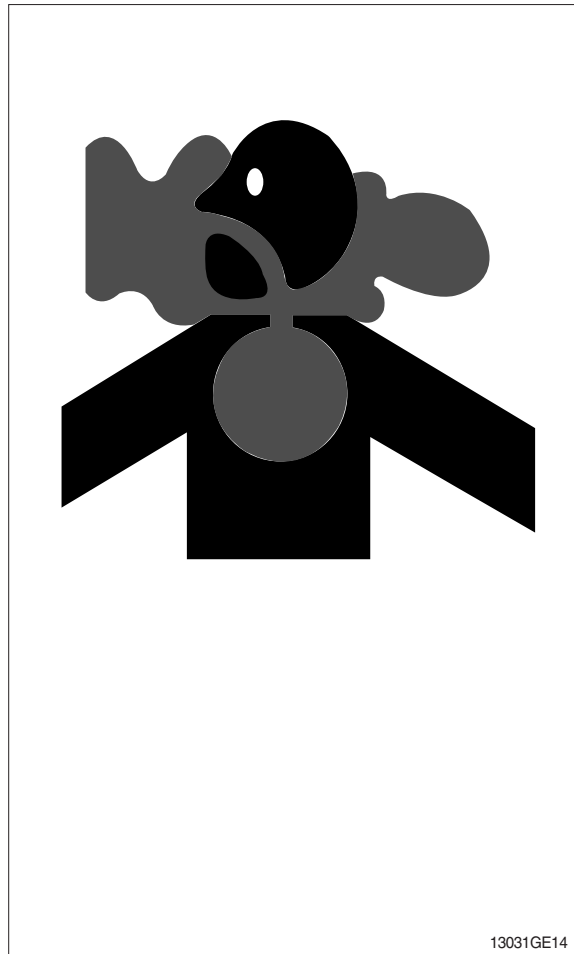
Avoid potentially toxic fumes and dust.

Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch.

Do all work outside or in a well ventilated area. Dispose of paint and solvent properly.

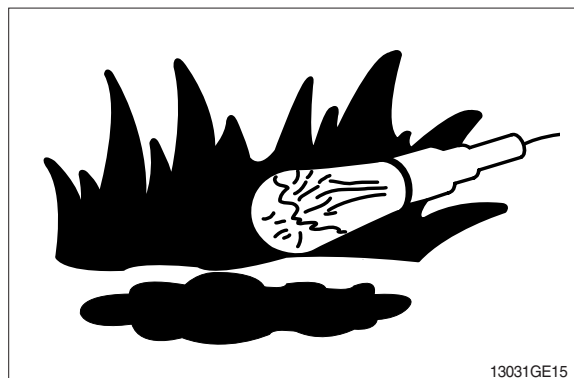
Remove paint before welding or heating:

- If you sand or grind paint, avoid breathing the dust. Wear an approved respirator.
- If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.



ILLUMINATE WORK AREA SAFELY

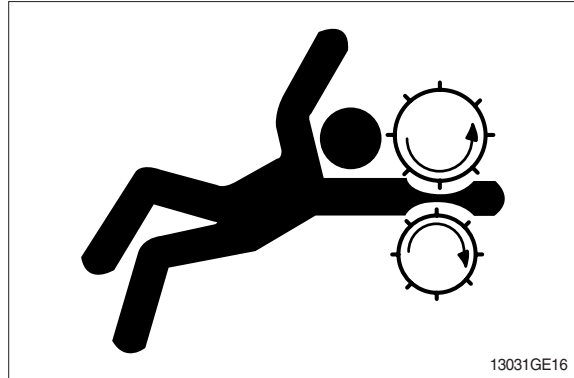
Illuminate your work area adequately but safely. Use a portable safety light for working inside or under the machine. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.



SERVICE MACHINE SAFELY

Tie long hair behind your head. Do not wear a necktie, scarf, loose clothing or necklace when you work near machine tools or moving parts. If these items were to get caught, severe injury could result.

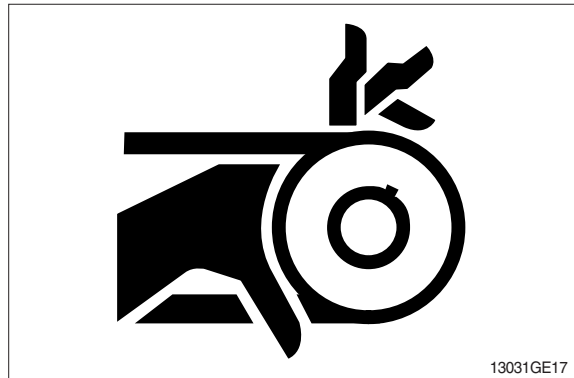
Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.



STAY CLEAR OF MOVING PARTS

Entanglements in moving parts can cause serious injury.

To prevent accidents, use care when working around rotating parts.



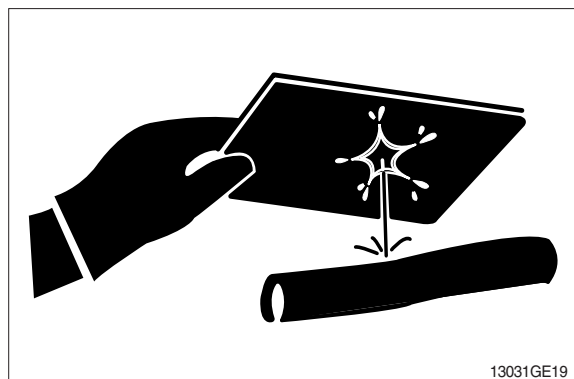
AVOID HIGH PRESSURE FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.



AVOID HEATING NEAR PRESSURIZED FLUID LINES

Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders. Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials.

Pressurized lines can be accidentally cut when heat goes beyond the immediate flame area. Install fire resisting guards to protect hoses or other materials.



PREVENT BATTERY EXPLOSIONS

Keep sparks, lighted matches, and flame away from the top of battery. Battery gas can explode.

Never check battery charge by placing a metal object across the posts. Use a volt-meter or hydrometer.

Do not charge a frozen battery; It may explode. Warm battery to 16°C (60°F).



PREVENT ACID BURNS

Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, eat holes in clothing, and cause blindness if splashed into eyes.

Avoid the hazard by:

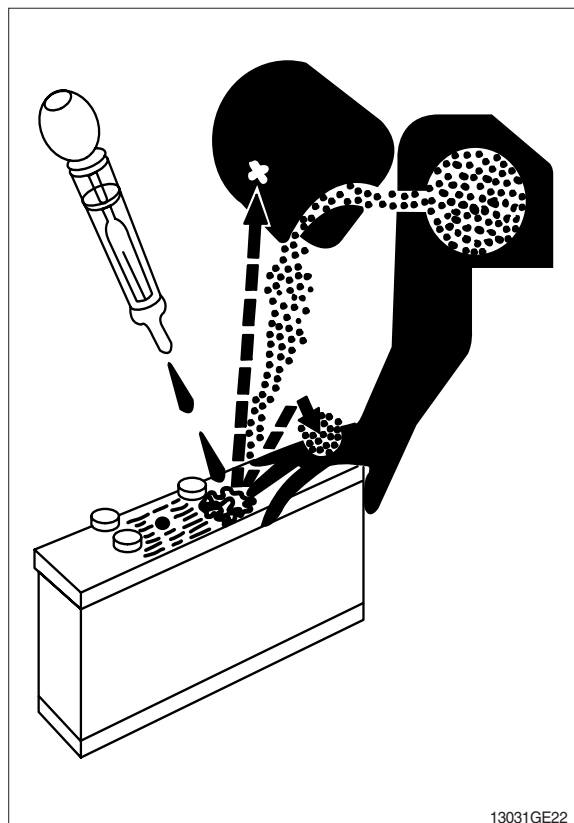
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Use proper jump start procedure.

If you spill acid on yourself:

1. Flush your skin with water.
2. Apply baking soda or lime to help neutralize the acid.
3. Flush your eyes with water for 10-15 minutes. Get medical attention immediately.

If acid is swallowed:

1. Drink large amounts of water or milk.
2. Then drink milk of magnesia, beaten eggs, or vegetable oil.
3. Get medical attention immediately.



