

SECTION 1 GENERAL



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SECTION 1 GENERAL

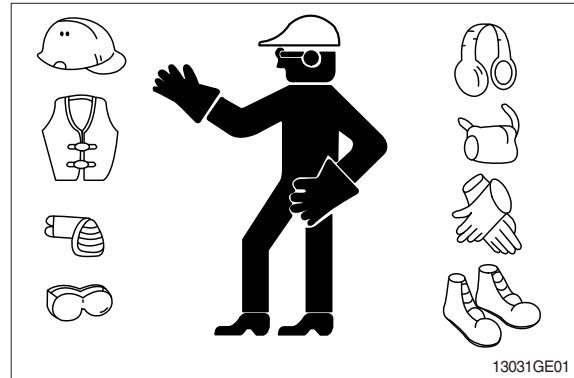
GROUP 1 SAFETY

FOLLOW SAFE PROCEDURE

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

WEAR PROTECTIVE CLOTHING

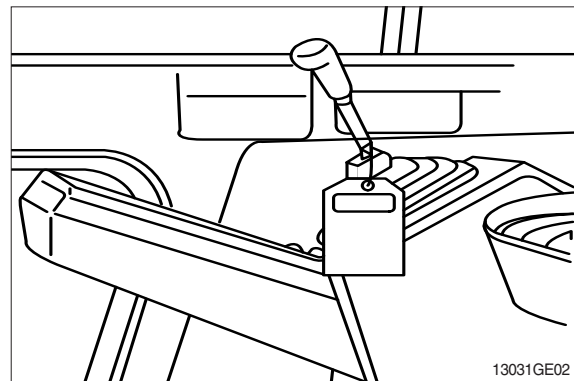
Wear close fitting clothing and safety equipment appropriate to the job.



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.



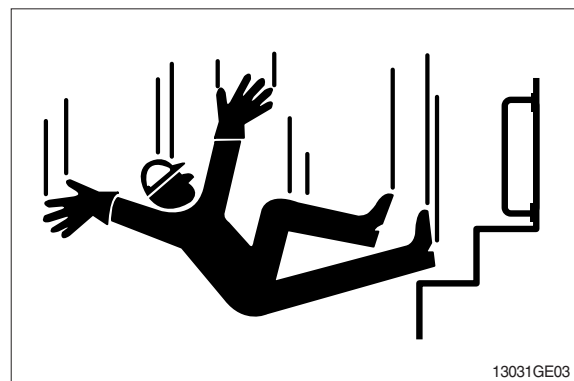
USE HANDHOLDS AND STEPS

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.

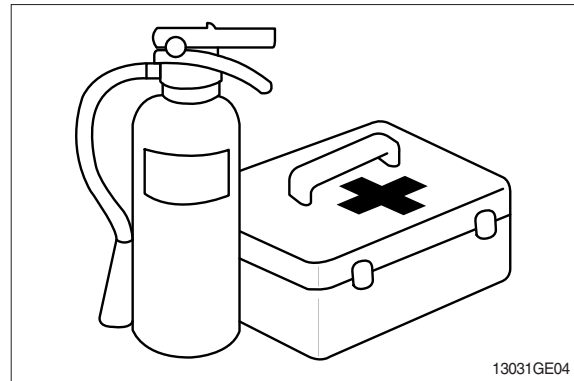


PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

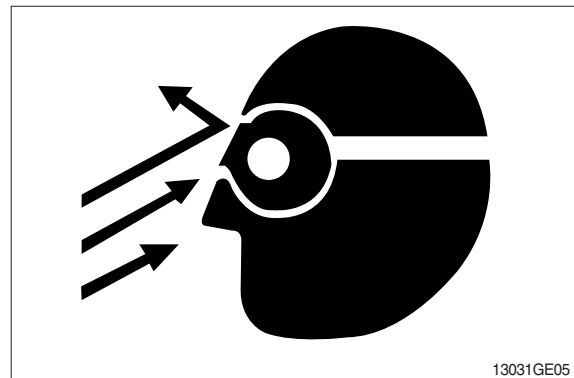
Keep a first aid kit and fire extinguisher handy.

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



PROTECT AGAINST FLYING DEBRIS

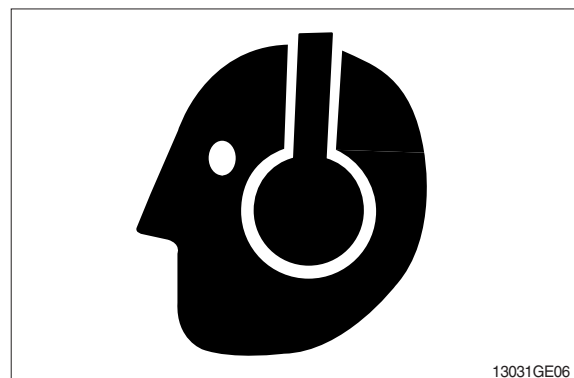
Guard against injury from flying pieces of metal or debris; Wear goggles or safety glasses.



PROTECT AGAINST NOISE

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

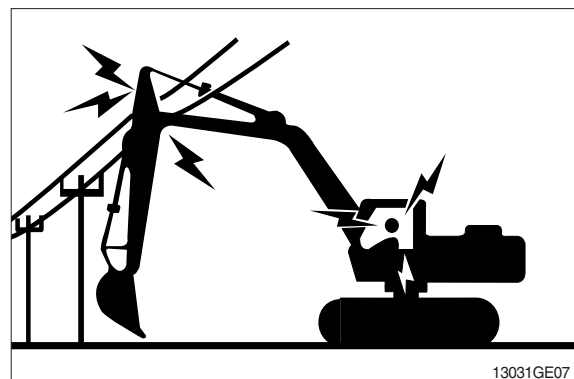
Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.



AVOID POWER LINES

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

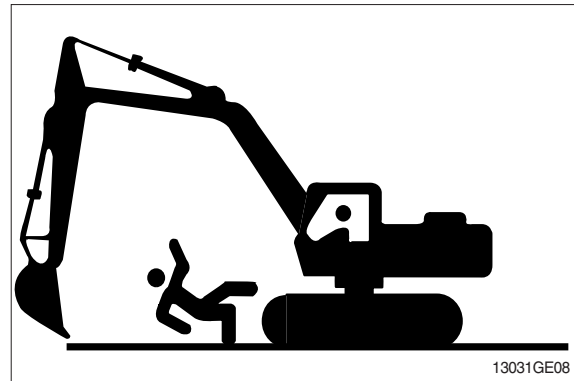
Never move any part of the machine or load closer to electric line than 3m(10ft) plus twice the line insulator length.



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.

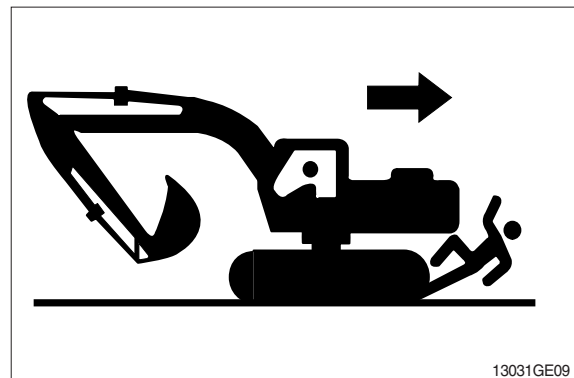


MOVE AND OPERATE MACHINE SAFELY

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:

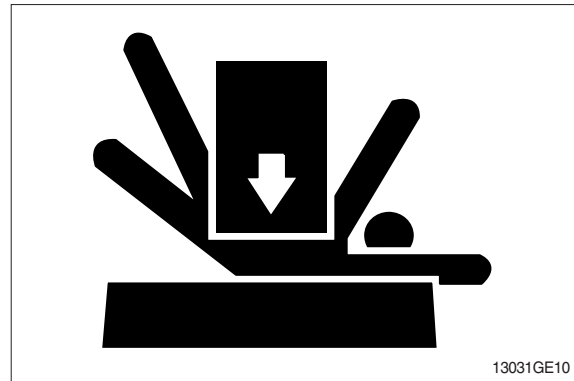
- Park machine on a level surface.
- Lower bucket to the ground.
- Turn auto idle switch off.
- Run engine at 1/2 speed without load for 2 minutes.
- Turn key switch to OFF to stop engine. Remove key from switch.
- Move pilot control shutoff lever to locked position.
- Allow engine to cool.

