

SECTION 1 GENERAL

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SECTION 1 GENERAL

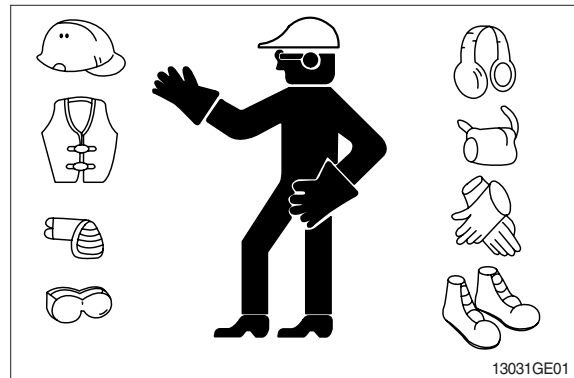
GROUP 1 SAFETY

FOLLOW SAFE PROCEDURE

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

WEAR PROTECTIVE CLOTHING

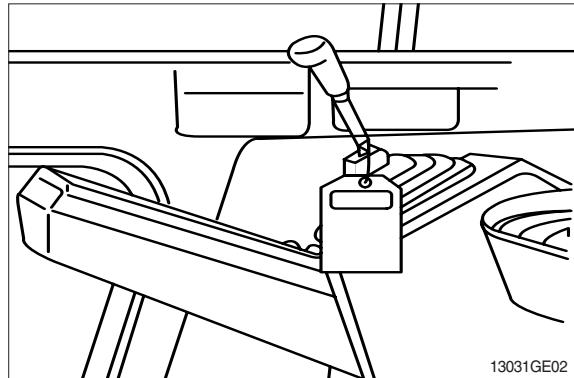
Wear close fitting clothing and safety equipment appropriate to the job.



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.



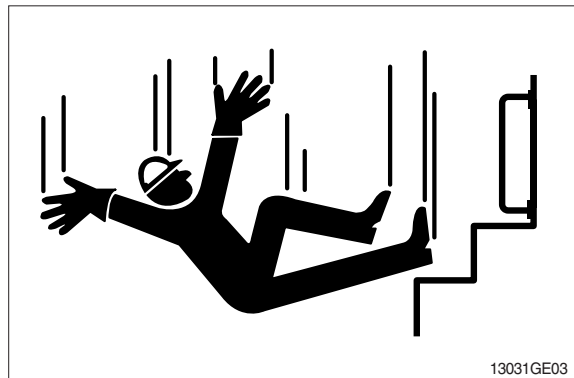
USE HANDHOLDS AND STEPS

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.

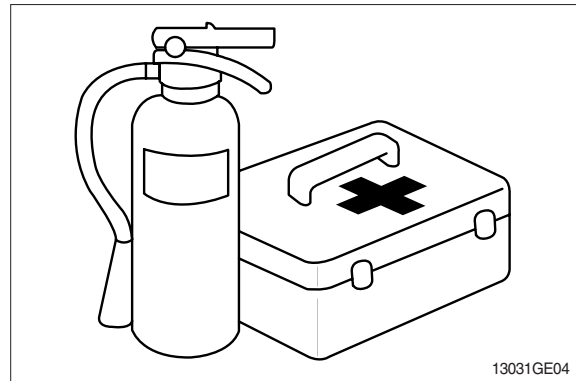


PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

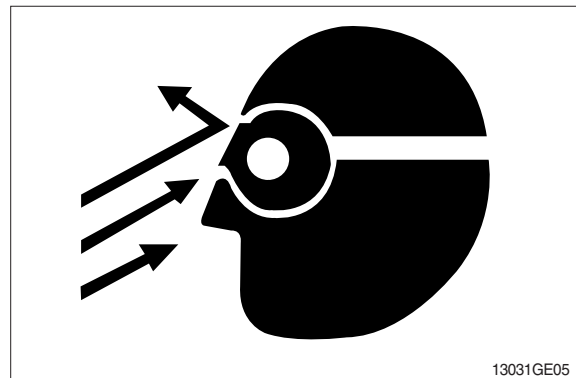
Keep a first aid kit and fire extinguisher handy.

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



PROTECT AGAINST FLYING DEBRIS

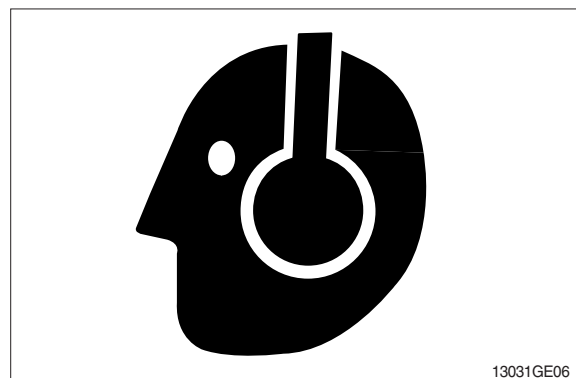
Guard against injury from flying pieces of metal or debris; Wear goggles or safety glasses.



PROTECT AGAINST NOISE

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

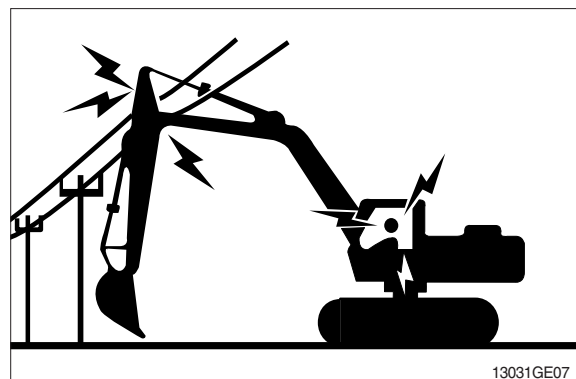
Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.



AVOID POWER LINES

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

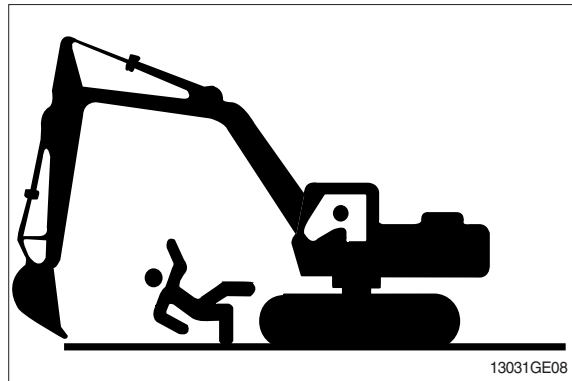
Never move any part of the machine or load closer to electric line than 3m(10ft) plus twice the line insulator length.



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.

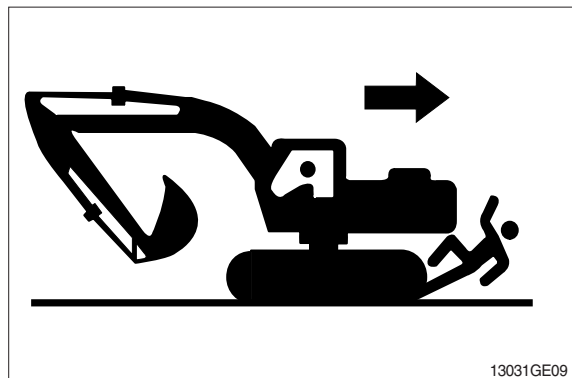


MOVE AND OPERATE MACHINE SAFELY

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:

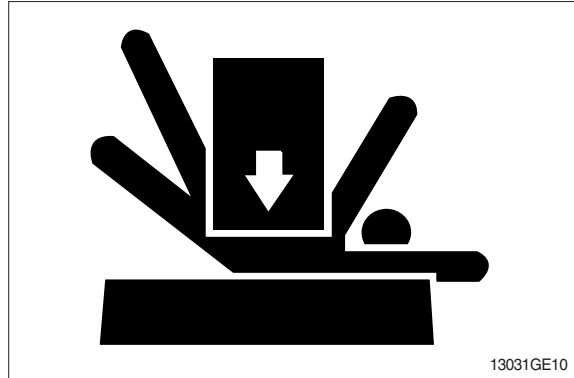
- Park machine on a level surface.
- Lower bucket to the ground.
- Turn auto idle switch off.
- Run engine at 1/2 speed without load for 2 minutes.
- Turn key switch to OFF to stop engine. Remove key from switch.
- Move pilot control shutoff lever to locked position.
- Allow engine to cool.

SUPPORT MACHINE PROPERLY

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 support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load.

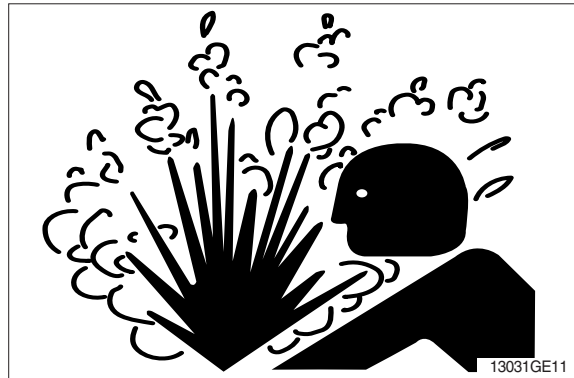
Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.



SERVICE COOLING SYSTEM SAFELY

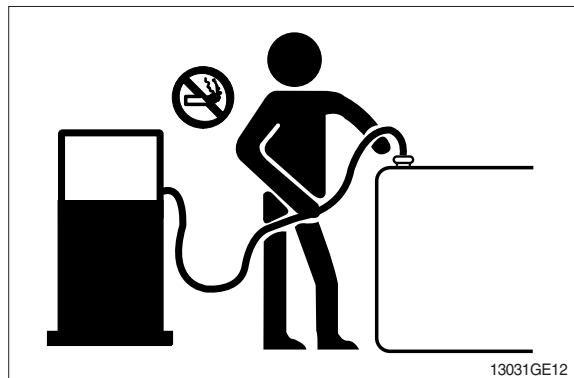
Explosive release of fluids from pressurized cooling system can cause serious burns.

