

Foreword	0-1	5. Traveling of the machine	4-8
Emission-related components warranty (USA and CANADA only)	0-2	6. Efficient working method	4-11
Before servicing this machine	0-3	7. Operation in the special work sites	4-15
EC regulation approved	0-4	8. Normal operation of excavator	4-17
Table to enter S/No and distributor	0-5	9. Attachment lowering	4-18
Safety labels	0-6	10. Storage	4-19
Machine data plate	0-19	11. RCV lever operating pattern	4-21
Guide (Direction, S/No, Intended use symbol) ·	0-20	12. Handling the rubber track	4-22
		13. Switching hydraulic attachment circuit	4-27
1. SAFETY HINTS		5. TRANSPORTATION	
1. Before operating the machine	1-1	1. Preparation for transportation	5-1
2. During operating the machine	1-16	2. Loading the machine	5-2
3. During maintenance	1-23	3. Fixing the machine	5-4
4. Parking	1-26	4. Loading and unloading by crane	5-5
		5. Dimension and weight	5-6
2. SPECIFICATIONS		6. MAINTENANCE	
1. Major components	2-1	1. Instruction	6-1
2. Specifications	2-2	2. Tightening torque	6-5
3. Working range	2-5	3. Fuel, coolant and lubricants	6-8
4. Weight	2-7	4. Maintenance check list	6-9
5. Lifting capacities	2-8	5. Maintenance chart	6-14
6. Bucket selection guide	2-16	6. Service instruction	6-16
7. Undercarriage	2-17	7. Electrical system	6-34
8. Specification for major components	2-19	7. TROUBLESHOOTING GUIDE	
9. Recommended oils	2-22	1. Engine	7-1
3. CONTROL DEVICES		2. Electrical system	7-2
1. Cab devices	3-1	3. Others	7-3
2. Cluster	3-2	8. HYDRAULIC BREAKER AND QUICK COUPLER	
3. Switches	3-22	1. Selecting hydraulic breaker	8-1
4. Levers and pedals	3-26	2. Circuit configuration	8-2
5. Others	3-29	3. Maintenance	8-3
4. OPERATION		4. Precaution when operating the breaker ...	8-4
1. Instruction for new machine	4-1	5. Quick coupler	8-10
2. Check before starting the engine	4-2	INDEX	9-1
3. Starting and stopping the engine	4-3		
4. Operation of the working device	4-7		

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: www.heydownloads.com by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

6) BATTERY ACCIDENT (item 7)

This label is positioned on the battery cover.

- ▲ Electrolyte containing sulfuric acid can cause severe burns. Avoid allowing contact with the skin, eyes or clothes. In the event of accident flush with sufficient water and contact a physician immediately.

Failure to comply may result in serious injury or death.

- ※ 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 allow any open flames or excessive heat near or when checking the battery.
- ▲ Do not allow unauthorized personnel to change the battery or to use booster cables.
- ▲ To prevent electric shock, do not touch battery terminal with wet hands.



94MT-02120

7) KEEP CLEAR (ATTACH) (item 8)

This label is positioned on both sides of the arm.

- ▲ Serious injury or death can result from a falling attachment
- ▲ To prevent serious injury or death, do not walk near, under implements or attachments.

This applies when machine is in use, the implements are suspended in air or while the machine is being worked on.



91MJ-06112

MACHINE DATA PLATE

DO NOT DEFACE OR REMOVE THIS PLATE
이 명판을 훼손하거나 오손시키지 마시오

MACHINE TYPE / MODEL
PRODUCT IDENTIFICATION NUMBER
ENGINE POWER
OPERATING MASS

477, Bundanguseo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, 13553, Korea
91LM-14112

HD HYUNDAI CONSTRUCTION EQUIPMENT

For general

DO NOT DEFACE OR REMOVE THIS PLATE
이 명판을 훼손하거나 오손시키지 마시오

MACHINE TYPE / MODEL		
PRODUCT IDENTIFICATION NUMBER / VEHICLE IDENTIFICATION NUMBER		
ENGINE POWER		
OPERATING MASS / GROSS VEHICLE WEIGHT	MFG. YEAR	YEAR INTO SERVICE

477, Bundanguseo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, 13553, Korea
91LM-14142

HD HYUNDAI CONSTRUCTION EQUIPMENT

For EU only

DO NOT DEFACE OR REMOVE THIS PLATE
이 명판을 훼손하거나 오손시키지 마시오

MACHINE TYPE
MODEL
MAX. CERTIFIED WEIGHT
STANDARDS ROPS : ISO 12117-2 TOPS : EN 13531 / ISO 12117 FOG : ISO 10262 (LEVEL 1)

477, Bundanguseo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, 13553, Korea
91MS-01292

HD HYUNDAI CONSTRUCTION EQUIPMENT

For ROPS

DO NOT DEFACE OR REMOVE THIS PLATE
이 명판을 훼손하거나 오손시키지 마시오

MACHINE TYPE
MODEL
STANDARDS FOG : ISO 10262 (LEVEL 1)

477, Bundanguseo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, 13553, Korea
91MS-01291

HD HYUNDAI CONSTRUCTION EQUIPMENT

For FOG

35AZ0MD01

※ The machine serial number assigned to this particular machine should be used when requesting information or ordering service parts for this machine from your authorized HD Hyundai Construction Equipment dealer. The machine serial number is also stamped on the frame.

Lines, Tubes, and Hoses

Do not bend high-pressure lines. Do not strike high-pressure lines. Do not install any lines that are bent or damaged. Use the appropriate backup wrenches in order to tighten all connections to the recommended torque.

Check lines, tubes, and hoses carefully. Wear Personal Protection Equipment (PPE) in order to check for leaks. Always use a board or cardboard when you check for a leak. Leaking fluid that is under pressure can penetrate body tissue. Fluid penetration can cause serious injury and possible death. A pin hole leak can cause severe injury. If fluid is injected into your skin, you must get treatment immediately. Seek treatment from a doctor that is familiar with this type of injury.

Replace the affected parts if any of the following conditions are present :

- End fittings are damaged or leaking.
- Outer coverings are chafed or cut.
- Wires are exposed.
- Outer coverings are swelling or ballooning.
- Flexible parts of the hoses are kinked.
- Outer covers have exposed embedded armoring.
- End fittings are displaced.

