SECTION 1 GENERAL

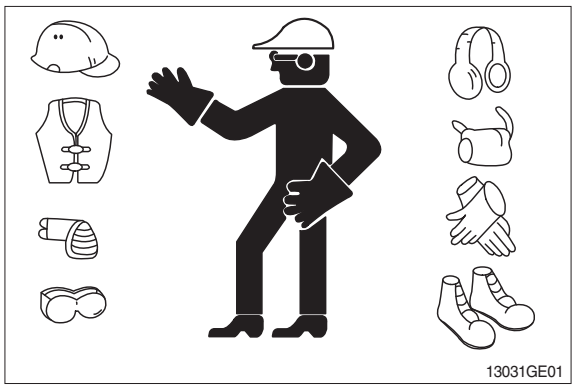
GROUP 1 SAFETY

FOLLOW SAFE PROCEDURE

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

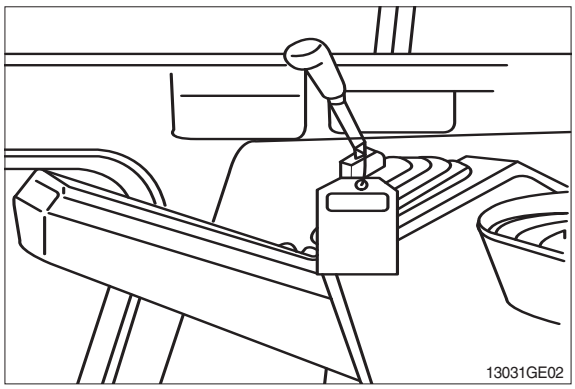
WEAR PROTECTIVE CLOTHING

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



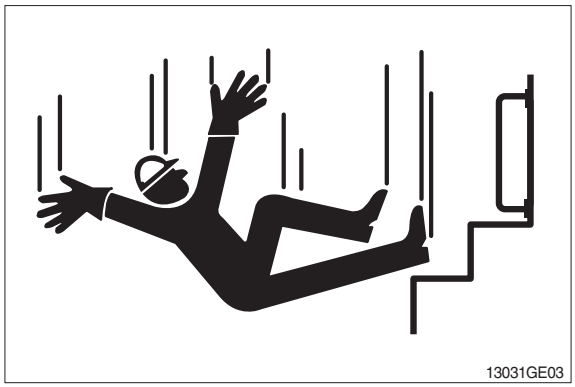
WARN OTHERS OF SERVICE WORK

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.

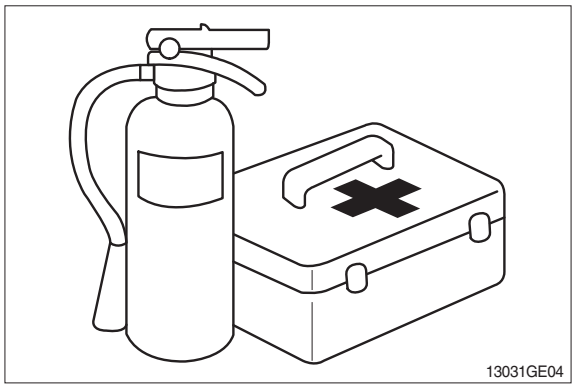


PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

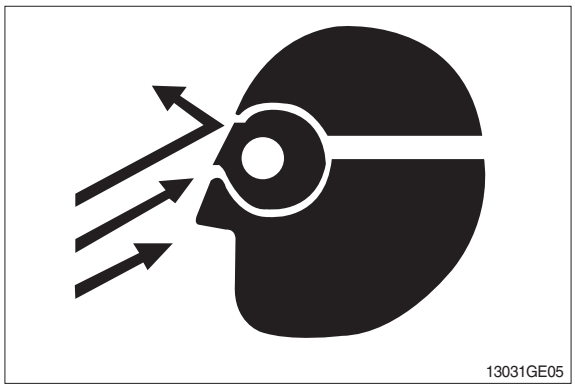
Keep a first aid kit and fire extinguisher handy.

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



PROTECT AGAINST FLYING DEBRIS

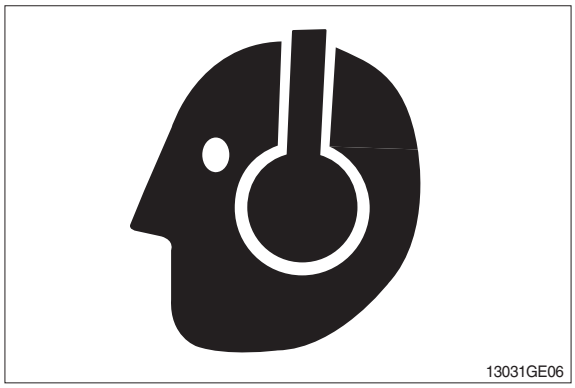
Guard against injury from flying pieces of metal or debris; Wear goggles or safety glasses.



PROTECT AGAINST NOISE

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

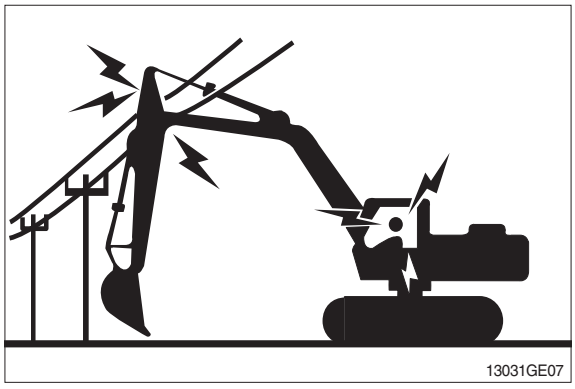
Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.



AVOID POWER LINES

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

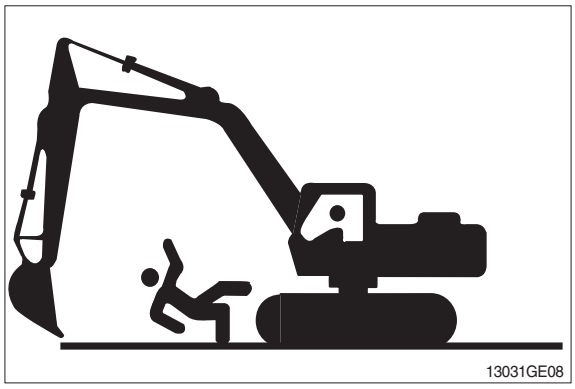
Never move any part of the machine or load closer to electric line than 3m(10ft) plus twice the line insulator length.



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.

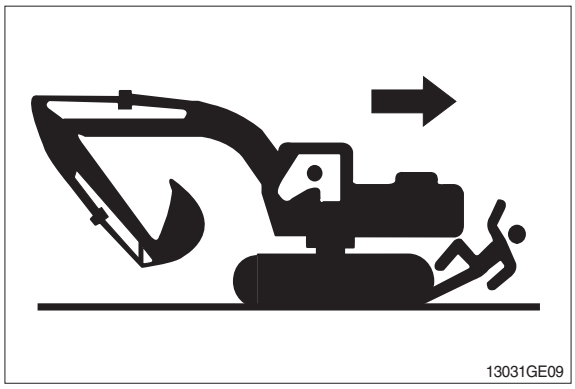


MOVE AND OPERATE MACHINE SAFELY

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 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

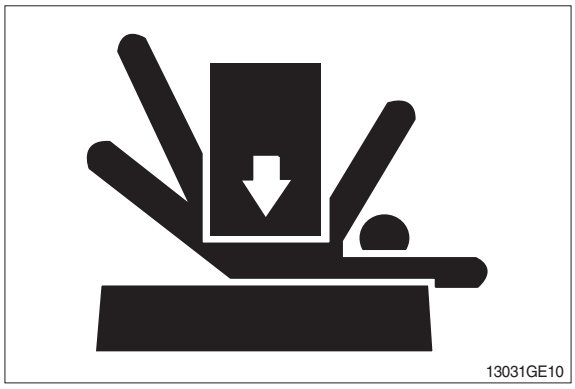
Before working on the machine:

- 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.



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.

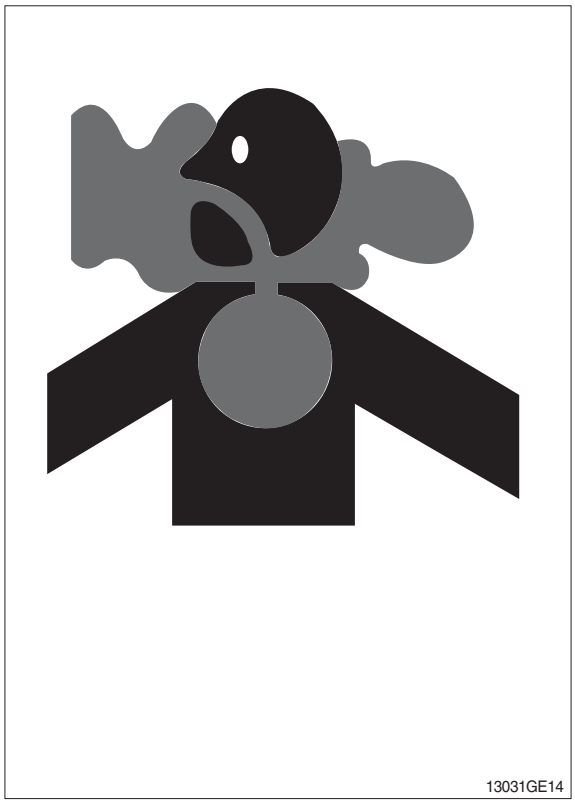
Make sure machine is clean of trash, grease, and debris.

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.


13031GE14

REMOVE PAINT BEFORE WELDING OR HEATING

Avoid potentially toxic fumes and dust.

Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch.

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

Remove paint before welding or heating:

- If you sand or grind paint, avoid breathing the dust. Wear an approved respirator.
- If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.

