

# SECTION 1 GENERAL

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# SECTION 1 GENERAL

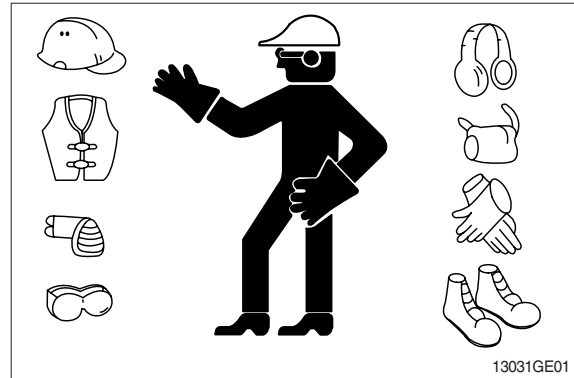
## GROUP 1 SAFETY

### FOLLOW SAFE PROCEDURE

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

### WEAR PROTECTIVE CLOTHING

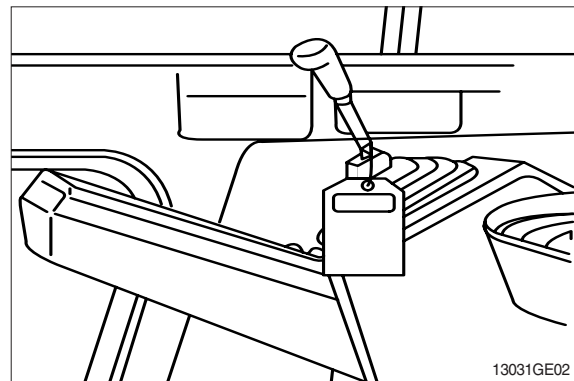
Wear close fitting clothing and safety equipment appropriate to the job.



### 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.



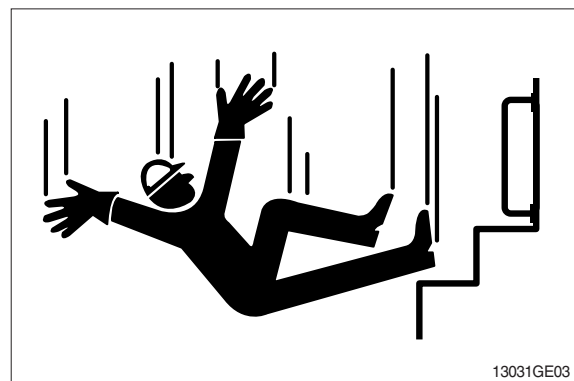
### USE HANDHOLDS AND STEPS

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.

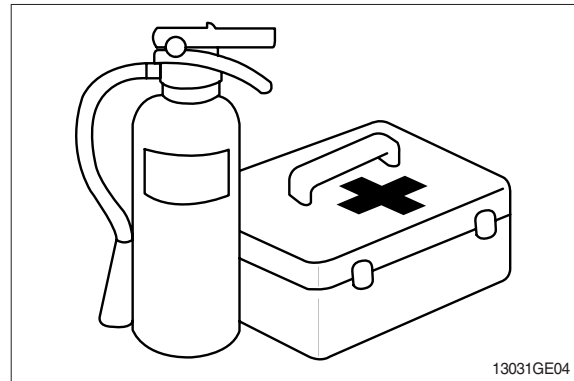


## PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

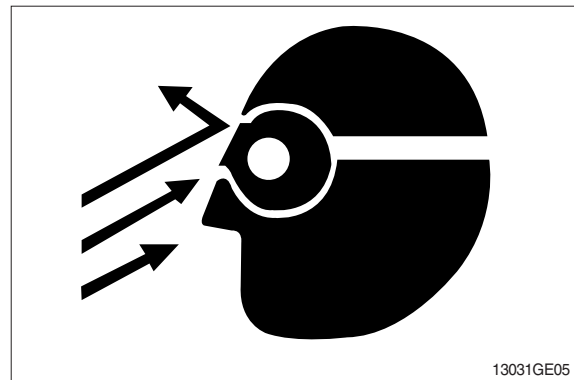
Keep a first aid kit and fire extinguisher handy.

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



## PROTECT AGAINST FLYING DEBRIS

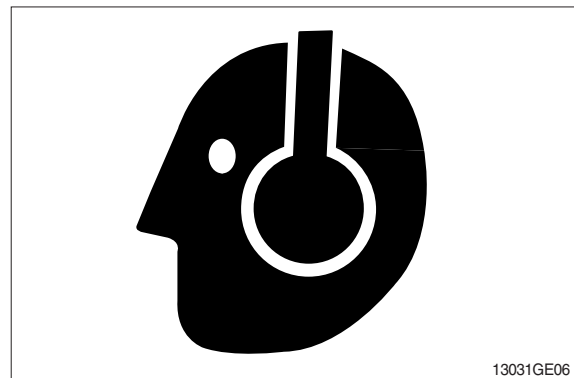
Guard against injury from flying pieces of metal or debris; Wear goggles or safety glasses.



## PROTECT AGAINST NOISE

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

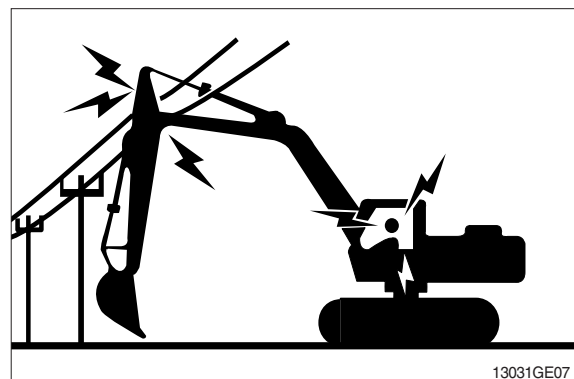
Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.