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.

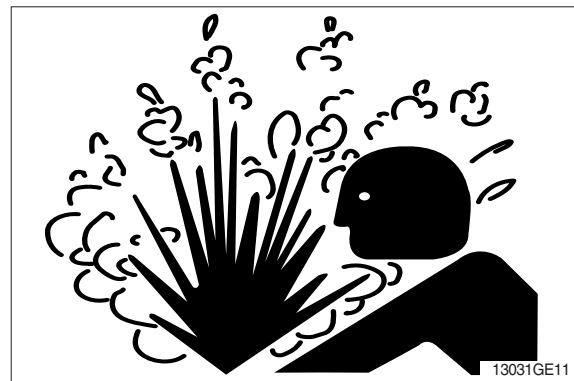
Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.



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

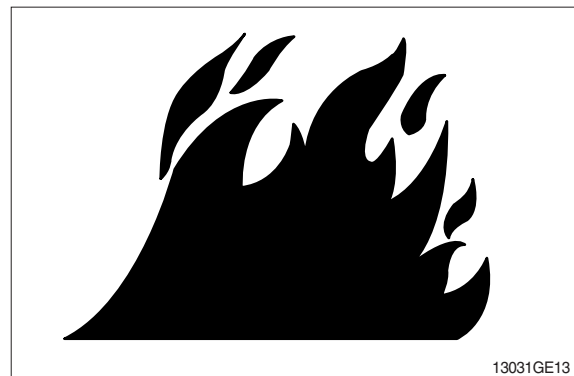
Handle fuel with care; It is highly flammable. Do not refuel the machine while smoking or when near open flame or sparks. Always stop engine before refueling machine. Fill fuel tank outdoors.



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.

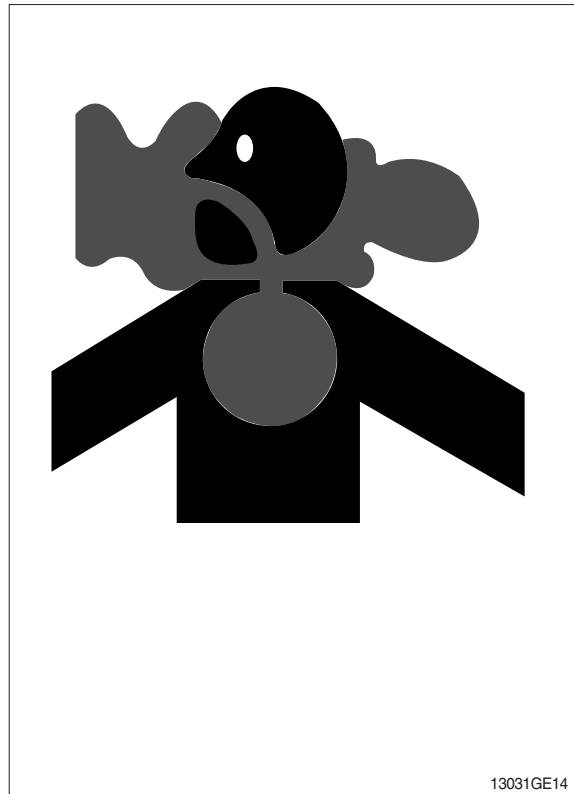
Do all work outside or in a well ventilated area. Dispose of paint and solvent properly.

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

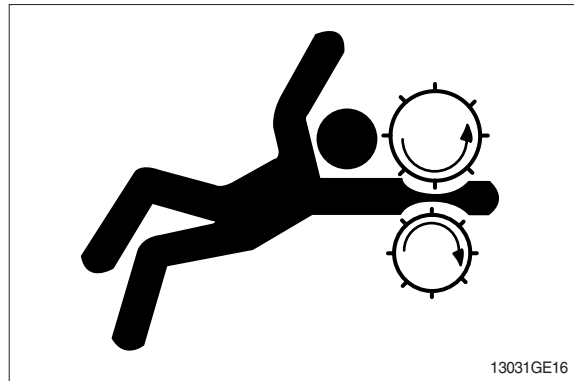
Illuminate your work area adequately but safely. Use a portable safety light for working inside or under the machine. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.



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.

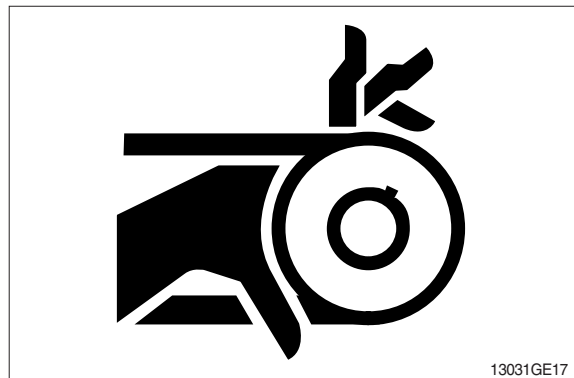
Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.



STAY CLEAR OF MOVING PARTS

Entanglements in moving parts can cause serious injury.

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



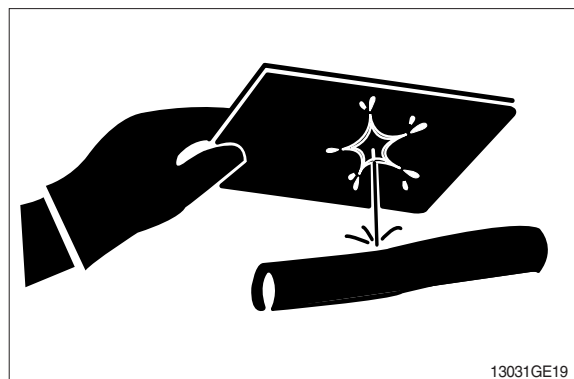
AVOID HIGH PRESSURE FLUIDS

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.

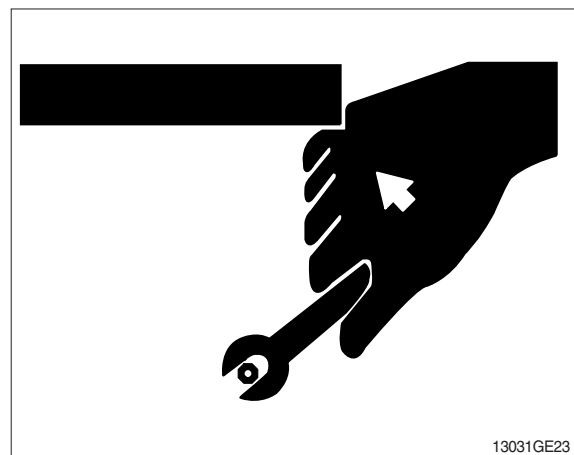
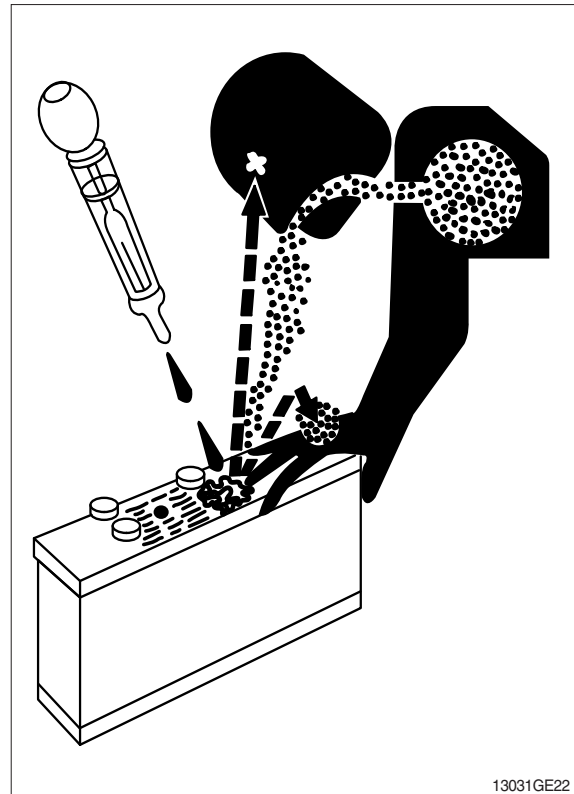
USE TOOLS PROPERLY

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.)