ILLUMINATE WORK AREA SAFELY

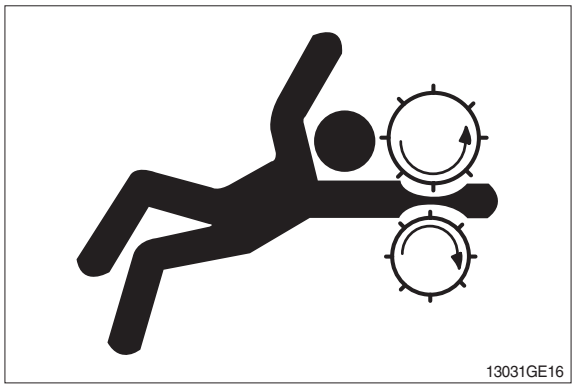
Illuminate your work area adequately but safely. Use a portable safety light for working inside or under the machine. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.


13031GE15

SERVICE MACHINE SAFELY

Tie long hair behind your head. Do not wear a necktie, scarf, loose clothing or necklace when you work near machine tools or moving parts. If these items were to get caught, severe injury could result.

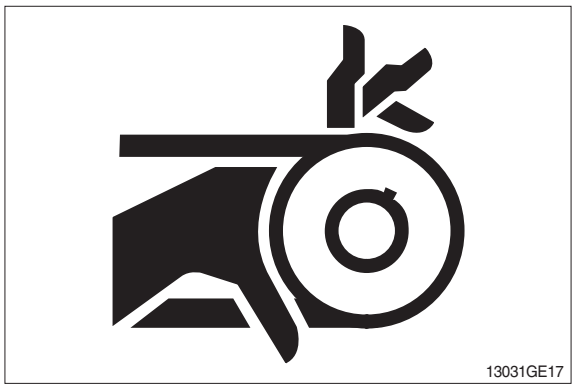
Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.



STAY CLEAR OF MOVING PARTS

Entanglements in moving parts can cause serious injury.

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



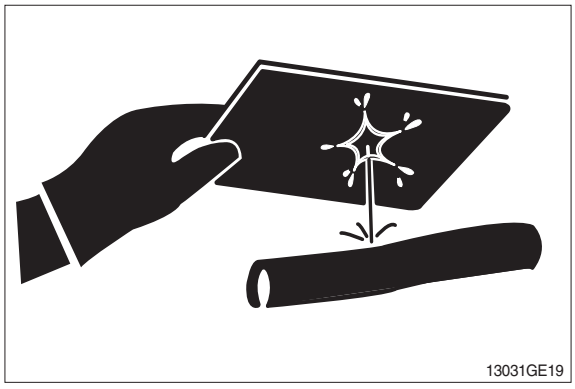
AVOID HIGH PRESSURE FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.



AVOID HEATING NEAR PRESSURIZED FLUID LINES

Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders. Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials.

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

PREVENT BATTERY EXPLOSIONS

Keep sparks, lighted matches, and flame away from the top of battery. Battery gas can explode.

Never check battery charge by placing a metal object across the posts. Use a volt-meter or hydrometer.

Do not charge a frozen battery; It may explode. Warm battery to 16°C (60°F).

PREVENT ACID BURNS

Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, eat holes in clothing, and cause blindness if splashed into eyes.

Avoid the hazard by:

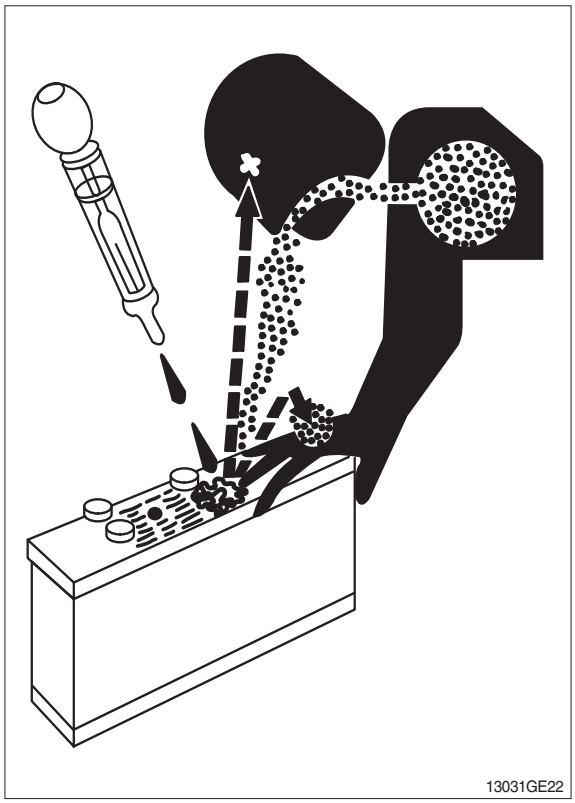
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling of dripping electrolyte.
5. Use proper jump start procedure.

If you spill acid on yourself:

1. Flush your skin with water.
2. Apply baking soda or lime to help neutralize the acid.
3. Flush your eyes with water for 10-15 minutes. Get medical attention immediately.

If acid is swallowed:

1. Drink large amounts of water or milk.
2. Then drink milk of magnesia, beaten eggs, or vegetable oil.
3. Get medical attention immediately.



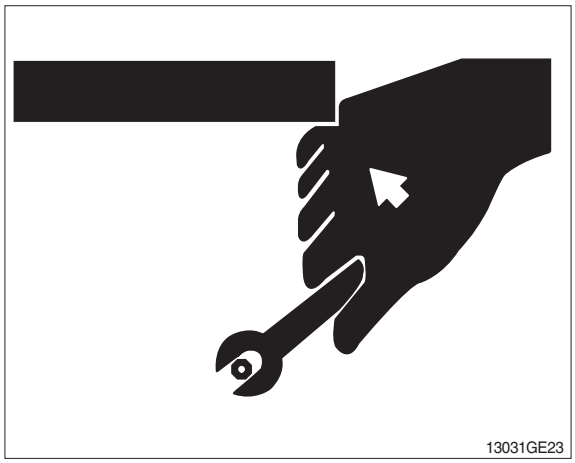
USE TOOLS PROPERLY

Use tools appropriate to the work. Makeshift tools, parts, and procedures can create safety hazards.

Use power tools only to loosen threaded tools and fasteners.

For loosening and tightening hardware, use the correct size tools. DO NOT use U.S. measurement tools on metric fasteners. Avoid bodily injury caused by slipping wrenches.

Use only recommended replacement parts. (See Parts catalogue.)

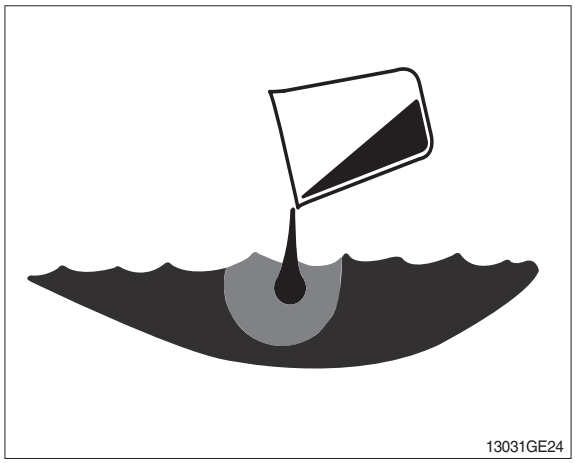


DISPOSE OF FLUIDS PROPERLY

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.

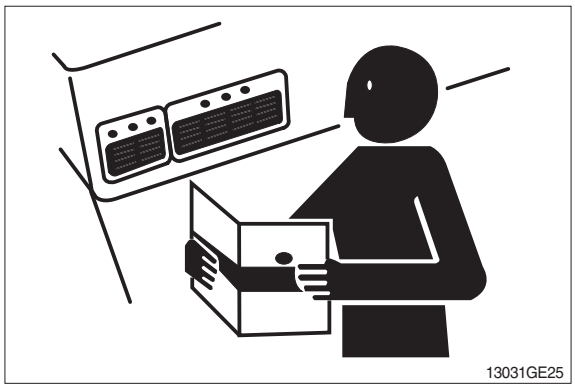
Use proper containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

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.