## AVOID POWER LINES

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

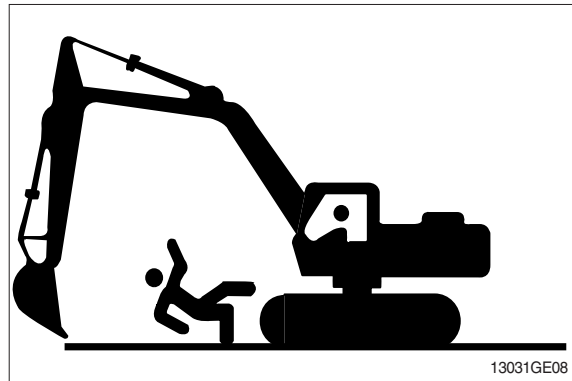
Never move any part of the machine or load closer to electric line than 3m(10ft) plus twice the line insulator length.



## 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.

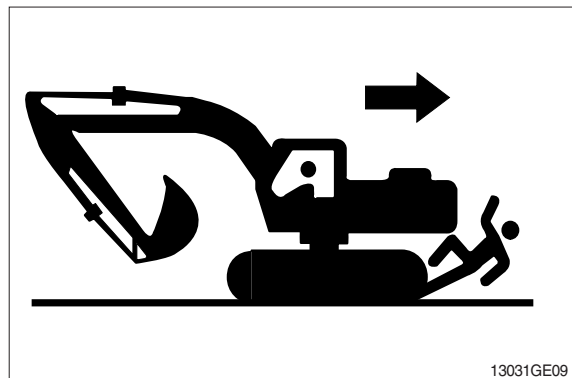


## MOVE AND OPERATE MACHINE SAFELY

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:

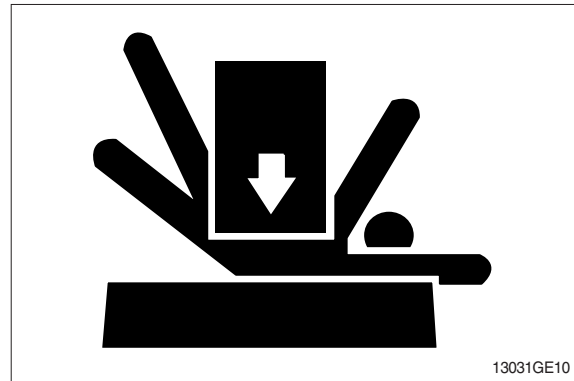
- Park machine on a level surface.
- Lower bucket to the ground.
- Turn auto idle switch off.
- Run engine at 1/2 speed without load for 2 minutes.
- Turn key switch to OFF to stop engine. Remove key from switch.
- Move pilot control shutoff lever to locked position.
- Allow engine to cool.

## 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.

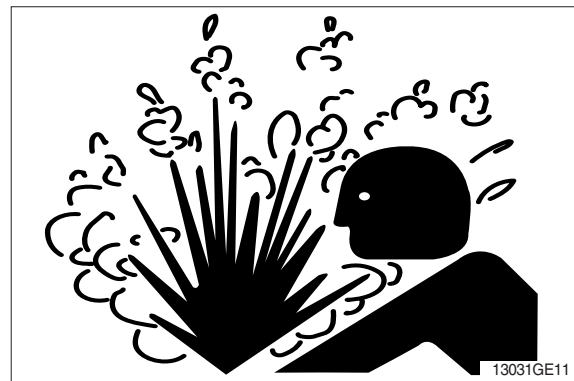
Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.



## SERVICE COOLING SYSTEM SAFELY

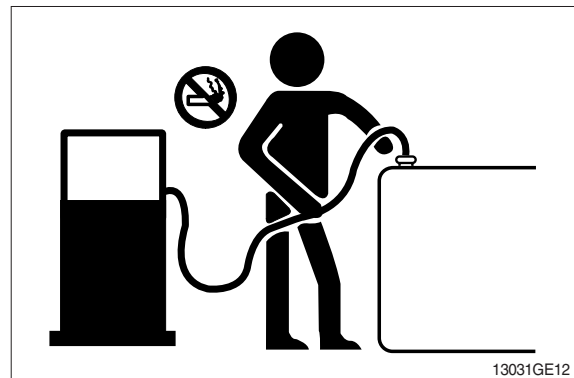
Explosive release of fluids from pressurized cooling system can cause serious burns.

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



## HANDLE FLUIDS SAFELY-AVOID FIRES

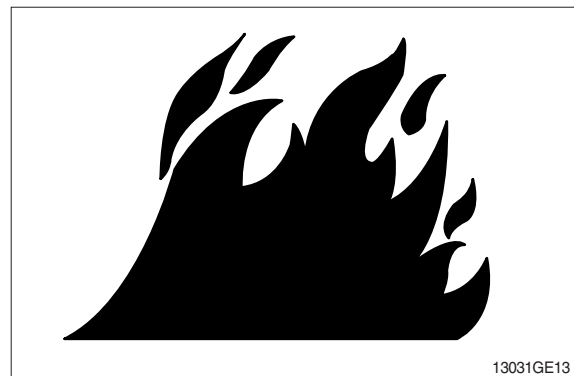
Handle fuel with care; It is highly flammable. Do not refuel the machine while smoking or when near open flame or sparks. Always stop engine before refueling machine. Fill fuel tank outdoors.



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

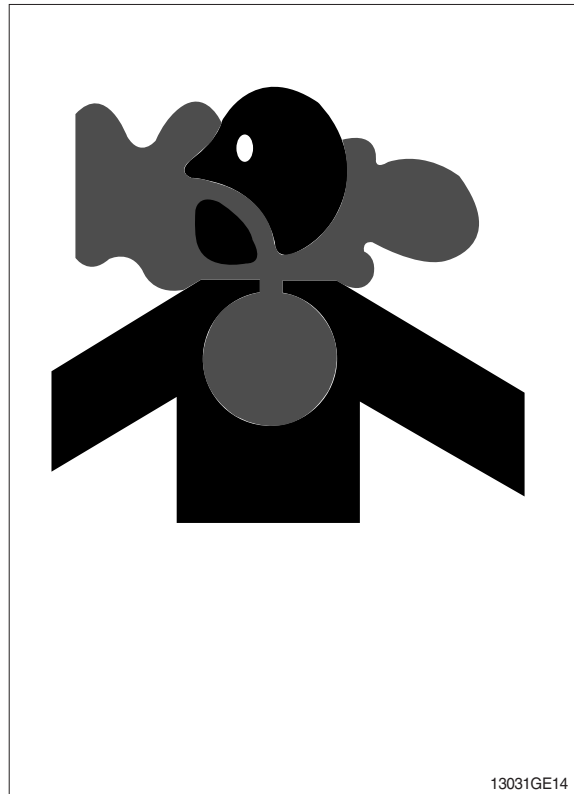
Avoid potentially toxic fumes and dust.