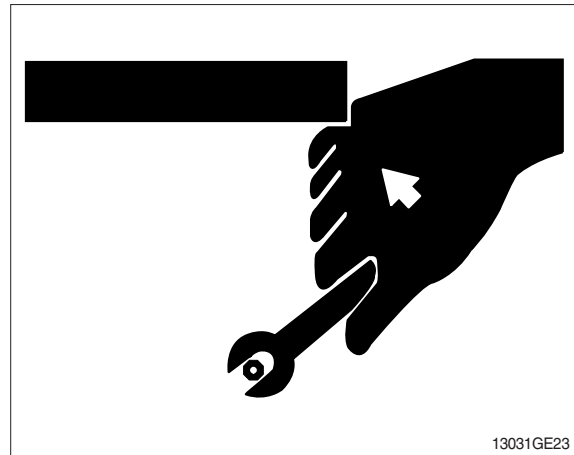
USE TOOLS PROPERLY

Use tools appropriate to the work. Makeshift tools, parts, and procedures can create safety hazards.

Use power tools only to loosen threaded tools and fasteners.

For loosening and tightening hardware, use the correct size tools. **DO NOT** use U.S. measurement tools on metric fasteners. Avoid bodily injury caused by slipping wrenches.

Use only recommended replacement parts. (See Parts catalogue.)

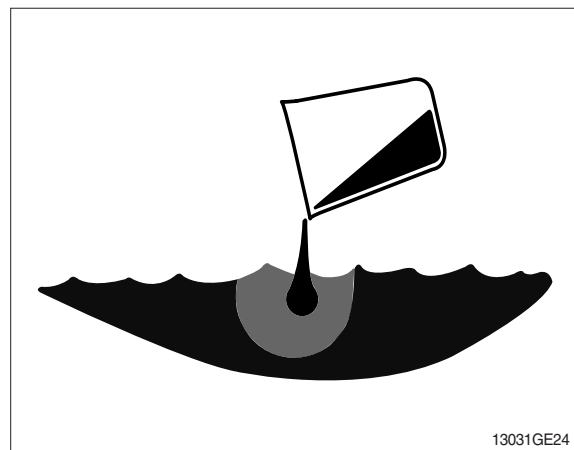


DISPOSE OF FLUIDS PROPERLY

Improperly disposing of fluids can harm the environment and ecology. Before draining any fluids, find out the proper way to dispose of waste from your local environmental agency.

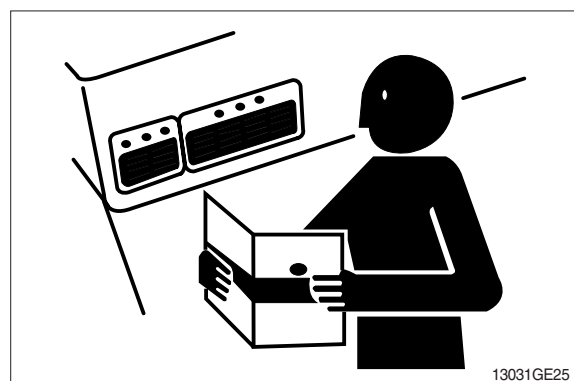
Use proper containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

DO NOT pour oil into the ground, down a drain, or into a stream, pond, or lake. Observe relevant environmental protection regulations when disposing of oil, fuel, coolant, brake fluid, filters, batteries, and other harmful waste.



REPLACE SAFETY SIGNS

Replace missing or damaged safety signs. See the machine operator's manual for correct safety sign placement.

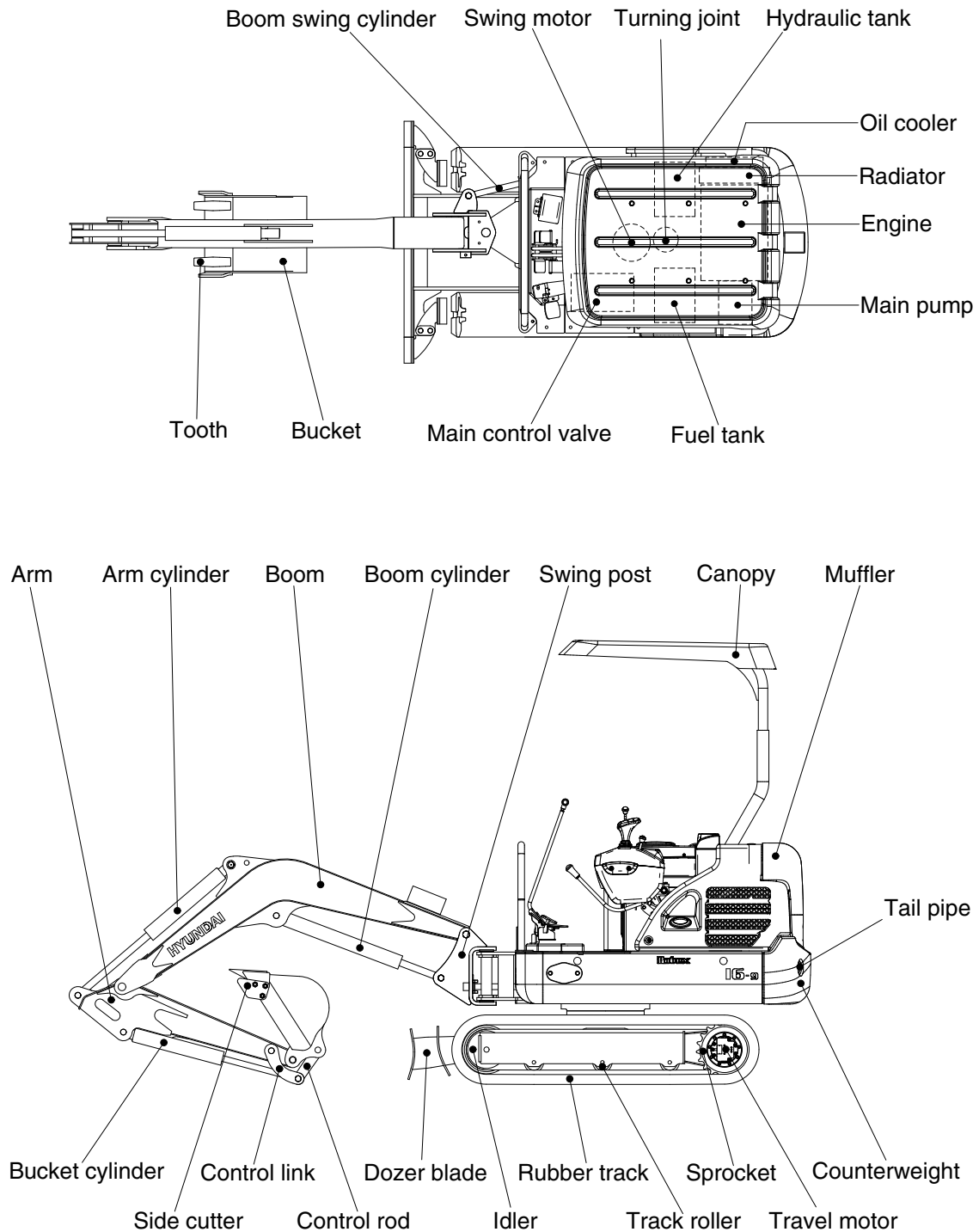


LIVE WITH SAFETY

Before returning machine to customer, make sure machine is functioning properly, especially the safety systems. Install all guards and shields.

