



English Version
HBN-H-301-12VER. 1.0

LIFT

HL-32F INSTRUCTION MANUAL



HESHBON CO., LTD.
410-2 Hanjin-Ri, Songak-Myun, Dangjin-Gun Chungnam
Chungnam Republic of Korea

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DECLARATION OF CONFORMITY

according to EN45014(09/1989)

We, HESHBON Co., LTD.
(supplier's name)
410-2 Hanjin-Ri, Songak-Myun, Dangjin-Gun Chungnam, Korea 343-823
Chungnam 343-823 R.O.K
(address)

declare under our sole responsibility that the product

product : Car Lift

Type : HL-2500E, HL-26K, HL-31X, HL-3000N, HL-41G, HL-51G
HL-25H, HL-26P, HL-31S, HL-32S, HL-32F, HL-3300J, 3300W, HL-46H

Serial Number:

(name, type or model, lot, batch or serial number, possibly sources and numbers of items)

to which this declaration relates is in conformity with the following standard(s) or other normative document(s); (title and /or number and date of issue of the standard(s) or other normative document(s))

EN292-1(1991) Safety of machinery-Basic concepts, general principles for design
Part 1 : Basic terminology, methodology

EN292-2(1991) Safety of machinery-Basic concepts, general principles for design

Amd A1(1995) Part 2 : Technical principles and specifications

EN60204-1(1997) Safety of machinery-Electrical equipment of machines
Part1 : General requirement

EN1493(1999) Vehicle Lifts

EN50081-2(1994) Electromagnetic compatibility . Generic emission standard
Part 2: Industrial environment

EN50021-2(1995) Electromagnetic compatibility . Generic emission standard
Part 2: Industrial environment

following the provisions Directive(s);

98/37/EC Directive on the approximation of the laws of Member States relating to
machinery(OJ L207-23.7.98)

73/23/EEC Directive on the laws of Member States relating to electrical equipment
designed for use with certain voltage limits(OJ L76 26.3.73);amended by
Directive 93/68/EEC(OJ L220 30.8.93)

89/336/EEC Council Directive on the approximation of laws of the Member States
relating to electromagnetic compatibility (OJ L139 23.5.89); amended by
Directives, 92/31/EEC(OJ L126 12.5.92)and 93/68/EEC(OJ L220 30.8.93)

Chungnam 343-823 R.O.K. 10.04.2003
(Place and date of issue)

Kwon, Oh-Hyun, President
(name and signature or equivalent marking of authorized person)

Document Revision Guide

Version	Date	Changes	Pages affected
1.0	2/2002	Initial Release	

NOTE TO THE USER

**Thank you for purchasing HESHBON'S
CAR LIFT.**

**Please read this instruction carefully for
safe and proper use of the car lift,
and keep it handy for future reference.**

v This Manual is for model ; HL-32F

1. AS FOR THE ASSURANCE OF SAFETY IN DESIGN AND CONSTRUCTION OF CAR LIFT, READ THIS MANUAL FIRST.
2. PLEASE MAKE SURE THAT THIS MANUAL IS DELIVERED TO END USERS FOR THEIR IMPLEMENTATION OF SAFETY.
3. DON'T USE THE CAR LIFT
IN A POTENTIALLY EXPLOSIVE ATMOSPHERE.

- ANY PART OF THIS PRINT MUST NOT BE REPRODUCED IN ANY FORM WITHOUT PERMISSION.
 - THIS PRINT IS SUBJECT TO CHANGE WITHOUT NOTICE.

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WARRANTY

The warranty period of the Car Lift shall be for a period of one year from the date of delivery to sales agent.

Subject to the limitations set forth below,

Contractor warrants that the Car Lift will be free from defects in material and workmanship and undertakes to, at parts, including repaired or replaced parts, in the which are (1) due solely to defective material and/or poor workman-ship on the parts of contractor and/or its sub-contractors and (2) for which notice there of is duly given to contractor in writing or by FAX. Confirmed in writing within thirty (30) days after discovery of any defects of which claim made hereunder.

This warranty is subject to the following conditions ;

- 1) Car Lift shall be properly used and operated by the company's operator solely in accordance with the specifications and operating instruction provided by contractor.
- 2) This warranty shall not be constructed to cover any defects due to ;
 - Normal wear and tear;
 - Bad operation and maintenance not in accordance with the operating and maintenance manuals to be provided by contractor;
 - Operation under conditions more severe than those in the specification and drawings;
 - Change in design or other modification by company without contractor's consent;
 - Movement or transfer without contractor's consent;
 - Consumable items in normal operating;
 - Any other carelessness not attributable to contractor.

Contact your sales agent for warranty coverage.

HESHBON CO., LTD.

410-2 Hanjin-Ri, Songak-Myun, Dangjin-Gun Chungnam, Korea

Tel) INT+ 82 41 351 3592

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CHAPTER 1. SAFEGUARDS

Please read carefully this chapter first for safe and proper use of the car lift. This company will not be held responsibilities for any injuries or accidents which occur due to the car lift being operated without having understood the contents of the instruction manual. Keep the Instruction Manual close to the car lift so that anyone can refer to when necessary.

Also, designate a person to take care of the manual.

1-1 Important Notices

Car lift must be considered to be a potential hazard to the health and safety of the car lift's operator and service personnel. It is important that this car lift is installed, maintained and operated according to the instructions set out within this manual.

This is a responsibility imposed on the customer by the EU Council Directive 89/655/EEC, concerning the minimum safety and health requirements for the use of work equipment by workers at work.

Any modification, alternation or addition to the car lift or the fitting of ancillary equipment must comply with the EU Council Directive(s). HESHBON can not accept any liability whatsoever, which may result in legal action from failure to comply with the regulations, or any consequential loss, claim or counter claim for damage, personal injury, or death arising as a result of any modification, alteration or addition to the fitting of ancillary equipment.

EU Council machinery Directive 98/37/EC.

The above machinery directive requires all new machinery to carry the CE mark, declaring conformity with all relevant EN standards in respect of safety systems and car lift construction.

All HESHBON carry the CE mark and thus conform with the EU Directives. Any modification to the car lift may invalidate the original CE certificate, and therefore always refer to HESHBON as reassessment may be required.

This document provides the information required for the intended use of car lift. The documentation is written for technically qualified personnel such as engineers or maintenance specialists who have been specially trained and who have the specialized knowledge required in the field of industrial machinery.

A knowledge of the safety instruction and warnings contained in this document and their appropriate application are prerequisites for safe installation and commissioning as well as safety in operation and maintenance of the car lift described. Only qualified personnel have the specialized knowledge that is necessary to correctly interpret the general guidelines relating to the safety instructions and warnings and implement them in each particular case.

For the sake of clarity, not all details of all versions of the product are described in this documents, nor can it cover all conceivable cases regarding installation, operation and maintenance. Should you require further information or face special problems that have not been dealt with insufficient detail in this document, please contact the manufacturer specified on cover page.

We would also point out that the contents of this product documentation shall not become a part of or modify any prior or existing agreement, commitment or legal relationship. The purchase agreement contains the complete and exclusive obligations of HESHBON Co., Ltd. Any statements contained in this document do not create new warranties or restrict the existing warranty.

1-2 Qualified Personnel

Persons who are not qualified should not be allowed to handle the car lift. Non-compliance with the warnings contained in this document or appearing on the car lift can result in severe personal injury or damage to property. Only qualified personnel should be allowed to work on this car lift.

Qualified persons as referred to in the safety precautions in this document as well as on the car lift itself are defined as follows:

- Operating personnel who have been trained work with the car lift and are conversant with the contents of the documents in as far as it is connected with the actual operation of the car lift;
- Service personnel who are trained to repair such the car lift and who are authorized to energize, clear, ground and tag circuits, equipment and systems in accordance with established safety practices.

1-3 Danger Notices

The safety precautions in this manual are classified into the following four levels. Please be particularly careful when performing operations that have a high degree of danger.

DANGER : Failure to follow this safety precaution may result in a great physical danger to the operator, or even death.

CAUTION : Failure to follow this safety precaution may result in a great physical danger to the operator, or severe damage to the car lift.

WARNING : Failure to follow this safety precaution may result in an injury to the operator, or damage to the car lift.

NOTICE : Failure to follow this safety precaution may result in a damage to the car lift.

1-4 Principle safety objective

- 1) The principle safety objective is to remove the possibility of any hazard or risk to the health or safety of the car lift's operator or service personnel.
- 2) Extreme caution must be exercised while servicing or installing the car lift.
- 3) The only safe policy when working or inspecting the car lift is to follow the instructions in this manual. Wherever possible shut off all electrical power and follow the procedures outlined in this manual.
- 4) Accident prevention should become part of the standard working, operating and maintenance procedures, and training should be provided to ensure safety standards are understood. Part of safety training should include the instructions detailed in this section.
- 5) If ancillary equipment is to be fitted ensure this is done in accordance with the relevant standards or EU Directives, and that all requirements for safety are fully met.
- 6) Always ensure servicing and maintenance tasks are carried out by suitable qualified personnel. The operator should understand the limits of their responsibility, and the training should reinforce the importance of not exceeding them.
- 7) The essential routine safety checks have an important function in ensuring the car lift continues to work in a safe manner. These checks must be carried out according to the instruction and at the recommended intervals.
- 8) If there are any questions or doubts regarding any aspect of car lift safety or operation or maintenance, please contact the company shown on the front of this manual.



1-5 Safety notices

To protect the operator or service personnel from any injuries or accidents during operating the car lift, please read this section and carefully for safe and proper use of the car lift.





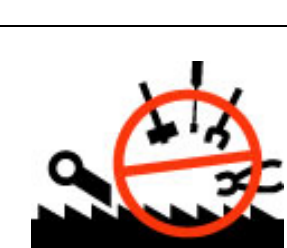

● General Safeguards







1. Please read carefully this instruction manual for safe and proper use of the car lift.
 2. Only qualified personnel should be allowed to work on this car lift.
 3. Checking before operation and routine inspection should be carried out in accordance with the procedures described in the manual.
 4. When the abnormal condition not specified at this instruction manual is occurred during operating, stop the operation of car lift and contact the manufacturer specified on cover page or distributor.
 5. This car lift should be only for repairing the car.





● Danger Notices

DANGER	
	<p>Do not move under the vehicle while the lift is being Operated.</p> <p>(Accident will cost you your lift or serieous injury)</p>
	<p>Move to sate place when the vehicle is likely To fall off.</p> <p>(Accident will cost you your lift or serieous injury)</p>

● Caution Notices

CAUTION	
	<p>Operation of this lift is allowed for the one who fully Understands how to operate. (Incorrect operation will lead unexpected accidents.)</p>
	<p>Clear the floor under the vehicle when you are Lifting down the vehicle. (The vehicle may fall off)</p>
	<p>Do not shake the vehicle on the lift too hard. (The vehicle may fall off)</p>
	<p>Do not have the lift tilted when you lifting up the vehicle. (Make the balanced. The vehicle may fall off or may be damaged. The lift also may be broken.)</p>
	<p>Never change or modify the safety device. (When the safety device does not function, serious accident may occur.)</p>
	<p>During lowering the lift, be careful to not put foot under a table. Serious injury may be happened.</p>

CAUTION	
	Do not operate the push button except the worker.
	Do not operate a damaged lift.
	Authorized personnel only in lift area.
	Make sure the driver apply the hand brake after he Drivers the vehicle driven on the lift. Operate the lift after the driver is off the vehicle. (The vehicle may fall off when the lift goes up and down.)
	After rising the machine, please operate with safety Equipment.
	High voltage! Beware of electric shock when you Open the operation line or control line. (You may get killed or seriously wounded.)