Shut off engine. Only remove filler cap when cool enough to touch with bare hands.



HANDLE FLUIDS SAFELY-AVOID FIRES

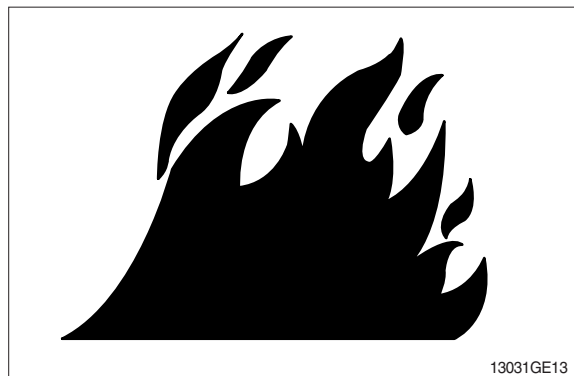
Handle fuel with care; It is highly flammable. Do not refuel the machine while smoking or when near open flame or sparks. Always stop engine before refueling machine. Fill fuel tank outdoors.



Store flammable fluids away from fire hazards. Do not incinerate or puncture pressurized containers.

Make sure machine is clean of trash, grease, and debris.

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

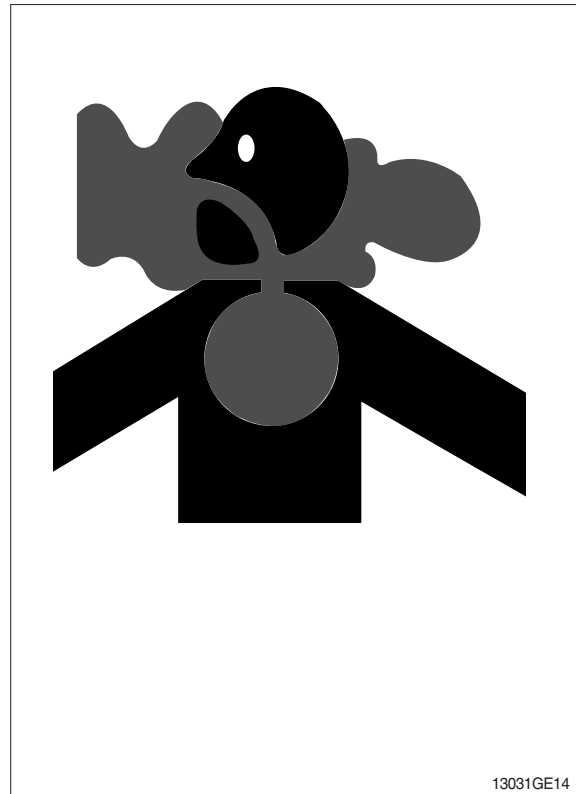
Avoid potentially toxic fumes and dust.

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

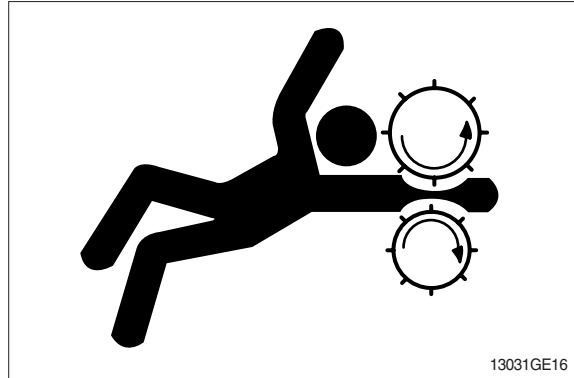
Illuminate your work area adequately but safely. Use a portable safety light for working inside or under the machine. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.



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.

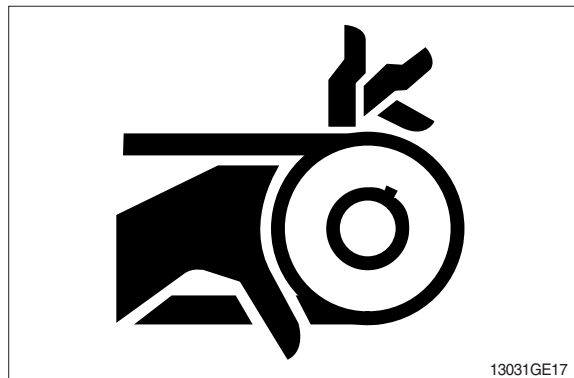
Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.



STAY CLEAR OF MOVING PARTS

Entanglements in moving parts can cause serious injury.

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



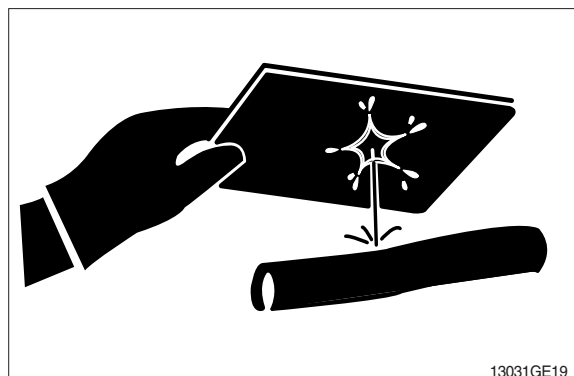
AVOID HIGH PRESSURE FLUIDS

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:

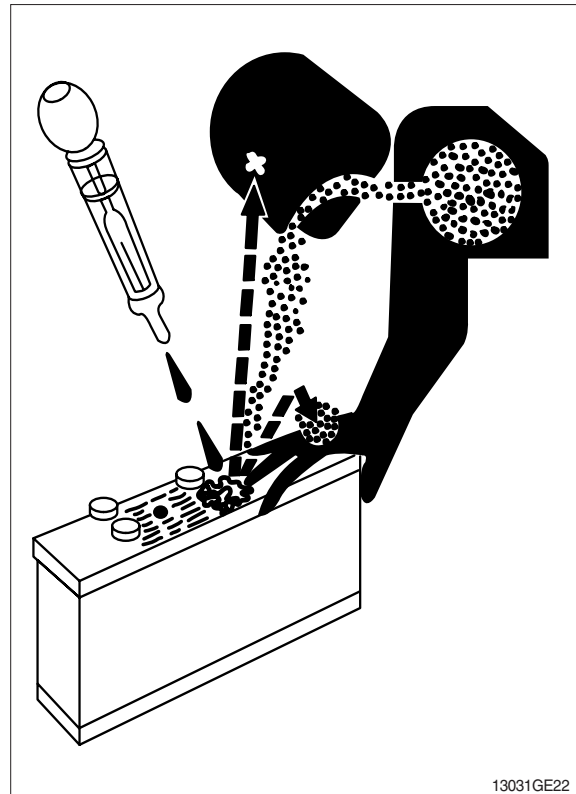
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Use proper jump start procedure.

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.



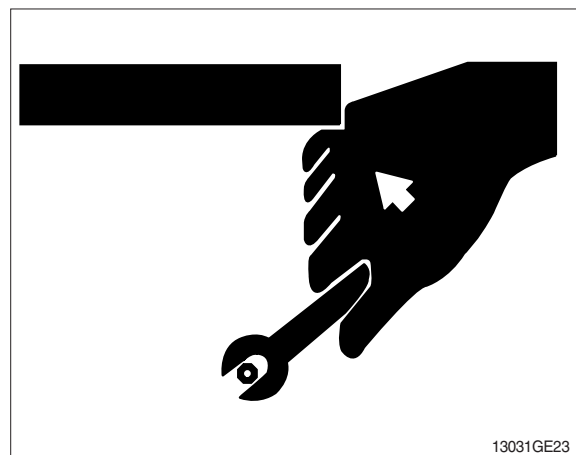
USE TOOLS PROPERLY

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.)

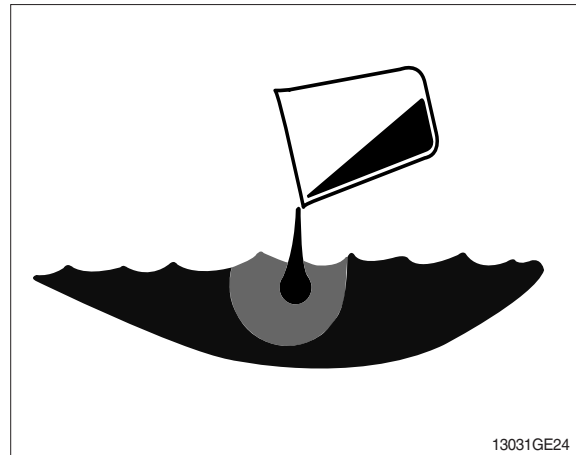


DISPOSE OF FLUIDS PROPERLY

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.

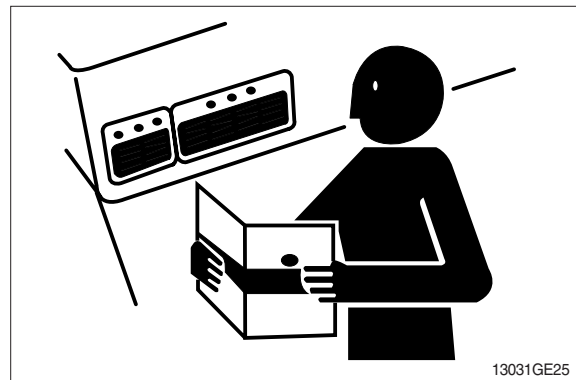
Use proper containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

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.

