CONTENTS

Fire and Explosion

Preventing fires

The following actions should be taken to minimize the risk of fire:

- Do a visual inspection before operating the machine to check for any risk of fire.
- Do not operate the machine if there is a risk of fire.
- Be sure to identify the primary exit and alternative exit of the machine, and fully understand how to use the exits in the event of a fire.
- Do not perform any welding or drilling work on the engine cover.
- Keep the engine compartment free from the build-up of flammable materials such as dead leaves, small branches, paper, and other types of trash.
- Keep the covers of the major parts of the machine closed. Make sure that the covers operate normally in order to be able to use firefighting equipment in the event of a fire.

- Be careful when handling fuel. Fuel is a highly flammable.
- Always stop the engine when refueling the machine.
- Refuel outdoors.
- Remove any build-up of flammable materials from the machine.
- Do not operate the machine near a flame.

- All fuels and most lubricant and coolant mixtures are flammable materials, so special care should be exercised when handling such materials to prevent fire and explosion.
- Keep all fuels and lubricant in adequate containers.
- Never smoke in the area where refueling is taking place or in the space for handling battery electrolytes and other flammable materials.
- Oil leaked to a hot surface or electronic component may cause a fire.
- Do not operate the machine if there is an oil leak. Repair the source of the oil leak, and wipe clean any leaked oil before operating the machine.
- Always clean all electrical lines, connectors, and clamps, and check whether they are securely connected on a regular basis.
- If any electrical wire or connector is loose or damaged, repair it immediately.

- Do not weld, cut or use a cutting torch through any tubes or lines in which flammable flows. Check all tubes and lines for signs of abrasion or deterioration and replace if damaged.
- Dust or particles generated when repairing the non-metallic hood or fender are flammable or explosive. Repair such parts in a well ventilated area well away from flames or sparks, and be sure to wear suitable PPE (Personal Protective Equipment).

Instructions on mitigating vibration

Machines should be correctly adjusted and maintained to ensure smooth operation. The terrain conditions should be observed. The following instructions will help reduce the whole body vibration level:

① Use the correct size attachments for your machine.

② Maintain the machines pursuant to the manufacturer's recommendations.

③ Maintain and provide good terrain conditions.

- Remove any large rocks or obstacles.
- Fill gutters or holes.
- Adjust speed and driving path as needed for the conditions.

④ Use a driver's seat that satisfies ISO 7096.

- Adjust the driver's seat and suspension for the weight and the size of the operator.
- Inspect the suspension and adjusting devices of the driver's seat.

⑤ Perform the following maneuvers without using excessive force :

- Steering
- Braking
- Accelerating
- Gear shifting

⑥ Move the attachments smoothly.

⑦ Keep the level of vibration minimal when working for a long time or driving for a long distance.

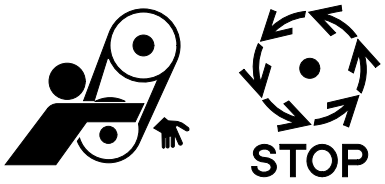
- Use a machine mounted with suspension system.
- Transport the machine when moving between worksites; do not drive the machine to get to another worksite.

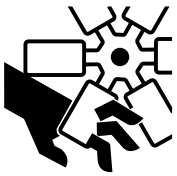
⑨ Take the following actions for optimal operator comfort and convenience:

- Adjust the driver's seat adjustment device to allow a convenient posture.
- Adjust the angles of the mirrors to minimize awkward, compromised posture
- Avoid working for an excessively long time, and take regular breaks.
- Do not jump on or off the cabin.
- Minimize repeated handling of loads and lifting of loads.
- The vibration information and calculation procedures are based on <ISO/TR 25398> has been defined according to the emission of vibrations measured under the actual working conditions of the machines.

Collision or cutting

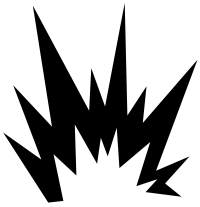
- Never perform a maintenance while the engine is running.
- Never open or remove the engine hood while the machine is in operation.
- If an inspection is required while the engine is running, two or more workers must perform the inspection.
- Keep areas in the vicinity of rotating or moving parts clean.
- Keep articles in the vicinity of the fan clean.
  - Wear safety gloves when handling the wire cables.
  - Wear protective goggles and protective clothes





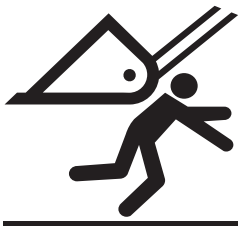
Preventing fire and explosion

- Use caution when handling fuels, lubrication oils, and coolant mixtures to prevent fire and explosion. Failure to comply may result in serious injury or death.
- Oil that leaks on to a hot surface or electronic components may cause a fire.
- Keep all fuels and lubrication oils in adequate containers.
- Do not smoke while refueling or while adding any fluids to the machine. Do not smoke near the fuel tank at anytime.
- Do not smoke in a space where battery electrolyte and other flammable materials are handled.
- Always keep all electrical lines, connectors, and clamps clean, and check whether they are securely connected on a regular basis.
- If any electrical wire or connector is loose or damaged, repair it immediately.
- Do not weld or cut with gas cutter pipes or tubes that contains flammable fluids.



Cautions on decoupling the attachments

- Do not allow unauthorized workers to access the machine.
- Place the machine in a safe position.
- Install safety fences around the machine.



4) BATTERY ACCIDENT (item 5)

This warning label is positioned on the battery cover.

⚠ Electrolyte containing sulfuric acid cause severe burns. Avoid being in contact with skin, eyes or clothes. In the event of accident flush with sufficient water, call a physician immediately.

※ Maintain the electrolyte at the recommended level. Add distilled water to the battery only when starting up, never when shutting down.

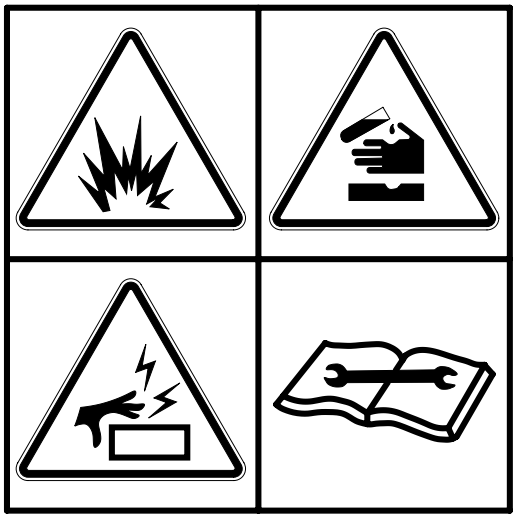
With electrolyte at proper level, less space may cause the gases to be accumulated in the battery.