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

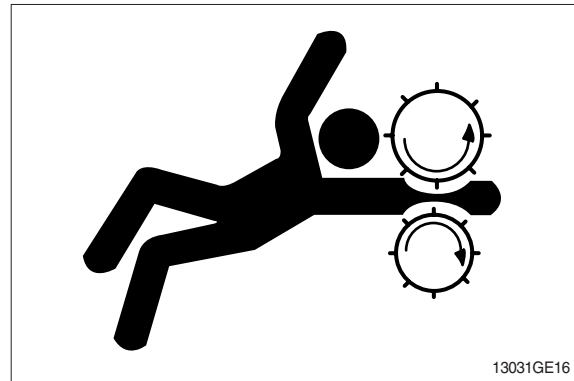
Illuminate your work area adequately but safely. Use a portable safety light for working inside or under the machine. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.



## 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.

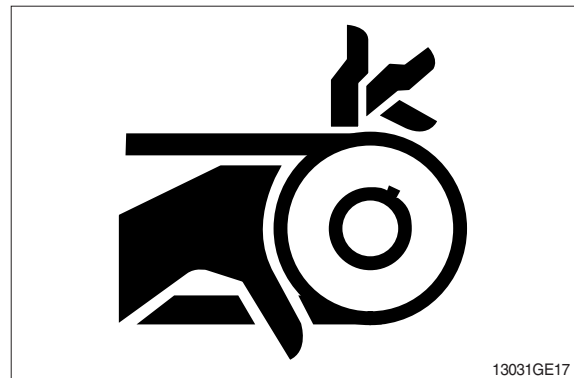
Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.



## STAY CLEAR OF MOVING PARTS

Entanglements in moving parts can cause serious injury.

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



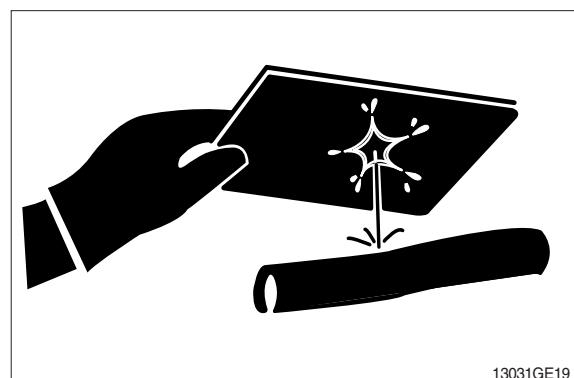
## AVOID HIGH PRESSURE FLUIDS

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:

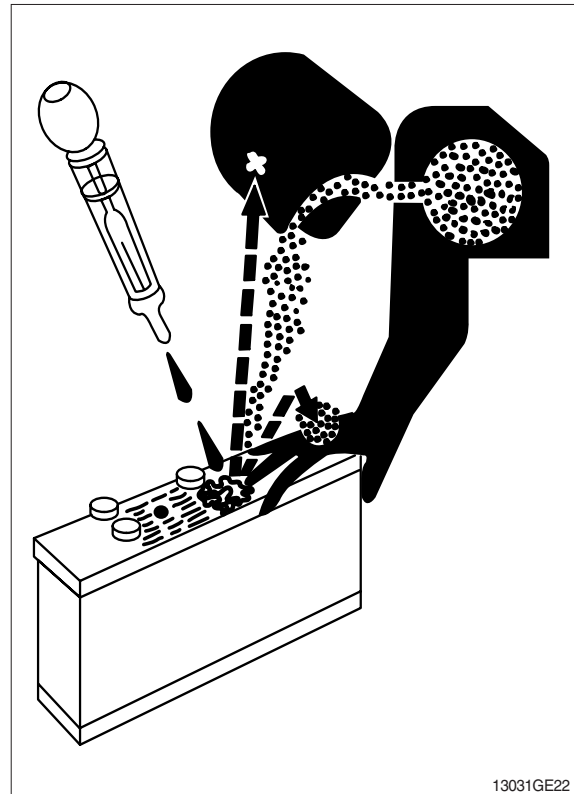
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Use proper jump start procedure.

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.



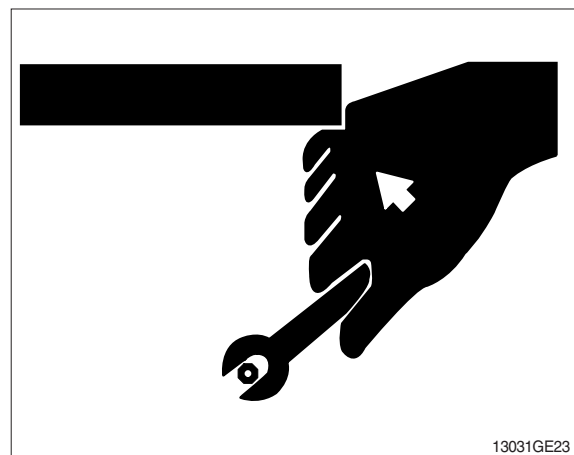
## USE TOOLS PROPERLY

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.)

