

## A MESSAGE TO HYUNDAI LIFT TRUCK OPERATORS

Lift trucks are specialized trucks with unique operating characteristics, designed to perform a specific job. Their function and operation is not like a car or ordinary truck. They require specific instructions and rules for safe operation and maintenance.

Safe operation of lift trucks is of primary importance to HYUNDAI.

Our experience with lift truck accidents has shown that when accidents happen and people are killed or injured, the causes are:

- **Operator not properly trained**
- **Operator not experienced with lift truck operation**
- **Basic safety rules not followed**
- **Lift truck not maintained in safe operating condition**

For these reasons, HYUNDAI wants you to know about the safe operation and correct maintenance of your lift truck.

This manual is designed to help you operate your lift truck safely.

This manual shows and tells you about safety inspections and the important general safety rules and hazards of lift truck operation. It describes the special components and features of the truck and explains their function. The correct operating procedures are shown and explained. Illustrations and important safety messages are included for clear understanding. A section on maintenance and lubrication is included for the lift truck mechanic.

The operator's manual is not a training manual. It is a guide to help trained and authorized operators safely operate their lift truck by emphasizing and illustrating the correct procedures. However, it cannot cover every possible situation that may result in an accident. You must watch for hazards in your work areas and avoid or correct them. It is important that you know and understand the information in this manual and that you know and follow your company safety rules!

Be sure that your equipment is maintained in a safe condition. Do not operate a damaged or malfunctioning truck. Practice safe operation every time you use your lift truck. Let's join together to set high standards in safety.

Remember, before you start operating this lift truck, be sure you understand all driving procedures. It is your responsibility, and it is important to you and your family, to operate your lift truck safely and efficiently.

**△ Be aware that the Federal Occupational Safety and Health Act (OSHA) and state laws require that operators be completely trained in the safe operation of lift trucks; It is also an (OSHA) requirement that a truck inspection be performed before every shift. If you need training in operating or inspecting your lift truck, ask your supervisor.**

HYUNDAI lift trucks are built to take hard work, but not abuse. They are built to be dependable, but they are only as safe and efficient as the operator and the persons responsible for maintaining them. Do not make any repairs to this truck unless you have been trained in safe lift truck repair procedures and are authorized by your employer.

This manual describes procedures for operation, handling, lubrication, maintenance, checking and adjustment. It will help the operator realize peak performance through effective, economical and safe truck operation.

## INTRODUCTION

HYUNDAI welcomes you to the growing group of professionals who own, operate and maintain HYUNDAI lift trucks. We take pride in the long tradition of quality products and superior value the HYUNDAI name represents. This manual familiarizes you with safety, operating, and maintenance information about your new lift truck. It has been specially prepared to help you use and maintain your HYUNDAI lift truck in a safe and correct manner.

Your HYUNDAI lift truck has been designed and built to be as safe and efficient as today's technology can make it. As manufactured, for some models, it meets all the applicable mandatory requirements of ANSI B56.1-1988 Safety Standard for Powered Industrial Trucks. Some trucks are also furnished with equipment to help you operate safely; for example, load back rest, parking brake and horn are standard equipment.

Safe, productive operation of a lift truck requires both skill and knowledge on the part of the operator. The operator must know, understand, and practice the safety rules and safe driving and load handling techniques described in this manual. To develop the skill required, the operator must become familiar with the construction and features of the lift truck and how they function, the operator must understand its capabilities and limitations, and see that it is kept in a safe condition.

### **Routine Servicing and Maintenance**

Regular maintenance and care of your lift truck is not only important for economy and utilization reasons; it is essential for your safety. A faulty lift truck is a potential source of danger to the operator, and to other personnel working near it. As with all quality equipment, keep your lift truck in good operating condition by following the recommended schedule of maintenance.

### **Operator Daily Inspection - Safety and Operating Checks**

A lift truck should always be examined by the operator, before driving, to be sure it is safe to operate. The importance of this procedure is emphasized in this manual with a brief illustrated review and later with more detailed instructions. HYUNDAI dealers can supply copies of a helpful **Drivers Daily Checklist**. It is an OSHA requirement.