⚠ Extinguish all smoking materials and open flames before checking the battery.

⚠ Do not use matches, lighters or torches as a light source near the battery for the probable presence of explosive gas.

⚠ Do not allow unauthorized personnel to change the battery or to use booster cables.

⚠ For safety from electric shock, do not battery terminal with a wet hand.



36070FW05

5) HIGH PRESSURE HOSE (item 6)

This warning label is positioned on the front side of the upper frame, rear side of the hydraulic tank and the cover of the MCV box.

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

⚠ Avoid the hazard by relieving pressure before disconnecting hydraulic lines or other lines.

※ See the maintenance section for details.

91N6-03133

35) **RCV LEVER** (item 56)

This warning label is positioned on the right side window of the cab.

※ **When you work by moving the seat to the front of cab, it is possible to take place interference between cluster and RCV lever at specific position.**
To prevent this interference, handle below works.

(1) Rotate cluster.
(2) Adjust seat position for up-and-downward using seat height adjuster knob in suspension.
(3) Lower the console box height using knob between RH console box and seat cushion.
(4) Push back console and seat position using seat and console box adjust knob between LH console box and seat cushion.

290F0FW04

36) **HIGH PRESSURE** (item 58)

This warning label is positioned on the engine hood.

⚠ **Do not open the high pressure parts or it may cause server injury.**

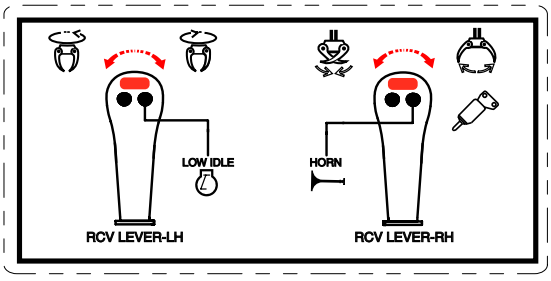
94K8-01110

37) **CONTROL RCV** (item 59)

This warning label is positioned on the right side window of the cab.

⚠ **Check the machine control pattern for conformance to pattern on this label. If not, change label to match pattern before operating machine.**

⚠ **Failure to do so could result in injury or death.**



330F0SL05

(3) User mode

① User mode is useful for setting the user preperable power quickly.
(engine speed, power shift and idle speed)

② There are two methods for use of user mode.

a. In operation screen

User mode switch is used to memorize the current machine operating status and activate the memorized user mode.
Refer to page 3-13.

b. In menu

Engine high idle rpm, auto idle rpm and pump torque (power shift) can be modulated and memorized separately in menu status.

- Each memory mode has a initial set which are mid-range of max engine speed, power shift and auto idle speed.

220S4OP32A

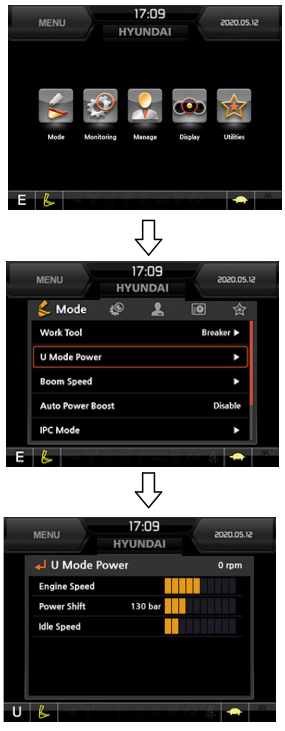
- High idle rpm, auto idle rpm and EPPR pressure can be adjusted and memorized in the U-mode.

※ **Refer to the page 3-19 for setting the user mode (available on U mode only).**

· LCD segment vs parameter setting

Step (▮)	Engine speed (rpm)	Idle speed (rpm)	Power shift (bar)
1	1550	1000	0
2	1600	1050	3
3	1650	1100	6
4	1700	1150 (auto decel)	9
5	1750	1200	12
6	1800	1250	16
7	1850	1300	20
8	1900	1350	26
9	1950	1400	32
10	2000	1450	38

※One touch decel & low idle : 950 rpm



220S4OP33A

(4) Travel mode

: Low speed traveling.

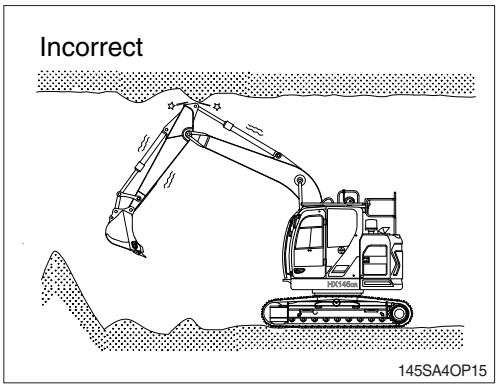
: High speed traveling.

(5) Auto idle mode

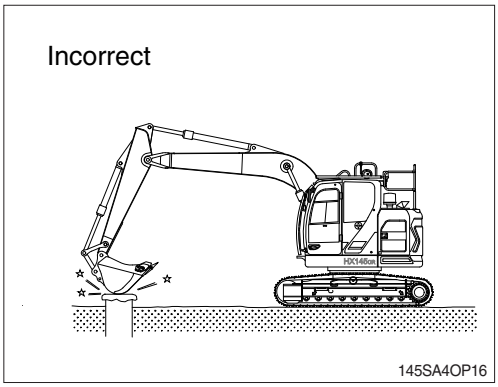
Pilot lamp ON : Auto idle function is activated.

Pilot lamp OFF : Auto idle function is canceled.

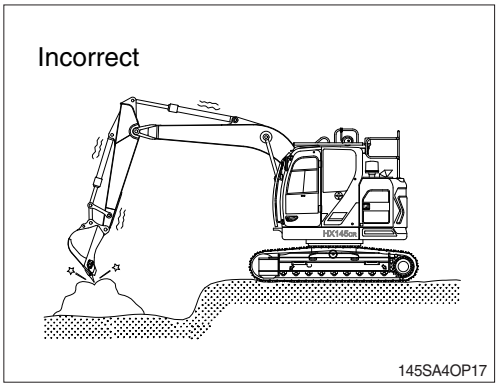
9) If the excavation is in an underground location or in a building, make sure that there is adequate overhead clearance and that there is adequate ventilation.



10) Do not use the dropping force of the work equipment for digging.
The machine can be damaged by the impact.



11) Do not use the bucket to crack hard objects like concrete or rocks.
This may break a tooth or pin, or bend boom.