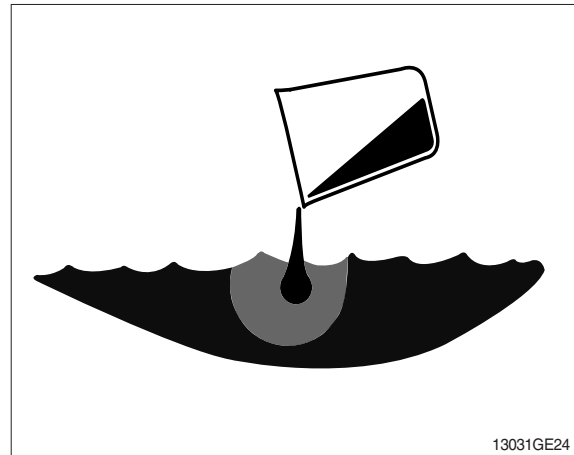


## DISPOSE OF FLUIDS PROPERLY

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.

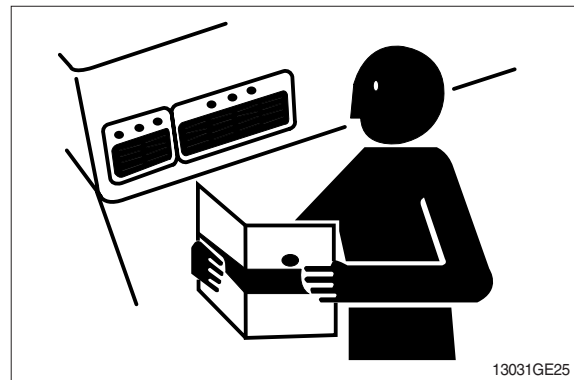
Use proper containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

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.

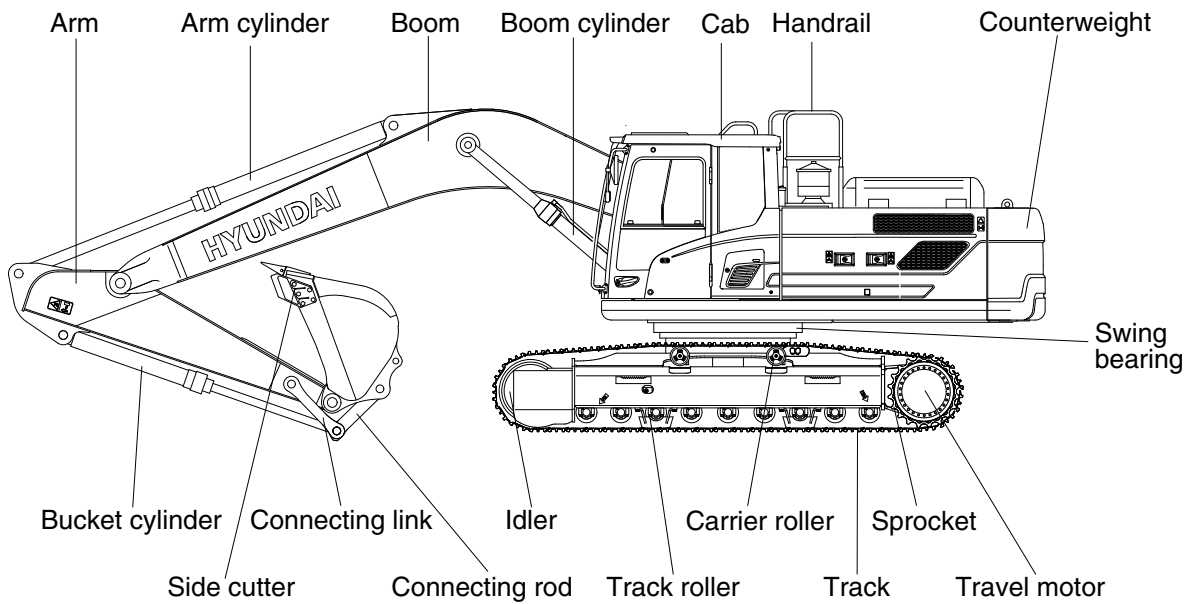
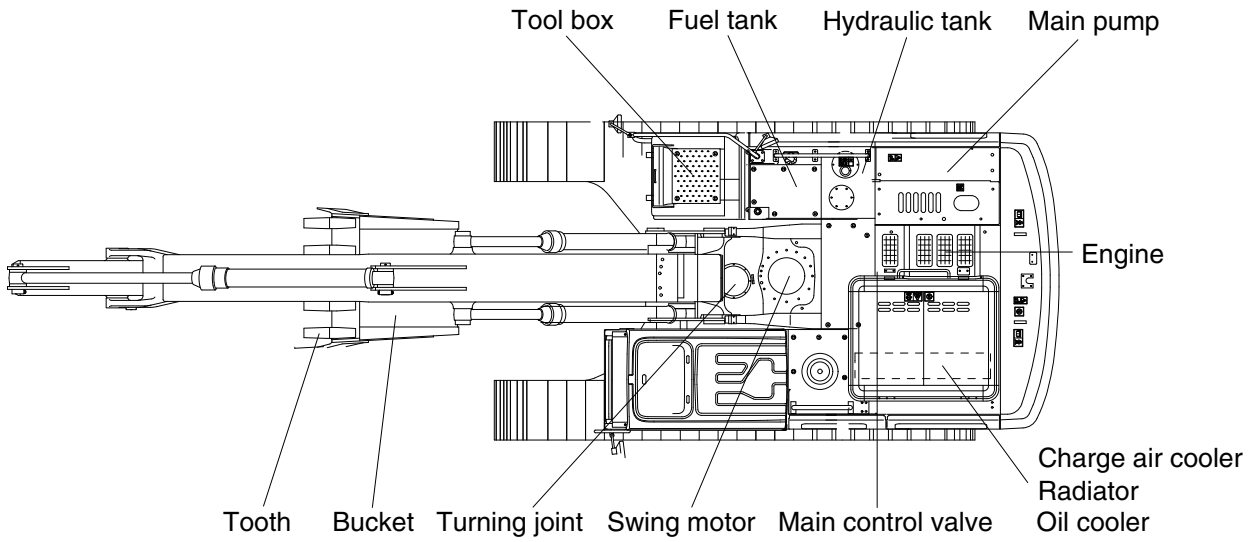