### **Planned Maintenance**

In addition to the daily operator inspection, HYUNDAI recommends that a planned maintenance and safety inspection program (PM) be performed by a trained and authorized mechanic on a regular basis. The PM will provide an opportunity to make a thorough inspection of the safety and operating condition of your lift truck. Necessary adjustments and repairs can be done during the PM, which will increase the life of components and reduce unscheduled downtime and increase safety. The PM can be scheduled to meet your particular application and lift truck usage.

The procedures for a periodic planned maintenance program that covers inspections, operational checks, cleaning, lubrication, and minor adjustments are outlined in this manual. Your HYUNDAI dealer is prepared to help you with a Planned Maintenance Program by trained service personnel who know your lift truck and can keep it operating safely and efficiently.

### **Service Manual**

In-depth service information for trained service personnel is found in Service Manual.

## HOW TO USE THIS MANUAL

This manual is a digest of essential information about the safe operation, the features and functions and explains how to maintain your lift truck. This manual is organized into eleven major parts:

**Section 1. General Safety Rules**, reviews and illustrates accepted practices for safe operation of a lift truck.

**Section 2. Operating Hazards**, warns of conditions that could cause damage to the truck or injury to the operator or other personnel.

**Section 3. Know Your Truck**, describes the major operating components, systems, controls, and other features of your truck and tells how they function.

**Section 4. Operator Maintenance and Care**, presents details on how to perform the operator's daily safety inspection and refuel the lift truck.

**Section 5. Starting and Operating Procedures**, discusses specific instructions on the safe, efficient operation of your lift truck.

**Section 6. Emergency Starting and Towing**, gives instructions for towing your truck in an emergency and for using battery jumper cables to start your truck in an emergency.

**Section 7. Planned Maintenance and Lubrication**, describes the PM (Planned Maintenance) program.

**Section 8. Information for LPG**, explains the method of operating HYUNDAI forklift that is powered by LPG.

**Section 9. Specifications**, provides reference information and data on features, components, and tightening torques.

**Section 10. Troubleshooting**, provides trouble symptoms, causes and methods of remedy.

**Section 11. Testing and Adjusting**, gives instructions for testing and adjusting.

※ The descriptions and specifications included in this manual were in effect at the time of printing.

HYUNDAI reserves the right to make improvements and changes in specifications or design, without notice and without incurring obligation. Please check with your authorized HYUNDAI dealer for information on possible updates or revisions.

The examples, illustrations, and explanations in this manual should help you improve your skill and knowledge as a professional lift truck operator and take full advantage of the capabilities and safety features of your new lift truck.

The first section of the manual is devoted to a review, with illustrations and brief messages, of general safety rules and the major operating hazards you can encounter while operating a lift truck. Next, you will find description's of the components of your specific lift truck model and how the instruments, gauges, and controls operate. Then, you will find a discussion of safe and efficient operating procedures, followed by instruction's on how to tow a disabled lift truck. The later sections of the manual are devoted to maintenance and truck specifications.

Take time to carefully read the **Know Your Truck** section. By acquiring a good basic understanding of your truck's features, and how they function, you are better prepared to operate it both efficiently and safely.

In **Planned Maintenance**, you will find essential information for correct servicing and periodic maintenance of your truck, including charts with recommended maintenance intervals and component capacities. Carefully follow these instructions and procedures.

Each major section has its own table of contents, so that you can find the various topics more easily.

We urge you to first carefully read the manual from cover to cover. Take time to read and understand the information on general safety rules and operating hazards. Acquaint yourself with the various procedures in this manual. Understand how all gauges, indicator lights, and controls function. Please contact your authorized HYUNDAI dealer for the answers to any questions you may have about your lift truck's features, operation, or manuals.

Operate your lift truck safely; careful driving is your responsibility.

Drive defensively and think about the safety of people who are working nearby. Know your truck's capabilities and limitations. Follow all instructions in this manual, including all symbols( ▲ △ ※ ) and messages to avoid damage to your lift truck or the possibility of any harm to yourself or others.