GROUP 2 SPECIFICATIONS

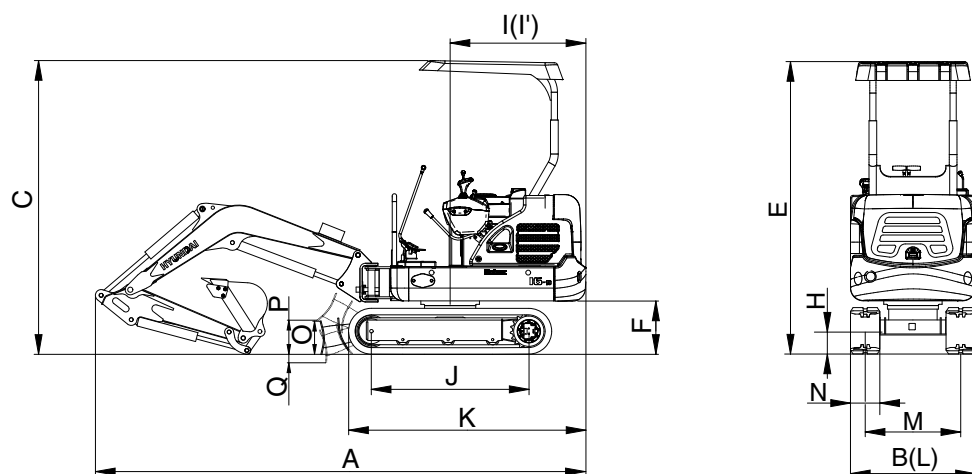
1. MAJOR COMPONENT



1692SP01

2. SPECIFICATIONS

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

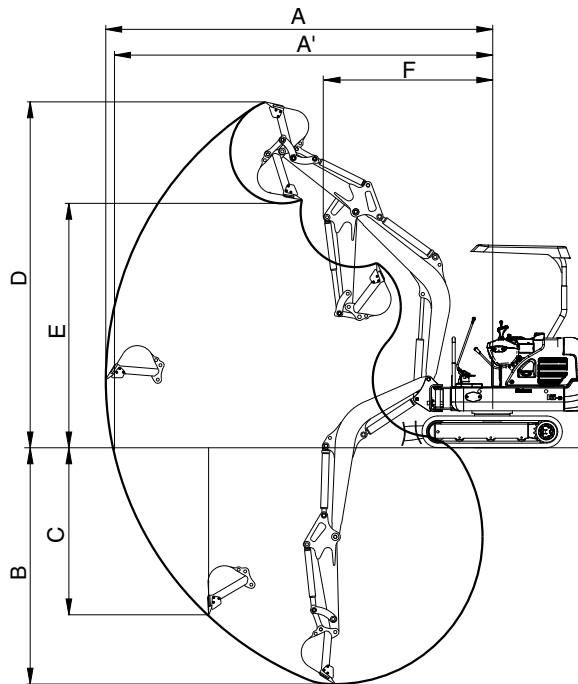


1692SP02

Description		Unit	Specification
Operating weight (canopy/cabin)		kg (lb)	1650 (3640) / 1820 (4010)
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/cabin)		kgf/cm ² (psi)	0.28 (3.92) / 0.30 (4.31)
Max traction force		kg (lb)	1550 (3420)

3. WORKING RANGE

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



1692SP03

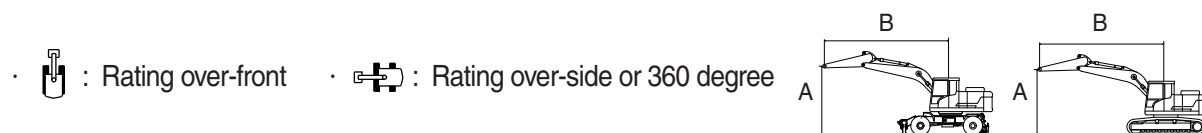
Description		0.96 m (3' 2") Arm	
Max digging reach	A	3970 mm (13' 0")	
Max digging reach on ground	A'	3880 mm (12' 9")	
Max digging depth	B	2250 mm (7' 5")	
Max vertical wall digging depth	C	1785 mm (5' 10")	
Max digging height	D	3670 mm (12' 0")	
Max dumping height	E	2550 mm (8' 4")	
Min swing radius	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	940	2070
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 mm)	66	146
Dozer blade assembly	60	130
Front attachment assembly (1.8 m boom, 0.96 m arm, 0.04 m ³ SAE heaped bucket)	200	440
1.8 m boom assembly	65	140
0.96 m arm assembly	30	70
0.04 m ³ 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

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outrigger	
R16-9	Canopy	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		1800	960	60	230	-	-	Down	-	-



Lift-point height (A)		Lift-point radius (B)										At max. reach		
		1.0 m (3.3 ft)		1.5 m (4.9 ft)		2.0 m (6.6 ft)		2.5 m (8.2 ft)		3.0 m (9.8 ft)		Capacity		Reach
														m (ft)
3.0 m (9.8 ft)	kg											*400	*400	2.20
	lb											*880	*880	(7.2)
2.5 m (8.2 ft)	kg							*370	340			*340	290	2.76
	lb							*820	750			*750	640	(9.1)
2.0 m (6.6 ft)	kg							*390	340	*390	260	*310	240	3.10
	lb							*860	750	*860	570	*680	530	(10.2)
1.5 m (4.9 ft)	kg					*530	460	*450	330	*410	250	*310	220	3.30
	lb					*1170	1010	*990	730	*900	550	*680	490	(10.8)
1.0 m (3.3 ft)	kg					*730	440	*530	320	*450	250	*320	210	3.39
	lb					*1610	970	*1170	710	*990	550	*710	460	(11.1)
0.5 m (1.6 ft)	kg					*870	420	*610	310	*480	240	*340	200	3.39
	lb					*1920	930	*1340	680	*1060	530	*750	440	(11.1)
Ground Line	kg					*910	410	*650	300	*500	240	*390	210	3.29
	lb					*2010	900	*1430	660	*1100	530	*860	460	(10.8)
-0.5 m (-1.6 ft)	kg	*800	*800	*1090	640	*880	410	*630	300	*480	240	*450	230	3.08
	lb	*1760	*1760	*2400	1410	*1940	900	*1390	660	*1060	530	*990	510	(10.1)
-1.0 m (-3.3 ft)	kg	*1230	*1230	*1120	640	*770	420	*550	310			*460	270	2.74
	lb	*2710	*2710	*2470	1410	*1700	930	*1210	680			*1010	600	(9.0)
-1.5 m (-4.9 ft)	kg			*760	660	*520	430					*440	390	2.15
	lb			*1680	1460	*1150	950					*970	860	(7.1)

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 lift-point is bucket pivot mounting pin on the arm (without bucket mass).

4. *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.

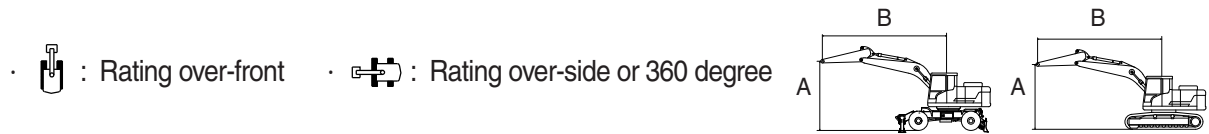
The difference between the weight of a work tool attachment must be subtracted.

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.

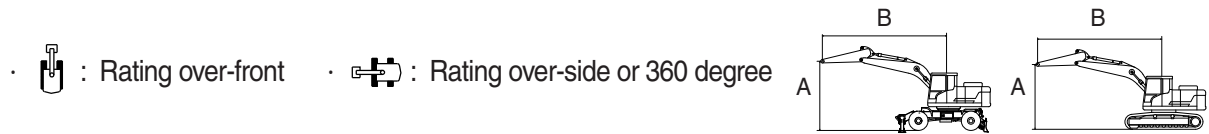
Make adjustments to the rated load as necessary for non-standard configurations.