12) NEVER CARRY OUT EXCESSIVE OPERATIONS

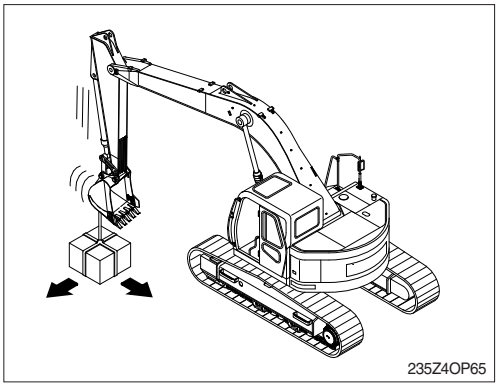
Operation exceeding machine performance may result in accident or failure.

Carry out lifting operation within specified load limit.

Never carry out operations which may damage the machine such as overload or over-impact-load.

Never travel while carrying a load.

In case you need installing over load warning device for object handling procedure, please contact HD Hyundai Construction Equipment distributor.



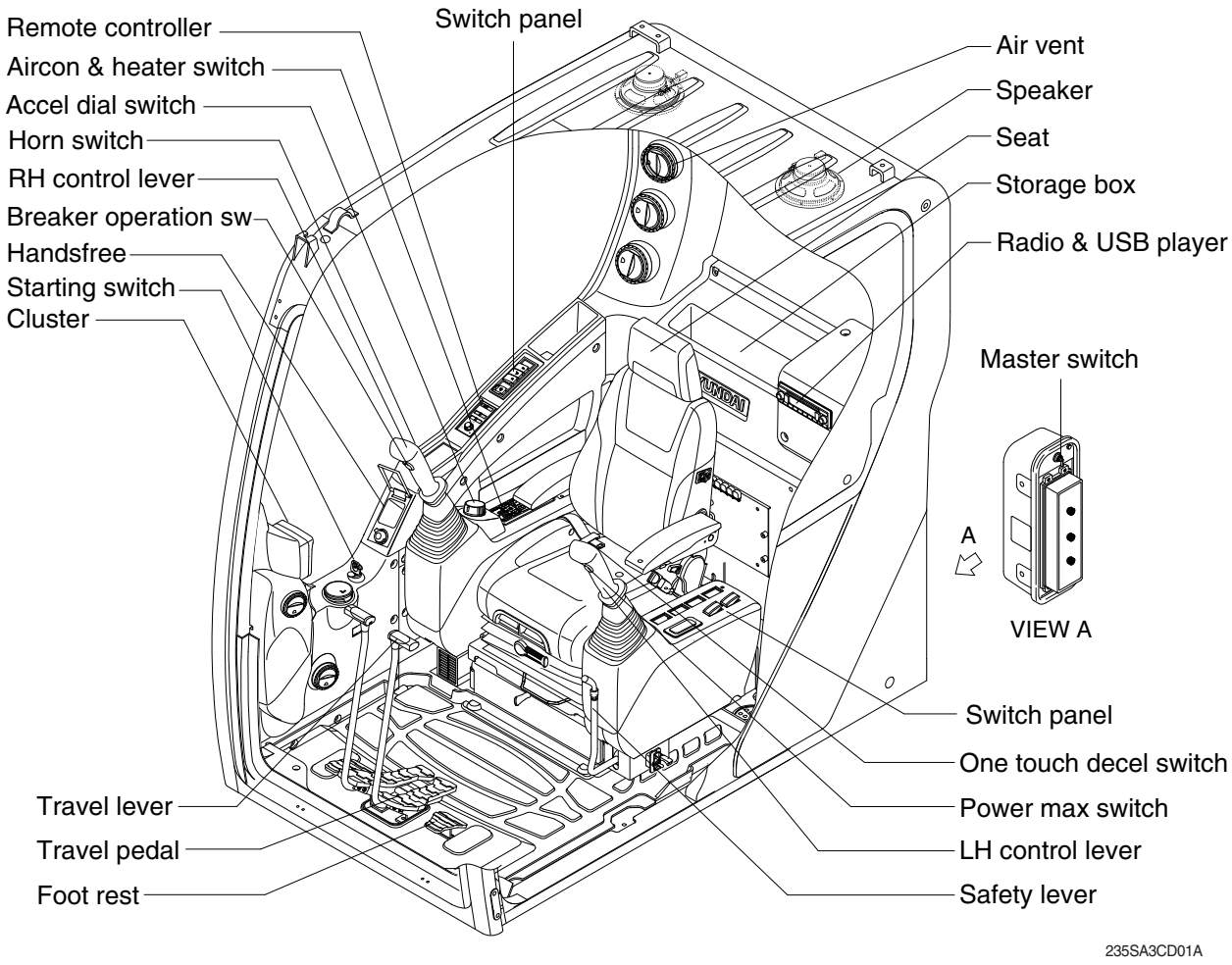
1. CAB DEVICES

1) The ergonomically designed console box and suspension type seat provide the operator with comfort.

2) ELECTRONIC MONITOR SYSTEM

(1) The centralized electronic monitor system allows the status and conditions of the machine to be monitored at a glance.

(2) It is equipped with a safety warning system for early detection of machine malfunction.



(4) Decel pilot lamp

290F3CD81

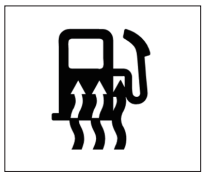
① Operating one touch decel switch on the RCV lever makes the lamp ON.

② Also, the lamp will be ON and engine speed will be lowered automatically to save fuel consumption when all levers and pedals are at neutral position, and the auto idle function is selected.

※ **One touch decel is not available when the auto idle pilot lamp is turned ON.**

※ **Refer to the page 3-36.**

(5) Fuel warmer pilot lamp

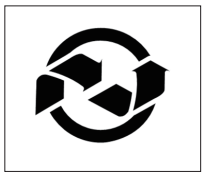


290F3CD82

① This lamp is turned ON when the coolant temperature is below 10˚C (50˚F) or the hydraulic oil temperature 20˚C (68˚F).

② The automatic fuel warming is cancelled when the engine coolant temperature is above 60˚C, and the hydraulic oil temperature is above 45˚C since the start switch was ON position.

(6) Maintenance pilot lamp



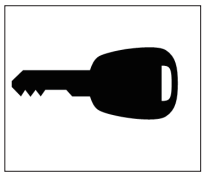
290F3CD83

① This lamp will be ON when the consuming parts are needed to change or replace. It means that the change or replacement interval of the consuming parts remains below 30 hours.

② Check the message in maintenance information of main menu. Also, this lamp lights ON for 3 minutes when the start switch is ON position.