This manual is intended to be a permanently attached part of your lift truck. Keep it on the truck as a ready reference for anyone who may drive or service it. If the truck you operate is not equipped with a manual, ask your supervisor to obtain one and have it attached to the truck. And, remember, your HYUNDAI dealer is pleased to answer any questions about the operation and maintenance of your lift truck and will provide you with additional information should you require it.

## EC REGULATION APPROVED

- Noise level (2000/14/EC and EN 12053) are as followings.

Model	LWA (EU only)	LPA
25/30/33L-9A, 35LN-9A	101 dB	80 dB

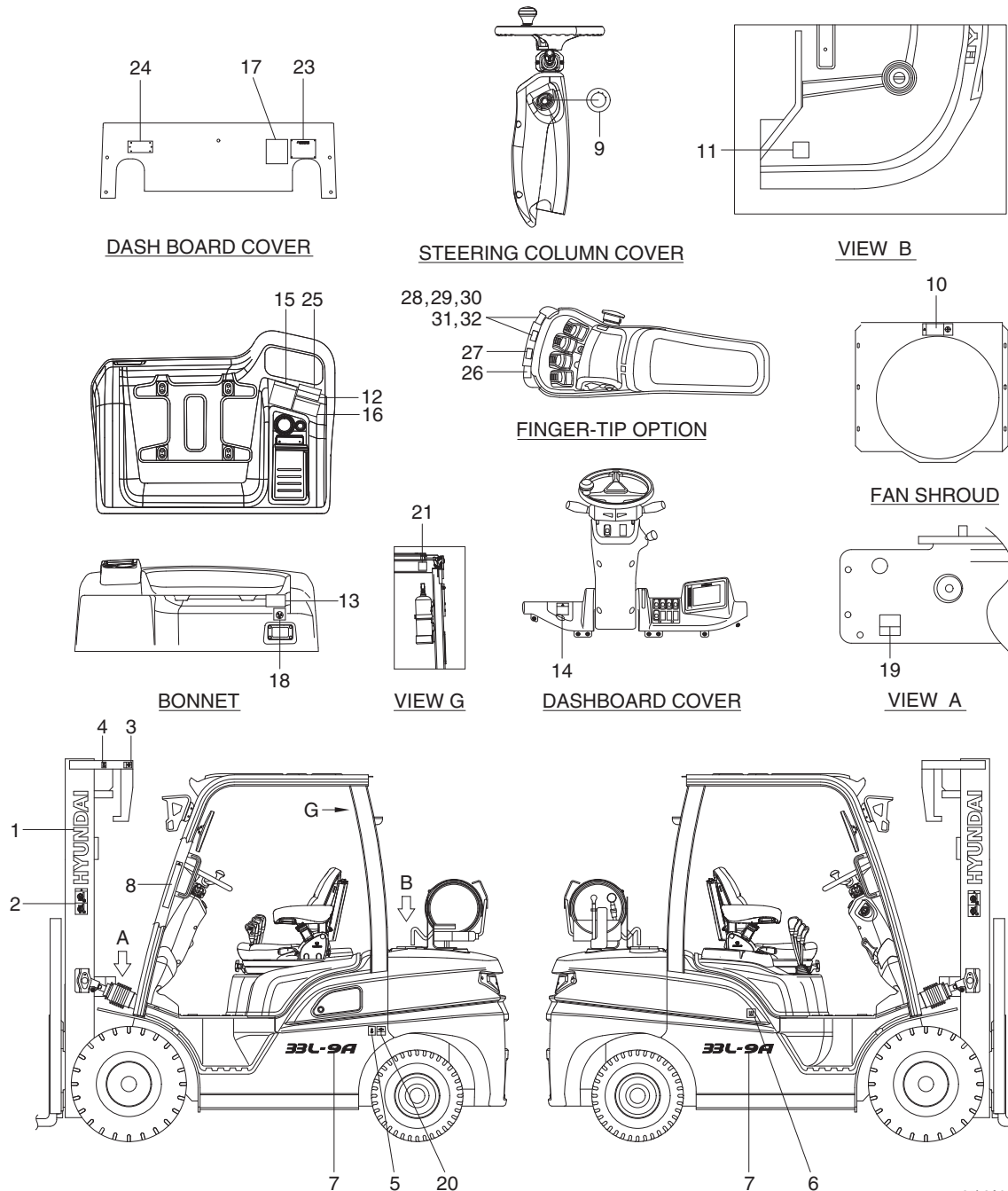
- The value of vibrations transmitted by the operator's seat are lower than standard value of (2005/88/EC)



# SAFETY LABELS

## 1. LOCATION

Always keep these labels clean. If they are lost or damaged, attach them again or replace them with new labels.