CAUTION	
	<p>Read this manual carefully before you operate the lift.</p> <p>(Violation to the warning may cause serious accident.)</p>
	<p>Drive the car onto the lift well-balanced.</p> <p>(The vehicle may fall off when the lift is shaking or when you assemble or disassemble a part.)</p>
	<p>Proper maintenance and inspection is necessary for safe operation.</p>
	<p>Set the base correctly before you install the lift.</p> <p>Incorrect setting may cause the lift broken.</p>

● Warning Notices

WARNING

Use the lift after reading carefully the instruction manual and understand the contents of them for safe and proper use of the car lift.

< During preparation>

1. This Lift is only for repairing the car. Do not use for other purpose.
2. Do not use the lift whenever any one of safety devices is not normally operated.
3. When the car is entered into the lift or gone out from the lift, please drive a car smoothly without the sudden stop or drive.
4. Be careful to not slide when a tire or arm is wet.

< During lifting and lowering the lift>

5. During moving up or down the lift, you should always watch the car without looking at something else.
6. If several lift are installed, the respective allocation of the switch shall be clear.
7. Do not move up a car exceeding the rated capacity of the lift.
8. Do not lift a car with persons or other load.
9. Check if oil or foreign material is in the arm.
10. Move up the lift after checking if the car is properly positioned.
11. Stop the operation of lift when the lift is reached to the limited height.
12. When the lift moves up or down, wait for 1 ~ 2 seconds before the next operation is carried out.
13. Be careful to not shake the car during lifting and lowering the lift. If the car settling to one side, stop immediately the operation of lift.
14. If the lift is not lowered in spite of pressing a down switch, move up the lift and then press the down switch again.
15. After the lift is completely moved down, the car should be entered into the lift or gone out from the lift.

WARNING

16. When the lift is moved up and down, prohibit the unauthorized persons from accessing to the lift.

17. Do not operate the lift with which a tool or component puts into the driving parts of the lift.
The lift may be broken, or a car may fall down.

18. During lowering the lift, check if the person or an object is around the lift or car.

< During repairing the car >

19. Check if the safety lock device is properly operated before operation.

20. Prohibit the unauthorized persons from accessing to the lift.

21. When the operator is not in the lift for a long time, or the lift is not operating, lower completely the lift.

< Other >

22. Do not change or modify the lift without permission.

If the lift is modified or changed, the lift may not fulfill its function, or serious accident may be happened.

23. When you find the fault of lift during using or checking the lift, stop the operation of lift, and request the maintenance to the sales agency.
Do not use the lift until the lift is repaired.

24. Please note that this lift is not designed for water-proof.
Do not use the lift in the hot place, car-washing use or outdoor use.

1-6 Essential Safety Checks (ESC's)

The essential safety checks are the most important part of the operators responsibility. The purpose of the ESC's is to ensure the safety features of the car lift are functioning properly, and thus the car lift is in a safe condition for use.

In addition to the operator it is recommended that regular additional ESC's are carried out by the responsible person and that a record is maintained in accordance with the EU machinery Regulations.

If any of the ESC's are in the "Fail" condition do not operate the car lift, immediately notify the responsible person within the company and contact the manufacturer as soon as possible.

ESSENTIAL SAFETY CHECKS (ESC'S)

GROUP 1 GENERAL – Visual Inspection

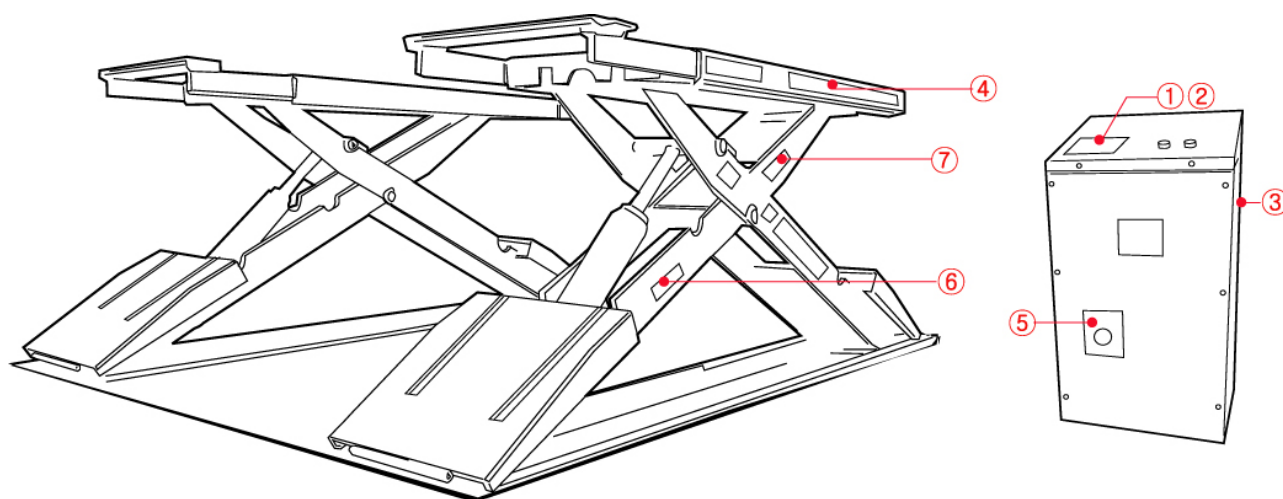
ESC	Description	O.K.	Fail
1A	Machine guarding		
1B	Electrical system including protective earth grounding		




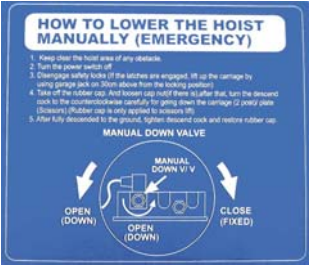


GROUP 2 Electrical isolator switch

Set the electrical isolator switch to OFF position and check the following conditions.

ESC	Description	O.K.	Fail
2A	All functions have been disabled		

1-7 Safety signs and Warnings location




NO	Warning Label
1	 <p>Read this manual carefully before you operate the lift. (Violation to the warning may cause serious accident)</p>
2	 <p>High voltage! Beware of electric shock when you open the operation line or control line. Be careful of your foot.</p>
3	
4	
5	
6	 <p>DANGER 위험 Moving Machinery risk of trapped / hand/fingers 이동식 승강기 손가락 끼임 위험</p>
7	 <p>DANGER 위험 Moving Machinery risk of shearing / crushing hazards 이동식 승강기 발가락 끼임 위험</p>

1-8 Illumination

This machine is not provided with a local lighting since it is designed for indoor use only. The sufficient illumination of the working area must be fulfilled by the factory in accordance with the appropriate code of practice and factory regulations. Minimum 300 lx is required. Flicker, dazzling, shadows and stroboscopic effects must be avoided to prevent a risk.

1-9 Level of sound pressure

The equivalent continuous A-weighted sound pressure levels of car lift do not exceed 85dB (A).

 WARNING	The factory must provide operator(s) with the appropriate measures including but not limited to an ear protection and a warning sign(s) if the sound pressure of 85dB (A) is exceeded.
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1-10 Training

Contact the manufacturer specified on cover page for information on training courses to aid you in becoming familiar with this car lift.

CHAPTER 2. OVERVIEW OF MACHINE

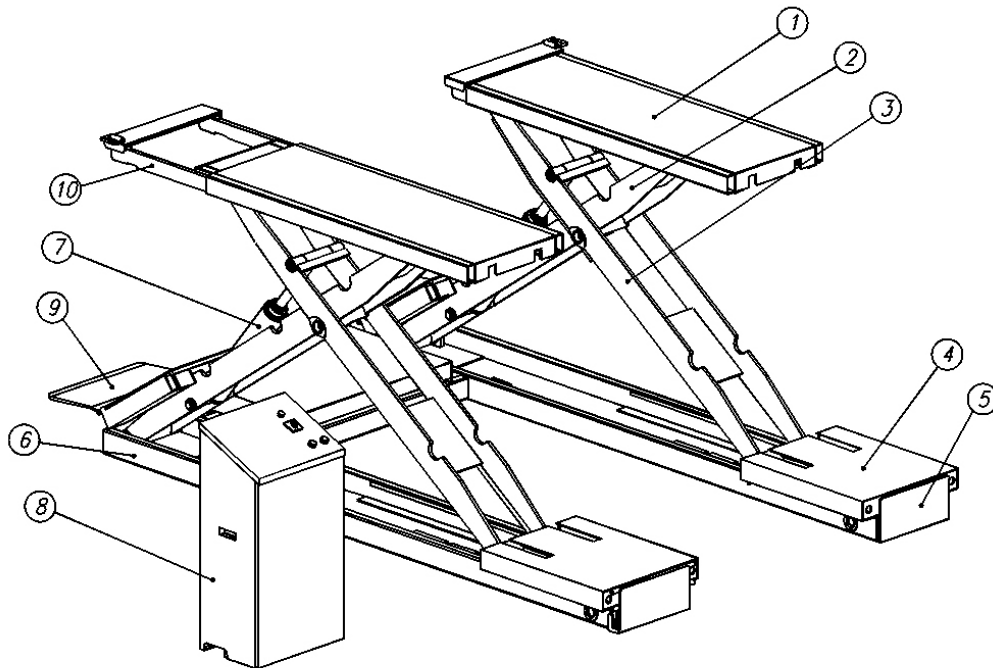
HL-32F is the stationary scissor lift with a 3ton rated capacity which are designed to raise vehicles totally, for the purpose of examine and working on or under the vehicles whilst in a raised position

2-1 Specification

The rated Capacity		3,000Kg
Overall Max. Height		FL+ 1,800 mm
Min. Height		FL – 265 mm
Min. Runways Height		1,800 mm
Lifting Time		Approx. 40~60 sec.
Lowering Time		Approx. 25 sec.
Standard Motor		1ph : 2.5HP, 220V/50/60HZ 3ph : 2HP, 220V/380V/50/60HZ
Dimension	Dimensions(Outer Width X Inner Width X Length)	1,900 X 1,000 X 3,680mm
Net Weight		920Kg

