SECTION 1 GENERAL

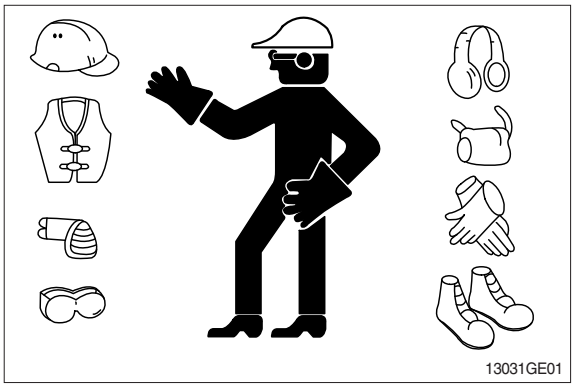
GROUP 1 SAFETY

FOLLOW SAFE PROCEDURE

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

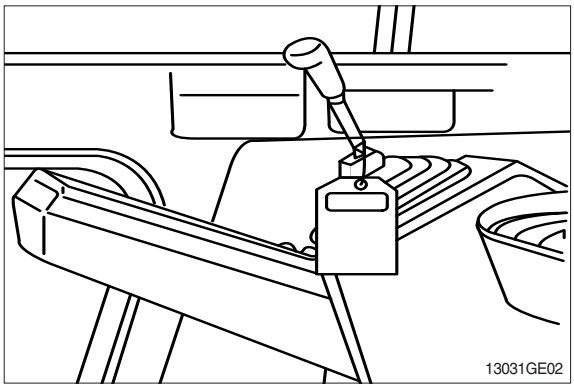
WEAR PROTECTIVE CLOTHING

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



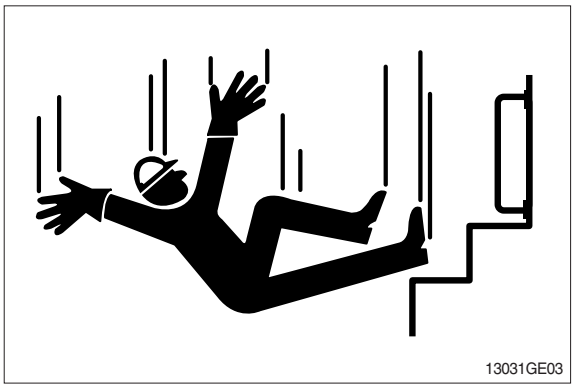
WARN OTHERS OF SERVICE WORK

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.

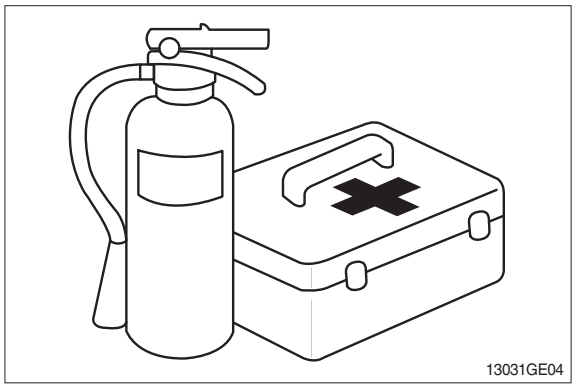


PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

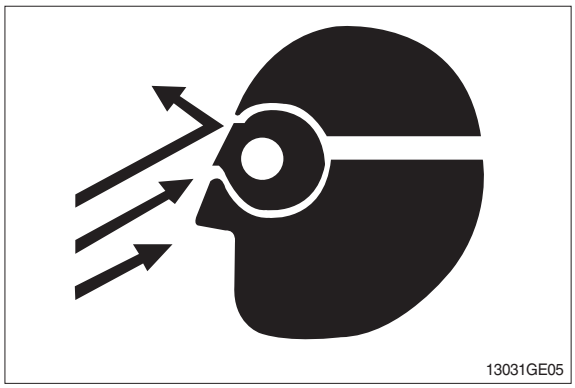
Keep a first aid kit and fire extinguisher handy.

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



PROTECT AGAINST FLYING DEBRIS

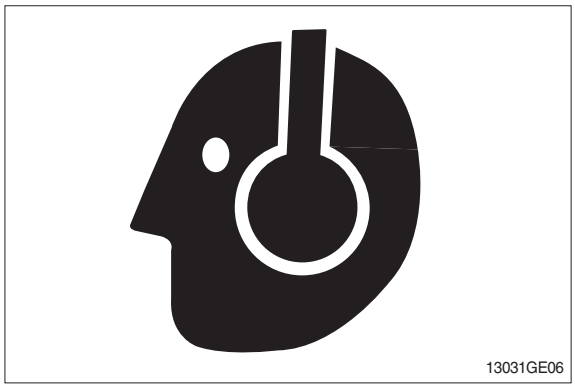
Guard against injury from flying pieces of metal or debris; Wear goggles or safety glasses.



PROTECT AGAINST NOISE

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

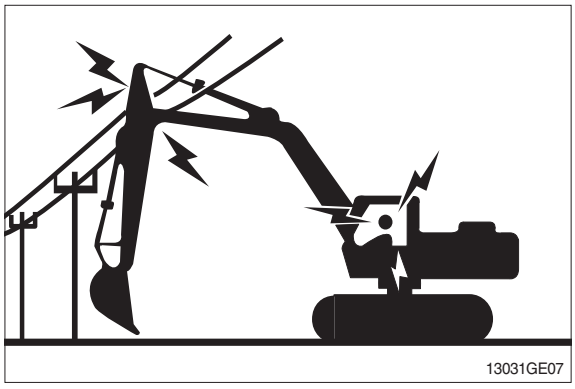
Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.



AVOID POWER LINES

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

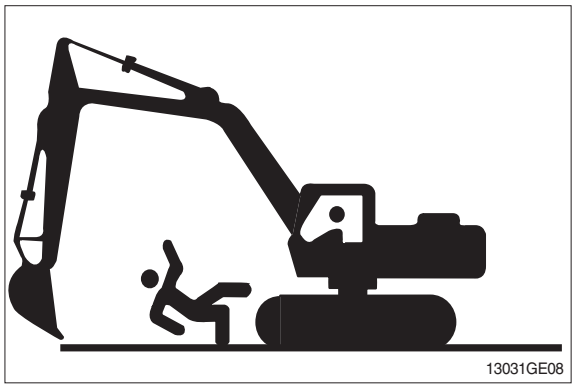
Never move any part of the machine or load closer to electric line than 3m(10ft) plus twice the line insulator length.



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.

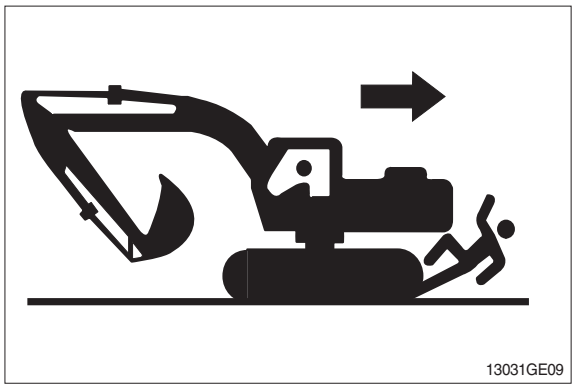

13031GE08

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.


13031GE09

OPERATE ONLY FORM 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.


13031GE26

PARK MACHINE SAFELY

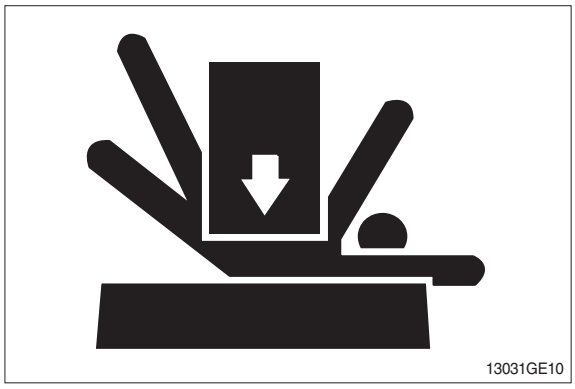
Before working on the machine:

- Park machine on a level surface.
- Lower bucket to the ground.
- Turn auto idle switch off.
- Run engine at low idle speed without load for 5 minutes.
- Turn key switch to OFF to stop engine. Remove key from switch.
- Place safety 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.


13031GE10

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.


13031GE11

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.


13031GE12

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

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

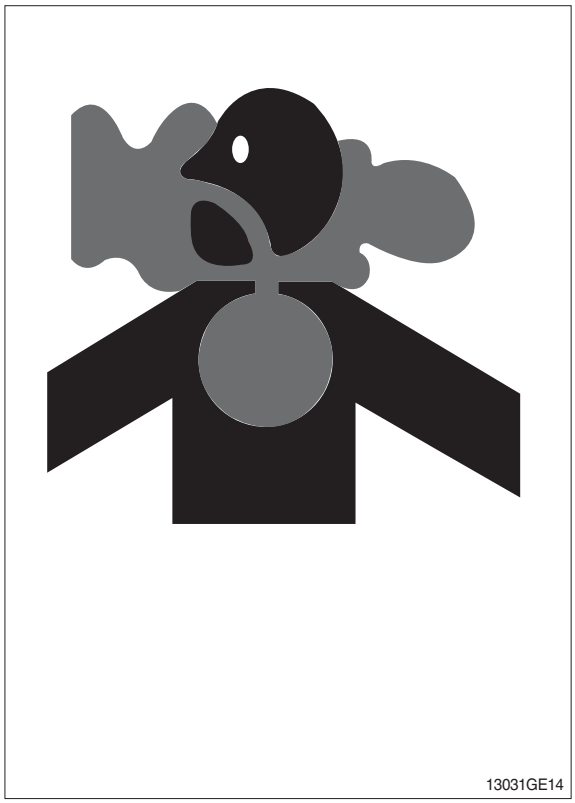
Do not store oily rags; They can ignite and burn spontaneously.


13031GE13

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.


13031GE14

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

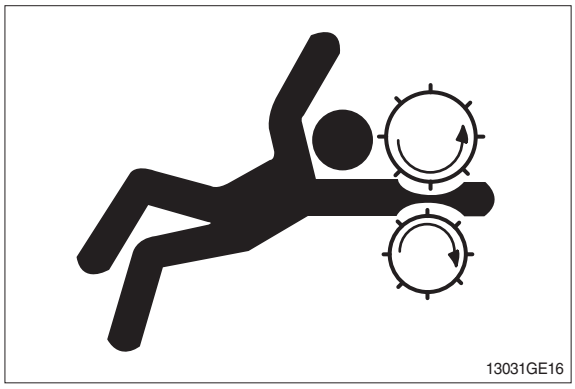
Illuminate your work area adequately but safely. Use a portable safety light for working inside or under the machine. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.


13031GE15

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.

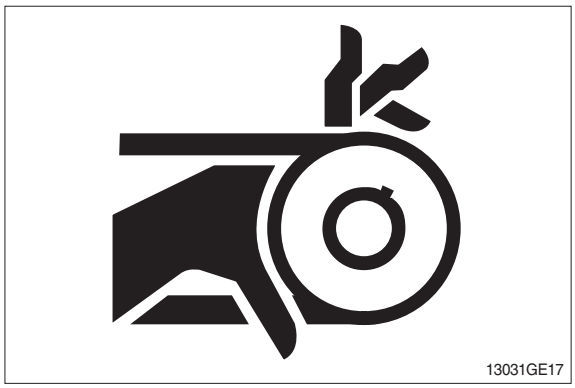
Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.



