

## SECTION 1 GENERAL

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## SECTION 1 GENERAL

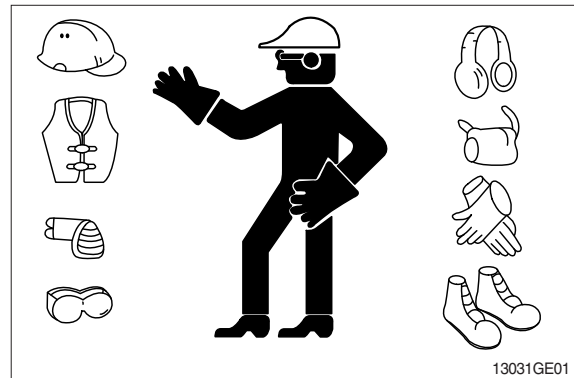
### GROUP 1 SAFETY

#### FOLLOW SAFE PROCEDURE

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

#### WEAR PROTECTIVE CLOTHING

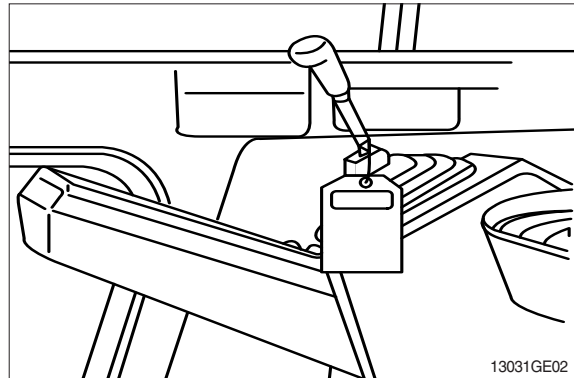
Wear close fitting clothing and safety equipment appropriate to the job.



#### 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.



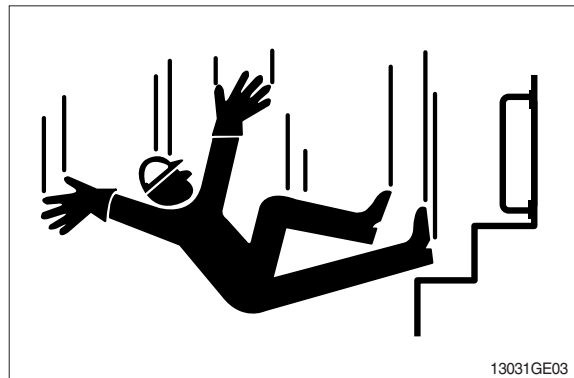
#### USE HANDHOLDS AND STEPS

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.

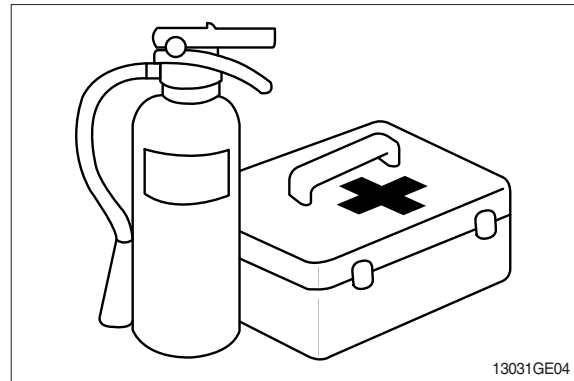


## PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

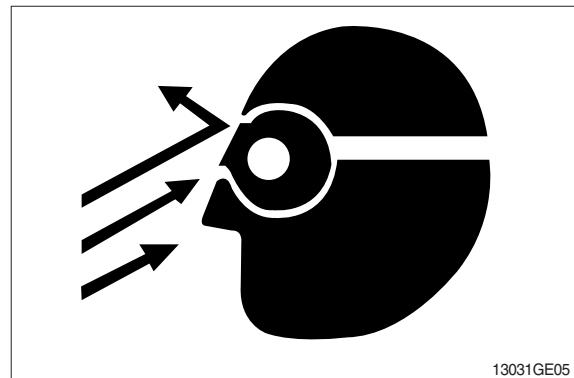
Keep a first aid kit and fire extinguisher handy.

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



## PROTECT AGAINST FLYING DEBRIS

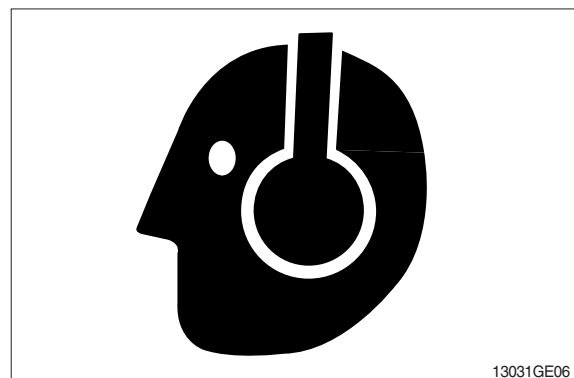
Guard against injury from flying pieces of metal or debris; Wear goggles or safety glasses.



## PROTECT AGAINST NOISE

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

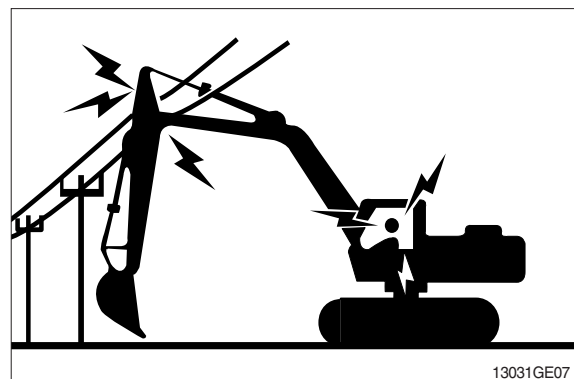
Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.



## AVOID POWER LINES

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

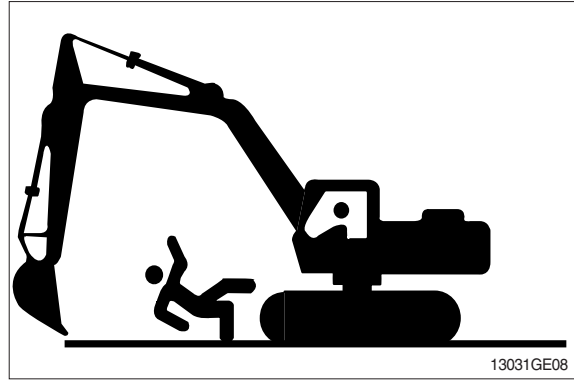
Never move any part of the machine or load closer to electric line than 3m(10ft) plus twice the line insulator length.