Make sure that all clamps, guards, and heat shields are installed correctly. During machine operation, this action will help to prevent vibration, rubbing against other parts, excessive heat, and failure of lines, tubes, and hoses.

Do not operate a machine when a fire hazard exists. Repair any lines that are corroded, loose, or damaged. Leaks may provide fuel for fires. Consult your HD Hyundai Construction Equipment dealer for repair or for replacement parts.

Ether

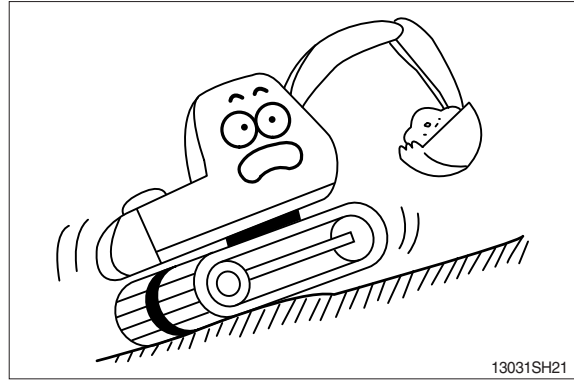
Ether (if equipped) is commonly used in cold weather applications. Ether is flammable and poisonous.

Do not spray ether manually into an engine if the machine is equipped with a thermal starting aid for cold weather starting.

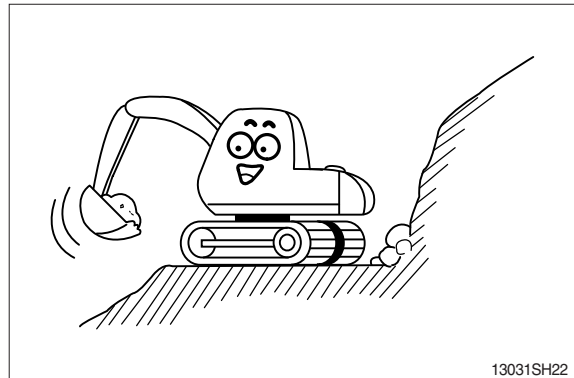
Use ether in ventilated areas. Do not smoke while you are replacing an ether cylinder or while you are using an ether spray.

Do not store ether cylinders in living areas or in the operator compartment of a machine. Do not store ether cylinders in direct sunlight or in temperatures above 49°C(120.2°F). Keep ether cylinders away from unauthorized personnel.

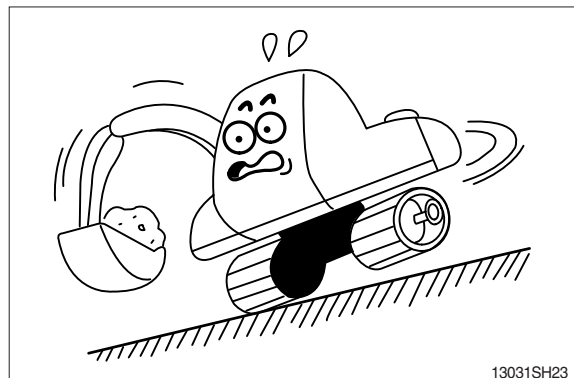
The operation on a slope is dangerous.
Avoid operating the machine on a slope of over
10 degree.



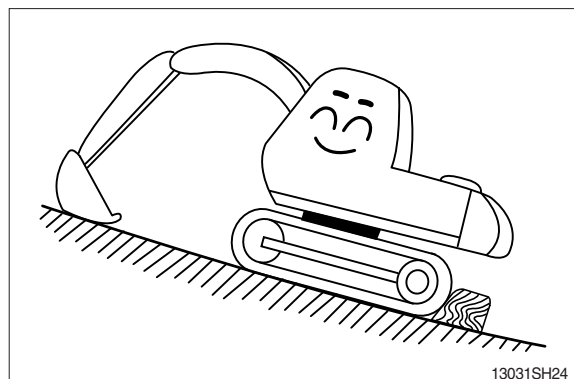
Operate the machine after making ground flat
when operation is required on a slope.



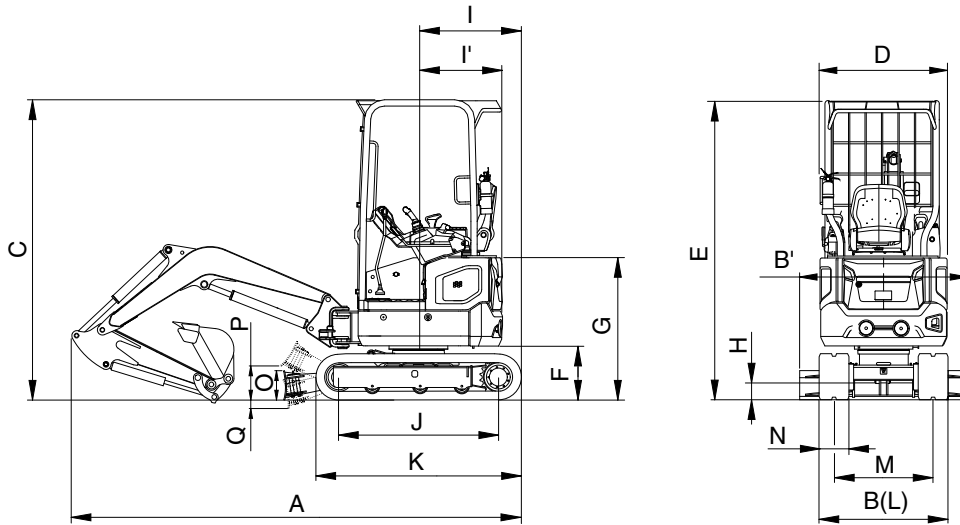
The swing on the slope can be danger of rolling
over.
Do not operate to swing the machine with the
bucket loaded on a slope since the machine
may lose its balance under such an instance.



Avoid parking and stopping on a slope.
Lower the bucket to the ground and block the
track when parking.