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outtriger	
R16-9	Canopy, Track extended	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		1800	960	60	230	-	-	Down	-	-



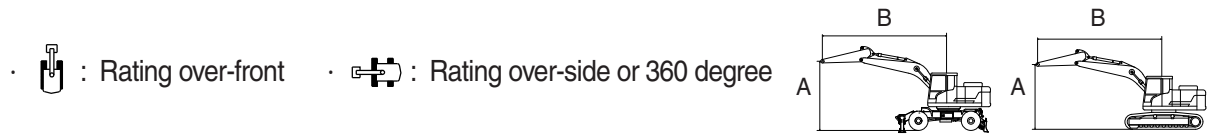
Lift-point height (A)		Lift-point radius (B)										At max. reach		
		1.0 m (3.3 ft)		1.5 m (4.9 ft)		2.0 m (6.6 ft)		2.5 m (8.2 ft)		3.0 m (9.8 ft)		Capacity		Reach
														m (ft)
3.0 m (9.8 ft)	kg lb											*400 *880	*400 *880	2.20 (7.2)
2.5 m (8.2 ft)	kg lb							*370 *820	*370 *820			*340 *750	*340 *750	2.76 (9.1)
2.0 m (6.6 ft)	kg lb							*390 *860	*390 *860	*390 *860	310 680	*310 *680	300 660	3.10 (10.2)
1.5 m (4.9 ft)	kg lb					*530 *1170	*530 *1170	*450 *990	410 900	*410 *900	310 680	*310 *680	270 600	3.30 (10.8)
1.0 m (3.3 ft)	kg lb					*730 *1610	550 1210	*530 *1170	400 880	*450 *990	300 660	*320 *710	250 550	3.39 (11.1)
0.5 m (1.6 ft)	kg lb					*870 *1920	530 1170	*610 *1340	390 860	*480 *1060	300 660	*340 *750	250 550	3.39 (11.1)
Ground Line	kg lb					*910 *2010	520 1150	*650 *1430	380 840	*500 *1100	300 660	*390 *860	260 570	3.29 (10.8)
-0.5 m (-1.6 ft)	kg lb	*800 *1760	*800 *1760	*1090 *2400	820 1810	*880 *1940	520 1150	*630 *1390	380 840	*480 *1060	290 640	*450 *990	280 620	3.08 (10.1)
-1.0 m (-3.3 ft)	kg lb	*1230 *2710	*1230 *2710	*1120 *2470	830 1830	*770 *1700	520 1150	*550 *1210	380 840			*460 *1010	340 750	2.74 (9.0)
-1.5 m (-4.9 ft)	kg lb			*760 *1680	*760 *1680	*520 *1150	*520 *1150					*440 *970	*440 *970	2.15 (7.1)

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outtriger	
R16-9	Cabin	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		1800	960	60	230	-	-	Down	-	-



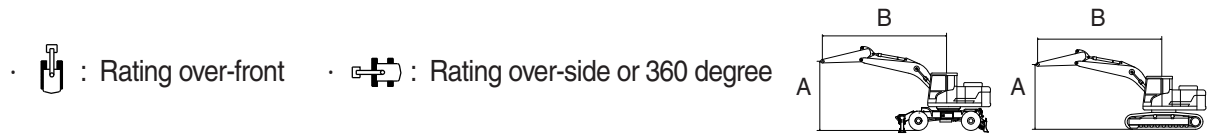
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														m (ft)
3.0 m (9.8 ft)	kg											*400	380	2.20
	lb											*880	840	(7.2)
2.5 m (8.2 ft)	kg							*370	310			*340	260	2.76
	lb							*820	680			*750	570	(9.1)
2.0 m (6.6 ft)	kg							*390	310	*390	230	*310	220	3.10
	lb							*860	680	*860	510	*680	490	(10.2)
1.5 m (4.9 ft)	kg					*530	420	*450	300	*410	230	*310	190	3.30
	lb					*1170	930	*990	660	*900	510	*680	420	(10.8)
1.0 m (3.3 ft)	kg					*730	390	*530	290	*450	220	*320	180	3.39
	lb					*1610	860	*1170	640	*990	490	*710	400	(11.1)
0.5 m (1.6 ft)	kg					*870	380	*610	280	*480	210	*340	180	3.39
	lb					*1920	840	*1340	620	*1060	460	*750	400	(11.1)
Ground Line	kg					*910	370	*650	270	*500	210	*390	190	3.29
	lb					*2010	820	*1430	600	*1100	460	*860	420	(10.8)
-0.5 m (-1.6 ft)	kg	*800	*800	*1090	570	*880	370	*630	270	*480	210	*450	200	3.08
	lb	*1760	*1760	*2400	1260	*1940	820	*1390	600	*1060	460	*990	440	(10.1)
-1.0 m (-3.3 ft)	kg	*1230	1210	*1120	580	*770	370	*550	270			*460	240	2.74
	lb	*2710	2670	*2470	1280	*1700	820	*1210	600			*1010	530	(9.0)
-1.5 m (-4.9 ft)	kg			*760	590	*520	380					*440	350	2.15
	lb			*1680	1300	*1150	840					*970	770	(7.1)

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outtriger	
R16-9	Cabin, Track extended	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		1800	960	60	230	-	-	Down	-	-



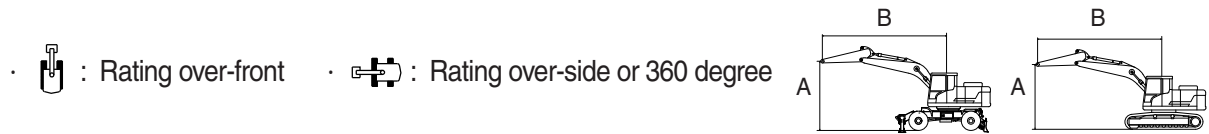
Lift-point height (A)		Lift-point radius (B)										At max. reach		
		1.0 m (3.3 ft)		1.5 m (4.9 ft)		2.0 m (6.6 ft)		2.5 m (8.2 ft)		3.0 m (9.8 ft)		Capacity		Reach
														m (ft)
3.0 m (9.8 ft)	kg lb											*400 *880	*400 *880	2.20 (7.2)
2.5 m (8.2 ft)	kg lb							*370 *820	*370 *820			*340 *750	320 710	2.76 (9.1)
2.0 m (6.6 ft)	kg lb							*390 *860	380 840	*390 *860	280 620	*310 *680	270 600	3.10 (10.2)
1.5 m (4.9 ft)	kg lb					*530 *1170	520 1150	*450 *990	370 820	*410 *900	280 620	*310 *680	240 530	3.30 (10.8)
1.0 m (3.3 ft)	kg lb					*730 *1610	490 1080	*530 *1170	360 790	*450 *990	270 600	*320 *710	230 510	3.39 (11.1)
0.5 m (1.6 ft)	kg lb					*870 *1920	470 1040	*610 *1340	350 770	*480 *1060	270 600	*340 *750	220 490	3.39 (11.1)
Ground Line	kg lb					*910 *2010	470 1040	*650 *1430	340 750	*500 *1100	260 570	*390 *860	230 510	3.29 (10.8)
-0.5 m (-1.6 ft)	kg lb	*800 *1760	*800 *1760	*1090 *2400	740 1630	*880 *1940	470 1040	*630 *1390	340 750	*480 *1060	260 570	*450 *990	250 550	3.08 (10.1)
-1.0 m (-3.3 ft)	kg lb	*1230 *2710	*1230 *2710	*1120 *2470	750 1650	*770 *1700	470 1040	*550 *1210	340 750			*460 *1010	300 660	2.74 (9.0)
-1.5 m (-4.9 ft)	kg lb			*760 *1680	*760 *1680	*520 *1150	480 1060					*440 *970	430 950	2.15 (7.1)

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outtriger	
R16-9	Canopy	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		1800	960	60	230	-	-	Up	-	-



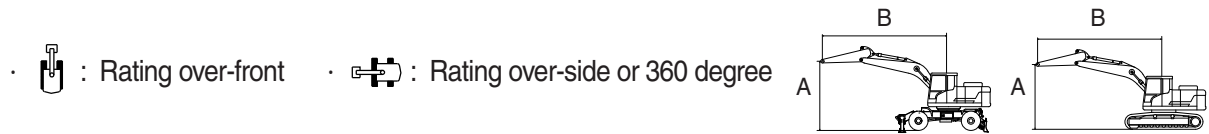
Lift-point height (A)		Lift-point radius (B)										At max. reach		
		1.0 m (3.3 ft)		1.5 m (4.9 ft)		2.0 m (6.6 ft)		2.5 m (8.2 ft)		3.0 m (9.8 ft)		Capacity		Reach
														m (ft)
3.0 m	kg											*400	340	2.20
(9.8 ft)	lb											*880	750	(7.2)
2.5 m	kg							*370	290			*340	240	2.76
(8.2 ft)	lb							*820	640			*750	530	(9.1)
2.0 m	kg							*390	280	320	210	300	200	3.10
(6.6 ft)	lb							*860	620	710	460	660	440	(10.2)
1.5 m	kg					*530	380	410	280	310	210	270	180	3.30
(4.9 ft)	lb					*1170	840	900	620	680	460	600	400	(10.8)
1.0 m	kg					560	360	400	260	310	200	260	170	3.39
(3.3 ft)	lb					1230	790	880	570	680	440	570	370	(11.1)
0.5 m	kg					540	340	390	250	300	200	250	170	3.39
(1.6 ft)	lb					1190	750	860	550	660	440	550	370	(11.1)
Ground	kg					530	330	380	250	300	190	260	170	3.29
Line	lb					1170	730	840	550	660	420	570	370	(10.8)
-0.5 m	kg	*800	*800	850	510	530	330	380	250	300	190	290	190	3.08
(-1.6 ft)	lb	*1760	*1760	1870	1120	1170	730	840	550	660	420	640	420	(10.1)
-1.0 m	kg	*1230	1010	860	510	540	340	390	250			340	220	2.74
(-3.3 ft)	lb	*2710	2230	1900	1120	1190	750	860	550			750	490	(9.0)
-1.5 m	kg			*760	530	*520	350					*440	320	2.15
(-4.9 ft)	lb			*1680	1170	*1150	770					*970	710	(7.1)