## 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.

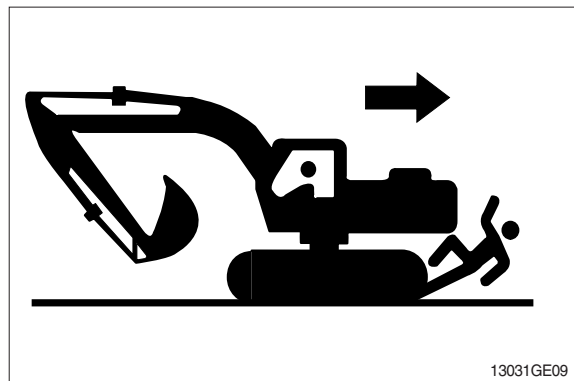


## MOVE AND OPERATE MACHINE SAFELY

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:

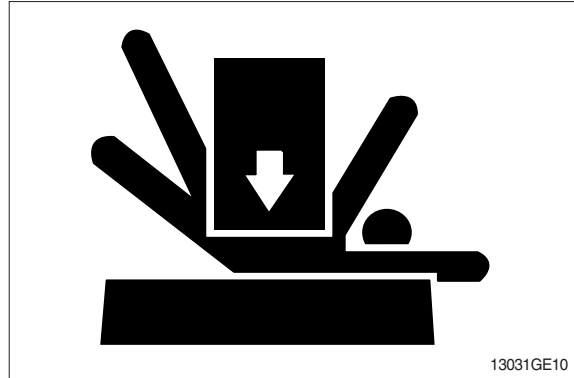
- Park machine on a level surface.
- Lower bucket to the ground.
- Turn auto idle switch off.
- Run engine at 1/2 speed without load for 2 minutes.
- Turn key switch to OFF to stop engine. Remove key from switch.
- Move pilot control shutoff lever to locked position.
- Allow engine to cool.

## 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.

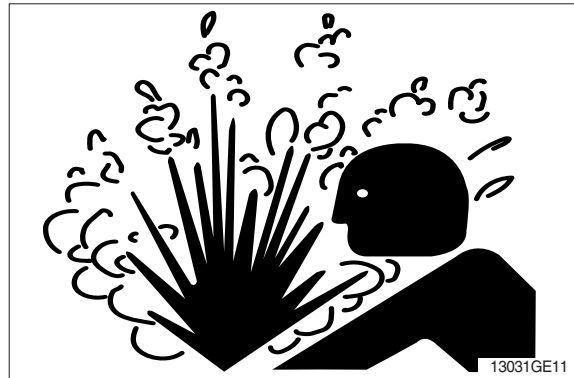
Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.



## SERVICE COOLING SYSTEM SAFELY

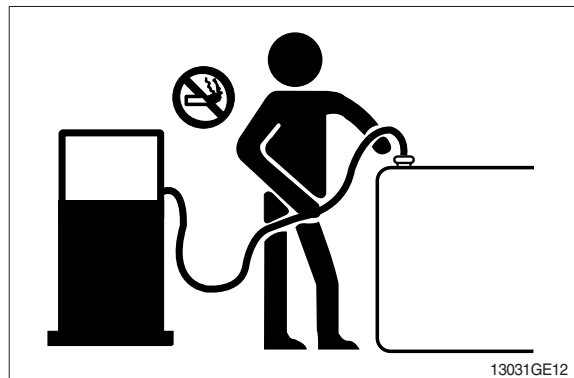
Explosive release of fluids from pressurized cooling system can cause serious burns.

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



## HANDLE FLUIDS SAFELY-AVOID FIRES

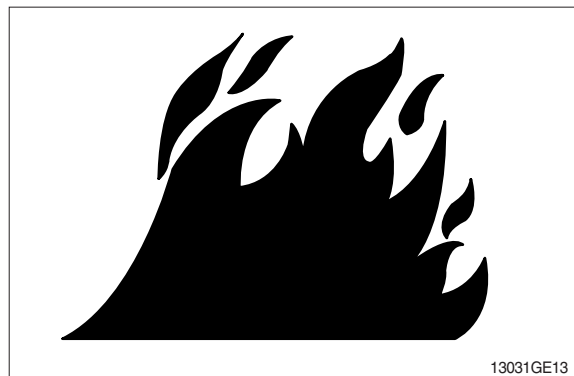
Handle fuel with care; It is highly flammable. Do not refuel the machine while smoking or when near open flame or sparks. Always stop engine before refueling machine. Fill fuel tank outdoors.



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

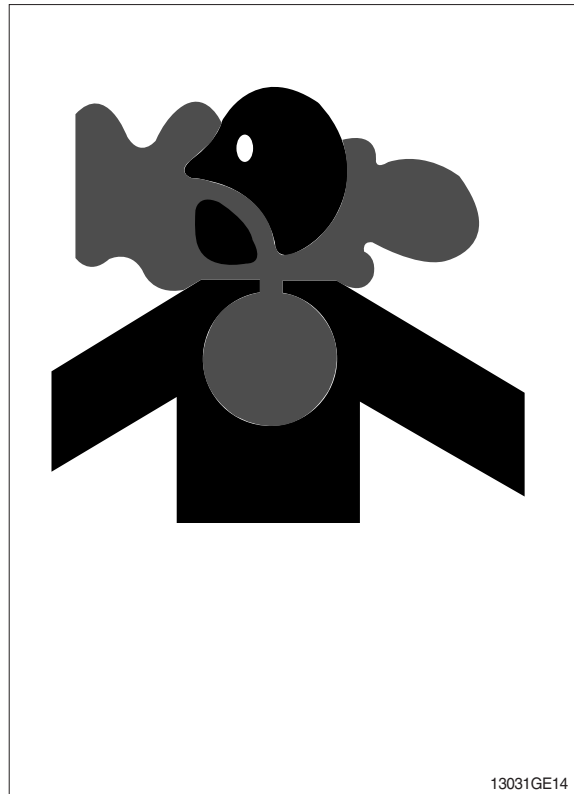
Avoid potentially toxic fumes and dust.

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

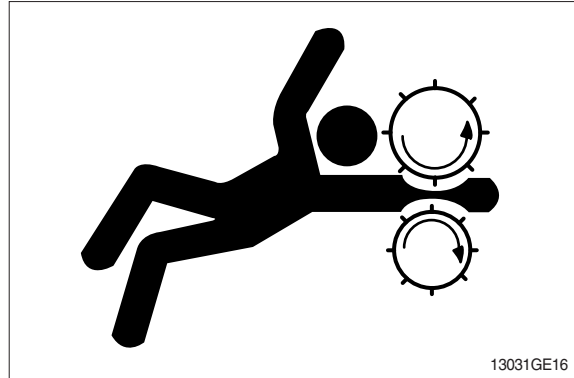
Illuminate your work area adequately but safely. Use a portable safety light for working inside or under the machine. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.



## 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.

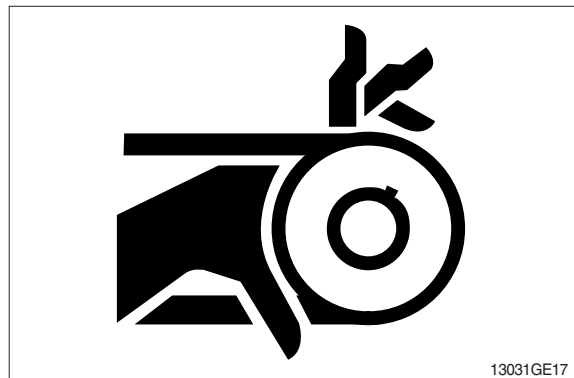
Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.



## STAY CLEAR OF MOVING PARTS

Entanglements in moving parts can cause serious injury.