STAY CLEAR OF MOVING PARTS

Entanglements in moving parts can cause serious injury.

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



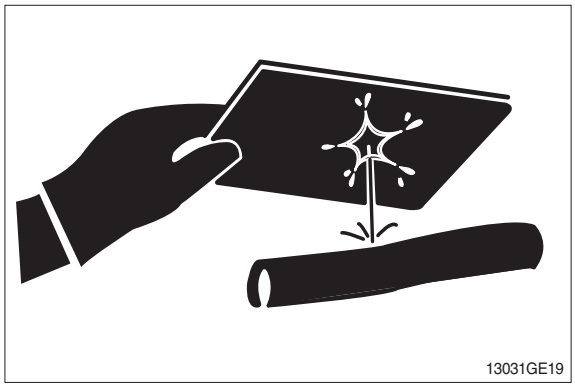
AVOID HIGH PRESSURE FLUIDS

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:

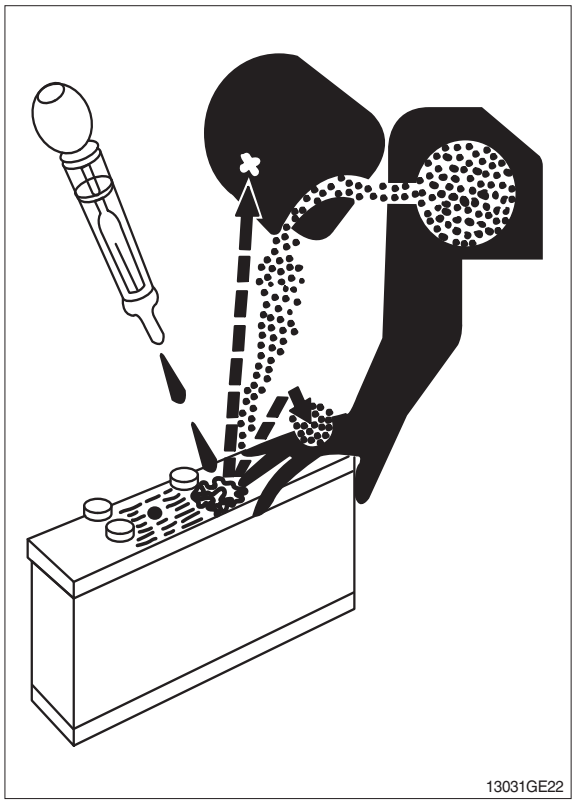
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling of dripping electrolyte.
5. Use proper jump start procedure.

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.



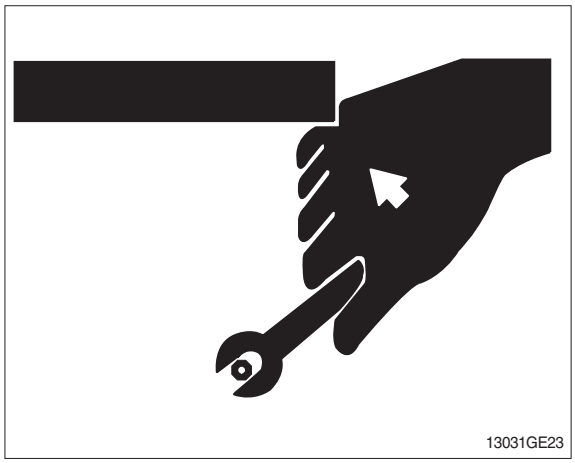
USE TOOLS PROPERLY

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 manual.)

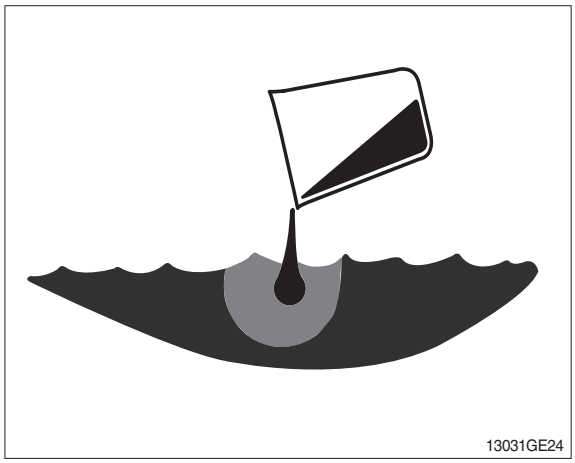


DISPOSE OF FLUIDS PROPERLY

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.

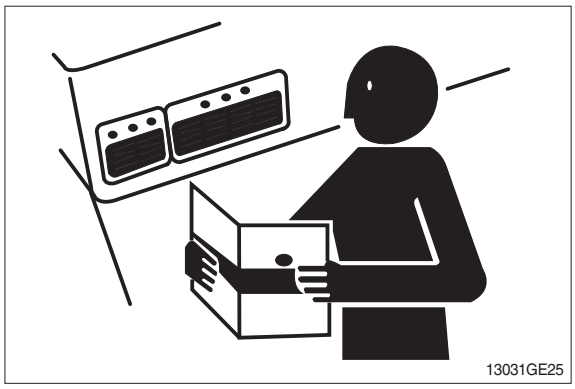
Use proper containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

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.