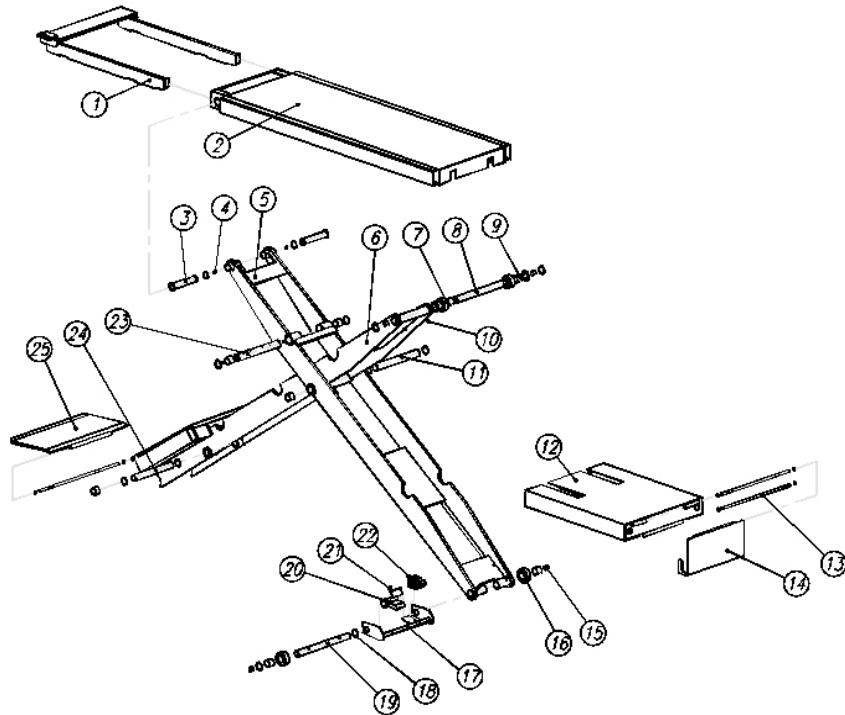
2-2 Description of construction

2-2-1 Assembly Drawing



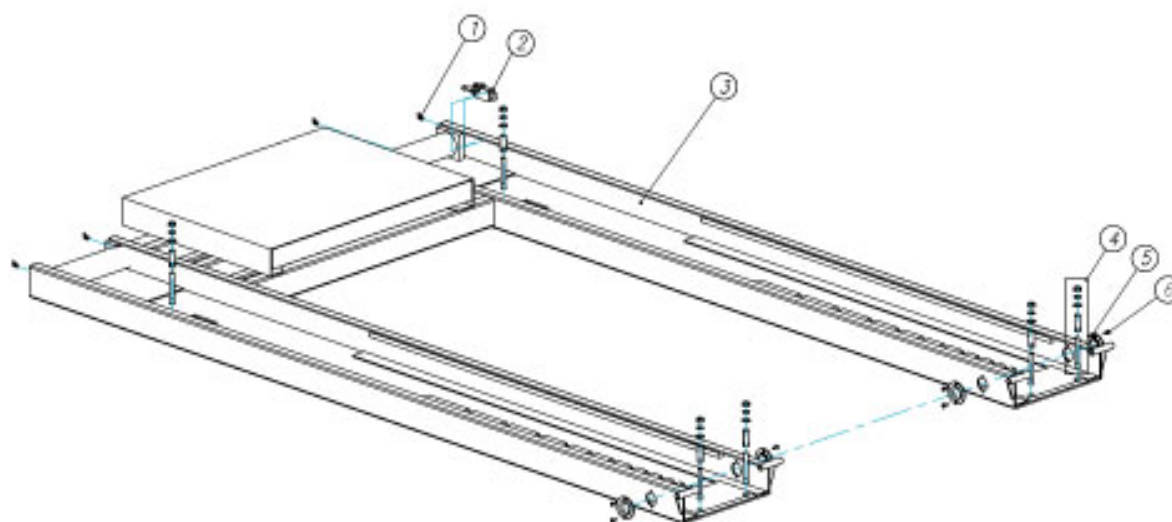
1. MAIN BOARD	6. BASE
2. LINK 1	7. CYLINDER
3. LINK 2	8. CONTROL BOX
4. FLOOR PLATE	9. BASE RAMP
5. CONNECTING PLATE	10. SLIDER

2-2-2 Construction of Main board, link & ramp



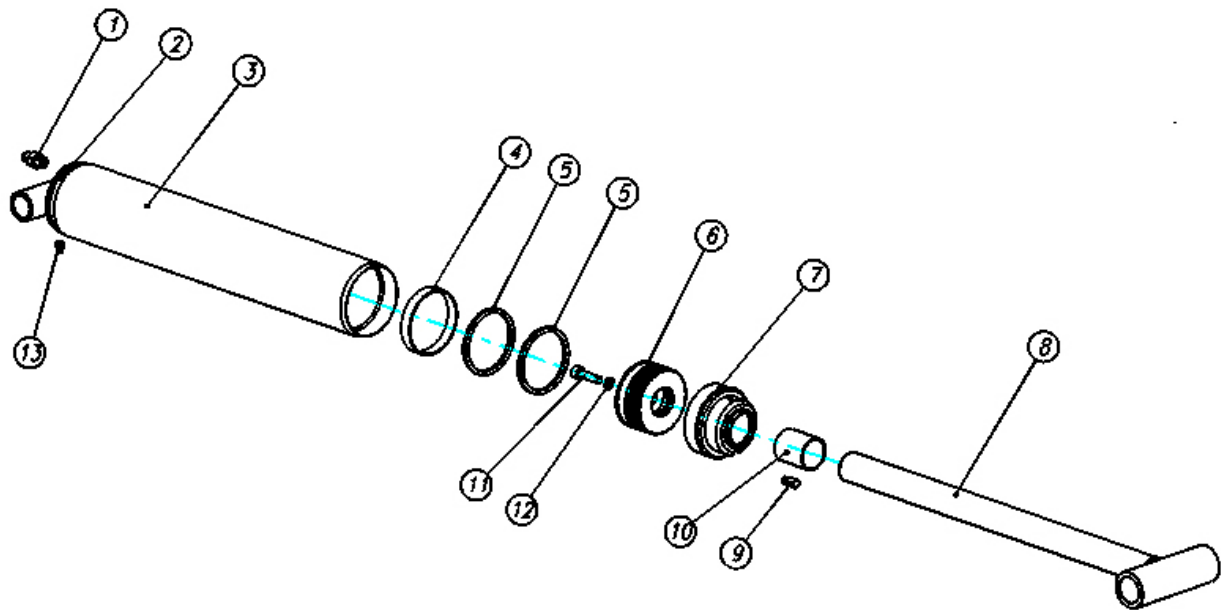
1 : SLIDER	10. LOCKING BOLT	19. LINK 2 LOWER PIN
2 : MAIN BOARD	11. LINK CENTER PIN	20. SAFETY LOCKER
3 : LINK 2 HIGH PIN	12. ASSISTANCE RAMP	21. OIL CAP
4 : GREASE NIPPLE	13. RAMP PIN	22. LOCKER SWITCH
5 : LINK 2	14. CONNECTING PLATE	23. CYLINDER HIGH PIN
6. LINK 1	15. PIN GUIDE	24. CYLINDER LOWER PIN
7. HIGH ROLLER	16. LINK 2 LOWER ROLLER	25. FLOOR PLATE
8. LINK 1 HIGH PIN	17. LOCKER SWITCH GUIDE	
9. OILESS BEARING	18. SNAP RING	

2-2-3 Construction of Base



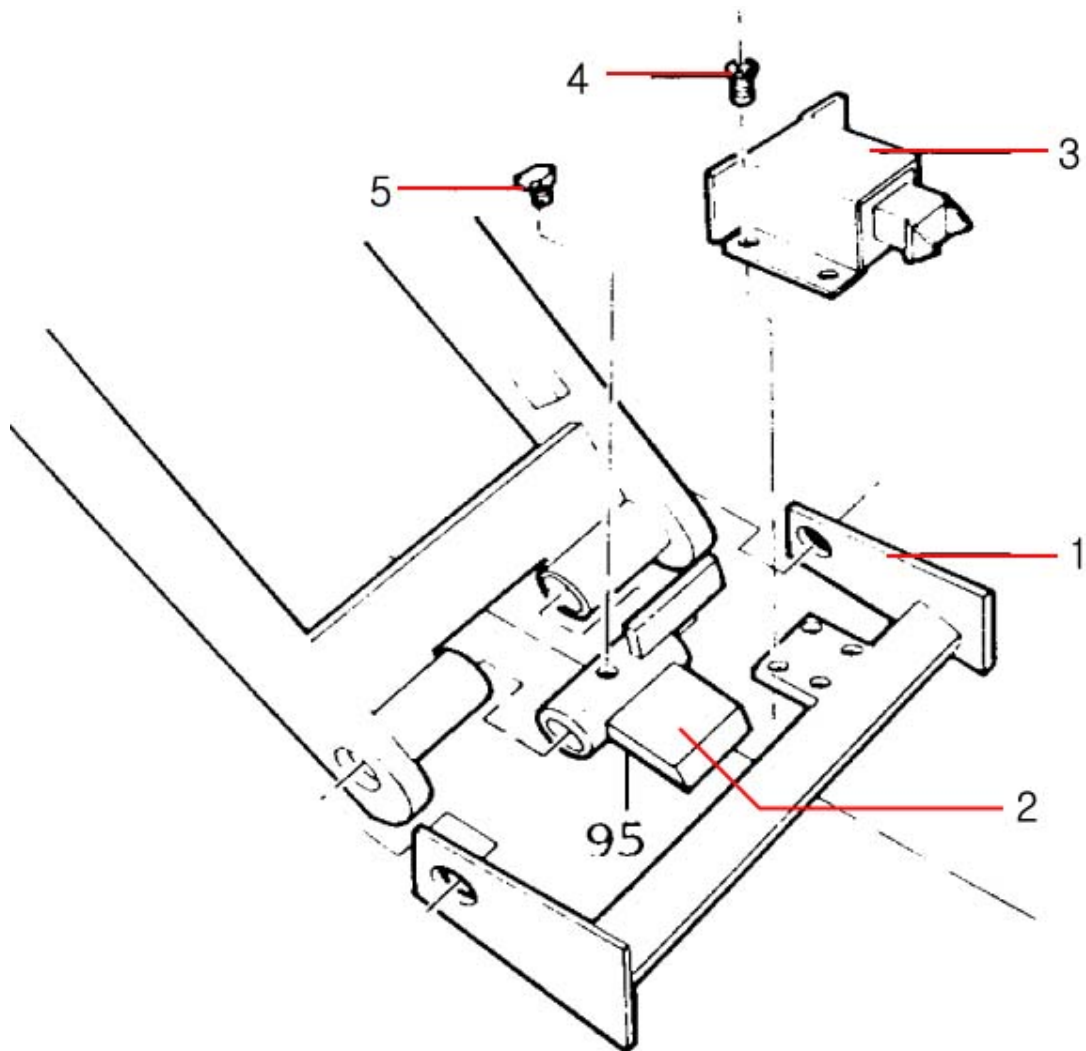
1 : BEAM COVER
2 : LIMIT SWITCH
3 : BASE BODY
4 : ANCHOR BOLT
5. BASE PIN COVER
6. TRUSS HEAD BOLT