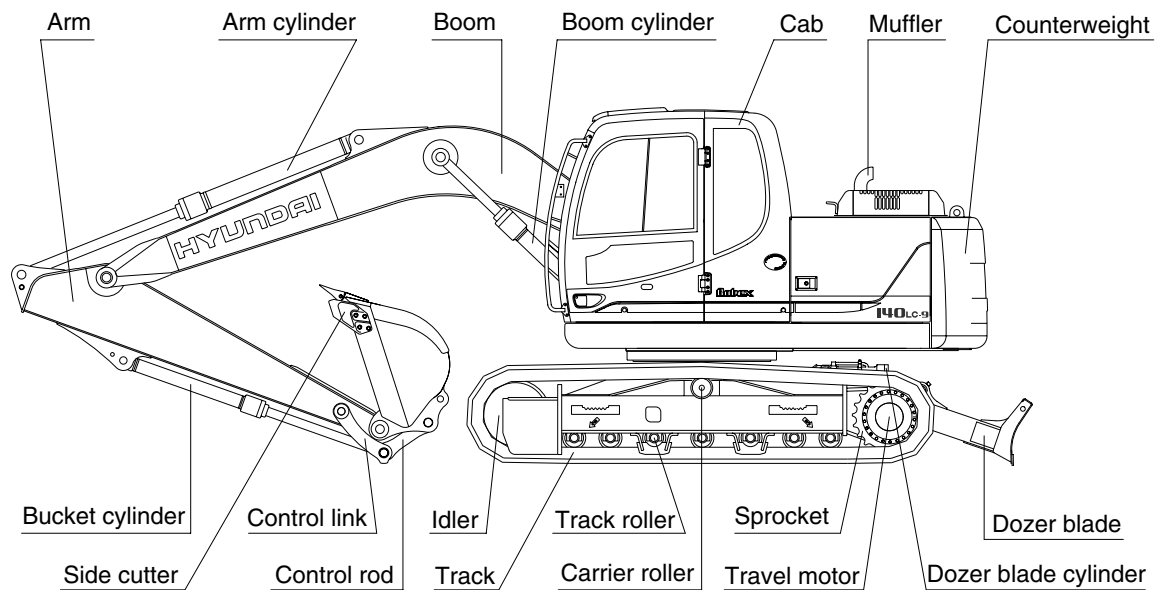
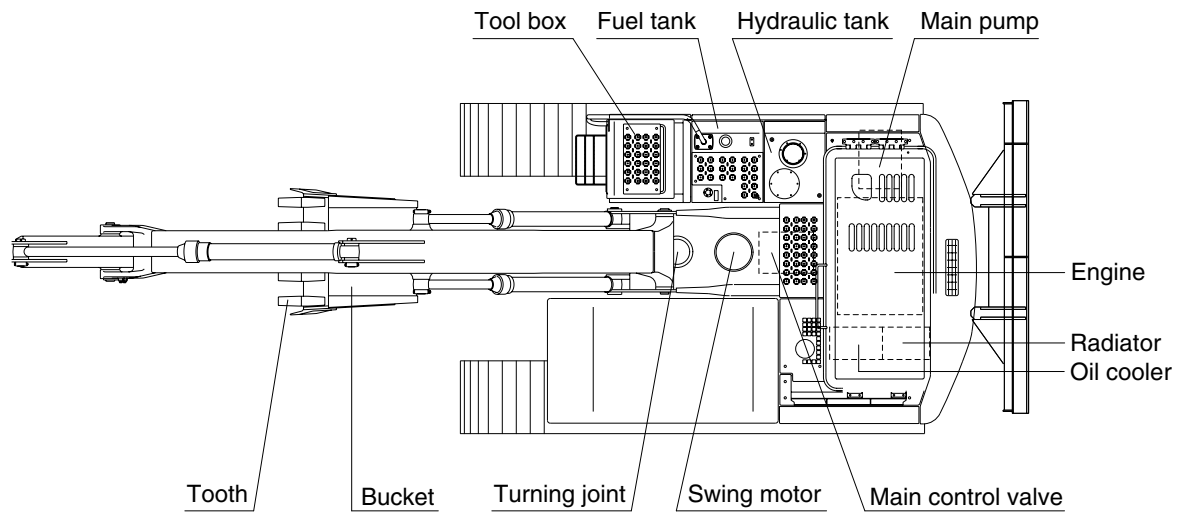


LIVE WITH SAFETY

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

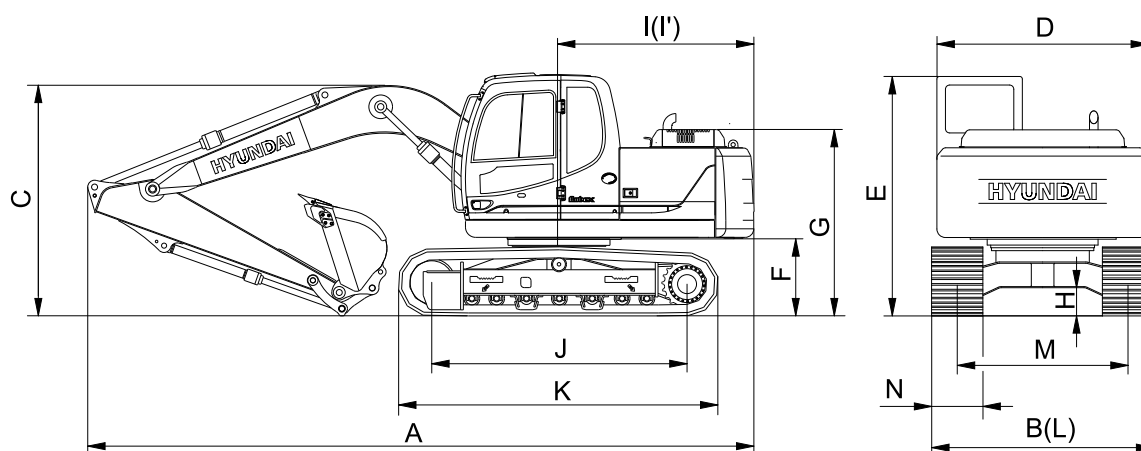


14092SP01

2. SPECIFICATIONS

1) R140LC-9

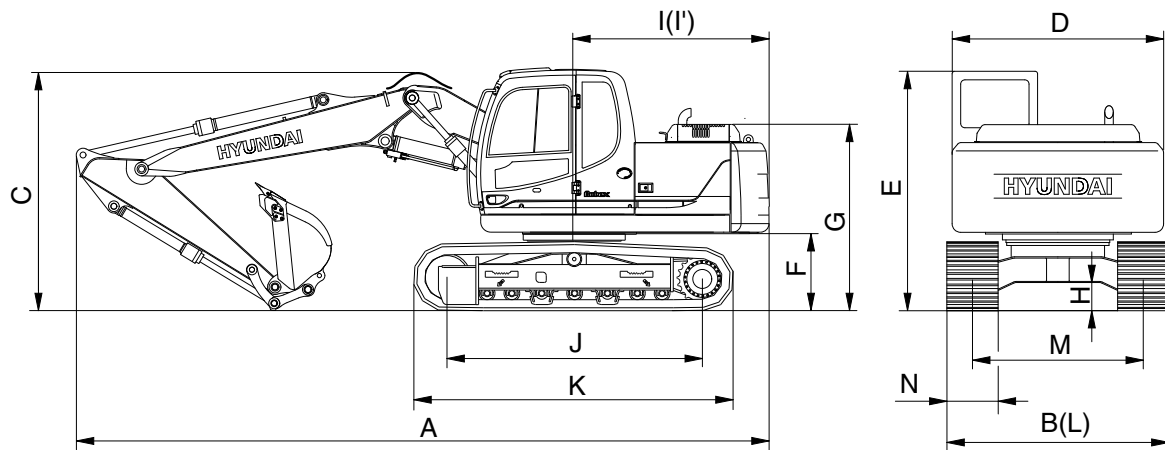
· 4.60 m (15' 1") BOOM and 2.50 m (8' 2") ARM



14092SP02

Description		Unit	Specification
Operating weight		kg (lb)	13980 (30820)
Bucket capacity (SAE heaped), standard		m³ (yd³)	0.58 (0.76)
Overall length	A	mm (ft-in)	7820 (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		940 (3' 1")
Engine cover height	G		2050 (6' 7")
Minimum ground clearance	H		440 (1' 5")
Rear-end distance	I		2330 (7' 7")
Rear-end swing radius	I'		2330 (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)	3.6/5.6 (2.2/3.5)
Swing speed		rpm	13.0
Gradeability		Degree (%)	35 (70)
Ground pressure (600 mm shoe)		kgf/cm² (psi)	0.36 (5.12)
Max traction force		kg (lb)	13300 (29320)

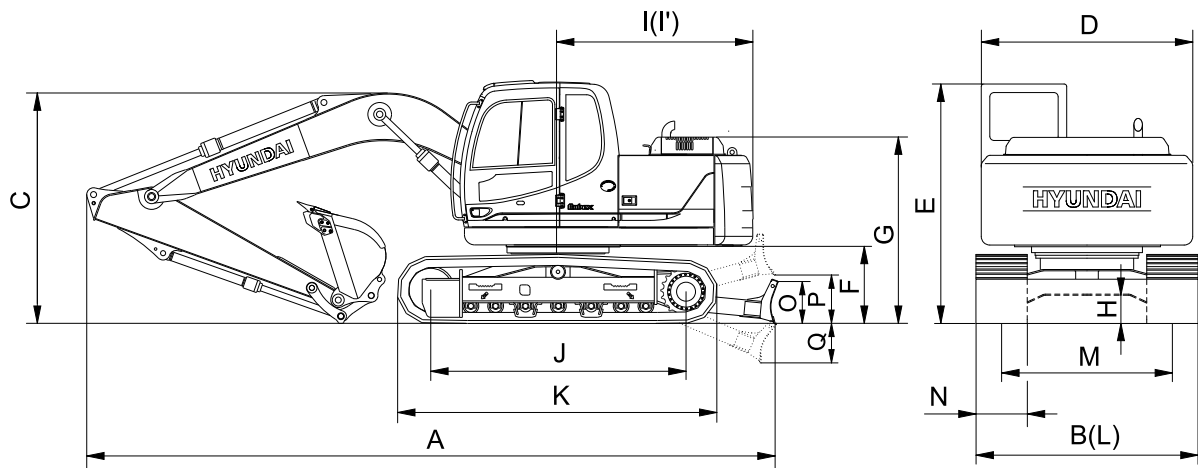
2) R140LC-9, 4.90 m (16' 1") HYDRAULIC ADJUSTABLE BOOM and 2.10 m (6' 11") ARM