13031GE24

REPLACE SAFETY LABELS

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

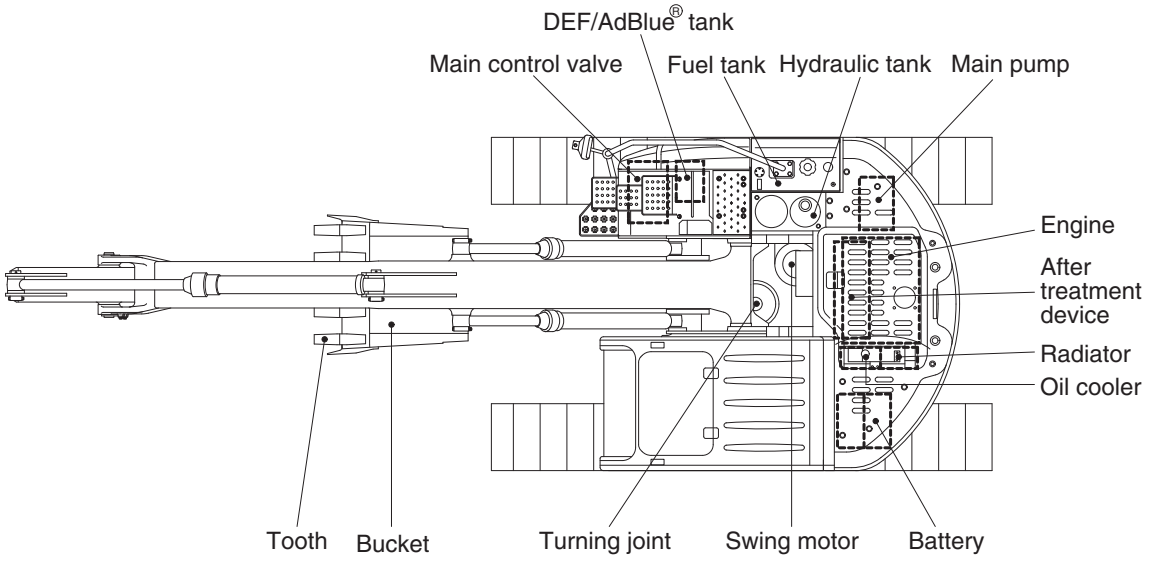

13031GE25

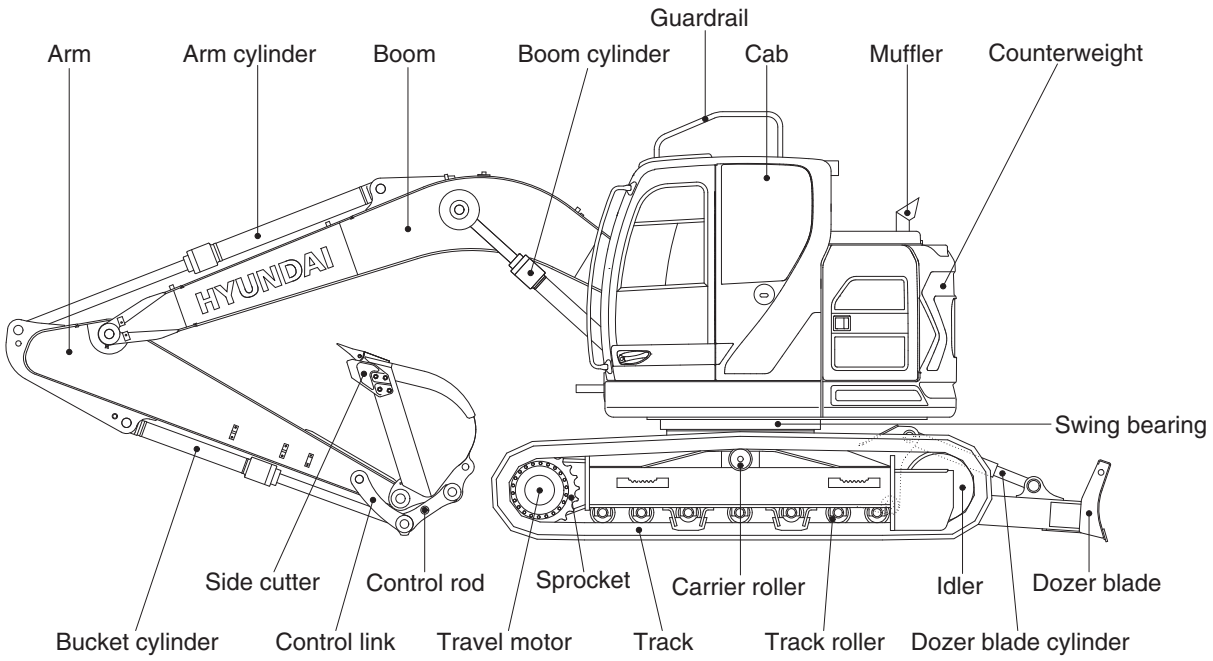
LIVE WITH SAFETY

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



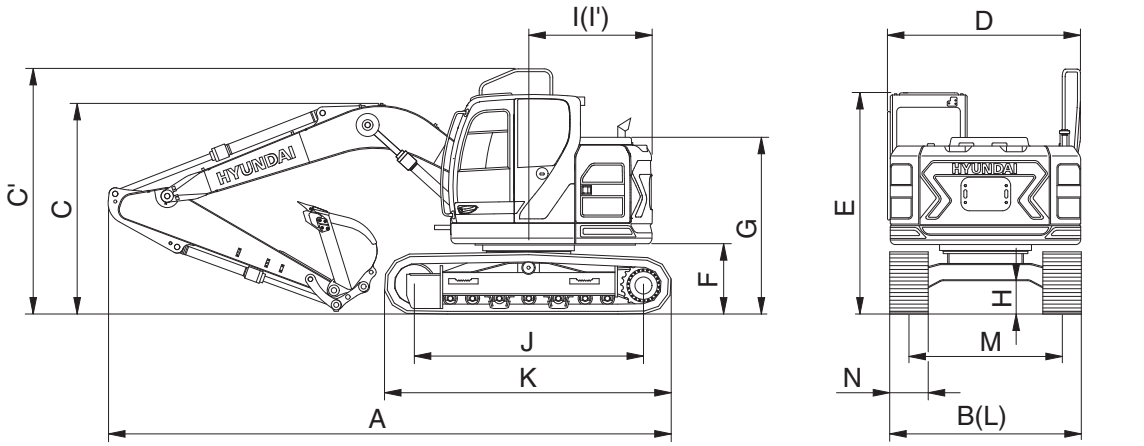


145ZF2SP01

2. SPECIFICATIONS

1) HX145 CR

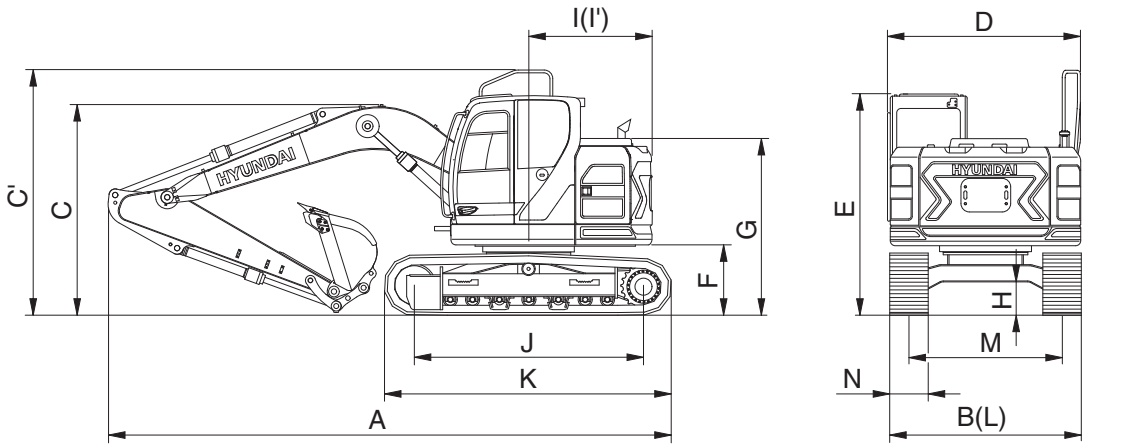
(1) 4.60 m (15' 1") boom and 1.9 m (6' 3"), 2.1 m (6' 11") arm



145ZF2SP02

Description		Unit	Specification	
			1.9 m (6' 3") arm	2.1 m (6' 11") arm
Operating weight		kg (lb)	15180 (33470)	15210 (33530)
Bucket capacity (SAE heaped), standard		m^3 (yd^3)	0.52 (0.68)	←
Overall length	A	mm (ft-in)	7290 (23' 11")	7310 (24' 0")
Overall width, with 600 mm shoe	B		2600 (8' 6")	←
Overall height	C		2630 (8' 8")	2710 (8' 11")
Overall height of guardrail	C'		3215 (10' 7")	←
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		2320 (7' 7")	←
Minimum ground clearance	H		440 (1' 5")	←
Rear-end distance	I		1500 (4' 11")	←
Rear-end swing radius	I'		1500 (4' 11")	←
Distance between tumblers	J		2910 (9' 7")	←
Undercarriage length	K		3618 (11' 8")	←
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)	3.3/5.5 (2.1/3.4)	←
Swing speed		rpm	11.2	←
Gradeability		Degree (%)	35 (70)	←
Ground pressure (600 mm shoe)		kgf/cm^2(psi)	0.40 (5.7)	0.40 (5.72)
Max traction force		kg (lb)	12000 (26455)	←

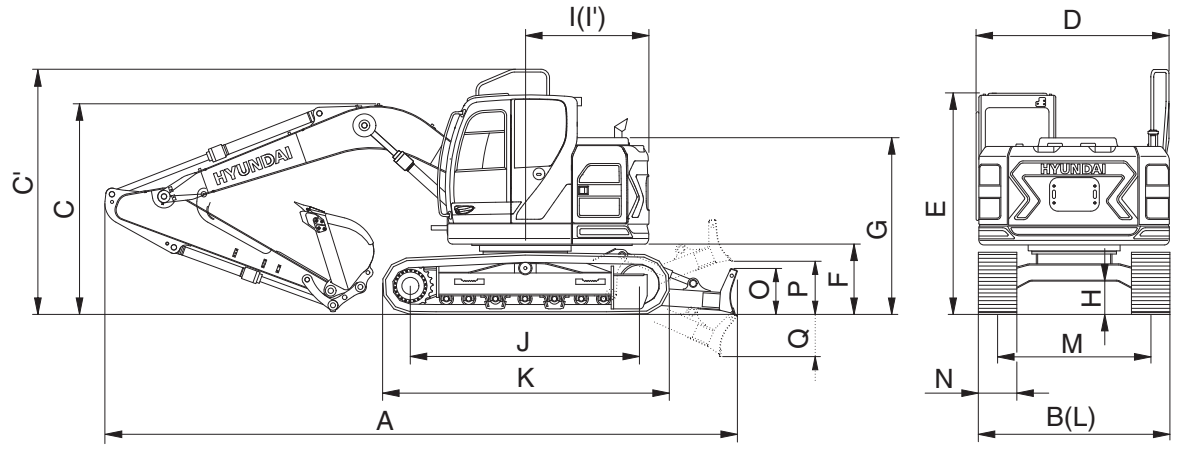
(2) 4.60 m (15' 1") boom and 2.50 m (8' 2"), 3.0 m (9' 10") arm



145ZF2SP02

Description		Unit	Specification	
			2.50 m (8' 2") arm	3.0 m (9' 10") arm
Operating weight		kg (lb)	15270 (33660)	15320 (33770)
Bucket capacity (SAE heaped), standard		m^3 (yd^3)	0.52 (0.68)	←
Overall length	A	mm (ft-in)	7270 (23' 10")	7210 (23' 8")
Overall width, with 600 mm shoe	B		2600 (8' 6")	←
Overall height	C		2860 (9' 5")	3210 (10' 6")
Overall height of guardrail	C'		3215 (10' 7")	←
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		2320 (7' 7")	←
Minimum ground clearance	H		440 (1' 5")	←
Rear-end distance	I		1500 (4' 11")	←
Rear-end swing radius	I'		1500 (4' 11")	←
Distance between tumblers	J		2910 (9' 7")	←
Undercarriage length	K		3618 (11' 8")	←
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)	3.3/5.5 (2.1/3.4)	←
Swing speed		rpm	11.2	←
Gradeability		Degree (%)	35 (70)	←
Ground pressure (600 mm shoe)		kgf/cm^2(psi)	0.40 (5.74)	0.40 (5.76)
Max traction force		kg (lb)	12000 (26455)	←

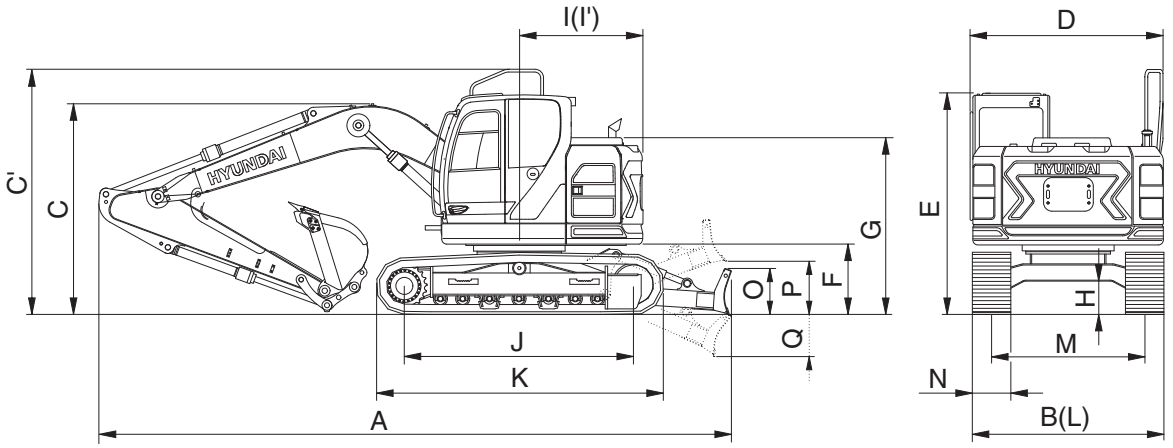
(3) 4.60 m (15' 1") boom and 1.9 m (6' 3"), 2.1 m (6' 11") arm with dozer



145ZF2SP03

Description		Unit	Specification	
			1.9 m (6' 3") arm	2.1 m (6' 11") arm
Operating weight		kg (lb)	16020 (35320)	16050 (35380)
Bucket capacity (SAE heaped), standard		m^3 (yd^3)	0.52 (0.68)	←
Overall length	A	mm (ft-in)	7840 (25' 9")	7860 (25' 9")
Overall width, with 600 mm shoe	B		2600 (8' 6")	←
Overall height	C		2630 (8' 8")	2710 (8' 11")
Overall height of guardrail	C'		3215 (10' 7")	←
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		2320 (7' 7")	←
Minimum ground clearance	H		440 (1' 5")	←
Rear-end distance	I		1500 (4' 11")	←
Rear-end swing radius	I'		1500 (4' 11")	←
Distance between tumblers	J		2910 (9' 7")	←
Undercarriage length	K		3618 (11' 8")	←
Undercarriage width	L		2600 (8' 6")	←
Track gauge	M		2000 (6' 7")	←
Track shoe width, standard	N		600 (24")	←
Height of blade	O		575 (1' 11")	←
Ground clearance of blade up	P		420 (1' 5")	←
Depth of blade down	Q		430 (1' 5")	←
Travel speed (low/high)		km/hr (mph)	3.3/5.5 (2.1/3.4)	←
Swing speed		rpm	11.2	←
Gradeability		Degree (%)	35 (70)	←
Ground pressure (600 mm shoe)		kgf/cm^2(psi)	0.42 (6.02)	0.42 (6.03)
Max traction force		kg (lb)	12000 (26455)	←

(4) 4.60 m (15' 1") boom and 2.50 m (8' 2"), 3.0 m (9' 10") arm with dozer

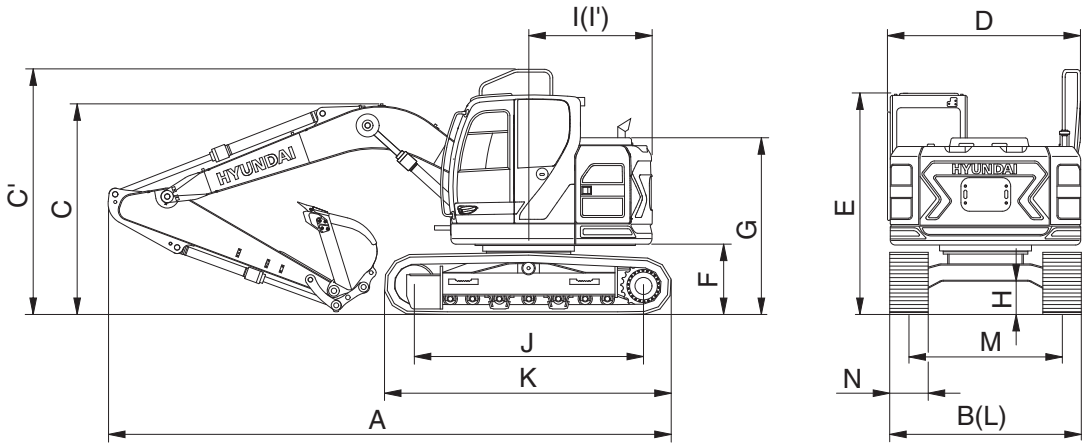


145ZF2SP03

Description		Unit	Specification	
			2.50 m (8' 2") arm	3.0 m (9' 10") arm
Operating weight		kg (lb)	16110 (35520)	16160 (35630)
Bucket capacity (SAE heaped), standard		m^3 (yd^3)	0.52 (0.68)	←
Overall length	A	mm (ft-in)	7820 (25' 8")	7760 (25' 6")
Overall width, with 600 mm shoe	B		2600 (8' 6")	←
Overall height	C		2860 (9' 5")	3210 (10' 6")
Overall height of guardrail	C'		3215 (10' 7")	←
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		2320 (7' 7")	←
Minimum ground clearance	H		440 (1' 5")	←
Rear-end distance	I		1500 (4' 11")	←
Rear-end swing radius	I'		1500 (4' 11")	←
Distance between tumblers	J		2910 (9' 7")	←
Undercarriage length	K		3618 (11' 8")	←
Undercarriage width	L		2600 (8' 6")	←
Track gauge	M		2000 (6' 7")	←
Track shoe width, standard	N		600 (24")	←
Height of blade	O		575 (1' 11")	←
Ground clearance of blade up	P		420 (1' 5")	←
Depth of blade down	Q		430 (1' 5")	←
Travel speed (low/high)		km/hr (mph)	3.3/5.5 (2.1/3.4)	←
Swing speed		rpm	11.2	←
Gradeability		Degree (%)	35 (70)	←
Ground pressure (600 mm shoe)		kgf/cm^2(psi)	0.43 (6.05)	0.43 (6.07)
Max traction force		kg (lb)	12000 (26455)	←