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



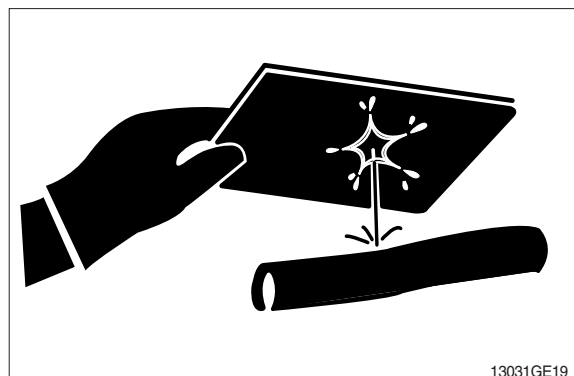
## AVOID HIGH PRESSURE FLUIDS

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:

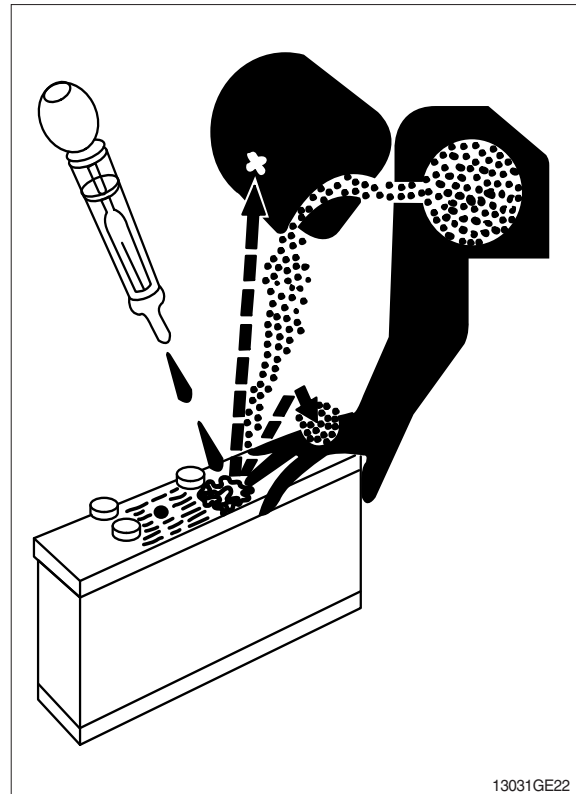
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Use proper jump start procedure.

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.



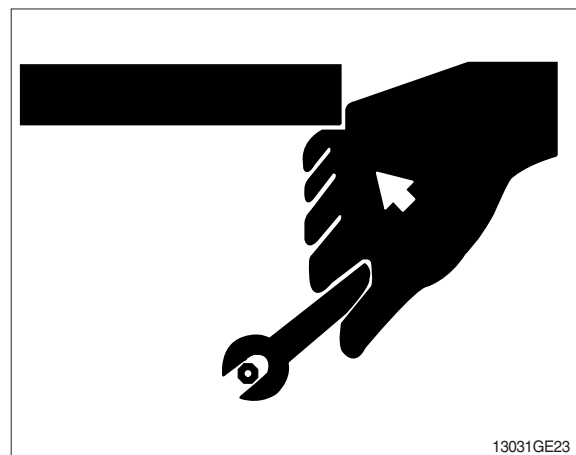
## USE TOOLS PROPERLY

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.)

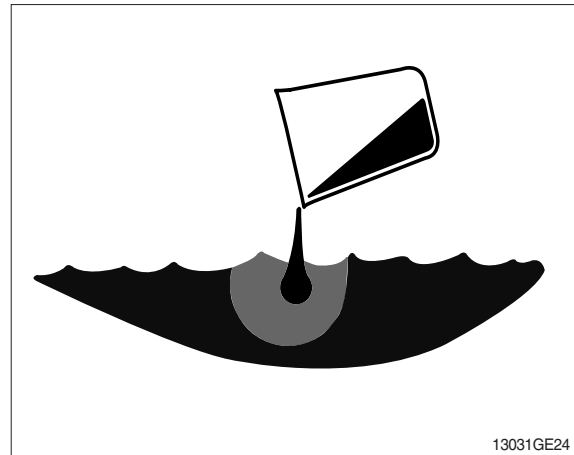


## DISPOSE OF FLUIDS PROPERLY

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.

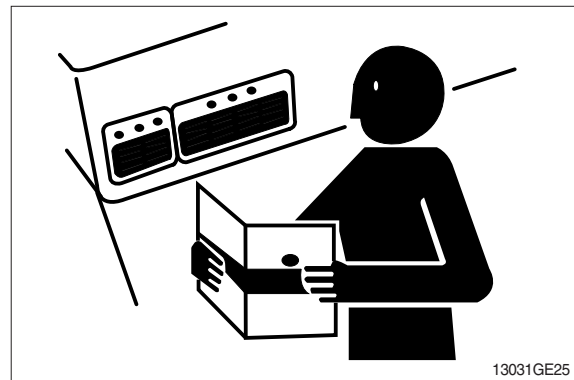
Use proper containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

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.

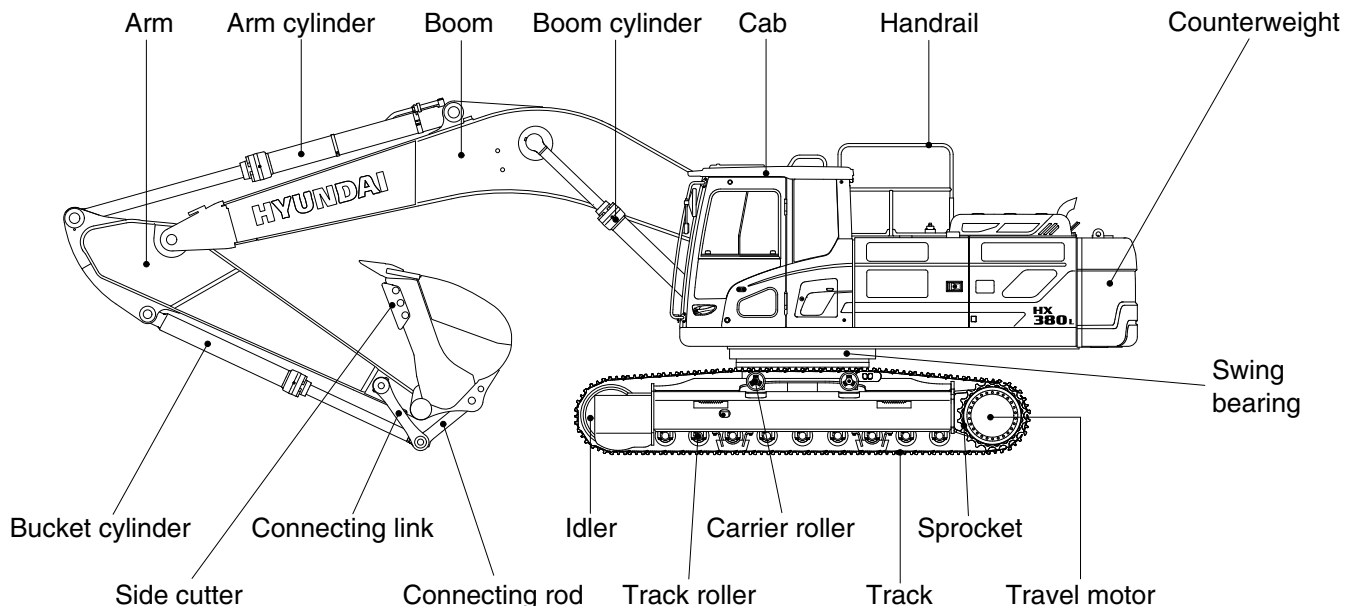
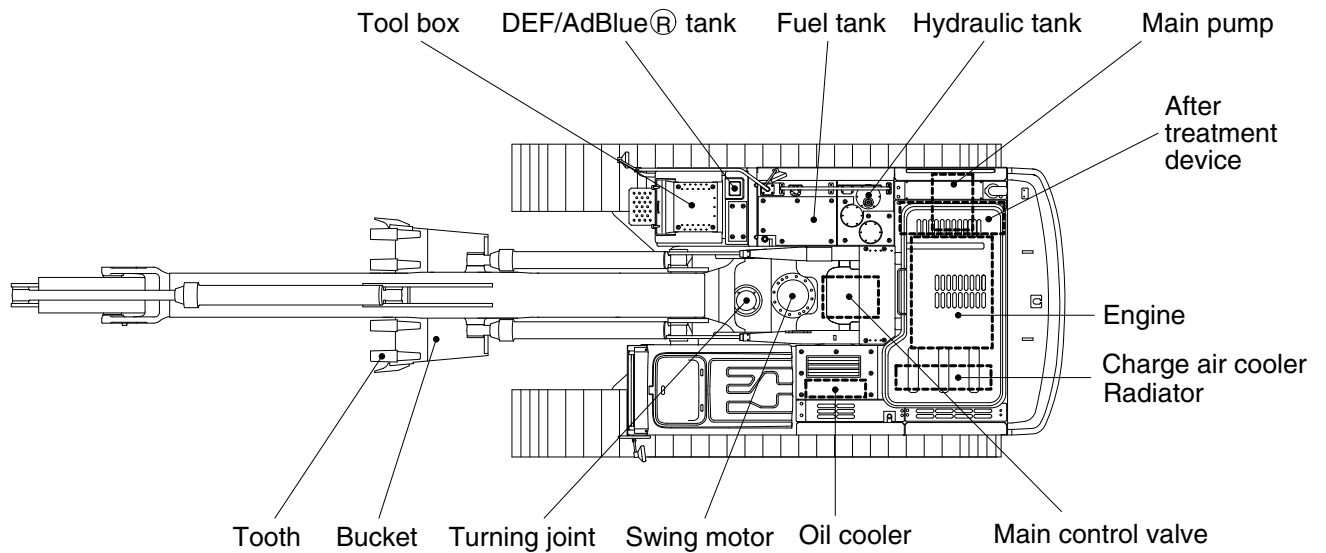


