SECTION 1 GENERAL

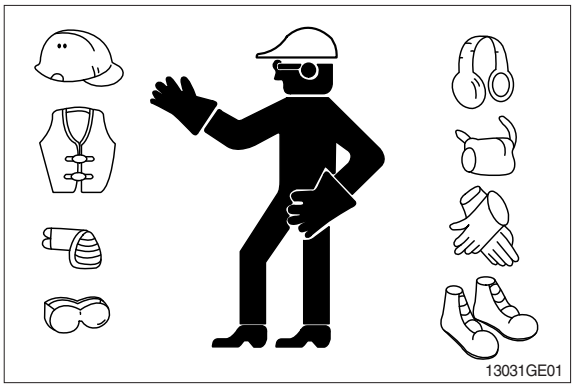
GROUP 1 SAFETY

FOLLOW SAFE PROCEDURE

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

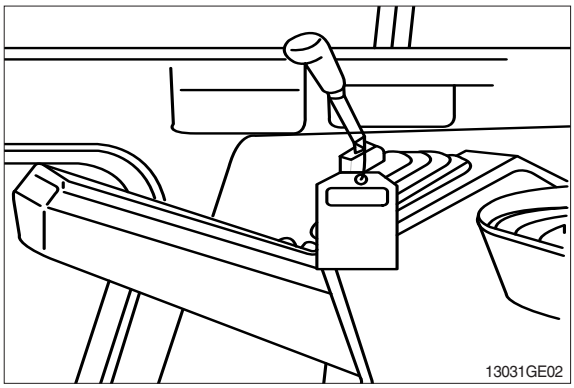
WEAR PROTECTIVE CLOTHING

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



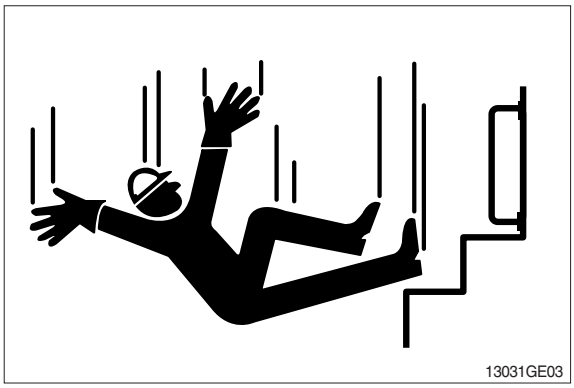
WARN OTHERS OF SERVICE WORK

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.

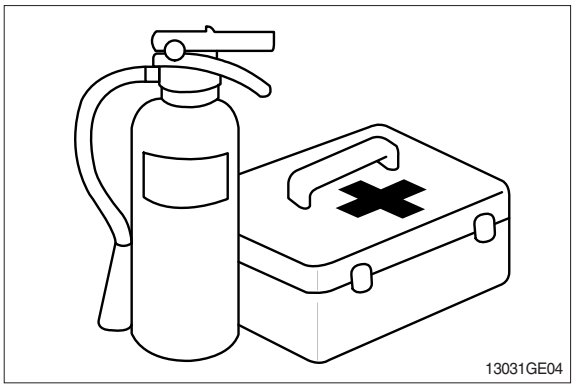


PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

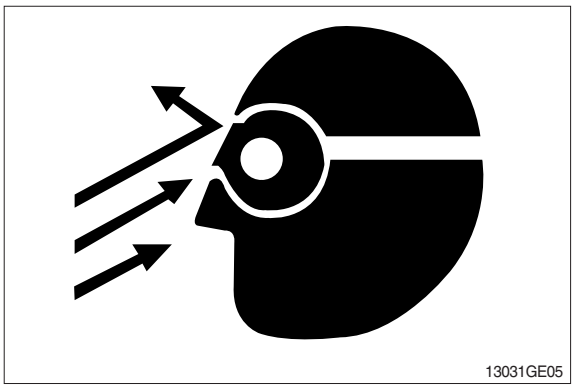
Keep a first aid kit and fire extinguisher handy.

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



PROTECT AGAINST FLYING DEBRIS

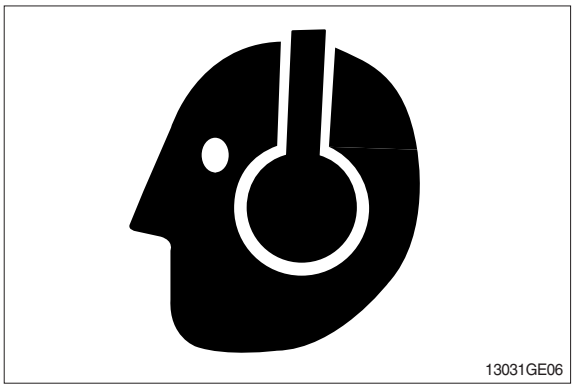
Guard against injury from flying pieces of metal or debris; wear goggles or safety glasses.



PROTECT AGAINST NOISE

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

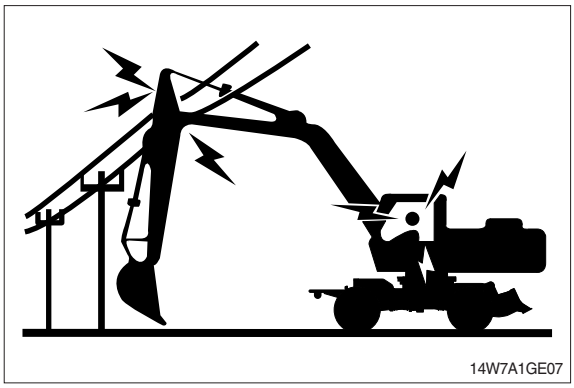
Wear a suitable hearing protective device such as ear-
muffs or earplugs to protect against objectionable or uncomfortable loud noises.



AVOID POWER LINES

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

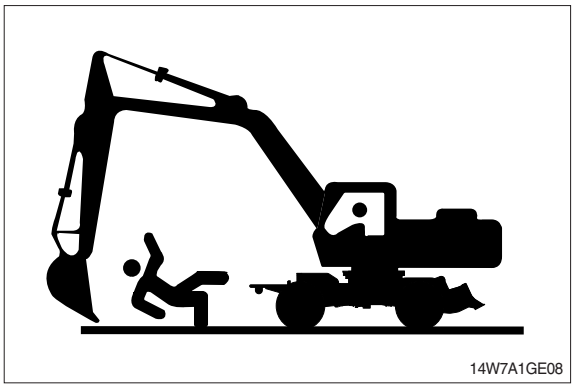
Never move any part of the machine or load closer to electric line than 3m(10ft) plus twice the line insulator length.



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.

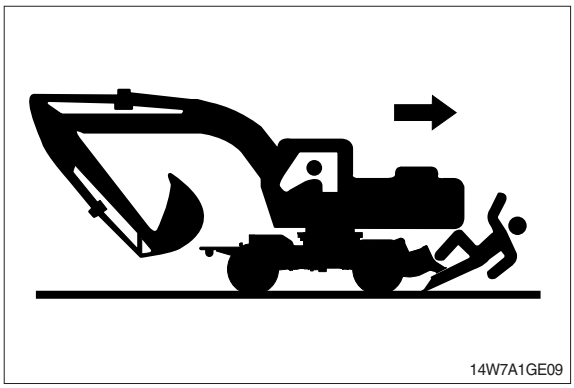


MOVE AND OPERATE MACHINE SAFELY

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.