2) HX145 LCR

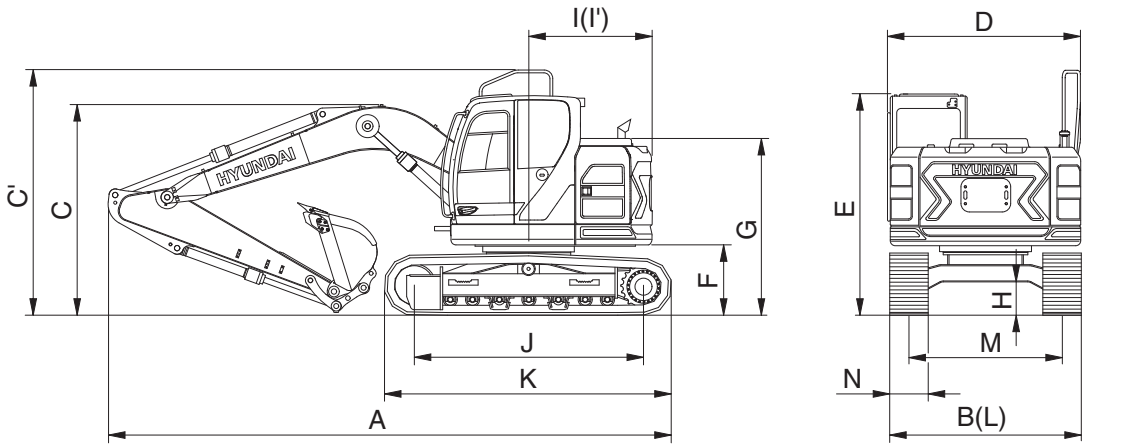
(1) 4.60 m (15' 1") boom and 1.9 m (6' 3"), 2.1 m (6' 11") arm



145ZF2SP02

Description		Unit	Specification	
			1.9 m (6' 3") arm	2.1 m (6' 11") arm
Operating weight		kg (lb)	15440 (34040)	15480 (34130)
Bucket capacity (SAE heaped), standard		m^3 (yd^3)	0.52 (0.68)	←
Overall length	A	mm (ft-in)	7380 (24' 3")	7400 (24' 3")
Overall width, with 600 mm shoe	B		2600 (8' 6")	←
Overall height	C		2630 (8' 8")	2710 (8' 11")
Overall height of guardrail	C'		3215 (10' 7")	←
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		2320 (7' 7")	←
Minimum ground clearance	H		440 (1' 5")	←
Rear-end distance	I		1500 (4' 11")	←
Rear-end swing radius	I'		1500 (4' 11")	←
Distance between tumblers	J		3090 (10' 2")	←
Undercarriage length	K		3798 (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)	3.3/5.5 (2.1/3.4)	←
Swing speed		rpm	11.2	←
Gradeability		Degree (%)	35 (70)	←
Ground pressure (600 mm shoe)		kgf/cm^2(psi)	0.39 (5.49)	0.39 (5.5)
Max traction force		kg (lb)	12000 (26455)	←

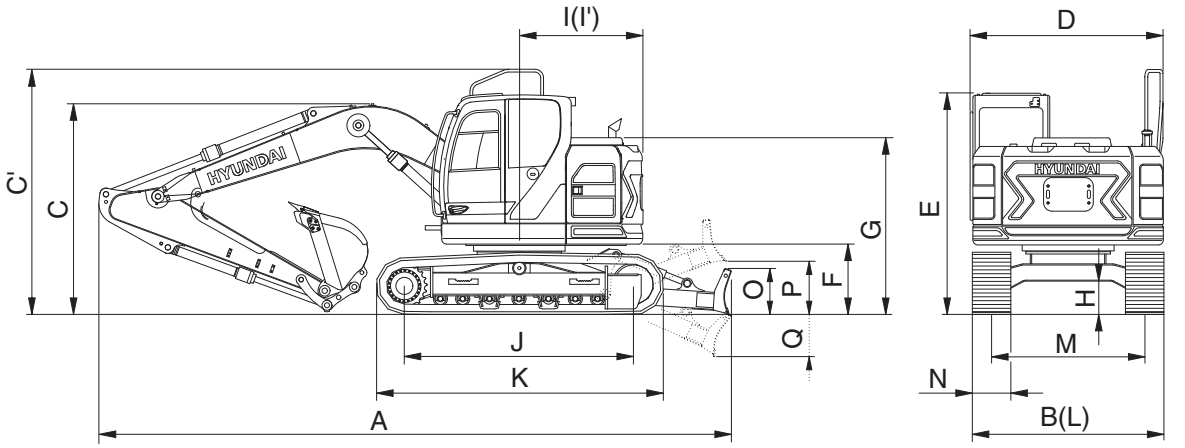
(2) 4.60 m (15' 1") boom and 2.50 m (8' 2"), 3.0 m (9' 10") arm



145ZF2SP02

Description		Unit	Specification	
			2.50 m (8' 2") arm	3.0 m (9' 10") arm
Operating weight		kg (lb)	15540 (34260)	15580 (34350)
Bucket capacity (SAE heaped), standard		m^3 (yd^3)	0.52 (0.68)	←
Overall length	A	mm (ft-in)	7360 (24' 2")	7300 (23' 11")
Overall width, with 600 mm shoe	B		2600 (8' 6")	←
Overall height	C		2860 (9' 5")	3210 (10' 6")
Overall height of guardrail	C'		3215 (10' 7")	←
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		2320 (7' 7")	←
Minimum ground clearance	H		440 (1' 5")	←
Rear-end distance	I		1500 (4' 11")	←
Rear-end swing radius	I'		1500 (4' 11")	←
Distance between tumblers	J		3090 (10' 2")	←
Undercarriage length	K		3798 (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)	3.3/5.5 (2.1/3.4)	←
Swing speed		rpm	11.2	←
Gradeability		Degree (%)	35 (70)	←
Ground pressure (600 mm shoe)		kgf/cm^2(psi)	0.39 (5.52)	0.39 (5.54)
Max traction force		kg (lb)	12000 (26455)	←

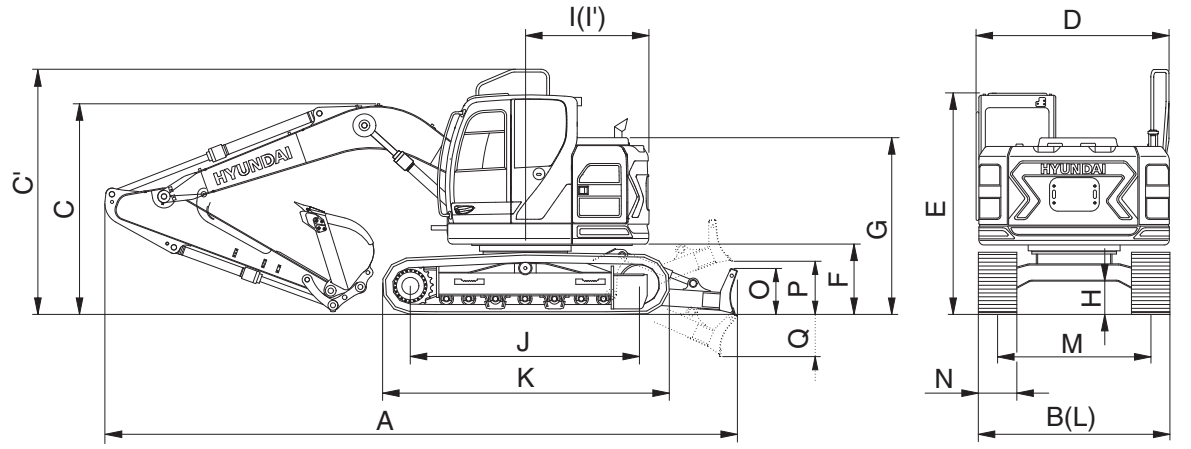
(3) 4.60 m (15' 1") boom and 1.9 m (6' 3"), 2.1 m (6' 11") arm with dozer



145ZF2SP03

Description		Unit	Specification	
			1.9 m (6' 3") arm	2.1 m (6' 11") arm
Operating weight		kg (lb)	16260 (35850)	16300 (35940)
Bucket capacity (SAE heaped), standard		m^3 (yd^3)	0.52 (0.68)	←
Overall length	A	mm (ft-in)	7840 (25' 9")	7860 (25' 9")
Overall width, with 600 mm shoe	B		2600 (8' 6")	←
Overall height	C		2630 (8' 8")	2710 (8' 11")
Overall height of guardrail	C'		3215 (10' 7")	←
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		2320 (7' 7")	←
Minimum ground clearance	H		440 (1' 5")	←
Rear-end distance	I		1500 (4' 11")	←
Rear-end swing radius	I'		1500 (4' 11")	←
Distance between tumblers	J		3090 (10' 2")	←
Undercarriage length	K		3798 (12' 6")	←
Undercarriage width	L		2600 (8' 6")	←
Track gauge	M		2000 (6' 7")	←
Track shoe width, standard	N		600 (24")	←
Height of blade	O		575 (1' 11")	←
Ground clearance of blade up	P		420 (1' 5")	←
Depth of blade down	Q		430 (1' 5")	←
Travel speed (low/high)		km/hr (mph)	3.3/5.5 (2.1/3.4)	←
Swing speed		rpm	11.2	←
Gradeability		Degree (%)	35 (70)	←
Ground pressure (600 mm shoe)		kgf/cm^2(psi)	0.41 (5.78)	0.41 (5.79)
Max traction force		kg (lb)	12000 (26455)	←

