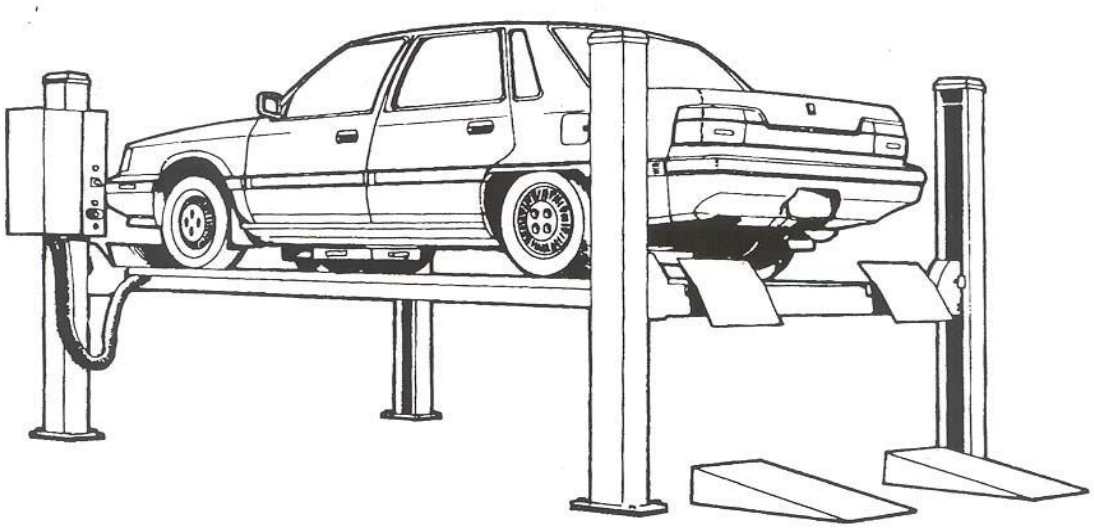
English Version

LIFT

GL-4.0-4E1 INSTRUCTION MANUAL



GUANGZHOU GUANGLI ELECTROMECHANICAL FACILITIES ENGINEERING CO.,LTD.2F,Xingchen BLDG,No.158,Guangyuan Zhong RD.,Guangzhou,China

Document Revision Guide

NOTE TO THE USER

Thank you for purchasing Guangli's CAR LIFT. Please read this instruction carefully for safe and proper use of the car lift, and keep it handy for future reference.

7 This Manual is for model ; GL-4.0-4E1

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.

🕘 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 ;

I) 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.

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2 **RECOMMENDED SPARE PARTS LIST**

SAFEGUARDS

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.

SAFEGUARDS

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 GUANGZHOU GUANGLI ELECTROMECHANICAL FACILITIES ENGINEERING CO.,LTD.Any statements contained in this document do not create new warranties or restrict the existing warranty.

1-1 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.

1-2 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.

1-3 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) 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.

6) 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.

7) 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.

1-4 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	
	Do not enter under the car lift during lifting the car. You may result in a great physical danger or even death.
	Do escape to the safety zone without staying under car lift when the car is possible to fall down. You may crush under car and then, result in a great physical danger or even death .

z

Caution Notice Warning Notice

CAUTION	
	Only qualified personnel should be allowed to work on this car lift. Unexpected accidents may be happened due to wrong operation.

	Do not lower the lift in the state of supporting a car by a stick to attach or detach components. The car may fall down.
.	Do not shake the lifted-up car. The car may fall down.
	Do not move up the lift in the condition of putting only one side of car into the lift. A car may fall down or damage. And also, the lift may damage.
	Never modify a safety devices. If a safety devices are not operated, a serious accident may be happened.
	During lowering the lift, be careful to not put foot under a table. Serious injury may be happened.

CAUTION	
	Use the lift after reading carefully the instruction manual and understand the contents of them for safe and proper use of the car lift. If a user does not follow a warnings, a serious accident may be happened.
	When the car enter into the lift, keep the balance of before and behind, and right and left of the car. A car may fall down during vibration, attachment or detachment of components.

	Electric shock. When opening a control panel, be careful to the electric shock. Serious injury or death may be happened.

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.

WARNING

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

< During repairing the car >
1 Check if the safety lock device is properly operated before operation.
2 Prohibit the unauthorized persons from accessing to the lift.
3 When the operator is not in the lift for a long time, or the lift is not operating, lower completely the lift.

< Other >

1 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.

2 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.

3 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.

SAFEGUARDS

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.