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outtriger	
R16-9	Canopy, Track extended	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		1800	960	60	230	-	-	Up	-	-



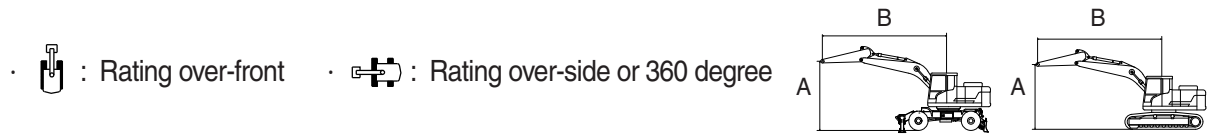
Lift-point height (A)		Lift-point radius (B)										At max. reach		
		1.0 m (3.3 ft)		1.5 m (4.9 ft)		2.0 m (6.6 ft)		2.5 m (8.2 ft)		3.0 m (9.8 ft)		Capacity		Reach
														m (ft)
3.0 m (9.8 ft)	kg lb											*400 *880	*400 *880	2.20 (7.2)
2.5 m (8.2 ft)	kg lb							*370 *820	*370 *820			*340 *750	*340 *750	2.76 (9.1)
2.0 m (6.6 ft)	kg lb							*390 *860	*390 *860	320 710	300 660	300 660	280 620	3.10 (10.2)
1.5 m (4.9 ft)	kg lb					*530 *1170	*530 *1170	410 900	390 860	310 680	290 640	270 600	250 550	3.30 (10.8)
1.0 m (3.3 ft)	kg lb					560 1230	520 1150	400 880	380 840	310 680	290 640	260 570	240 530	3.39 (11.1)
0.5 m (1.6 ft)	kg lb					540 1190	500 1100	390 860	360 790	300 660	280 620	250 550	240 530	3.39 (11.1)
Ground Line	kg lb					530 1170	490 1080	380 840	360 790	300 660	280 620	260 570	250 550	3.29 (10.8)
-0.5 m (-1.6 ft)	kg lb	*800 *1760	*800 *1760	850 1870	770 1700	530 1170	490 1080	380 840	360 790	300 660	280 620	290 640	270 600	3.08 (10.1)
-1.0 m (-3.3 ft)	kg lb	*1230 *2710	*1230 *2710	860 1900	780 1720	540 1190	490 1080	390 860	360 790			340 750	320 710	2.74 (9.0)
-1.5 m (-4.9 ft)	kg lb			*760 *1680	*760 *1680	*520 *1150	510 1120					*440 *970	*440 *970	2.15 (7.1)

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outtriger	
R16-9	Cabin	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		1800	960	60	230	-	-	Up	-	-



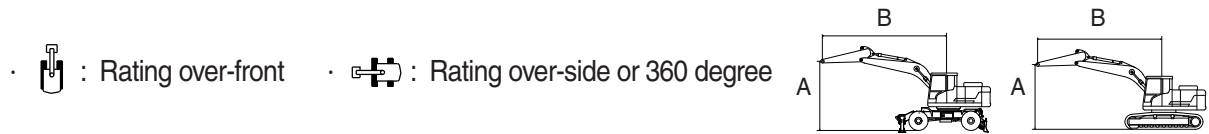
Lift-point height (A)		Lift-point radius (B)										At max. reach		
		1.0 m (3.3 ft)		1.5 m (4.9 ft)		2.0 m (6.6 ft)		2.5 m (8.2 ft)		3.0 m (9.8 ft)		Capacity		Reach
														m (ft)
3.0 m (9.8 ft)	kg											*400	310	2.20
	lb											*880	680	(7.2)
2.5 m (8.2 ft)	kg							*370	260			320	220	2.76
	lb							*820	570			710	490	(9.1)
2.0 m (6.6 ft)	kg							380	250	280	190	270	180	3.10
	lb							840	550	620	420	600	400	(10.2)
1.5 m (4.9 ft)	kg					530	340	370	250	280	190	240	160	3.30
	lb					1170	750	820	550	620	420	530	350	(10.8)
1.0 m (3.3 ft)	kg					500	320	360	240	270	180	230	150	3.39
	lb					1100	710	790	530	600	400	510	330	(11.1)
0.5 m (1.6 ft)	kg					480	300	350	230	270	180	220	150	3.39
	lb					1060	660	770	510	600	400	490	330	(11.1)
Ground Line	kg					470	300	340	220	260	170	230	150	3.29
	lb					1040	660	750	490	570	370	510	330	(10.8)
-0.5 m (-1.6 ft)	kg	*800	*800	760	450	470	300	340	220	260	170	250	170	3.08
	lb	*1760	*1760	1680	990	1040	660	750	490	570	370	550	370	(10.1)
-1.0 m (-3.3 ft)	kg	*1230	910	770	460	480	300	340	220			300	200	2.74
	lb	*2710	2010	1700	1010	1060	660	750	490			660	440	(9.0)
-1.5 m (-4.9 ft)	kg			*760	470	490	310					440	280	2.15
	lb			*1680	1040	1080	680					970	620	(7.1)

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outtriger	
R16-9	Cabin, Track extended	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		1800	960	60	230	-	-	Up	-	-



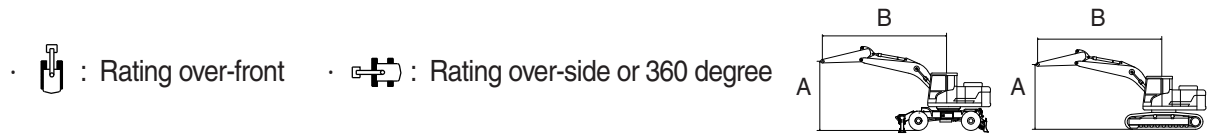
Lift-point height (A)		Lift-point radius (B)										At max. reach		
		1.0 m (3.3 ft)		1.5 m (4.9 ft)		2.0 m (6.6 ft)		2.5 m (8.2 ft)		3.0 m (9.8 ft)		Capacity		Reach
														m (ft)
3.0 m (9.8 ft)	kg											*400	*400	2.20
	lb											*880	*880	(7.2)
2.5 m (8.2 ft)	kg							*370	360			320	300	2.76
	lb							*820	790			710	660	(9.1)
2.0 m (6.6 ft)	kg							380	360	280	270	270	250	3.10
	lb							840	790	620	600	600	550	(10.2)
1.5 m (4.9 ft)	kg					530	490	370	350	280	260	240	230	3.30
	lb					1170	1080	820	770	620	570	530	510	(10.8)
1.0 m (3.3 ft)	kg					500	460	360	340	270	260	230	210	3.39
	lb					1100	1010	790	750	600	570	510	460	(11.1)
0.5 m (1.6 ft)	kg					480	450	350	330	270	250	220	210	3.39
	lb					1060	990	770	730	600	550	490	460	(11.1)
Ground Line	kg					470	440	340	320	260	250	230	220	3.29
	lb					1040	970	750	710	570	550	510	490	(10.8)
-0.5 m (-1.6 ft)	kg	*800	*800	760	690	470	440	340	320	260	250	250	240	3.08
	lb	*1760	*1760	1680	1520	1040	970	750	710	570	550	550	530	(10.1)
-1.0 m (-3.3 ft)	kg	*1230	*1230	770	700	480	440	340	320			300	280	2.74
	lb	*2710	*2710	1700	1540	1060	970	750	710			660	620	(9.0)
-1.5 m (-4.9 ft)	kg			*760	710	490	450					440	410	2.15
	lb			*1680	1570	1080	990					970	900	(7.1)