※ **Refer to the page 3-24.**

(7) Smart key pilot lamp (premium type, opt)



290F3CD214

① This lamp is ON when the engine is started by the start button.

② This lamp is red when the a authentication fails, green when succeeds.

※ **Refer to the page 3-25.**

(8) Auto engine shutdown pilot lamp

220A3CD202

① This lamp is turned ON when the auto engine shutdown is activated

※ **Refer to the page 3-21.**

⑥ Automatic engine shutdown (option)

220S3CD91A

220S3CD92A

220S3CD93A

· The automatic engine shutdown function can be set by this menu.
  - One time
  - Always
  - Disable
  - Wait time setting : Max 40 minutes, min 2 minutes

⑦ Initial mode

220S3CD122A

220S3CD119A

· **Key on initial mode**
  - Selected the power mode is activated when the engine is started.

Key on initial work mode
  - Not installed
  - Last setting
  - Work mode

⑧ Emergency mode

220S3CD248A

220S3CD249A

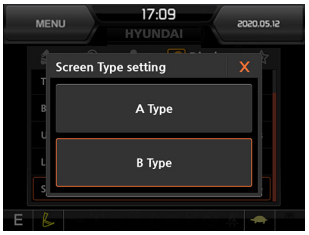
· This mode can be used when the switches are abnormal on the cluster.
· The cluster switches will be selected by touched each icon.

⑥ Screen type (premium type)

220S3CD165A

A Type (Default) 220S3CD166A

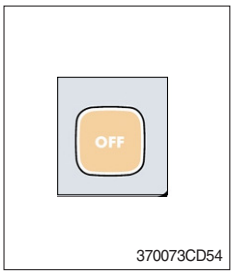
220S3CD156A



B Type (Option) 220S3CD174A

220S3CD167A

1) POWER OFF SWITCH

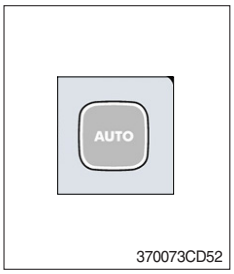


(1) This switch makes the system and the LED OFF.
Just before the power OFF, set values are stored.

(2) Default setting values

Function	Air conditioner	In/outlet	LCD	Temperature	Mode
Value	OFF	Inlet	OFF	Previous sw OFF	Previous sw OFF

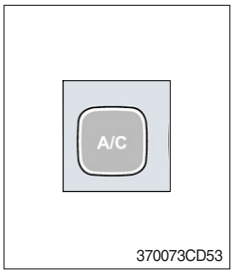
2) AUTO SWITCH



(1) Turn the starting switch to ON position, LCD lights ON.
Auto air conditioner and heater system automatically keeps the optimum condition in accordance with operator's temperature configuration sensing ambient and cabin inside temperature.

(2) This switch can restart system after system OFF.

3) AIR CONDITIONER SWITCH (compressor switch)

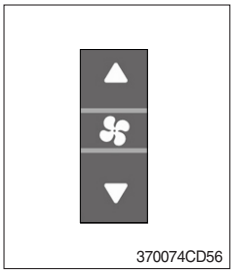


(1) This switch turns the compressor and the LCD ON.

(2) In accordance with the temperature sensed by duct (evaporator) sensor, compressor turns ON or OFF automatically.

※ Air conditioner operates to remove vapor and drains water through a drain hose. Water can be sprayed into the cab in case that the drain cock at the ending point of drain hose has a problem.
In this case, exchange the drain cock.

4) FAN SPEED SWITCH

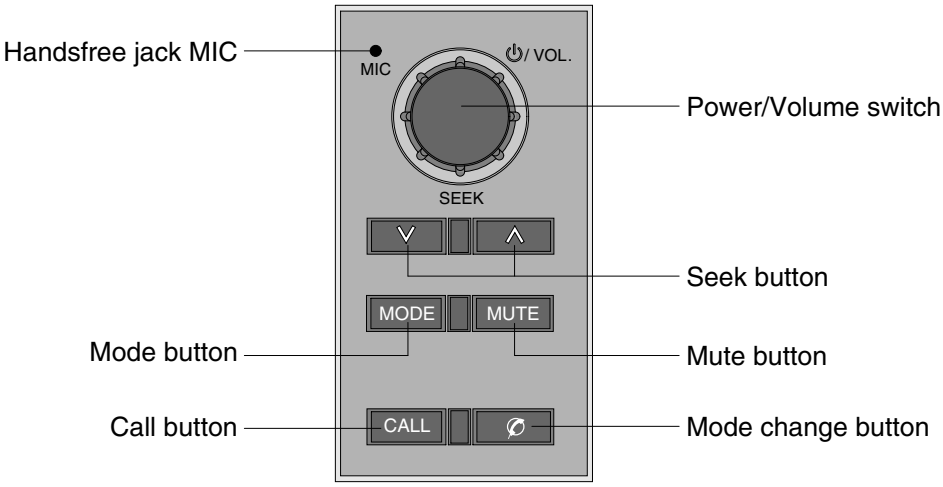


(1) Fan speed is controlled automatically by setted temperature.

(2) This switch controls fan speed manually.
- There are 8 up/down steps to control fan speed.
- The maximum step or the minimum step beeps 5 times.

(3) This switch makes the system ON.

REMOTE CONTROLLER (MACHINE SERIAL NO.: #0206-)



21093CD52

(1) Power and volume switch

21093CD52A

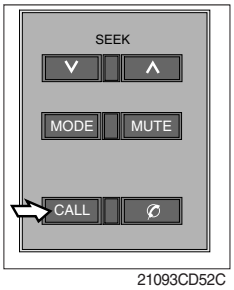
① This switch is used to turn the audio or handsfree ON or OFF.
② This switch is turned to right, the handsfree volume is increased over 7 steps.
③ If it is turned to left, volume will be decreased.
※ **This switch adjust the audio volume when selected audio mode.**

(2) Mode change button

21093CD52B

① This button is to select the handsfree mode or audio mode.
· Lamp ON : Handsfree mode ("TEL MUTE" displayed ON audio LCD)
· Lamp OFF : Audio mode

(3) Call button



21093CD52C

① This button is used answer a call, last number redial, ring off.
② For calling, press the button over 0.5sec within 3 seconds until the beep sounds.
※ **This can be used when the starting switch is ON.**

(5) Track Scan Play (SCAN) button

- SCAN playback : Simply press SCAN (12) button to play the first 10 seconds of each track.
- SCAN folder : Press and hold SCAN button for longer than 2 seconds to scan play the tracks in current folder.
- SCAN off : Simply press it again to cancel SCAN feature.