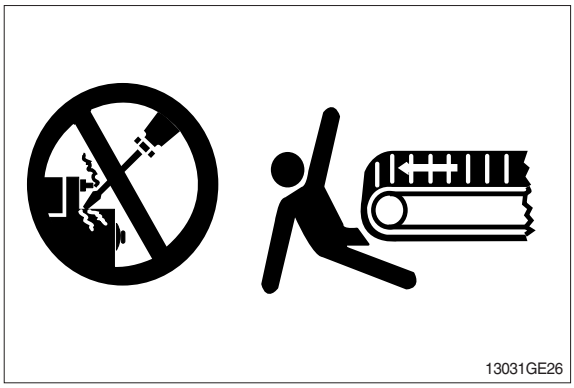
Use a signal person when moving, swinging, or operating the machine in congested areas. Coordinate hand signals before starting the excavator.



OPERATE ONLY 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.



PARK MACHINE SAFELY

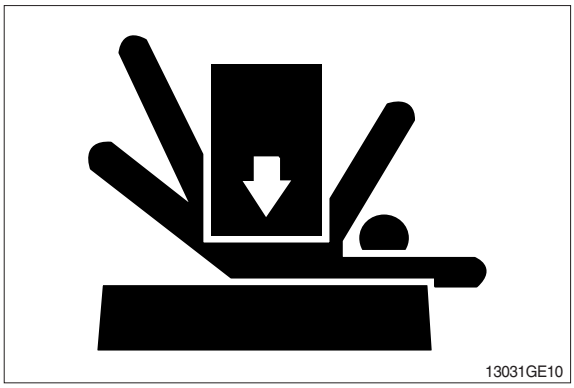
Before working on the machine:

- 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.

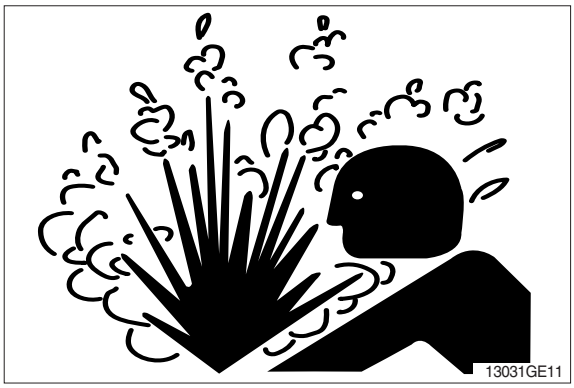
Do not support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load.
Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.


13031GE10

SERVICE COOLING SYSTEM SAFELY

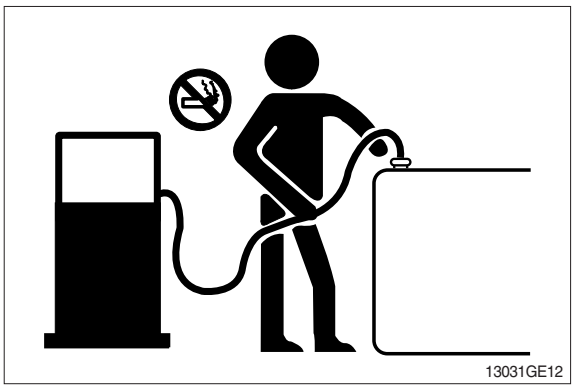
Explosive release of fluids from pressurized cooling system can cause serious burns.

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


13031GE11

HANDLE FLUIDS SAFELY-AVOID FIRES

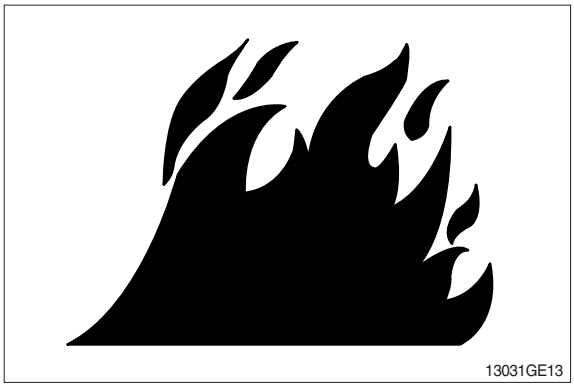
Handle fuel with care; it is highly flammable. Do not refuel the machine while smoking or when near open flame or sparks. Always stop engine before refueling machine.
Fill fuel tank outdoors.


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.

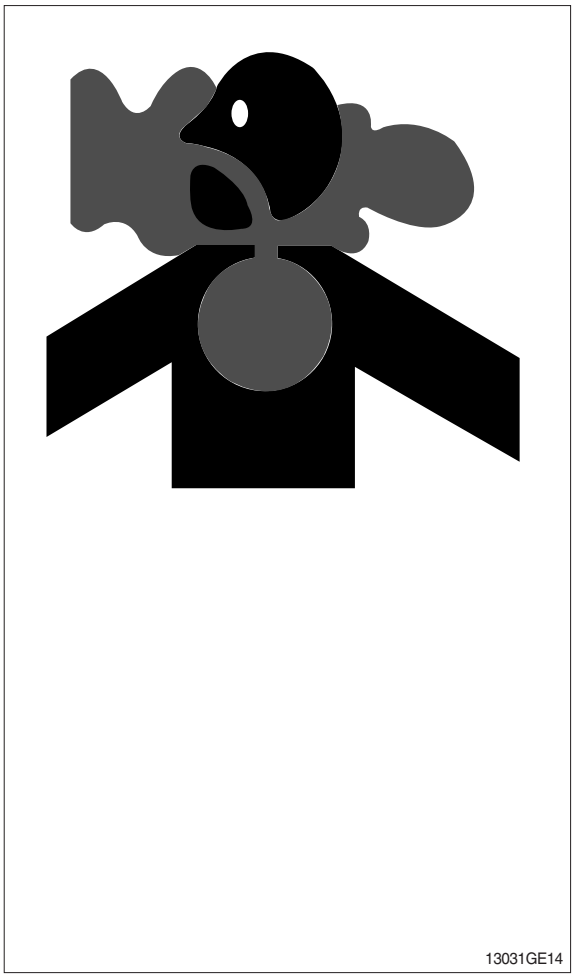
Do not store oily rags ; they can ignite and burn spontaneously.


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.



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.

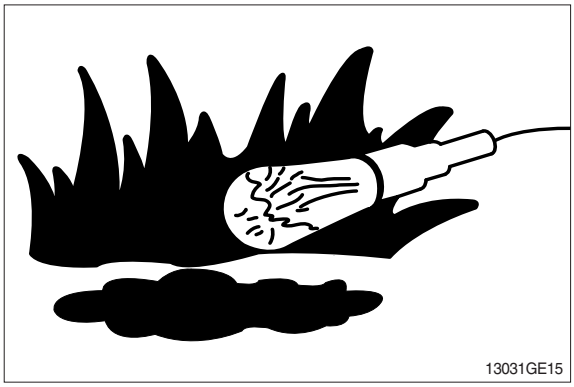
Do all work outside or in a well ventilated area. Dispose of paint and solvent properly.