(4) 4.60 m (15' 1") boom and 2.50 m (8' 2"), 3.0 m (9' 10") arm with dozer

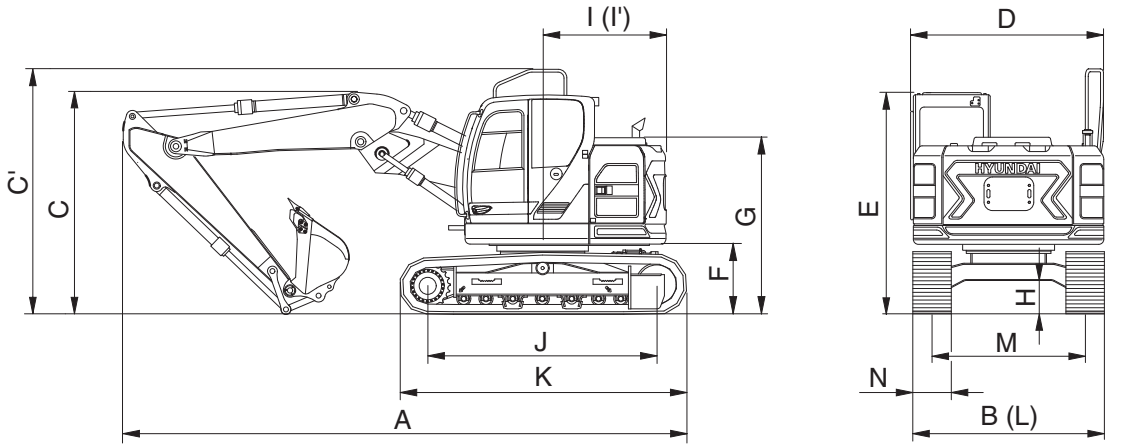


145ZF2SP03

Description		Unit	Specification	
			2.50 m (8' 2") arm	3.0 m (9' 10") arm
Operating weight		kg (lb)	16360 (36070)	16400 (36160)
Bucket capacity (SAE heaped), standard		m^3 (yd^3)	0.52 (0.68)	←
Overall length	A	mm (ft-in)	7820 (25' 8")	7760 (25' 6")
Overall width, with 600 mm shoe	B		2600 (8' 6")	←
Overall height	C		2860 (9' 5")	3210 (10' 6")
Overall height of guardrail	C'		3215 (10' 7")	←
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		2320 (7' 7")	←
Minimum ground clearance	H		440 (1' 5")	←
Rear-end distance	I		1500 (4' 11")	←
Rear-end swing radius	I'		1500 (4' 11")	←
Distance between tumblers	J		3090 (10' 2")	←
Undercarriage length	K		3798 (12' 6")	←
Undercarriage width	L		2600 (8' 6")	←
Track gauge	M		2000 (6' 7")	←
Track shoe width, standard	N		600 (24")	←
Height of blade	O		575 (1' 11")	←
Ground clearance of blade up	P		420 (1' 5")	←
Depth of blade down	Q		430 (1' 5")	←
Travel speed (low/high)		km/hr (mph)	3.3/5.5 (2.1/3.4)	←
Swing speed		rpm	11.2	←
Gradeability		Degree (%)	35 (70)	←
Ground pressure (600 mm shoe)		kgf/cm^2(psi)	0.41 (5.82)	0.41 (5.83)
Max traction force		kg (lb)	12000 (26455)	←

3) HX145 LCR 2-PIECE BOOM

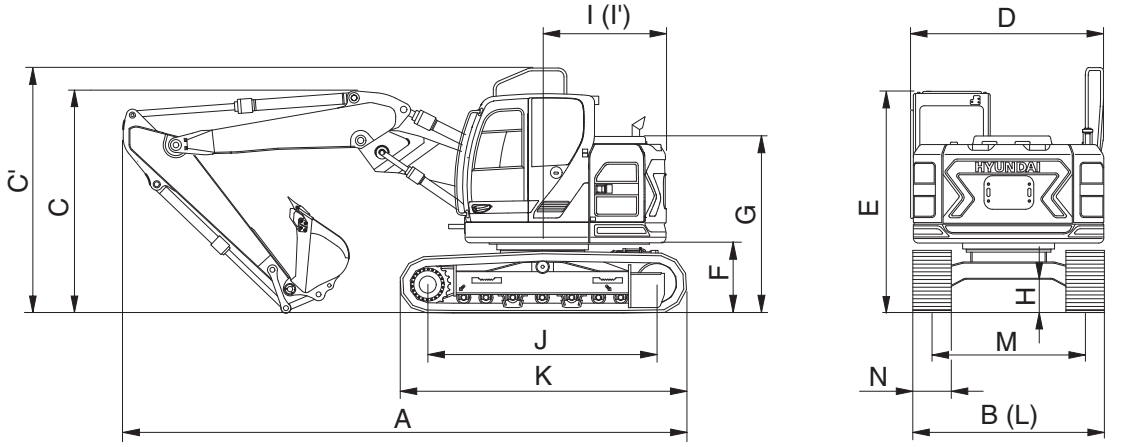
(1) 4.939 m (16' 2") 2-piece boom and 1.9 m (6' 3"), 2.1 m (6' 11") arm



145ZF2SP06

Description		Unit	Specification	
			1.9 m (6' 3") arm	2.1 m (6' 11") arm
Operating weight		kg (lb)	15770 (34770)	15800 (34830)
Bucket capacity (SAE heaped), standard		m^3 (yd^3)	0.52 (0.68)	←
Overall length	A	mm (ft-in)	7650 (25' 1")	7720 (25' 4")
Overall width, with 600 mm shoe	B		2600 (8' 6")	←
Overall height	C		2865 (9' 5")	2870 (9' 5")
Overall height of guardrail	C'		3215 (10' 7")	←
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		2320 (7' 7")	←
Minimum ground clearance	H		440 (1' 5")	←
Rear-end distance	I		1500 (4' 11")	←
Rear-end swing radius	I'		1500 (4' 11")	←
Distance between tumblers	J		3090 (10' 2")	←
Undercarriage length	K		3798 (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)	3.3/5.5 (2.1/3.4)	←
Swing speed		rpm	11.2	←
Gradeability		Degree (%)	35 (70)	←
Ground pressure (600 mm shoe)		kgf/cm^2(psi)	0.39 (5.61)	0.39 (5.62)
Max traction force		kg (lb)	12000 (26455)	←

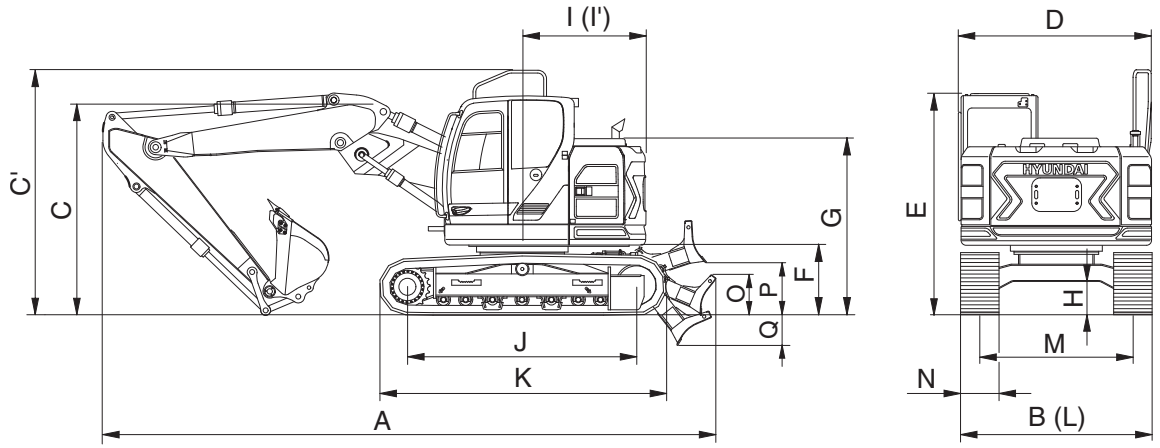
(2) 4.939 m (16' 2") 2-piece boom and 2.50 m (8' 2") arm



145ZF2SP06

Description		Unit	Specification
Operating weight		kg (lb)	15860 (34970)
Bucket capacity (SAE heaped), standard		m^3 (yd^3)	0.52 (0.68)
Overall length	A	mm (ft-in)	7690 (25' 3")
Overall width, with 600 mm shoe	B		2600 (8' 6")
Overall height	C		2900 (9' 6")
Overall height of guardrail	C'		3215 (10' 7")
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		2320 (7' 7")
Minimum ground clearance	H		440 (1' 5")
Rear-end distance	I		1500 (4' 11")
Rear-end swing radius	I'		1500 (4' 11")
Distance between tumblers	J		3090 (10' 2")
Undercarriage length	K		3798 (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)	3.3/5.5 (2.1/3.4)
Swing speed		rpm	11.2
Gradeability		Degree (%)	35 (70)
Ground pressure (600 mm shoe)		kgf/cm^2(psi)	0.40 (5.64)
Max traction force		kg (lb)	12000 (26455)

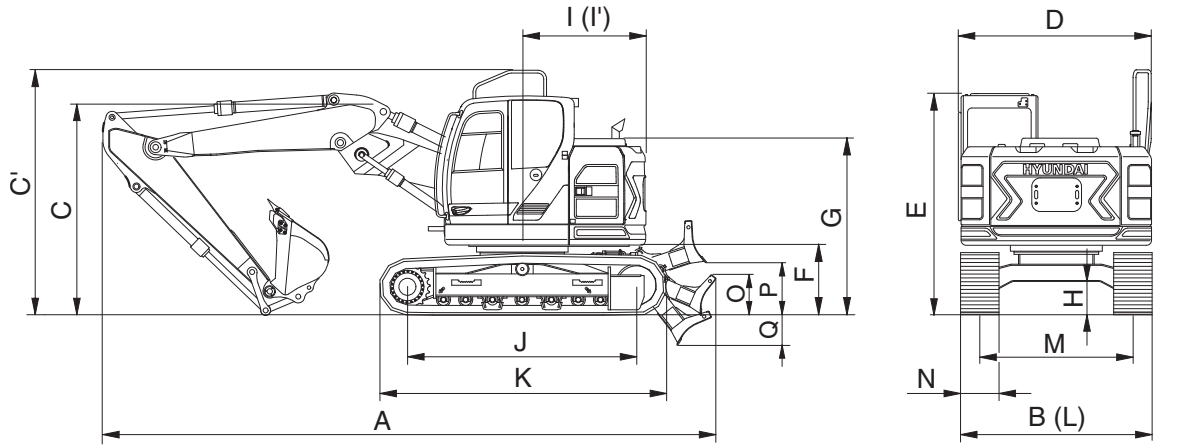
(3) 4.939 m (16' 2") 2-piece boom and 1.9 m (6' 3"), 2.1m (6' 11") arm with dozer



145ZF2SP07

Description		Unit	Specification	
			1.9 m (6' 3") arm	2.1 m (6' 11") arm
Operating weight		kg (lb)	16580 (36550)	16620 (36640)
Bucket capacity (SAE heaped), standard		m^3 (yd^3)	0.52 (0.68)	←
Overall length	A	mm (ft-in)	8110 (26' 7")	8180 (26' 10")
Overall width, with 600 mm shoe	B		2600 (8' 6")	←
Overall height	C		2865 (9' 5")	2870 (9' 5")
Overall height of guardrail	C'		3215 (10' 7")	←
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		2320 (7' 7")	←
Minimum ground clearance	H		440 (1' 5")	←
Rear-end distance	I		1500 (4' 11")	←
Rear-end swing radius	I'		1500 (4' 11")	←
Distance between tumblers	J		3090 (10' 2")	←
Undercarriage length	K		3798 (12' 6")	←
Undercarriage width	L		2600 (8' 6")	←
Track gauge	M		2000 (6' 7")	←
Track shoe width, standard	N		600 (24")	←
Height of blade	O		575 (1' 11")	←
Ground clearance of blade up	P		410 (1' 4")	←
Depth of blade down	Q		450 (1' 6")	←
Travel speed (low/high)		km/hr (mph)	3.3/5.5 (2.1/3.4)	←
Swing speed		rpm	11.2	←
Gradeability		Degree (%)	35 (70)	←
Ground pressure (600 mm shoe)		kgf/cm^2(psi)	0.41 (5.89)	0.42 (5.91)
Max traction force		kg (lb)	12000 (26455)	←