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outtriger	
R16-9	Canopy	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		1800	960	60	230	-	-	Up	-	-



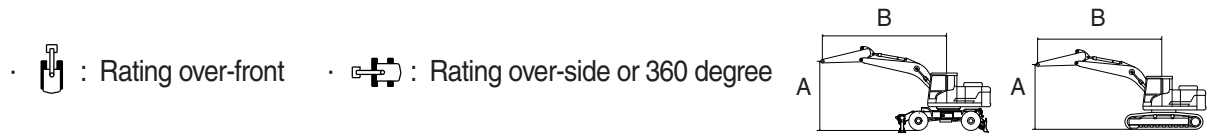
Lift-point height (A)		Lift-point radius (B)												At max. reach		
		1.0 m (3.3 ft)		1.5 m (4.9 ft)		2.0 m (6.6 ft)		2.5 m (8.2 ft)		3.0 m (9.8 ft)		3.5 m (11.5 ft)		Capacity		Reach
																m (ft)
2.5 m	kg							*320	*320					*280	260	2.96
(8.2 ft)	lb							*710	*710					*620	570	(9.7)
2.0 m	kg							*340	340	*350	260			*260	220	3.27
(6.6 ft)	lb							*750	750	*770	570			*570	490	(10.7)
1.5 m	kg					*460	*460	*410	330	*380	250			*260	200	3.45
(4.9 ft)	lb					*1010	*1010	*900	730	*840	550			*570	440	(11.3)
1.0 m	kg					*660	440	*500	320	*420	250	*340	190	*270	190	3.54
(3.3 ft)	lb					*1460	970	*1100	710	*930	550	*750	420	*600	420	(11.6)
0.5 m	kg					*830	420	*580	310	*460	240	*370	190	*280	190	3.54
(1.6 ft)	lb					*1830	930	*1280	680	*1010	530	*820	420	*620	420	(11.6)
Ground	kg			*640	620	*900	410	*630	300	*490	230			*320	190	3.45
Line	lb			*1410	1370	*1980	900	*1390	660	*1080	510			*710	420	(11.3)
-0.5 m	kg	*700	*700	*990	620	*890	400	*640	300	*490	230			*370	210	3.25
(-1.6 ft)	lb	*1540	*1540	*2180	1370	*1960	880	*1410	660	*1080	510			*820	460	(10.7)
-1.0 m	kg	*1050	*1050	*1210	630	*810	410	*580	300					*430	240	2.93
(-3.3 ft)	lb	*2310	*2310	*2670	1390	*1790	900	*1280	660					*950	530	(9.6)
-1.5 m	kg	*1510	1340	*910	640	*620	420							*430	320	2.42
(-4.9 ft)	lb	*3330	2950	*2010	1410	*1370	930							*950	710	(7.9)

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outtriger	
R16-9	Canopy, Track extended	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		1800	1120	60	230	-	-	Down	-	-



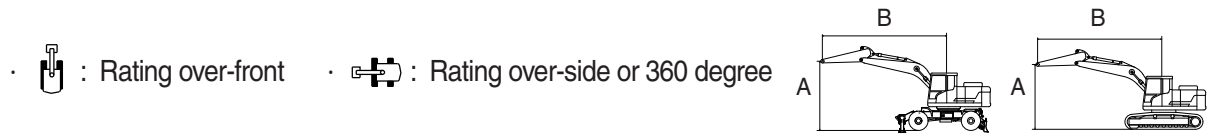
Lift-point height (A)		Lift-point radius (B)												At max. reach		
		1.0 m (3.3 ft)		1.5 m (4.9 ft)		2.0 m (6.6 ft)		2.5 m (8.2 ft)		3.0 m (9.8 ft)		3.5 m (11.5 ft)		Capacity		Reach
																m (ft)
2.5 m (8.2 ft)	kg lb							*320 *710	*320 *710					*280 *620	*280 *620	2.96 (9.7)
2.0 m (6.6 ft)	kg lb							*340 *750	*340 *750	*350 *770	310 680			*260 *570	*260 *570	3.27 (10.7)
1.5 m (4.9 ft)	kg lb					*460 *1010	*460 *1010	*410 *900	*410 *900	*380 *840	310 680			*260 *570	250 550	3.45 (11.3)
1.0 m (3.3 ft)	kg lb					*660 *1460	550 1210	*500 *1100	400 880	*420 *930	300 660	*340 *750	240 530	*270 *600	240 530	3.54 (11.6)
0.5 m (1.6 ft)	kg lb					*830 *1830	530 1170	*580 *1280	380 840	*460 *1010	300 660	*370 *820	240 530	*280 *620	230 510	3.54 (11.6)
Ground Line	kg lb			*640 *1410	*640 *1410	*900 *1980	520 1150	*630 *1390	380 840	*490 *1080	290 640			*320 *710	240 530	3.45 (11.3)
-0.5 m (-1.6 ft)	kg lb	*700 *1540	*700 *1540	*990 *2180	810 1790	*890 *1960	510 1120	*640 *1410	370 820	*490 *1080	290 640			*370 *820	260 570	3.25 (10.7)
-1.0 m (-3.3 ft)	kg lb	*1050 *2310	*1050 *2310	*1210 *2670	820 1810	*810 *1790	520 1150	*580 *1280	370 820					*430 *950	300 660	2.93 (9.6)
-1.5 m (-4.9 ft)	kg lb	*1510 *3330	*1510 *3330	*910 *2010	830 1830	*620 *1370	530 1170							*430 *950	400 880	2.42 (7.9)

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outtriger	
R16-9	Cabin	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		1800	1120	60	230	-	-	Down	-	-



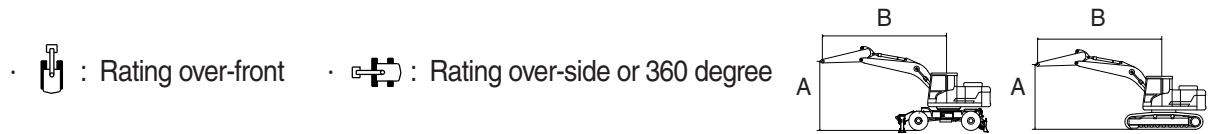
Lift-point height (A)		Lift-point radius (B)												At max. reach		
		1.0 m (3.3 ft)		1.5 m (4.9 ft)		2.0 m (6.6 ft)		2.5 m (8.2 ft)		3.0 m (9.8 ft)		3.5 m (11.5 ft)		Capacity		Reach
																m (ft)
2.5 m	kg							*320	310					*280	230	2.96
(8.2 ft)	lb							*710	680					*620	510	(9.7)
2.0 m	kg							*340	310	*350	230			*260	200	3.27
(6.6 ft)	lb							*750	680	*770	510			*570	440	(10.7)
1.5 m	kg					*460	420	*410	300	*380	230			*260	180	3.45
(4.9 ft)	lb					*1010	930	*900	660	*840	510			*570	400	(11.3)
1.0 m	kg					*660	400	*500	290	*420	220	*340	170	*270	170	3.54
(3.3 ft)	lb					*1460	880	*1100	640	*930	490	*750	370	*600	370	(11.6)
0.5 m	kg					*830	370	*580	270	*460	210	*370	170	*280	170	3.54
(1.6 ft)	lb					*1830	820	*1280	600	*1010	460	*820	370	*620	370	(11.6)
Ground	kg			*640	550	*900	360	*630	270	*490	210			*320	170	3.45
Line	lb			*1410	1210	*1980	790	*1390	600	*1080	460			*710	370	(11.3)
-0.5 m	kg	*700	*700	*990	560	*890	360	*640	260	*490	210			*370	180	3.25
(-1.6 ft)	lb	*1540	*1540	*2180	1230	*1960	790	*1410	570	*1080	460			*820	400	(10.7)
-1.0 m	kg	*1050	*1050	*1210	560	*810	360	*580	260					*430	210	2.93
(-3.3 ft)	lb	*2310	*2310	*2670	1230	*1790	790	*1280	570					*950	460	(9.6)
-1.5 m	kg	*1510	1200	*910	580	*620	370							*430	290	2.42
(-4.9 ft)	lb	*3330	2650	*2010	1280	*1370	820							*950	640	(7.9)