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

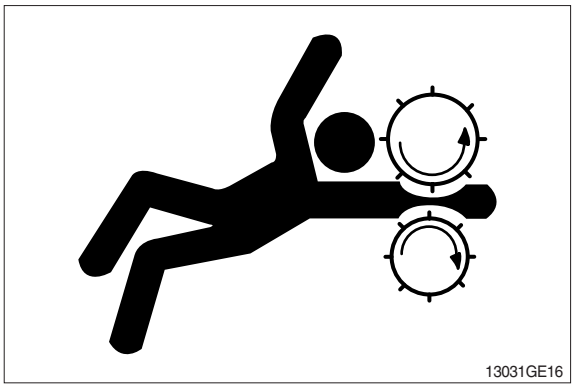
Illuminate your work area adequately but safely. Use a portable safety light for working inside or under the machine. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.



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.

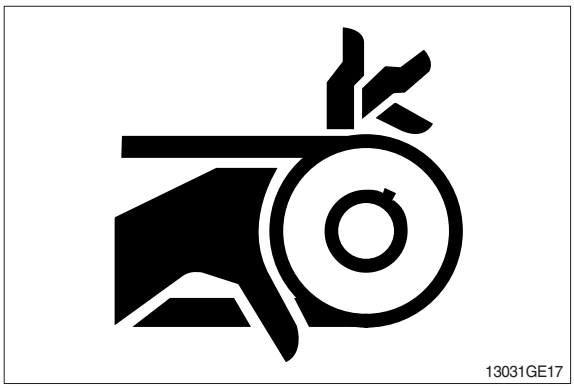
Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.



STAY CLEAR OF MOVING PARTS

Entanglements in moving parts can cause serious injury.

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



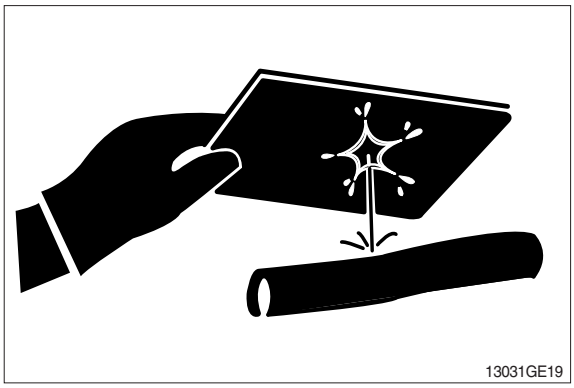
AVOID HIGH PRESSURE FLUIDS

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.

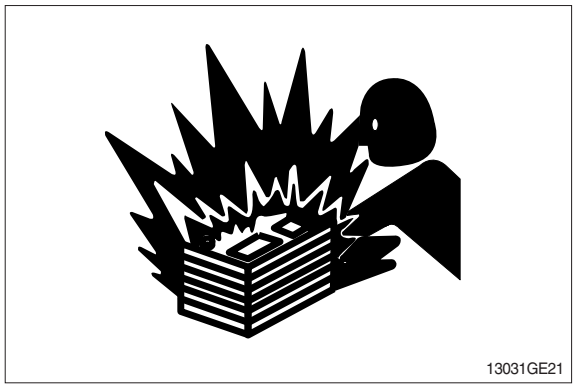
Pressurized lines can be accidentally cut when heat goes beyond the immediate flame area. Install fire resisting guards to protect hoses or other materials.

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:

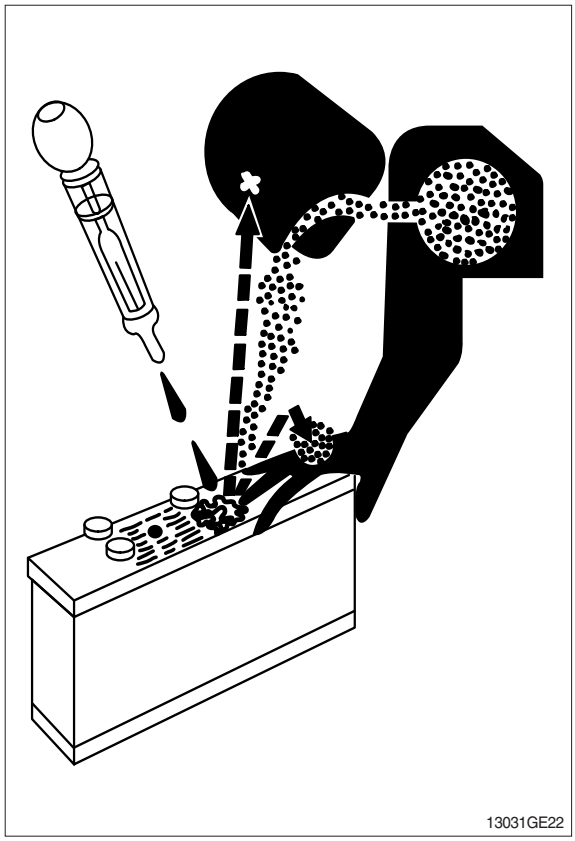
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling of dripping electrolyte.
5. Use proper jump start procedure.

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.



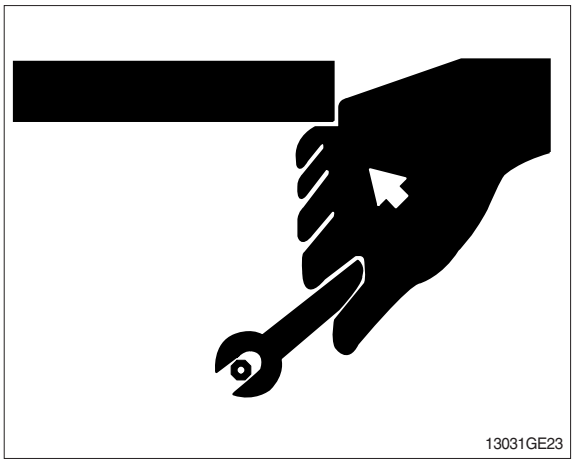
USE TOOLS PROPERLY

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.)

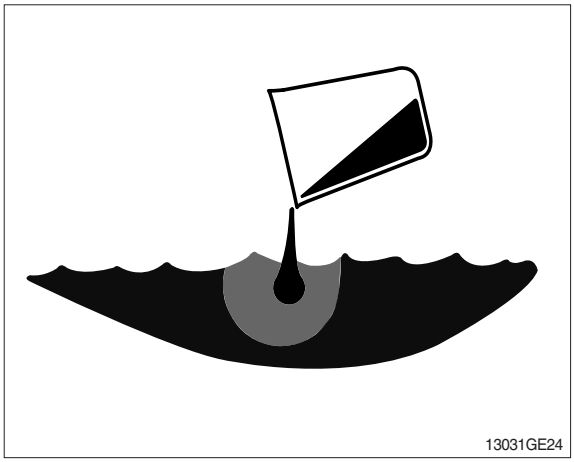


DISPOSE OF FLUIDS PROPERLY

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.

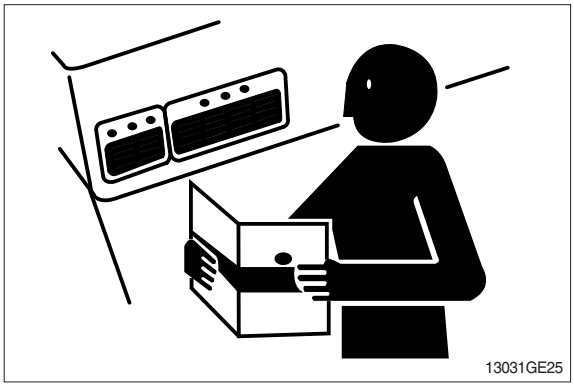
Use proper containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

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.