(4) 4.939 m (16' 2") 2-piece boom and 2.50 m (8' 2") arm with dozer

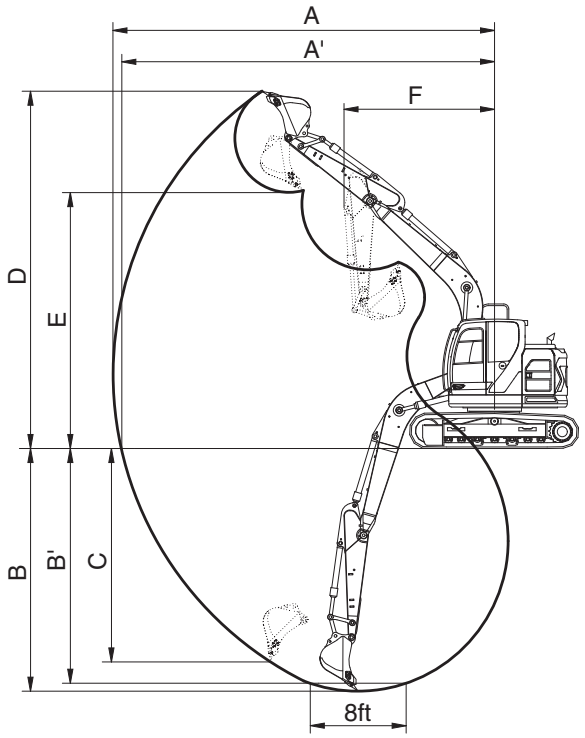


145ZF2SP07

Description		Unit	Specification
Operating weight		kg (lb)	16680 (36770)
Bucket capacity (SAE heaped), standard		m^3 (yd^3)	0.52 (0.68)
Overall length	A	mm (ft-in)	8150 (26' 9")
Overall width, with 600 mm shoe	B		2600 (8' 6")
Overall height	C		2900 (9' 6")
Overall height of guardrail	C'		3215 (10' 7")
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		2320 (7' 7")
Minimum ground clearance	H		440 (1' 5")
Rear-end distance	I		1500 (4' 11")
Rear-end swing radius	I'		1500 (4' 11")
Distance between tumblers	J		3090 (10' 2")
Undercarriage length	K		3798 (12' 6")
Undercarriage width	L		2600 (8' 6")
Track gauge	M		2000 (6' 7")
Track shoe width, standard	N		600 (24")
Height of blade	O		575 (1' 11")
Ground clearance of blade up	P		410 (1' 4")
Depth of blade down	Q		450 (1' 6")
Travel speed (low/high)		km/hr (mph)	3.3/5.5 (2.1/3.4)
Swing speed		rpm	11.2
Gradeability		Degree (%)	35 (70)
Ground pressure (600 mm shoe)		kgf/cm^2(psi)	0.42 (5.93)
Max traction force		kg (lb)	12000 (26455)

3. WORKING RANGE

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

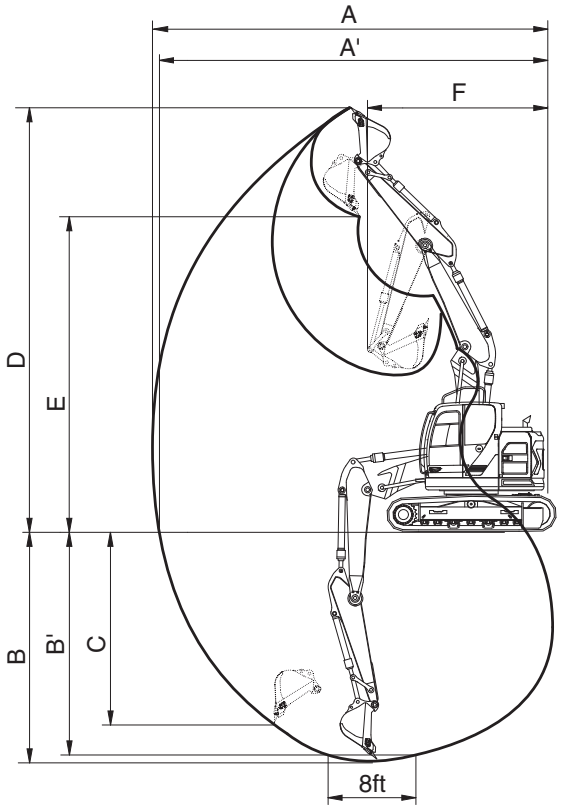


145ZF2SP04

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 [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) 4.939 M (16' 2") 2-PIECE BOOM



145ZF2SP08

Description		1.90 m (6' 3") Arm	2.10 m (6' 11") Arm	2.50 m (8' 2") Arm
Max digging reach	A	8000 mm (26' 3")	8270 mm (27' 2")	8675 mm (28' 6")
Max digging reach on ground	A'	7850 mm (25' 9")	8130 mm (26' 8")	8540 mm (28' 0")
Max digging depth	B	4985 mm (16' 4")	5175 mm (17' 0")	5580 mm (18' 4")
Max digging depth (8ft level)	B'	4870 mm (16' 0")	5060 mm (16' 7")	5470 mm (17'11")
Max vertical wall digging depth	C	4030 mm (13' 3")	4555 mm (14'11")	5015 mm (16' 5")
Max digging height	D	9000 mm (29' 6")	9340 mm (30' 8")	9715 mm (31'10")
Max dumping height	E	6555 mm (21' 6")	6850 mm (22' 6")	7230 mm (23' 9")
Min swing radius	F	2220 mm (7' 3")	2300 mm (7' 7")	2250 mm (7' 5")
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

4. WEIGHT

Item	HX145LCR		HX145 LCRD	
	kg	lb	kg	lb
Upper structure assembly				
· Main frame weld assembly	1300	2870	1266	2791
· Engine assembly	558	1230	←	←
· 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				
· Track frame weld assembly	1640	3620	1713★1 1771★2	3777★1 3904★2
· Swing bearing	228	503	←	←
· Travel motor assembly	240	530	←	←
· Turning joint	50	110	←	←
· Track recoil spring	93	206	←	←
· Idler	105	231	←	←
· Carrier roller	20	45	←	←
· Track roller	35	80	←	←
· Sprocket	40	88	←	←
· Track-chain assembly (600 ㎜ standard triple grouser shoe)	1804	3977	←	←
· Dozer blade assembly	-	-	519	1144
Front attachment assembly				
· 4.6 m boom assembly	830	1830	←	←
· 2-piece boom assembly	1018	2244	←	←
· 2.5 m arm assembly	435	960	←	←
· 0.52 ㎥ 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	-	-	44	97

★1 HX145CRD ★2 HX145LCRD

※ This information is different with operating and transportation weight because it is not including harness, pipe, oil, fuel so on.

※ Refer to Transportation for actual weight information and Specifications for operating weight.

5. LIFTING CAPACITIES

1) HX145LCR MONO BOOM

Model	Boom Type	Boom Length	Arm Length	Counterweight Weight (kg)	Shoe Width	Dozer		Outrigger	
						Front	Rear	Front	Rear
HX145LCR	Mono	4600	1900	2800	600	-	-	-	-

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

Lift-point height (A)		Lift-point radius (B)								At max. reach		
		1.5 m (4.9 ft)		3.0 m (9.8 ft)		4.5 m (14.8 ft)		6.0 m (19.7 ft)		Capacity		Reach
												m (ft)
7.5m	kg									*5160	*5160	2.27
24.6ft	lb									*11380	*11380	(7.5)
6.0m	kg			*5270	*5270	*4160	3760			*3510	*3510	4.63
19.7ft	lb			*11620	*11620	*9170	8290			*7740	*7740	(15.2)
4.5m	kg			*6050	*6050	*4910	3730			*3160	2500	5.73
14.8ft	lb			*13340	*13340	*10820	8220			*6970	5510	(18.8)
3.0m	kg					*5560	3540	3760	2280	*3130	2100	6.30
9.8ft	lb					*12260	7800	8290	5030	*6900	4630	(20.7)
1.5m	kg					5710	3310	3670	2200	3270	1960	6.47
4.9ft	lb					12590	7300	8090	4850	7210	4320	(21.2)
0.0m	kg			*5830	5770	5560	3180	3610	2140	3380	2010	6.29
0.0ft	lb			*12850	12720	12260	7010	7960	4720	7450	4430	(20.6)
-1.5m	kg			*7860	5810	5530	3160			3890	2300	5.71
-4.9ft	lb			*17330	12810	12190	6970			8580	5070	(18.7)
-3.0m	kg			*5420	*5420	*3560	3280			*3380	3200	4.58
-9.8ft	lb			*11950	*11950	*7850	7230			*7450	7050	(15.0)

※ Note

1. Lifting capacity are based on SAE J1097 and ISO 10567.
2. Lifting capacity of the ROBEX series does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.
3. The lift-point is bucket pivot mounting pin on the arm (without bucket mass).
4. *indicates load limited by hydraulic capacity.

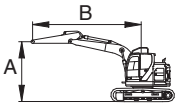
※ Lifting capacities are based upon a standard machine conditions.
Lifting capacities will vary with different work tools, ground conditions and attachments.
The difference between the weight of a work tool attachment must be subtracted.
Consult your Hyundai dealer regarding the lifting capacities for specific work tools and attachments.

⚠ Failure to comply to the rated load can cause possible personal injury or property damage.
Make adjustments to the rated load as necessary for non-standard configurations.