2-2-4 Construction of cylinder



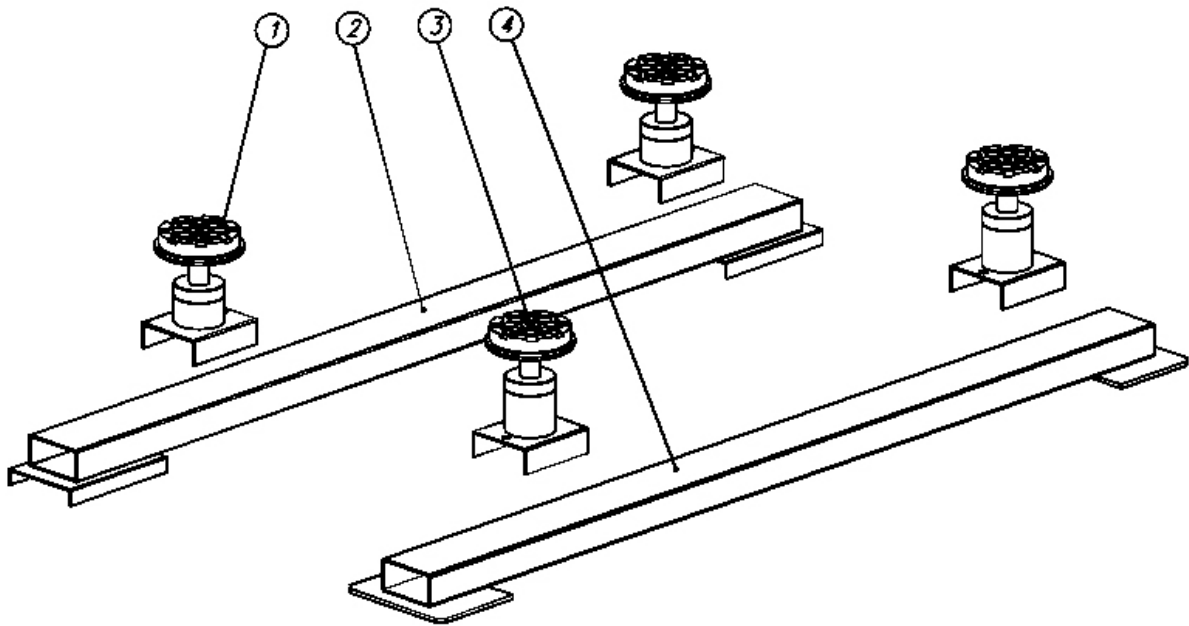
1 : OIL NIPPLE (ST)	8. ROD BAR
2 : TAIL COVER	9. SILENCER
3 : CYLINDER	10. OILESS BEARING
4. WEAR RING	11. WRENCH BOLT
5 U-PACKING	12. SPRING WASHER
6. PISTON	13. GREASE NIPPLE
7. HEAD COVER	

2-2-5 Construction of safty Device



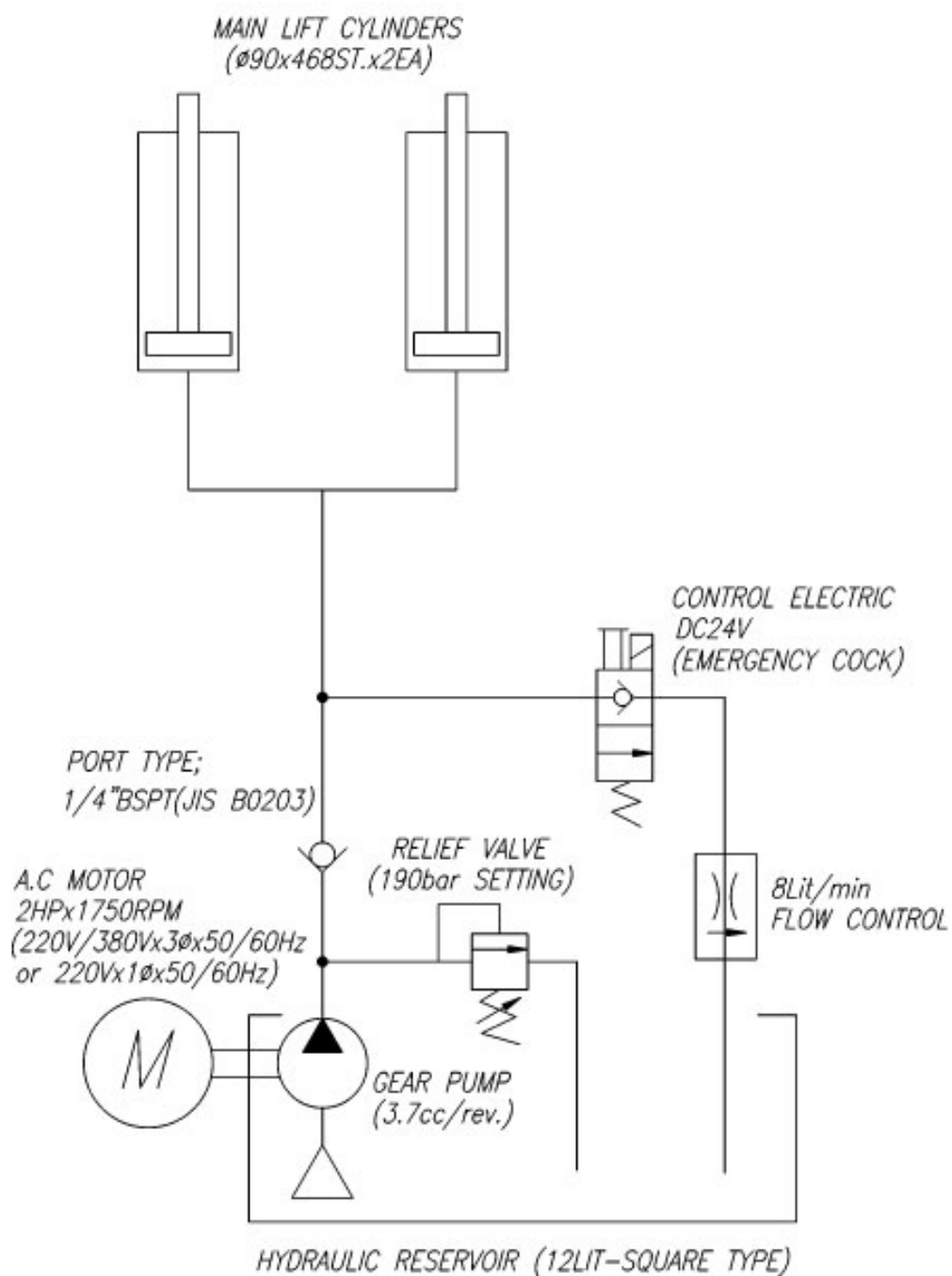
1 : Solenoid Guide
2 : Stopper
3 : Solenoid
4 : Round Head Bolt
5 : Oil Cap