REPLACE SAFETY SIGNS

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

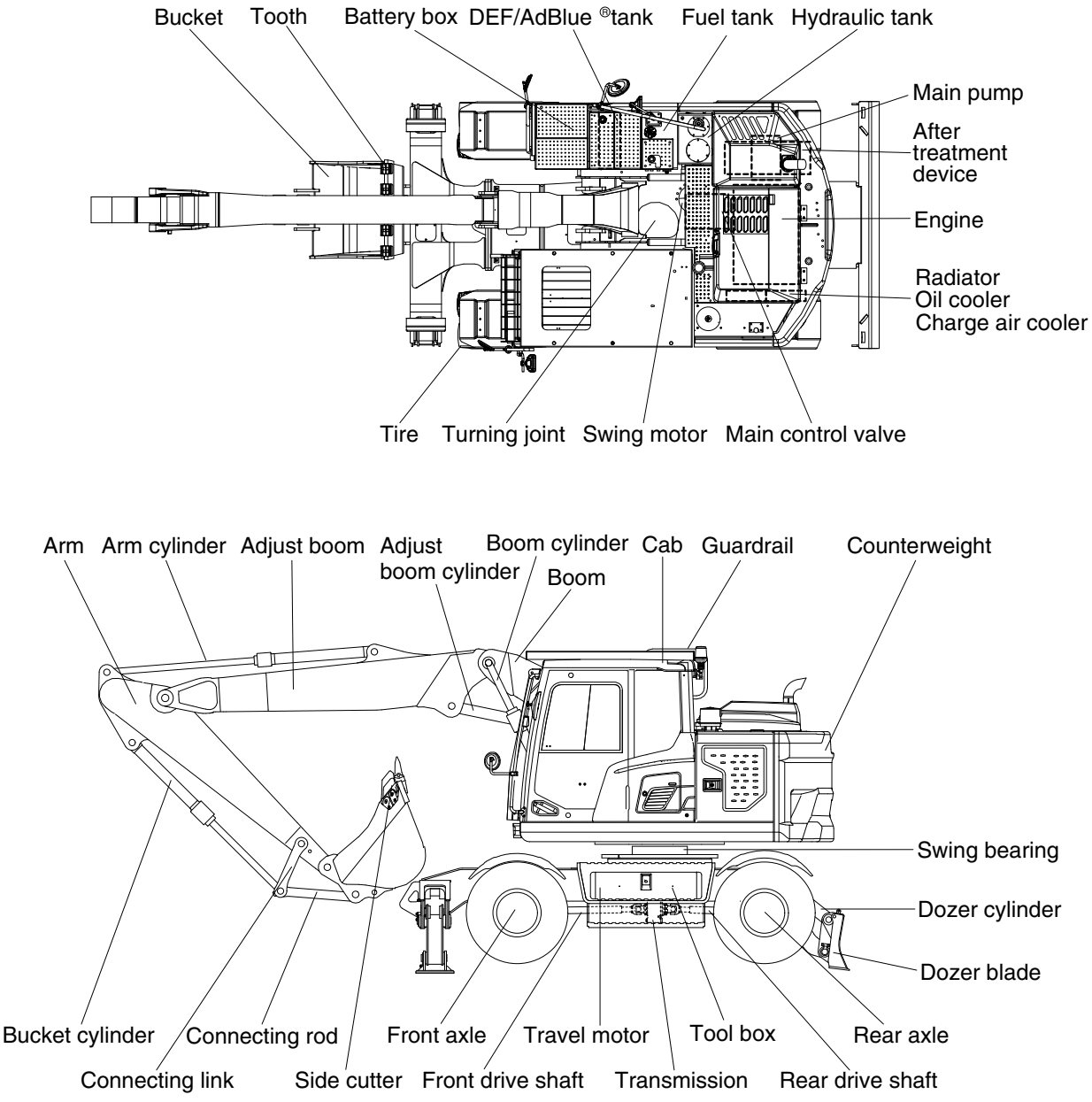


LIVE WITH SAFETY

Before returning machine to customer, make sure machine is functioning properly, especially the safety systems. Install all guards and shields.