## LIVE WITH SAFETY

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

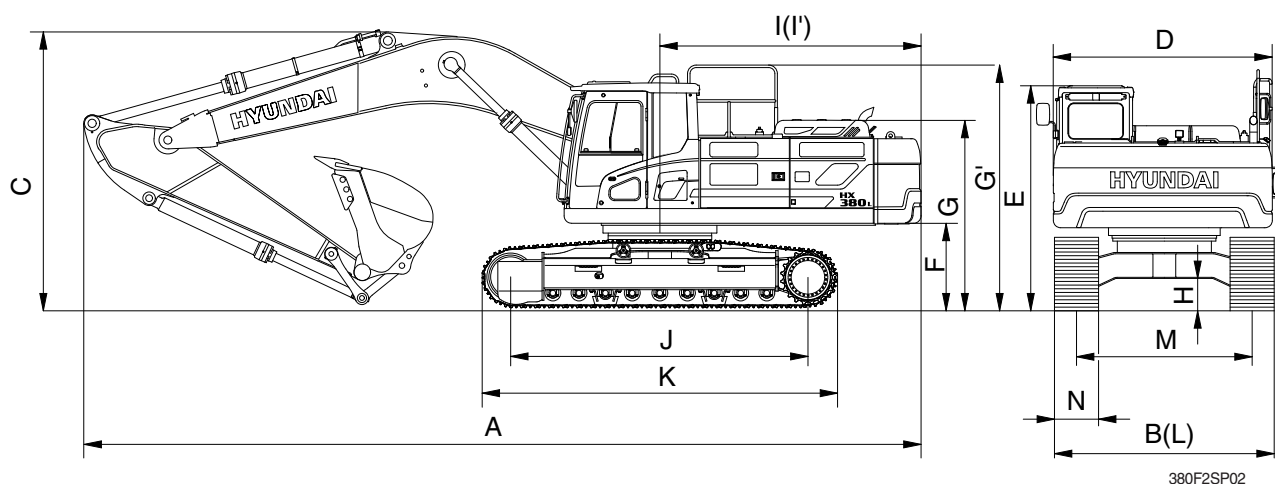


380F2SP01

## 2. SPECIFICATIONS

### 1) HX380 L

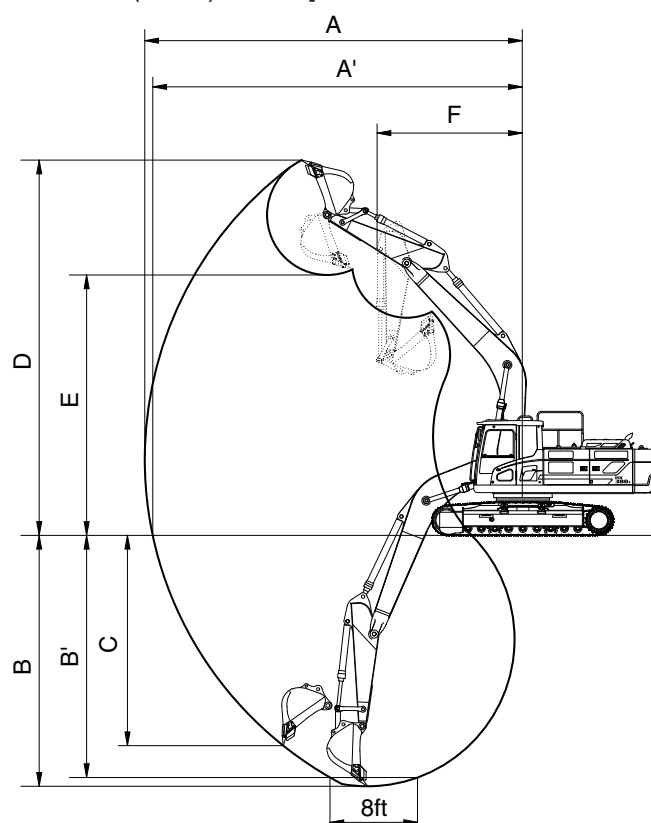
· 6.5 m (21' 4") BOOM and 3.2 m (10' 6") ARM



Description		Unit	Specification
Operating weight		kg (lb)	37200 (82011)
Bucket capacity (SAE heaped), standard		m <sup>3</sup> (yd <sup>3</sup> )	1.44 (1.88)
Overall length	A	mm (ft-in)	11340 (37' 2")
Overall width, with 600 mm shoe	B		3230 (10' 9")
Overall height of boom	C		3760 (12' 3")
Superstructure width	D		2980 ( 9' 9")
Overall height of cab	E		3190 (10' 4")
Ground clearance of counterweight	F		1200 ( 3' 11")
Overall height of engine hood	G		2672 ( 8' 9")
Overall height of handrail	G'		3350 (11' 0")
Minimum ground clearance	H		530 ( 1' 8")
Rear-end distance	I		3510 (11' 6")
Rear-end swing radius	I'		3570 (11' 9")
Distance between tumblers	J		4030 (13' 3")
Undercarriage length	K		4940 (16' 2")
Undercarriage width	L		3280 (10' 9")
Track gauge	M		2590 ( 8' 5")
Track shoe width, standard	N		600 (24")
Travel speed (low/high)		km/hr (mph)	3.6/6.4 (2.11/3.98)
Swing speed		rpm	11.2
Gradeability		Degree (%)	35 (70)
Ground pressure (600 mm shoe)		kgf/cm <sup>2</sup> (psi)	0.64 (9.03)
Max traction force		kg (lb)	32500 (71650)