25L9A00M101

- |                   |                       |                              |                               |
|-------------------|-----------------------|------------------------------|-------------------------------|
| 1 Logo (HYUNDAI)  | 9 Start key           | 17 Noise                     | 26 Lift (finger-tip)          |
| 2 Mast warning    | 10 Radiator and fan   | 18 Engine room               | 27 Tilt (finger-tip)          |
| 3 Hand caution    | 11 Temperature        | 19 Tire air pressure - front | 28 Side shift (finger-tip)    |
| 4 Hook            | 12 Solid tire         | 20 Tire air pressure - rear  | 29~31 Positioner (finger-tip) |
| 5 Hook            | 13 Parking warning    | 21 Fire extinguisher         | 32 Rotator (finger-tip)       |
| 6 Hydraulic oil   | 14 Brake fluid        | 23 Name plate - CE or UL     |                               |
| 7 Model name      | 15 Load capacity      | 24 Label - UL                |                               |
| 8 Operator safety | 16 Safety instruction | 25 Parking brake             |                               |

## 2. DESCRIPTION

There are several specific warning labels on this truck, please become familiarized with all warning labels.

Replace any safety label that is damaged, or missed.

### 1) MAST WARNING (item 2)

This warning label is positioned on the both side of the mast.

- ⚠ **Never stand or work under the raised forks at any circumstances without supporting with block.**
- ⚠ **In case of working under the forks, it is essential to support the carriage with blocks.**

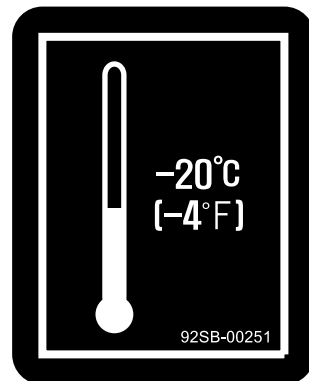


25L7A0OM06

### 2) TEMPERATURE (item 11)

This warning label is positioned on the top left side of the counterweight.

- ⚠ **Coolant must be checked as specified in planned maintenance intervals.**



25L9A0OM10

### 3) HYDRAULIC OIL (item 6)

This warning label is positioned on the side cover of the right hand.

- ※ **Fill only the hydraulic oil.**
- ※ **Do not fill the diesel fuel.**



92AF-00310

### 3) RADIATOR AND FAN (item 10)

This warning label is positioned on the fan shroud of the radiator.

- ⚠ **Never open the filler cap while engine running or at high coolant temperature.**
- ⚠ **It warns of the danger or injury from spinning fan blades when the engine is running. Be sure that you keep your hands, fingers, arms, and clothing away from a spinning fan. Don't stand in line with a spinning fan. Fan blades can break at excessively high rpm and be thrown out of the engine compartment.**

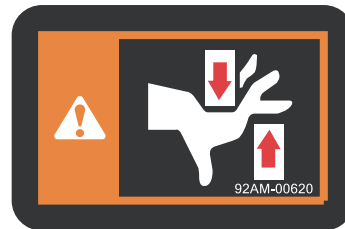


25L7A0OM07

### 4) HAND CAUTION (item 3)

This warning label is positioned on the center side of the mast cross plate.

- ⚠ **It warns of the danger of injury from movement between rails, chains, sheaves, fork carriage, and other parts of the mast assembly. Do not climb on or reach into the mast. Personal injury will result if any part of your body is put between moving parts of the mast.**



35DEOM103

### 5) HOOK (item 4, 5)

This label is positioned respectively on the both top side of mast and near rear tire of the both side of the main frame.