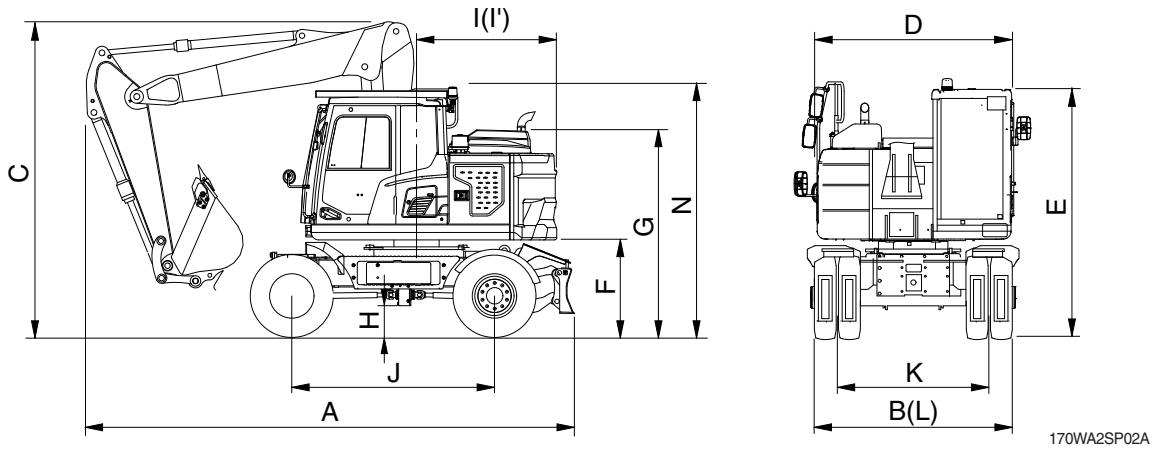
GROUP 2 SPECIFICATIONS

1. MAJOR COMPONENT



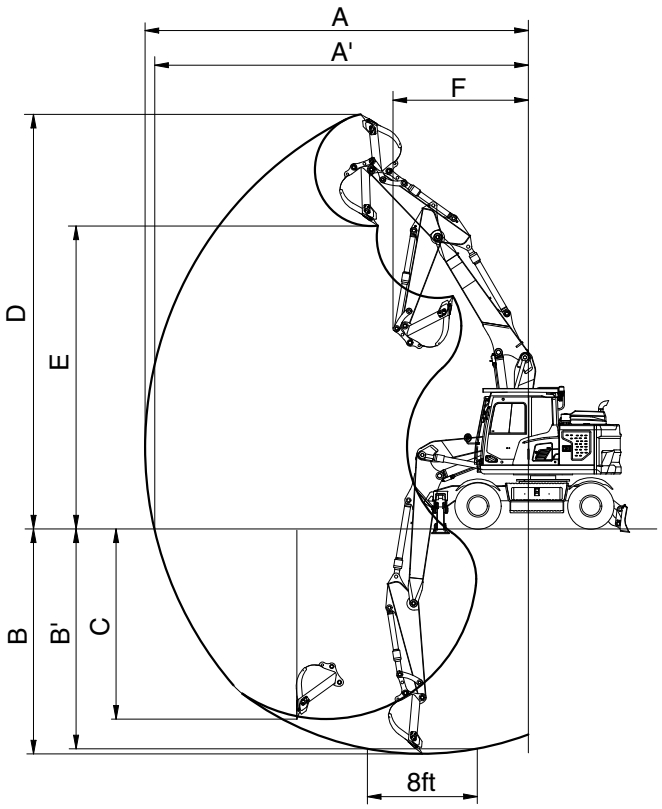
170WA2SP01

2. SPECIFICATIONS



Description			Unit		Specification		
			m (ft-in)	Boom	5.0 (16' 5")		
				Arm	2.45 (8' 0")	2.00 (6' 7")	2.60 (8' 6")
Operating weight			kg (lb)		18820 (41490)	18780 (41400)	18890 (41650)
Bucket capacity (SAE heaped), standard			m^3 (yd^3)		0.70 (0.92)	0.70 (0.92)	0.70 (0.92)
Overall length (traveling)		A	mm (ft-in)		6310 (20' 8")	6340 (20' 10")	6250 (20' 6")
Overall length (shipping)					8290 (27' 2")	8330 (27' 4")	8250 (27' 1")
Overall width		B			2530 (8' 4")	2530 (8' 4")	2530 (8' 4")
Overall height of boom		C			3990 (13' 1")	4000 (13' 1")	4000 (13' 1")
Upperstructure width		D			2500 (8' 2")	2500 (8' 2")	2500 (8' 2")
Cab height		E			3220 (10' 7")	3220 (10' 7")	3220 (10' 7")
Ground clearance of counterweight		F			1265 (4' 2")	1265 (4' 2")	1265 (4' 2")
Engine cover height		G			2730 (8' 11")	2730 (8' 11")	2730 (8' 11")
Minimum ground clearance		H			370 (1' 3")	370 (1' 3")	370 (1' 3")
Rear-end distance		I			1830 (6' 0")	1830 (6' 0")	1830 (6' 0")
Rear-end swing radius		I'			1830 (6' 0")	1830 (6' 0")	1830 (6' 0")
Wheel base		J			2600 (8' 6")	2600 (8' 6")	2600 (8' 6")
Tread	Std axle	K			1944 (6' 5")	1944 (6' 5")	1944 (6' 5")
	Wide axle				2114 (6' 11")	2114 (6' 11")	2114 (6' 11")
Dozer blade width		L			2530 (8' 4")	3275 (10' 9")	2530 (8' 4")
Overall height of guardrail		N			3450 (11' 4")	3450 (11' 4")	3450 (11' 4")
Travel speed		Low	km/hr (mph)		10 (6.2)	10 (6.2)	10 (6.2)
		High			35 (21.7)	35 (21.7)	35 (21.7)
		Creep			3 (1.9)	3 (1.9)	3 (1.9)
Swing speed			rpm		9.50	9.50	9.50
Gradeability			Degree (%)		35 (70)	35 (70)	35 (70)
Max traction force			kg (lb)		10506	10506	10506

3. WORKING RANGE AND DIGGING POWER



170WA2SP05

Description		2.45 m (8' 0") Arm	2.00 m (6' 7") Arm	2.60 m (8' 6") Arm
Max digging reach	A	8950 (29' 4")	8490 (27' 10")	9020 (29' 7")
Max digging reach on ground	A'	8750 (28' 8")	8280 (27' 2")	8820 (28' 11")
Max digging depth	B	5440 (17' 10")	4980 (16' 4")	5565 (18' 3")
Max digging depth (8 ft level)	B'	5340 (17' 6")	4870 (16' 0")	5460 (17' 11")
Max vertical wall digging depth	C	4680 (15' 4")	4150 (13' 7")	4680 (15' 4")
Max digging height	D	9785 (32' 1")	9370 (30' 9")	9680 (31' 9")
Max dumping height	E	7060 (23' 2")	6660 (21' 10")	6980 (22' 11")
Min swing radius	F	3040 (10' 0")	3380 (11' 1")	3500 (11' 6")
Bucket digging force	SAE	98.0 [106.9]	98.2 [107.1]	98.3 [107.3]
		9992 [10900]	10008 [10920]	10026 [10940]
		22030 [24030]	22060 [24070]	22100 [24120]
	ISO	114.8 [125.2]	115.0 [125.4]	115.2 [125.6]
		11706 [12770]	11726 [12790]	11746 [12810]
		25810 [28150]	25850 [28200]	25900 [28240]
Arm digging force	SAE	67.3 [73.4]	84.8 [92.5]	66.7 [72.8]
		6858 [7480]	8648 [9430]	6798 [7420]
		15120 [16490]	19070 [20790]	14990 [16360]
	ISO	70.4 [76.8]	89.4 [97.6]	69.7 [76.0]
		7178 [7830]	9118 [9950]	7106 [7750]
		15830 [17260]	20100 [21940]	15670 [17090]

[ ] : Power boost

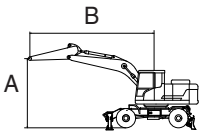
4. WEIGHT

Item	HW170A CR	
	kg	lb
Upperstructure assembly	9260	20410
· Main frame weld assembly	1213	2670
· Engine assembly	378	830
· Aftertreatment assembly	64	140
· Main pump assembly	91	200
· Main control valve assembly	144	320
· Swing motor assembly	148	330
· Hydraulic oil tank WA	135	300
· Fuel tank WA	138	300
· Counterweight	4200	9260
· Cab assembly	495	1090
Lower chassis assembly	5860	12920
· Lower frame weld assembly	1552	3420
· Swing bearing	260	570
· Travel motor assembly (2EA)	80	180
· Turning joint	117	258
· Transmission assembly	135	300
· Front axle assembly	637	1400
· Front axle assembly (wide)	655	1440
· Rear axle assembly	534	1180
· Rear axle assembly (wide)	547	1210
· Dozer blade assembly (front)	810	1786
· Dozer blade assembly (rear)	809	1784
· Front outrigger assembly	1046	2310
· Rear outrigger assembly	1046	2310
Front attachment assembly (5.0 m 2-piece boom, 2.45 m arm, 0.58 m^3 SAE heaped bucket)	3700	8160
· 5.0 m 2-piece boom assembly	1094	2410
· 2.45 m arm assembly	488	1080
· 2.00 m arm assembly	457	1010
· 2.60 m arm assembly	549	1210
· 0.70 m^3 SAE heaped bucket assembly	599	1320
· 0.76 m^3 SAE heaped bucket assembly	620	1370
· 0.89 m^3 SAE heaped bucket assembly	684	1510
· 1.05 m^3 SAE heaped bucket assembly	740	1630
· 0.73 m^3 SAE heaped bucket assembly	617	1360
· 0.85 m^3 SAE heaped bucket assembly	669	1470
· 0.69 m^3 SAE heaped bucket assembly	724	1600
· 0.75 m^3 SAE heaped bucket assembly	536	1180
· Bucket control link assembly	157	350
· Adjustable boom cylinder assembly (2EA)	266	590
· Arm cylinder assembly	169	370
· Bucket cylinder assembly	123	270
· Oscillating cylinder assembly (2EA)	94	207
· Adjustable cylinder assembly	209	460
· Outrigger cylinder assembly (2EA)	182	400
· Blade cylinder assembly (front) (2EA)	86	190
· Blade cylinder assembly (rear) (2EA)	86	190
· Front outrigger assembly	1045	2300
· Rear outrigger assembly	1046	2310