### 3. WORKING RANGE

#### 1) HX380 L, HX380 NL [6.5 m (21' 2") BOOM]



380F2SP04

Description		6.45 m (21' 2") Boom		
		2.2 m (7' 3") Arm	2.65 m (8' 8") Arm	3.2 m (10' 6") Arm
Max digging reach	A	10330 mm (33'11")	10710mm (35' 1")	11150 mm (36' 7")
Max digging reach on ground	A'	10120 mm (33' 2")	10580mm (34' 7")	10950 mm (35'11")
Max digging depth	B	6360 mm (20'10")	6820 mm (22' 4")	7360 mm (24' 2")
Max digging depth (8ft level)	B'	6170 mm (20' 3")	6650 mm (21' 10")	7200 mm (23' 7")
Max vertical wall digging depth	C	5970 mm (19' 7")	6320 mm (20' 7")	6330 mm (20' 9")
Max digging height	D	10260 mm (33' 8")	10190 mm (33' 4")	10360 mm (34' 0")
Max dumping height	E	7060 mm (23' 2")	7120 mm (23'4")	7260 mm (23'10")
Min swing radius	F	4630 mm (15' 2")	4620 mm (15' 2")	4360 mm (14' 4")
Bucket digging force	SAE	186.3 [203.3] kN	186.3 [203.3] kN	188.3 [205.5] kN
		19000 [20730] kgf	19000 [20730] kgf	19200 [20950] kgf
		41890 [45700] lbf	41890 [45700] lbf	42330 [46190] lbf
	ISO	214.8 [234.3] kN	214.8 [234.3] kN	216.7 [236.4] kN
		21900 [23890] kgf	21900 [23890] kgf	22100 [24110] kgf
		48280 [52670] lbf	48280 [52670] lbf	48720 [53150] lbf
Arm crowd force	SAE	195.2 [212.9] kN	156.9[171.2] kN	140.2 [153.0] kN
		19900 [21710] kgf	16000 [17480] kgf	14300 [15600] kgf
		43870 [47860] lbf	35270 [38480] lbf	31530 [34390] lbf
	ISO	205.0 [223.6] kN	162.8 [177.6] kN	145.1 [158.4] kN
		20900 [22800] kgf	16600 [18080] kgf	14800 [16150] kgf
		46080 [50270] lbf	36600[39930] lbf	32630 [35600] lbf

[ ] : Power boost













## 4. WEIGHT

Item	HX380L	
	kg	lb
Upperstructure assembly	10714.71	23621.89
Main frame weld assembly	2919.22	6435.77
Engine assembly	730	1609.37
Main pump assembly	201	443
Main control valve assembly	220	485
Swing motor assembly	370	820
Hydraulic oil tank assembly	300	661
Fuel tank assembly	350	772
Counterweight	6600	13230
Cab assembly	515	1135.38
Radiator assy	230	510
Oil cooler assy	80	180
Lower chassis assembly	8917.23	19659.12
Track frame weld assembly	4951.13	10915.37
Swing bearing	468	1031.76
Travel motor assembly	380	837.75
Turning joint	53	116.85
Tension cylinder	225	496
Idler	261	575.4
Sprocket	83	183
Carrier roller	79.50	175.26
Track roller	40	88.18
Track-chain assembly (600 mm standard triple grouser shoe)	2196	4841.35
Front attachment assembly (6.45 m boom, 2.65 m arm)	2879.52	6348.25
6.45 m boom assembly	272.68	601.15
2.65 m arm assembly	1219.68	2688.9
1.44 m³ SAE heaped bucket	1230	2710
Boom cylinder assembly	314.10	692.47
Arm cylinder assembly	434.70	958.34
Bucket cylinder assembly	266.3	587.09
Bucket control linkage assembly	372.06	820.25













## 5. LIFTING CAPACITIES

- 1) 6.45m (21'2") boom, 2.65 m (8'7") arm equipped with 600 mm (24") triple grouser shoe and 6,600 kg (13230 lb) counterweight.

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

Load Point Height		Load Radius										At max. reach		
		3.0m (9.8 ft)		4.5 m (14.8 ft)		6.0m (19.7 ft)		7.5m (24.6 ft)		9.0 (29.5 ft)		Capacity		Reach
														m (ft)
7.5m	Kg											*6990	*6990	7.2
24.6ft	lb											*15410	*15410	(23.6)
6.0m	Kg							*7110	6400			*7050	5480	8.13
19.7ft	lb							*15670	14110			*15540	12080	(26.7)
4.5m	Kg			*11190	*11190	*8840	*8840	*7690	6140			*7230	4680	8.71
14.8ft	lb			*24670	*24670	*19490	*19491	*16950	13540			*15940	10320	(28.6)
3.0m	Kg			*14550	12910	8310	8310	*8490	5820	6750	4250	6750	4250	9.00
9.8ft	lb			*32080	28460	18320	18320	*18720	12830	14880	9370	14880	9370	(29.5)
1.5m	Kg			*16970	11930	7770	7770	8840	5520	6590	4110	6560	4080	9.03
4.9ft	lb			*37410	26300	17130	17130	19490	12170	14530	9060	14460	8990	(29.6)
Ground line	Kg			*17790	11570	7450	7450	8620	5320			6720	4160	8.80
Ground line	lb			*39220	25510	16420	16420	19000	11730			14820	9170	(28.9)
-1.5m	Kg	*15040	*15040	*17480	11540	7330	7330	8530	5240			7330	4520	8.29
-4.9ft	lb	*33160	*33160	*38540	25440	16160	16160	18810	11550			16160	9960	(27.2)
-3.0m	Kg	*22610	*22610	*16230	11720	7410	7410					8720	5390	7.45
-9.8ft	lb	*49850	*49850	*35780	25840	16340	16340					19220	11880	(24.4)
-4.5m	Kg	*18600	*18600	*13680	12130	7720	7720					*9830	7500	6.12
-14.8ft	lb	*41010	*41010	*30160	26740	17020	17020					*21670	16530	(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 load point is a hook located on the back of the bucket.
  4. \*indicates load limited by hydraulic capacity.

Load Point Height		Load Radius										At max. reach		
		3.0m (9.8 ft)		4.5 m (14.8 ft)		6.0m (19.7 ft)		7.5m (24.6 ft)		9.0 (29.5 ft)		Capacity		Reach
														m (ft)
7.5m	Kg											*8510	7720	7.09
24.6ft	lb											*18760	17020	(23.3)
6.0m	Kg					*9010	*9010	*8450	6970			*8440	6190	8.04
19.7ft	lb					*19860	*19860	*18630	15370			*18610	13650	(26.4)
4.5m	Kg			13210	13211	*10310	9540	*8970	6780			8070	5400	8.62
14.8ft	lb			*29120	*29121	*22370	21030	*19780	14950			17790	11900	(28.3)
3.0m	Kg					*11880	9000	*9740	6510			7530	5010	8.92
9.8ft	lb					*26190	19840	*21470	14350			16600	11050	(29.3)
1.5m	Kg					*13180	8570	9580	6280			7380	4880	8.95
4.9ft	lb					*29060	18890	21120	13850			16270	10760	(29.3)
Ground line	Kg			*18160	12660	13180	8330	9420	6130			7600	5000	8.71
Ground line	lb			*40040	27910	29060	18360	20770	13510			16760	11020	(28.6)
-1.5m	Kg	*12520	*12520	*18300	12700	13110	8270	9380	6090			8280	5430	8.20
-4.9ft	lb	*27600	*27600	*40340	28000	28900	18230	20680	13430			18250	11970	(26.9)
-3.0m	Kg	*22130	*22130	*16700	12900	*12760	8380					9820	6400	7.34
-9.8ft	lb	*48790	*48790	*36820	28440	*28130	18470					21650	14110	(24.1)
-4.5m	Kg			*13570	13310							*9820	8760	5.99
-14.8ft	lb			*29920	29340							*21760	19310	(19.7)