(6) Track Repeat Play (RPT) button

- REPEAT playback : Simply press RPT (8) button to play current track repeatedly.
- REPEAT folder : Press and hold RPT for longer than 2 seconds to repeat play the tracks in current folder.
- REPEAT off : Simply press it again to cancel REPEAT feature.

(7) Track Random Play (RDM) button

- RANDOM playback : Simply press RDM (9) button to play the tracks in the device in a random sequence.
- RANDOM folder : Press and hold RDM button for longer than 2 seconds to random play the tracks in current folder.
- RANDOM off : Simply press it again to cancel RANDOM feature.

(8) ID3 v2 (DISP)

① While a MP3 file is playing, press DISP button (6) to display ID3 information. Repeat push DISP button (6) to show directory name / file name and album name / performer / title.

※ If the MP3 disc does not have any ID3 information, it will show NO ID3.

＊ USB Information and Notice

a. Playback FILE SYSTEM and condition allowance.
   - FAT, FAT12, FAT16 and FAT32 in the file system.
   - V1.1, V2.2 and V2.3 in the TAG (ID3) version.

b. Display up to 32 characters in the LCD display.

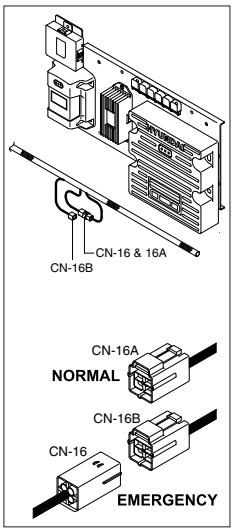
c. No support any of MULTI-CAED Reader.

d. No high speed playback but only playing with normal full speed.

※ DRM files in the USB may cause malfunction to playback in the radio unit.

※ The temperature below -10 Celsius, the audio unit with USB hook up would be affected to play well.

8) EMERGENCY ENGINE SPEED CONTROL CONNECTOR



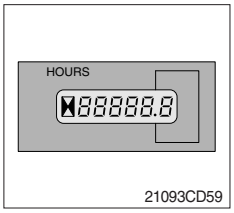
145SA3CD58

(1) When the CAN communication between the ECM and the MCU is abnormal due to malfunction, change CN-16 connection from CN-16A to CN-16B and then control the engine speed by rotating accel dial switch.

※ **Never connect connector CN-16 with CN-16B when MCU is in normal operation.**

※ **Make repair as soon as possible.**

9) SERVICE METER

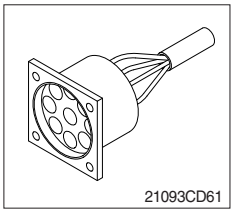


21093CD59

(1) This meter shows the total operation hours of the machine.

(2) Always ensure the operating condition of the meter during the machine operation. Inspect and service the machine based on hours as indicated in chapter 6, maintenance.

10) RS232 SERVICE SOCKET


21093CD61

(1) MCU communicates the machine data with Laptop computer through RS232 service socket.

3. FUEL, COOLANT AND LUBRICANTS

1) NEW MACHINE

New machine used and filled with following lubricants.

Description	Specification
Engine oil (API CH-4)	SAE 10W-30, ★SAE 5W-40
Hydraulic oil	HD Hyundai Construction Equipment genuine long life (ISO VG 32, VG 46, VG 68) Conventional hydraulic oil (ISO VG 15★)
Swing and travel reduction gear	SAE 85W-90 (GL-4/GL-5)
Grease	Lithium base grease NLGI No. 2
Fuel	ASTM D975-No. 2, Ultra low sulfur diesel
Coolant (DCA4)	ASTM D6210 Mixture of 50% ethylene glycol base antifreeze and 50% water. Mixture of 60% ethylene glycol base antifreeze and 40% water.★

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
DCA4 : Brand name of Chemical Additive manufactured by the Cummins Fleetguard Co

Ultra low sulfur diesel
- sulfur content ≤ 15 ppm

★Cold region
Russia, CIS, Mongolia

※ Refer to the page 7-24 for further information of recommended oils.

1) CHECK ENGINE OIL LEVEL

Check the oil level with the machine on a flat ground before starting engine.

(1) Pull out the dipstick and wipe with a clean cloth.

(2) Check the oil level by inserting the dipstick completely into the hole and pulling out again.

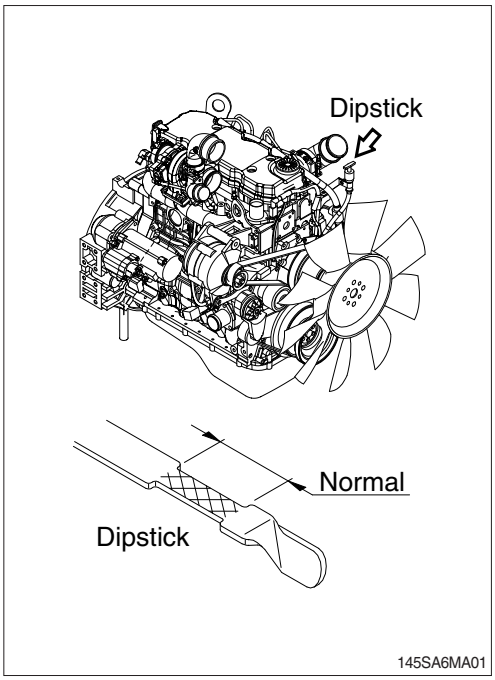
(3) If oil level is LOW, add oil and then check again.

※ **If the oil is contaminated or diluted, change the oil regardless of the regular change interval.**

※ **Check oil level after engine has been stopped for 15 minutes.**

⚠ **Do not operate unless the oil level is in the normal range.**

※ **Keep all parts clean from contaminants. Contaminants may cause rapid wear and shortened component life.**



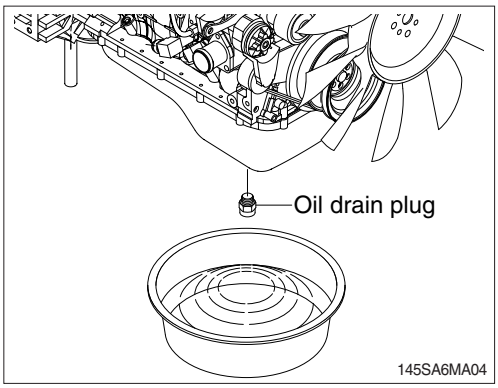
2) REPLACEMENT OF ENGINE OIL AND OIL FILTER

(1) Operate the engine until the coolant temperature reaches 60˚C (140˚F). Shut off the engine.

(2) Remove the oil drain plug. Drain the oil immediately to be sure all the oil and suspended contaminants are removed from the engine.