5. LIFTING CAPACITIES

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outrigger	
HW170A CR	2-PIECE BOOM	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		5000	2000	4200	-	500	-	Down	-	-

· : 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)
7.5 m (24.6 ft)	kg							*4790	*4790	4.19
	lb							*10560	*10560	(13.8)
6.0 m (19.7 ft)	kg			*4310	*4310			*4390	3240	5.75
	lb			*9500	*9500			*9680	7140	(18.9)
4.5 m (14.8 ft)	kg			*4930	4680	*4350	3000	4000	2550	6.60
	lb			*10870	10320	*9590	6610	8820	5620	(21.7)
3.0 m (9.8 ft)	kg			*6070	4350	4560	2880	3570	2250	7.03
	lb			*13380	9590	10050	6350	7870	4960	(23.1)
1.5 m (4.9 ft)	kg			6770	4070	4430	2750	3450	2160	7.12
	lb			14930	8970	9770	6060	7610	4760	(23.4)
0.0 m (0.0 ft)	kg			6630	3940	4340	2680	3600	2240	6.87
	lb			14620	8690	9570	5910	7940	4940	(22.5)
-1.5 m (-4.9 ft)	kg	*10340	7320	6630	3950	4360	2690	4140	2570	6.24
	lb	*22800	16140	14620	8710	9610	5930	9130	5670	(20.5)

Note 1. Lifting capacity are based on ISO 10567.

2. Lifting capacity of the HX 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).

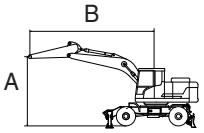
4. *Indicates load limited by hydraulic capacity.

※ 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 with your local HD Hyundai Construction Equipment dealer regarding the lifting capacities for specific work tools and attachments.

⚠ Failure to comply to the rated load can cause surious injury, death, or property damage. Make adjustments to the rated load as necessory for non-standard configurations.

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outrigger	
HW170A CR	2-PIECE BOOM	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		5000	2000	4200	-	500	-	Up	-	-

· : 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)
7.5 m (24.6 ft)	kg							*4790	*4790	4.19
	lb							*10560	*10560	(13.8)
6.0 m (19.7 ft)	kg			*4310	*4310			*4390	2920	5.75
	lb			*9500	*9500			*9680	6440	(18.9)
4.5 m (14.8 ft)	kg			*4930	4220	*4350	2700	4000	2290	6.60
	lb			*10870	9300	*9590	5950	8820	5050	(21.7)
3.0 m (9.8 ft)	kg			*6070	3900	4560	2590	3570	2020	7.03
	lb			*13380	8600	10050	5710	7870	4450	(23.1)
1.5 m (4.9 ft)	kg			6770	3620	4430	2460	3450	1930	7.12
	lb			14930	7980	9770	5420	7610	4250	(23.4)
0.0 m (0.0 ft)	kg			6630	3500	4340	2390	3600	2000	6.87
	lb			14620	7720	9570	5270	7940	4410	(22.5)
-1.5 m (-4.9 ft)	kg	*10340	6400	6630	3510	4360	2400	4140	2290	6.24
	lb	*22800	14110	14620	7740	9610	5290	9130	5050	(20.5)

Note 1. Lifting capacity are based on ISO 10567.

2. Lifting capacity of the HX 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.
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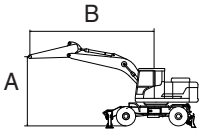
⚠ Failure to comply to the rated load can cause surious injury, death, or property damage. Make adjustments to the rated load as necessory for non-standard configurations.

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outrigger	
HW170A CR	2-PIECE BOOM	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		5000	2450	4200	-	500	-	Down	-	-

· : 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)
7.5 m (24.6 ft)	kg			*4040	*4040					*3280	*3280	4.95
	lb			*8910	*8910					*7230	*7230	(16.2)
6.0 m (19.7 ft)	kg			*3820	*3820	*3900	3070			*2780	*2780	6.31
	lb			*8420	*8420	*8600	6770			*6130	*6130	(20.7)
4.5 m (14.8 ft)	kg			*4470	*4470	*4010	3020			*2600	2260	7.10
	lb			*9850	*9850	*8840	6660			*5730	4980	(23.3)
3.0 m (9.8 ft)	kg			*5630	4410	*4480	2880	*2610	2020	*2590	2020	7.50
	lb			*12410	9720	*9880	6350	*5750	4450	*5710	4450	(24.6)
1.5 m (4.9 ft)	kg			*6770	4080	4420	2740	3180	1980	*2700	1940	7.58
	lb			*14930	8990	9740	6040	7010	4370	*5950	4280	(24.9)
0.0 m (0.0 ft)	kg			6600	3910	4310	2640			*2980	2010	7.35
	lb			14550	8620	9500	5820			*6570	4430	(24.1)
-1.5 m (-4.9 ft)	kg	*9110	7170	6560	3880	4280	2620			*3530	2250	6.77
	lb	*20080	15810	14460	8550	9440	5780			*7780	4960	(22.2)
-3.0 m (-9.8 ft)	kg			*6380	3970							
	lb			*14070	8750							

Note 1. Lifting capacity are based on ISO 10567.

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3. The Lift-point is bucket pivot mounting pin on the arm (without bucket mass).
4. *Indicates load limited by hydraulic capacity.

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Lifting capacities will vary with different work tools, ground conditions and attachments.
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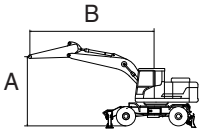
⚠ Failure to comply to the rated load can cause surious injury, death, or property damage. Make adjustments to the rated load as necessory for non-standard configurations.

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outrigger	
HW170A CR	2-PIECE BOOM	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		5000	2450	4200	-	500	-	Up	-	-

· : 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)
7.5 m (24.6 ft)	kg			*4040	*4040					*3280	*3280	4.95
	lb			*8910	*8910					*7230	*7230	(16.2)
6.0 m (19.7 ft)	kg			*3820	*3820	*3900	2770			*2780	2510	6.31
	lb			*8420	*8420	*8600	6110			*6130	5530	(20.7)
4.5 m (14.8 ft)	kg			*4470	4290	*4010	2730			*2600	2030	7.10
	lb			*9850	9460	*8840	6020			*5730	4480	(23.3)
3.0 m (9.8 ft)	kg			*5630	3950	*4480	2590	*2610	1810	*2590	1810	7.50
	lb			*12410	8710	*9880	5710	*5750	3990	*5710	3990	(24.6)
1.5 m (4.9 ft)	kg			*6770	3640	4420	2450	3180	1760	*2700	1730	7.58
	lb			*14930	8020	9740	5400	7010	3880	*5950	3810	(24.9)
0.0 m (0.0 ft)	kg			6600	3470	4310	2350			*2980	1790	7.35
	lb			14550	7650	9500	5180			*6570	3950	(24.1)
-1.5 m (-4.9 ft)	kg	*9110	6260	6560	3430	4280	2330			*3530	2010	6.77
	lb	*20080	13800	14460	7560	9440	5140			*7780	4430	(22.2)
-3.0 m (-9.8 ft)	kg			*6380	3520							
	lb			*14070	7760							

Note 1. Lifting capacity are based on ISO 10567.