13031GE24

REPLACE SAFETY SIGNS

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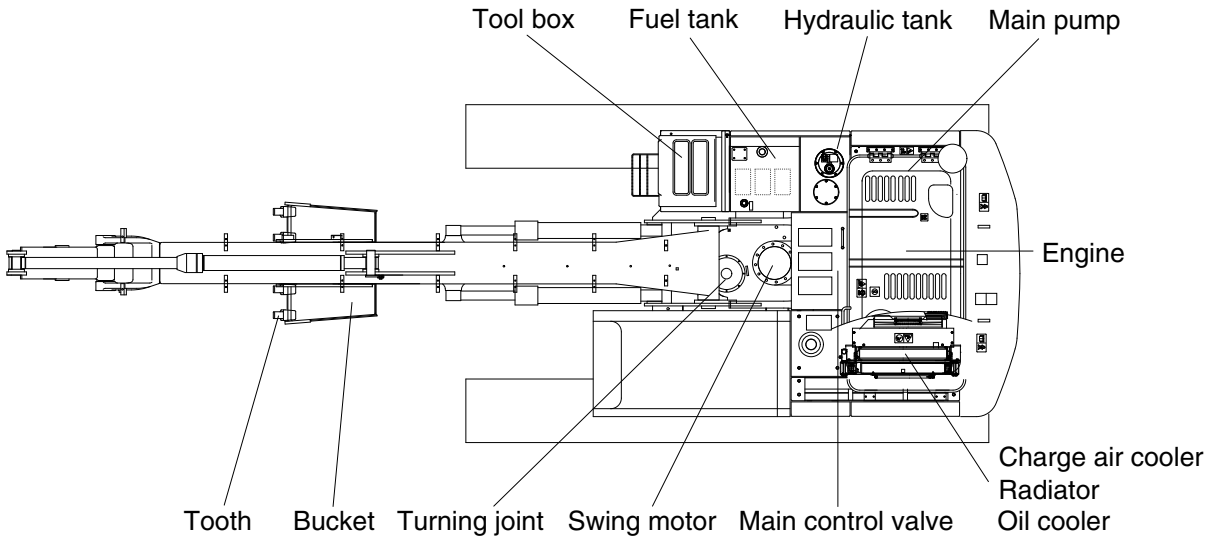
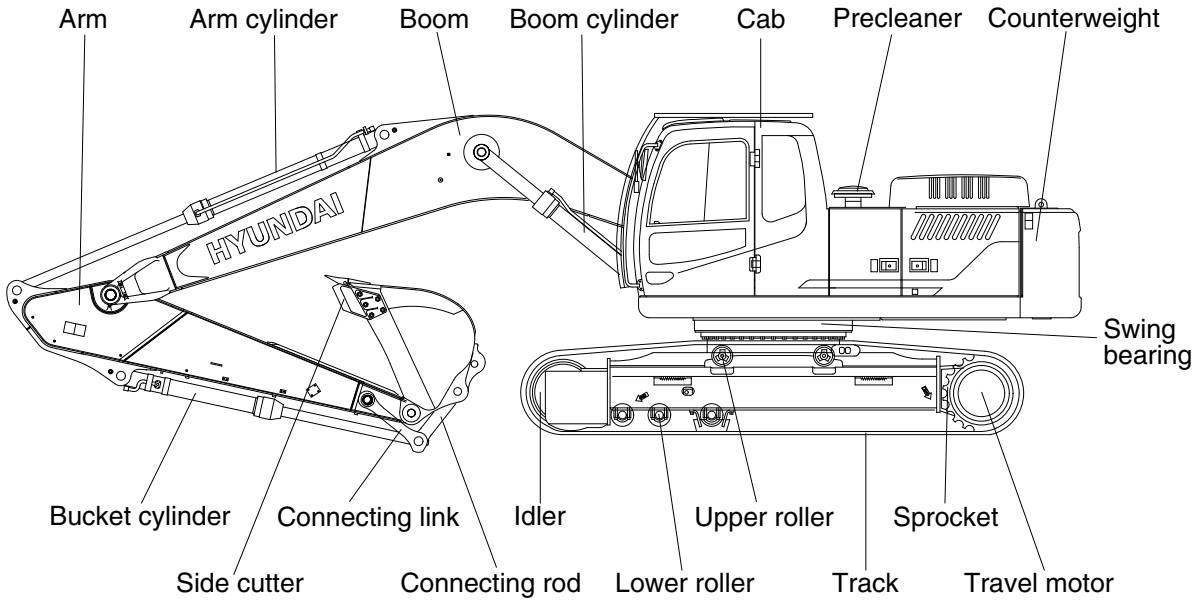
LIVE WITH SAFETY

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

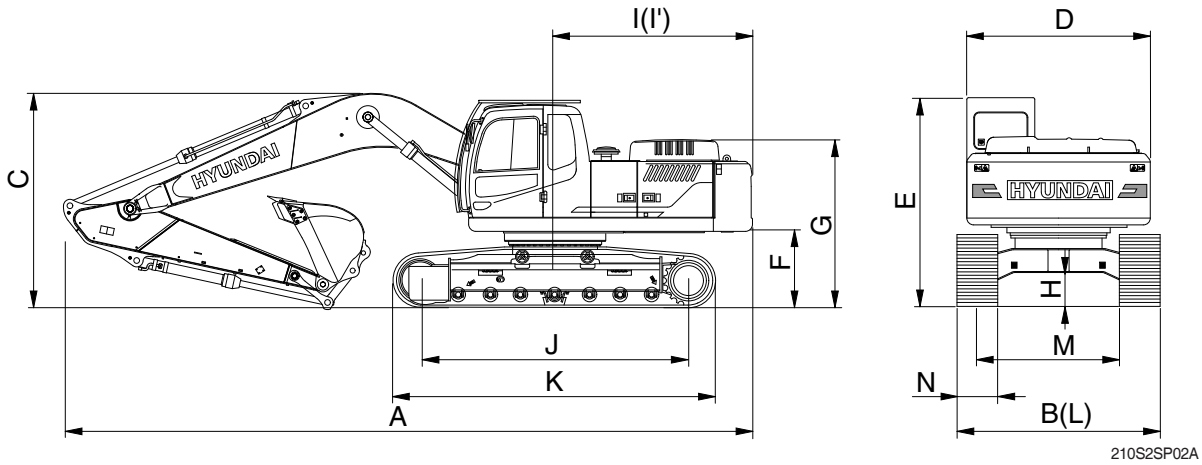




210S2SP01B

2. SPECIFICATIONS

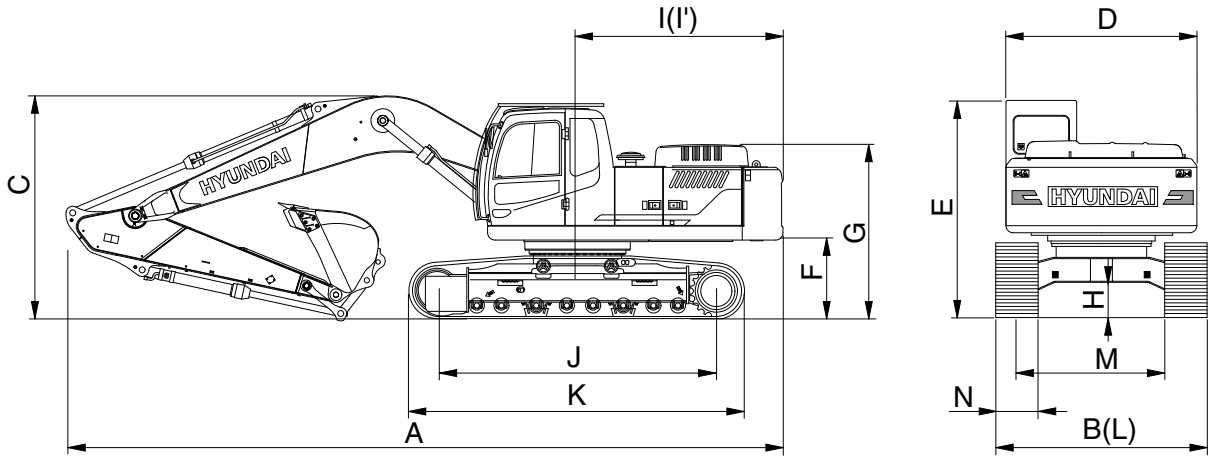
1) HX210S, MONO BOOM



210S2SP02A

Description		Unit		Specification		
		m (ft-in)	Boom	5.70 (18' 8")		
			Arm	2.90 (9' 6")	2.00 (6' 7")	2.40 (7' 10")
		mm (in)	Shoe	600 (24")		
Operating weight		kg (lb)		20830 (45920)	20670 (45570)	20740 (45720)
Bucket capacity (SAE heaped), standard		m³ (yd³)		0.92 (1.20)	0.92 (1.20)	0.92 (1.20)
Overall length	A	mm (ft-in)		9550 (31' 4")	9620 (31' 7")	9575 (31' 5")
Overall width	B			2800 (9' 2")	2800 (9' 2")	2800 (9' 2")
Overall height of boom	C			2960 (9' 9")	3115 (10' 3")	3020 (9' 11")
Superstructure width	D			2700 (8' 10")	2700 (8' 10")	2700 (8' 10")
Overall height of cab	E			3035 (9' 11")	3035 (9' 11")	3035 (9' 11")
Ground clearance of counterweight	F			1095 (3' 7")	1095 (3' 7")	1095 (3' 7")
Overall height of engine hood	G			2380 (7' 10")	2380 (7' 10")	2380 (7' 10")
Overall height of handrail	G'			2970 (9' 9")	2970 (9' 9")	2970 (9' 9")
Minimum ground clearance	H			475 (1' 7")	475 (1' 7")	475 (1' 7")
Rear-end distance	I			2770 (9' 1")	2770 (9' 1")	2770 (9' 1")
Rear-end swing radius	I'			2845 (9' 4")	2845 (9' 4")	2845 (9' 4")
Distance between tumblers	J			3270 (10' 9")	3270 (10' 9")	3270 (10' 9")
Undercarriage length	K			4015 (13' 2")	4015 (13' 2")	4015 (13' 2")
Undercarriage width	L			2800 (9' 2")	2800 (9' 2")	2800 (9' 2")
Track gauge	M			2200 (7' 3")	2200 (7' 3")	2200 (7' 3")
Track shoe width, standard	N			600 (2' 0")	600 (2' 0")	600 (2' 0")
Travel speed (low/high)		km/hr (mph)		3.5/5.7 (2.2/3.5)	3.5/5.7 (2.2/3.5)	3.5/5.7 (2.2/3.5)
Swing speed		rpm		12.2	12.2	12.2
Gradeability		Degree (%)		35 (70)	35 (70)	35 (70)
Ground pressure		kgf/cm² (psi)		0.48 (6.81)	0.48 (6.76)	0.48 (6.78)
Max traction force		kg (lb)		21100 (46517)	21100 (46517)	21100 (46517)