※ **A drain pan with a capacity of 20 liters (5.0 U.S. gallons) will be adequate.**

※ **Disposal of the waste oil in accordance with local regulations.be adequate.**

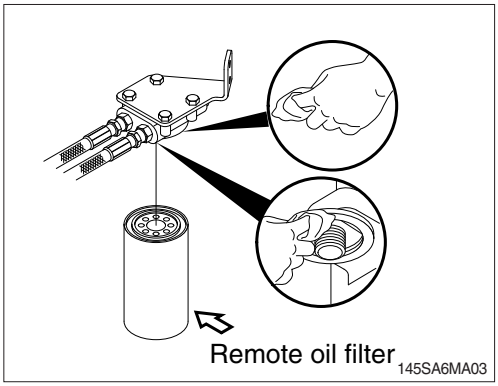


(3) Clean the area around the lubricating oil filter head.

(4) Use oil filter wrench to remove the oil filter.

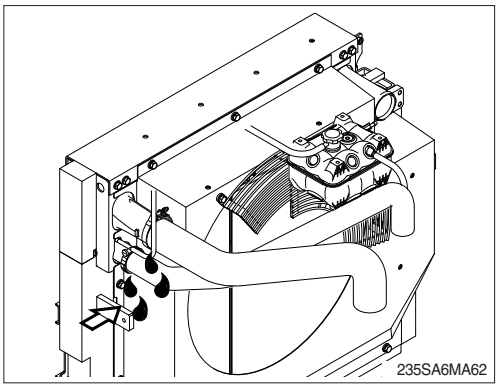
(5) Clean the gasket surface of oil filter head.

※ **The O-ring can stick on the filter head. Be sure it is removed before installing the new filter.**



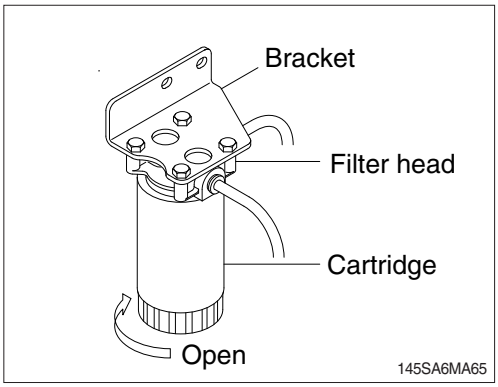
13) CHARGE AIR PIPING

(1) Inspect the charge air piping and hoses for leaks, holes, cracks, or loose connections.
(2) Tighten the hose clamps if necessary.
(3) Air bleeding



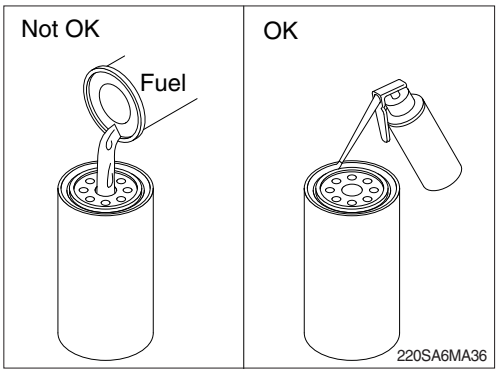
14) REPLACEMENT OF FUEL FILTER

(1) Clean the area around the filter head, remove the filter with a fuel filter wrench and clean the O-ring surface.



(2) Lubricate the O-ring of fuel filter with clean engine oil.

※ **Do not pre-fill fuel in the new fuel filter.**
The system must be primed after the fuel filter is installed. Pre-filling the fuel filter can result in debris entering the fuel system and anmaging fuel system components.



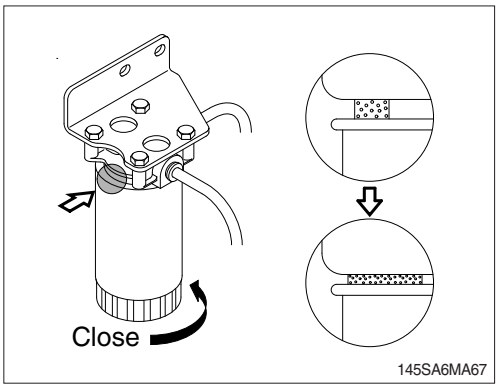
(3) Install the filter on the filter head.

※ **Tighten the filter until the gasket contacts the filter head surface and tighten the filter an additional 3/4 turn more after contacts the filter head.**

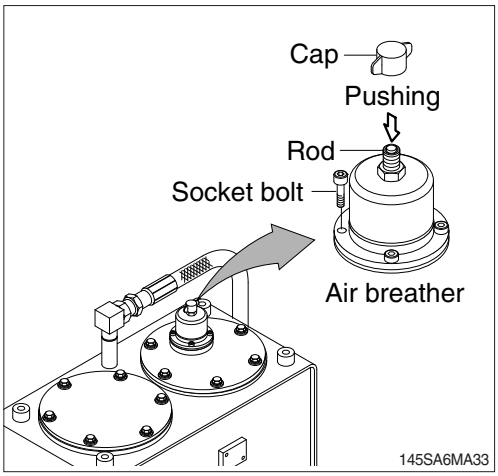
(4) Prime the low pressure system of the fuel system after fuel filter installation

※ **It is not necessary to vent air from the high pressure system before starting the engine.**

⚠ **The fuel pump high-pressure fuel lines and fuel rail contain very high-pressure fuel. Never loosen any fittings while the engine is running. Personal injury and property damage can result.**



21) FILLING HYDRAULIC OIL



(1) Stop the engine to the position of level check.

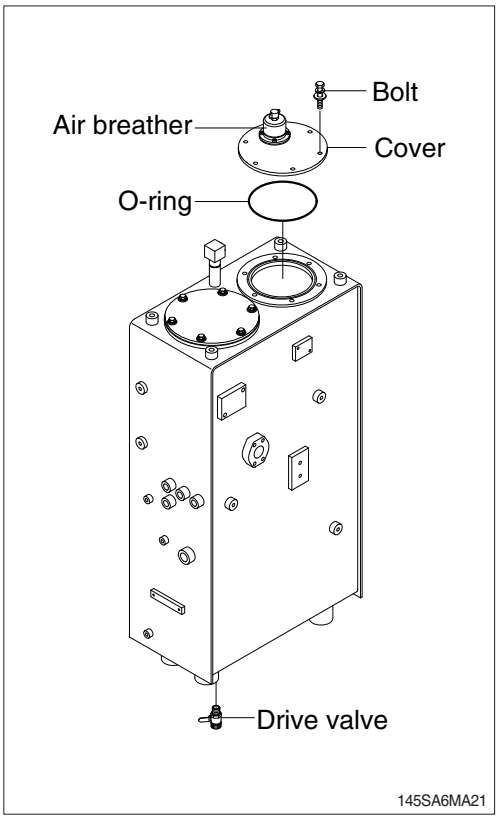
(2) Remove the cap and relieve the pressure in the tank by pushing the rod of the air breather.