2) 1.75 m (5' 9") MONO BOOM, 1.23 m (4' 0") LONG ARM, 260 kg ADD CWT

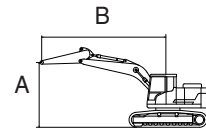










17AZ2SP02

Description		Unit	Specification
Operating weight (canopy)		kg (lb)	1980 (4370)
Bucket capacity (SAE heaped), standard		m ³ (yd ³)	0.04 (0.052)
Overall length	A	mm (ft-in)	3528 (11' 6")
Overall width (extension crawler)	B		994~1290 (3' 3"~4' 3")
Overall width (dozer blade)	B'		1294 (4' 3")
Overall height	C		2320 (7' 7")
Overall width of upperstructure	D		980 (3' 3")
Overall height of canopy	E		2320 (7' 7")
Ground clearance of counterweight	F		415 (1' 4")
Overall height of engine hood	G		1095 (3' 7")
Minimum ground clearance	H		150 (0' 6")
Rear-end distance	I		720 (2' 4")
Rear-end swing radius	I'		720 (2' 4")
Distance between tumblers	J		1230 (4' 0")
Undercarriage length	K		1580 (5' 2")
Undercarriage width (extension crawler)	L		994~1290 (3' 3"~4' 3")
Track gauge (extension crawler)	M		764~1060 (2' 6"~3' 6")
Track shoe width, standard	N		230 (0' 9")
Height of blade	O		225 (0' 9")
Ground clearance of blade up	P		183 (0' 7")
Depth of blade down	Q		222 (0' 9")
Travel speed (low/high)			km/hr (mph)
Swing speed		rpm	9.16
Gradeability		Degree (%)	35 (70)
Ground pressure 230 mm rubber shoe (canopy)		kgf/cm ² (psi)	0.33 (4.68)
Max traction force		kg (lb)	1420 (3130)

Model	Type	Boom	Arm	Counterweight	Rubber shoe	Wheel	Dozer		Outtriger	
HX17A Z	Canopy	Length [mm]	Length [mm]	weight [kg]	width [mm]	width [mm]	Front	Rear	Front	Rear
		1750	1030	260	230	-	Up	-	-	-

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



Load point height (A)								At max. reach		
		2.0 m (6.6 ft)		2.5 m (8.2 ft)		3.0 m (9.8 ft)		Capacity		Reach
										m (ft)
3.0 m (9.8 ft)	kg lb	*390 *860	*390 *860					*410 *900	*410 *900	2.18 (7.2)
2.5 m (8.2 ft)	kg lb			*370 *820	*370 *820			*350 *770	340 750	2.74 (9.0)
2.0 m (6.6 ft)	kg lb	*380 *840	*380 *840	*380 *840	*380 *840	310 680	290 640	290 640	280 620	3.07 (10.1)
1.5 m (4.9 ft)	kg lb	*510 *1120	*510 *1120	400 880	380 840	300 660	290 640	260 570	250 550	3.27 (10.7)
1.0 m (3.3 ft)	kg lb	550 1210	510 1120	390 860	370 820	300 660	280 620	250 550	240 530	3.36 (11.0)
0.5 m (1.6 ft)	kg lb	520 1150	490 1080	380 840	360 790	290 640	280 620	250 550	230 510	3.36 (11.0)
Ground Line	kg lb	510 1120	480 1060	370 820	350 770	290 640	270 600	250 550	240 530	3.26 (10.7)
-0.5 m (-1.6 ft)	kg lb	510 1120	480 1060	370 820	350 770	280 620	270 600	280 620	260 570	3.05 (10.0)
-1.0 m (-3.3 ft)	kg lb	510 1120	480 1060	370 820	350 770			330 730	320 710	2.70 (8.9)
-1.5 m (-4.9 ft)	kg lb	*480 *1060	*480 *1060					*430 *950	*430 *950	2.11 (6.9)

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

※ Lifting capacities are based upon a standard machine conditions.

Lifting capacities will vary with different work tools, ground conditions and attachments.

The difference between the weight of a work tool attachment must be subtracted.

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

※ Please be aware of the local regulations and instructions for lifting operations.

▲ Failure to comply to the rated load can cause serious injury, death, or property damage. Make adjustments to the rated load as necessary for non-standard configurations.