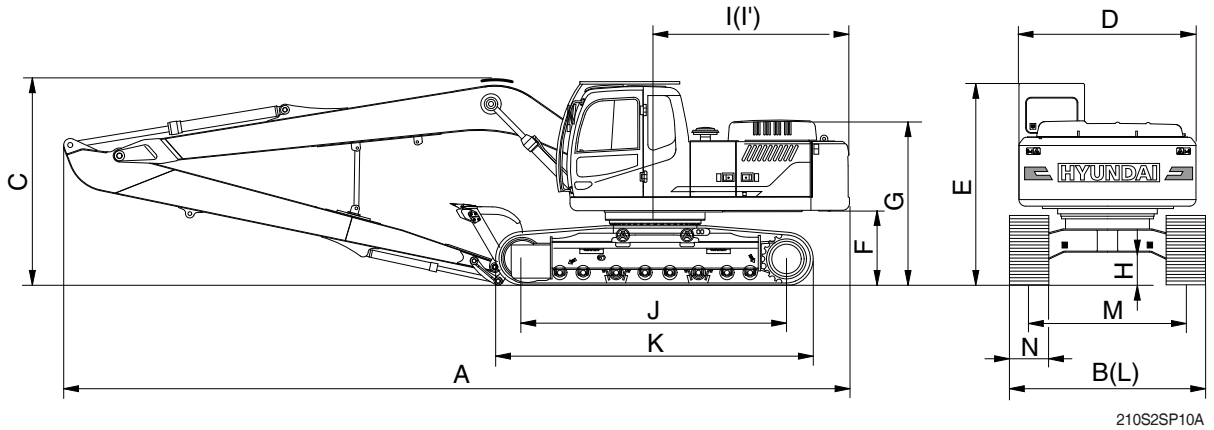
2) HX220S, MONO BOOM



210S2SP03A

Description		Unit		Specification		
		m (ft-in)	Boom	5.70 (18' 8")		
			Arm	2.90 (9' 6")	2.00 (6' 7")	2.40 (7' 10")
		mm (in)	Shoe	600 (24")		
Operating weight		kg (lb)		21260 (46870)	21100 (46520)	21160 (46650)
Bucket capacity (SAE heaped), standard		m^3 (yd^3)		0.92 (1.20)	0.92 (1.20)	0.92 (1.20)
Overall length	A	mm (ft-in)		9550 (31' 4")	9620 (31' 7")	9575 (31' 5")
Overall width	B			2990 (9' 10")	2990 (9' 10")	2990 (9' 10")
Overall height of boom	C			2960 (9' 9")	3115 (10' 3")	3020 (9' 11")
Superstructure width	D			2700 (8' 10")	2700 (8' 10")	2700 (8' 10")
Overall height of cab	E			3035 (9' 11")	3035 (9' 11")	3035 (9' 11")
Ground clearance of counterweight	F			1095 (3' 7")	1095 (3' 7")	1095 (3' 7")
Overall height of engine hood	G			2380 (7' 10")	2380 (7' 10")	2380 (7' 10")
Overall height of handrail	G'			2970 (9' 9")	2970 (9' 9")	2970 (9' 9")
Minimum ground clearance	H			475 (1' 7")	475 (1' 7")	475 (1' 7")
Rear-end distance	I			2770 (9' 1")	2770 (9' 1")	2770 (9' 1")
Rear-end swing radius	I'			2845 (9' 4")	2845 (9' 4")	2845 (9' 4")
Distance between tumblers	J			3650 (12' 0")	3650 (12' 0")	3650 (12' 0")
Undercarriage length	K			4395 (14' 5")	4395 (14' 5")	4395 (14' 5")
Undercarriage width	L			2990 (9' 10")	2990 (9' 10")	2990 (9' 10")
Track gauge	M			2390 (7' 10")	2390 (7' 10")	2390 (7' 10")
Track shoe width, standard	N			600 (2' 0")	600 (2' 0")	600 (2' 0")
Travel speed (low/high)		km/hr (mph)		3.5/5.7 (2.2/3.5)	3.5/5.7 (2.2/3.5)	3.5/5.7 (2.2/3.5)
Swing speed		rpm		12.2	12.2	12.2
Gradeability		Degree (%)		35 (70)	35 (70)	35 (70)
Ground pressure		kgf/cm^2 (psi)		0.45 (6.45)	0.45 (6.41)	0.45 (6.42)
Max traction force		kg (lb)		21100 (46517)	21100 (46517)	21100 (46517)

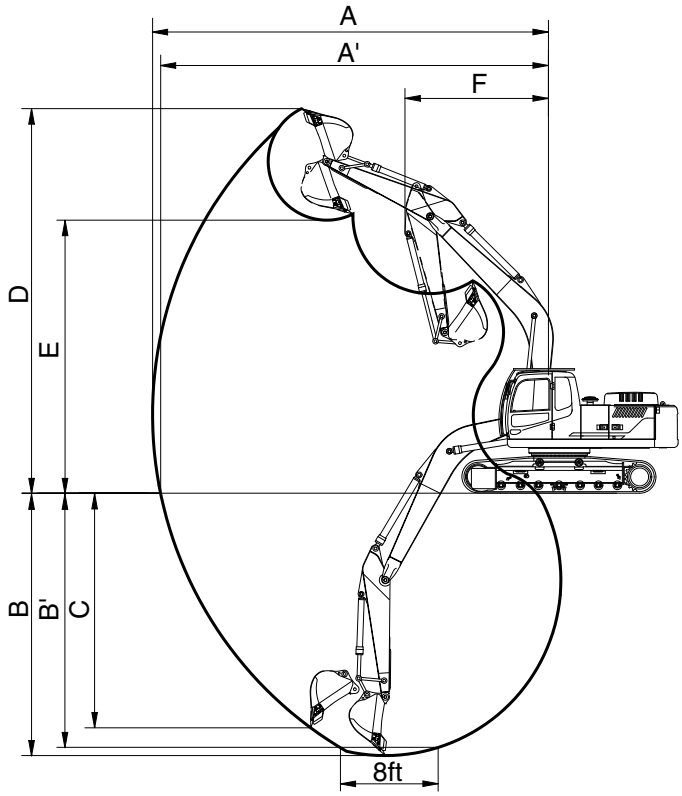
3) HX220S LR



Description		Unit		Specification
		m (ft-in)	Boom	8.50 (27' 11")
			Arm	6.20 (20' 4")
		mm (in)	Shoe	800 (32")
Operating weight		kg (lb)		24390 (53770)
Bucket capacity (SAE heaped), standard		m^3 (yd^3)		0.52 (0.68)
Overall length	A	mm (ft-in)		12345 (40' 6")
Overall width	B			3190 (10' 6")
Overall height of boom	C			3365 (11' 0")
Superstructure width	D			2740 (9' 0")
Overall height of cab	E			3035 (9' 11")
Ground clearance of counterweight	F			1095 (3' 7")
Overall height of engine hood	G			2380 (7' 10")
Overall height of handrail	G'			2970 (9' 9")
Minimum ground clearance	H			475 (1' 7")
Rear-end distance	I			2770 (9' 1")
Rear-end swing radius	I'			2890 (9' 6")
Distance between tumblers	J			3650 (12' 0")
Undercarriage length	K			4395 (14' 5")
Undercarriage width	L			3190 (10' 6")
Track gauge	M			2390 (7' 10")
Track shoe width, standard	N			800 (2' 7")
Travel speed (low/high)		km/hr (mph)		3.66/5.76
Swing speed		rpm		12.4
Gradeability		Degree (%)		35 (70)
Ground pressure		kgf/cm^2 (psi)		0.39 (5.55)
Max traction force		kg (lb)		20832 (45930)

3. WORKING RANGE AND DIGGING FORCE

1) HX210S MONO BOOM

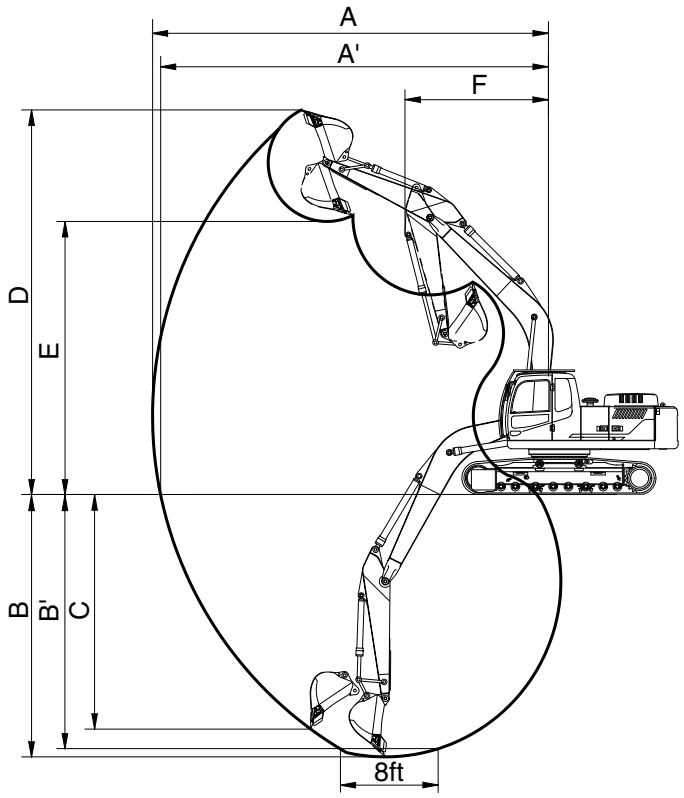


210S2SP04B

Description	m (ft-in)	Boom	5.70 (18' 8")		
		Arm	2.90 (9' 6")	2.00 (6' 7")	2.40 (7' 10")
Max digging reach	mm (ft-in)	A	9945 (32' 8")	9145 (30' 0")	9525 (31' 3")
Max digging reach on ground		A'	9780 (32' 1")	8960 (29' 5")	9355 (30' 8")
Max digging depth		B	6500 (21' 4")	5585 (18' 4")	5990 (19' 8")
Max digging depth (8 ft level)		B'	6315 (20' 9")	5360 (17' 7")	5790 (19' 0")
Max vertical wall digging depth		C	5960 (19' 7")	5070 (16' 8")	5445 (17' 10")
Max digging height		D	9750 (32' 0")	9370 (30' 9")	9625 (31' 7")
Max dumping height		E	6990 (22' 11")	6580 (21' 7")	6830 (22' 5")
Min swing radius		F	3425 (11' 3")	3715 (12' 2")	3400 (11' 2")
Bucket digging force	kN	SAE	130.4 [141.6]	130.4 [141.6]	130.4 [141.6]
	kgf		13300 [14440]	13300 [14440]	13300 [14440]
	lbf		29320 [31830]	29320 [31830]	29320 [31830]
	kN	ISO	152.3 [165.3]	152.3 [165.3]	152.3 [165.3]
	kgf		15530 [16860]	15530 [16860]	15530 [16860]
	lbf		34240 [37170]	34240 [37170]	34240 [37170]
Arm digging force	kN	SAE	102.8 [111.6]	144.3 [156.6]	119.3 [129.4]
	kgf		10480 [11380]	14710 [15970]	12160 [13200]
	lbf		23100 [25090]	32430 [35210]	26810 [29100]
	kN	ISO	106.9 [116.0]	152.0 [165.0]	124.7 [135.4]
	kgf		10900 [11830]	15500 [16830]	12720 [13810]
	lbf		24030 [26080]	34170 [37100]	28040 [30450]

[ ] : Power boost

2) HX220S MONO BOOM

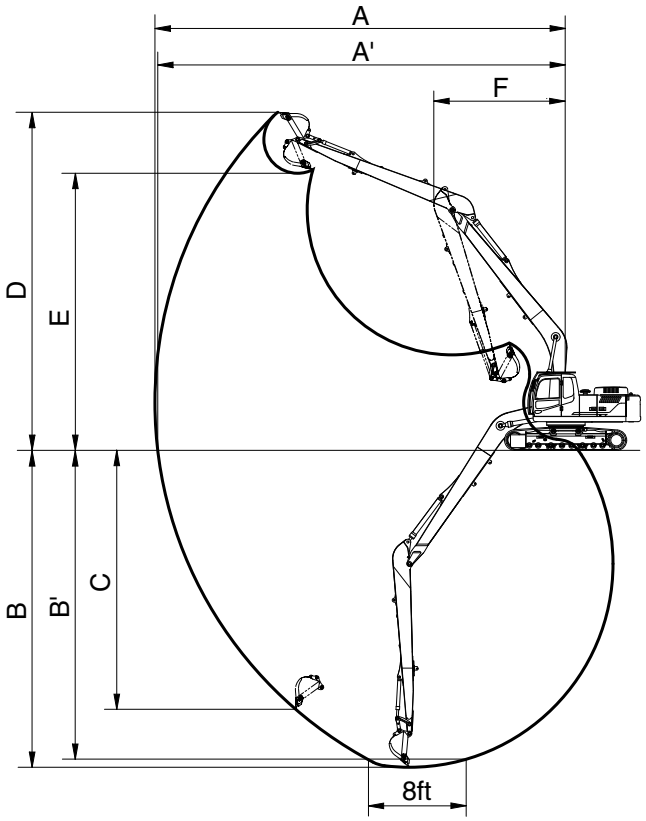


210S2SP12

Description	m (ft-in)	Boom	5.70 (18' 8")		
		Arm	2.90 (9' 6")	2.00 (6' 7")	2.40 (7' 10")
Max digging reach	mm (ft-in)	A	9945 (32' 8")	9145 (30' 0")	9525 (31' 3")
Max digging reach on ground		A'	9780 (32' 1")	8960 (29' 5")	9355 (30' 8")
Max digging depth		B	6500 (21' 4")	5585 (18' 4")	5990 (19' 8")
Max digging depth (8 ft level)		B'	6315 (20' 9")	5360 (17' 7")	5790 (19' 0")
Max vertical wall digging depth		C	5960 (19' 7")	5070 (16' 8")	5445 (17' 10")
Max digging height		D	9750 (32' 0")	9370 (30' 9")	9625 (31' 7")
Max dumping height		E	6990 (22' 11")	6580 (21' 7")	6830 (22' 5")
Min swing radius		F	3425 (11' 3")	3715 (12' 2")	3400 (11' 2")
Bucket digging force	kN	SAE	130.4 [141.6]	130.4 [141.6]	130.4 [141.6]
	kgf		13300 [14440]	13300 [14440]	13300 [14440]
	lbf		29320 [31830]	29320 [31830]	29320 [31830]
	kN	ISO	152.3 [165.3]	152.3 [165.3]	152.3 [165.3]
	kgf		15530 [16860]	15530 [16860]	15530 [16860]
	lbf		34240 [37170]	34240 [37170]	34240 [37170]
Arm digging force	kN	SAE	102.8 [111.6]	144.3 [156.6]	119.3 [129.4]
	kgf		10480 [11380]	14710 [15970]	12160 [13200]
	lbf		23100 [25090]	32430 [35210]	26810 [29100]
	kN	ISO	106.9 [116.0]	152.0 [165.0]	124.7 [135.4]
	kgf		10900 [11830]	15500 [16830]	12720 [13810]
	lbf		24030 [26080]	34170 [37100]	28040 [30450]

[ ] : Power boost

3) HX220S LR



210S2SP11A

Description	m (ft-in)	Boom	8.50 (27' 11")
		Arm	6.20 (20' 4")
Max digging reach	mm (ft-in)	A	15425 (50' 7")
Max digging reach on ground		A'	15320 (50' 3")
Max digging depth		B	11500 (37' 9")
Max digging depth (8 ft level)		B'	11355 (37' 3")
Max vertical wall digging depth		C	10265 (33' 8")
Max digging height		D	13445 (44' 1")
Max dumping height		E	11200 (36' 9")
Min swing radius		F	4705 (15' 5")
Bucket digging force	kN	SAE	68.0
	kgf		6930
	lbf		15280
	kN	ISO	80.3
	kgf		8190
	lbf		18060
Arm digging force	kN	SAE	49.5
	kgf		5050
	lbf		11130
	kN	ISO	50.5
	kgf		5150
	lbf		11350

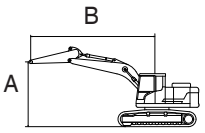
4. WEIGHT

Item	HX210S		HX220S	
	kg	lb	kg	lb
Upperstructure assembly	8950	19730	←	
Main frame weld assembly	2600	5730	←	
Engine assembly	437	963	←	
Main pump assembly	120	265	←	
Main control valve assembly	200	440	←	
Swing motor assembly	190	420	←	
Hydraulic oil tank assembly	240	530	←	
Fuel tank assembly	195	430	←	
Counterweight	3600	7940	←	
Cab assembly	310	680	←	
Lower chassis assembly	8060	17770	8700	19180
Track frame weld assembly	2545	5611	2720	6000
Swing bearing	290	639	←	
Travel motor assembly	305	670	←	
Turning joint	55	120	←	
Track recoil spring	140	309	←	
Idler	151	333	←	
Upper roller	21	46	←	
Lower roller	48	106	←	
Track-chain assembly (600 mm standard triple grouser shoe)	1353	2983	1356	2989
Front attachment assembly (5.70 m boom, 2.90 m arm, 0.87 m^3 SAE heaped bucket)	4030	8880	←	
5.70 m boom assembly	1520	3350	←	
2.90 m arm assembly	750	1650	←	
0.92 m^3 SAE heaped bucket	765	1690	←	
Boom cylinder assembly	180	400	←	
Arm cylinder assembly	290	640	←	
Bucket cylinder assembly	175	390	←	
Bucket control link assembly	170	370	←	

5. LIFTING CAPACITIES

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outrigger	
HX210S	MONO BOOM	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		5700	2000	3600	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)
7.5 m (24.6 ft)	kg									*6130	5770	5.05
	lb									*13510	12720	(16.6)
6.0 m (19.7 ft)	kg			*6180	*6180	*5780	4360			*5810	3910	6.39
	lb			*13620	*13620	*12740	9610			*12810	8620	(21.0)
4.5 m (14.8 ft)	kg			*7370	6540	*6130	4240			4890	3190	7.17
	lb			*16250	14420	*13510	9350			10780	7030	(23.5)
3.0 m (9.8 ft)	kg					6300	4030	4490	2900	4410	2850	7.58
	lb					13890	8880	9900	6390	9720	6280	(24.9)
1.5 m (4.9 ft)	kg					6090	3840	4410	2830	4260	2740	7.67
	lb					13430	8470	9720	6240	9390	6040	(25.2)
0.0 m (0.0 ft)	kg			9270	5530	5970	3730			4400	2810	7.46
	lb			20440	12190	13160	8220			9700	6190	(24.5)
-1.5 m (-4.9 ft)	kg			9290	5550	5960	3720			4900	3110	6.92
	lb			20480	12240	13140	8200			10800	6860	(22.7)
-3.0 m (-9.8 ft)	kg	*11600	10880	*8810	5680					6180	3900	5.95
	lb	*25570	23990	*19420	12520					13620	8600	(19.5)

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).

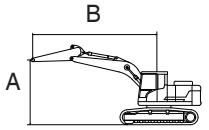
4. *Indicates load limited by hydraulic capacity.

※ 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 your HD Hyundai Construction Equipment 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 necessory for non-standard configurations.

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outrigger	
HX210S	MONO BOOM	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		5700	2400	3600	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)
7.5 m (24.6 ft)	kg									*5580	4880	5.62
	lb									*12300	10760	(18.4)
6.0 m (19.7 ft)	kg					*5340	4410			5360	3510	6.85
	lb					*11770	9720			11820	7740	(22.5)
4.5 m (14.8 ft)	kg			*6830	6630	*5770	4260	4570	2970	4480	2910	7.58
	lb			*15060	14620	*12720	9390	10080	6550	9880	6420	(24.9)
3.0 m (9.8 ft)	kg			*8560	6090	6320	4040	4480	2890	4070	2620	7.97
	lb			*18870	13430	13930	8910	9880	6370	8970	5780	(26.1)
1.5 m (4.9 ft)	kg			9440	5660	6080	3830	4380	2800	3940	2520	8.06
	lb			20810	12480	13400	8440	9660	6170	8690	5560	(26.4)
0.0 m (0.0 ft)	kg			9220	5480	5930	3690	4310	2730	4040	2570	7.85
	lb			20330	12080	13070	8140	9500	6020	8910	5670	(25.8)
-1.5 m (-4.9 ft)	kg	*9280	*9280	9200	5460	5890	3660			4450	2820	7.34
	lb	*20460	*20460	20280	12040	12990	8070			9810	6220	(24.1)
-3.0 m (-9.8 ft)	kg	*12580	10660	*9230	5560	5970	3730			5430	3420	6.44
	lb	*27730	23500	*20350	12260	13160	8220			11970	7540	(21.1)
-4.5 m (-14.8 ft)	kg			*6610	5840							
	lb			*14570	12870							

Note 1. Lifting capacity are based on ISO 10567.
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4. *Indicates load limited by hydraulic capacity.

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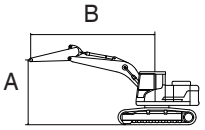
⚠ Failure to comply to the rated load can cause possible personal injury or property damage.
Make adjustments to the rated load as necessory for non-standard configurations.

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outrigger	
HX210S	MONO BOOM	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		5700	2900	3600	600	-	-	-	-	-

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



Lift-point height (A)		Lift-point radius (B)										At max. reach		
		1.5 m (4.9 ft)		3.0 m (9.8 ft)		4.5 m (14.8 ft)		6.0 m (19.7 ft)		7.5 m (24.6 ft)		Capacity		Reach
														m (ft)
7.5 m (24.6 ft)	kg							*4920	4480			*4330	4200	6.21
	lb							*10850	9880			*9550	9260	(20.4)
6.0 m (19.7 ft)	kg							*4830	4470			*4030	3150	7.34
	lb							*10650	9850			*8880	6940	(24.1)
4.5 m (14.8 ft)	kg					*6130	*6130	*5330	4310	4600	3000	*3960	2650	8.03
	lb					*13510	*13510	*11750	9500	10140	6610	*8730	5840	(26.3)
3.0 m (9.8 ft)	kg					*7880	6210	*6120	4070	4490	2890	3750	2400	8.39
	lb					*17370	13690	*13490	8970	9900	6370	8270	5290	(27.5)
1.5 m (4.9 ft)	kg					*9500	5710	6090	3830	4360	2780	3630	2310	8.48
	lb					*20940	12590	13430	8440	9610	6130	8000	5090	(27.8)
0.0 m (0.0 ft)	kg			*4930	*4930	9190	5440	5900	3660	4270	2690	3700	2340	8.28
	lb			*10870	*10870	20260	11990	13010	8070	9410	5930	8160	5160	(27.2)
-1.5 m (-4.9 ft)	kg	*5620	*5620	*9410	*9410	9110	5370	5820	3590	4240	2660	4020	2530	7.80
	lb	*12390	*12390	*20750	*20750	20080	11840	12830	7910	9350	5860	8860	5580	(25.6)
-3.0 m (-9.8 ft)	kg			*13620	10420	9180	5430	5860	3620			4770	3000	6.96
	lb			*30030	22970	20240	11970	12920	7980			10520	6610	(22.8)
-4.5 m (-14.8 ft)	kg			*10720	*10720	*7730	5640					*5820	4180	5.60
	lb			*23630	*23630	*17040	12430					*12830	9220	(18.4)

Note 1. Lifting capacity are based on ISO 10567.

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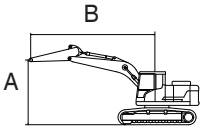
⚠ Failure to comply to the rated load can cause possible personal injury or property damage.
Make adjustments to the rated load as necessory for non-standard configurations.

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outrigger	
HX220S	MONO BOOM	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		5700	2900	3600	600	-	-	-	-	-

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



Lift-point height (A)		Lift-point radius (B)										At max. reach		
		1.5 m (4.9 ft)		3.0 m (9.8 ft)		4.5 m (14.8 ft)		6.0 m (19.7 ft)		7.5 m (24.6 ft)		Capacity		Reach
														m (ft)
7.5 m (24.6 ft)	kg							*4920	*4920			*4330	*4330	6.21
	lb							*10850	*10850			*9550	*9550	(20.4)
6.0 m (19.7 ft)	kg							*4830	*4830			*4030	3510	7.34
	lb							*10650	*10650			*8880	7740	(24.1)
4.5 m (14.8 ft)	kg					*6130	*6130	*5330	4800	*4960	3350	*3960	2970	8.03
	lb					*13510	*13510	*11750	10580	*10930	7390	*8730	6550	(26.3)
3.0 m (9.8 ft)	kg					*7880	6980	*6120	4550	5060	3240	*4060	2700	8.39
	lb					*17370	15390	*13490	10030	11160	7140	*8950	5950	(27.5)
1.5 m (4.9 ft)	kg					*9500	6470	6920	4310	4930	3120	4100	2600	8.48
	lb					*20940	14260	15260	9500	10870	6880	9040	5730	(27.8)
0.0 m (0.0 ft)	kg			*4930	*4930	*10340	6190	6720	4140	4830	3030	4190	2640	8.29
	lb			*10870	*10870	*22800	13650	14820	9130	10650	6680	9240	5820	(27.2)
-1.5 m (-4.9 ft)	kg	*5620	*5620	*9400	*9400	*10370	6120	6640	4060	4800	3010	4550	2860	7.80
	lb	*12390	*12390	*20720	*20720	*22860	13490	14640	8950	10580	6640	10030	6310	(25.6)
-3.0 m (-9.8 ft)	kg			*13630	12090	*9640	6180	6680	4100			5410	3380	6.96
	lb			*30050	26650	*21250	13620	14730	9040			11930	7450	(22.8)
-4.5 m (-14.8 ft)	kg			*10720	*10720	*7730	6400					*5820	4710	5.60
	lb			*23630	*23630	*17040	14110					*12830	10380	(18.4)

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).

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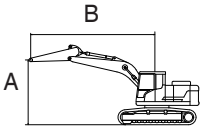
Make adjustments to the rated load as necessory for non-standard configurations.

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outrigger	
HX220S	MONO BOOM	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		5700	2000	3600	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)
7.5 m (24.6 ft)	kg									*6130	*6130	5.05
	lb									*13510	*13510	(16.6)
6.0 m (19.7 ft)	kg			*6170	*6170	*5780	4850			*5810	4360	6.39
	lb			*13600	*13600	*12740	10690			*12810	9610	(21.0)
4.5 m (14.8 ft)	kg			*7370	7320	*6130	4720			5510	3560	7.17
	lb			*16250	16140	*13510	10410			12150	7850	(23.5)
3.0 m (9.8 ft)	kg					*6820	4510	5060	3250	4970	3190	7.58
	lb					*15040	9940	11160	7170	10960	7030	(24.9)
1.5 m (4.9 ft)	kg					6910	4320	4970	3170	4810	3070	7.67
	lb					15230	9520	10960	6990	10600	6770	(25.2)
0.0 m (0.0 ft)	kg			*10600	6270	6790	4210			4970	3150	7.46
	lb			*23370	13820	14970	9280			10960	6940	(24.5)
-1.5 m (-4.9 ft)	kg			*10130	6290	6780	4200			5540	3500	6.92
	lb			*22330	13870	14950	9260			12210	7720	(22.7)
-3.0 m (-9.8 ft)	kg	*11600	*11600	*8810	6430					*6360	4380	5.95
	lb	*25570	*25570	*19420	14180					*14020	9660	(19.5)

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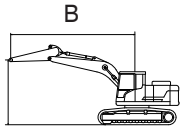
⚠ Failure to comply to the rated load can cause possible personal injury or property damage.
Make adjustments to the rated load as necessory for non-standard configurations.

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outrigger	
HX220S	MONO BOOM	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		5700	2400	3600	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)
7.5 m (24.6 ft)	kg									*5580	5430	5.62
	lb									*12300	11970	(18.4)
6.0 m (19.7 ft)	kg					*5340	4900			*5390	3910	6.85
	lb					*11770	10800			*11880	8620	(22.5)
4.5 m (14.8 ft)	kg			*6820	*6820	*5770	4750	5140	3320	5040	3250	7.58
	lb			*15040	*15040	*12720	10470	11330	7320	11110	7170	(24.9)
3.0 m (9.8 ft)	kg			*8560	6860	*6520	4520	5050	3240	4590	2940	7.97
	lb			*18870	15120	*14370	9960	11130	7140	10120	6480	(26.1)
1.5 m (4.9 ft)	kg			*9990	6420	6910	4300	4950	3140	4450	2830	8.06
	lb			*22020	14150	15230	9480	10910	6920	9810	6240	(26.4)
0.0 m (0.0 ft)	kg			*10530	6220	6750	4170	4870	3080	4570	2890	7.85
	lb			*23210	13710	14880	9190	10740	6790	10080	6370	(25.8)
-1.5 m (-4.9 ft)	kg	*9270	*9270	*10280	6200	6710	4130			5030	3170	7.34
	lb	*20440	*20440	*22660	13670	14790	9110			11090	6990	(24.1)
-3.0 m (-9.8 ft)	kg	*12590	12350	*9230	6310	*6790	4210			*6060	3850	6.44
	lb	*27760	27230	*20350	13910	*14970	9280			*13360	8490	(21.1)
-4.5 m (-14.8 ft)	kg			*6620	6600							
	lb			*14590	14550							

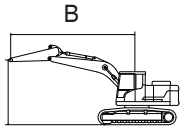
Note 1. Lifting capacity are based on ISO 10567.
2. Lifting capacity of the HX series does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.
3. The Lift-point is bucket pivot mounting pin on the arm (without bucket mass).
4. *Indicates load limited 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 your HD Hyundai Construction Equipment 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 necessory for non-standard configurations.

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outrigger	
HX220S LR	MONO BOOM	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		8500	6200	5300	800	-	-	-	-	-

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



Lift-point height (A)		Lift-point radius (B)																		At max. reach		
		1.5 m (4.9 ft)		3.0 m (9.8 ft)		4.5 m (14.8 ft)		6.0 m (19.7 ft)		7.5 m (24.6 ft)		9.0 m (29.5 ft)		10.5 m (34.4 ft)		12.0 m (39.4 ft)		13.5 m (44.3 ft)		Capacity		Reach
																						m (ft)
12.0m	kg																			*970	*970	9.79
39.4ft	lb																			*2140	*2140	(32.1)
10.5m	kg													*1530	*1530					*880	*880	11.17
34.4ft	lb													*3370	*3370					*1940	*1940	(36.6)
9.0m	kg													*2000	*2000	*1090	*1090			*830	*830	12.21
29.5ft	lb													*4410	*4410	*2400	*2400			*1830	*1830	(40.0)
7.5m	kg													*2050	*2050	*1800	*1800			*810	*810	12.99
24.6ft	lb													*4520	*4520	*3970	*3970			*1790	*1790	(42.6)
6.0m	kg													*2170	*2170	*2110	1940	*880	*880	*800	*800	13.55
19.7ft	lb													*4780	*4780	*4650	4280	*1940	*1940	*1760	*1760	(44.5)
4.5m	kg											*2530	*2530	*2350	*2350	*2220	1860	*1430	*1430	*810	*810	13.94
14.8ft	lb											*5580	*5580	*5180	*5180	*4890	4100	*3150	*3150	*1790	*1790	(45.7)
3.0m	kg					*5420	*5420	*4030	*4030	*3300	*3300	*2850	*2850	*2560	2260	*2360	1770	*1770	1400	*840	*840	14.15
9.8ft	lb					*11950	*11950	*8880	*8880	*7280	*7280	*6280	*6280	*5640	4980	*5200	3900	*3900	3090	*1850	*1850	(46.4)
1.5m	kg					*6960	*6960	*4860	4840	*3810	3550	*3180	2710	*2780	2120	*2510	1680	*1960	1340	*880	*880	14.20
4.9ft	lb					*15340	*15340	*10710	10670	*8400	7830	*7010	5970	*6130	4670	*5530	3700	*4320	2950	*1940	*1940	(46.6)
0.0m	kg			*2670	*2670	*6320	*6320	*5550	4370	*4260	3250	*3490	2510	*2990	1990	*2650	1590	*1970	1290	*940	*940	14.08
0.0ft	lb			*5890	*5890	*13930	*13930	*12240	9630	*9390	7170	*7690	5530	*6590	4390	*5840	3510	*4340	2840	*2070	*2070	(46.2)
-1.5m	kg	*2530	*2530	*3460	*3460	*6060	6020	*6000	4070	*4600	3030	*3740	2360	3150	1880	2590	1520	*1670	1250	*1040	*1040	13.81
-4.9ft	lb	*5580	*5580	*7630	*7630	*13360	13270	*13230	8970	*10140	6680	*8250	5200	6940	4140	5710	3350	*3680	2760	*2290	*2290	(45.3)
-3.0m	kg	*3520	*3520	*4440	*4440	*6700	5910	*6220	3920	*4810	2900	3820	2250	3080	1810	2550	1480			*1170	*1170	13.36
-9.8ft	lb	*7760	*7760	*9790	*9790	*14770	13030	*13710	8640	*10600	6390	8420	4960	6790	3990	5620	3260			*2580	*2580	(43.8)
-4.5m	kg	*4540	*4540	*5560	*5560	*7810	5920	*6230	3880	*4860	2840	3770	2210	3040	1780	2540	1470			*1360	*1360	12.71
-14.8ft	lb	*10010	*10010	*12260	*12260	*17220	13050	*13730	8550	*10710	6260	8310	4870	6700	3920	5600	3240			*3000	*3000	(41.7)
-6.0m	kg	*5640	*5640	*6840	*6840	*8000	6040	*6020	3920	*4750	2850	3780	2210	3060	1790					*1650	1540	11.84
-19.7ft	lb	*12430	*12430	*15080	*15080	*17640	13320	*13270	8640	*10470	6280	8330	4870	6750	3950					*3640	3400	(38.8)
-7.5m	kg	*6860	*6860	*8360	*8360	*7280	6240	*5570	4040	*4430	2930	*3580	2280	*2850	1880					*2170	1840	10.68
-24.6ft	lb	*15120	*15120	*18430	*18430	*16050	13760	*12280	8910	*9770	6460	*7890	5030	*6280	4140					*4780	4060	(35.0)
-9.0m	kg			*8410	*8410	*6130	*6130	*4760	4240	*3760	3100	*2880	2450							*2800	2410	9.13
-29.5ft	lb			*18540	*18540	*13510	*13510	*10490	9350	*8290	6830	*6350	5400							*6170	5310	(30.0)

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 your HD Hyundai Construction Equipment 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 necessory for non-standard configurations.

6. BUCKET SELECTION GUIDE

1) HX210S, 3600 KG COUNTERWEIGHT

General bucket

Heavy duty
(without side cutter)

Rock heavy duty

Long reach

Type	Capacity		Width		Weight	Tooth	MONO Recommendation		
	SAE Heaped	CECE heaped	Without side cutter	With side cutter			5.70 m (18' 8") Boom		
	m^3 (yd^3)	m^3 (yd^3)	mm (in)	mm (in)	kg (lb)	EA	2.00 m (6' 7") Arm	2.40 m (7' 10") Arm	2.90 m (9' 6") Arm
General bucket	0.92 (1.20)	0.81 (1.06)	1085 (42.7'''	1230 (48.4")	750 (1650)	5	●	◐	■
	1.05 (1.37)	0.96 (1.26)	1220 (48.0")	1370 (53.9")	790 (1740)	5	◐	■	▲
	1.17 (1.53)	1.00 (1.31)	1340 (52.8")	1490 (58.7")	850 (1870)	6	■	▲	▲
Heavy duty	0.92 (1.20)	0.83 (1.09)	1050 (41.3")	1095 (43.1")	865 (1910)	5	●	◐	■
	1.08 (1.41)	0.97 (1.27)	1200 (47.2")	1245 (49.0")	935 (2060)	5	■	■	▲
Rock heavy duty	0.91 (1.19)	0.83 (1.09)	1050 (41.3")	1095 (43.1")	1050 (2310)	4	◐	■	■
	1.23 (1.61)	1.11 (1.45)	1350 (53.1")	1395 (54.9")	1240 (2730)	5	▲	▲	X
	0.87 (1.14)	0.75 (0.98)	1150 (45.3")	-	875 (1930)	5	●	◐	■
	1.20 (1.57)	1.00 (1.31)	1425 (56.1")	-	990 (2180)	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

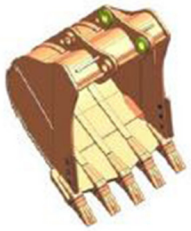
X Not recommended

※ 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) HX210S, 4200 KG COUNTERWEIGHT

General bucket

Heavy duty
(without side cutter)



Rock heavy duty

Long reach

Type	Capacity		Width		Weight	Tooth	MONO Recommendation 5.70 m (18' 8") 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	2.00 m (6' 7") Arm	2.40 m (7' 10") Arm	2.90 m (9' 6") Arm
General bucket	0.92 (1.20)	0.81 (1.06)	1085 (42.7")	1230 (48.4")	750 (1650)	5	●	●	◐
	1.05 (1.37)	0.96 (1.26)	1220 (48.0")	1370 (53.9")	790 (1740)	5	◐	◐	■
	1.17 (1.53)	1.00 (1.31)	1340 (52.8")	1490 (58.7")	850 (1870)	6	◐	■	▲
Heavy duty	0.92 (1.20)	0.83 (1.09)	1050 (41.3")	1095 (43.1")	865 (1910)	5	●	◐	◐
	1.08 (1.41)	0.97 (1.27)	1200 (47.2")	1245 (49.0")	935 (2060)	5	◐	■	■
Rock heavy duty	0.91 (1.19)	0.83 (1.09)	1050 (41.3")	1095 (43.1")	1050 (2310)	4	●	◐	■
	1.23 (1.61)	1.11 (1.45)	1350 (53.1")	1395 (54.9")	1240 (2730)	5	■	▲	▲
	0.87 (1.14)	0.75 (0.98)	1150 (45.3")	-	875 (1930)	5	●	●	◐
	1.20 (1.57)	1.00 (1.31)	1425 (56.1")	-	990 (2180)	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.

3) HX220S, 3600 KG COUNTERWEIGHT

General bucket

Heavy duty
(without side cutter)

Rock heavy duty

Long reach

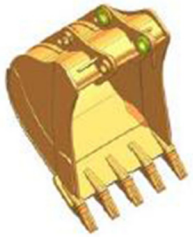
Type	Capacity		Width		Weight	Tooth	MONO		
							Recommendation		
	SAE Heaped	CECE heaped	Without side cutter	With side cutter			5.70 m (18' 8") Boom		
	m^3 (yd^3)	m^3 (yd^3)	mm (in)	mm (in)	kg (lb)	EA	2.00 m (6' 7") Arm	2.40 m (7' 10") Arm	2.90 m (9' 6") Arm
General bucket	0.92 (1.20)	0.81 (1.06)	1085 (42.7")	1230 (48.4")	750 (1650)	5	●	●	◐
	1.05 (1.37)	0.96 (1.26)	1220 (48.0")	1370 (53.9")	790 (1740)	5	●	◐	■
	1.17 (1.53)	1.00 (1.31)	1340 (52.8")	1490 (58.7")	850 (1870)	6	◐	■	■
Heavy duty	0.92 (1.20)	0.83 (1.09)	1050 (41.3")	1095 (43.1")	865 (1910)	5	●	●	◐
	1.08 (1.41)	0.97 (1.27)	1200 (47.2")	1245 (49.0")	935 (2060)	5	◐	◐	■
Rock heavy duty	0.91 (1.19)	0.83 (1.09)	1050 (41.3")	1095 (43.1")	1050 (2310)	4	●	◐	◐
	1.23 (1.61)	1.11 (1.45)	1350 (53.1")	1395 (54.9")	1240 (2730)	5	■	▲	▲
	0.87 (1.14)	0.75 (0.98)	1150 (45.3")	-	875 (1930)	5	●	●	◐
	1.20 (1.57)	1.00 (1.31)	1425 (56.1")	-	990 (2180)	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