Unit : mm

Model	Boom	Boom	Arm	Counterweight	Shoe	Dozer		Outrigger	
	Type	Length	Length	Weight (kg)	Width	Front	Rear	Front	Rear
HX145LCR	Mono	4600	2100	2800	600	-	-	-	-

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

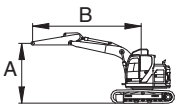


Lift-point height (A)		Lift-point radius (B)								At max. reach		
		1.5 m (4.9 ft)		3.0 m (9.8 ft)		4.5 m (14.8 ft)		6.0 m (19.7 ft)		Capacity		Reach
												m (ft)
7.5m	kg									*4600	*4600	2.74
24.6ft	lb									*10140	*10140	(9.0)
6.0m	kg			*4950	*4950	*4460	3800			*3360	3310	4.87
19.7ft	lb			*10910	*10910	*9830	8380			*7410	7300	(16.0)
4.5m	kg			*5330	*5330	*4730	3750			*3070	2370	5.93
14.8ft	lb			*11750	*11750	*10430	8270			*6770	5220	(19.4)
3.0m	kg			*7860	6620	*5400	3550	3760	2280	*3050	2010	6.48
9.8ft	lb			*17330	14590	*11900	7830	8290	5030	*6720	4430	(21.2)
1.5m	kg					5720	3310	3660	2190	3140	1880	6.65
4.9ft	lb					12610	7300	8070	4830	6920	4140	(21.8)
0.0m	kg			*6280	5730	5540	3160	3590	2120	3220	1920	6.47
0.0ft	lb			*13850	12630	12210	6970	7910	4670	7100	4230	(21.2)
-1.5m	kg	*5280	*5280	*8140	5750	5500	3120			3680	2170	5.90
-4.9ft	lb	*11640	*11640	*17950	12680	12130	6880			8110	4780	(19.4)
-3.0m	kg			*5850	*5850	*4010	3210			*3450	2940	4.83
-9.8ft	lb			*12900	*12900	*8840	7080			*7610	6480	(15.8)

Unit : mm

Model	Boom	Boom	Arm	Counterweight	Shoe	Dozer		Outrigger	
	Type	Length	Length	Weight (kg)	Width	Front	Rear	Front	Rear
HX145LCR	Mono	4600	2500	2800	600	-	-	-	-

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

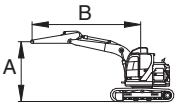


Lift-point height (A)		Lift-point radius (B)								At max. reach		
		1.5 m (4.9 ft)		3.0 m (9.8 ft)		4.5 m (14.8 ft)		6.0 m (19.7 ft)		Capacity		Reach
												m (ft)
7.5m	kg			*4060	*4060					*2910	*2910	3.63
24.6ft	lb			*8950	*8950					*6420	*6420	(11.9)
6.0m	kg					*3820	*3820			*2260	*2260	5.42
19.7ft	lb					*8420	*8420			*4980	*4980	(17.8)
4.5m	kg			*3950	*3950	*4310	3810	*3330	2360	*2070	*2070	6.38
14.8ft	lb			*8710	*8710	*9500	8400	*7340	5200	*4560	*4560	(20.9)
3.0m	kg			*7130	6800	*5090	3590	3780	2290	*2040	1810	6.90
9.8ft	lb			*15720	14990	*11220	7910	8330	5050	*4500	3990	(22.6)
1.5m	kg			*8100	6020	5740	3320	3660	2180	*2130	1700	7.06
4.9ft	lb			*17860	13270	12650	7320	8070	4810	*4700	3750	(23.1)
0.0m	kg			*6750	5690	5530	3140	3570	2100	*2350	1730	6.89
0.0ft	lb			*14880	12540	12190	6920	7870	4630	*5180	3810	(22.6)
-1.5m	kg	*4740	*4740	*8620	5660	5450	3070	3540	2070	*2830	1920	6.36
-4.9ft	lb	*10450	*10450	*19000	12480	12020	6770	7800	4560	*6240	4230	(20.9)
-3.0m	kg	*8830	*8830	*6640	5780	*4620	3130			*3350	2470	5.38
-9.8ft	lb	*19470	*19470	*14640	12740	*10190	6900			*7390	5450	(17.6)

Unit : mm

Model	Boom	Boom	Arm	Counterweight	Shoe	Dozer		Outrigger	
	Type	Length	Length	Weight (kg)	Width	Front	Rear	Front	Rear
HX145LCR	Mono	4600	3000	2800	600	-	-	-	-

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



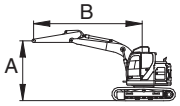
Lift-point height (A)		Lift-point radius (B)										At max. reach		
		1.5 m (4.9 ft)		3.0 m (9.8 ft)		4.5 m (14.8 ft)		6.0 m (19.7 ft)		7.5 m (24.6 ft)		Capacity		Reach
														m (ft)
7.5m	kg											*2300	*2300	4.48
24.6ft	lb											*5070	*5070	(14.7)
6.0m	kg					*3280	*3280	*1920	*1920			*1900	*1900	6.01
19.7ft	lb					*7230	*7230	*4230	*4230			*4190	*4190	(19.7)
4.5m	kg					*3450	*3450	*3230	2410			*1760	*1760	6.89
14.8ft	lb					*7610	*7610	*7120	5310			*3880	*3880	(22.6)
3.0m	kg			*5250	*5250	*4630	3660	3820	2320			*1750	1630	7.37
9.8ft	lb			*11570	*11570	*10210	8070	8420	5110			*3860	3590	(24.2)
1.5m	kg			*8650	6220	*5600	3380	3680	2200	*1910	1540	*1820	1530	7.52
4.9ft	lb			*19070	13710	*12350	7450	8110	4850	*4210	3400	*4010	3370	(24.7)
0.0m	kg			*7520	5740	5550	3160	3560	2090			*2000	1550	7.36
0.0ft	lb			*16580	12650	12240	6970	7850	4610			*4410	3420	(24.1)
-1.5m	kg	*4280	*4280	*9100	5620	5430	3050	3500	2040			*2360	1700	6.87
-4.9ft	lb	*9440	*9440	*20060	12390	11970	6720	7720	4500			*5200	3750	(22.5)
-3.0m	kg	*7420	*7420	*7510	5680	*5160	3060					*3150	2090	5.97
-9.8ft	lb	*16360	*16360	*16560	12520	*11380	6750					*6940	4610	(19.6)
-4.5m	kg			*4370	*4370							*2550	*2550	4.42
-14.8ft	lb			*9630	*9630							*5620	*5620	(14.5)

2) HX145LCR 2-PIECE BOOM

Unit : mm

Model	Boom Type	Boom Length	Arm Length	Counterweight Weight (kg)	Shoe Width	Dozer Front	Dozer Rear	Outrigger Front	Outrigger Rear
HX145LCR	2PCS	4939	1900	2800	600	-	-	-	-

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



Lift-point height (A)		Lift-point radius (B) 3.0 m (9.8 ft)		4.5 m (14.8 ft)		6.0 m (19.7 ft)		At max. reach Capacity		Reach
										m (ft)
7.5m	kg	*6340	*6340					*5810	*5810	3.21
24.6ft	lb	*13980	*13980					*12810	*12810	(10.5)
6.0m	kg	*5610	*5610	*5140	3830			*4390	3030	5.14
19.7ft	lb	*12370	*12370	*11330	8440			*9680	6680	(16.9)
4.5m	kg	*6910	*6910	*5450	3730	3860	2350	3690	2240	6.15
14.8ft	lb	*15230	*15230	*12020	8220	8510	5180	8140	4940	(20.2)
3.0m	kg			5970	3500	3790	2280	3190	1920	6.69
9.8ft	lb			13160	7720	8360	5030	7030	4230	(21.9)
1.5m	kg			5700	3270	3680	2190	3020	1800	6.85
4.9ft	lb			12570	7210	8110	4830	6660	3970	(22.5)
0.0m	kg			5550	3140	3610	2120	3100	1840	6.68
0.0ft	lb			12240	6920	7960	4670	6830	4060	(21.9)
-1.5m	kg	*9370	5770	5520	3120	3610	2120	3500	2070	6.13
-4.9ft	lb	*20660	12720	12170	6880	7960	4670	7720	4560	(20.1)

※ Note

1. Lifting capacity are based on SAE J1097 and ISO 10567.
2. Lifting capacity of the ROBEX series does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.
3. The lift-point is bucket pivot mounting pin on the arm (without bucket mass).
4. *indicates load limited by hydraulic capacity.

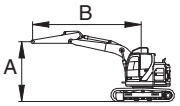
※ Lifting capacities are based upon a standard machine conditions.
Lifting capacities will vary with different work tools, ground conditions and attachments.
The difference between the weight of a work tool attachment must be subtracted.
Consult your Hyundai dealer regarding the lifting capacities for specific work tools and attachments.

⚠ Failure to comply to the rated load can cause possible personal injury or property damage.
Make adjustments to the rated load as necessary for non-standard configurations.

Unit : mm

Model	Boom	Boom	Arm	Counterweight	Shoe	Dozer		Outrigger	
	Type	Length	Length	Weight (kg)	Width	Front	Rear	Front	Rear
HX145LCR	2PCS	4939	2100	2800	600	-	-	-	-

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

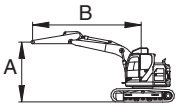


Lift-point height (A)		Lift-point radius (B)						At max. reach		
		3.0 m (9.8 ft)		4.5 m (14.8 ft)		6.0 m (19.7 ft)		Capacity		Reach
										m (ft)
7.5m	kg	*5810	*5810					*5300	*5300	3.58
24.6ft	lb	*12810	*12810					*11680	*11680	(11.7)
6.0m	kg			*4900	3850			*4170	2830	5.38
19.7ft	lb			*10800	8490			*9190	6240	(17.6)
4.5m	kg	*6190	*6190	*5260	3750	3870	2360	3510	2130	6.35
14.8ft	lb	*13650	*13650	*11600	8270	8530	5200	7740	4700	(20.8)
3.0m	kg			5980	3510	3790	2280	3050	1830	6.87
9.8ft	lb			13180	7740	8360	5030	6720	4030	(22.5)
1.5m	kg			5700	3260	3670	2180	2890	1720	7.03
4.9ft	lb			12570	7190	8090	4810	6370	3790	(23.1)
0.0m	kg			5530	3120	3590	2100	2960	1750	6.86
0.0ft	lb			12190	6880	7910	4630	6530	3860	(22.5)
-1.5m	kg	*9130	5710	5490	3080	3570	2090	3320	1950	6.33
-4.9ft	lb	*20130	12590	12100	6790	7870	4610	7320	4300	(20.8)
-3.0m	kg			5570	3150					
-9.8ft	lb			12280	6940					

Unit : mm

Model	Boom	Boom	Arm	Counterweight	Shoe	Dozer		Outrigger	
	Type	Length	Length	Weight (kg)	Width	Front	Rear	Front	Rear
HX145LCR	2PCS	4939	2500	2800	600	-	-	-	-

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

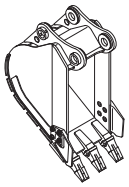
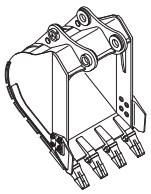
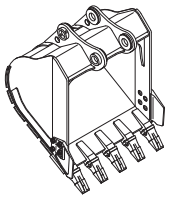


Lift-point height (A)		Lift-point radius (B)								At max. reach		
		3.0 m (9.8 ft)		4.5 m (14.8 ft)		6.0 m (19.7 ft)		7.5 m (24.6 ft)		Capacity		Reach
												m (ft)
7.5m	kg									*3570	*3570	4.33
24.6ft	lb									*7870	*7870	(14.2)
6.0m	kg			*4450	3920					*2910	2440	5.90
19.7ft	lb			*9810	8640					*6420	5380	(19.4)
4.5m	kg	*4440	*4440	*4860	3800	3900	2380			*2690	1900	6.80
14.8ft	lb	*9790	*9790	*10710	8380	8600	5250			*5930	4190	(22.3)
3.0m	kg	*8480	6640	*5820	3550	3800	2290			*2640	1660	7.28
9.8ft	lb	*18700	14640	*12830	7830	8380	5050			*5820	3660	(23.9)
1.5m	kg			5720	3280	3670	2170			2640	1560	7.43
4.9ft	lb			12610	7230	8090	4780			5820	3440	(24.4)
0.0m	kg	*4590	*4590	5510	3100	3560	2080			2700	1580	7.27
0.0ft	lb	*10120	*10120	12150	6830	7850	4590			5950	3480	(23.9)
-1.5m	kg	*8330	5600	5430	3030	3520	2040			2980	1740	6.78
-4.9ft	lb	*18360	12350	11970	6680	7760	4500			6570	3840	(22.2)
-3.0m	kg	*8520	5720	5480	3080							
-9.8ft	lb	*18780	12610	12080	6790							