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outtriger	
R16-9	Cabin, Track extended	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		1800	1120	60	230	-	-	Down	-	-



Lift-point height (A)		Lift-point radius (B)												At max. reach		
		1.0 m (3.3 ft)		1.5 m (4.9 ft)		2.0 m (6.6 ft)		2.5 m (8.2 ft)		3.0 m (9.8 ft)		3.5 m (11.5 ft)		Capacity		Reach
																m (ft)
2.5 m (8.2 ft)	kg lb							*320 *710	*320 *710					*280 *620	*280 *620	2.96 (9.7)
2.0 m (6.6 ft)	kg lb							*340 *750	*340 *750	*350 *770	280 620			*260 *570	240 530	3.27 (10.7)
1.5 m (4.9 ft)	kg lb					*460 *1010	*460 *1010	*410 *900	370 820	*380 *840	280 620			*260 *570	220 490	3.45 (11.3)
1.0 m (3.3 ft)	kg lb					*660 *1460	500 1100	*500 *1100	360 790	*420 *930	270 600	*340 *750	210 460	*270 *600	210 460	3.54 (11.6)
0.5 m (1.6 ft)	kg lb					*830 *1830	470 1040	*580 *1280	340 750	*460 *1010	260 570	*370 *820	210 460	*280 *620	210 460	3.54 (11.6)
Ground Line	kg lb			*640 *1410	*640 *1410	*900 *1980	460 1010	*630 *1390	330 730	*490 *1080	260 570			*320 *710	210 460	3.45 (11.3)
-0.5 m (-1.6 ft)	kg lb	*700 *1540	*700 *1540	*990 *2180	730 1610	*890 *1960	460 1010	*640 *1410	330 730	*490 *1080	260 570			*370 *820	230 510	3.25 (10.7)
-1.0 m (-3.3 ft)	kg lb	*1050 *2310	*1050 *2310	*1210 *2670	730 1610	*810 *1790	460 1010	*580 *1280	330 730					*430 *950	270 600	2.93 (9.6)
-1.5 m (-4.9 ft)	kg lb	*1510 *3330	*1510 *3330	*910 *2010	750 1650	*620 *1370	470 1040							*430 *950	360 790	2.42 (7.9)

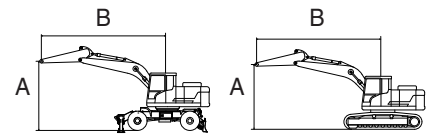
Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outtriger	
R16-9	Canopy	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		1800	1120	60	230	-	-	Up	-	-



Lift-point height (A)		Lift-point radius (B)												At max. reach		
		1.0 m (3.3 ft)		1.5 m (4.9 ft)		2.0 m (6.6 ft)		2.5 m (8.2 ft)		3.0 m (9.8 ft)		3.5 m (11.5 ft)		Capacity		Reach
																m (ft)
2.5 m	kg							*320	290					*280	220	2.96
(8.2 ft)	lb							*710	640					*620	490	(9.7)
2.0 m	kg							*340	280	320	210			*260	180	3.27
(6.6 ft)	lb							*750	620	710	460			*570	400	(10.7)
1.5 m	kg					*460	390	*410	280	310	210			250	160	3.45
(4.9 ft)	lb					*1010	860	*900	620	680	460			550	350	(11.3)
1.0 m	kg					560	360	400	260	310	200	240	160	240	160	3.54
(3.3 ft)	lb					1230	790	880	570	680	440	530	350	530	350	(11.6)
0.5 m	kg					540	340	390	250	300	200	240	160	240	150	3.54
(1.6 ft)	lb					1190	750	860	550	660	440	530	350	530	330	(11.6)
Ground	kg			*640	490	530	330	380	240	290	190			240	160	3.45
Line	lb			*1410	1080	1170	730	840	530	640	420			530	350	(11.3)
-0.5 m	kg	*700	*700	840	490	520	330	380	240	290	190			260	170	3.25
(-1.6 ft)	lb	*1540	*1540	1850	1080	1150	730	840	530	640	420			570	370	(10.7)
-1.0 m	kg	*1050	980	850	500	530	330	380	240					300	200	2.93
(-3.3 ft)	lb	*2310	2160	1870	1100	1170	730	840	530					660	440	(9.6)
-1.5 m	kg	*1510	1000	860	510	540	340							410	260	2.42
(-4.9 ft)	lb	*3330	2200	1900	1120	1190	750							900	570	(7.9)

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outtriger	
R16-9	Canopy, Track extended	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		1800	1120	60	230	-	-	Up	-	-

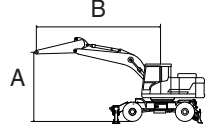
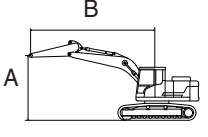
 : Rating over-front
  : Rating over-side or 360 degree



Lift-point height (A)		Lift-point radius (B)												At max. reach		
		1.0 m (3.3 ft)		1.5 m (4.9 ft)		2.0 m (6.6 ft)		2.5 m (8.2 ft)		3.0 m (9.8 ft)		3.5 m (11.5 ft)		Capacity		Reach
																m (ft)
2.5 m	kg							*320	*320					*280	*280	2.96
(8.2 ft)	lb							*710	*710					*620	*620	(9.7)
2.0 m	kg							*340	*340	320	300			*260	260	3.27
(6.6 ft)	lb							*750	*750	710	660			*570	570	(10.7)
1.5 m	kg					*460	*460	*410	390	310	290			250	230	3.45
(4.9 ft)	lb					*1010	*1010	*900	860	680	640			550	510	(11.3)
1.0 m	kg					560	520	400	370	310	290	240	230	240	220	3.54
(3.3 ft)	lb					1230	1150	880	820	680	640	530	510	530	490	(11.6)
0.5 m	kg					540	500	390	360	300	280	240	220	240	220	3.54
(1.6 ft)	lb					1190	1100	860	790	660	620	530	490	530	490	(11.6)
Ground	kg			*640	*640	530	480	380	350	290	280			240	230	3.45
Line	lb			*1410	*1410	1170	1060	840	770	640	620			530	510	(11.3)
-0.5 m	kg	*700	*700	840	760	520	480	380	350	290	270			260	250	3.25
(-1.6 ft)	lb	*1540	*1540	1850	1680	1150	1060	840	770	640	600			570	550	(10.7)
-1.0 m	kg	*1050	*1050	850	760	530	480	380	350					300	280	2.93
(-3.3 ft)	lb	*2310	*2310	1870	1680	1170	1060	840	770					660	620	(9.6)
-1.5 m	kg	*1510	*1510	860	780	540	490							410	380	2.42
(-4.9 ft)	lb	*3330	*3330	1900	1720	1190	1080							900	840	(7.9)

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outtriger	
R16-9	Cabin	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		1800	1120	60	230	-	-	Up	-	-

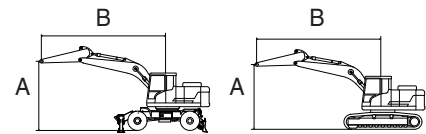
 : Rating over-front
  : Rating over-side or 360 degree