2. Lifting capacity of the HX series does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.

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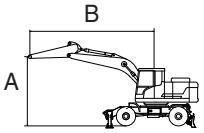
Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outrigger	
HW170A CR	2-PIECE BOOM	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		5000	2600	4200	-	500	-	Down	-	-

· : 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)
7.5 m (24.6 ft)	kg			*3810	*3810					*3480	*3480	5.15
	lb			*8400	*8400					*7670	*7670	(16.9)
6.0 m (19.7 ft)	kg			*3660	*3660	*3740	3090			*2990	2680	6.47
	lb			*8070	*8070	*8250	6810			*6590	5910	(21.2)
4.5 m (14.8 ft)	kg			*4310	*4310	*3900	3030			*2830	2190	7.24
	lb			*9500	*9500	*8600	6680			*6240	4830	(23.7)
3.0 m (9.8 ft)	kg			*5480	4430	*4390	2890	3230	2020	*2820	1960	7.63
	lb			*12080	9770	*9680	6370	7120	4450	*6220	4320	(25.0)
1.5 m (4.9 ft)	kg			*6660	4090	4420	2740	3170	1970	*2950	1890	7.71
	lb			*14680	9020	9740	6040	6990	4340	*6500	4170	(25.3)
0.0 m (0.0 ft)	kg			6590	3900	4300	2630			3150	1940	7.48
	lb			14530	8600	9480	5800			6940	4280	(24.5)
-1.5 m (-4.9 ft)	kg	*8880	7130	6540	3850	4270	2600			3520	2170	6.91
	lb	*19580	15720	14420	8490	9410	5730			7760	4780	(22.7)
-3.0 m (-9.8 ft)	kg			*6510	3930							
	lb			*14350	8660							

Note 1. Lifting capacity are based on ISO 10567.
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3. The Lift-point is bucket pivot mounting pin on the arm (without bucket mass).
4. *Indicates load limited by hydraulic capacity.

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Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outrigger	
HW170A CR	2-PIECE BOOM	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		5000	2600	4200	-	500	-	Up	-	-

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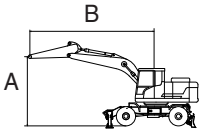

Lift-point height (A)		Lift-point radius (B)								At max. reach		
		3.0 m (9.8 ft)		4.5 m (14.8 ft)		6.0 m (19.7 ft)		7.5 m (24.6 ft)		Capacity		Reach
												m (ft)
7.5 m (24.6 ft)	kg			*3810	*3810					*3480	*3480	5.15
	lb			*8400	*8400					*7670	*7670	(16.9)
6.0 m (19.7 ft)	kg			*3660	*3660	*3740	2790			*2990	2420	6.47
	lb			*8070	*8070	*8250	6150			*6590	5340	(21.2)
4.5 m (14.8 ft)	kg			*4310	*4310	*3900	2740			*2830	1970	7.24
	lb			*9500	*9500	*8600	6040			*6240	4340	(23.7)
3.0 m (9.8 ft)	kg			*5480	3970	*4390	2600	3230	1810	*2820	1750	7.63
	lb			*12080	8750	*9680	5730	7120	3990	*6220	3860	(25.0)
1.5 m (4.9 ft)	kg			*6660	3640	4420	2450	3170	1760	*2950	1680	7.71
	lb			*14680	8020	9740	5400	6990	3880	*6500	3700	(25.3)
0.0 m (0.0 ft)	kg			6590	3460	4300	2340			3150	1730	7.48
	lb			14530	7630	9480	5160			6940	3810	(24.5)
-1.5 m (-4.9 ft)	kg	*8880	6210	6540	3410	4270	2310			3520	1930	6.91
	lb	*19580	13690	14420	7520	9410	5090			7760	4250	(22.7)
-3.0 m (-9.8 ft)	kg			*6510	3490							
	lb			*14350	7690							

Note 1. Lifting capacity are based on ISO 10567.
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3. The Lift-point is bucket pivot mounting pin on the arm (without bucket mass).
4. *Indicates load limited by hydraulic capacity.

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6. BUCKET SELECTION GUIDE

1) DOZER BLADE UP

General bucket　　Heavy duty　　Ditch cleaning　　Hammerless tooth

Type	Capacity		Width		Weight	Tooth	2-PIECE Recommendation mm (ft-in) 5.0 m (16' 5") Boom		
	SAE Heaped	CECE heaped	Without side cutter	With side cutter					
	m^3 (yd^3)	m^3 (yd^3)	mm (in)	mm (in)	kg (lb)	EA	2.0 m (6' 7") Arm	2.45 m (8' 0") Arm	2.6 m (8' 6") Arm
General bucket	0.70 (0.92)	0.60 (0.78)	1020 (40.2")	1100 (43.3")	600 (1320)	5	◐	■	■
	0.76 (0.99)	0.65 (0.85)	1010 (39.8")	1170 (46.1")	620 (1370)	5	■	▲	▲
	0.89 (1.16)	0.77 (1.01)	1170 (46.1")	1325 (52.2")	680 (1500)	6	▲	▲	X
	1.05 (1.37)	0.90 (1.18)	1355 (53.3")	1510 (59.4")	740 (1630)	6	X	X	X
Heavy duty	0.69 (0.90)	0.62 (0.81)	1025 (40.4")	-	720 (1590)	5	◐	■	▲
Ditch cleaning	0.75 (0.98)	0.65 (0.85)	1820 (71.7")	-	540 (1190)	0	◐	■	■
Hammer -less tooth	0.73 (0.95)	0.67 (0.88)	914 (36.0")	946 (37.2")	620 (1370)	5	◐	■	▲
	0.85 (1.11)	0.76 (0.99)	1067 (42.0")	1096 (43.1")	670 (1480)	5	■	▲	▲

●	Applicable for materials with density of 2100 kg/m^3 (3500 lb/yd^3) or less
◐	Applicable for materials with density of 1800 kg/m^3 (3000 lb/yd^3) or less
■	Applicable for materials with density of 1500 kg/m^3 (2500 lb/yd^3) or less
▲	Applicable for materials with density of 1200 kg/m^3 (2000 lb/yd^3) 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 HD Hyundai Construction Equipment dealer for information on selecting the correct boom−arm−bucket combination.