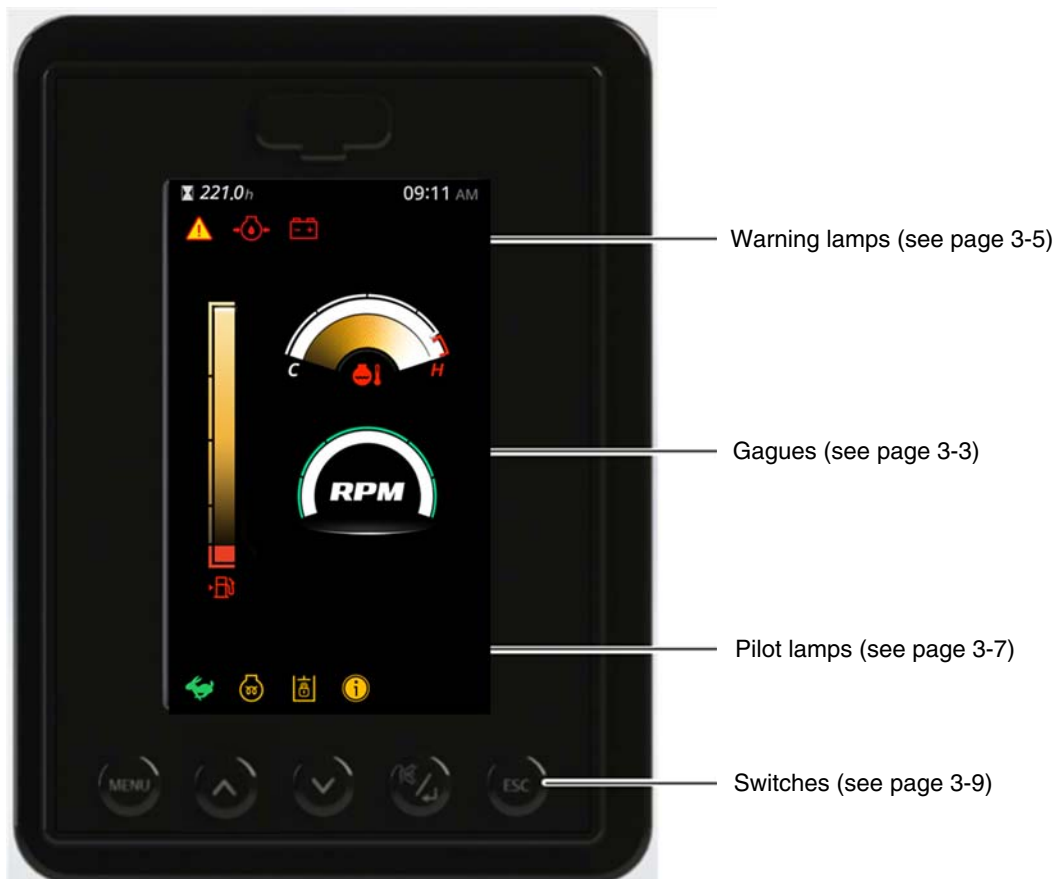
2. CLUSTER

1) STRUCTURE

The cluster consists of LCD and switches as shown below. The LCD is to warn the operator in case of abnormal machine operation or conditions for the appropriate operation and inspection.

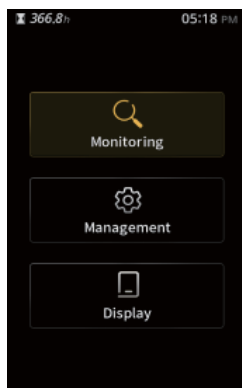
The LCD is to display for monitoring, manage and display set with the switches.

- ※ The cluster installed on this machine does not entirely guarantee the condition of the machine. Daily inspection should be performed according to chapter 6, Maintenance.
- ※ When the cluster provides a warning, immediately check the problem and perform the required action.

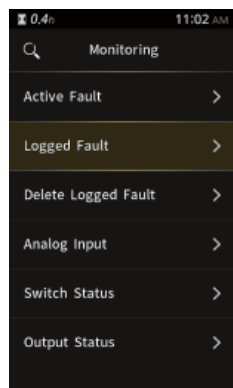


17AZ3CD10

② Logged fault



17AZ3CD106



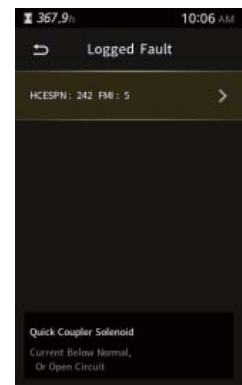
17AZ3CD113



17AZ3CD114



17AZ3CD115



17AZ3CD116

- The logged fault of the machine and engine can be checked by this menu.
- This menu can be used only HCE service man.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

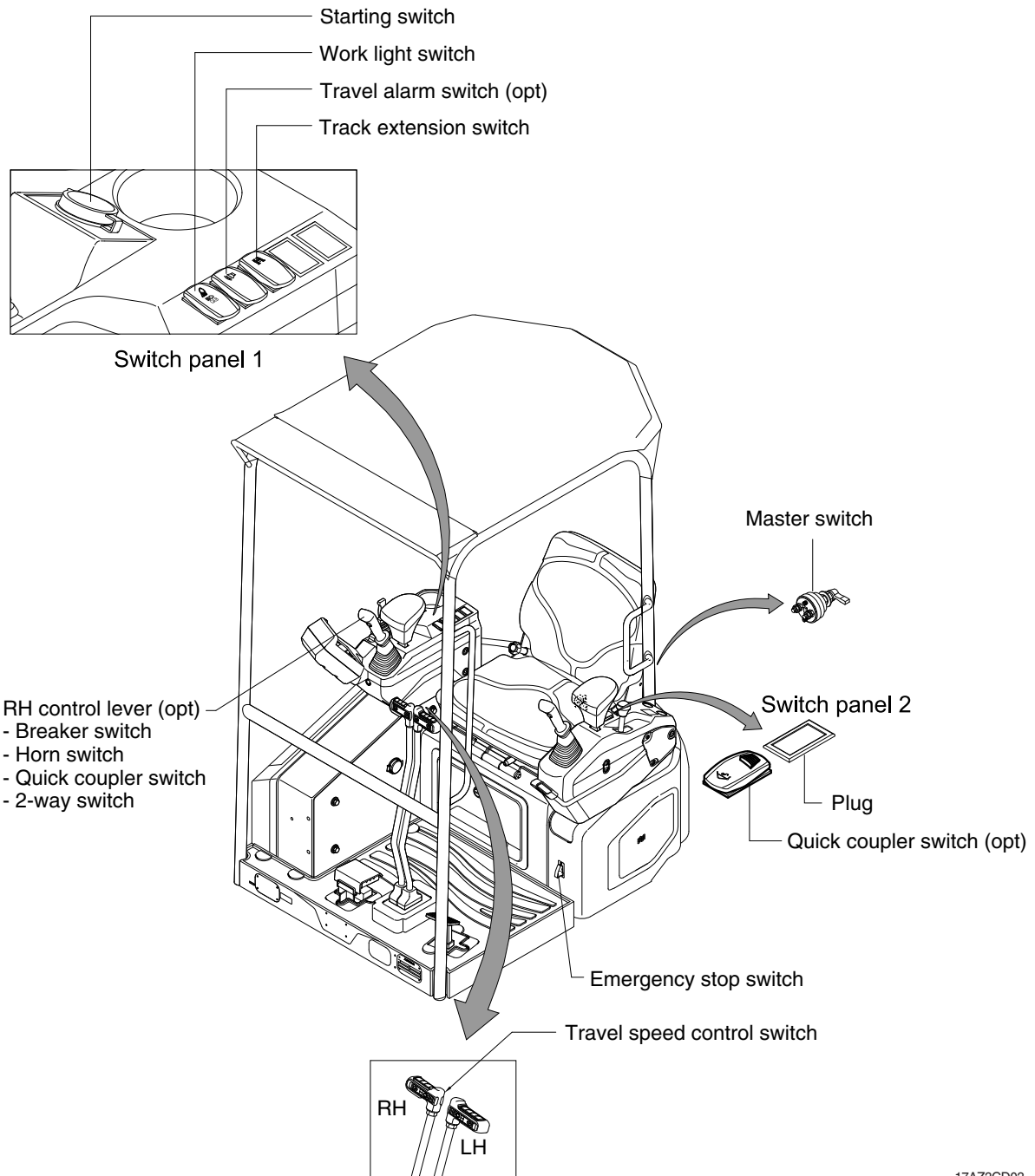
- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: www.heydownloads.com by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

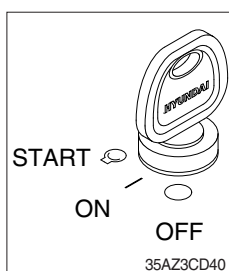
CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

3. SWITCHES



17AZ3CD03

1) STARTING SWITCH



(1) There are three positions, OFF, ON and START.