2) 6.45m (21'2") boom, 3.2m (10'4") arm equipped with 600mm (24") triple grouser shoe and 6,600 kg (13230 lb) counterweight



Rating over-front



Rating over-side or 360 degree

Load Point Height		Load Radius										At max. reach		
		3.0m (9.8 ft)		4.5 m (14.8 ft)		6.0m (19.7 ft)		7.5m (24.6 ft)		9.0 (29.5 ft)		Capacity		Reach
														m (ft)
7.5m	Kg							*6300	*6300			*4910	*4910	7.88
24.6ft	lb							*13890	*13890			*10820	*10820	(25.9)
6.0m	Kg							*6530	*6530			*4850	*4850	8.75
19.7ft	lb							*14400	*14400			*10690	*10690	(28.7)
4.5m	Kg					*8150	*8150	*7200	6290	*6570	4500	*4990	4230	9.28
14.8ft	lb					*17970	*17970	*15870	13870	*14480	9920	*11000	9330	(30.5)
3.0m	Kg			*13430	*13430	*9830	8560	*8100	5960	6840	4330	*5320	3870	9.56
9.8ft	lb			*29610	*29610	*21670	18870	*17860	13140	15080	9550	*11730	8530	(31.4)
1.5m	Kg			*16300	12370	*11410	7990	8970	5640	6660	4170	*5870	3730	9.58
4.9ft	lb			*35940	27270	*25150	17610	19780	12430	14680	9190	*12940	8220	(31.4)
Ground line	Kg	*8690	*8690	*17710	11820	12470	7600	8710	5400	6520	4040	6120	3780	9.37
Ground line	lb	*19160	*19160	*39040	26060	27490	16760	19200	11900	14370	8910	13490	8330	(30.7)
-1.5m	Kg	*13540	*13540	*17870	11670	12260	7420	8570	5280			6590	4070	8.89
-4.9ft	lb	*29850	*29850	*39400	25730	27030	16360	18890	11640			14530	8970	(29.2)
-3.0m	Kg	*19290	*19290	*17020	11760	12260	7430	8580	5290			7620	4720	8.11
-9.8ft	lb	*42530	*42530	*37520	25930	27030	16380	18920	11660			16800	10410	(26.6)
-4.5m	Kg	*21120	*21120	*15000	12050	*11130	7620					*9200	6170	6.92
-14.8ft	lb	*46560	*46560	*33070	26570	*24540	16800					*20280	13600	(22.7)
-6.0m	Kg			*10840	*10840							*9590	*9590	5.01
-19.7ft	lb			*23900	*23900							*21140	*21140	(16.4)

- NOTES :
1. Lifting Capacity are based on SAE J1097, ISO 10567.
  2. Lifting Capacity of the Robex Series does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.
  3. The load point is a hook (standard equipment) located on the back of the bucket.
  4. ( \* ) Indicates load limited by hydraulic capacity.

Load Point Height		Load Radius										At max. reach		
		3.0m (9.8 ft)		4.5 m (14.8 ft)		6.0m (19.7 ft)		7.5m (24.6 ft)		9.0 (29.5 ft)		Capacity		Reach
														m (ft)
7.5m	Kg							*7750	7210			*6630	*6630	7.74
24.6ft	lb							*17090	15900			*14620	*14620	(25.4)
6.0m	Kg							*7860	7140			*6420	5620	8.62
19.7ft	lb							*17330	15740			*14150	12390	(28.3)
4.5m	Kg			*11980	*11980	*9650	*9650	*8500	6930	7650	5150	*6450	4990	9.17
14.8ft	lb			*26410	*26410	*21270	*21270	*18740	15280	16870	11350	*14220	11000	(30.1)
3.0m	Kg			*15520	14090	*11340	9250	*9380	6660	7520	5030	*6690	4660	9.44
9.8ft	lb			*34220	31060	*25000	20390	*20680	14680	16580	11090	*14750	10270	(31.0)
1.5m	Kg			*18140	13210	*12840	8770	9710	6400	7390	4910	6840	4540	9.47
4.9ft	lb			*39990	29120	*28310	19330	21410	14110	16290	10820	15080	10010	(31.1)
Ground line	Kg			*19100	12840	13340	8470	9510	6210	7290	4820	7010	4630	9.25
Ground line	lb			*42110	28310	29410	18670	20970	13690	16070	10630	15450	10210	(30.4)
-1.5m	Kg	*12280	*12280	*18880	12780	13200	8360	9420	6130			7540	4970	8.77
-4.9ft	lb	*27070	*27070	*41620	28180	29100	18430	20770	13510			16620	10960	(28.8)
-3.0m	Kg	*19800	*19800	*17670	12910	13250	8400	9470	6180			8700	5710	7.98
-9.8ft	lb	*43650	*43650	*38960	28460	29210	18520	20880	13620			19180	12590	(26.2)
-4.5m	Kg	*20570	*20570	*15170	13220	*11400	8620					*9590	7350	6.76
-14.8ft	lb	*45350	*45350	*33440	29150	*25130	19000					*21140	16200	(22.2)
-6.0m	Kg													
-19.7ft	lb													

- NOTES :
1. Lifting Capacity are based on SAE J1097, ISO 10567.
  2. Lifting Capacity of the Robex Series does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.
  3. The load point is a hook (standard equipment) located on the back of the bucket.
  4. ( \* ) Indicates load limited by hydraulic capacity.



3) 6.45m (21'2") boom, 2.2m (7'2") arm equipped with 600mm (24") triple grouser shoe and 6,600 kg (13230 lb) counterweight



Rating over-front



Rating over-side or 360 degree

Load Point Height		Load Radius								At max. reach	
		3.0m (9.8 ft)		4.5 m (14.8 ft)		6.0m (19.7 ft)		7.5m (24.6 ft)		Capacity	Reach
											m (ft)
7.5m	Kg									*7740	7480
24.6ft	lb									*17060	16490 (22.8)
6.0m	Kg					*8300	*8300	*7740	6420	*7710	5810
19.7ft	lb					*18300	*18300	*17060	14150	*17000	12810 (25.9)
4.5m	Kg			*12400	*12400	*9570	8960	*8250	6200	7700	4960
14.8ft	lb			*27340	*27340	*21100	19750	*18190	13670	16980	10930 (27.9)
3.0m	Kg					*11110	8370	*9010	5920	7120	4530
9.8ft	lb					*24470	18450	*19860	13050	15700	9990 (28.9)
1.5m	Kg					*12380	7900	8980	5660	6940	4380
4.9ft	lb					*27290	17420	19800	12480	15300	9660 (29.0)
Ground line	Kg			*18100	11850	12490	7650	8800	5500	7150	4490
Ground line	lb			*39900	26120	27540	16870	19400	12130	15760	9900 (28.2)
-1.5m	Kg			*17460	11900	12420	7590	8760	5470	7860	4930
-4.9ft	lb			*38490	26230	27380	16730	19310	12060	17330	10870 (26.5)
-3.0m	Kg	*13840	*13840	*15900	12130	*12020	7710			9470	5940
-9.8ft	lb	*30510	*30510	*35050	26470	*26500	17000			20880	13100 (23.6)
-4.5m	Kg	*21290	*21290	*12860	12590					*9720	8480
-14.8ft	lb	*46990	*46990	*28350	27760					*21430	18700 (19.1)

NOTES :

1. Lifting Capacity are based on SAE J1097, ISO 10567.
2. Lifting Capacity of the Robex Series does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.
3. The load point is a hook (standard equipment) located on the back of the bucket.
4. (★) Indicates load limited by hydraulic capacity.