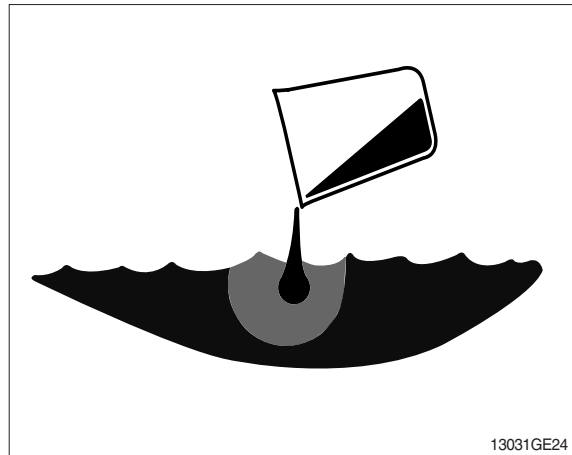


DISPOSE OF FLUIDS PROPERLY

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.

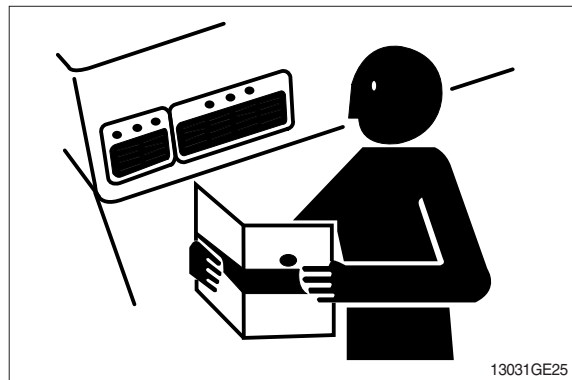
Use proper containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

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.

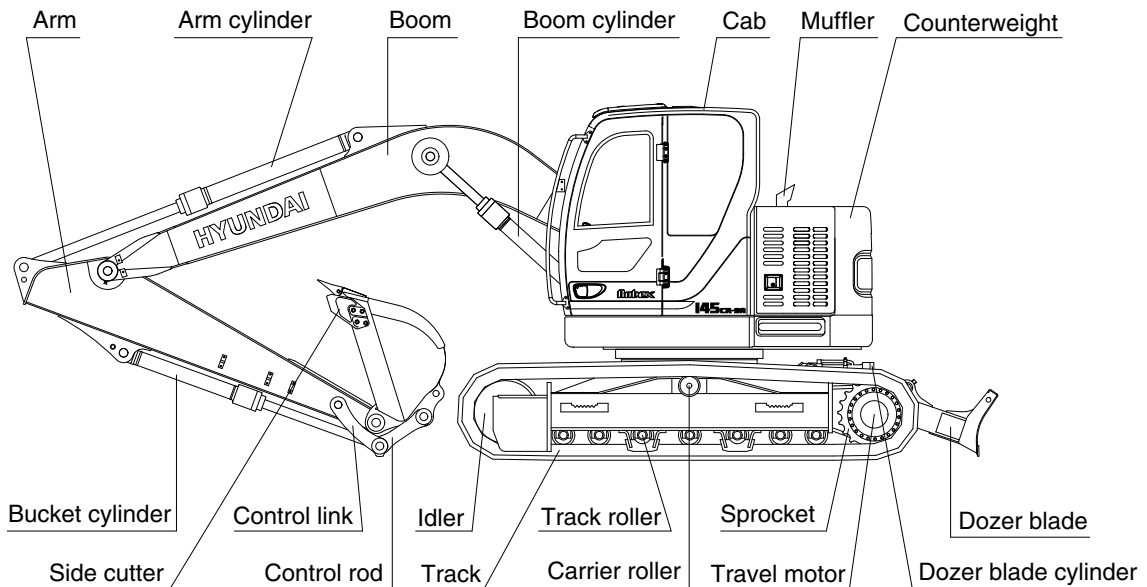
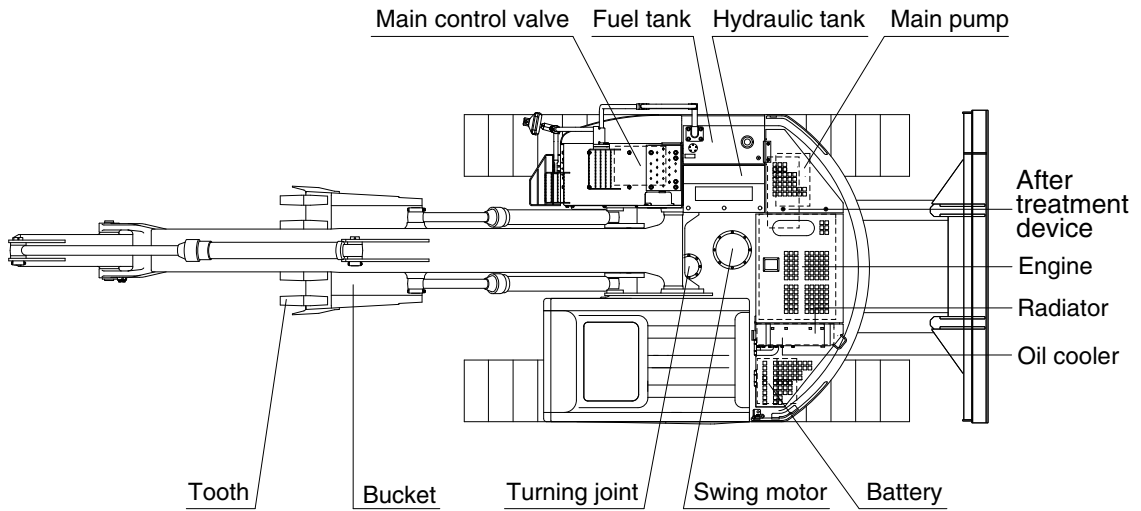