14092SP03

Description		Unit	Specification
Operating weight		kg (lb)	13980 (30860)
Bucket capacity (SAE heaped), standard		m ³ (yd ³)	0.58 (0.76)
Overall length	A	mm (ft-in)	8170 (26' 8")
Overall width, with 600 mm shoe	B		2600 (8' 6")
Overall height of boom	C		2940 (9' 8")
Superstructure width	D		2500 (8' 2")
Overall height of cab	E		2860 (9' 4")
Ground clearance of counterweight	F		940 (3' 1")
Engine cover height	G		2050 (6' 7")
Minimum ground clearance	H		440 (1' 5")
Rear-end distance	I		2330 (7' 7")
Rear-end swing radius	I'		2330 (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)	3.6/5.6 (2.2/3.5)
Swing speed		rpm	13.0
Gradeability		Degree (%)	35 (70)
Ground pressure (600 mm shoe)		kgf/cm ² (psi)	0.36 (5.12)
Max traction force		kg (lb)	13300 (29320)

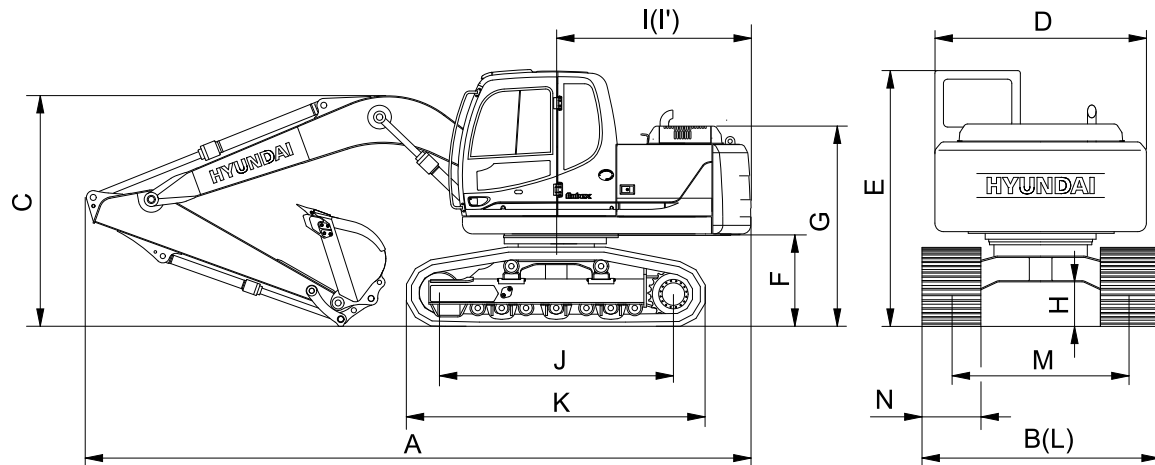
3) R140LCD-9



14092SP04

Description		Unit	Specification
Operating weight		kg (lb)	14800 (32630)
Bucket capacity (SAE heaped), standard		m ³ (yd ³)	0.58 (0.76)
Overall length	A	mm (ft-in)	8130 (26' 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		940 (3' 1")
Engine cover height	G		2050 (6' 7")
Minimum ground clearance	H		440 (1' 5")
Rear-end distance	I		2330 (7' 7")
Rear-end swing radius	I'		2330 (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")
Height of blade	O		550 (1' 8")
Ground clearance of blade up	P		560 (1' 8")
Depth of blade down	Q		500 (1' 6")
Travel speed (low/high)		km/hr (mph)	3.6/5.6 (2.2/3.5)
Swing speed		rpm	13.0
Gradeability		Degree (%)	35 (70)
Ground pressure (600 mm shoe)		kgf/cm ² (psi)	0.38 (5.40)
Max traction force		kg (lb)	13300 (29320)

4) R140LCM-9



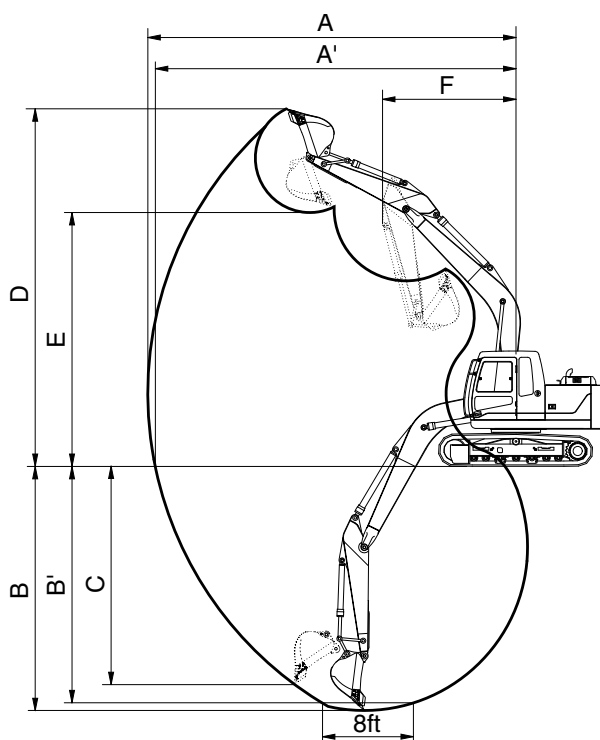
14092SP05

Description		Unit	Specification
Operating weight		kg (lb)	16880 (37210)
Bucket capacity (SAE heaped), standard		m ³ (yd ³)	0.58 (0.76)
Overall length	A	mm (ft-in)	7790 (25' 6")
Overall width, with 800 mm shoe	B		2840 (9' 4")
Overall height of boom	C		2830 (9' 3")
Superstructure width	D		2500 (8' 2")
Overall height of cab	E		3120 (10' 2")
Ground clearance of counterweight	F		1200 (3' 9")
Engine cover height	G		2310 (7' 6")
Minimum ground clearance	H		600 (2' 0")
Rear-end distance	I		2330 (7' 7")
Rear-end swing radius	I'		2330 (7' 7")
Distance between tumblers	J		3030 (9' 6")
Undercarriage length	K		3860 (12' 8")
Undercarriage width	L		2840 (9' 4")
Track gauge	M		2040 (6' 8")
Track shoe width, standard	N		800 (32")
Travel speed (low/high)		km/hr (mph)	3.6/5.6 (2.2/3.5)
Swing speed		rpm	13.0
Gradeability		Degree (%)	35 (70)
Ground pressure (800 mm shoe)		kgf/cm ² (psi)	0.32 (4.55)
Max traction force		kg (lb)	13300 (29320)