- ⚠ **Refer to page 5-30 for safe loading procedures.**



92AM-00630



## 6) SAFETY INSTRUCTION (item 16)

This warning label is positioned on the top right side of the bonnet cover if the truck is equipped with \*OPSS.

### ▲ Truck for USA or equipped with OPSS is equipped with an operator existence sensing system per ANSI/ASME B56.1-7.21.10 and 7.21.11 or ISO 3691.

- (1) Powered travel movement of the truck shall be possible only if the operator is in the normal operating position.

Transmission will automatically shift to neutral upon the exiting of the operator.

- (2) The forward/reverse lever must be cycled through neutral with the operator in the normal operating position to regain powered direction control.

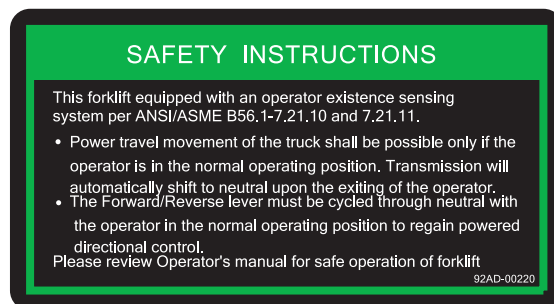
- (3) Control of mast tilting, lifting and lowering is not possible through operation of the appropriate control when the operator is not in the normal position. (Travel and mast OPSS only)

## 7) BRAKE FLUID (item 14)

This warning label is located on the left side of dashboard cover.

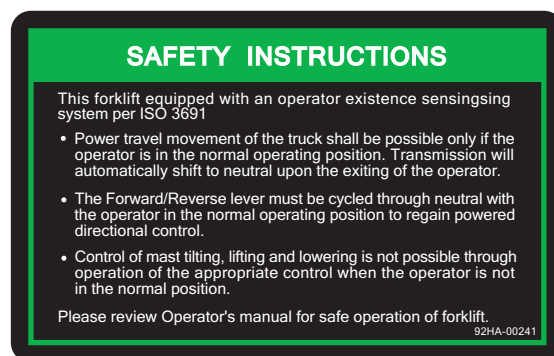
※ Fill the hydraulic oil ISO VG32 or Azolla ZS32 only.

## Travel OPSS



25L7A0OM02

## Travel and mast OPSS



92HA-00241

\* OPSS : Operator Presence Sensing System



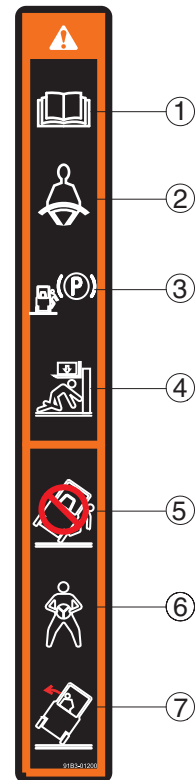
92HN-00881

## 8) OPERATOR SAFETY (item 8)

This warning label is positioned on the front right inside of overhead guard stay.

- ① Read and understand this manual before operating the truck.
- ② Always buckle up the seat belt for safety operation.
- ③ When the operator get off the truck, always press the parking brake switch to LOCK position so that the truck can keep with stopping condition.
- ④ The people should not pass through under forks and other attachments which are lifted or being lifted.
- ⑤ Do not jump down from the truck. It can be caused that the operator have severe injury or death in the event of a tip over.
- ⑥ Outstretch the legs as widely as possible and grasp firmly the steering handle.
- ⑦ Lean the body to the opposite direction in order to avoid severe injury or death when the truck is tipped over.

※ Refer to page 3-3 for details.



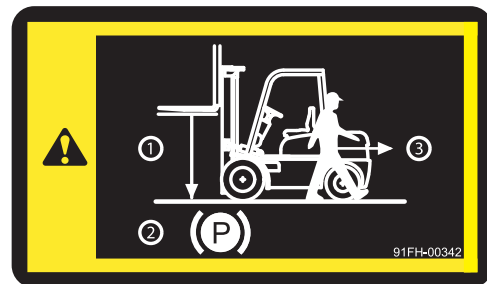
25L9A0OM09

## 9) PARKING WARNING (item 13)

This warning plate is located on the front left side of the bonnet.