2-2-6 Construction of Extension

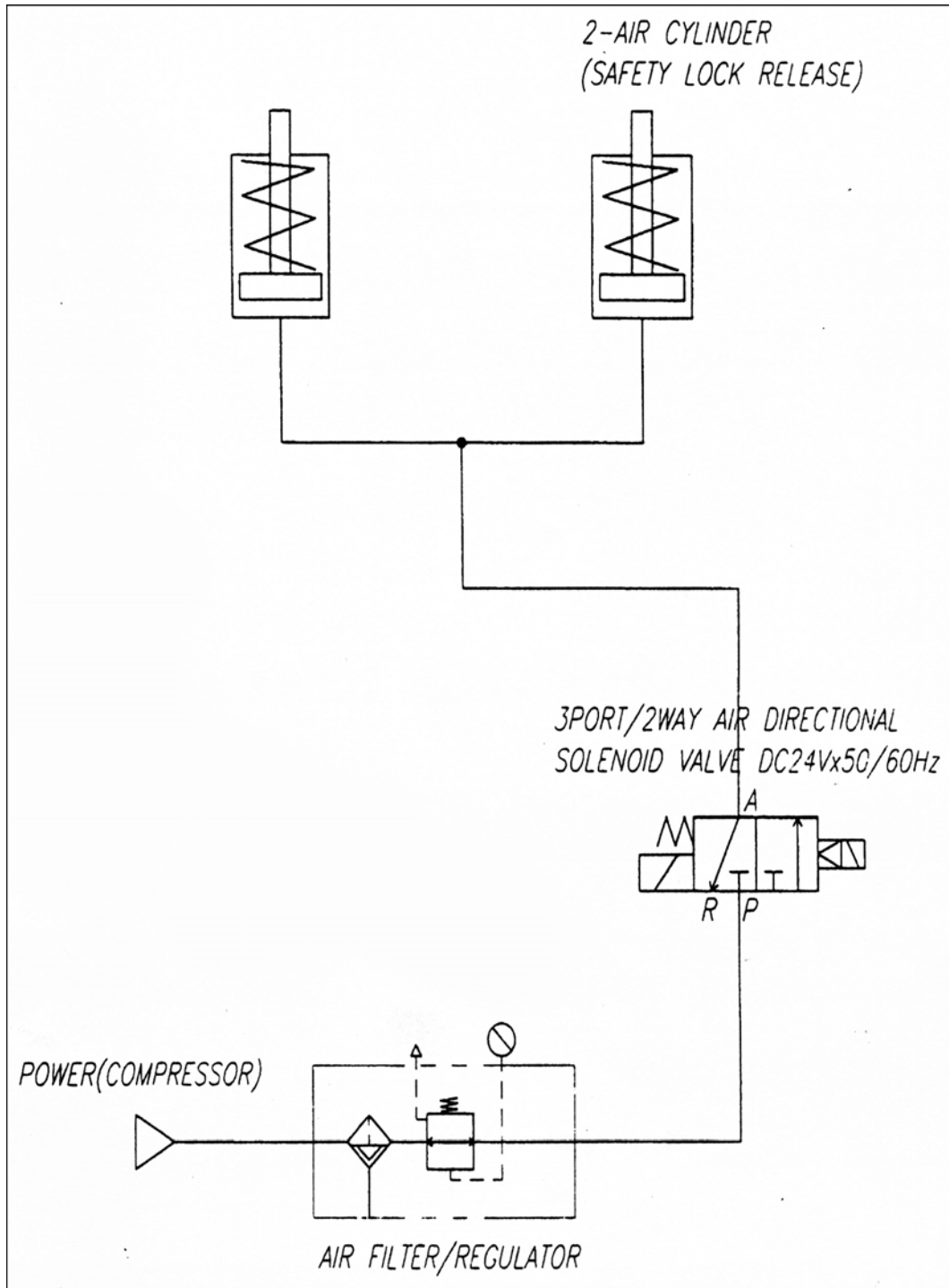


1 : LONGER ADAPTOR	OPTION
2 : CROSS BEAM 1	OPTION
3 : HIGH ADJUSTABLE POLE	OPTION
4 : CROSS BEAM 2	OPTION

2-2-7 Hydraulic Circuit

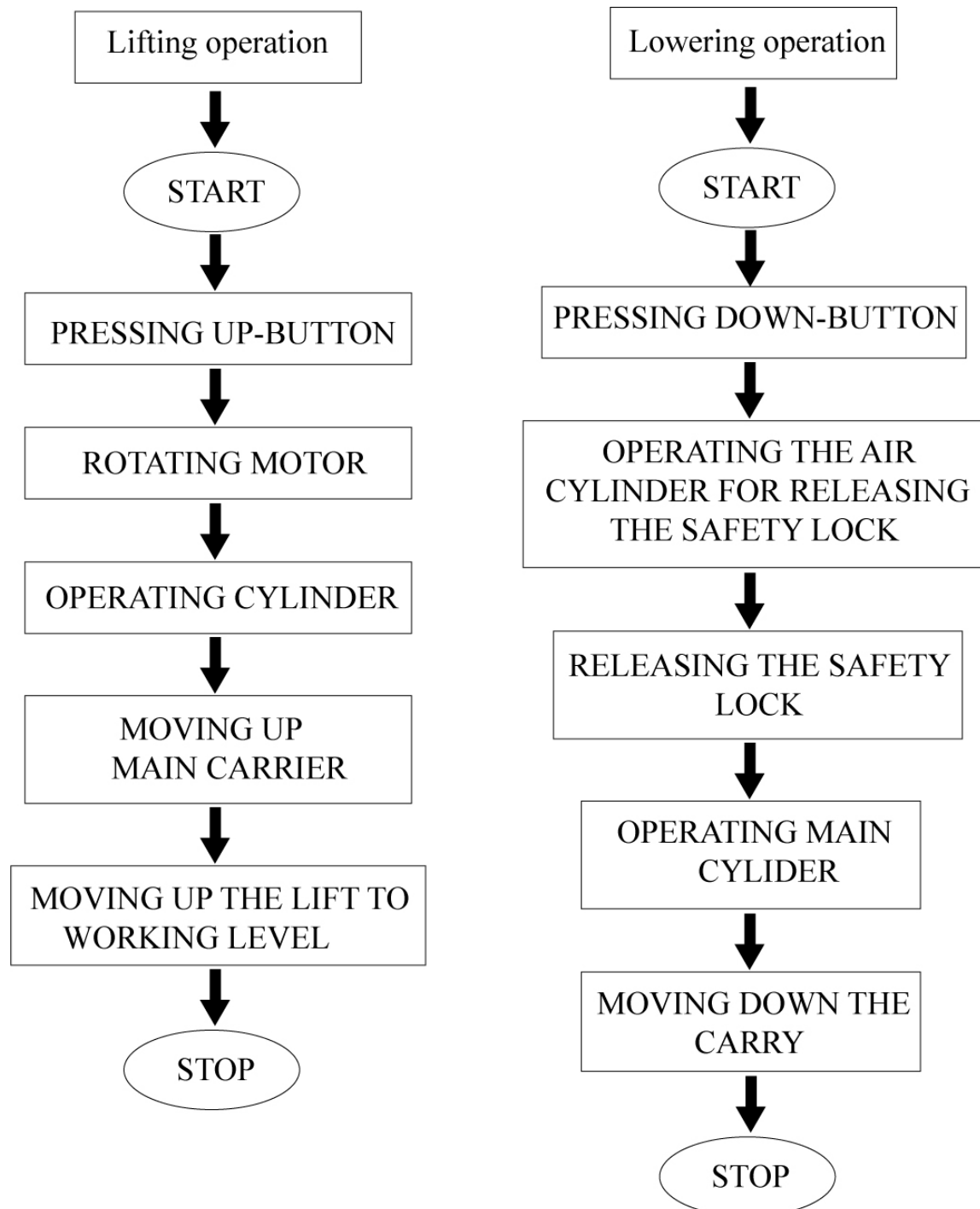


2-2-8 Pneumatic Circuit



2-3 Description of operation

The lifting, lowering or stopping of lift is carried out by pressing the switch on the control box. The followings are the flowchart for operation.



2-4 Safety device

The following safety devices are installed at this lift.

Device	Description
Safety Lock	The safety lock is attached to the side of cylinder and protects the lowering of lift when an hydraulic oil is leaked or hydraulic circuit is damaged. The safety lock is not operated in the range of low height without the lock. (Safety lock is possible to operate at height more than 260mm.)
Check Valve	The check valve protects the lowering of lift by maintaining the hydraulic pressure of lift during lifting

CHAPTER 3. TRANSPORTATION AND INSTALLATION

This chapter explains how to install your lift. Always read it ahead of time, even when the lift is installed by HESHBON Co., Ltd. or the place of purchase. Please refer to this chapter when you re-locate your lift

3-1 Preparation for installation

< Before Installation >

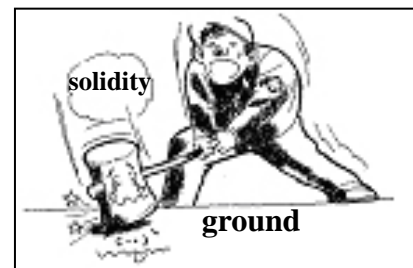
This is a lift that has been made precisely by the advanced technologies and unique features of HESHBON not known to other engineers. Therefore, for higher reliability, it must be installed by our engineer or local representative or under the witness of our staffs or local representative to ensure the safe use for a longer time. This is also true when you re-locate your lift.

< Installation Place >

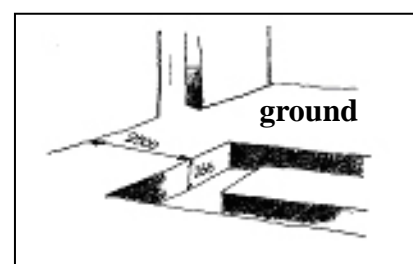
- 1) The lift should be installed on a solid concrete and its strength should be at least 15KN/m² or stronger. And, anchor bolts should withstand a strength of at least 8 KN/m².
(The load strength of surface under the post shall have more than 350KN/m²)

- 2) When a gaps at the post or surface to be installed are made by adjusting the horizontality during installation, be sure to fill the | gaps in wet cement and mortar.
(This job must be carried out by the user.)

1. The ground on which the lift will be installed should be flat and solid.
(The thickness of concrete should be 150mm or more. Be sure to install a water drainage system when installing the lift outdoor.)



2. For installation, the ground should be dug about 265mm. The installation ground should be separated by the distance of 2500~3000mm from the front side wall.
(The length of vehicle's hood should be considered.)



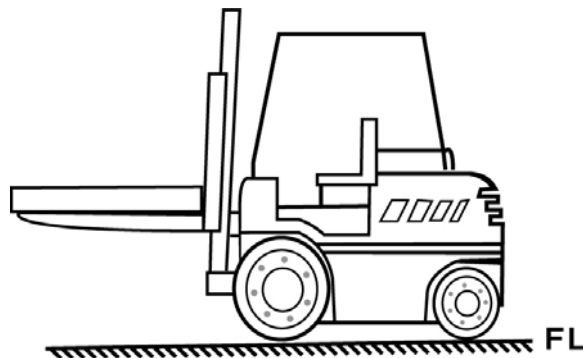
3-2 Precaution during installation

- 1) Maintain the lift about 1m or more away from the wall in order to ensure the sufficient work space.
- 2) Do not change the specifications(lifting or lowering speed, and pressure) that have been pre-set at the factory.
- 3) Do not install the lift at outdoor. When the lift is installed at outdoor under unavoidable circumstances, the cable entrance of control panel should be water-proofed.

3-3 Transportation

The lift is packaged in a wooden box at the factory. After the lift is arrived at the installation site, transport the product to the installation location in accordance with following procedure.

- 1) Machine should be transported to installation place by forklift car.

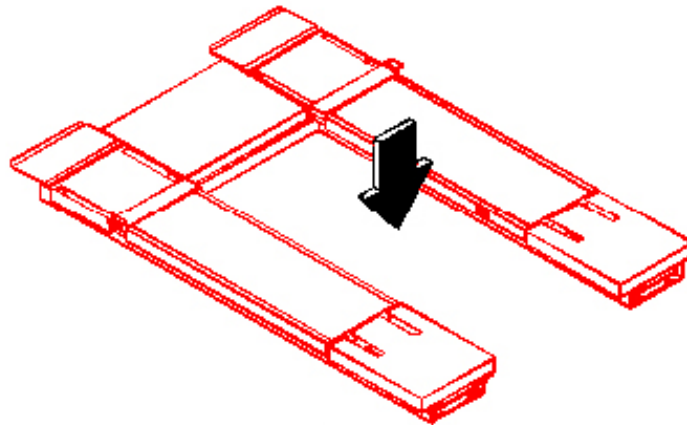


- 2) Unloading and unpacking

Referring the packages to the packing list and assembly drawing, carry them into the installation site in order. It is to be desired that packages should be unpacked at the final installation place wherever practicable. Reinforced materials are usually fitted with this machine so as to protect parts against damages on the way of transportation. Make sure not to remove them until the installation work starts.

- 3) Checking accessories and spares

Check that all accessories and spares are provided when unpacking the lift. Check all accessories and spares against the provided packing list. When you ordered optional equipment, check the equipment against Contact HESHBON CO., LTD. immediately if any parts is missing or damaged

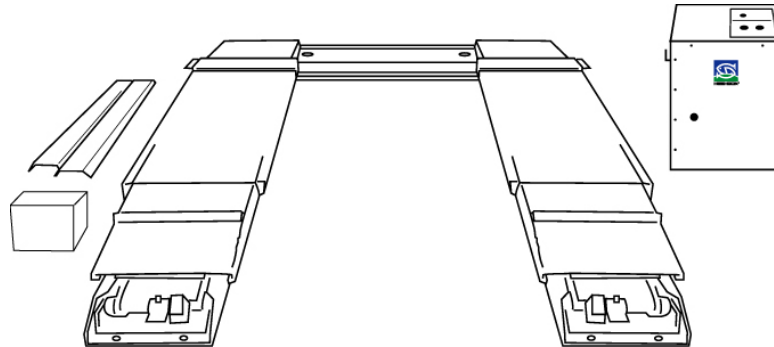
3-4 How to operate the lift

- (1) Press Down button on the control panel to move down the main board on the ground.
- (2) Clear the obstacles around the lift so that the vehicle can move onto the board.
- (3) Drive the vehicle onto the lift, placing the center of the weight to the center of the lift.
Apply side brake before the driver gets off, and then adjust the extension if required before moving the vehicle up.
- (4) If extensions are required, place 4 supports in proper positions before you move up the main board to the required height.
- (5) Make sure everything is in normal status before you start your job.
- (6) Make sure the main board is completely down on the ground before you drive off the vehicle.