- ○ (OFF) : None of electrical circuits activate.
- | (ON) : All the systems of machine operate.
- ◯ (START) : Use when starting the engine. Release key immediately after starting.

※ **Key must be in the ON position with engine running to maintain electrical and hydraulic function and prevent serious machine damage.**

1. INSTRUCTION FOR NEW MACHINE

- 1) It takes about 100 operation hours to enhance its designed performance.
- 2) Operate according to the 3 steps below and avoid excessive operation for the initial 100 hours.

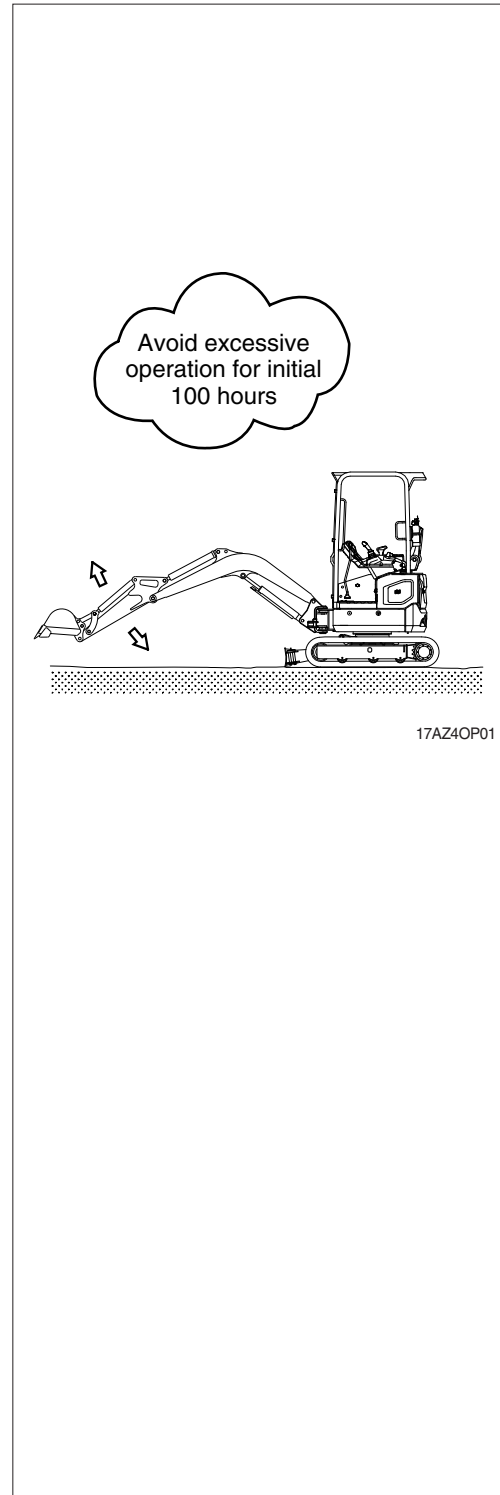
Service meter	Load
Until 10 hours	About 60 %
Until 100 hours	About 80 %
After 100 hours	100 %

※ **Excessive operation may deteriorate the performance of machine and shorten the life of the machine.**

3) Be careful during the initial 100 hours operation

- (1) Check daily for the level and leakage of fluids.
 - (2) Check greasing points on a regular basis and grease all points as needed. Refer to greasing chart located on the machine.
 - (3) Check over all hose connections, bolts, nuts and screws, on a daily basis.
 - (4) Warm up the machine fully before operating.
 - (5) Check all gauges occasionally during the operation.
 - (6) Check if the machine is operating normally during operation.
- 4) After the initial 250 hours of operation replace or change the following:

Checking items	Hours
Fuel filter element	250
Hydraulic oil return filter	
Travel reduction gear oil	

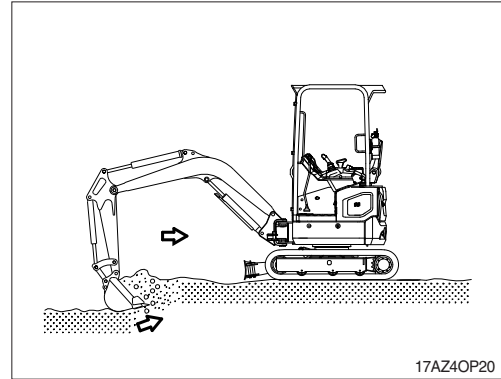


6. EFFICIENT WORKING METHOD

- 1) Do the digging work by arm.

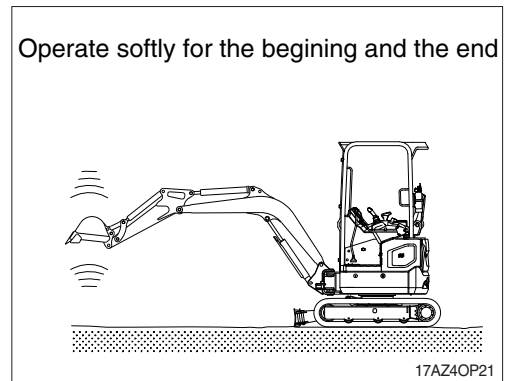
Use the pulling force of arm for digging and use together with the digging force of the bucket if necessary.

- ※ Consult the local regulations and instructions when using the dozer blade for additional machine stability. For the installation of a dozer cylinder safety valve, please contact your HD Hyundai Construction Equipment dealer.