- (1) Warning before leaving the operator seat.

- ① Be sure to lower the attachment to the ground.
- ② Apply the parking brake.

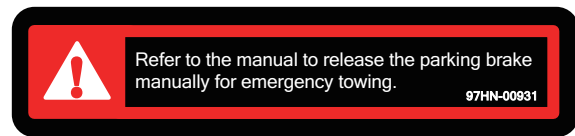


25L9A0OM11

#### 10) PARKING BRAKE (item 25)

This warning plate is located on the top right side of the bonnet.

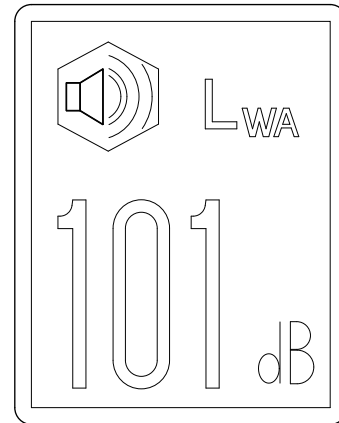
- ※ Refer to the page 6-3 to release the parking brake manually for emergency towing.



97HN-00931

#### 11) NOISE (item 17)

This plate is located on the front side of dashboard.



25G7AFW09

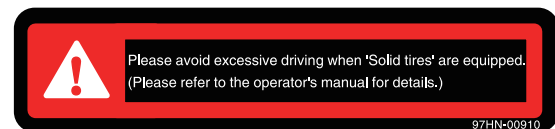
#### 12) SOLID TIRE (item 12)

This decal located on the top right side of the bonnet.

When 'solid tires' are equipped.

- (1) Do not travel more than 25 kph (16 mph).
- (2) Do not travel further than 8 km (5 miles) in an hour.
- (3) Do not travel on the public road.

- ▲ Our warranty does not cover any damages caused by not observing clauses above.



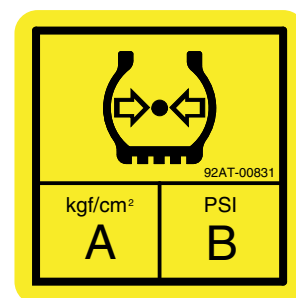
97HN-00910

#### 13) TIRE AIR PRESSURE (item 19, 20)

This label is positioned on the front top of the left and right fender and both side of main frame.

- ▲ Tire pressure must be checked in accordance with planned maintenance intervals.

- ※ Refer to page 5-3 for the regulated tire air pressure (A and B).

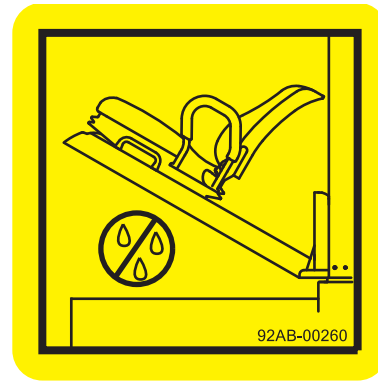


92AT-00831

#### 14) ENGINE ROOM (item 18)

This warning label is located on the front left side of the bonnet.

⚠ **Don't wash the engine room.**



25L7A00M01

#### 14) FIRE EXTINGUISHER (item 21)

This label is located on the rear left inside of the overhead guard stay.