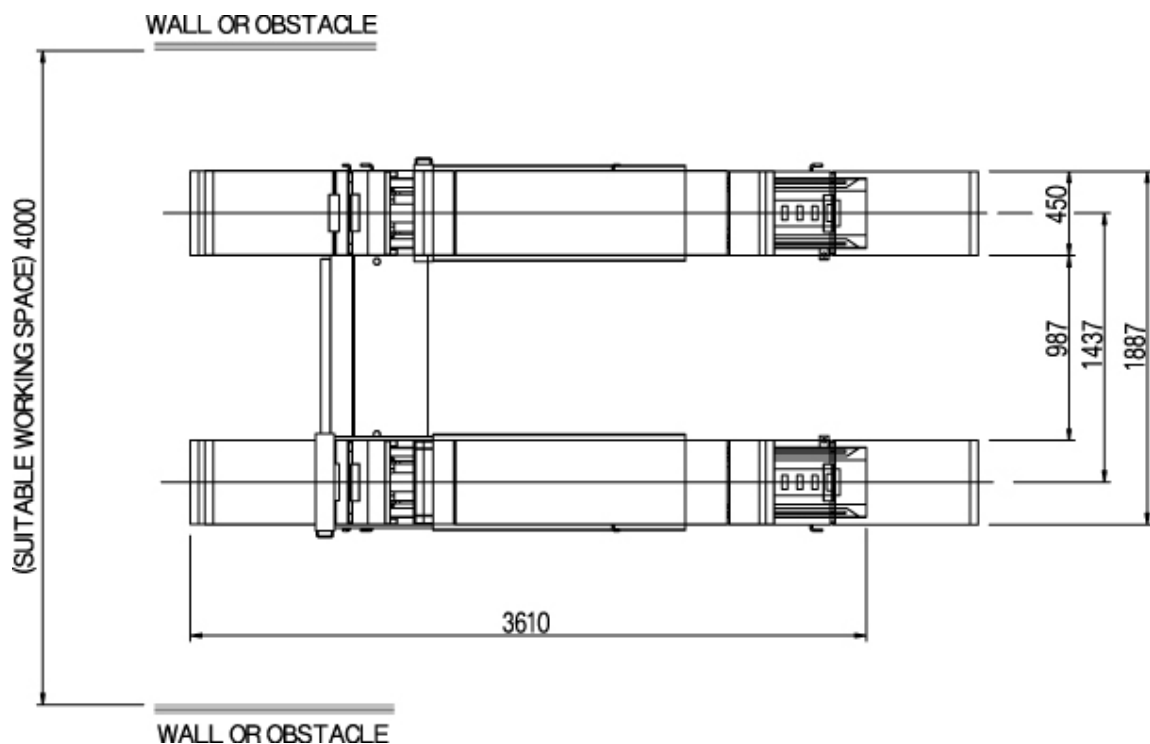
3-5 Installation

The installation should be carried out in accordance with the following procedures

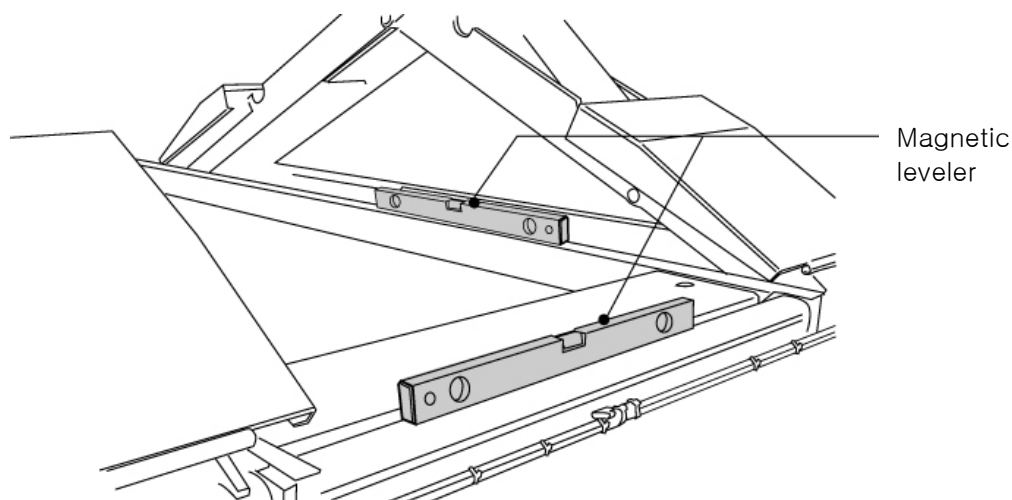
1. After checking the parts, prepare them to the installation site as follows:



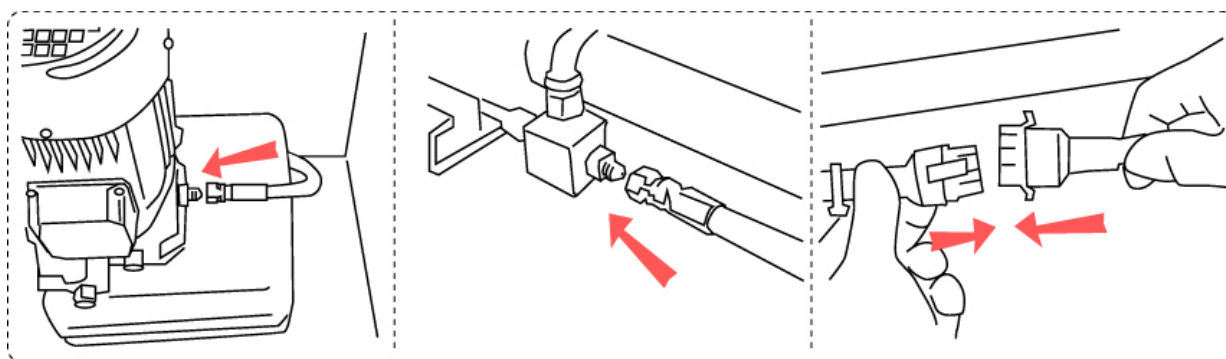
2. Determine the location to be installed and move the main frame to the installation location. The vehicle is available to enter at the front side and rear side of this car lift. When the one side of location to be installed is blocked, the rear side and side of lift shall be maintained the distance more than 1.5m more than 1m from the wall, respectively.



- Put the magnetic leveler on a round pope and adjust the lively of the lift using liner

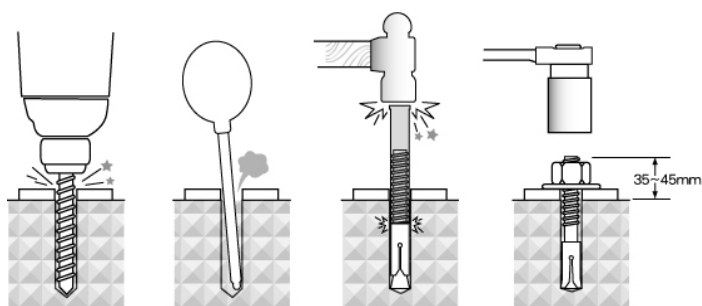


- Connect the hydraulic hose and cables (the solenoid for safety lock and limit switch)



- Make a hole for anchor bolt and fix the base with the anchor bolt.

When being more than enough space under the base after fixing with the anchor bolt, fill up the space with mortar.

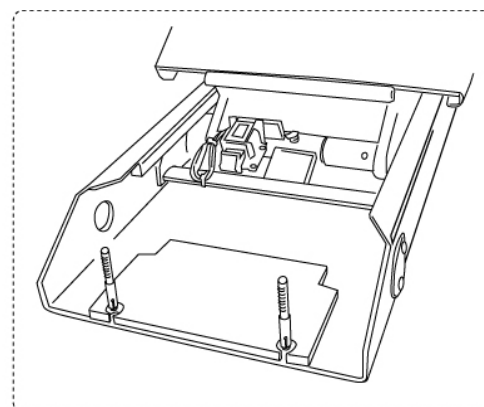


Drill hole same diameter as anchor

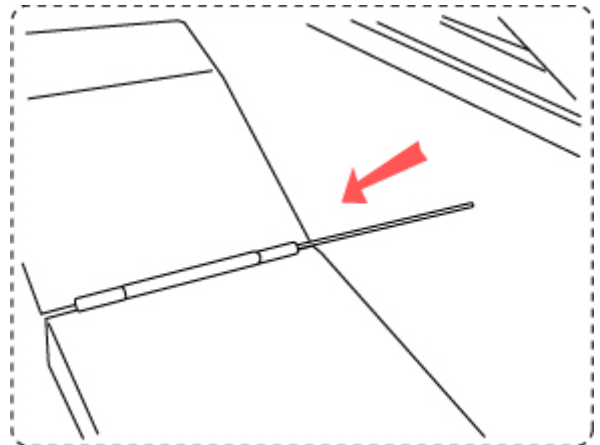
Clean Hole

Hit anchor bolt by special tool to spread out collar (Hit strong enough at 3~4 times)

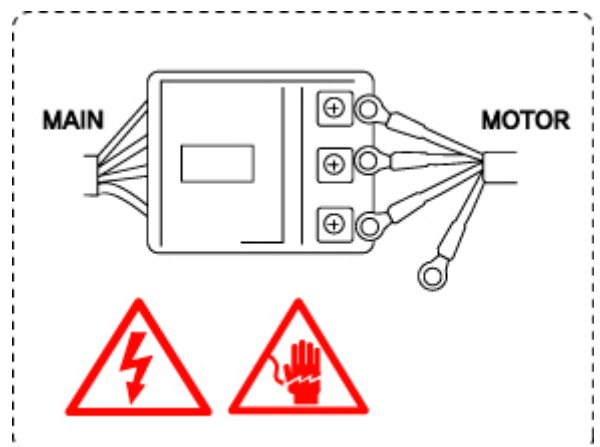
Tighten nut



6. Insert the pin and assemble the access board.



7. Connect the power pack main power supply.

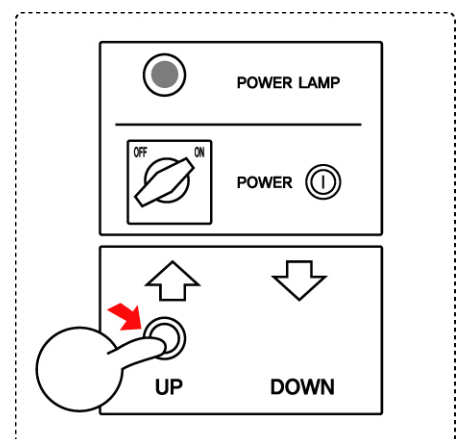


 Warning	Turn off the main switch on the power supply distribution panel, place the warning sign, and then, connect the power cable.
-------------	---

8. Adjust the levelity of the car lift with liner.
When moving up and down the lift, support a liner at the side with the fast sound of locker.