## LIVE WITH SAFETY

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

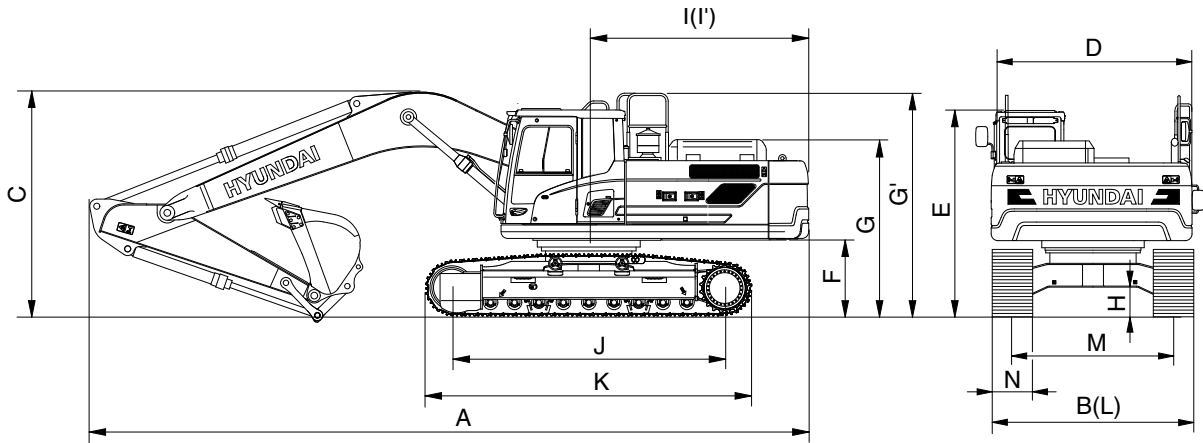


300HD2SP01

## 2. SPECIFICATIONS

### 1) HX300HD

(1) 6.25 m (20' 6") boom and 3.05 m (10' 0") arm



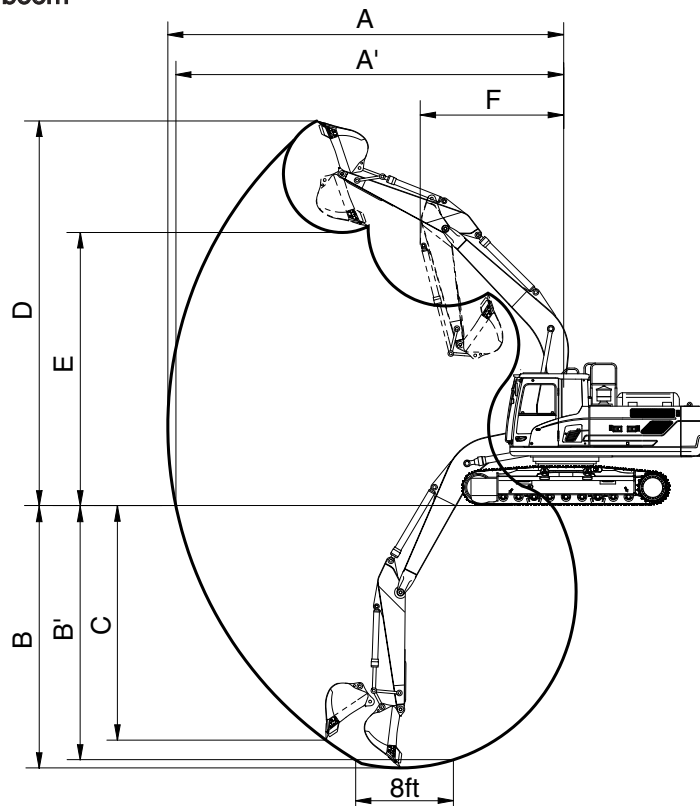
300HD2SP02

Description		Unit	Specification	
Operating weight		kg (lb)	30200 (66580)	
Bucket capacity (SAE heaped), standard		m <sup>3</sup> (yd <sup>3</sup> )	1.50 (1.96)	
Overall length	A	mm (ft-in)	10740 (35' 3")	
Overall width, with 600 mm shoe	B		3200 (10' 6")	
Overall height of boom	C		3320 (10' 11")	
Superstructure width	D		2980 ( 9' 9")	
Overall height of cab	E		3130 (10' 3")	
Ground clearance of counterweight	F		1185 ( 3' 9")	
Overall height of engine hood	G		2657 ( 8' 9")	
Overall height of handrail	G'		3336 (10' 11")	
Minimum ground clearance	H		500 ( 1' 8")	
Rear-end distance	I		3265 (10' 9")	
Rear-end swing radius	I'		3345 (11' 0")	
Distance between tumblers	J		4030 (13' 3")	
Undercarriage length	K		4940 (16' 2")	
Undercarriage width	L		3200 (10' 6")	
Track gauge	M		2600 ( 8' 6")	
Track shoe width, standard	N		600 (24")	
Travel speed (low/high)			km/hr (mph)	3.3/5.9 (2.1/3.7)
Swing speed			rpm	10.2
Gradeability		Degree (%)	35 (70)	
Ground pressure (600 mm shoe)		kgf/cm <sup>2</sup> (psi)	0.58 (8.25)	
Max traction force		kg (lb)	26500 (58420)	