3. WORKING RANGE

1) R140LC/LCD-9

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



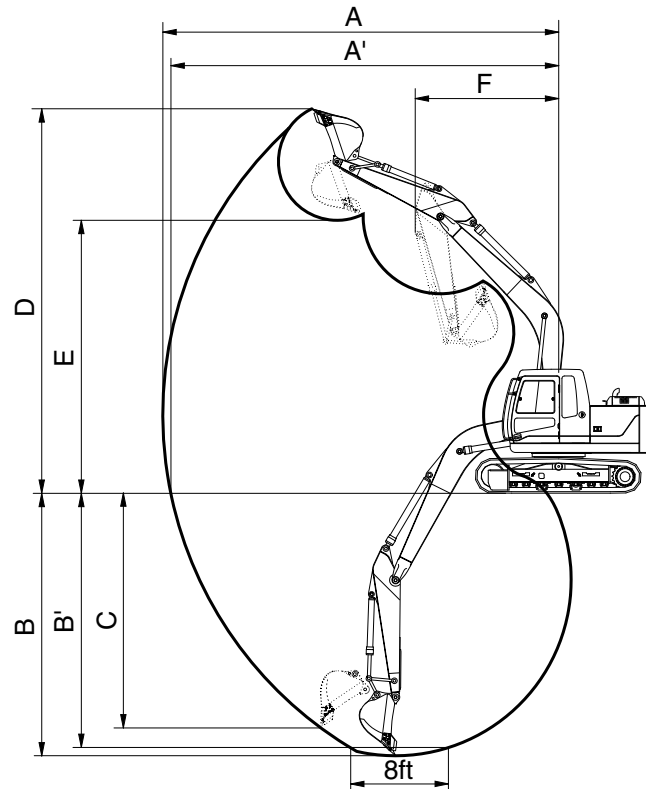
14092SP06

Description		1.90 m (6' 3") Arm	2.10 m (6' 11") Arm	※2.50 m (8' 2") Arm	3.00 m (9' 10") Arm
Max digging reach	A	7750 mm (25' 5")	7920 mm (25' 11")	8330 mm (27' 4")	8790 mm (28' 10")
Max digging reach on ground	A'	7600 mm (24' 11")	7770 mm (25' 6")	8180 mm (26' 10")	8650 mm (28' 4")
Max digging depth	B	4950 mm (16' 2")	5150 mm (16' 10")	5550 mm (18' 3")	6050 mm (19' 10")
Max digging depth (8ft level)	B'	4680 mm (15' 4")	4900 mm (16' 1")	5340 mm (17' 6")	5870 mm (19' 3")
Max vertical wall digging depth	C	4650 mm (15' 3")	4900 mm (16' 1")	5330 mm (17' 6")	5850 mm (19' 2")
Max digging height	D	8100 mm (26' 7")	8180 mm (26' 10")	8500 mm (27' 11")	8780 mm (28' 10")
Max dumping height	E	5670 mm (18' 7")	5750 mm (18' 10")	6060 mm (19' 11")	6330 mm (20' 9")
Min swing radius	F	2630 mm (8' 8")	2670 mm (8' 9")	2650 mm (8' 8")	2680 mm (8' 10")
Bucket digging force	SAE	87.3 [94.8] kN	87.3 [94.8] kN	87.3 [94.8] kN	87.3 [94.8] kN
		8900 [9660] kgf	8900 [9660] kgf	8900 [9660] kgf	8900 [9660] kgf
		19620 [21300] lbf	19620 [21300] lbf	19620 [21300] lbf	19620 [21300] lbf
	ISO	102 [110.8] kN	102 [110.8] kN	102 [110.8] kN	102 [110.8] kN
		10400 [11290] kgf	10400 [11290] kgf	10400 [11290] kgf	10400 [11290] kgf
		22930 [24890] lbf	22930 [24890] lbf	22930 [24890] lbf	22930 [24890] lbf
Arm crowd force	SAE	76.5 [83.1] kN	73.6 [79.9] kN	62.8 [68.2] kN	55.9 [60.7] kN
		7800 [8470] kgf	7500 [8140] kgf	6400 [6950] kgf	5700 [6190] kgf
		17200 [18670] lbf	16530 [17950] lbf	14110 [15320] lbf	12570 [13640] lbf
	ISO	80.4 [87.3] kN	77.5 [84.1] kN	65.7 [71.4] kN	57.9 [62.8] kN
		8200 [8900] kgf	7900 [8580] kgf	6700 [7270] kgf	5900 [6410] kgf
		18080 [19630] lbf	17420 [18910] lbf	14770 [16040] lbf	13010 [14120] lbf

※ : STD

[] : Power boost

(2) 4.10 m (13' 5") MONO BOOM

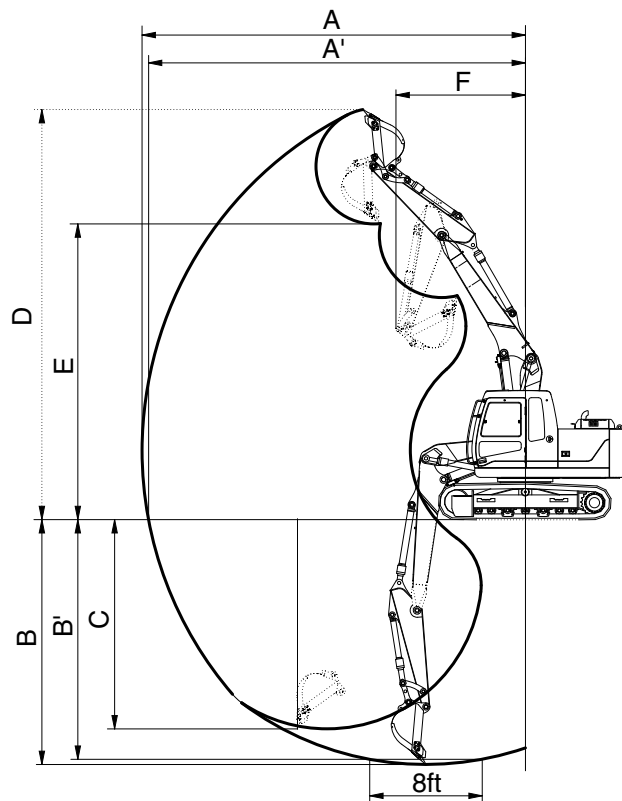


14092SP06

Description		1.90 m (6' 3") Arm	2.10 m (6' 11") Arm
Max digging reach	A	7260 mm (23' 10")	7420 mm (24' 4")
Max digging reach on ground	A'	7090 mm (23' 3")	7260 mm (23' 10")
Max digging depth	B	4540 mm (14' 11")	4740 mm (15' 7")
Max digging depth (8ft level)	B'	4280 mm (14' 1")	4490 mm (14' 9")
Max vertical wall digging depth	C	4240 mm (13' 11")	4350 mm (14' 3")
Max digging height	D	7700 mm (25' 3")	7770 mm (25' 6")
Max dumping height	E	5260 mm (17' 3")	5340 mm (17' 6")
Min swing radius	F	2350 mm (7' 9")	2460 mm (8' 1")
Bucket digging force	SAE	87.3 [94.8] kN	87.3 [94.8] kN
		8900 [9660] kgf	8900 [9660] kgf
		19620 [21300] lbf	19620 [21300] lbf
	ISO	102 [110.8] kN	102 [110.8] kN
		10400 [11290] kgf	10400 [11290] kgf
		22930 [24890] lbf	22930 [24890] lbf
Arm crowd force	SAE	76.5 [83.1] kN	73.6 [79.9] kN
		7800 [8470] kgf	7500 [8140] kgf
		17200 [18670] lbf	16530 [17950] lbf
	ISO	80.4 [87.3] kN	77.5 [84.1] kN
		8200 [8900] kgf	7900 [8580] kgf
		18080 [19630] lbf	17420 [18910] lbf

[] : Power boost

(3) 4.90 m (16' 1") ADJUST BOOM



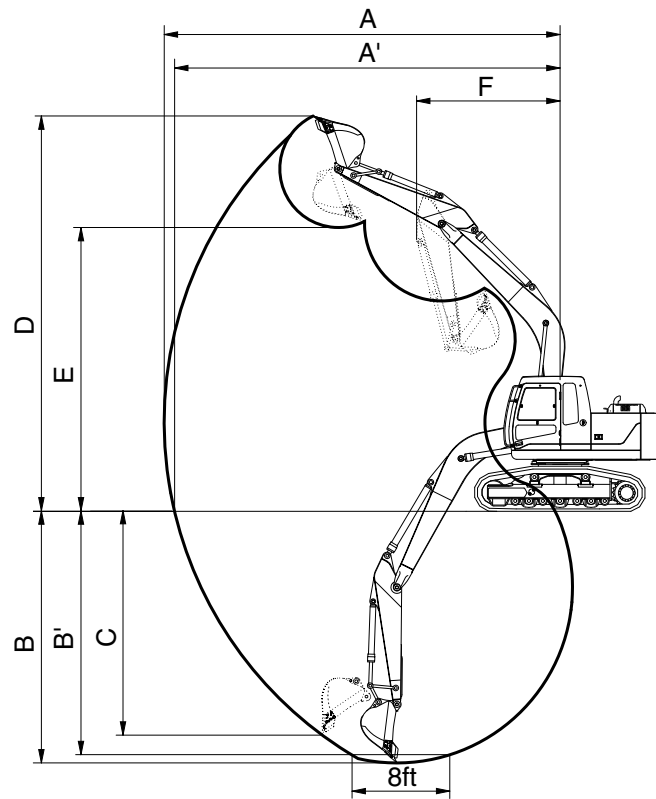
14092SP08

Description		1.90 m (6' 3") Arm	2.10 m (6' 11") Arm	2.50 m (8' 2") Arm
Max digging reach	A	8140 mm (26' 8")	8320 mm (27' 4")	8720 mm (28' 7")
Max digging reach on ground	A'	8000 mm (26' 3")	8180 mm (26' 10")	8590 mm (28' 2")
Max digging depth	B	5110 mm (16' 9")	5310 mm (17' 5")	5710 mm (18' 9")
Max digging depth (8ft level)	B'	5000 mm (16' 5")	5190 mm (17' 0")	5610 mm (18' 5")
Max vertical wall digging depth	C	4490 mm (14' 9")	4660 mm (15' 3")	5120 mm (16' 10")
Max digging height	D	8810 mm (28' 11")	8890 mm (29' 2")	9270 mm (30' 5")
Max dumping height	E	6330 mm (20' 9")	6410 mm (21' 0")	6780 mm (22' 3")
Min swing radius	F	2670 mm (8' 9")	2830 mm (9' 3")	2690 mm (8' 10")
Bucket digging force	SAE	87.3 [94.8] kN	87.3 [94.8] kN	87.3 [94.8] kN
		8900 [9660] kgf	8900 [9660] kgf	8900 [9660] kgf
		19620 [21300] lbf	19620 [21300] lbf	19620 [21300] lbf
	ISO	102 [110.8] kN	102 [110.8] kN	102 [110.8] kN
		10400 [11290] kgf	10400 [11290] kgf	10400 [11290] kgf
		22930 [24890] lbf	22930 [24890] lbf	22930 [24890] lbf
Arm crowd force	SAE	76.5 [83.1] kN	73.6 [79.9] kN	62.8 [68.2] kN
		7800 [8470] kgf	7500 [8140] kgf	6400 [6950] kgf
		17200 [18670] lbf	16530 [17950] lbf	14110 [15320] lbf
	ISO	80.4 [87.3] kN	77.5 [84.1] kN	65.7 [71.4] kN
		8200 [8900] kgf	7900 [8580] kgf	6700 [7270] kgf
		18080 [19630] lbf	17420 [18910] lbf	14770 [16040] lbf