9. Supply the power to turn on the CAM switch.


10. Check if the hydraulic oil of hydraulic unit tank is properly maintained.



11. Check If the motor is rotated to the counter-clockwise when pressing the UP button. When the motor is rotated to the clockwise, change the phase connection of motor.
12. After finishing all of the above confirmation, start no-load test run.
Press the UP and DOWN switch 2 or 3 times at the intervals of about 2 seconds. Should something wrong be found as the result of the test run, refer to troubleshooting.
13. If the above no-load test run passes satisfactorily, you can make test run under load. It is convenient to record the test result for future maintenance.

CHAPTER 4. OPERATION

4-1 Warning for use

 WARNING	Only qualified personnel should be allowed to work on this car lift.
--	--

4-2 Checking point before operation

<ul style="list-style-type: none">● Check the below items every day before operation. During checking, do not load a car on the lift.● When you find the fault of lift during using or checking the lift, stop the operation of lift, and request the maintenance to the sales agency. Do not use the lift until the lift is repaired.

- (1) Check if the lift is normally operated during lifting and lowering.
And check if an abnormal noise is occurred.
- (2) Check if the lift is properly operated when the button is pressed.
And check if the lift is stopped when the button is released.
- (3) Check if an oil is leaked from the hydraulic line, the hydraulic cylinder, and the hydraulic unit. And check if an abnormal noise is occurred at them.
- (4) Check if the safety lock device is normally operated during lifting.
- (5) Check if screws are loosened.
- (6) Check if the appearance of the lift's body is damaged or twisted.
- (7) Check if the electric parts is normally operated.
- (8) Check if the lift and working place keeps the clean condition.

4-3 Preparation before operation

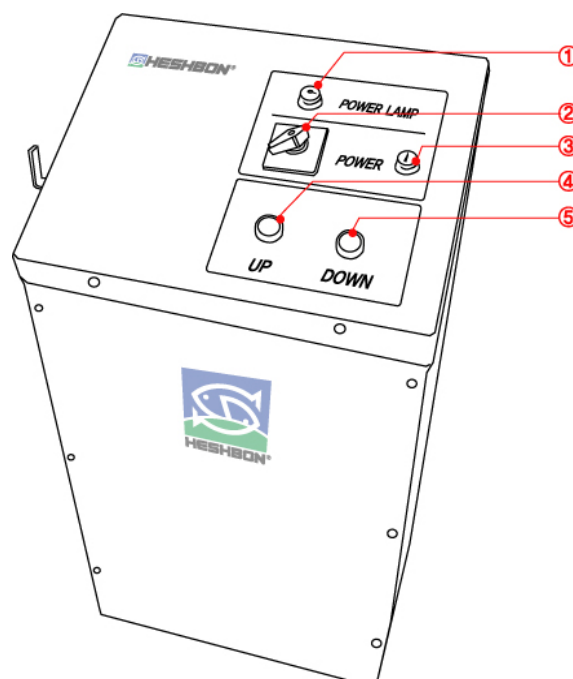
Check the following items before loading a car into the lift:

- (1) Lower completely the lift to the bottom.
- (2) Prohibit the unauthorized persons from accessing to the lift.
- (3) When use the lift which has not operated for a long time, check the oil conditions and functions of each part and then, use the lift after lifting and lowering to press the UP and DOWN switch 2 or 3 times at the intervals of about 2 seconds without load.
- (4) During the winter season, operate the lift 3 to 5 times without load in temperature 5℃ ~ -20℃. Do not use the lift in the temperate below -20℃.
- (5) During entering the car into the car lift, be careful to do not go off safety value.
- (6) After setting the safety value, do not adjust the setting value of safety value.
- (7) When the oil level is not maintained the proper pressure, do not operate the life.
- (8) Before lowering the car lift, check if a persons or children' s stay under the lift.
- (9)Traveling on the load carrying devices is forbidden.

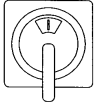


4-4 Description of control panel

4-4-1 Configuration of control panel

The configuration of control panel is as follows.



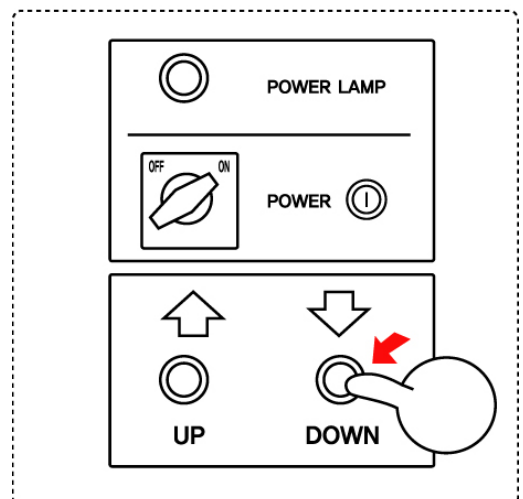
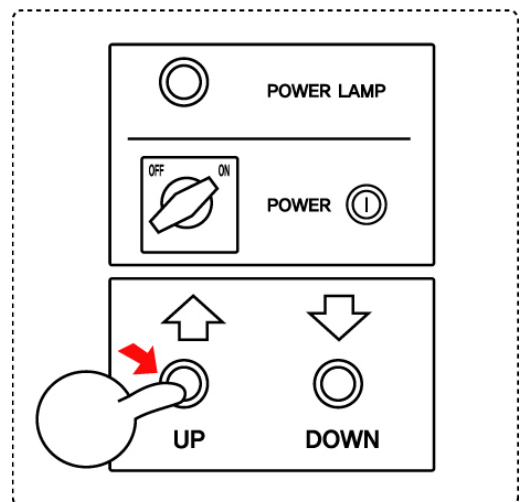
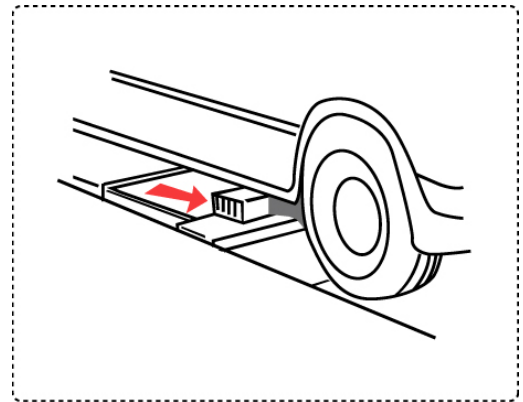
4-4-2 Description of control panel

Switch and Lamp	Function description
	CAM switch for supplying the power at the car lift.. Before the machine is operated, this switch should be turned ON. And also, this switch may use to turn off the power when the Emergency situation is occurred at the machine.
	Key switch for moving up and down the lift. The lift is moved up during Key switch is holding to UP, and when the key switch is returned to the center position, the lift stops the operation for lifting. The lift is moved down during Key switch is holding to DOWN and when the key switch is returned to the center position, the lift stops the operation for lowering.
	Locker Key for locking the control panel. When the locker is opened, the upper case can be opened to upside.
	Power lamp for indicating that the power is supplying at the lift. When the CAM switch is turned on, the lamp is lighted on.



4-5 Operation

1. After passing the car through the access board horizontally, drive the car until the front tire of car is accessed to tire stopper.
2. After putting on the parking brake, get off at the car. And then, after pulling the extension board inserted into track, set them to the body car and put the rubber support between the extension board and body of car.
3. After turning on the power switch, when you press the UP button at control panel, the lift is moved up. The lift is raised only during pressing the button.
4. After finishing the work, when you press the DOWN button at control panel, the lift is lowered after the lift is lowered after the lift is raised during 1 or 2 seconds by the timer.



CHAPTER 5. TROUBLESHOOTING

5-1 Inspection and repair

Symptoms		Check Point	Corrective Action to be taken
Hydraulic Cylinder And its units	The abnormal noise at motor listened.	<ol style="list-style-type: none"> 1. Rated capacity is exceeded. 2. Relief pressure is low. 3. Shortage of hydraulic oil. 	<ol style="list-style-type: none"> 1. Operate within rated capacity. 2. Adjust to 3 ton. 3. Let air out of the hydraulic unit after supplying the oil.
	Hydraulic Oil is leaked.	<ol style="list-style-type: none"> 1. Defect in hydraulic hoses. 2. Leakage from connecting parts. 3. Bad cylinder packing 	<ol style="list-style-type: none"> 1. Replace the hydraulic hose. 2. Tighten the connection. 3. Request A/S.
	Oil is contaminated.	Check if an water or Foreign substance comes into the cylinder.	Exchange oil (annually) (Hydraulic oil : 32CST/12litter)
	The lift is not move up .	Check if the oil is leaked or hydraulic pump are damaged.	Request A/S.
	The lift is not lowered.	Check if the value is properly operated.	Request A/S.
	The fitting parts is rusted.	Check if the grease is not sufficiently injected.	In jet the grease every 1 month.
Electric Devices	Motor is not operated and the abnormal noise at motor is listened	<ol style="list-style-type: none"> 1. Check if the motor is damaged. 2. Check if the fuse is opened. 3. Check if the push button is damaged. 4. Check if the upper limit is operated. 5. Check if wiring gauge is proper. 6. Check if the input power less than 200V is supplied. 	<ol style="list-style-type: none"> 1. Replace the motor (Request A/S). 2. Replace the fuse after solving trouble. 3. Replace the push button(Request A/S). 4. Re-operate after lowering the lift. 5. Replace to the cable with over 3.5mm2 diameter. 6. Increase the input power capacity.
	Fuse is snapped	<ol style="list-style-type: none"> 1. Check the Contact of magnetic contactor. 2. Check the capacity of circuit breaker. 3. Check if the wire is damaged. 	<ol style="list-style-type: none"> 1. Replacement (Request A/S). 2. Replacement (Request A/S). 3. Replacement after checking.
	Motor is operating but lift is not moved up.	<ol style="list-style-type: none"> 1. Check if the rotating direction of motor is correct. 2. Check if hydraulic lines is damaged 	<ol style="list-style-type: none"> 1. Re-operate after changing the phase connection. 2. Refer to check points for hydraulic cylinder and unit.

CHAPTER 6. MAINTENANCE

6-1 General caution during maintained

- 1) Maintenance should be performed by more than two persons.
- 2) Maintenance should be carried out after putting a sign-board of "NO ENTRANCE" at work area.
- 3) Don't disassemble the system before you are familiar with the disassembling sequence.
- 4) Record the place or parts where maintenance is needed.
- 5) Keep the disassembled parts safely.
- 6) Be sure to fasten bolts and nuts correctly in its position during attaching the parts.
- 7) During maintenance of control box inside, check whether CAM switch is in "OFF" position.
- 8) During replacement of electrical component, fasten the terminal bolts
of part tightly after checking the wire no. (or color) and parts no.
- 9) After replacing the oil filter, drain completely the oil in the oil tank.
- 10) When replacing the oil filter, drain completely the oil in the oil tank.
- 11) Clean the control box inside by air once a month.
- 12) Check once a week whether the bolts are loosen, and if the bolts are loosen,
fasten the bolts tightly.
- 13) Don't open the control box without permission of authorized
persons during maintenance of control box.