LIVE WITH SAFETY

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

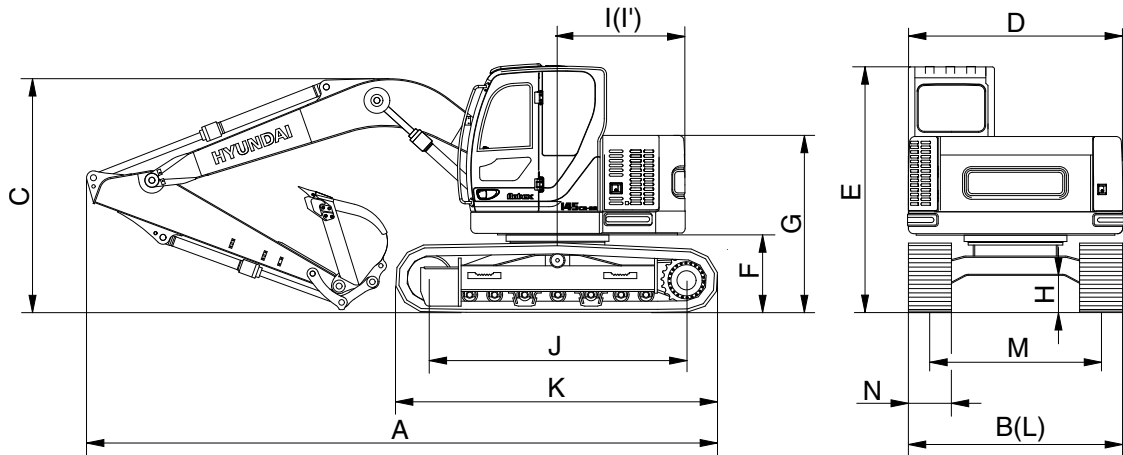


145Z9A2SP01

2. SPECIFICATIONS

1) R145CR-9A

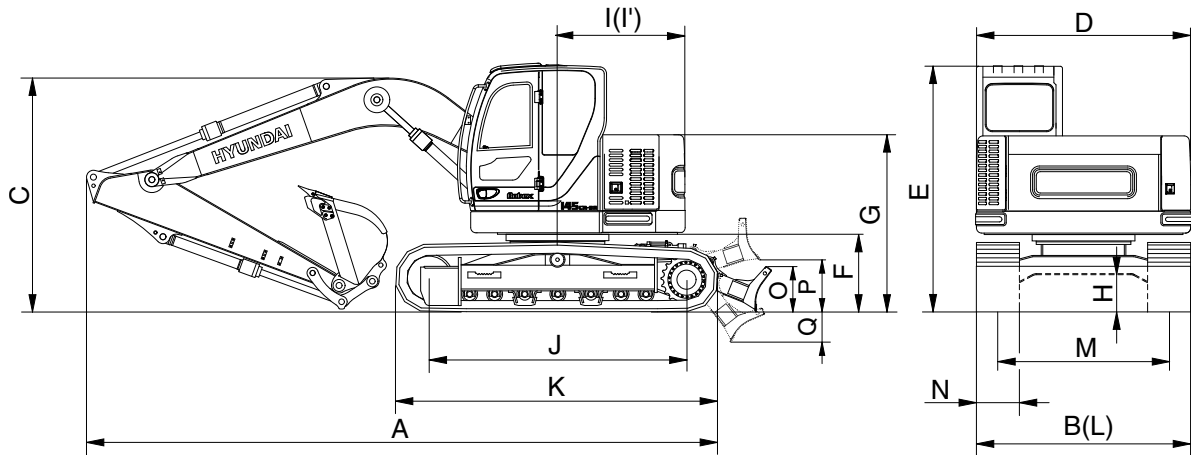
- 4.60 m (15' 1") BOOM and 2.50 m (8' 2") ARM



145Z9A2SP02

| Description | | Unit | Specification |
|--|----|-----------------------------------|----------------|
| Operating weight | | kg (lb) | 14600 (32190) |
| Bucket capacity (SAE heaped), standard | | m ³ (yd ³) | 0.52 (0.68) |
| Overall length | A | mm (ft-in) | 7270 (23' 10") |
| Overall width, with 500 mm shoe | B | | 2500 (8' 2") |
| Overall height | C | | 2860 (9' 5") |
| Superstructure width | D | | 2500 (8' 2") |
| Overall height of cab | E | | 2900 (9' 6") |
| Ground clearance of counterweight | F | | 930 (3' 1") |
| Engine cover height | G | | 2215 (7' 3") |
| Minimum ground clearance | H | | 440 (1' 5") |
| Rear-end distance | I | | 1500 (4' 11") |
| Rear-end swing radius | I' | | 1500 (4' 11") |
| Distance between tumbler rollers | J | | 2910 (9' 7") |
| Undercarriage length | K | | 3640 (11' 11") |
| Undercarriage width | L | | 2500 (8' 2") |
| Track gauge | M | | 2000 (6' 7") |
| Track shoe width, standard | N | | 500 (20") |
| Travel speed (low/high) | | | km/hr (mph) |
| Swing speed | | rpm | 12.0 |
| Gradeability | | Degree (%) | 35 (70) |
| Ground pressure (500 mm shoe) | | kgf/cm ² (psi) | 0.46 (6.54) |
| Max traction force | | kg (lb) | 13300 (29320) |

2) R145CRD-9A

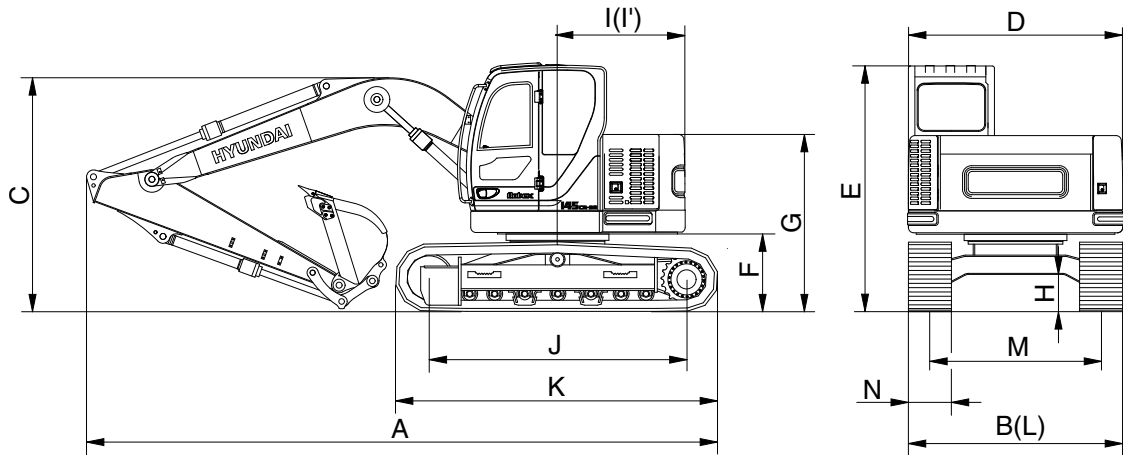


145Z9A2SP03

| Description | | Unit | Specification |
|--|----|-----------------------------------|----------------|
| Operating weight | | kg (lb) | 15400 (33950) |
| Bucket capacity (SAE heaped), standard | | m ³ (yd ³) | 0.52 (0.68) |
| Overall length | A | mm (ft-in) | 7820 (25' 8") |
| Overall width, with 500 mm shoe | B | | 2500 (8' 2") |
| Overall height | C | | 2860 (9' 5") |
| Superstructure width | D | | 2500 (8' 2") |
| Overall height of cab | E | | 2900 (9' 6") |
| Ground clearance of counterweight | F | | 930 (3' 1") |
| Engine cover height | G | | 2215 (7' 3") |
| Minimum ground clearance | H | | 440 (1' 5") |
| Rear-end distance | I | | 1500 (4' 11") |
| Rear-end swing radius | I' | | 1500 (4' 11") |
| Distance between tumbler | J | | 2910 (9' 7") |
| Undercarriage length | K | | 3640 (11' 11") |
| Undercarriage width | L | | 2500 (8' 2") |
| Track gauge | M | | 2000 (6' 7") |
| Track shoe width, standard | N | | 500 (20") |
| Height of blade | O | | 575 (1' 8") |
| Ground clearance of blade up | P | | 420 (1' 8") |
| Depth of blade down | Q | | 430 (1' 6") |
| Travel speed (low/high) | | | km/hr (mph) |
| Swing speed | | rpm | 12.0 |
| Gradeability | | Degree (%) | 35 (70) |
| Ground pressure (500 mm shoe) | | kgf/cm ² (psi) | 0.49 (6.97) |
| Max traction force | | kg (lb) | 13300 (29320) |