Lift-point height (A)		Lift-point radius (B)												At max. reach		
		1.0 m (3.3 ft)		1.5 m (4.9 ft)		2.0 m (6.6 ft)		2.5 m (8.2 ft)		3.0 m (9.8 ft)		3.5 m (11.5 ft)		Capacity		Reach
																m (ft)
2.5 m	kg							*320	260					*280	190	2.96
(8.2 ft)	lb							*710	570					*620	420	(9.7)
2.0 m	kg							*340	260	280	190			240	160	3.27
(6.6 ft)	lb							*750	570	620	420			530	350	(10.7)
1.5 m	kg					*460	350	370	250	280	190			220	150	3.45
(4.9 ft)	lb					*1010	770	820	550	620	420			490	330	(11.3)
1.0 m	kg					500	320	360	230	270	180	210	140	210	140	3.54
(3.3 ft)	lb					1100	710	790	510	600	400	460	310	460	310	(11.6)
0.5 m	kg					480	300	350	220	270	170	210	140	210	130	3.54
(1.6 ft)	lb					1060	660	770	490	600	370	460	310	460	290	(11.6)
Ground	kg			*640	440	470	290	340	220	260	170			210	140	3.45
Line	lb			*1410	970	1040	640	750	490	570	370			460	310	(11.3)
-0.5 m	kg	*700	*700	750	440	460	290	330	210	260	170			230	150	3.25
(-1.6 ft)	lb	*1540	*1540	1650	970	1010	640	730	460	570	370			510	330	(10.7)
-1.0 m	kg	*1050	880	750	440	470	290	340	210					270	170	2.93
(-3.3 ft)	lb	*2310	1940	1650	970	1040	640	750	460					600	370	(9.6)
-1.5 m	kg	*1510	900	770	460	480	300							360	230	2.42
(-4.9 ft)	lb	*3330	1980	1700	1010	1060	660							790	510	(7.9)

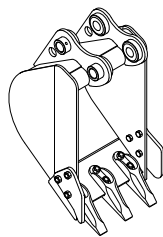
Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outtriger	
R16-9	Cabin, Track extended	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		1800	1120	60	230	-	-	Up	-	-

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



Lift-point height (A)		Lift-point radius (B)												At max. reach		
		1.0 m (3.3 ft)		1.5 m (4.9 ft)		2.0 m (6.6 ft)		2.5 m (8.2 ft)		3.0 m (9.8 ft)		3.5 m (11.5 ft)		Capacity		Reach
																m (ft)
2.5 m	kg							*320	*320					*280	270	2.96
(8.2 ft)	lb							*710	*710					*620	600	(9.7)
2.0 m	kg							*340	*340	280	270			240	230	3.27
(6.6 ft)	lb							*750	*750	620	600			530	510	(10.7)
1.5 m	kg					*460	*460	370	350	280	260			220	210	3.45
(4.9 ft)	lb					*1010	*1010	820	770	620	570			490	460	(11.3)
1.0 m	kg					500	470	360	340	270	260	210	200	210	200	3.54
(3.3 ft)	lb					1100	1040	790	750	600	570	460	440	460	440	(11.6)
0.5 m	kg					480	440	350	320	270	250	210	200	210	200	3.54
(1.6 ft)	lb					1060	970	770	710	600	550	460	440	460	440	(11.6)
Ground	kg			*640	*640	470	430	340	320	260	240			210	200	3.45
Line	lb			*1410	*1410	1040	950	750	710	570	530			460	440	(11.3)
-0.5 m	kg	*700	*700	750	680	460	430	330	310	260	240			230	220	3.25
(-1.6 ft)	lb	*1540	*1540	1650	1500	1010	950	730	680	570	530			510	490	(10.7)
-1.0 m	kg	*1050	*1050	750	680	470	430	340	310					270	250	2.93
(-3.3 ft)	lb	*2310	*2310	1650	1500	1040	950	750	680					600	550	(9.6)
-1.5 m	kg	*1510	*1510	770	700	480	440							360	340	2.42
(-4.9 ft)	lb	*3330	*3330	1700	1540	1060	970							790	750	(7.9)

6. BUCKET SELECTION GUIDE



0.04 m³ SAE
heaped bucket

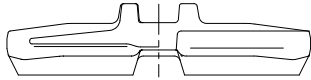
Capacity		Width		Weight	Recommendation
					1.8 m (5' 11") boom
SAE heaped	CECE heaped	Without side cutter	With side cutter		0.96 m (3' 2") arm
0.04m ³ (0.05 yd ³)	0.03 m ³ (0.04 yd ³)	390 mm (15.4")	440 mm (17.3")	40 kg (88 lb)	Applicable for materials with density of 1600 kgf/m ³ (2700 lb /yd ³) or 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)	0.28 (3.92)
	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

HYUNDAI genuine lubricating oils have been developed to offer the best performance and service life for your equipment. These oils have been tested according to the specifications of HYUNDAI and, therefore, will meet the highest safety and quality requirements.

We recommend that you use only HYUNDAI genuine lubricating oils and grease officially approved by HYUNDAI.

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	4.2 (1.1)	★SAE 5W-40							
			SAE 30							
			SAE 10W							
			SAE 10W-30							
			SAE 15W-40							
Final drive	Gear oil	0.33×2 (0.09×2)	★SAE 75W-90							
			SAE 85W-140							
Hydraulic tank	Hydraulic oil	Tank; 20 (5.3)	★ISO VG 15							
		System; 30 (7.9)	ISO VG 46, HBHO VG 46★ ³							
			ISO VG 68							
Fuel tank	Diesel fuel★ ¹	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 soft water★ ²	4(1.1)	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

UTTO : Universal Tractor Transmission Oil

★ : Cold region

Russia, CIS, Mongolia

★¹ : Ultra low sulfur diesel

- sulfur content ≤ 15 ppm

★² : Soft water

City water or distilled water

★³ : Hyundai Bio Hydraulic Oil

- For more information, contact HYUNDAI dealers.

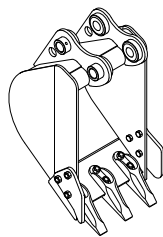
※ Using any lubricating oils other than HYUNDAI genuine products may lead to a deterioration of performance and cause damage to major components.

※ Do not mix HYUNDAI genuine oil with any other lubricating oil as it may result in damage to the systems of major components.

※ Do not use any engine oil other than that specified above, as it may clog the diesel particulate filter(DPF).

※ For HYUNDAI genuine lubricating oils and grease for use in regions with extremely low temperatures, please contact HYUNDAI dealers.

6. BUCKET SELECTION GUIDE



0.04 m³ SAE
heaped bucket

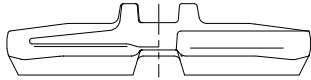
Capacity		Width		Weight	Recommendation
					1.8 m (5' 11") boom
SAE heaped	CECE heaped	Without side cutter	With side cutter		0.96 m (3' 2") arm
0.04m ³ (0.05 yd ³)	0.03 m ³ (0.04 yd ³)	390 mm (15.4")	440 mm (17.3")	40 kg (88 lb)	Applicable for materials with density of 1600 kgf/m ³ (2700 lb /yd ³) or 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)	0.28 (3.92)
	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

HYUNDAI genuine lubricating oils have been developed to offer the best performance and service life for your equipment. These oils have been tested according to the specifications of HYUNDAI and, therefore, will meet the highest safety and quality requirements.

We recommend that you use only HYUNDAI genuine lubricating oils and grease officially approved by HYUNDAI.

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	4.2 (1.1)	★SAE 5W-40								
								SAE 30			
				SAE 10W							
				SAE 10W-30							
					SAE 15W-40						
Final drive	Gear oil	0.33×2 (0.09×2)	★SAE 75W-90								
					SAE 85W-140						
Hydraulic tank	Hydraulic oil	Tank; 20 (5.3)	★ISO VG 15								
		System; 30 (7.9)			ISO VG 46, HBHO VG 46★ ³						
						ISO VG 68					
Fuel tank	Diesel fuel★ ¹	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 soft water★ ²	4(1.1)	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

UTTO : Universal Tractor Transmission Oil

★ : Cold region

Russia, CIS, Mongolia

★¹ : Ultra low sulfur diesel

- sulfur content ≤ 15 ppm

★² : Soft water

City water or distilled water

★³ : Hyundai Bio Hydraulic Oil

- For more information, contact HYUNDAI dealers.

※ Using any lubricating oils other than HYUNDAI genuine products may lead to a deterioration of performance and cause damage to major components.

※ Do not mix HYUNDAI genuine oil with any other lubricating oil as it may result in damage to the systems of major components.

※ Do not use any engine oil other than that specified above, as it may clog the diesel particulate filter(DPF).

※ For HYUNDAI genuine lubricating oils and grease for use in regions with extremely low temperatures, please contact HYUNDAI dealers.