6-2 Check List and periodic maintenance

Inspection period	Points to be checked	Items to be checked	Inspection method	Action to be taken	Replacement period
1 week	Rubber Support for adjustment	Abrasion and deformation	Visual	Replacement	1 year
	Magnetic contactor	Damage of contact	Measurement	Replacement	2 year
3 months	Wire Rope	Abrasion, deformation and Breaking of wire	Visual	Replacement	2 year
	Post Guide	Abrasion	Visual	Replacement	4 year
	DU bush	Abrasion	Visual	Replacement	4 year
	Axis for wire pulley	Noise and abrasion	Visual	Replacement	5 year
	Wire pulley	Abrasion	Visual	Replacement	5 year
6 months	Electrical component	Damage of component	Measurement	Replacement	3 year
	Hydraulic Oil	Shortage of oil	Visual	Replacement	1 year
1 year	Piston Seal Kit	Oil leak or deformation	Visual	Replacement	3 year
	Load Seal Kit	Oil leak or deformation	Visual	Replacement	3 year

6-3 Lubricant

The supply of oil or grease on the nipple or friction parts will reduce the loss of power consumption from the friction and minimizes its loss and it increase the efficiency of the machine. The followings are the oil supplying plan.

Oil supplying plan

Location to be applied	Kinds of oil or grease	Period of exchange
Nipple	SAE 32	Supply every 1 months

CHAPTER 7. How to descend manually at emergency


7-1 When to use manual operation

- (1) For power failure, for hydraulic circuit trouble, and when the main board does not go down with 'emergency operation'.
- (2) When it is inevitable due to electricity problem

7-2 Preparation

- (1) Clear obstacles under the lift.
- (2) Turn off the power switch.
- (3) Make sure to release 2 locks
- (4) Use separate hydraulic jack.
- (5) Do not allow anyone under the lift.

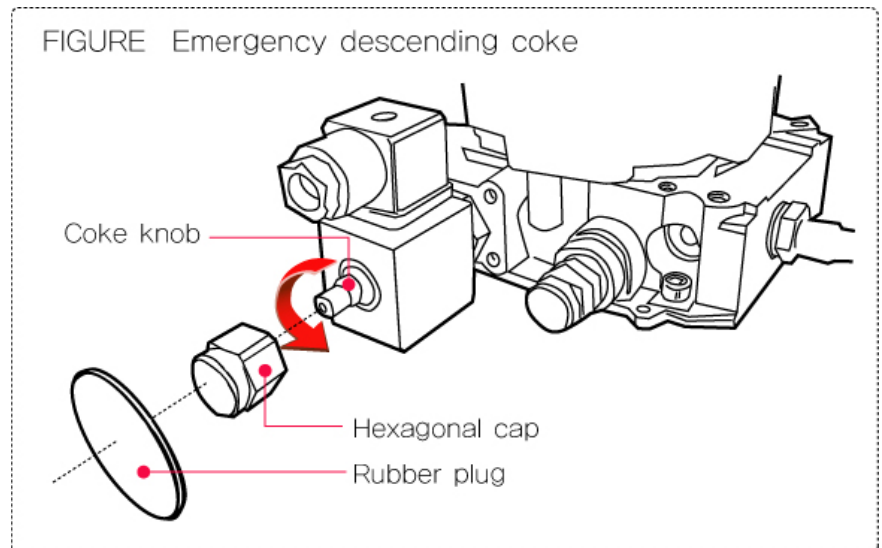
7-3 Manual descending sequence

 Warning	If it is impossible to take action by yourself, stop operation and Call to authorized dealer immediately.
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- 1) Open the control panel emergency descending cock rubber cap.
- 2) Remove hexagonal cap with 19mm spanner.
- 3) Turn the emergency cock knob counter-clockwise, and then the lift starts descent.
(Sudden turning will make the lift drop suddenly.)

7-4 Action after the manual operation

- 1) After ascent of lift, turn emergency cock knob to clockwise.
- 2) Fix hexagonal cap.
- 3) Insert the rubber plug to to panel hole.



7-5 How to descend the lift when brake is applied during the emergency manual descending.

1. Requirements

- 1) Manual jack
- 2) Bar
- 3) Piece of cloth to use when releasing the brake.

2. How to descend lift manually

- 1) As in Figure 7-5-1, use the manual jack, support, or bar to move up the lift.
- 2) Raise '1' in the Figure 7-5-2.
- 3) If the locker is in the direction of the arrow raise the lock and then insert a piece of cloth or glove in '2'.
- 4) Now basic preparation for manual descent is completed.
- 5) Follow the next steps in 7-3 and 7-4 to perform emergency descending.

FIGURE 7-5-1

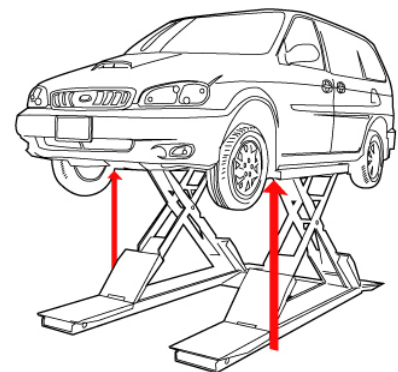
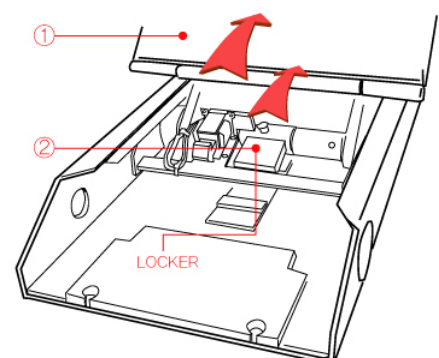


FIGURE 7-5-2



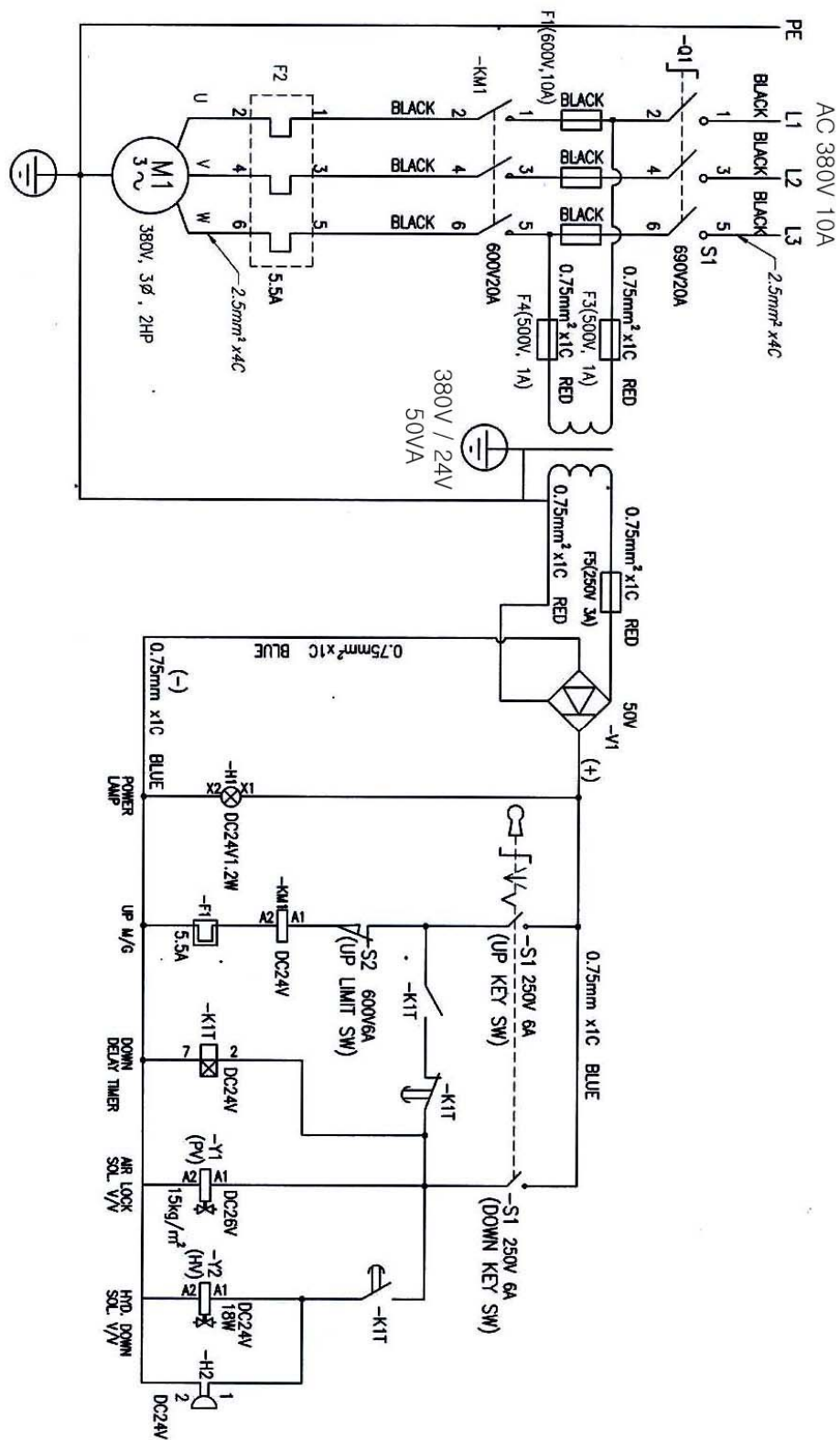
APPENDIX

1. ELECTRIC DRAWING
2. RECOMMENDED SPARE PARTS LIST

[illegible]

AC 220V 15A

2. ELECTRIC DRAWING -32F (AC 380 10A)



RECOMMENDED SPARE PARTS LIST

SPARE PARTS LIST

NO	DESCRIPTION	STANDARD	Q' TY	MANUFACTURE	REMARKS
1	Magnctic Contactor	LP1K0910-8D	1	TELEMECANIQUE	
2	Cam Switch	V01 690V 20A	1	SCHNIDER	
3	Timer	MA4-C DC24V 50/60Hz	1	HAN YOUNG	HL-31S, 32S HL-32F
4	Air Solenoid V/V	SV-121 DC24V	1	TAVHAY PNEUMATICS CORP.	
5	Bridge Diode	KBPC 10A 50V	1		
6	Limit Swich	M-904	1	KOREA AUTO CONTROL or HAN YOUNG	
7	Miero Switch	ZCN P-501A 10A 250V	1	HAN YOUNG	HL-25H HL-26P
8	Push Button Switch	KD5BRRER10 S	2	KOREA AUTO CONTROL	
9	Pilot Lamp	DC24	1	HAN YOUNG	
10	Fuse	250V 1A 110V 3A	2 1	LEGRAND	
11	Over Load Relay	LR2K0316	1	TELEMECANIQUE	
12	Key Switch		1	HAN YOUNG	



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