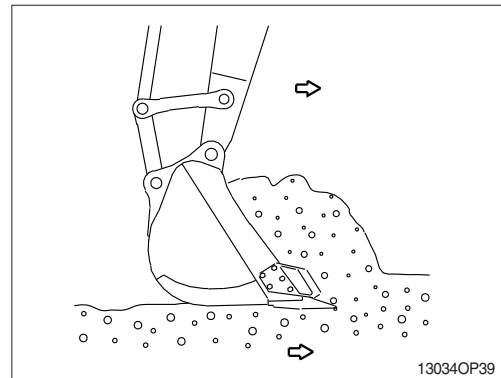


- 2) When lowering and raising the boom operate softly for the beginning and the end.

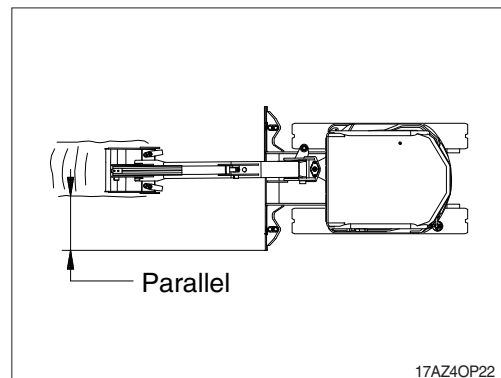
In particularly, sudden stops while lowering the boom may cause damage to the machine.



- 3) The digging resistance and wearing of tooth can be reduced by putting the end of bucket tooth to the digging direction.



- 4) Set the tracks parallel to the line of the ditch to be excavated when digging ditch. Do not swing while digging.



11. RCV LEVER OPERATING PATTERN

1) PATTERN CHANGE VALVE INSTALL (option)

- ※ If the machine is equipped with the pattern change valve, the machine operation pattern can be easily changed.
- ※ Whenever a change is made to the machine control pattern also exchange the pattern label in the cab to match the new pattern.

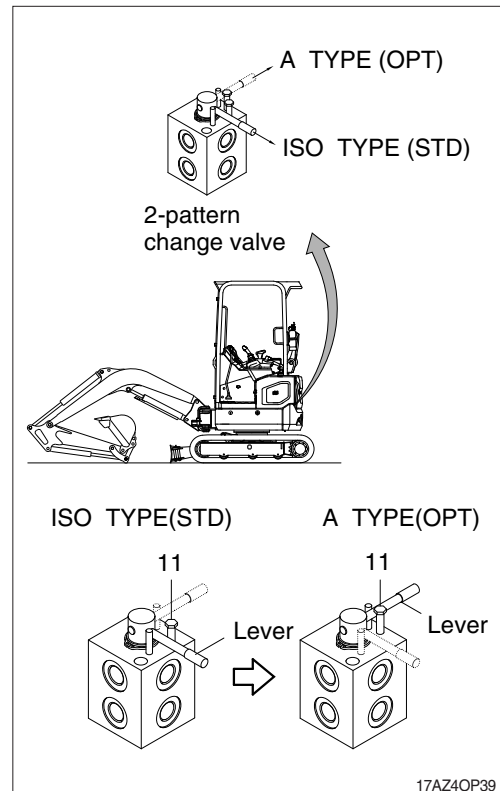
Operation	ISO type	A type
Left RCV lever		
Right RCV lever		

(1) The machine control pattern can be changed from the "ISO type" to "A type" by changing the position of the lever.

- ▲ **Before starting the machine, check the lever position of pattern change valve and actual operating of attachment.**

(2) Change of operating pattern

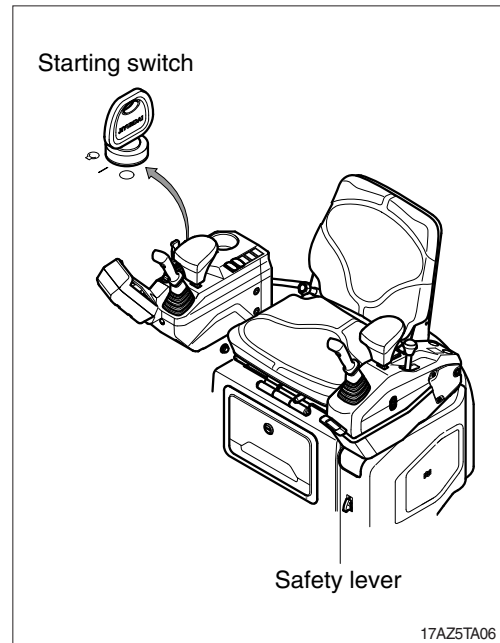
- ① Loosen the bolt (11).
- ② Move lever from the "ISO type" to "A type" position.
- ③ After the lever is set, tighten the bolt in order to secure the lever.



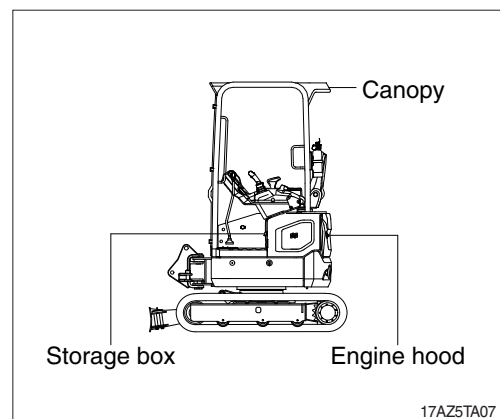
17AZ4OP39

3. FIXING THE MACHINE

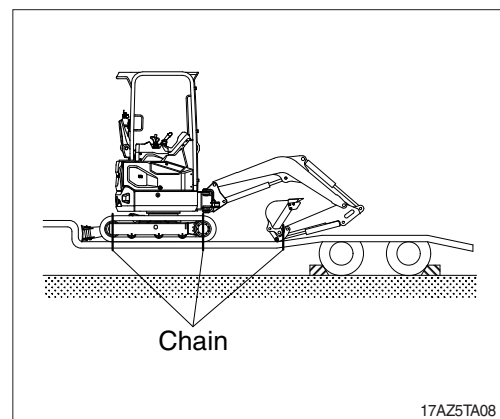
- 1) Lower down the working device on the loading plate of trailer.
- 2) Keep the safety lever in the **LOCK** position.
- 3) Turn **OFF** all the switches and remove the key.



- 4) Secure all locks.



- 5) Place timbers behind the tracks, secure the machine to trailer with chains or straps which are in good condition and approved for the weight which they will be securing, to prevent the machine from moving in any direction.