[] : Power boost

2) R140LCM-9

(1) 4.6 m (15' 1") MONO BOOM



14092SP09

Description		1.90 m (6' 3") Arm	2.10 m (6' 11") Arm	※2.50 m (8' 2") Arm	3.00 m (9' 10") Arm
Max digging reach	A	7750 mm (25' 5")	7920 mm (26' 0")	8330 mm (27' 4")	8790 mm (28' 10")
Max digging reach on ground	A'	7540 mm (24' 9")	7710 mm (25' 4")	8110 mm (26' 7")	8580 mm (28' 2")
Max digging depth	B	4690 mm (15' 5")	4890 mm (16' 1")	5290 mm (17' 4")	5790 mm (19' 0")
Max digging depth (8ft level)	B'	4420 mm (14' 6")	4640 mm (15' 3")	5080 mm (16' 8")	5610 mm (18' 5")
Max vertical wall digging depth	C	4390 mm (14' 9")	4640 mm (15' 3")	5070 mm (16' 8")	5590 mm (18' 4")
Max digging height	D	8360 mm (27' 5")	8440 mm (27' 8")	8760 mm (28' 9")	9040 mm (29' 7")
Max dumping height	E	5930 mm (19' 5")	6010 mm (19' 8")	6320 mm (20' 9")	6590 mm (21' 7")
Min swing radius	F	2630 mm (8' 8")	2670 mm (8' 9")	2650 mm (8' 8")	2680 mm (8' 10")
Bucket digging force	SAE	87.3 [94.8] kN	87.3 [94.8] kN	87.3 [94.8] kN	87.3 [94.8] kN
		8900 [9660] kgf	8900 [9660] kgf	8900 [9660] kgf	8900 [9660] kgf
		19620 [21300] lbf	19620 [21300] lbf	19620 [21300] lbf	19620 [21300] lbf
	ISO	102 [110.8] kN	102 [110.8] kN	102 [110.8] kN	102 [110.8] kN
		10400 [11290] kgf	10400 [11290] kgf	10400 [11290] kgf	10400 [11290] kgf
		22930 [24890] lbf	22930 [24890] lbf	22930 [24890] lbf	22930 [24890] lbf
Arm crowd force	SAE	76.5 [83.1] kN	73.6 [79.9] kN	62.8 [68.2] kN	55.9 [60.7] kN
		7800 [8470] kgf	7500 [8140] kgf	6400 [6950] kgf	5700 [6190] kgf
		17200 [18670] lbf	16530 [17950] lbf	14110 [15320] lbf	12570 [13640] lbf
	ISO	80.4 [87.3] kN	77.5 [84.1] kN	65.7 [71.4] kN	57.9 [62.8] kN
		8200 [8900] kgf	7900 [8580] kgf	6700 [7270] kgf	5900 [6410] kgf
		18080 [19630] lbf	17420 [18910] lbf	14770 [16040] lbf	13010 [14120] lbf

※ : STD [] : Power boost

4. WEIGHT

1) R140LC-9, R140LCD-9

Item	R140LC-9		R140LCD-9	
	kg	lb	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	6160	13580
Track frame weld assembly	1590	3510	1840	4060
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	←	
Dozer blade assembly	-		550	1220
Front attachment assembly (4.6 m boom, 2.5 m arm, 0.58 m³ SAE heaped bucket)	2420	5330	←	
4.6 m boom assembly	830	1830	←	
2.5 m arm assembly	435	960	←	
0.58 m³ 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	←	
Dozer blade cylinder assembly	-		55	120

2) R140LCM-9

Item	R140LCM-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	480	1060
Lower chassis assembly	8700	19180
Track frame weld assembly	2180	4810
Swing bearing	190	410
Travel motor assembly	305	670
Turning joint	50	110
Tension cylinder assembly	280	620
Idler assembly	320	710
Carrier roller assembly	200	440
Track roller assembly	700	1540
Track-chain assembly (800 mm standard triple grouser shoe)	1370	3020
Front attachment assembly (4.6 m boom, 2.5 m arm, 0.58 m³ SAE heaped bucket)	2420	5330
4.6 m boom assembly	830	1830
2.5 m arm assembly	435	960
0.58 m³ 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

5. LIFTING CAPACITIES

1) R140LC-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.

(2) 4.60 m (15' 1") boom, 1.90 m (6' 3") arm equipped with 0.58 m³ (SAE heaped) bucket and 600 mm (24") triple grouser shoe and 2000 kg (4410 lb) counterweight.

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					*3340 *7360	*3340 *7360			*3170 *6990	2350 5180	5.95 (19.5)
4.5 m (15.0 ft)	kg lb					*3550 *7830	*3550 *7830			2820 6220	1760 3880	6.90 (22.6)
3.0 m (10.0 ft)	kg lb			*6270 *13820	*6270 *13820	*4440 *9790	3510 7740	3480 7670	2170 4780	2480 5470	1520 3350	7.37 (24.2)
1.5 m (5.0 ft)	kg lb			*8490 *18720	6040 13320	5400 11900	3270 7210	3380 7450	2080 4590	2390 5270	1450 3200	7.45 (24.4)
Ground Line	kg lb			*8230 *18140	5790 12760	5200 11460	3100 6830	3300 7280	2000 4410	2510 5530	1520 3350	7.17 (23.5)
-1.5 m (-5.0 ft)	kg lb	*6670 *14700	*6670 *14700	*9690 *21360	5800 12790	5140 11330	3050 6720			2960 6530	1810 3990	6.48 (21.3)
-3.0 m (-10 ft)	kg lb	*10970 *24180	*10970 *24180	*8330 *18360	5930 13070	5220 11510	3110 6860			*3690 *8140	2670 5890	5.15 (16.9)

2) R140LC-9, ADJUST BOOM

(1) 4.90 m (16' 1") adjust boom, 1.90 m (6' 3") 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		
		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			*2900 *6390	*2900 *6390			*2880 *6350	2010 4430	6.45 (21.2)
4.5 m (15.0 ft)	kg lb			*3280 *7230	*3280 *7230	*3150 *6940	2220 4890	2530 5580	1540 3400	7.33 (24.0)
3.0 m (10.0 ft)	kg lb	*6420 *14150	*6420 *14150	*4230 *9330	3440 7580	3470 7650	2130 4700	2240 4940	1340 2950	7.76 (25.5)
1.5 m (5.0 ft)	kg lb			5310 11710	3160 6970	3340 7360	2020 4450	2170 4780	1280 2820	7.84 (25.7)
Ground Line	kg lb	*5430 *11970	*5430 *11970	5110 11270	2980 6570	3240 7140	1930 4250	2270 5000	1340 2950	7.58 (24.9)
-1.5 m (-5.0 ft)	kg lb	*9210 *20300	5620 12390	5050 11130	2940 6480	3220 7100	1900 4190	2630 5800	1570 3460	6.93 (22.7)
-3.0 m (-10 ft)	kg lb	*8450 *18630	5780 12740	5130 11310	3000 6610					

- 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) 4.90 m (16' 1") adjust boom, 2.10 m (6' 11") arm equipped with 0.58 m³ (SAE heaped) bucket and 600 mm (24") triple grouser shoe and 2000 kg (4410 lb) counterweight.

Load point height		Load radius						At max. reach		
		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			*2690 *5930	*2690 *5930			*2760 *6080	1900 4190	6.68 (21.9)
4.5 m (15.0 ft)	kg lb			*3080 *6790	*3080 *6790	*2990 *6590	2230 4920	2420 5340	1470 3240	7.52 (24.7)
3.0 m (10.0 ft)	kg lb	*5930 *13070	*5930 *13070	*4030 *8880	3460 7630	*3360 *7410	2140 4720	2150 4740	1280 2820	7.94 (26.0)
1.5 m (5.0 ft)	kg lb			*5140 *11330	3160 6970	3340 7360	2010 4430	2080 4590	1220 2690	8.02 (26.3)
Ground Line	kg lb	*5690 *12540	5540 12210	5090 11220	2960 6530	3230 7120	1910 4210	2170 4780	1270 2800	7.77 (25.5)
-1.5 m (-5.0 ft)	kg lb	*8930 *19690	5560 12260	5020 11070	2900 6390	3190 7030	1870 4120	2490 5490	1470 3240	7.14 (23.4)
-3.0 m (-10 ft)	kg lb	*8650 *19070	5690 12540	5070 11180	2950 6500					

3) R140LCD-9

(1) 4.60 m (15' 1") boom, 1.9 m (6' 3") 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					*3340 *7360	*3340 *7360			*3170 *6990	2490 5490	5.95 (19.5)
4.5 m (15.0 ft)	kg lb					*3550 *7830	*3550 *7830			3070 6770	1870 4120	6.90 (22.6)
3.0 m (10.0 ft)	kg lb			*6270 *13820	*6270 *13820	*4440 *9790	3700 8160	3780 8330	2300 5070	2710 5970	1620 3570	7.37 (24.2)
1.5 m (5.0 ft)	kg lb			*8490 *18720	6380 14070	*5520 *12170	3460 7630	3680 8110	2210 4870	2610 5750	1550 3420	7.45 (24.4)
Ground Line	kg lb			*8230 *18140	6130 13510	5650 12460	3290 7250	3590 7910	2130 4700	2750 6060	1630 3590	7.17 (23.5)
-1.5 m (-5.0 ft)	kg lb	*6670 *14700	*6670 *14700	*9690 *21360	6140 13540	5590 12320	3240 7140			3230 7120	1930 4250	6.48 (21.3)
-3.0 m (-10 ft)	kg lb	*10970 *24180	*10970 *24180	*8330 *18360	6270 13820	*5520 *12170	3300 7280			*3690 *8140	2830 6240	5.15 (16.9)

- 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) 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.