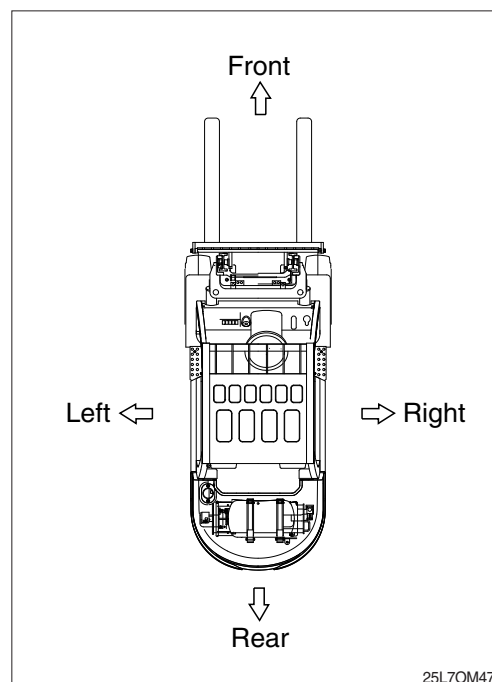
※ **Read and understand the instructions adhered decal on the fire extinguisher.**



91B1-01600

## 1. DIRECTION

The directions of this truck indicate forward, backward, right and left when truck is in the travelling direction.

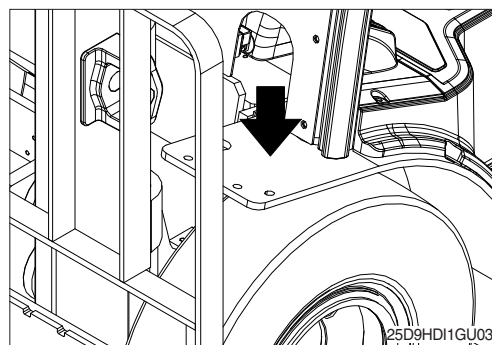


## 2. SERIAL NUMBER

Inform following when you order parts or the truck is out of order.

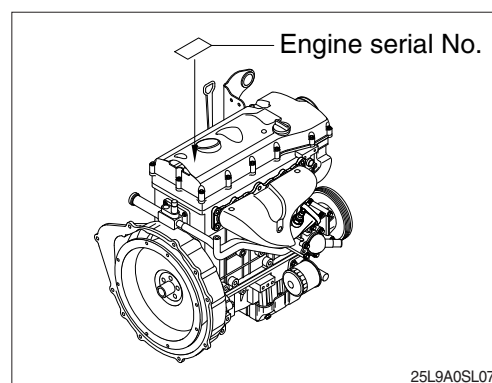
### 1) TRUCK SERIAL NUMBER

It is shown on the left fender.



### 2) ENGINE SERIAL NUMBER

It is shown on the name plate of the engine.



### 3. SYMBOLS

▲ Important safety hint

△ It indicates matters which can cause the great loss on the truck or the surroundings.

※ It indicates the useful information for operator

## EC Declaration of conformity - update 05/01/'10

1. We hereby declare that the following machine comply with the machine directive 2006/42/EC, EMC-directive 2004/108/EC, Non-road mobile machinery emission directive 97/68/EC (amended by 2002/88/EC, 2004/26/EC, 2006/105/EC) and noise emission 2000/14/EC (amended by 2005/88/EC).

Forklifts	Model :	*****
	Serial Nr. :	***

- |                 |   |
|-----------------|---|
| 2. Manufacturer | Hyundai Heavy Industries Co. Ltd.<br>1 Chonha-Dong, Dong-Ku<br>Ulsan<br>The republic of Korea |
|-----------------|---|

Authorized representative :	Hyundai Heavy Industries Europe N.V.
Owner of the technical file for machine production.	Vossendal 11
(TCF : Technical Construction File)	2440 Geel
	Belgium

- |                                     |   |
|-------------------------------------|---|
| 3. Harmonized European directives : | ISO3691-1.3, ISO 20898:2008, EN ISO 2867:2008 |
|-------------------------------------|---|

4. Noise level :

Certain n° :	e13*2000/14*2005/88*0059*08
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Date :	2009-06-17
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Conformity assessment procedure :	Attachment VIII following the periodical inspection on technical extended with "Information on the scope of delivery" by TÜV Rheinland.
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Authorized entity :	Société Nationale de Certification et d'Homologation s.à r.l CE0499 11, route de Luxembourg 5230 Sandweiler Luxemburg
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Engine power :	*** kW
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Guaranteed sound power level :	*** dB (A)
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5. Remarks

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Managing Director

Geel, Belgium

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