### 3. WORKING RANGE

#### 1) HX300HD

(1) 6.25 m (20' 6") boom



300HD2SP06

Description		2.50 m (8' 2") Arm	3.05 m (10' 0") Arm
Max digging reach	A	10310 mm (33' 10")	10810 mm (35' 6")
Max digging reach on ground	A'	10100 mm (33' 2")	10610 mm (34' 10")
Max digging depth	B	6780 mm (22' 3")	7330 mm (24' 1")
Max digging depth (8 ft level)	B'	6600 mm (21' 8")	7170 mm (23' 6")
Max vertical wall digging depth	C	5760 mm (18' 11")	6280 mm (20' 7")
Max digging height	D	9980 mm (32' 9")	10200 mm (33' 6")
Max dumping height	E	6930 mm (22' 9")	7150 mm (23' 5")
Min swing radius	F	4320 mm (14' 2")	4270 mm (14' 0")
Bucket digging force	SAE	165.7 [180.8] kN	165.7 [180.8] kN
		16900 [18440] kgf	16900 [18440] kgf
		37260 [40650] lbf	37260 [40650] lbf
	ISO	191.2 [208.6] kN	192.2 [209.7] kN
		19500 [21270] kgf	19600 [21380] kgf
		42990 [46890] lbf	43210 [47130] lbf
Arm digging force	SAE	155.9 [170.1] kN	131.4 [143.4] kN
		15900 [17350] kgf	13400 [14620] kgf
		35050 [38250] lbf	29540 [32230] lbf
	ISO	163.8 [178.7] kN	136.3 [148.7] kN
		16700 [18220] kgf	13900 [15160] kgf
		36820 [40170] lbf	30640 [33420] lbf

[ ] : Power boost

## 4. WEIGHT

### 1) HX300HD

Item	HX300HD	
	kg	lb
Upperstructure assembly	13740	30290
Main frame weld assembly	2720	6000
Engine assembly	617	1360
Main pump assembly	201	443
Main control valve assembly	220	485
Swing motor assembly	350	770
Hydraulic oil tank assembly	250	550
Fuel tank assembly	240	530
Counterweight	5200	11460
Cab assembly	422	930
Lower chassis assembly	10790	23790
Track frame weld assembly	3750	8270
Swing bearing	435	960
Travel motor assembly	360	790
Turning joint	54	120
Sprocket	83	183
Track recoil spring	225	500
Idler	250	551
Carrier roller	35	80
Track roller	56	123
Track-chain assembly (600 mm standard triple grouser shoe)	1880	4145
Front attachment assembly (6.25 m boom, 3.05 m arm, 1.50 m <sup>3</sup> SAE heaped bucket)	5550	12240
6.25 m boom assembly	2285	5040
3.05 m arm assembly	1025	2260
1.50 m <sup>3</sup> SAE heaped bucket	1010	2230
Boom cylinder assembly	270	600
Arm cylinder assembly	360	790
Bucket cylinder assembly	220	485
Bucket control linkage total	110	240

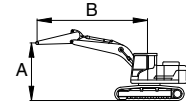
## 5. LIFTING CAPACITIES











Unit : mm

Model	Boom	Boom	Arm	Counterweight	Shoe	Dozer		Outrigger	
	Type	Length	Length	Weight (kg)	Width	Front	Rear	Front	Rear
HX300HD	Mono	6250	2500	5200	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 24.6ft	kg lb					*6980 *15390	*6980 *15390			*6760 *14900	6760 14900	6.74 (22.1)
6.0m 19.7ft	kg lb					*7380 *16270	*7380 *16270	*7170 *15810	5630 12410	*6440 *14200	5330 11750	7.74 (25.4)
4.5m 14.8ft	kg lb			*10660 *23500	*10660 *23500	*8470 *18670	7750 17090	*7530 *16600	5500 12130	*6420 *14150	4620 10190	8.34 (27.4)
3.0m 9.8ft	kg lb			*13720 *30250	10980 24210	*9850 *21720	7320 16140	*8180 *18030	5300 11680	*6640 *14640	4270 9410	8.64 (28.3)
1.5m 4.9ft	kg lb					*11040 *24340	6970 15370	8220 18120	5120 11290	6630 14620	4160 9170	8.67 (28.4)
0.0m 0.0ft	kg lb			*16170 *35650	10220 22530	11300 24910	6770 14930	8080 17810	5000 11020	6840 15080	4270 9410	8.43 (27.7)
-1.5m -4.9ft	kg lb	*11150 *24580	*11150 *24580	*15780 *34790	10240 22580	11240 24780	6730 14840	8060 17770	4980 10980	7520 16580	4670 10300	7.89 (25.9)
-3.0m -9.8ft	kg lb	*19830 *43720	*19830 *43720	*14550 *32080	10410 22950	*10980 *24210	6830 15060			*9000 *19840	5590 12320	6.99 (22.9)
-4.5m -14.8ft	kg lb	*15970 *35210	*15970 *35210	*11820 *26060	10790 23790					*9210 *20300	7980 17590	5.55 (18.2)

### ※ 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 mounting pin on the arm (without bucket).
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.

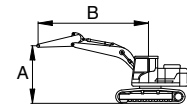
Make adjustments to the rated load as necessary for non-standard configurations.













Unit : mm

Model	Boom	Boom	Arm	Counterweight	Shoe	Dozer		Outrigger	
	Type	Length	Length	Weight (kg)	Width	Front	Rear	Front	Rear
HX300HD	Mono	6250	3050	5200	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)		9.0 m (29.5 ft)		Capacity		Reach	
													m (ft)	
7.5 m (24.6 ft)	kg											*4410	*4410	7.38
	lb											*9720	*9720	(24.2)
6.0 m (19.7 ft)	kg						*6490	5710				*4220	*4220	8.30
	lb						*14310	12590				*9300	*9300	(27.2)
4.5 m (14.8 ft)	kg		*9450	*9450	*7760	*7760	*6980	5540				*4210	4200	8.86
	lb		*20830	*20830	*17110	*17110	*15390	12210				*9280	9260	(29.1)
3.0 m (9.8 ft)	kg		*12510	11250	*9210	7400	*7720	5320	*5490	4000		*4340	3900	9.14
	lb		*27580	24800	*20300	16310	*17020	11730	*12100	8820		*9570	8600	(30.0)
1.5 m (4.9 ft)	kg		*14900	10490	*10550	7000	8210	5110	*6190	3900		*4640	3790	9.17
	lb		*32850	23130	*23260	15430	18100	11270	*13650	8600		*10230	8360	(30.1)
0.0 m (0.0 ft)	kg		*15940	10170	11280	6740	8040	4950				*5160	3870	8.94
	lb		*35140	22420	24870	14860	17730	10910				*11380	8530	(29.3)
-1.5 m (-4.9 ft)	kg	*11100	*11100	*15950	10110	11160	6640	7970	4890			*6050	4180	8.44
	lb	*24470	*24470	*35160	22290	24600	14640	17570	10780			*13340	9220	(27.7)
-3.0 m (-9.8 ft)	kg	*17910	*17910	*15100	10220	11210	6690	8050	4960			*7770	4870	7.61
	lb	*39480	*39480	*33290	22530	24710	14750	17750	10930			*17130	10740	(25.0)
-4.5 m (-14.8 ft)	kg	*18100	*18100	*13040	10520	*9550	6920					*8810	6480	6.32
	lb	*39900	*39900	*28750	23190	*21050	15260					*19420	14290	(20.7)
-6.0 m (-19.7 ft)	kg													
	lb													