2) PIPE AND HOSE (FLARE type)

Thread size (PF)	Width across flat (mm)	kgf · m	lbf · ft
1/4"	19	4	28.9
3/8"	22	5	36.2
1/2"	27	9.5	68.7
3/4"	36	18	130
1"	41	21	152
1-1/4"	50	35	253

3) PIPE AND HOSE (ORFS type)

Thread size (UNF)	Width across flat (mm)	kgf · m	lbf · ft
9/16-18	19	4	28.9
11/16-16	22	5	36.2
13/16-16	27	9.5	68.7
1-3/16-12	36	18	130
1-7/16-12	41	21	152
1-11/16-12	50	35	253

4) FITTING

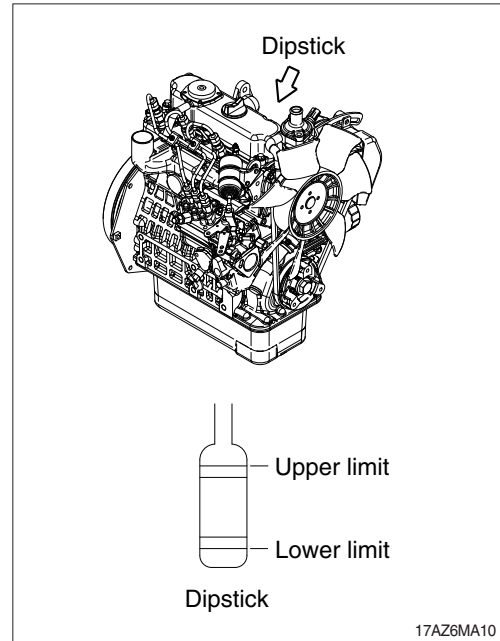
Thread size	Width across flat (mm)	kgf · m	lbf · ft
1/4"	19	4	28.9
3/8"	22	5	36.2
1/2"	27	9.5	68.7
3/4"	36	18	130
1"	41	21	152
1-1/4"	50	35	253

6. SERVICE INSTRUCTION

1) CHECK ENGINE OIL LEVEL

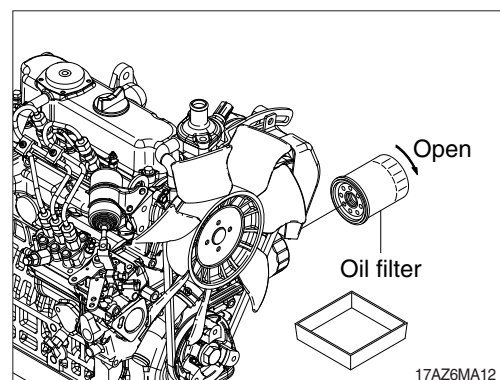
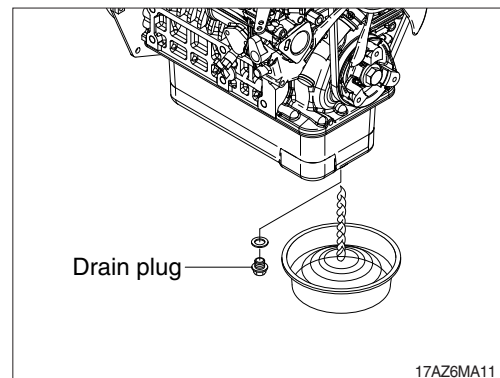
Check the oil level with the machine on a flat ground before starting engine.

- (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.
Check to see that the oil level lies between the upper line and lower line.
- (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.
 - △ When you use an oil of different brand or viscosity from the previous, drain the remaining oil. Do not mix 2 different types of oil.



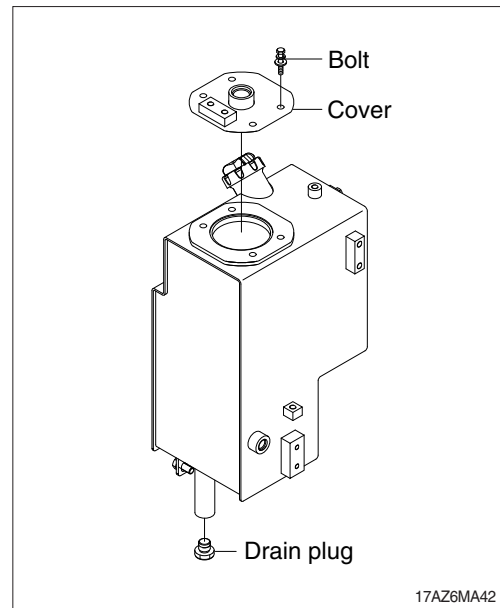
2) REPLACEMENT OF ENGINE OIL AND OIL FILTER

- ▲ To avoid personal injury or death :
 - Be sure to stop the engine before changing the engine oil filter.
 - Allow engine to cool down sufficiently, oil can be hot and cause burns.
- (1) Remove the drain plug and drain all the old oil.
 - ※ A drain pan with a capacity of 5.0 liters (1.3 U.S. gallons) will be adequate.
 - ※ Dispose of the waste oil in accordance with local regulations.
- (2) Clean around the filter head, remove the filter with a filter wrench and clean the gasket surface.