Load Point Height		Load Radius								At max. reach	
		3.0m (9.8 ft)		4.5 m (14.8 ft)		6.0m (19.7 ft)		7.5m (24.6 ft)		Capacity	Reach
											m (ft)
7.5m	Kg					*9270	*9270			*9410	8410
24.6ft	lb					*20440	*20440			*20750	18450 (22.0)
6.0m	Kg					*9770	*9770	*9170	6980	*9210	6650
19.7ft	lb					*21450	*21450	*20220	15390	*20300	14660 (25.3)
4.5m	Kg					*11050	9550	*9550	6830	8600	5790
14.8ft	lb					*24360	21050	*21050	15060	18960	12760 (27.3)
3.0m	Kg					*12560	9060	9930	6610	8020	5370
9.8ft	lb					*27690	19970	21890	14570	17680	11840 (28.3)
1.5m	Kg					13580	8700	9710	6410	7880	5250
4.9ft	lb					29440	19180	21410	14130	17370	11570 (28.4)
Ground line	Kg					13380	8530	9580	6300	8150	5420
Ground line	lb					29500	18810	21120	13890	17970	11950 (27.6)
-1.5m	Kg			*18050	13070	13360	8520	9590	6310	8980	5940
-4.9ft	lb			*39790	28810	29450	18780	21140	13910	19800	13100 (25.8)
-3.0m	Kg	*20300	*20300	*16130	13290	*12440	8670			*10070	7150
-9.8ft	lb	*44750	*44750	*35560	29300	*27430	19110			*22200	15700 (22.9)
-4.5m	Kg			*12300	*12300					*9490	*9490
-14.8ft	lb			*27120	*27120					*20920	*20920 (18.2)

## 6. BUCKET SELECTION GUIDE



General bucket



Heavy duty  
(without side cutter)



Rock heavy duty

Capacity m3 (yd3)		Width mm(in)	Weight kg(lb)	Tooth	Recommendation mm(ft-in)	Recommendation mm(ft-in)	Recommendation mm(ft-in)
					6.450 (21'2") Boom	6.450 (21'2") Boom	6.450 (21'2") Boom
SAE heaped	CECE heaped				2650 (8'7") Arm	2200 (7'2") Arm	3200 (10'4") Arm
2.10 (2.75)	1.80 (2.35)	1823	1650 (3640)	5	■	●	
1.44 (1.88)	1.25 (1.63)	1278	1485 (3270)	4	●		●
▲ 1.62 (2.12)	1.40 (1.83)	1540	1570 (3460)	5	●	●	
2.3	2.02	1746	1830 (4034)	6	■	■	
▲ 1.8	1.6	1556	1722 (3796)	5	●	●	

▲ Heavy Duty Bucket

L' Rock-Heavy duty bucket [Granite/Marble Bucket]

● Applicable for materials with density of 2,100 Kg/m<sup>3</sup> (3,500 lbf/yd<sup>3</sup>) or less

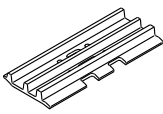
■ Applicable for materials with density of 1,500 Kg/m<sup>3</sup> (2,500 lbf/yd<sup>3</sup>) or less

## 7. UNDERCARRIAGE

### 1) TRACKS

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

### 2) TYPES OF SHOES

Model	Shapes		Triple grouser				
							
HX380 L	Shoe width	mm (in)	600 (24)	700 (28)	750 (30)	800 (32)	900 (36)
	Operating weight	kg (lb)	38920 (85800)	39370 (86800)	39595 (87290)	39820 (87790)	40270 (88780)
	Ground pressure	kgf/cm <sup>2</sup> (psi)	0.70 (9.95)	0.61 (8.67)	0.57 (8.11)	0.54 (7.68)	0.48 (6.83)
	Overall width	mm (ft-in)	3340 (10' 11")	3440 (11' 3")	3490 (11' 5")	3540 (11' 7")	3640 (11' 11")
HX380 NL	Shoe width	mm (in)	600 (24)	-	-	-	-
	Operating weight	kg (lb)	38820 (85580)	-	-	-	-
	Ground pressure	kgf/cm <sup>2</sup> (psi)	0.70 (9.95)	-	-	-	-
	Overall width	mm (ft-in)	2990 (9' 10")	-	-	-	-

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

Item	Quantity
Carrier rollers	2 EA
Track rollers	9 EA
Track shoes	51 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
700 mm triple grouser	Option	B
750 mm triple grouser	Option	B
800 mm triple grouser	Option	C
900 mm triple grouser	Option	C

※ **Table 2**

Category	Applications	Applications
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</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-1

Item	Specification
Model	Cummins QSL9
Type	4-cycle turbocharged charger 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 × 145 mm (4.49" × 5.69")
Piston displacement	8900 cc (543 cu in)
Compression ratio	16.7 : 1
Rated net horse power (SAE J1349)	344 Hp at 1650 rpm (257 kW at 1650 rpm)
Rated gross horse power (SAE J1995)	359 Hp at 1650 rpm (267 kW at 1650 rpm)
Maximum torque	166 kgf · m (1186 lbf · ft) at 1500 rpm
Engine oil quantity	30 ℓ (7.9 U.S. gal)
Wet weight	708 kg (1560 lb)
Low idling speed	900 ± 100 rpm
High idling speed	1700 + 50 rpm
Rated fuel consumption	155 g/Hp · hr at 1650 rpm
Starting motor	Denso (24V-7.8 kW)
Alternator	Denso 24V-95A
Battery	2 × 12V × 160Ah

## 1) ENGINE-2

Item	Specification
Model	HD Hyundai Construction Equipment / HM8.3
Type	4-cycle, turbocharged, charger air cooled, mechanical controlled diesel engine
Cooling method	Water cooled
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 × 135 mm (4.49" × 5.31")
Piston displacement	8.3 ℓ (506 cu in)
Compression ratio	18 : 1
Gross power	260 Hp (194 kW) at 2200 rpm
Net power	255 Hp (190 kW) at 2200 rpm
Max. power	261 Hp (195 kW) at 2200 rpm
Maximum torque	1150 N·m (848 lbf·ft) at 1300 rpm
Engine oil quantity	26.5 ℓ (7.0 U.S. gal)
Wet weight	604 kg (1332 lb)
Starting motor	24 V-7.5 kW
Alternator	24 V-90A

## 2) MAIN PUMP

Item	Specification
Type	Variable displacement tandem axis piston pumps
Capacity	2 × 175 cc/rev
Rated oil flow	2 × 306 ℓ /min (80.8 U.S. gpm / 67.3 U.K. gpm)
Rated speed	1750 rpm