6. BUCKET SELECTION GUIDE

1) HX145 LCR

(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					
					4.6 m (15' 1") Mono boom				4.9 m (16' 1") Adjust 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")	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)	750 mm (29.5")	850 mm (33.5")	410 kg (900 lb)	●	●	●	⊙	●	●
0.46 m³ (0.60 yd³)	0.40 m³ (0.52 yd³)	840 mm (33.1")	940 mm (37.0")	435 kg (960 lb)	●	●	●	○	●	⊙
0.52 m³ (0.68 yd³)	0.45 m³ (0.59 yd³)	915 mm (36.0")	1015 mm (40.0")	460 kg (1010 lb)	●	●	●	X	⊙	⊙
※0.58 m³ (0.76 yd³)	0.50 m³ (0.65 yd³)	1000 mm (39.4")	1100 mm (43.3")	480 kg (1060 lb	●	●	⊙	X	⊙	○
0.65 m³ (0.85 yd³)	0.55 m³ (0.72 yd³)	1105 mm (43.5")	1205 mm (47.4")	500 kg (1100 lb)	⊙	⊙	○	X	○	X
0.71 m³ (0.93 yd³)	0.60 m³ (0.78 yd³)	1190 mm (46.9")	1290 mm (50.8")	540 kg (1190 lb)	○	○	X	X	X	X

※ : Standard bucket

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

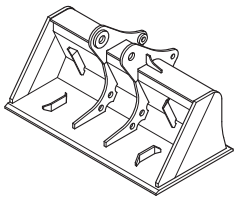
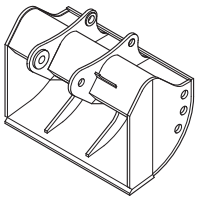
⊙ Applicable for materials with density of 1600 kg/m³ (2700 lb/yd³) or less

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

X Not recommended

※ These recommendations are for general conditions and average use.
Work tools and ground conditions have effects on machine performance.
Select an optimum combination according to the working conditions and the type of work that is being done.
Consult your Hyundai dealer for information on selecting the correct boom-arm-bucket combination.

(2) Special bucket

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

Capacity		Width		Weight	Recommendation				
					4.6 m (15' 1") Mono boom			4.9 m (16' 9") Adjust 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")	2.1 m arm (6' 11")	2.5 m arm (8' 2")
◎ 0.55 m³ (0.72 yd³)	0.45 m³ (0.59 yd³)	1800 mm (70.9")	-	585 kg (1290 lb)	⊙	○	○	⊙	○
★ 0.45 m³ (0.59 yd³)	0.40 m³ (0.52 yd³)	1520 mm (59.8")	-	410 kg (900 lb)	●	●	⊙	●	⊙

◎ : Slope finishing bucket

★ : Ditch cleaning bucket

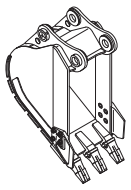
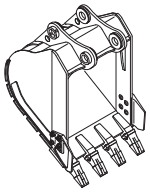
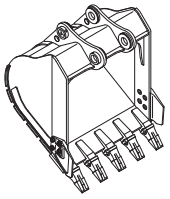
● Applicable for materials with density of 2000 kg/m³ (3370 lb/yd³) or less

⊙ 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) HX140 LCR 2-PIECE 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") adjust 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)	750 mm (29.5")	850 mm (33.5")	410 kg (900 lb)	●	●	⊙
0.46 m³ (0.60 yd³)	0.40 m³ (0.52 yd³)	840 mm (33.1")	940 mm (37.0")	435 kg (960 lb)	⊙	⊙	■
0.52 m³ (0.68 yd³)	0.45 m³ (0.59 yd³)	915 mm (36.0")	1015 mm (40.0")	460 kg (1010 lb)	■	■	▲
※0.58 m³ (0.76 yd³)	0.50 m³ (0.65 yd³)	1000 mm (39.4")	1110 mm (43.7")	480 kg (1060 lb)	■	▲	▲
0.65 m³ (0.85 yd³)	0.55 m³ (0.72 yd³)	1105 mm (43.5")	1205 mm (47.4")	500 kg (1100 lb)	▲	▲	X
0.71 m³ (0.93 yd³)	0.60 m³ (0.78 yd³)	1190 mm (46.9")	1290 mm (50.8")	540 kg (1190 lb)	▲	X	X

※ : Standard bucket

● Applicable for materials with density of 2100 kg/m³ (3500 lb/yd³) or less

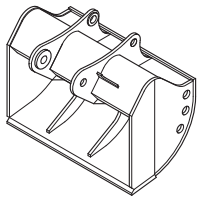
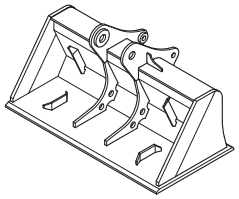
⊙ Applicable for materials with density of 1800 kg/m³ (3000 lb/yd³) or less

■ Applicable for materials with density of 1500 kg/m³ (2500 lb/yd³) or less

▲ Applicable for materials with density of 1200 kg/m³ (2000 lb/yd³) or less

X Not recommended

(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

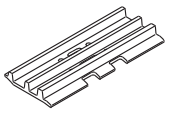
● Applicable for materials with density of 2100 kg/m³ (3500 lb/yd³) or less
⊙ Applicable for materials with density of 1800 kg/m³ (3000 lb/yd³) or less
■ Applicable for materials with density of 1500 kg/m³ (2500 lb/yd³) or less
▲ Applicable for materials with density of 1200 kg/m³ (2000 lb/yd³) or less
X Not recommended

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 		
HX145CR	Shoe width	mm (in)	500 (20)	600 (24)	700 (28)
	Operating weight	kg (lb)	15050 (33180)	15270 (33660)	15480 (34130)
	Ground pressure	kgf/cm^2 (psi)	0.48 (6.79)	0.4 (5.74)	0.35 (4.99)
	Overall width	mm (ft-in)	2500 (8' 2")	2600 (8' 6")	2700 (8' 10")
HX145CR (with dozer)	Shoe width	mm (in)	500 (20)	600 (24)	700 (28)
	Operating weight	kg (lb)	15880 (35010)	16110 (35520)	16330 (36000)
	Ground pressure	kgf/cm^2 (psi)	0.50 (7.16)	0.43 (6.06)	0.37 (5.26)
	Overall width	mm (ft-in)	2500 (8' 2")	2600 (8' 6")	2700 (8' 10")
HX145LCR	Shoe width	mm (in)	500 (20)	600 (24)	700 (28)
	Operating weight	kg (lb)	15310 (33750)	15540 (34260)	15750 (34720)
	Ground pressure	kgf/cm^2 (psi)	0.46 (6.53)	0.39 (5.52)	0.34 (4.8)
	Overall width	mm (ft-in)	2500 (8' 2")	2600 (8' 6")	2700 (8' 10")
HX145LCR (with dozer)	Shoe width	mm (in)	500 (20)	600 (24)	700 (28)
	Operating weight	kg (lb)	16120 (35540)	16360 (36070)	16580 (36550)
	Ground pressure	kgf/cm^2 (psi)	0.48 (6.88)	0.41 (5.82)	0.36 (5.05)
	Overall width	mm (ft-in)	2500 (8' 2")	2600 (8' 6")	2700 (8' 10")
HX145LCR 2-pcs boom	Shoe width	mm (in)	500 (20)	600 (24)	700 (28)
	Operating weight	kg (lb)	15630 (34460)	15860 (34970)	16080 (35450)
	Ground pressure	kgf/cm^2 (psi)	0.47 (6.67)	0.4 (5.64)	0.34 (4.90)
	Overall width	mm (ft-in)	2500 (8' 2")	2600 (8' 6")	2700 (8' 10")

3) NUMBER OF ROLLERS AND SHOES ON EACH SIDE

Item	Quantity	
	HX145CR	HX145LCR
Carrier rollers	2 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	· 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	Perkins 1204F
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 net horse power (SAE J1349)	116 Hp (87 kW) at 1950 rpm
Rated gross horse power (SAE J1995)	124 Hp (92.6 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	558 kg (1230 lb)
High idling speed	2000 ± 50 rpm
Low idling speed	1000 ± 100 rpm
Rated fuel consumption	165 g/Hp · hr at 1950 rpm
Starting motor	24 V-4.5 kW
Alternator	24 V-100 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 × 126.8 ℓ/min (33.5 U.S. gpm / 28.0 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	Type 1	Type 2
Type	Fixed displacement axial piston motor	
Capacity	71 cc/rev	72 cc/rev
Relief pressure	285 kgf/cm^2 (4050 psi)	
Braking system	Automatic, spring applied hydraulic released	
Braking torque	31.3 kgf · m (226 lbf · ft)	30 kgf · m (217 lbf · ft)
Brake release pressure	33.8 kgf/cm^2 (481 psi)	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	77/45 cc/rev	77/45 cc/rev
Reduction gear type	2-stage planetary		
Braking system	Automatic, spring applied hydraulic released		
Brake release pressure	9.5 kgf/cm^2 (135 psi)	10.7 kgf/cm^2 (135 psi)	14.3 kgf/cm^2 (203 psi)
Braking torque	19.7 kgf · m (143 lbf · ft)	19.7 kgf · m (143 lbf · ft)	33 kgf/cm^2 (239 psi)

7) CYLINDER

Item		Specification
Boom cylinder	Bore dia × Stroke	Ø105 × 1105 mm
	Cushion	Extend only
Arm cylinder	Bore dia × Stroke	Ø115 × 1138 mm
	Cushion	Extend and retract
Bucket cylinder	Bore dia × Stroke	Ø100 × 850 mm
	Cushion	Extend only
Dozer cylinder (option)	Bore dia × Stroke	Ø100 × 250 mm
	Cushion	-
Adjust cylinder (opt)	Bore dia × Stroke	Ø145 × 613 mm
	Cushion	-
Adjust boom cylinder (opt)	Bore dia × Stroke	Ø105 × 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
HX145LCR	Standard	500 mm (20")	0.45 kgf/cm² (6.40 psi)	47	2500 mm (8' 2")
	Option	600 mm (24")	0.38 kgf/cm² (5.40 psi)	47	2600 mm (8' 6")
		700 mm (28")	0.33 kgf/cm² (4.69 psi)	47	2700 mm (8' 10")

9. RECOMMENDED OILS

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

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

Service point	Kind of fluid	Capacity ℓ (U.S. gal)	Ambient temperature °C(°F) -50 (-58) -30 (-22) -20 (-4) -10 (14) 0 (32) 10 (50) 20 (68) 30 (86) 40 (104)
Engine oil pan	Engine oil	10.5 (2.8)	★SAE 5W-40 SAE 30 SAE 10W SAE 10W-30 SAE 15W-40
DEF/ AdBlue® tank	Mixture of urea and deionized water	19.0 (5.0)	ISO 22241, High-purity urea + deionized water (32.5:67.5)
Swing drive	Gear oil	TYPE 1 : 3.5 (0.9) TYPE 2 : 2.5 (0.7)	★SAE 75W-90
Final drive		2.3×2 (0.6×2)	SAE 80W-90
Hydraulic tank	Hydraulic oil	Tank : 96 (25.4) System : 180 (47.6)	★ISO VG 15 ISO VG 32 ISO VG 46, HBHO VG 46★3 ISO VG 68
Fuel tank	Diesel fuel★1	265 (70.0)	★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★2	14.5 (3.8)	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
DEF : Diesel Exhaust Fluid, DEF compatible with AdBlue®

★ : Cold region (Russia, CIS, Mongolia)
★1 : Ultra low sulfur diesel
- sulfur content ≤ 15 ppm
★2 : Soft water
City water or distilled water
★3 : Hyundai Bio Hydraulic Oil

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

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

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

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