16) CHANGE HYDRAULIC OIL

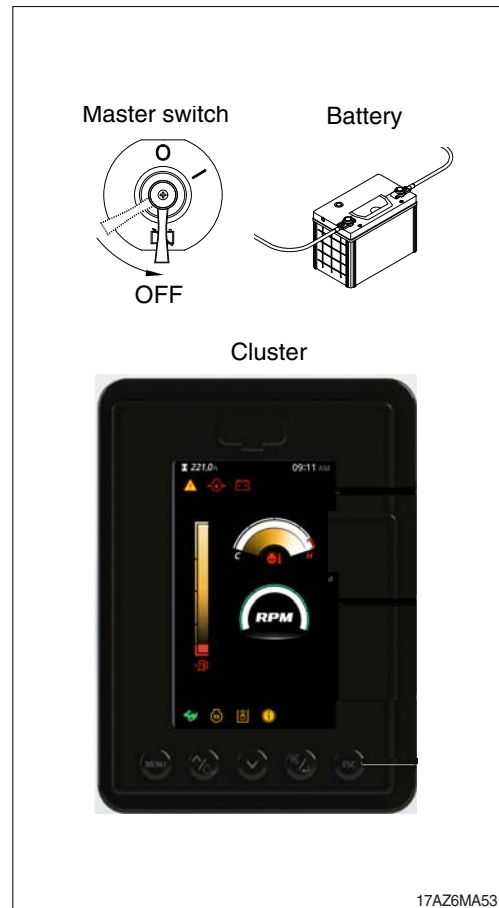
- (1) Position the machine like the hydraulic oil check. Then stop engine.
 - (2) Remove the bolt (1) and return filter cover (2).
 - Tightening torque : 3.4 ± 0.7 kgf·m
(24.6 ± 5.1 lbf·ft)
 - (3) Prepare a suitable container with a capacity of 20 ℓ (5.3 U.S. gal).
 - (4) To drain the oil loosen the drain plug at the bottom of the oil tank.
 - (5) Close the drain plug and fill proper amount of recommended oil.
 - (6) Assemble with reverse order of disassembly.
 - (7) To bleed air from hydraulic pump loosen the air breather at top of hydraulic pump assembly.
 - (8) Start engine and run continually. Release the air by full stroke of each control lever.
- ※ In case 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.



4) WELDING REPAIR

Before welding, follow the below procedure.

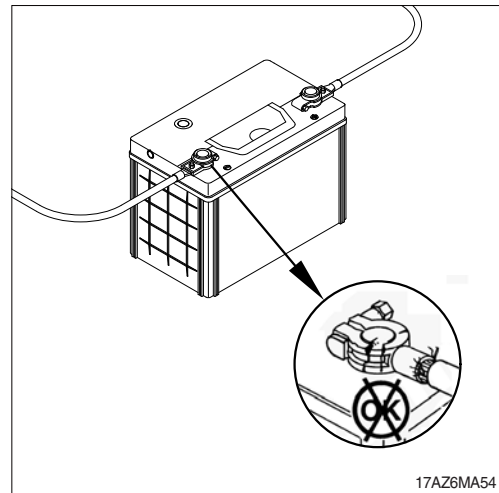
- (1) Shut off the engine and remove the starting switch.
 - (2) Disconnect ground cable from battery by master switch.
 - (3) Before carrying out any electric welding on the machine, the battery cables should be disconnected and the connectors pulled out of the cluster etc.
 - (4) Connect the earth (ground) lead of the welding equipment as close to the welding point as possible.
 - ※ Remove all paint to ensure a solid ground is achieved.
 - ※ Do not weld or use cutting torch on pipes or tubes that contain flammable fluids. Clean them thoroughly with nonflammable solvent before welding or flame cutting on them.
- ▲ Do not attempt to weld before carrying out the above.
If not, it will cause serious damage to electric system.



5) BATTERY CABLE AND CONNECTIONS

▲ Batteries can emit explosive gases. To reduce the possibility of personal injury, always ventilate the compartment before servicing the batteries.

- (1) Remove and inspect the battery cables and connections for cracks or corrosion.
- (2) Replace broken terminals, connectors, or cables.
- (3) If the connections are corroded, use a battery brush or wire brush to clean the connections.
- (4) Make sure all debris are removed from the connecting surfaces.
- (5) Install the cables and tighten the battery connections.
- (6) Coat the terminals with grease to prevent corrosion.



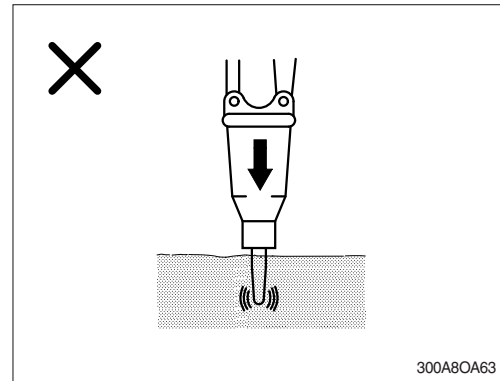
NEVER DRIVE THE CHISEL INTO THE GROUND

If the advance is too large and the chisel is not rocked to release the dust, the chisel will be driven into the material without breaking the material. This causes the chisel tip to glow red-hot and lose its hardness.

As a result, the chisel wears out more quickly. Operating in this way is not permitted.

Dust dampens impact power, when the chisel is inserted into the ground, and reduces the efficiency of the breaker. Tilt the breaker slightly backward and forward, not more than 5°, while operating so that the dust can escape.

Do not rock the breaker at angles greater than 5° or the chisel will be broken.

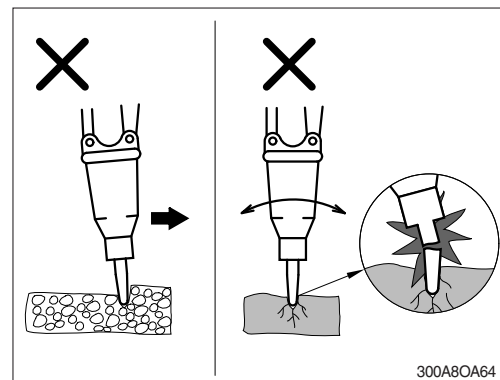


NEVER USE AS A LEVER

Do not use the chisel as a lever; e.g. crowbar, as this will cause the chisel to break.

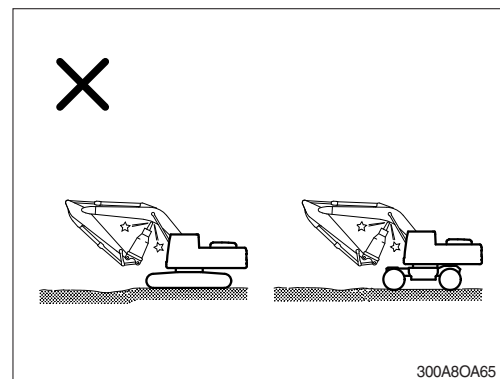
Under any circumstances, operating in this way is not permitted.

Most of bending failure of the chisel may be caused by lever action in stone that is inside hard or frozen ground. Be careful and stop operating if you feel sudden resistance under the chisel.



TAKE CARE OF CHISEL AND BOOM INTERFACE

Be aware of clearance between breaker tip and the underside of boom as shown.



CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: www.heydownloads.com by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL