

# HIDROMEK®



## **HMK 300 LC** Operation and Maintenance Manual

01.05.2007/R01  
H257312000  
5125001-

[www.hidromek.com.tr](http://www.hidromek.com.tr)

## FACTORY AND SERVICE DEPARTMENT

---

| HEAD OFFICE AND FACTORY         |   |
|---------------------------------|---|
| Adress                          | : Organize Sanayi Bölgesi Osmanlı Cad. No:1 06935<br>Sincan/ANKARA                    |
| Phone                           | :+90 312 267 12 60 (20 Lines)   |
| Fax                             | :+90 312 267 12 39  |
| İnternet                        | : <a href="http://www.hidromek.com.tr">www.hidromek.com.tr</a>                        |
| e-mail                          | : <a href="mailto:info@hidromek.com.tr">info@hidromek.com.tr</a>                      |
| AFTER SALES SERVICES DEPARTMENT |   |
| Adress                          | : Şehit Osman Avcı Mahallesi No: 479 (İstanbul Yolu 17. km) 06930<br>Eryaman / ANKARA |
| Phone                           | : +90 312 280 87 40 (8 Lines)   |
| Fax                             | : +90 312 280 87 48   |
| Spare Parts Fax                 | : +90 312 280 87 49   |

# CONTENTS

---

## [GENERAL]

|     |   |     |
|-----|---|-----|
| 1.  | FOREWORD.....                                 | 1.1 |
| 2.  | SAFETY INFORMATION.....                       | 2.1 |
| 3.  | GENERAL INFORMATION.....                      | 3.1 |
| 3.1 | SPECIFIED WORKING.....                        | 3.1 |
| 3.2 | CE MARKING AND DECLARATION OF CONFORMITY..... | 3.1 |
| 3.3 | CHARACTERISTICS OF THE MACHINE.....           | 3.2 |
| 3.4 | BREAKING IN OPERATION.....                    | 3.2 |
| 4.  | DRIVING LICENSE.....                          | 4.1 |
| 5.  | NAME PLATE.....                               | 5.1 |
| 5.1 | MACHINE NAME PLATE POSITION.....              | 5.1 |
| 5.2 | ENGINE NAME PLATE POSITION.....               | 5.1 |

## [SAFETY]

|     |                                      |      |
|-----|--------------------------------------|------|
| 6.  | GENERAL CAUTION.....                 | 6.1  |
| 7.  | CAUTION ON OPERATING.....            | 7.1  |
| 7.1 | BEFORE STARTING THE ENGINE.....      | 7.1  |
| 7.2 | AFTER STARTING THE ENGINE.....       | 7.4  |
| 7.3 | HAND SIGNALS.....                    | 7.11 |
| 7.4 | TRANSPORTING.....                    | 7.16 |
| 7.5 | BATTERY.....                         | 7.17 |
| 7.6 | TOWING.....                          | 7.19 |
| 7.7 | LIFTING OBJECTS.....                 | 7.20 |
| 8.  | CAUTION ON MAINTANING.....           | 8.1  |
| 8.1 | BEFORE MAINTENANCE.....              | 8.1  |
| 8.2 | UNDER MAINTENANCE.....               | 8.4  |
| 9.  | ATTACHED POSITIONS SAFETY LABEL..... | 9.1  |
| 9.1 | ATTACHED POSITIONS.....              | 9.1  |
| 9.2 | CONTENTS OF SAFETY DECAL.....        | 9.2  |

## [OPERATION]

|      |                                 |      |
|------|---------------------------------|------|
| 10.  | NAME OF EACH PART.....          | 10.1 |
| 10.1 | LOCATION OF MAIN PARTS.....     | 10.1 |
| 10.2 | OPERATÖR KABİNİ DETAYI.....     | 10.2 |
| 11.  | DESCRIPTION OF EACH DEVICE..... | 11.1 |
| 11.1 | INSTRUMENT PANEL.....           | 11.1 |
| 11.2 | SWITCH PANEL.....               | 11.6 |
| 11.3 | WORK MODE SELECTION SWITCH..... | 11.8 |
| 11.4 | START SWITCH.....               | 11.8 |

---

|       |  |       |
|-------|--|-------|
| 11.5  | LEVERS AND PEDALS.....                           | 11.9  |
| 11.6  | SAFETY LOCKING DEVICE.....                       | 11.11 |
| 11.7  | EMERGENCY ENGINE RPM CONTROL LEVER.....          | 11.11 |
| 11.8  | CONTROL SWITCH.....                              | 11.12 |
| 11.9  | LIGHTER.....                                     | 11.12 |
| 11.10 | BEACON SWITCH (OPTIONAL).....                    | 11.12 |
| 11.11 | HEATER AND AIR CONDITION.....                    | 11.12 |
| 11.12 | FUSE BOX.....                                    | 11.15 |
| 11.13 | EXTERNAL POWER SOCKET.....                       | 11.15 |
| 11.14 | BATTERY MASTER SWITCH.....                       | 11.16 |
| 11.15 | FUEL SUPPLY PUMP.....                            | 11.16 |
| 11.16 | FRONT WINDSHIELD.....                            | 11.17 |
| 11.17 | DOOR LOCK SYSTEM AND FIRE EXTINGUISHER.....      | 11.18 |
| 11.18 | HANDLING OF ACCUMULTOR.....                      | 11.18 |
| 12.   | OPERATING THE MACHINE.....                       | 12.1  |
| 12.1  | CHECK BEFORE STARTING THE ENGINE.....            | 12.1  |
| 12.2  | STARTING THE ENGINE.....                         | 12.9  |
| 12.3  | FOLLOW UP AFTER STARTING THE ENGINE.....         | 12.10 |
| 12.4  | STARTING THE MACHINE.....                        | 12.12 |
| 12.5  | TRAVEL DIRECTION CONTROL.....                    | 12.14 |
| 12.6  | STOPPING THE MACHINE.....                        | 12.15 |
| 12.7  | SWINGING THE MACHINE.....                        | 12.16 |
| 12.8  | OPERATING ATTACHMENTS.....                       | 12.16 |
| 12.9  | PROHIBITIONS DURING OPERATION.....               | 12.17 |
| 12.10 | CAUTIONS DURING OPERATION.....                   | 12.19 |
| 12.11 | CAUTIONS WHEN TRAVELING ON A SLOPE.....          | 12.21 |
| 12.12 | ESCAPING FROM SWAMPY GROUND.....                 | 12.22 |
| 12.13 | ADDITIONAL WORKS USING HYDRAULIC EXCAVATORS..... | 12.23 |
| 12.14 | LIFTING.....                                     | 12.25 |
| 12.15 | REPLACING BUCKET.....                            | 12.26 |
| 12.16 | PARKING THE MACHINE.....                         | 12.27 |
| 12.17 | CHECKS AFTER FINISHING WORK.....                 | 12.28 |
| 12.18 | STOPPING THE ENGINE.....                         | 12.28 |
| 12.19 | CHECKS AFTER STOPPING THE ENGINE.....            | 12.29 |
| 12.20 | LOCKING SYSTEM.....                              | 12.29 |
| 12.21 | HANDLING THE BELT.....                           | 12.30 |
| 13.   | TRANSPORTATION.....                              | 13.1  |
| 13.1  | LOADING AND UNLOADING.....                       | 13.1  |
| 13.2  | CAUTIONS ON LOADING.....                         | 13.2  |
| 13.3  | CAUTIONS ON TRANSPORTATION.....                  | 13.3  |
| 13.4  | LIFTING THE MACHINE.....                         | 13.4  |
| 14.   | HANDLING IN COLD WHEATHER.....                   | 14.1  |
| 14.1  | PREPARATION FOR COLD WHEATHER.....               | 14.1  |
| 14.2  | CAUTIONS AFTER FINISHING WORK.....               | 14.2  |
| 14.3  | WARM WHEATHER.....                               | 14.2  |
| 15.   | LONG TERM STORAGE.....                           | 15.1  |
| 15.1  | BEFORE STORAGE.....                              | 15.1  |
| 15.2  | WHILE IN STORAGE.....                            | 15.1  |
| 15.3  | AFTER STORAGE.....                               | 15.2  |
| 16.   | TROUBLESHOOTING.....                             | 16.1  |
| 16.1  | SUSPECTED TROUBLE PHENOMENA.....                 | 16.1  |

|      |   |       |
|------|---|-------|
| 16.2 | TOWING METHOD.....                          | 16.2  |
| 16.3 | USAGE OF TOWING HOLE FOR LIGHT OBJECTS..... | 16.2  |
| 16.4 | CAUTIONS UNDER SPECIAL CIRCUMSTANCES.....   | 16.2  |
| 16.5 | ELECTRIC DISCHARGE.....                     | 16.3  |
| 16.6 | ENGINE.....                                 | 16.6  |
| 16.7 | HYDRAULIC SYSTEM.....                       | 16.8  |
| 16.8 | ELECTRIC SYSTEM.....                        | 16.11 |
| 16.9 | OTHER TROUBLES.....                         | 16.13 |

[INSPECTION AND MAINTENANCE]

|      |  |       |
|------|--|-------|
| 17.  | CAUTIONS IN MAINTENANCE.....                             | 17.1  |
| 18.  | GENERAL MAINTENANCE.....                                 | 18.1  |
| 18.1 | OIL, FUEL AND COOLANT.....                               | 18.1  |
| 18.2 | ELECTRONIC PARTS.....                                    | 18.3  |
| 18.3 | HYDRAULIC UNITS.....                                     | 18.4  |
| 18.4 | BUCKET PLAY ADJUSTMENT.....                              | 18.5  |
| 19.  | CONSUMABLE PARTS.....                                    | 19.1  |
| 20.  | FUEL AND LUBRICATION USAGE ACCORDING TO TEMPERATURE..... | 20.1  |
| 20.1 | FUEL, COOLANT AND LUBRICATION.....                       | 20.1  |
| 20.2 | RECOMMENDED LUBRICATION OIL.....                         | 20.2  |
| 20.3 | RECOMMENDED FUEL.....                                    | 20.3  |
| 21.  | PERIODIC REPLACEMENT OF MAIN PARTS.....                  | 21.1  |
| 22.  | INSPECTION AND MAINTENANCE LIST.....                     | 22.1  |
| 22.1 | MAINTENANCE LIST ACCORDING TO REPLACING TIME.....        | 22.1  |
| 23.  | PERIODIC INSPECTION AND MAINTENANCE.....                 | 23.1  |
| 23.1 | EVERY 10 HOUR (BEFORE STARTING).....                     | 23.1  |
| 23.2 | FIRST 50 HOUR.....                                       | 23.11 |
| 23.3 | EVERY 50 HOUR (WEEKLY SERVICE).....                      | 23.13 |
| 23.4 | FIRST 250 HOUR.....                                      | 23.16 |
| 23.5 | EVERY 250 HOUR (MONTHLY SERVICE).....                    | 23.18 |
| 23.6 | FIRST 500 HOUR.....                                      | 23.22 |
| 23.7 | EVERY 500 HOUR (3 MONTH SERVICE).....                    | 23.23 |
| 23.8 | EVERY 1000 HOUR (6 MONTH SERVICE).....                   | 23.25 |
| 23.9 | EVERY 2000 HOUR (YEARLY SERVICE).....                    | 23.31 |

[SPECIFICATIONS]

|      |                                     |      |
|------|-------------------------------------|------|
| 24.  | SPECIFICATIONS.....                 | 24.1 |
| 24.1 | DIMENSIONS.....                     | 24.1 |
| 24.2 | SPECIFICATIONS AND PERFORMANCE..... | 24.2 |
| 24.3 | WORKING RANGE.....                  | 24.7 |
| 24.4 | SOUND AND VIBRATION LEVELS.....     | 24.8 |

[WORKING EQUIPMENT AND OPTIONAL ATTACHMENTS]

|     |                         |      |
|-----|-------------------------|------|
| 25. | GENERAL PRECAUTION..... | 25.1 |
|-----|-------------------------|------|

---

|      |   |      |
|------|---|------|
| 25.1 | SAFETY.....                                       | 25.1 |
| 25.2 | CAUTION WHEN FITTING THE WORKING EQUIPMENT.....   | 25.2 |
| 25.3 | ATTACHMENT SELECTON.....                          | 25.3 |
| 25.4 | PROTECTION AGAINST FALLING OR FLYING OBJECTS..... | 25.3 |
| 26.  | SELECTION OF TRACK SHOE.....                      | 26.1 |
| 26.1 | METHOD OF SHOE SELECTION.....                     | 26.1 |
| 27.  | HYDRAULIC BREAKER.....                            | 27.1 |
| 27.1 | MAINLY AVAILABLE WORKS.....                       | 27.1 |
| 27.2 | INCORRECT METHODS.....                            | 27.2 |
| 27.3 | FLOW ADJUSTMENT FOR BREAKER.....                  | 27.4 |
| 27.4 | MAINTENANCE FOR BREAKER.....                      | 27.4 |
| 28.  | QUICK COUPLING ATTACMENT.....                     | 28.1 |
| 29   | ROTATOR.....                                      | 29.1 |

**GENERAL**

## 1. FOREWORD

---

This manual contains safety, operation, transportation, lubrication, maintenance and repair information.

You must read and study this manual carefully and fully understand the operation, lubrication, maintenance and repair information before operating this machine. Failure to follow this manual can cause serious accidents.

### WARNING

If you operate this machine carelessly, it could result in serious injury. Mechanics and operators must read this manual carefully before operating or performing lubrication, maintenance and repair on this machine. This manual should be stored in the literature storage area in the operator's compartment, so that all personnel handling the machine can read it periodically.

- Read this manual again and again and study until the operation is habituated.
- If this manual is lost or damaged, please consult your HÍDROMEK dealer.
- When the machine is handed over, this manual shall be included.

The safety, operation, maintenance and repair information described in this manual are applied to limit the machine to specified usage.

Some photographs or illustrations in this manual show details or attachments that can be different from your machine. Guards and covers may have been removed for illustrative purposes.

Continuing improvement and advancement of product design may have caused changes to your machine that are not included in this publication.

This manual is copyrighted with all rights reserved.  
No part of this manual may be copied, in whole or in part, without written consent from HÍDROMEK.






## 2. SAFETY INFORMATION

---

Most accidents involving product operation, maintenance and repair are caused by failure to observe basic safety rules or precautions. Do not operate or perform any lubrication, maintenance or repair on this product, until you have read and understood the operation, lubrication, maintenance and repair information.

The safety symbols used in this manual or on the machine are classified as follows:

| <b>Safety Symbols</b>  | <b>Contents</b>   |
|--|---|
|  <b>DANGER</b>  | This symbol is used for safety where a great possibility of serious injury or death is present. |
|  <b>WARNING</b> | This symbol is used for safety where a possibility of injury or death is latent                 |
|  <b>CAUTION</b> | This symbol is used where a great possibility of injury or break-down of machine is present     |
| <b>IMPORTANT</b>   | This symbol is used where a possibility of damage or short-life span of machine is present      |

It is impossible to grasp all of the dangerous conditions. Therefore, the safety related contents depicted in this manual or on this machine cannot explain all of them. When operating the machine, keep safety in mind at any time, to prevent injury and breakdown of machines.

### 3. GENERAL INFORMATION

---

#### 3.1 SPECIFIED WORKING

This machine is a hydraulic excavator. Main usage is as follows:

- Excavating
- Digging
- Breaking (Equipped with breaker-option)
- Leveling
- Loading
- Demolition of building (Equipped with demolition attachment-option)

**Detailed working method ► Refer to 12.13 Additional Works Using Hydraulic Excavators.**

This manual contains the information on safety, operation, inspection and maintenance related to the specified usage.


Safety related areas other than specified in this manual should be considered as user's own responsibilities.

Operations outside the specified usage of this machine should never be attempted.

#### 3.2 CE MARKING AND DECLARATION OF CONFORMITY

NOTE: Applies only to machines marketed within the EU/EEA.

This machine is CE marked. This means that, when delivered to the customer, the machine meets the applicable "Essential Health and Safety Requirements", according to the EU Machine Safety Directive. Any person carrying out an alteration that affects the safety of the machine is responsible for consequences.

|   |  |
|---|--|
| Maker   | <b>HİDROMEK</b>  |
| Type & Model  | _____  |
| Serial No.  | _____  |
| Engine power  | _____  |
| Operating Weight  | _____  |
| Mfg Date  | _____  |
| Tested according to EN474 and EN292   |  |
| Address   | HİDROMEK LTD.ŞTİ.<br>Sincan Organize Sanayii Bölgesi<br>Osmanlı Cad. No:1 Sincan/ANKARA<br>Tel: (312) 267 12 60 Fax: (312) 267 12 39 |
|  |  |
| <small>H347011101</small>   |  |

The machine is supplied together with a Declaration of Conformity with the EU Machine Safety Directive.

If the machine is used for purposes or with special bodies or add-ons, other than described in these instructions, safety must at all times and in each case be maintained. The person carrying out such action is also responsible for the action, which in some cases, may require a new CE marking and of a new Declaration of Conformity in compliance with the EU Machine Safety Directive. HİDROMEK is only responsible for the changes, which are done by HİDROMEK.

---

### **3.3 CHARACTERISTICS OF THE MACHINE**

- Advanced electronic system is equipped with following:
  - ✓ Engine mode selection according to the working condition
  - ✓ Excavating force increment by one-touch
  - ✓ Automatic warm-up of engine
  - ✓ Auto idle canceling by one touch
  - ✓ Auto deceleration and idling of engine
  - ✓ Preventing engine from overheat
  - ✓ Self diagnostic
  - ✓ Flow adjusting on instrument panel for breaker
  - ✓ Work mode selection according to working condition
- High output, durable, water cooled diesel engine
- High durability hydraulic pump
- Cushion type hydraulic cylinders
- Advanced hydraulic system applies combined system to working device operating circuit
- Safety locking device equipped control lever console
- Air-conditioned, economically designed operator's compartment for comfort and convenience (optional).
  - ✓ Cab has been designed to offer maximum all around visibility
  - ✓ Adjustable, safe and comfortable seat
- Improved resilience when traveling or working, by applying liquid-filling type mount of 6-point-silicone support method, which is very effective in relieving the vibration or shock of cab.
- Shock relief valve for swing brake
- Prepared connection fittings for hydraulic breaker piping

### **3.4 BREAKING-IN OPERATION**

This machine has been adjusted and tested before shipment from the factory.

Abnormal operation may reduce the performance and life of the machine. Therefore, operate the machine for the first 100 hours carefully.

Pay attention to the following:

- Allow the engine to idle for 5 minutes after starting the engine.
- Do not allow overload or over speed operation.
- Do not rapid operation when starting, accelerating, stopping or turning.

## 4. DRIVING LICENSE

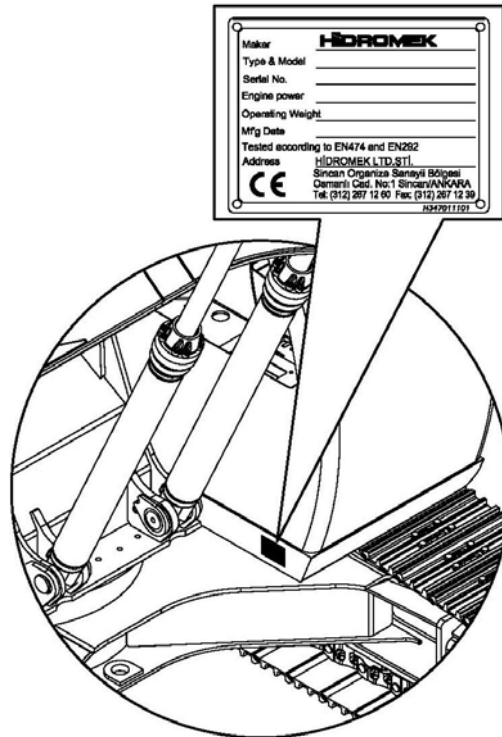
---

The operator must obtain a valid driving license necessary for the machine operation according to the national, provincial, state or local regulations.

## 5. NAME PLATE

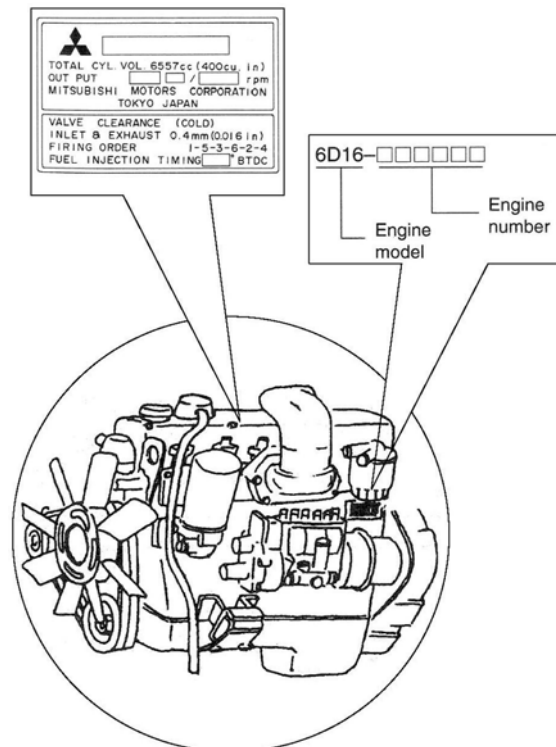
### 5.1 MACHINE NAMEPLATE POSITION

The machine nameplate is attached on the right lower side of the operator's compartment.



### 5.2 ENGINE NAMEPLATE POSITION

The engine nameplate is attached on the rocker cover; the engine number plate is attached on the cylinder block.



**SAFETY**

## 6. GENERAL CAUTION

---

### WARNING

Always observe this caution for safety.

#### **OPERATORS MUST HAVE SOME PROPERTIES**

People who use or operate hydraulic excavators must be:

- Physically: Good vision, hearing, coordination, and capable of safety performing all functions required for the operation of the machine.
- Mentally: Able to understand and apply established rules, regulations, and safe practices. Be alert, using good judgment for safety to themselves and others. Desire to do their job correctly and in a responsible manner.
- Emotionally: Be calm and capable of withstanding stress and make judgments concerning their own physical and mental conditions.
- Trained: Have read and understood the operator's instructional manual, hand signals chart and warning decals, and be skilled and knowledgeable in all operational and maintenance aspects of the machine.
- Licensed: If required by law.

#### **OBSERVE ALL SAFETY RULES ON-SITE**

- Only and certified personnel may operate or maintain this machine.
- Observe all rules, cautions and procedures for safety when operating or maintaining the machine.
- When working with a signalman, work according to the specified signals.

#### **INSTALL ALL GUARDS AND SAFETY DEVICES**

- Ensure all of the guards and covers are correctly installed. Repair or replace damaged items.
- Know the correct usage of safety locking device lever and safety belt, and use as recommended.

**Safety locking device lever ► Refer to 11.6 Safety Locking Device**  
**Safety belt (seat belt) ► Refer to 12.21 Handling the Belt**

- Incorrect operation of the safety device may cause serious injury.

## WEAR PROTECTIVE CLOTHES AND SAFETY EQUIPMENT

- Wear close fitting clothing. Never wear personal items, which may be caught by control lever or components or oiled clothes, which can be easily catch fire.
- Wear the appropriate protective clothing and safety equipment in accordance with working conditions when operating and maintaining the machine.
- Do not wear radio/cassette headphones while operating the machine.



### WARNING

If a safety caution is ignored, serious accident may occur.

## MODIFICATIONS

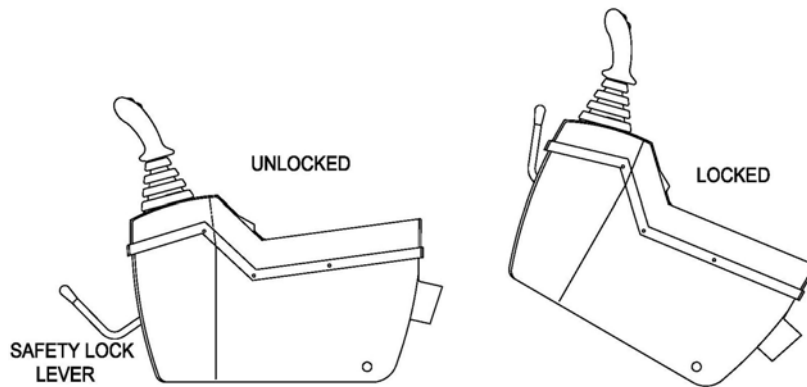
- Modifications without recommendation of HİDROMEK may cause safety, related problems.
- If modifications are required, contact HİDROMEK or your local dealer.
- HİDROMEK is not responsible for injury or defects due to modifications without permission.



### USE RAIL AND FOOTHOLD TO CLIMB

- Lock the safety-locking lever securely before leaving the operators seat.
- If a control lever is touched through carelessness when not locked out, the machine may suddenly operate, and cause serious injury or death.
- Make sure to lower the attachment to the ground, lock the safety-locking device, stop the engine, and lock the door when leaving the machine.
- Never forget to remove the starter key.

**Safety locking lever ► Refer to 11.6 Safety Locking Device**

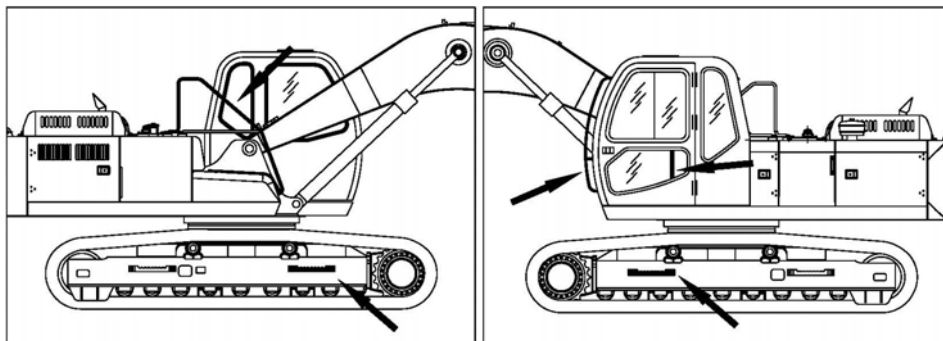


### **⚠ WARNING**

Always observe this caution for safety.

### USE RAIL AND FOOTHOLD TO CLIMB ON/OFF

- Do not jump on/off a machine. Especially, never get on/off a moving machine.
- Never grasp the control lever to get on/off.
- Make sure to support the body (3 point hold of feet or hands) by use of rail and foothold.
- If oil or mud is attached onto shoes, rail or foothold, wipe off immediately. Especially, clean the windows, rear view mirrors and lights.
- When grasping on the door rail for getting on/off or moving to the rear of the machine, ensure that the opened door is locked against the cab.



**⚠ WARNING**

If safety caution is ignored, serious accident may occur.

**NO FIRE NEAR TO FUEL AND OIL**

Antifreeze, fuel and oil are flammable. Keep away from open flame or other fire hazards.

- Never put a burning cigarette or match near flammables.
- Before adding fuel, stop the engine and put out all cigarettes.
- Wipe up spilled oil immediately.
- Tighten the caps on containers for fuel or oil securely.
- Keep fuel or oil in a well-ventilated place.
- Do not use fuel or oil for cleaning.
- Keep fuel or oil in a designated off-limits place.

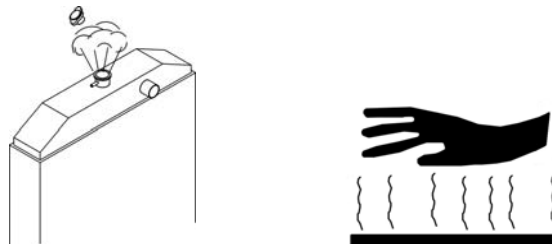


**⚠ WARNING**

Always observe this caution for safety.

**HANDLE WITH CARE UNDER HIGH TEMPERATURE**

- Immediately after stopping the machine, the temperature of the hydraulic oil, engine oil and engine coolant is very high and pressure is accumulated. In this condition, if you replace a filter, drain the oil or coolant, open the cap, or the hot fluid may cause burning or scalding.
- To prevent spouting the hot coolant
  - 1) Stop the engine.
  - 2) Wait until the temperature is lowered.
  - 3) Turn the cap slowly to release the inner pressure, and then open the cap.
- While operating or immediately after stopping the machine, the engine, manifold, muffler and turbocharger are very hot. Take care not to touch these components.



**⚠ WARNING**

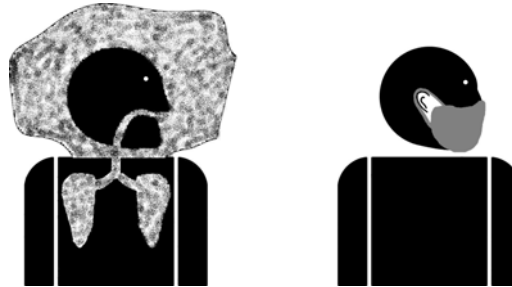
If safety caution is ignored, serious accident may occur.

**DO NOT INHALE DUST CONTAINING ASBESTOS**

If you inhale dust-containing asbestos, it may cause a disorder of the respiratory system.

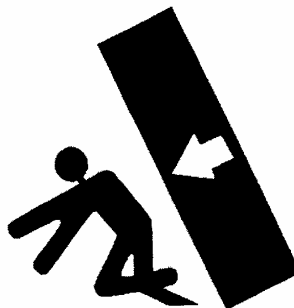
Asbestos is not contained in this machine itself; however, if you handle materials that possibly contain asbestos, observe the following measures.

- Never use compressed air as a cleaning tool.
- Avoid brushing or grinding material containing asbestos.
- Apply a mist of water on material containing asbestos.
- Wear an approved respirator.



**PAY ATTENTION TO MOVING PARTS**

- The area near moving parts (between upper and lower frame, moving parts of attachment, engine compartment, etc.) may cause injury. When you check or maintain in these areas, lock the parts capable of moving and pay special attention.
- When the track is lifted to maintain the lower frame, support with hardwood blocks. Never support with boom or arm only.

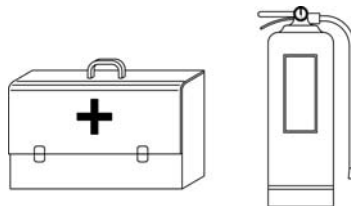


**⚠ WARNING**

Always observe this caution for safety.

**MACHINE FIRE EXTINGUISHER AND FIRST-AID KIT**

- Equip with a fire extinguisher, and read carefully the directions for use.
- Equip with a first-aid kit and instruction booklet.
- Display the measures to be taken in case of fire or accident.
- Display the names and telephone numbers of personnel to contact in an emergency.



**⚠ WARNING**

If safety caution is ignored, serious accident may occur.

**PROTECTION FROM FALLING OR SCATTERING MATERIALS**

- Install the necessary protection guards according to working conditions while working with breaker, working at quarries and demolition or where falling or scattering materials are capable of entering the operator's cab (see 25.3).
- Do not operate or travel with the front window open.
- Ensure that non-essential personnel keep a safe distance from both the machine and falling / scattering materials.