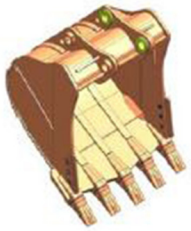
※ These recommendations are for general conditions and average use.
Work tools and ground conditions have effects on machine performance.
Select an optimum combination according to the working conditions and the type of work that is being done.
Consult your HD Hyundai Construction Equipment dealer for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

4) HX220S, 4200 KG COUNTERWEIGHT

General bucket



Heavy duty
(without side cutter)



Rock heavy duty

Long reach

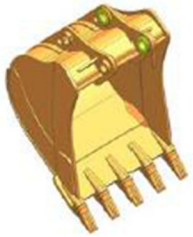
Type	Capacity		Width		Weight	Tooth	MONO Recommendation 5.70 m (18' 8") Boom		
	SAE Heaped	CECE heaped	Without side cutter	With side cutter			2.00 m (6' 7") Arm	2.40 m (7' 10") Arm	2.90 m (9' 6") Arm
	m^3 (yd^3)	m^3 (yd^3)	mm (in)	mm (in)	kg (lb)	EA			
General bucket	0.92 (1.20)	0.81 (1.06)	1085 (42.7")	1230 (48.4")	750 (1650)	5	●	●	●
	1.05 (1.37)	0.96 (1.26)	1220 (48.0")	1370 (53.9")	790 (1740)	5	●	●	◐
	1.17 (1.53)	1.00 (1.31)	1340 (52.8")	1490 (58.7")	850 (1870)	6	●	◐	■
Heavy duty	0.92 (1.20)	0.83 (1.09)	1050 (41.3")	1095 (43.1")	865 (1910)	5	●	●	●
	1.08 (1.41)	0.97 (1.27)	1200 (47.2")	1245 (49.0")	935 (2060)	5	●	◐	◐
Rock heavy duty	0.91 (1.19)	0.83 (1.09)	1050 (41.3")	1095 (43.1")	1050 (2310)	4	●	●	◐
	1.23 (1.61)	1.11 (1.45)	1350 (53.1")	1395 (54.9")	1240 (2730)	5	◐	■	▲
	0.87 (1.14)	0.75 (0.98)	1150 (45.3")	-	875 (1930)	5	●	●	●
	1.20 (1.57)	1.00 (1.31)	1425 (56.1")	-	990 (2180)	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

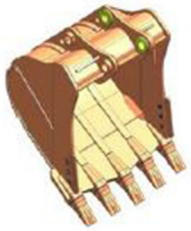
※ These recommendations are for general conditions and average use.
Work tools and ground conditions have effects on machine performance.
Select an optimum combination according to the working conditions and the type of work that is being done.
Consult your HD Hyundai Construction Equipment dealer for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

5) HX220S LR, 5300 KG COUNTERWEIGHT

General bucket



Heavy duty
(without side cutter)



Rock heavy duty

Long reach

Type	Capacity		Width		Weight	Tooth	L/Reach Recommendation
	SAE Heaped	CECE heaped	Without side cutter	With side cutter			8.50 m (27' 11") Boom
	m^3 (yd^3)	m^3 (yd^3)	mm (in)	mm (in)	kg (lb)	EA	6.20 m (20' 4") Arm
LR	0.51 (0.67)	0.45 (0.59)	865 (34.1")	995 (39.2")	395 (870)	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

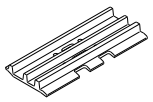
※ These recommendations are for general conditions and average use.
Work tools and ground conditions have effects on machine performance.
Select an optimum combination according to the working conditions and the type of work that is being done.
Consult your HD Hyundai Construction Equipment dealer for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

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			
						
HX210S	Shoe width	mm (in)	600 (24)	-	-	800 (32)
	Operating weight	kg (lb)	20830 (45920)	-	-	21380 (47140)
	Ground pressure	kgf/cm^2 (psi)	0.48 (6.81)	-	-	0.42 (5.99)
	Overall width	mm (ft-in)	2800 (9' 2")	-	-	3000 (9' 10")
HX220S	Shoe width	mm (in)	600 (24)★	600 (24)	700 (28)	800 (32)
	Operating weight	kg (lb)	21260 (46870)	21450 (47290)	21750 (47950)	22040 (48590)
	Ground pressure	kgf/cm^2 (psi)	0.45 (6.45)	0.46 (6.51)	0.40 (5.56)	0.35 (5.02)
	Overall width	mm (ft-in)	2990 (9' 10")	2800 (9' 2")	3090 (10' 2")	3190 (10' 6")

★ : 8.5 T

3) NUMBER OF ROLLERS AND SHOES ON EACH SIDE

Item	Quantity	
	HX210S	HX220S
Upper rollers	2 EA	2 EA
Lower rollers	7 EA	8 EA
Track shoes	45 EA	49 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
800 mm triple grouser	Option	C

※ Table 2

Category	Applications	Precautions
A	Rocky ground, river beds, normal soil	· 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
B	Normal soil, soft ground	· These shoes cannot be used on rough ground with large obstacles such as boulders or fallen trees · Travel at high speed only on flat ground · Travel slowly at low speed if it is impossible to avoid going over obstacles
C	Extremely soft ground (swampy ground)	· Use the shoes only in the conditions that the machine sinks and it is impossible to use the shoes of category A or B · These shoes cannot be used on rough ground with large obstacles such as boulders or fallen trees · Travel at high speed only on flat ground · Travel slowly at low speed if it is impossible to avoid going over obstacles

8. SPECIFICATIONS FOR MAJOR COMPONENTS

1) ENGINE

Item	Specification
Model	HD Hyundai Construction Equipment 6BTAA-5.9 (HM5.9)
Type	4-cycle, turbocharged, charge 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	102 × 120 mm (4.02 " × 4.72 ")
Piston displacement	5900 cc (360 cu in)
Compression ratio	17.3 : 1
Rated gross horse power (SAE J1995)	148 Hp at 2000rpm (110 kW at 2000 rpm)
Rated net horse power (SAE J1349)	145 Hp at 2000 rpm (108 kW at 2000 rpm)
Maximum torque at 1300 rpm	64 kgf · m (463 lbf · ft)
Engine oil quantity	14 ℓ (3.8 U.S. gal) : -#1289 20 ℓ (5.3 U.S. gal) : #1290-
Dry weight	437 kg (963 lb)
High idling speed	2250 + 50 rpm
Low idling speed	800 ± 100 rpm
Rated fuel consumption	95 g/Hp · hr at 1200 rpm
Starting motor	Lucas 24V
Alternator	Lucas 24V-75A
Battery	2 × 12V × 100Ah

2) MAIN PUMP

Item	Specification
Type	Variable displacement tandem axis piston pumps
Capacity	2 × 117 cc/rev
Maximum pressure	350 kgf/cm^2 (4978 psi)
Rated oil flow	2 × 234 ℓ /min (61.8 U.S. gpm/ 51.4 U.K. gpm)
Rated speed	2000 rpm

3) GEAR PUMP

Item	Specification
Type	Fixed displacement gear pump single stage
Capacity	15 cc/rev
Maximum pressure	40 kgf/cm^2 (568 psi)
Rated oil flow	30 ℓ /min (7.9 U.S. gpm/6.7 U.K. gpm)

4) MAIN CONTROL VALVE

Item	Specification
Type	9 spools mono-block
Operating method	Hydraulic pilot system
Main relief valve pressure	350 kgf/cm^2 (4978 psi)
Overload relief valve pressure	400 kgf/cm^2 (5689 psi)

5) SWING MOTOR

Item	Specification
Type	Two fixed displacement axial piston motor
Capacity	142.8 cc/rev
Relief pressure	265 kgf/cm^2 (3894 psi)
Braking system	Automatic, spring applied hydraulic released
Braking torque	63.3 kgf/cm^2 (470.8 lbf · ft)
Brake release pressure	20.9~35.5 kgf/cm^2 (297~505 psi)
Reduction gear type	2 - stage planetary
Swing speed	12.2rpm

6) TRAVEL MOTOR

Item	Specification
Type	Variable displacement axial piston motor
Relief pressure	350 kgf/cm^2 (4978 psi)
Reduction gear type	2-stage planetary
Braking system	Automatic, spring applied hydraulic released
Brake release pressure	13 kgf/cm^2 (182 psi)
Braking torque	65.1 kgf · m (470 lbf · ft)

7) REMOTE CONTROL VALVE

Item		Specification
Type		Pressure reducing type
Operating pressure	Minimum	6.5 kgf/cm^2 (92 psi)
	Maximum	26 kgf/cm^2 (370 psi)
Single operation stroke	Lever	61 mm (2.4 in)
	Pedal	123 mm (4.84 in)

8) CYLINDER

Item		Specification
Boom cylinder	Bore dia × Stroke	Ø120 × 1290 mm
	Cushion	Extend only
Arm cylinder	Bore dia × Stroke	Ø140 × 1443 mm
	Cushion	Extend and retract
Bucket cylinder	Bore dia × Stroke	Ø120 × 1060 mm
	Cushion	Extend only
Bucket cylinder (Long reach)	Bore dia × Stroke	Ø95 × 900 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.

9. 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 ★2	14 (3.8) : -#1289 20 (5.3) : #1290-	★SAE 0W-40 ★SAE 0W-30 SAE 5W-30 SAE 10W-30 SAE 15W-40
Swing drive	Gear oil	6.2 (1.6)	★SAE 75W-90
Final drive		4.5×2 (1.2×2)	SAE 80W-90
Hydraulic tank	Hydraulic oil	Tank : 160 (42.3) System : 275 (72.6)	★ISO VG 15 ISO VG 32 ISO VG 46 ISO VG 68
Fuel tank	Diesel fuel	340 (89.8)	★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★1	31 (8.2)	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
★1 : Soft water
City water or distilled water
★2 : Meets or exceeds
API CI-4 grade

※ 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.

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