※ 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 mounting pin on the arm (without bucket).
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.

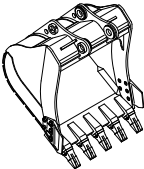
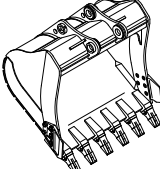
▲ Failure to comply to the rated load can cause possible personal injury or property damage.

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



## 6. BUCKET SELECTION GUIDE

### 1) GENERAL BUCKET

	
<p>1.50 m<sup>3</sup> SAE heaped bucket</p>	<p>1.85 m<sup>3</sup> SAE heaped bucket</p>

Capacity		Width		Weight	Recommendation	
					6.25 m (20' 6") boom	
SAE heaped	CECE heaped	Without side cutter	With side cutter		2.5 m arm (8' 2")	3.05 m arm (10' 0")
1.50 m <sup>3</sup> (1.96 yd <sup>3</sup> )	1.30 m <sup>3</sup> (1.70 yd <sup>3</sup> )	1490 mm (59")	1610 mm (63.0")	1080 kg (2380 lb)	●	●
1.85 m <sup>3</sup> (2.42 yd <sup>3</sup> )	1.60 m <sup>3</sup> (2.09 yd <sup>3</sup> )	1800 mm (71")	1920 mm (76")	1230 kg (2710 lb)	■	▲

- Applicable for materials with density of 2100 kg/m<sup>3</sup> (3500 lb/yd<sup>3</sup>) or less
- ◐ Applicable for materials with density of 1800 kg/m<sup>3</sup> (3000 lb/yd<sup>3</sup>) or less
- Applicable for materials with density of 1500 kg/m<sup>3</sup> (2500 lb/yd<sup>3</sup>) or less
- ▲ Applicable for materials with density of 1200 kg/m<sup>3</sup> (2000 lb/yd<sup>3</sup>) or less
- X Not recommended

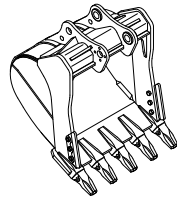
※ These recommendations are for general conditions and average use.

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) ROCK-HEAVY DUTY BUCKET



◆ 1.50 m<sup>3</sup> SAE  
heaped bucket

Capacity		Width		Weight	Recommendation	
					6.25 m (20' 6") boom	
SAE heaped	CECE heaped	Without side cutter	With side cutter		2.5 m arm (8' 2")	3.05 m arm (10' 0")
◆ 1.50 m <sup>3</sup> (1.96 yd <sup>3</sup> )	1.30 m <sup>3</sup> (1.70 yd <sup>3</sup> )	1620 mm (64")	-	1440 kg (3170 lb)	●	■

◆ : Rock-Heavy duty bucket

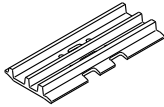
●	Applicable for materials with density of 2100 kg/m <sup>3</sup> (3500 lb/yd <sup>3</sup> ) or less
◐	Applicable for materials with density of 1800 kg/m <sup>3</sup> (3000 lb/yd <sup>3</sup> ) or less
■	Applicable for materials with density of 1500 kg/m <sup>3</sup> (2500 lb/yd <sup>3</sup> ) or less
▲	Applicable for materials with density of 1200 kg/m <sup>3</sup> (2000 lb/yd <sup>3</sup> ) 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	
				
HX300HD	Shoe width	mm (in)	600 (24)	800 (32)
	Operating weight	kg (lb)	30200 (66580)	31150 (68670)
	Ground pressure	kgf/cm <sup>2</sup> (psi)	0.58 (8.27)	0.45 (6.4)
	Overall width	mm (ft-in)	3200 (10' 6")	3400 (11' 1")

### 3) NUMBER OF ROLLERS AND SHOES ON EACH SIDE

Item	Quantity
Carrier rollers	2 EA
Track rollers	9 EA
Track shoes	48 EA

#### 4) SELECTION OF TRACK SHOE

Suitable track shoes should be selected according to operating conditions.

##### Method of selecting shoes

Confirm the category from the list of applications in **table 2**, then use **table 1** to select the shoe. Wide shoes (categories B and C) have limitations on applications. Before using wide shoes, check the precautions, then investigate and study the operating conditions to confirm if these shoes are suitable.

Select the narrowest shoe possible to meet the required flotation and ground pressure. Application of wider shoes than recommendations will cause unexpected problem such as bending of shoes, crack of link, breakage of pin, loosening of shoe bolts and the other various problems.