3) R145LCR-9A

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



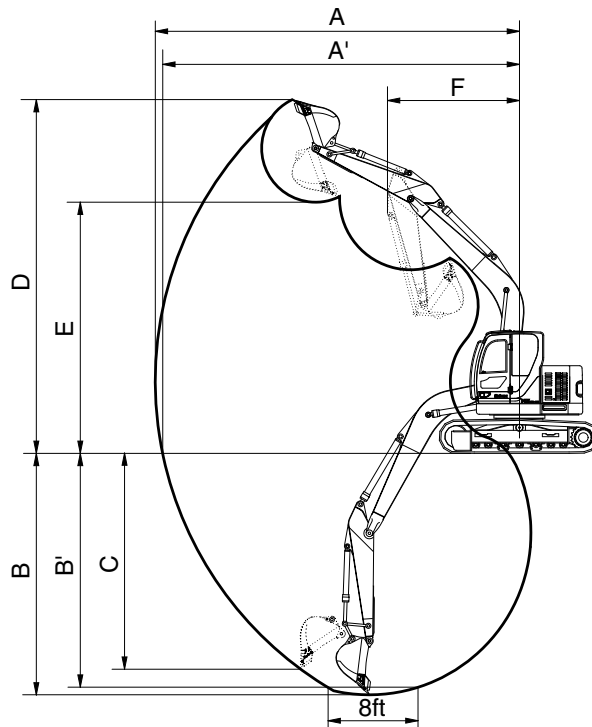
145Z9A2SP02

| Description | | Unit | Specification |
|--|----|-----------------------------------|---------------|
| Operating weight | | kg (lb) | 14980 (33030) |
| Bucket capacity (SAE heaped), standard | | m ³ (yd ³) | 0.52 (0.68) |
| Overall length | A | mm (ft-in) | 7360 (24' 2") |
| Overall width, with 600 mm shoe | B | | 2600 (8' 6") |
| Overall height | C | | 2860 (9' 5") |
| Superstructure width | D | | 2500 (8' 2") |
| Overall height of cab | E | | 2900 (9' 6") |
| Ground clearance of counterweight | F | | 930 (3' 1") |
| Engine cover height | G | | 2215 (7' 3") |
| Minimum ground clearance | H | | 440 (1' 5") |
| Rear-end distance | I | | 1480 (4' 10") |
| Rear-end swing radius | I' | | 1480 (4' 10") |
| Distance between tumblers | J | | 3090 (10' 2") |
| Undercarriage length | K | | 3820 (12' 6") |
| Undercarriage width | L | | 2600 (8' 6") |
| Track gauge | M | | 2000 (6' 7") |
| Track shoe width, standard | N | | 600 (24") |
| Travel speed (low/high) | | | km/hr (mph) |
| Swing speed | | rpm | 11.5 |
| Gradeability | | Degree (%) | 35 (70) |
| Ground pressure (600 mm shoe) | | kgf/cm ² (psi) | 0.37 (5.26) |
| Max traction force | | kg (lb) | 13300 (29320) |

3. WORKING RANGE

1) R145CR/CRD/LCR-9A

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



145Z9A2SP04

| 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 | 7730 mm (25' 4") | 7900 mm (25' 11") | 8310 mm (27' 3") | 8770 mm (28' 9") |
| Max digging reach on ground | A' | 7580 mm (24' 10") | 7750 mm (25' 0") | 8170 mm (26' 10") | 8630 mm (28' 4") |
| Max digging depth | B | 4890 mm (16' 1") | 5100 mm (16' 9") | 5500 mm (18' 1") | 5990 mm (19' 8") |
| Max digging depth (8ft level) | B' | 4640 mm (15' 3") | 4870 mm (16' 0") | 5290 mm (17' 4") | 5810 mm (19' 1") |
| Max vertical wall digging depth | C | 4400 mm (14' 5") | 4600 mm (15' 1") | 5000 mm (16' 5") | 5400 mm (17' 9") |
| Max digging height | D | 8840 mm (29' 0") | 8970 mm (29' 5") | 9350 mm (30' 8") | 9730 mm (31' 11") |
| Max dumping height | E | 6350 mm (20' 10") | 6470 mm (21' 3") | 6850 mm (22' 6") | 7230 mm (23' 9") |
| Min swing radius | F | 1860 mm (6' 1") | 2030 mm (6' 8") | 1980 mm (6' 6") | 2260 mm (7' 5") |
| 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 [9670] kgf | 8900 [9670] kgf | 8900 [9670] kgf | 8900 [9670] 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











| Item | R145CR-9A | | R145CRD-9A | | R145LCR-9A | |
|---|-----------|-------|------------|-------|------------|-------|
| | kg | lb | kg | lb | kg | lb |
| Upper structure assembly | 6950 | 15320 | ← | | ← | |
| Main frame weld assembly | 1315 | 2900 | ← | | ← | |
| Engine assembly | 540 | 1190 | ← | | ← | |
| Main pump assembly | 90 | 200 | ← | | ← | |
| Main control valve assembly | 140 | 310 | ← | | ← | |
| Swing motor assembly | 120 | 260 | ← | | ← | |
| Hydraulic oil tank assembly | 150 | 330 | ← | | ← | |
| Fuel tank assembly | 120 | 260 | ← | | ← | |
| Counterweight | 2800 | 6170 | ← | | ← | |
| Cab assembly | 450 | 990 | ← | | ← | |
| Lower chassis assembly | 5230 | 11530 | 6030 | 13290 | 5600 | 12350 |
| Track frame weld assembly | 1480 | 3260 | 1640 | 3620 | 1820 | 4010 |
| Swing bearing | 215 | 470 | ← | | ← | |
| Travel motor assembly | 240 | 530 | ← | | ← | |
| Turning joint | 50 | 110 | ← | | ← | |
| Track recoil spring | 105 | 230 | ← | | ← | |
| Idler | 125 | 280 | ← | | ← | |
| Carrier roller | 20 | 45 | ← | | ← | |
| Track roller | 35 | 80 | ← | | ← | |
| Track-chain assembly (500 mm standard triple grouser shoe) | 910 | 2010 | ← | | 940 | 2070 |
| Dozer blade assembly | - | | 465 | 1025 | - | |
| Front attachment assembly (4.6 m boom, 2.5 m arm, 0.52 m ³ SAE heaped bucket) | 2420 | 5330 | ← | | ← | |
| 4.6 m boom assembly | 830 | 1830 | ← | | ← | |
| 2.5 m arm assembly | 435 | 960 | ← | | ← | |
| 0.52 m ³ SAE heaped bucket | 460 | 1010 | ← | | ← | |
| 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 | - | |

5. LIFTING CAPACITIES

1) R145CR-9A











(1) 4.60 m (15' 1") boom, 2.50 m (8' 2") arm equipped with 0.52 m³ (SAE heaped) bucket and 500 mm (20") triple grouser shoe and 2800 kg (6170 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 | | | | | *2960 | *2960 | | | 2710 | 1700 | 6.50 |
| | lb | | | | | *6530 | *6530 | | | 5970 | 3750 | (21.3) |
| 4.5 m (15.0 ft) | kg | | | | | *3460 | 3310 | *2670 | 1930 | 2120 | 1280 | 7.37 |
| | lb | | | | | *7630 | 7300 | *5890 | 4250 | 4670 | 2820 | (24.2) |
| 3.0 m (10.0 ft) | kg | | | *6090 | *6090 | *4480 | 3090 | 2990 | 1850 | 1870 | 1090 | 7.81 |
| | lb | | | *13430 | *13430 | *9880 | 6810 | 6590 | 4080 | 4120 | 2400 | (25.6) |
| 1.5 m (5.0 ft) | kg | | | *8480 | 5380 | 4640 | 2810 | 2870 | 1730 | 1780 | 1030 | 7.90 |
| | lb | | | *18700 | 11860 | 10230 | 6190 | 6330 | 3810 | 3920 | 2270 | (25.9) |
| Ground Line | kg | | | 9050 | 4920 | 4390 | 2590 | 2750 | 1630 | 1850 | 1060 | 7.67 |
| | lb | | | 19950 | 10850 | 9680 | 5710 | 6060 | 3590 | 4080 | 2340 | (25.2) |
| -1.5 m (-5.0 ft) | kg | *5850 | *5850 | *8700 | 4820 | 4280 | 2490 | 2700 | 1580 | 2120 | 1240 | 7.07 |
| | lb | *12900 | *12900 | *19180 | 10630 | 9440 | 5490 | 5950 | 3480 | 4670 | 2730 | (23.2) |
| -3.0 m (-10 ft) | kg | *8930 | *8930 | *7030 | 4900 | 4300 | 2510 | | | *2400 | 1700 | 5.97 |
| | lb | *19690 | *19690 | *15500 | 10800 | 9480 | 5530 | | | *5290 | 3750 | (19.6) |
| -4.5 m (-15.0 ft) | kg | | | *3750 | *3750 | | | | | | | |
| | lb | | | *8270 | *8270 | | | | | | | |

- 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 0.52 m³ (SAE heaped) bucket and 500 mm (20") triple grouser shoe and 2800 kg (6170 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 | | | | | *3270 | *3270 | | | 3360 | 2130 | 5.75 |
| | lb | | | | | *7210 | *7210 | | | 7410 | 4700 | (18.9) |
| 4.5 m (15.0 ft) | kg | | | *4960 | *4960 | *4310 | 3250 | | | 2500 | 1550 | 6.73 |
| | lb | | | *10930 | *10930 | *9500 | 7170 | | | 5510 | 3420 | (22.1) |
| 3.0 m (10.0 ft) | kg | | | *7230 | 5970 | 4900 | 3050 | 2980 | 1850 | 2170 | 1310 | 7.22 |
| | lb | | | *15940 | 13160 | 10800 | 6720 | 6570 | 4080 | 4780 | 2890 | (23.7) |
| 1.5 m (5.0 ft) | kg | | | *9120 | 5220 | 4620 | 2800 | 2880 | 1750 | 2070 | 1230 | 7.32 |
| | lb | | | *20110 | 11510 | 10190 | 6170 | 6350 | 3860 | 4560 | 2710 | (24.0) |
| Ground Line | kg | | | *8610 | 4970 | 4430 | 2640 | 2800 | 1680 | 2170 | 1290 | 7.06 |
| | lb | | | *18980 | 10560 | 9770 | 5820 | 6170 | 3700 | 4780 | 2840 | (23.2) |
| -1.5 m (-5.0 ft) | kg | *6830 | *6830 | *8140 | 4970 | 4370 | 2580 | | | 2560 | 1540 | 6.40 |
| | lb | *15060 | *15060 | *17950 | 10960 | 9630 | 5690 | | | 5640 | 3400 | (21.0) |
| -3.0 m (-10 ft) | kg | | | *6010 | 5100 | *4100 | 2650 | | | *2250 | *2250 | 5.12 |
| | lb | | | *13250 | 11240 | *9040 | 5840 | | | *4960 | *4960 | (16.8) |











(3) 4.60 m (15' 1") boom, 3.0 m (9' 10") arm equipped with 0.52 m³ (SAE heaped) bucket and 700 mm (20") triple grouser shoe and 2800 kg (6170 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) | | 7.0 m (25 ft) | | Capacity | | Reach |
| | |  |  |  |  |  |  |  |  |  |  |  |  | kg |
| 6.0 m (20.0 ft) | kg | | | | | *2560 | *2560 | *1730 | *1730 | | | 2350 | 1450 | 7.07 |
| | lb | | | | | *5640 | *5640 | *3810 | *3810 | | | 5180 | 3200 | (23.2) |
| 4.5 m (15.0 ft) | kg | | | | | *2760 | *2760 | *2550 | 1980 | | | 1890 | 1120 | 7.86 |
| | lb | | | | | *6080 | *6080 | *5620 | 4370 | | | 4170 | 2470 | (25.8) |
| 3.0 m (10.0 ft) | kg | | | *3690 | *3690 | *3690 | 3170 | 3030 | 1880 | *1430 | 1180 | 1680 | 960 | 8.27 |
| | lb | | | *8140 | *8140 | *8140 | 6990 | 6680 | 4140 | *3150 | 2600 | 3700 | 2120 | (27.1) |
| 1.5 m (5.0 ft) | kg | | | *7740 | 5620 | 4720 | 2880 | 2890 | 1750 | 1950 | 1130 | 1610 | 910 | 8.36 |
| | lb | | | *17060 | 12390 | 10410 | 6350 | 6370 | 3860 | 4300 | 2490 | 3550 | 2010 | (27.4) |
| Ground Line | kg | | | 9180 | 5020 | 4440 | 2630 | 2760 | 1630 | *1830 | 1080 | 1660 | 930 | 8.14 |
| | lb | | | 20240 | 11070 | 9790 | 5800 | 6080 | 3590 | *4030 | 2380 | 3660 | 2050 | (26.7) |
| -1.5 m (-5.0 ft) | kg | *5380 | *5380 | 8930 | 4820 | 4280 | 2490 | 2680 | 1560 | | | 1860 | 1060 | 7.59 |
| | lb | *11860 | *11860 | 19690 | 10630 | 9440 | 5490 | 5910 | 3440 | | | 4100 | 2340 | (24.9) |
| -3.0 m (-10 ft) | kg | *7860 | *7860 | *7790 | 4830 | 4250 | 2460 | 2680 | 1560 | | | 2380 | 1400 | 6.59 |
| | lb | *17330 | *17330 | *17170 | 10650 | 9370 | 5420 | 5910 | 3440 | | | 5250 | 3090 | (21.6) |
| -4.5 m (-15 ft) | kg | *8050 | *8050 | *5160 | 5020 | *3260 | 2580 | | | | | | | |
| | lb | *17750 | *17750 | *11380 | 11070 | *7190 | 5690 | | | | | | | |

2) R145CRD-9A (with dozer blade)













(1) 4.60 m (15' 1") boom, 2.50 m (8' 2") arm equipped with 0.52 m³ (SAE heaped) bucket and 500 mm (20") triple grouser shoe and 2800 kg (6170 lb) counterweight with dozer blade.

-  : 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 | | | | | *2960 *6530 | *2960 *6530 | | | *2910 *6420 | 1820 4010 | 6.50 (21.3) |
| 4.5 m (15.0 ft) | kg lb | | | | | *3460 *7630 | *3460 *7630 | *2670 *5890 | 2060 4540 | 2340 5160 | 1380 3040 | 7.37 (24.2) |
| 3.0 m (10.0 ft) | kg lb | | | *6090 *13430 | *6090 *13430 | *4480 *9880 | 3270 7230 | 3270 7210 | 1980 4370 | 2070 4560 | 1190 2620 | 7.81 (25.6) |
| 1.5 m (5.0 ft) | kg lb | | | *8480 *18700 | 5720 12610 | 5060 11160 | 3000 6610 | 3150 6940 | 1860 4100 | 1980 4370 | 1120 2470 | 7.90 (25.9) |
| Ground Line | kg lb | | | *9170 *20220 | 5260 11600 | 4810 10600 | 2780 6130 | 3030 6680 | 1760 3880 | 2060 4540 | 1160 2560 | 7.67 (25.2) |
| -1.5 m (-5.0 ft) | kg lb | *5850 *12900 | *5850 *12900 | *8700 *19180 | 5160 11380 | 4700 10360 | 2680 5910 | 2980 6570 | 1710 3770 | 2350 5180 | 1340 2950 | 7.07 (23.2) |
| -3.0 m (-10 ft) | kg lb | *8930 *19690 | *8930 *19690 | *7030 *15500 | 5230 11530 | 4720 10410 | 2700 5950 | | | *2400 *5290 | 1830 4030 | 5.97 (19.6) |
| -4.5 m (-15.0 ft) | kg lb | | | *3750 *8270 | *3750 *8270 | | | | | | | |

- 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, 3.0 m (9' 10") arm equipped with 0.52 m³ (SAE heaped) bucket and 700 mm (20") triple grouser shoe and 2800 kg (6170 lb) counterweight with dozer blade.