(3) Loosen the socket bolts remove the breather and fill the oil to the specified level.
· Tightening torque : 1.0 kgf·m (7.2 lbf·ft)

(4) Start engine after filling and operate the work equipment several times.

(5) Check the oil level at the level check position after engine stops.

22) CHANGE HYDRAULIC OIL



(1) Lower the bucket on the ground pulling the arm and bucket cylinder to the maximum.

(2) Remove the cap and relieve the pressure in the tank by pushing the rod of the air breather.

(3) Remove the cover.
· Tightening torque : 6.9±1.4 kgf · m
(50±10 lbf · ft)

(4) Prepare a suitable container.

(5) To drain the oil open the drain valve at the bottom of the oil tank.

(6) Fill proper amount of recommended oil.

(7) Put the breather in the right position.

(8) Bleed air hydraulic pump loosen the air breather at top of hydraulic pump assembly.

(9) Start engine and run continually. Release the air by full stroke of each control lever.

※ Incase of injecting HBHO (HD Hyundai Construction Equipment Bio Hydraulic Oil) to machines that have formerly used different hydraulic oil, the proportion of residual oil must not exceed 2 %

※ Do not mix any other Bio oil, use only HBHO as bio oil.
If changing to Bio oil, contact HD Hyundai Construction Equipment dealer.

41) LUBRICATE PIN AND BUSHING

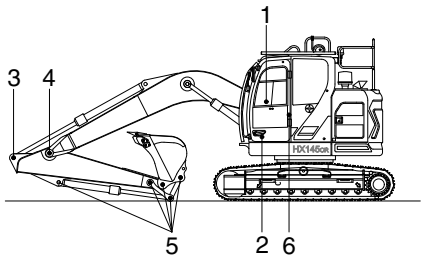
(1) Lubricate to each pin of working device

Lubricate the grease to the grease nipple according to the lubricating interval.

No.	Description	Qty
1	Lubrication manifold at boom	5
2	Boom cylinder pin (head)	2
3	Arm cylinder pin (rod)	1
4	Boom and arm connection pin	1
5	Bucket cylinder pin (head and rod)	2
	Bucket link (control rod)	2
	Arm and bucket connection pin	1
	Bucket and control rod connection pin	1
	Arm and control link connection pin	1
6	Boom rear bearing center ★	1
7	Dozer blade connection pin	6

※ Shorten lubricating interval when working in water or dusty places.

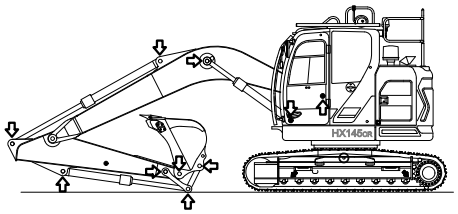
★ Not required : If necessary, lubricate the grease.



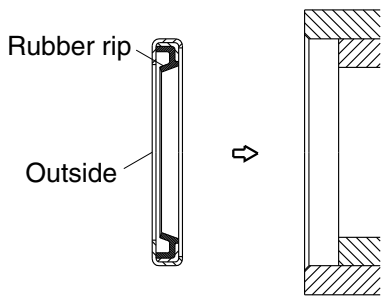
1 Lubricating manifold (5EA)
2 Boom cylinder pin (2EA)
3 Arm cylinder pin (1EA)
4 Boom and arm connection pin (1EA)
5 Arm and bucket (7EA)
6 Boom rear bearing center (1EA)

(2) Dust seals are mounted on the rotating part of working device to extend the lubricating interval.

※ Mount the lip to be faced outside when replace the dust seal.

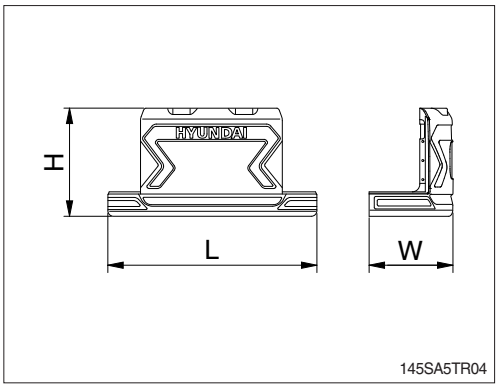


If it is assembled in wrong direction, it will cause fast wear of pin and bushing, and create noise and vibration during operation. Assemble the seal same direction with picture and use with plastic hammer when replace.

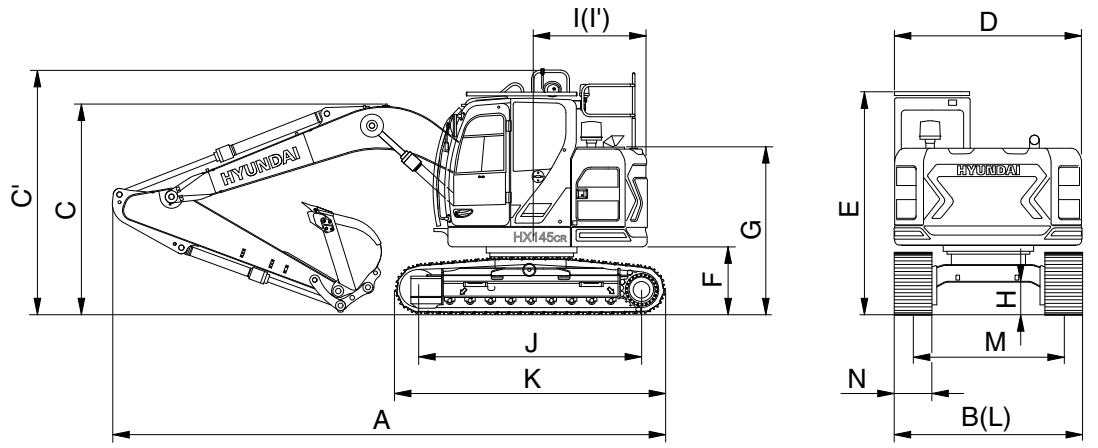


9) COUNTERWEIGHT

Mark	Description	Unit	Specification
L	Length	mm (ft-in)	2484 (8' 2")
H	Height	mm (ft-in)	1285 (4' 3")
W	Width	mm (ft-in)	998 (3' 3")
Wt	Weight	kg (lb)	2800 (6170)