2) DOZER BLADE DOWN

General bucket　Heavy duty　Ditch cleaning　Hammerless tooth

Type	Capacity		Width		Weight	Tooth	2-PIECE Recommendation mm (ft-in) 5.0 m (16' 5") Boom		
	SAE Heaped	CECE heaped	Without side cutter	With side cutter					
	m³ (yd³)	m³ (yd³)	mm (in)	mm (in)	kg (lb)	EA	2.0 m (6' 7") Arm	2.45 m (8' 0") Arm	2.6 m (8' 6") Arm
General bucket	0.70 (0.92)	0.60 (0.78)	1020 (40.2")	1100 (43.3")	600 (1320)	5	●	◐	◐
	0.76 (0.99)	0.65 (0.85)	1010 (39.8")	1170 (46.1")	620 (1370)	5	◐	■	■
	0.89 (1.16)	0.77 (1.01)	1170 (46.1")	1325 (52.2")	680 (1500)	6	■	▲	▲
	1.05 (1.37)	0.90 (1.18)	1355 (53.3")	1510 (59.4")	740 (1630)	6	▲	X	X
Heavy duty	0.69 (0.90)	0.62 (0.81)	1025 (40.4")	-	720 (1590)	5	●	◐	■
Ditch cleaning	0.75 (0.98)	0.65 (0.85)	1820 (71.7")	-	540 (1190)	0	●	◐	■
Hammer -less tooth	0.73 (0.95)	0.67 (0.88)	914 (36.0")	946 (37.2")	620 (1370)	5	◐	◐	■
	0.85 (1.11)	0.76 (0.99)	1067 (42.0")	1096 (43.1")	670 (1480)	5	■	■	▲

● 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

※ 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 HD Hyundai Construction Equipment dealer for information on selecting the correct boom−arm−bucket combination.

7. SPECIFICATIONS FOR MAJOR COMPONENTS

1) ENGINE

Item	Specification
Maker / Model	CUMMINS / B4.5
Type	4-cycle, turbocharged, charge air cooled, electronic controlled diesel engine
Cooling method	Water cooled
Number of cylinders and arrangement	4 cylinders, in-line
Firing order	1-3-2-4
Combustion chamber type	Direct injection type
Cylinder bore × stroke	107 × 124 mm (4.21" × 4.88")
Displacement	4.5 ℓ (275 cu in)
Compression ratio	17.2 : 1
Gross power	173 Hp (129 kW) at 2200 rpm
Net power	170 Hp (127 kW) at 2200 rpm
Max. power	173 Hp (129 kW) at 2200 rpm
Peak Torque	780 N · m (575 lb · ft) at 1500 rpm
Engine oil quantity	11 ℓ (2.9 U.S. gal)
Wet weight or Dry weight	378 kg (830 lb)
Starter motor	24 V-4.8 kW
Alternator	24 V-95 A
Battery	2 × 12 × 100 Ah

2) MAIN PUMP

Item	Specification
Type	Variable displacement piston pump
Capacity	145 cc/rev
Maximum pressure	350 kgf/cm^2 (4980 psi) [380 kgf/cm^2 (5400 psi)]
Rated oil flow	260 ℓ/min (68.7 U.S. gpm / 57.2 U.K. gpm)
Rated speed	1800 rpm

[ ]: Power boost

3) STEERING PUMP

Item	Specification
Type	Fixed displacement gear pump single stage
Capacity	35cc/rev
Maximum pressure	210 kgf/cm^2 (2990 psi)
Rated oil flow	60 ℓ /min (15.9 U.S. gpm/13.2 U.K. gpm)

4) MAIN CONTROL VALVE

Item	Specification
Type	Section block
Operating method	Hydraulic pilot system
Main relief valve pressure	350 kgf/cm^2 (4980 psi)
Main relief valve pressure (power boost)	380 kgf/cm^2 (5400 psi)
Overload relief valve pressure	420 kgf/cm^2 (5970 psi)

5) SWING UNIT

Item	Specification
Type	Radial piston motor
Capacity	1687 cc/rev
Relief pressure	270 kgf/cm^2 (3840 psi)
Braking system	Automatic, spring applied hydraulic released
Brake release pressure	15~40 kgf/cm^2 (213~569 psi)
Reduction gear type	-

6) TRAVEL MOTOR

Item	Specification
Type	Variable displacement bent-axis axial piston motor
Relief pressure	380 kgf/cm^2 (5400 psi)
Counter balance valve	Applied
Capacity (max/min)	140/51.8 cc/rev

7) POWER TRAIN

Item	Description		Specification
Transmission	Type		2 speed power shift transmission
	Gear ratio	1st	4.87
		2nd	1.20
	Clutch pressure		30~32 kgf /cm^2 (427~455 psi)
Parking brake	Type		Multi disc brake integrated in transmission
	Maximum braking torque		3286 kgf · m (23760 lbf · ft)
Axle	Type		4 wheel drive with differential
	Gear ratio		16.0
	Brake		Multi disc brake
	Brake pressure		81.6 kgf /cm^2 (1160 psi)
	Steering pressure		204 kgf /cm^2 (2900 psi)

8) POWER TRAIN GEAR PUMP

Item	Description
Capacity	Steering + brake : 11.9 + 19.3 cc / rev (pump PTO)
Rated flow	Steering + brake : 20 + 33 lpm (1800 rpm) (5.3 + 8.7 U.S. gpm / 4.4 + 7.3 U.K. gpm)

9) CYLINDER

Item		Specification
Arm cylinder	Bore dia × Rod dia × Stroke	Ø120× Ø80×1235 mm
	Cushion	Extend and retract
Bucket cylinder	Bore dia × Rod dia × Stroke	Ø105× Ø75×995 mm
	Cushion	Extend only
Dozer cylinder	Bore dia × Rod dia × Stroke	Ø110× Ø65×235 mm
	Cushion	-
Outrigger cylinder	Bore dia × Rod dia × Stroke	Ø125× Ø75×463 mm
	Cushion	-
Adjust cylinder	Bore dia × Rod dia × Stroke	Ø160× Ø95×624 mm
	Cushion	-
2-piece boom cylinder	Bore dia × Rod dia × Stroke	Ø110× Ø75×992 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. RECOMMENDED OILS

HD Hyundai Construction Equipment 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 HD Hyundai Construction Equipment and, therefore, will meet the highest safety and quality requirements.
We recommend that you use only HD Hyundai Construction Equipment genuine lubricating oils and grease officially approved by HD Hyundai Construction Equipment.

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	11 (2.9)	★SAE 0W-40 ★SAE 5W-30 SAE 5W-40
Transmission case		2.5 (0.66)	SAE 15W-40
DEF/ AdBlue® tank	Mixture of urea and deionized water	48 (12.7)	ISO 22241, High-purity urea + deionized water (32.5:67.5)
Front axle	Gear oil	Center : 10.5 (2.77) Hub : 2.5×2 (0.66×2)	SAE 85W-90 LSD or UTTO
Rear axle		Center : 12.5 (3.30) Hub : 2.5×2 (0.66×2)	
Hydraulic tank	Hydraulic oil	Tank: 103 (27.2) System: 204 (53.9)	★ISO VG 15 ISO VG 32 ISO VG 46, HBHO★3 ISO VG 68
Fuel tank	Diesel fuel★1	200 (52.8)	★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	19.5 (5.5)	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 Materia
DEF : Diesel Exhaust Fluid, DEF compatible with AdBlue®

★ : Cold region (Russia, CIS, Mongolia)
★1 : Ultra low sulfur diesel
- sulfur content ≤ 10 ppm
★2 : Soft water
City water or distilled water
★3 : HD Hyundai Construction Equipment Bio Hydraulic Oil

※ Using any lubricating oils other than HD Hyundai Construction Equipment genuine products may lead to a deterioration of performance and cause damage to major components.
※ Do not mix HD Hyundai Construction Equipment 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 HD Hyundai Construction Equipment genuine lubricating oils and grease for use in regions with extremely low temperatures, please contact your local HD Hyundai Construction Equipment dealers.