| 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) | | 7.0 m (25 ft) | | Capacity | | Reach m (ft) |
| | |  |  |  |  |  |  |  |  |  |  |  |  | |
| 6.0 m (20.0 ft) | kg lb | | | | | *2560 *5640 | *2560 *5640 | *1730 *3810 | *1730 *3810 | | | 2570 5670 | 1560 3440 | 7.07 (23.2) |
| 4.5 m (15.0 ft) | kg lb | | | | | *2760 *6080 | *2760 *6080 | *2550 *5620 | 2110 4650 | | | 2090 4610 | 1220 2690 | 7.86 (25.8) |
| 3.0 m (10.0 ft) | kg lb | | | *3690 *8140 | *3690 *8140 | *3690 *8140 | 3360 7410 | *3210 *7080 | 2020 4450 | *1430 *3150 | 1280 2820 | 1860 4100 | 1050 2310 | 8.27 (27.1) |
| 1.5 m (5.0 ft) | kg lb | | | *7740 *17060 | 5950 13120 | *5030 *11090 | 3070 6770 | 3170 6990 | 1890 4170 | *1990 *4390 | 1230 2710 | 1790 3590 | 990 2180 | 8.36 (27.4) |
| Ground Line | kg lb | | | *9190 *20260 | 5360 11820 | 4850 10690 | 2820 6220 | 3040 6700 | 1770 3900 | *1830 *4030 | 1180 2600 | 1850 4080 | 1020 2250 | 8.14 (26.7) |
| -1.5 m (-5.0 ft) | kg lb | *5380 *11860 | *5380 *11860 | *9060 *19970 | 5160 11380 | 4700 10360 | 2680 5910 | 2960 6530 | 1690 3730 | | | 2070 4560 | 1160 2560 | 7.59 (24.9) |
| -3.0 m (-10 ft) | kg lb | *7860 *17330 | *7860 *17330 | *7790 *17170 | 5170 11400 | 4670 10300 | 2650 5840 | 2960 6530 | 1690 3730 | | | *2460 *5420 | 1520 3350 | 6.59 (21.6) |
| -4.5 m (-15 ft) | kg lb | *8050 *17750 | *8050 *17750 | *5160 *11380 | *5160 *11380 | 3260 7190 | 2770 6110 | | | | | | | |

3) R145LCR-9A

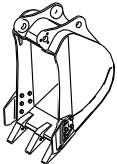
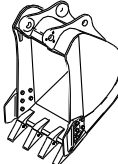
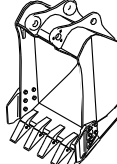
(1) 4.60 m (15' 1") boom, 2.50 m (8' 2") arm equipped with 0.52 m³ (SAE heaped) bucket and 500 mm (20") triple grouser shoe and 2800 kg (6170 lb) counterweight.

| 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 | | | | | *2960 *6530 | *2960 *6530 | | | 2870 6330 | 1710 3770 | 6.50 (21.3) |
| 4.5 m (15.0 ft) | kg lb | | | | | *3460 *7630 | 3340 7360 | *2670 *5890 | 1950 4300 | 2250 4960 | 1300 2870 | 7.37 (24.2) |
| 3.0 m (10.0 ft) | kg lb | | | *6090 *13430 | *6090 *13430 | *4480 *9880 | 3120 6880 | 3170 6990 | 1870 4120 | 1990 4390 | 1110 2450 | 7.81 (25.6) |
| 1.5 m (5.0 ft) | kg lb | | | *8480 *18700 | 5420 11950 | 4930 10870 | 2840 6260 | 3040 6700 | 1750 3860 | 1900 4190 | 1040 2290 | 7.90 (25.9) |
| Ground Line | kg lb | | | *9170 *20220 | 4970 10960 | 4680 10320 | 2620 5780 | 2930 6460 | 1650 3640 | 1970 4340 | 1080 2380 | 7.67 (25.2) |
| -1.5 m (-5.0 ft) | kg lb | *5850 *12900 | *5850 *12900 | *8700 *19180 | 4870 10740 | 4570 10080 | 2520 5560 | 2870 6330 | 1600 3530 | 2260 4980 | 1250 2760 | 7.07 (23.2) |
| -3.0 m (-10 ft) | kg lb | *8930 *19690 | *8930 *19690 | *7030 *15500 | 4940 10890 | 4590 10120 | 2540 5600 | | | *2400 *5290 | 1720 3790 | 5.97 (19.6) |
| -4.5 m (-15 ft) | kg lb | | | *3750 *8270 | *3750 *8270 | | | | | | | |

6. BUCKET SELECTION GUIDE

1) R145CR-9A, R145CRD-9A, R145LCR-9A

(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 |

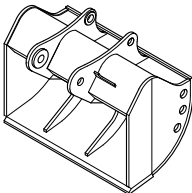
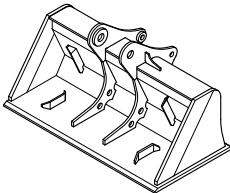
| Capacity | | Width | | Weight | Recommendation | | | |
|--|--|------------------------|---------------------|---------------------|----------------------|-----------------------|----------------------|-----------------------|
| | | | | | 4.6 m (15' 1") boom | | | |
| SAE heaped | CECE heaped | Without 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) | 750 mm (29.5") | 850 mm (33.5") | 410 kg (900 lb) | | | | |
| 0.46 m ³ (0.60 yd ³) | 0.40 m ³ (0.52 yd ³) | 840 mm (33.1") | 940 mm (37.0") | 435 kg (960 lb) | | | | |
| 0.52 m ³ (0.68 yd ³) | 0.45 m ³ (0.59 yd ³) | 915 mm (36.0") | 1015 mm (40.0") | 460 kg (1010 lb) | | | | |
| 0.58 m ³ (0.76 yd ³) | 0.50 m ³ (0.65 yd ³) | 1000 mm (39.4") | 1100 mm (43.3") | 480 kg (1060 lb) | | | | |
| 0.65 m ³ (0.85 yd ³) | 0.55 m ³ (0.72 yd ³) | 1105 mm (43.5") | 1205 mm (47.4") | 500 kg (1100 lb) | | | | |
| 0.71 m ³ (0.93 yd ³) | 0.60 m ³ (0.78 yd ³) | 1190 mm (46.9") | 1290 mm (50.8") | 540 kg (1190 lb) | | | | |

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

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

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

(2) Special bucket

| | |
|--|--|
| <p>Ditch cleaning bucket</p>  | <p>Slope finishing bucket</p>  |
| <p>★0.45 m³ SAE heaped bucket</p> | <p>◎0.55 m³ SAE heaped bucket</p> |

| 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") |
| ★0.45 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

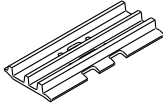
Applicable for materials with density of 1100 kgf/m³ (1850 lbf/yd³) or less

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 | | |
|------------|------------------|---------------------------|--|---------------|---------------|
| | | |  | | |
| R145CR-9A | Shoe width | mm (in) | ※ 500 (20) | 600 (24) | 700 (28) |
| | Operating weight | kg (lb) | 14600/32190 | 14790 (32610) | 15020 (33110) |
| | Ground pressure | kgf/cm ² (psi) | 0.46 (6.54) | 0.39 (5.55) | 0.34 (4.83) |
| | Overall width | mm (ft-in) | 2500 (8' 2") | 2600 (8' 6") | 2700 (8' 10") |
| R145CRD-9A | Shoe width | mm (in) | ※ 500 (20) | 600 (24) | 700 (28) |
| | Operating weight | kg (lb) | 15400 (33950) | 15610 (34610) | 15840 (34920) |
| | Ground pressure | kgf/cm ² (psi) | 0.49 (6.97) | 0.41 (5.83) | 0.36 (5.12) |
| | Overall width | mm (ft-in) | 2500 (8' 2") | 2600 (8' 6") | 2700 (8' 10") |
| R145LCR-9A | Shoe width | mm (in) | ※ 500 (20) | 600 (24) | 700 (28) |
| | Operating weight | kg (lb) | 14660 (32320) | 14850 (32740) | 15080 (33250) |
| | Ground pressure | kgf/cm ² (psi) | 0.44 (6.26) | 0.37 (5.26) | 0.32 (4.55) |
| | Overall width | mm (ft-in) | 2500 (8' 2") | 2600 (8' 6") | 2700 (8' 10") |