### 3) GEAR PUMP

Item	Specification
Type	Fixed displacement gear pump single stage
Capacity	15cc/rev
Maximum pressure	40 kgf/cm <sup>2</sup> (570 psi)
Rated oil flow	24.75 ℓ /min (6.5 U.S. gpm/5.4 U.K. gpm)

### 4) MAIN CONTROL VALVE

Item	Specification
Type	9 spools
Operating method	Hydraulic pilot system
Main relief valve pressure	330 kgf/cm <sup>2</sup> (4690 psi) [360 kgf/cm <sup>2</sup> (5120 psi)]
Overload relief valve pressure	390 kgf/cm <sup>2</sup> (5550 psi)

[ ]: Power boost

### 5) SWING MOTOR

Item	Specification	
Machine serial No.	-#0465	#0466-
Type	Axial piston motor	
Capacity	233 cc/rev	240 cc/rev
Relief pressure	290 kgf/cm <sup>2</sup> (4120 psi)	
Braking system	Automatic, spring applied hydraulic released	
Braking torque	107 kgf · m (773 lbf · ft)	134 kgf · m (969 lbf · ft)
Brake release pressure	30~50 kgf/cm <sup>2</sup> (427~711 psi)	26 kgf/cm <sup>2</sup> (370 psi)
Reduction gear type	2 - stage planetary	

### 6) TRAVEL MOTOR

Item	Specification	
Type	Variable displacement axial piston motor	
Relief pressure	370 kgf/cm <sup>2</sup> (5260 psi)	*360 kgf/cm <sup>2</sup> (5120 psi)
Capacity (max / min)	185/114 cc/rev	
Reduction gear type	3-stage planetary	
Braking system	Automatic, spring applied hydraulic released	
Brake release pressure	10.6 kgf/cm <sup>2</sup> (151 psi)	*8.9 kgf/cm <sup>2</sup> (127 psi)
Braking torque	57.1 kgf · m (413 lbf · ft)	*49.0 kgf · m (354 lbf · ft)

\* : TRAVEL MOTOR (TYPE 2)

## 7) CYLINDER

Item		Specification
Boom cylinder	Bore dia × Rod dia × Stroke	ø 160 × ø 110 × 1500 mm
	Cushion	Extend only
Arm cylinder	Bore dia × Rod dia × Stroke	ø 170 × ø 120 × 1760 mm
	Cushion	Extend and retract
Bucket cylinder	Bore dia × Rod dia × Stroke	ø 150 × ø 105 × 1295 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
HX380 L	Standard	600 mm (24")	0.70 kgf/cm <sup>2</sup> (9.95 psi)	51	3340 mm (10' 11")
	Option	700 mm (28")	0.61 kgf/cm <sup>2</sup> (8.67 psi)	51	3440 mm (11' 3")
		750 mm (30")	0.57 kgf/cm <sup>2</sup> (8.11 psi)	51	3490 mm (11' 5")
		800 mm (32")	0.54 kgf/cm <sup>2</sup> (7.68 psi)	51	3540 mm (11' 7")
		900 mm (36")	0.48 kgf/cm <sup>2</sup> (6.83 psi)	51	3640 mm (11' 11")
HX380 NL	Standard	600 mm (24")	0.70 kgf/cm <sup>2</sup> (9.95 psi)	51	2990 mm (9' 10")

## 9) BUCKET

Item		Capacity		Tooth quantity	Width
		SAE heaped	CECE heaped		
HX380L HX380NL	Standard	1.62 m <sup>3</sup> (2.12 yd <sup>3</sup> )	1.42 m <sup>3</sup> (1.86 yd <sup>3</sup> )	5	1480 mm (58")
		1.46 m <sup>3</sup> (1.91 yd <sup>3</sup> )	1.28 m <sup>3</sup> (1.67 yd <sup>3</sup> )	4	1370 mm (54")
		1.90 m <sup>3</sup> (2.49 yd <sup>3</sup> )	1.65 m <sup>3</sup> (2.16 yd <sup>3</sup> )	5	1665 mm (66")
		2.10 m <sup>3</sup> (2.75 yd <sup>3</sup> )	1.84 m <sup>3</sup> (2.41 yd <sup>3</sup> )	5	1800 mm (71")
		2.32 m <sup>3</sup> (3.03 yd <sup>3</sup> )	2.02 m <sup>3</sup> (2.64 yd <sup>3</sup> )	6	1950 mm (77")
		◆1.46 m <sup>3</sup> (1.91 yd <sup>3</sup> )	1.28 m <sup>3</sup> (1.67 yd <sup>3</sup> )	4	1370 mm (54")
		◆1.62 m <sup>3</sup> (2.12 yd <sup>3</sup> )	1.42 m <sup>3</sup> (1.86 yd <sup>3</sup> )	5	1480 mm (58")
		◆1.90 m <sup>3</sup> (2.49 yd <sup>3</sup> )	1.65 m <sup>3</sup> (2.16 yd <sup>3</sup> )	5	1665 mm (66")
		◆2.10 m <sup>3</sup> (2.75 yd <sup>3</sup> )	1.84 m <sup>3</sup> (2.41 yd <sup>3</sup> )	5	1800 mm (71")
		◆1.46 m <sup>3</sup> (1.91 yd <sup>3</sup> )	1.28 m <sup>3</sup> (1.67 yd <sup>3</sup> )	4	1370 mm (54")
		◆1.62 m <sup>3</sup> (2.12 yd <sup>3</sup> )	1.42 m <sup>3</sup> (1.86 yd <sup>3</sup> )	5	1480 mm (58")
		◆1.90 m <sup>3</sup> (2.49 yd <sup>3</sup> )	1.65 m <sup>3</sup> (2.16 yd <sup>3</sup> )	5	1665 mm (66")

◆ : Heavy duty bucket

◆ : Rock-heavy duty bucket



## 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	31.7 (8.4)	★SAE 5W-40								
							SAE 30				
				SAE 10W							
				SAE 10W-30							
				SAE 15W-40							
DEF/ AdBlue® tank	Mixture of urea and deionized water	42.5 (11.2)	ISO 22241, High-purity urea + deionized water (32.5:67.5)								
Swing drive	Gear oil	8.0 (2.1)	★SAE 75W-90								
Final drive		TYPE 1 : 4.3 (1.1) ×2 TYPE 2 : 5.5 (1.5) ×2	SAE 80W-90								
Hydraulic tank	Hydraulic oil	Tank : 210 (55.5)	★ISO VG 15								
		System : 414 (109)	ISO VG 32								
			ISO VG 46, HBHO VG 46★ <sup>3</sup>								
			ISO VG 68								
Fuel tank	Diesel fuel★ <sup>1</sup>	600 (159)	★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>	55 (14.5)	Ethylene glycol base permanent type (50 : 50)								
			★Ethylene glycol base permanent type (60 : 40)								

**SAE** : Society of Automotive Engineers

**API** : American Petroleum Institute

**ISO** : International Organization for Standardization

**NLGI** : National Lubricating Grease Institute

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

**UTTO** : Universal Tractor Transmission Oil

**DEF** : Diesel Exhaust Fluid, DEF compatible with AdBlue®

★ : Cold region

Russia, CIS, Mongolia

★<sup>1</sup> : Ultra low sulfur diesel  
- sulfur content ≤ 15 ppm

★<sup>2</sup> : Soft water  
City water or distilled water

★<sup>3</sup> : Hyundai Bio Hydraulic Oil  
- For more information, contact HYUNDAI dealers.

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

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

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

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