2) HX145LCRT3, LONG CRAWER

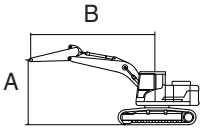


145SA2SP02

Description		Unit		Specification	
		m (ft-in)	Boom	4.6 (15' 1")	
			Arm	2.50 (8' 2")	3.00 (9' 10")
		mm (in)	Shoe	600 (24)	
Operating weight		kg (lb)		15130 (33360)	15170 (33440)
Bucket capacity (SAE heaped), standard		m^3 (yd^3)		0.52 (0.68)	0.52 (0.68)
Overall length	A	mm (ft-in)		6965 (22' 10")	6885 (22' 7")
Overall width	B			2600 (8' 6")	2600 (8' 6")
Overall height of boom	C			2769 (9' 1")	3123 (10' 3")
Superstructure width	D			2500 (8' 2")	2500 (8' 2")
Overall height of cab	E			2940 (9' 8")	2940 (9' 8")
Ground clearance of counterweight	F			930 (3' 1")	930 (3' 1")
Overall height of engine hood	G			2270 (7' 5")	2270 (7' 5")
Overall height of handrail	G'			3430 (11' 3")	3430 (11' 3")
Minimum ground clearance	H			440 (1' 5")	440 (1' 5")
Rear-end distance	I			1500 (4' 11")	1500 (4' 11")
Rear-end swing radius	I'			1500 (4' 11")	1500 (4' 11")
Distance between tumblers	J			3090 (10' 2")	3090 (10' 2")
Undercarriage length	K			3820 (12' 6")	3820 (12' 6")
Undercarriage width	L			2600 (8' 6")	2600 (8' 6")
Track gauge	M			2000 (6' 7")	2000 (6' 7")
Track shoe width, standard	N			600 (2' 0")	600 (2' 0")
Travel speed (low/high)		km/hr (mph)		3.1/5.4 (1.9/3.4)	3.1/5.4 (1.9/3.4)
Swing speed		rpm		11.40	11.40
Gradeability		Degree (%)		35 (70)	35 (70)
Ground pressure		kgf/cm^2 (psi)		0.38 (5.38)	0.38 (5.39)
Max traction force		kg (lb)		12672 (27937)	12672 (27937)

Model	Type	Boom	Arm	Counterweight	Shoe	Wheel	Dozer		Outrigger	
HX145LCRT3	MONO BOOM	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		4600	3000	2800	600	-	-	-	-	-

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



Lift-point height (A)		Lift-point radius (B)										At max. reach		
		1.5 m (4.9 ft)		3.0 m (9.8 ft)		4.5 m (14.8 ft)		6.0 m (19.7 ft)		7.5 m (24.6 ft)		Capacity		Reach
														m (ft)
7.5 m	kg											*2300	*2300	4.48
(24.6 ft)	lb											*5070	*5070	(14.7)
6.0 m	kg					*3280	*3280	*1920	*1920			*1900	*1900	6.01
(19.7 ft)	lb					*7230	*7230	*4230	*4230			*4190	*4190	(19.7)
4.5 m	kg					*3450	*3450	*3230	2390			*1760	*1760	6.89
(14.8 ft)	lb					*7610	*7610	*7120	5270			*3880	*3880	(22.6)
3.0 m	kg			*5250	*5250	*4630	3620	3490	2310			*1750	1630	7.37
(9.8 ft)	lb			*11570	*11570	*10210	7980	7690	5090			*3860	3590	(24.2)
1.5 m	kg			*8760	6200	5270	3370	3370	2200	*1910	1550	*1820	1540	7.52
(4.9 ft)	lb			*19310	13670	11620	7430	7430	4850	*4210	3420	*4010	3400	(24.7)
0.0 m	kg			*7520	5760	5040	3160	3260	2100			*2000	1560	7.36
(0.0 ft)	lb			*16580	12700	11110	6970	7190	4630			*4410	3440	(24.1)
-1.5 m	kg	*4280	*4280	*9250	5640	4920	3060	3210	2050			*2360	1710	6.87
(-4.9 ft)	lb	*9440	*9440	*20390	12430	10850	6750	7080	4520			*5200	3770	(22.5)
-3.0 m	kg	*7420	*7420	*7650	5700	4930	3070					*3150	2100	5.97
(-9.8 ft)	lb	*16360	*16360	*16870	12570	10870	6770					*6940	4630	(19.6)
-4.5 m	kg			*4480	*4480							*2630	*2630	4.42
(-14.8 ft)	lb			*9880	*9880							*5800	*5800	(14.5)

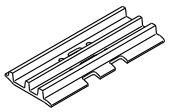
Note 1. Lifting capacity are based on ISO 10567.

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.

7. UNDERCARRIAGE

1) TYPES OF SHOES

Model	Shapes		Triple grouser		
					
-	Shoe width	mm (in)	500 (20)	600 (24)	700 (32)
HX145LCRT3 STD CRAWLER WO DOZER	Operating weight	kg (lb)	14660 (32320)	14880 (32800)	15090 (33270)
	Ground pressure	kgf/cm^2 (psi)	0.46 (6.61)	0.39 (5.59)	0.34 (4.86)
	Overall width	mm (ft-in)	2500 (8' 2")	2600 (8' 6")	2700 (8' 10")
	Link quantity	EA	45	45	45
HX145LCRT3 LONG CRAWLER WO DOZER	Operating weight	kg (lb)	14900 (32850)	15130 (33360)	15350 (33840)
	Ground pressure	kgf/cm^2 (psi)	0.45 (6.36)	0.38 (5.38)	0.33 (4.68)
	Overall width	mm (ft-in)	2500 (8' 2")	2600 (8' 6")	2700 (8' 10")
	Link quantity	EA	47	47	47
HX145LCRT3 STD CRAWLER WITH DOZER	Operating weight	kg (lb)	15470 (34110)	15700 (34610)	15910 (35080)
	Ground pressure	kgf/cm^2 (psi)	0.49 (6.98)	0.41 (5.90)	0.36 (5.12)
	Overall width	mm (ft-in)	2500 (8' 2")	2600 (8' 6")	2700 (8' 10")
	Link quantity	EA	45	45	45
HX145LCRT3 LONG CRAWLER WITH DOZER	Operating weight	kg (lb)	15680 (34570)	15920 (35100)	16150 (35600)
	Ground pressure	kgf/cm^2 (psi)	0.47 (6.69)	0.40 (5.66)	0.35 (4.92)
	Overall width	mm (ft-in)	2500 (8' 2")	2600 (8' 6")	2700 (8' 10")
	Link quantity	EA	47	47	47