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	2040 4500	6.69 (21.9)
4.5 m (15.0 ft)	kg lb							*2770 *6110	2410 5310	2660 5860	1600 3530	7.53 (24.7)
3.0 m (10.0 ft)	kg lb			*4930 *10870	*4930 *10870	*3830 *8440	3770 8310	*3380 *7450	2320 5110	2380 5250	1400 3090	7.95 (26.1)
1.5 m (5.0 ft)	kg lb			*8030 *17700	6580 14510	*5010 *11050	3490 7690	3680 8110	2210 4870	2300 5070	1340 2950	8.03 (26.3)
Ground Line	kg lb			*8780 *19360	6140 13540	5640 12430	3280 7230	3570 7870	2110 4650	2400 5290	1400 3090	7.77 (25.5)
-1.5 m (-5.0 ft)	kg lb	*5740 *12650	*5740 *12650	*9910 *21850	6040 13320	5530 12190	3180 7010	3510 7740	2060 4540	2730 6020	1610 3550	7.15 (23.5)
-3.0 m (-10 ft)	kg lb	*8760 *19310	*8760 *19310	*9040 *19930	6110 13470	5550 12240	3200 7050			*3540 *7800	2170 4780	6.01 (19.7)
-4.5 m (-15 ft)	kg lb			*6590 *14530	6370 14040							

4) R140LCM-9

(1) 4.60 m (15' 1") boom, 1.90 m (6' 3") arm equipped with 0.58 m³ (SAE heaped) bucket and 800 mm (32") 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					*3310 *7300	*3310 *7300			*3180 *7010	2610 5750	6.16 (20.2)
4.5 m (15.0 ft)	kg lb					*3670 *8090	*3670 *8090	*2830 *6240	2640 5820	3200 7050	2050 4520	7.01 (23.0)
3.0 m (10.0 ft)	kg lb			*6820 *15040	*6820 *15040	*4620 *10190	4090 9020	*3860 *8510	2580 5690	2880 6350	1820 4010	7.41 (24.3)
1.5 m (5.0 ft)	kg lb			*7800 *17200	7120 15700	*5680 *12520	3850 8490	3930 8660	2480 5470	2820 6220	1770 3900	7.43 (24.4)
Ground Line	kg lb			*8700 *19180	6940 15300	6050 13340	3700 8160	3850 8490	2410 5310	3020 6660	1890 4170	7.09 (23.3)
-1.5 m (-5.0 ft)	kg lb	*7330 *16160	*7330 *16160	*9540 *21030	6960 15340	6010 13250	3670 8090			3630 8000	2290 5050	6.31 (20.7)
-3.0 m (-10 ft)	kg lb			*7950 *17530	7130 15720	*5200 *11460	3760 8290					

- 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.

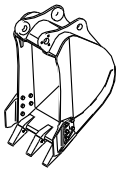
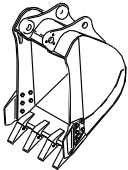
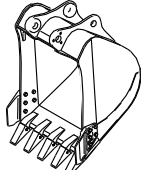
(2) 4.60 m (15' 1") boom, 2.50 m (8' 2") arm equipped with 0.58 m³ (SAE heaped) bucket and 800 mm (32") triple grouser shoe and 2000 kg (4410 lb) counterweight.

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									*2830 *6240	2180 4810	6.87 (22.5)
4.5 m (15.0 ft)	kg lb					*3040 *6700	*3040 *6700	*2930 *6460	2690 5930	2790 6150	1770 3900	7.63 (25.0)
3.0 m (10.0 ft)	kg lb			*5460 *12040	*5460 *12040	*4030 *8880	*4030 *8880	*3470 *7650	2590 5710	2540 5600	1590 3510	7.99 (26.2)
1.5 m (5.0 ft)	kg lb			*8460 *18650	7290 16070	*5200 *11460	3880 8550	3930 8660	2480 5470	2490 5490	1540 3400	8.01 (26.3)
Ground Line	kg lb	*3600 *7940	*3600 *7940	*8880 *19580	6920 15260	6030 13290	3680 8110	3820 8420	2380 5250	2630 5800	1630 3590	7.70 (25.3)
-1.5 m (-5.0 ft)	kg lb	*6200 *13670	*6200 *13670	*9840 *21690	6850 15100	5940 13100	3600 7940	3780 8330	2340 5160	3050 6720	1900 4190	7.00 (23.0)
-3.0 m (-10 ft)	kg lb	*9390 *20700	*9390 *20700	*8770 *19330	6960 15340	*5760 *12700	3640 8020			*3520 *7760	2650 5840	5.74 (18.8)

6. BUCKET SELECTION GUIDE

1) R140LC-9S, R140LCD-9S

(1) General bucket

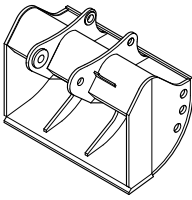
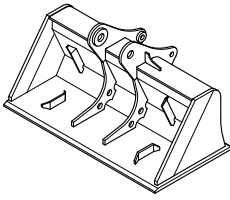
		
0.23 m ³ SAE heaped bucket	0.40, 0.46 m ³ SAE heaped bucket	0.52, ※0.58, 0.65, 0.71 m ³ SAE heaped bucket

Capacity		Width		Weight	Recommendation					
					4.6 m (15' 1") boom				4.1 m (13' 5") boom	
					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")
SAE heaped	CECE heaped	Without side cutter	With side cutter							
0.23 m ³ (0.30 yd ³)	0.20 m ³ (0.26 yd ³)	520 mm (20.5")	620 mm (24.4")	335 kg (740 lb)						
0.40 m ³ (0.52 yd ³)	0.35 m ³ (0.46 yd ³)	760 mm (29.9")	860 mm (33.9")	410 kg (900 lb)						
0.46 m ³ (0.60 yd ³)	0.40 m ³ (0.52 yd ³)	850 mm (33.5")	950 mm (37.4")	435 kg (960 lb)						
0.52 m ³ (0.68 yd ³)	0.45 m ³ (0.59 yd ³)	935 mm (36.8")	1035 mm (40.8")	460 kg (1010 lb)						
※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)						
0.65 m ³ (0.85 yd ³)	0.55 m ³ (0.72 yd ³)	1110 mm (43.7")	1210 mm (47.6")	500 kg (1100 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)						

※ : 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

(2) Special bucket

Ditch cleaning bucket 	Slope finishing bucket 
★0.45 m³ SAE heaped bucket	◎0.55 m³ SAE heaped bucket

Capacity		Width		Weight	Recommendation					
					4.6 m (15' 1") boom				4.1 m (13' 5") boom	
					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")
★0.45 m ³ (0.59 yd ³)	0.40 m ³ (0.52 yd ³)	1520 mm (59.8")	-	410 kg (900 lb)						
◎0.55 m ³ (0.72 yd ³)	0.45 m ³ (0.59 yd ³)	1800 mm (70.9")	-	585 kg (1290 lb)						

★ : Ditch cleaning bucket

◎ : Slope finishing bucket

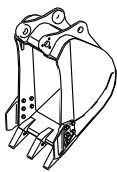
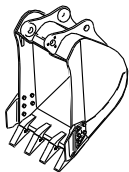
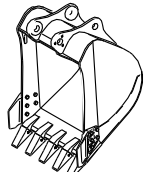
 Applicable for materials with density of 2000 kgf/m³ (3370 lbf/yd³) or less

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

 Applicable for materials with density of 1100 kgf/m³ (1850 lbf/yd³) or less

2) R140LC-9, ADJUST BOOM

(1) General bucket

		
0.23 m³ SAE heaped bucket	0.40, 0.46 m³ SAE heaped bucket	0.52, ※ 0.58, 0.65, 0.71 m³ SAE heaped bucket

Capacity		Width		Weight	Recommendation		
					4.9 m (16' 1") 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")
0.23 m³ (0.30 yd³)	0.20 m³ (0.26 yd³)	520 mm (20.5")	620 mm (24.4")	335 kg (740 lb)			
0.40 m³ (0.52 yd³)	0.35 m³ (0.46 yd³)	760 mm (29.9")	860 mm (33.9")	410 kg (900 lb)			
0.46 m³ (0.60 yd³)	0.40 m³ (0.52 yd³)	850 mm (33.5")	950 mm (37.4")	435 kg (960 lb)			
0.52 m³ (0.68 yd³)	0.45 m³ (0.59 yd³)	935 mm (36.8")	1035 mm (40.7")	460 kg (1010 lb)			
※ 0.58 m³ (0.76 yd³)	0.50 m³ (0.65 yd³)	1030 mm (40.6")	1130 mm (44.5")	480 kg (1060 lb)			
0.65 m³ (0.85 yd³)	0.55 m³ (0.72 yd³)	1110 mm (43.7")	1210 mm (47.6")	500 kg (1100 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)			

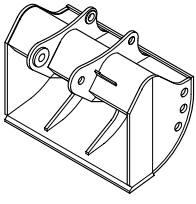
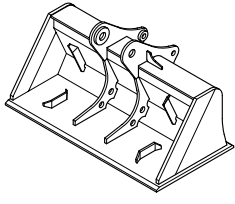
※ : Standard bucket

 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

(2) Special bucket

Ditch cleaning bucket 	Slope finishing bucket 
★0.45 m³ SAE heaped bucket	⊙0.55 m³ SAE heaped bucket

Capacity		Width		Weight	Recommendation		
					4.9 m (16' 1") 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")
★0.45 m³ (0.59 yd³)	0.40 m³ (0.52 yd³)	1520 mm (59.8")	-	410 kg (900 lb)			
⊙0.55 m³ (0.72 yd³)	0.45 m³ (0.59 yd³)	1800 mm (70.9")	-	585 kg (1290 lb)			

★ : Ditch cleaning bucket

⊙ : Slope finishing bucket

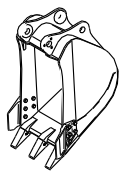
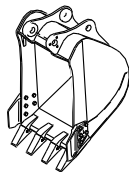
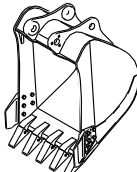
 Applicable for materials with density of 2000 kgf/m³ (3370 lbf/yd³) or less