※ **Table 1**

Track shoe	Specification	Category
600 mm triple grouser	Standard	A
800 mm triple grouser	Option	C

※ **Table 2**

Category	Applications	Precautions
A	Rocky ground, river beds, normal soil	<ul style="list-style-type: none"> <li>· Travel at low speed on rough ground with large obstacles such as boulders or fallen trees or a wide range of general civil engineering work</li> </ul>
B	Normal soil, soft ground	<ul style="list-style-type: none"> <li>· These shoes cannot be used on rough ground with large obstacles such as boulders or fallen trees</li> <li>· Travel at high speed only on flat ground</li> <li>· Travel slowly at low speed if it is impossible to avoid going over obstacles</li> </ul>
C	Extremely soft ground (swampy ground)	<ul style="list-style-type: none"> <li>· Use the shoes only in the conditions that the machine sinks and it is impossible to use the shoes of category A or B</li> <li>· These shoes cannot be used on rough ground with large obstacles such as boulders or fallen trees</li> <li>· Travel at high speed only on flat ground</li> <li>· Travel slowly at low speed if it is impossible to avoid going over obstacles</li> </ul>

## 8. SPECIFICATIONS FOR MAJOR COMPONENTS

### 1) ENGINE

Item	Specification
Model	Hyundai HM8.3
Type	4-cycle turbocharged, charge air cooled diesel engine
Cooling method	Water cooling
Number of cylinders and arrangement	6 cylinders, in-line
Firing order	1-5-3-6-2-4
Combustion chamber type	Direct injection type
Cylinder bore × stroke	114 × 134.9 mm (4.49" × 5.31")
Piston displacement	8290 cc (506 cu in)
Compression ratio	18 : 1
Rated net horse power (SAE J1349)	245 Hp (183 kW) at 2200 rpm
Rated gross horse power (SAE J1995)	250 Hp (186 kW) at 2200 rpm
Maximum torque	124 kgf · m (899 lbf · ft) at 1300 rpm
Engine oil quantity	26.5 ℓ (7.0 U.S. gal)
Wet weight	617 kg (1360 lb)
High idling speed	2457 ± 50 rpm
Low idling speed	850 ± 100 rpm
Rated fuel consumption	151 g/Hp · hr at 1400 rpm
Starting motor	24 V-7.2 kW
Alternator	24 V-90 A
Battery	2 × 12 V × 150 Ah

### 2) MAIN PUMP

Item	Specification
Type	Variable displacement tandem axis piston pumps
Capacity	2 × 154 cc/rev
Maximum pressure	350 kgf/cm <sup>2</sup> (4980 psi) [380 kgf/cm <sup>2</sup> (5400 psi)]
Rated oil flow	2 × 285 ℓ /min (75.3 U.S. gpm / 62.7 U.K. gpm)

[ ] : Power boost

### 3) GEAR PUMP

Item	Specification
Type	Fixed displacement gear pump single stage
Capacity	15 cc/rev
Maximum pressure	40 kgf/cm <sup>2</sup> (570 psi)
Rated oil flow	27.75 ℓ /min (7.3 U.S. gpm/7.1 U.K. gpm)

### 4) MAIN CONTROL VALVE

Item	Specification	
Type	10 spools	
Operating method	Hydraulic pilot system	
Main relief valve pressure	350 kgf/cm <sup>2</sup> (4980 psi) [380 kgf/cm <sup>2</sup> (5400 psi)]	
Port relief valve pressure	Boom	400 kgf/cm <sup>2</sup> (5690 psi)
	Arm	400 kgf/cm <sup>2</sup> (5690 psi)
	Bucket	400 kgf/cm <sup>2</sup> (5690 psi)

[ ] : Power boost

### 5) SWING MOTOR

Item	Specification
Type	Axial piston motor
Capacity	156.9 cc/rev
Relief pressure	300 kgf/cm <sup>2</sup> (4270 psi)
Braking system	Automatic, spring applied hydraulic released
Braking torque	84.4 kgf · m (610 lbf · ft) over
Brake release pressure	36.6 kgf/cm <sup>2</sup> (519 psi) below
Reduction gear type	2 - stage planetary

### 6) TRAVEL MOTOR

Item	Specification
Type	Variable displacement axial piston motor
Capacity	282.6/156.9 cc/rev
Relief pressure	350 kgf/cm <sup>2</sup> (4980 psi)
Braking system	Automatic, spring applied hydraulic released
Braking torque	134 kgf · m (969 lbf · ft)
Brake release pressure	17 kgf/cm <sup>2</sup> (242 psi)
Reduction gear type	2-stage planetary

## 7) CYLINDER

	Item	Specification
Boom cylinder	Bore dia × Stroke	Ø 140 × 1465 mm
	Cushion	Extend only
Arm cylinder	Bore dia × Stroke	Ø 150 × 1765 mm
	Cushion	Extend and retract
Bucket cylinder	Bore dia × Stroke	Ø 135 × 1185 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
Standard	600 mm (24")	0.58 kgf/cm <sup>2</sup> (8.27 psi)	48	3200 mm (10' 6")
Option	800 mm (32")	0.45 kgf/cm <sup>2</sup> (6.40 psi)	48	3400 mm (11' 1")

## 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)
Engine oil pan	Engine oil★ <sup>1</sup>	26.5 (7.0)	★SAE 0W-40						
			★SAE 0W-30						
			SAE 5W-30						
			SAE 10W-30						
			SAE 15W-40						
Swing drive	Gear oil	11 (2.91)	★SAE 75W-90						
Final drive		7.8×2 (2.1×2)	SAE 80W-90						
Hydraulic tank	Hydraulic oil	Tank : 190 (50)	ISO VG 32						
		System : 330 (87)	ISO VG 46, HBHO VG 46★ <sup>3</sup>						
			ISO VG 68						
Fuel tank	Diesel fuel	500 (132)	★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★ <sup>2</sup>	27 (7.1)	Ethylene glycol base permanent type (50 : 50)						
			★Ethylene glycol base permanent type (60 : 40)						

**SAE** : Society of Automotive Engineers

**API** : American Petroleum Institute

**ISO** : International Organization for Standardization

**NLGI** : National Lubricating Grease Institute

**ASTM** : American Society of Testing and Material

★ : Cold region

Russia, CIS, Mongolia

★<sup>1</sup> : Meet or exceeds API CH-4 grade

★<sup>2</sup> : Soft water

City water or distilled water

★<sup>3</sup> : 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.

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