※ : Standard

3) NUMBER OF ROLLERS AND SHOES ON EACH SIDE

| Item | Quantity | |
|-----------------|----------------------|------------|
| | R145CR-9A/R145CRD-9A | R145LCR-9A |
| Carrier rollers | 1 EA | 2 EA |
| Track rollers | 7 EA | 7 EA |
| Track shoes | 45 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 |
|-----------------------|---------------|----------|
| 500 mm triple grouser | Standard | A |
| 600 mm triple grouser | Option | A |
| 700 mm triple grouser | Option | B |

※ **Table 2**

| Category | Applications | Applications |
|----------|---|--|
| A | Rocky ground, river beds, normal soil | <ul style="list-style-type: none"> • Travel at low speed on rough ground with large obstacles such as boulders or fallen trees |
| B | Normal soil, soft ground | <ul style="list-style-type: none"> • These shoes cannot be used on rough ground with large obstacles such as boulders or fallen trees • Travel at high speed only on flat ground • Travel slowly at low speed if it is impossible to avoid going over obstacles |

8. SPECIFICATIONS FOR MAJOR COMPONENTS

1) ENGINE

| Item | Specification |
|-------------------------------------|--|
| Model | Perkins 1204E |
| 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 | 105 × 127 mm (4.1" × 5.0") |
| Piston displacement | 4400 cc (269 cu in) |
| Compression ratio | 16.5 : 1 |
| Rated gross horse power (SAE J1995) | 124 Hp (92.7 kW) at 1950 rpm |
| Maximum torque | 54 kgf · m (391 lbf · ft) at 1400 rpm |
| Engine oil quantity | 10.5 l (2.8 U.S. gal) |
| Dry weight | 507 kg (1118 lb) |
| High idling speed | 2000 ± 50 rpm |
| Low idling speed | 800 ± 100 rpm |
| Rated fuel consumption | 163 g/Hp · hr at 1950 rpm |
| Starting motor | 24 V-4.5 kW |
| Alternator | 24 V-85 A |
| Battery | 2 × 12 V × 100 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 | 1950 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 | 29.2 l /min (7.7 U.S. gpm / 6.4 U.K. gpm) |

4) MAIN CONTROL VALVE

| Item | Specification |
|--------------------------------|---|
| Type | 11 spools |
| Operating method | Hydraulic pilot system |
| Main relief valve pressure | 350 kgf/cm ² (4980 psi) [380 kgf/cm ² (5400 psi)] |
| Overload relief valve pressure | 400 kgf/cm ² (5690 psi) |

[]: Power boost

5) SWING MOTOR

| Item | Specification |
|------------------------|--|
| Type | Fixed displacement axial piston motor |
| Capacity | 72 cc/rev |
| Relief pressure | 285 kgf/cm ² (4050 psi) |
| Braking system | Automatic, spring applied hydraulic released |
| Braking torque | 30 kgf · m (217 lbf · ft) |
| Brake release pressure | 15~50 kgf/cm ² (213~711 psi) |
| Reduction gear type | 2 - stage planetary |

6) TRAVEL MOTOR

| Item | Type 1 | Type 2 | Type 3 |
|------------------------|--|-------------------|------------------------------------|
| Type | Variable displacement axial piston motor | | |
| Relief pressure | 350 kgf/cm ² (4970 psi) | | |
| Capacity (max / min) | 77/45 cc/rev | 76.62/44.8 cc/rev | 77/44.5 cc/rev |
| Reduction gear type | 2-stage planetary | | |
| Braking system | Automatic, spring applied hydraulic released | | |
| Brake release pressure | 9.5 kgf/cm ² (135 psi) | | 14.1 kgf/cm ² (201 psi) |
| Braking torque | 19.7 kgf · m (142.5 lbf · ft) | | 33 kgf/cm ² (238.7 psi) |

7) CYLINDER

| Item | | Specification |
|-------------------------|-----------------------------|------------------------|
| Boom cylinder | Bore dia × Rod dia × Stroke | ∅ 105 × ∅ 75 × 1105 mm |
| | Cushion | Extend only |
| Arm cylinder | Bore dia × Rod dia × Stroke | ∅ 115 × ∅ 80 × 1138 mm |
| | Cushion | Extend and retract |
| Bucket cylinder | Bore dia × Rod dia × Stroke | ∅ 100 × ∅ 70 × 840 mm |
| | Cushion | Extend only |
| Dozer cylinder (option) | Bore dia × Rod dia × Stroke | ∅ 100 × ∅ 70 × 250 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) SHOE

| Item | | Width | Ground pressure | Link quantity | Overall width |
|------------|----------|--------------|-------------------------------------|---------------|-------------------|
| R145CR-9A | Standard | 500 mm (20") | 0.46 kgf/cm ² (6.54 psi) | 45 | 2500 mm (8' 2") |
| | Option | 600 mm (24") | 0.39 kgf/cm ² (5.55 psi) | 45 | 2600 mm (8' 6") |
| | | 700 mm (28") | 0.34 kgf/cm ² (4.83 psi) | 45 | 2700 mm (8' 10") |
| R145CRD-9A | Standard | 500 mm (20") | 0.49 kgf/cm ² (6.97 psi) | 45 | 2500 mm (8' 2") |
| | Option | 600 mm (24") | 0.41 kgf/cm ² (5.81 psi) | 45 | 2600 mm (8' 6") |
| | | 700 mm (28") | 0.36 kgf/cm ² (5.12 psi) | 45 | 2700 mm (8' 10") |
| R145LCR-9A | Standard | 500 mm (20") | 0.44 kgf/cm ² (6.26 psi) | 47 | 2500 mm (8' 2") |
| | Option | 600 mm (24") | 0.37 kgf/cm ² (5.26 psi) | 47 | 2600 mm (8' 6") |
| | | 700 mm (28") | 0.32 kgf/cm ² (4.55 psi) | 47 | 2700 mm (8' 10") |

9) BUCKET

| Item | Capacity | | Tooth quantity | Width | |
|---------------------------------------|--|---|----------------|---------------------|------------------|
| | SAE heaped | CECE heaped | | Without side cutter | With side cutter |
| R145CR-9A R145CRD-9A R145LCR-9A | 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") |
| | 0.23 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") |
| | 0.58 m ³ (0.76 yd ³) | 0.50 m ³ (0.65 yd ³) | 5 | 1000 mm (39.4") | 1100 mm (43.3") |
| | 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) |
| Engine oil pan | Engine oil | 10.5 (2.8) | ★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) | ★SAE 75W-90 | | | | | | |
| Final drive | | 2.2×2 (0.6×2) | SAE 80W-90 | | | | | | |
| Hydraulic tank | Hydraulic oil | Tank: 96 (25.4) | ★ISO VG 15 | | | | | | |
| | | | ISO VG 32 | | | | | | |
| | | System: 180 (47.6) | ISO VG 46 | | | | | | |
| | | | ISO VG 68 | | | | | | |
| Fuel tank | Diesel fuel★1 | 232 (61.3) | ★ASTM D975 NO.1 | | | | | | |
| | | | ASTM D975 NO.2 | | | | | | |
| Fitting (Grease nipple) | Grease | As required | ★NLGI NO.1 | | | | | | |
| | | | NLGI NO.2 | | | | | | |
| Radiator (Reservoir tank) | Mixture of antifreeze and water 50 : 50 | 20 (5.3) | Ethylene glycol base permanent type | | | | | | |
| | | | ★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

★1 : Ultra low sulfur diesel

- sulfur content ≤ 15 ppm

★ : Cold region

Russia, CIS, Mongolia