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

 Applicable for materials with density of 1100 kgf/m³ (1850 lbf/yd³) or less

3) R140LCM-9

(1) General bucket

		
0.23 m ³ SAE heaped bucket	0.40, 0.46 m ³ SAE heaped bucket	0.52, ※ 0.58, 0.65, 0.71 m ³ SAE heaped bucket

Capacity		Width		Weight	Recommendation			
					4.6 m (15' 1") 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")
0.23 m ³ (0.30 yd ³)	0.20 m ³ (0.26 yd ³)	520 mm (20.5")	620 mm (24.4")	335 kg (740 lb)				
0.40 m ³ (0.52 yd ³)	0.35 m ³ (0.46 yd ³)	760 mm (29.9")	860 mm (33.9")	410 kg (900 lb)				
0.46 m ³ (0.60 yd ³)	0.40 m ³ (0.52 yd ³)	850 mm (33.5")	950 mm (37.4")	435 kg (960 lb)				
0.52 m ³ (0.68 yd ³)	0.45 m ³ (0.59 yd ³)	935 mm (36.8")	1035 mm (40.7")	460 kg (1010 lb)				
※ 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)				
0.65 m ³ (0.85 yd ³)	0.55 m ³ (0.72 yd ³)	1110 mm (43.7")	1210 mm (47.6")	500 kg (1100 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)				

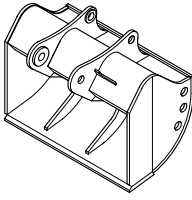
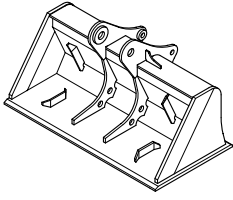
※ : Standard bucket

 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

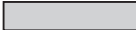
(2) Special bucket

Ditch cleaning bucket 	Slope finishing bucket 
★0.45 m³ SAE heaped bucket	◎0.55 m³ SAE heaped bucket

Capacity		Width		Weight	Recommendation		
					4.9 m (16' 1") 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")
★0.45 m ³ (0.59 yd ³)	0.40 m ³ (0.52 yd ³)	1520 mm (59.8")	-	410 kg (900 lb)			
◎0.55 m ³ (0.72 yd ³)	0.45 m ³ (0.59 yd ³)	1800 mm (70.9")	-	585 kg (1290 lb)			

★ : Ditch cleaning bucket

◎ : Slope finishing bucket

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

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

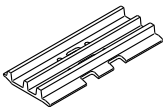
 Applicable for materials with density of 1100 kgf/m³ (1850 lbf/yd³) or less

7. UNDERCARRIAGE

1) TRACKS

X-leg type center frame is integrally welded with reinforced box-section track frames. The design includes dry tracks, lubricated rollers, idlers, sprockets, hydraulic track adjusters with shock absorbing springs and assembled track-type tractor shoes with triple grousers.

2) TYPES OF SHOES

Model	Shapes		Triple grouser		
					
R140LC-9S	Shoe width	mm (in)	500 (20)	※600 (24)	700 (28)
	Operating weight	kg (lb)	13790 (30400)	13980 (30820)	14210 (31330)
	Ground pressure	kgf/cm ² (psi)	0.43 (6.11)	0.36 (5.12)	0.32 (4.55)
	Overall width	mm (ft-in)	2500 (8' 2")	2600 (8' 6")	2700 (8' 10")
R140LCD-9S	Shoe width	mm (in)	500 (20)	※600 (24)	700 (28)
	Operating weight	kg (lb)	14590 (32160)	14800 (32630)	15030
	Ground pressure	kgf/cm ² (psi)	0.45 (6.40)	0.38 (5.40)	0.33 (4.70)
	Overall width	mm (ft-in)	2500 (8' 2")	2600 (8' 6")	2700 (8' 10")
R140LCM-9S	Shoe width	mm (in)	710 (28)	※800 (32)	960 (38)
	Operating weight	kg (lb)	16880 (37210)	16880 (37210)	17110 (37720)
	Ground pressure	kgf/cm ² (psi)	0.32 (4.55)	0.32 (4.55)	0.27 (3.84)
	Overall width	mm (ft-in)	2750 (9' 0")	2840 (9' 4")	3000 (9' 10")

※ : Standard

3) NUMBER OF ROLLERS AND SHOES ON EACH SIDE

Item	Quantity	
	R140LC/LCD-9S	R140LCM-9S
Carrier rollers	1 EA	2 EA
Track rollers	7 EA	7 EA
Track shoes	46 EA	47 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
500 mm triple grouser	Option	A
700 mm triple grouser	Option	B
710 mm triple grouser	R140LC-9 only	B
800 mm triple grouser	R140LCM-9 only	B

※ **Table 2**

Category	Applications	Applications
A	Rocky ground, river beds, normal soil	• Travel at low speed on rough ground with large obstacles such as boulders or fallen trees
B	Normal soil, soft ground	• These shoes cannot be used on rough ground with large obstacles such as boulders or fallen trees • Travel at high speed only on flat ground • Travel slowly at low speed if it is impossible to avoid going over obstacles

8. SPECIFICATIONS FOR MAJOR COMPONENTS

1) ENGINE

Item	Specification
Model	Mitsubishi D04FD-TAA
Type	4-cycle turbocharged charge air cooled 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	102 × 130 mm
Piston displacement	4250cc (260cu in)
Compression ratio	16.5 : 1
Rated gross horse power (SAE J1995)	119 Hp (89 kW) at 2000 rpm
Maximum torque	45.4 kgf · m (328 lbf · ft) at 1700 rpm
Engine oil quantity	17.5 l (4.6 U.S. gal)
Dry weight	420 kg (930 lb)
High idling speed	2100 ± 50 rpm
Low idling speed	850 ± 100 rpm
Rated fuel consumption	165 g/Hp · hr at 2000 rpm
Starting motor	24 V-5.0 kW
Alternator	24 V-50 A
Battery	2 × 12 V × 80 Ah

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	260 kgf/cm ² (3698 psi)
Braking system	Automatic, spring applied hydraulic released
Braking torque	25 kgf · m (181 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	Variable displacement axial piston motor
Relief pressure	365 kgf/cm ² (5190 psi)
Capacity (max / min)	86/45 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)
Braking torque	19.7 kgf · m (140 lbf · ft)

7) CYLINDER

Item		Specification
Boom cylinder	Bore dia × Rod dia × Stroke	Ø105 × Ø75 × 1075 mm
	Cushion	Extend only
Arm cylinder	Bore dia × Rod dia × Stroke	Ø115 × Ø80 × 1138 mm
	Cushion	Extend and retract
Bucket cylinder	Bore dia × Rod dia × Stroke	Ø100 × Ø70 × 840 mm
	Cushion	Extend only
Dozer cylinder (opt)	Bore dia × Rod dia × Stroke	Ø100 × Ø70 × 250 mm
	Cushion	-
Adjust cylinder (opt)	Bore dia × Rod dia × Stroke	Ø145 × Ø90 × 613 mm
	Cushion	Extend only
Adjust boom cylinder (opt)	Bore dia × Rod dia × Stroke	Ø105 × Ø75 × 975 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-9S	Standard	600 mm (24")	0.36 kgf/cm ² (5.12 psi)	46	2600 mm (8' 6")
	Option	500 mm (20")	0.43 kgf/cm ² (6.11 psi)	46	2500 mm (8' 2")
		700 mm (28")	0.31 kgf/cm ² (4.41 psi)	46	2700 mm (8' 10")
R140LCD-9S	Standard	600 mm (24")	0.38 kgf/cm ² (5.40 psi)	46	2600 mm (8' 6")
	Option	500 mm (20")	0.45 kgf/cm ² (6.40 psi)	46	2500 mm (8' 2")
		700 mm (28")	0.33 kgf/cm ² (4.70 psi)	46	2700 mm (8' 10")
R140LCM-9S	Standard	800 mm (32")	0.32 kgf/cm ² (4.55 psi)	47	2840 mm (9' 4")
	Option	710 mm (28")	0.36 kgf/cm ² (5.12 psi)	47	2750 mm (9' 0")
		960 mm (38")	0.27 kgf/cm ² (3.84 psi)	47	3000 mm (9' 10")

9) BUCKET

Item		Capacity		Tooth quantity	Width	
		SAE heaped	CECE heaped		Without side cutter	With side cutter
R140LC-9S	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	0.23 m ³ (0.30 yd ³)	0.20 m ³ (0.26 yd ³)	3	520 mm (20.5")	620 mm (24.4")
		0.40 m ³ (0.52 yd ³)	0.35 m ³ (0.46 yd ³)	4	750 mm (29.5")	850 mm (33.5")
		0.46 m ³ (0.60 yd ³)	0.40 m ³ (0.52 yd ³)	4	840 mm (33.1")	940 mm (37.0")
		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")
		0.65 m ³ (0.85 yd ³)	0.55 m ³ (0.72 yd ³)	5	1105 mm (43.5")	1205 mm (47.4")
		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")
		★0.45 m ³ (0.59 yd ³)	0.40 m ³ (0.52 yd ³)	-	1520 mm (59.8")	-
		◎0.55 m ³ (0.72 yd ³)	0.45 m ³ (0.59 yd ³)	-	1800 mm (70.9")	-

★ : Ditch cleaning bucket

◎ : Slope finishing bucket

9. RECOMMENDED OILS

Use only oils listed below. Do not mix different brand oil.

Please use HYUNDAI genuine oil and grease.

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	17.5 (4.6)	★SAE 5W-40								
						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)★ ² 3.5(1.0)	★SAE 75W-90								
Final drive		2.2×2 (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 soft water★ ¹	15.5 (4.1)	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

★ : Cold region
 Russia, CIS, Mongolia
 ★¹ : Soft water
 City water or distilled water
 ★² : Service when the grease inlet exists on the equipment