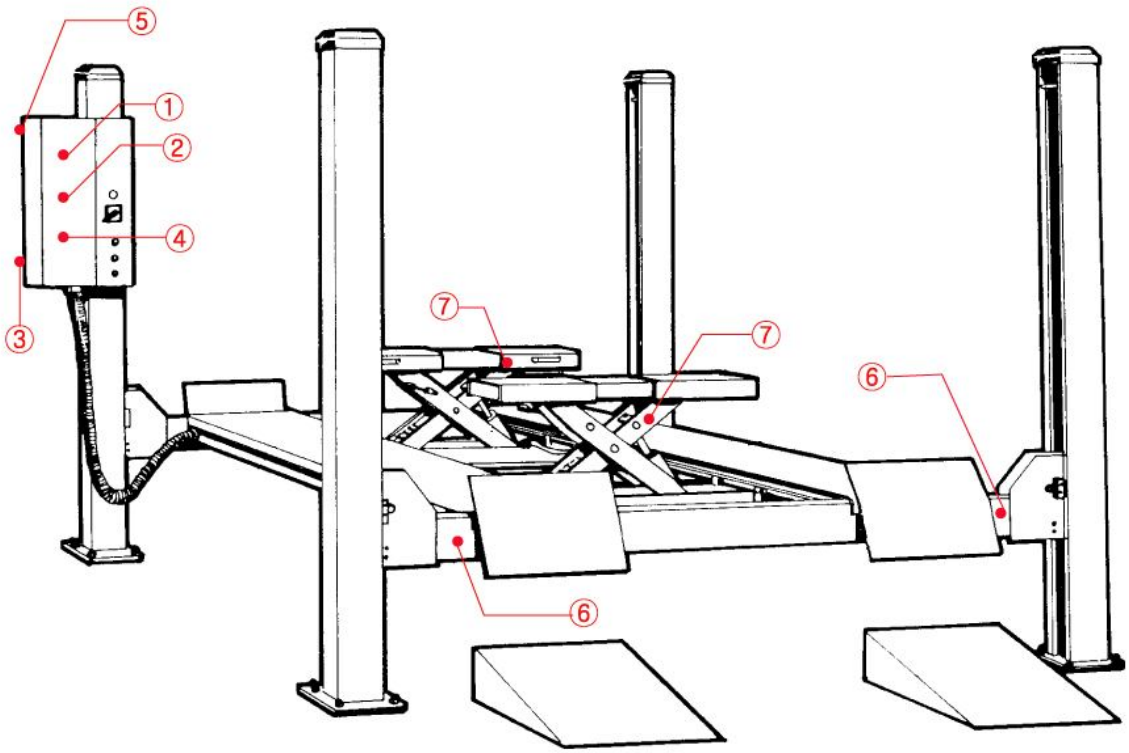
If any of the ESC's are in the "Fail" condition do not operate the car lift, immediately notify the responsible person within the company and contact the manufacturer as soon as possible. ESSENTIAL SAFETY CHECKS (ESC'S) GROUP 1 GENERAL -Visual Inspection

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

GROUP 2 Electrical isolator switchSet 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


⑤
①
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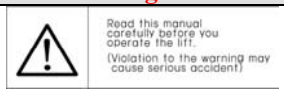
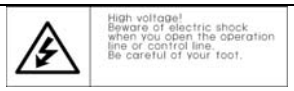
NO	Warning Label
1	
2	
3	
4	
5	
6	
7	

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.

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.

1-11

OVERVIEW OF MACHINE

CHAPTER 2. OVERVIEW OF MACHINE

GL-4.0-4E1 is a stationary four column lift with two step operated jack as a option which are designed to raise vehicles Totally, for the purpose of examing and working on or under the vehecles shilst in a raised

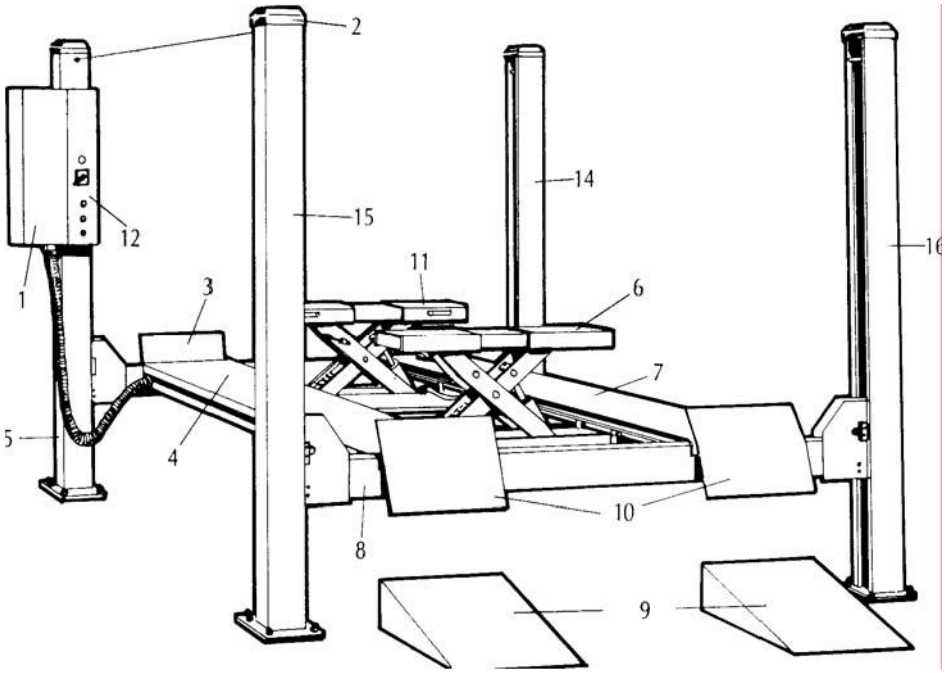
position.

2-1 Specification

Model No.		**GL-4.0-4E1**
The rated Capacity	Main Board	6,000 Kg
	2-step operated Jack	2000Kg
Overall Max. Heght	Main Board	1,650mm
	2-step operated Jack	455mm
Min. Height	Main Board	184mm
	2-step operated Jack	220mm
Min Runways Height	Main Board	1,566mm
	2-step operated Jack	220mm
Lifting Time	Main Board	Approx. 40～60sec.
	2-step operated Jack	Approx. 5～15sec
Lowering Time	Main Board	Approx. 35 sec.
	2-step operated Jack	Approx. 5～15sec
Standard Motor		3ph : 3H+P, 220V/380V/50Hz/60Hz
Dimension	Outer Width X Inner Width X Length	3，310 X 4，480 X 2212mm
	Max. Height	2,215mm
	Outer Width X Inner Width X Length(Main board)	1,880 X 1,960 X 840mm
Net weight		1,580 kg

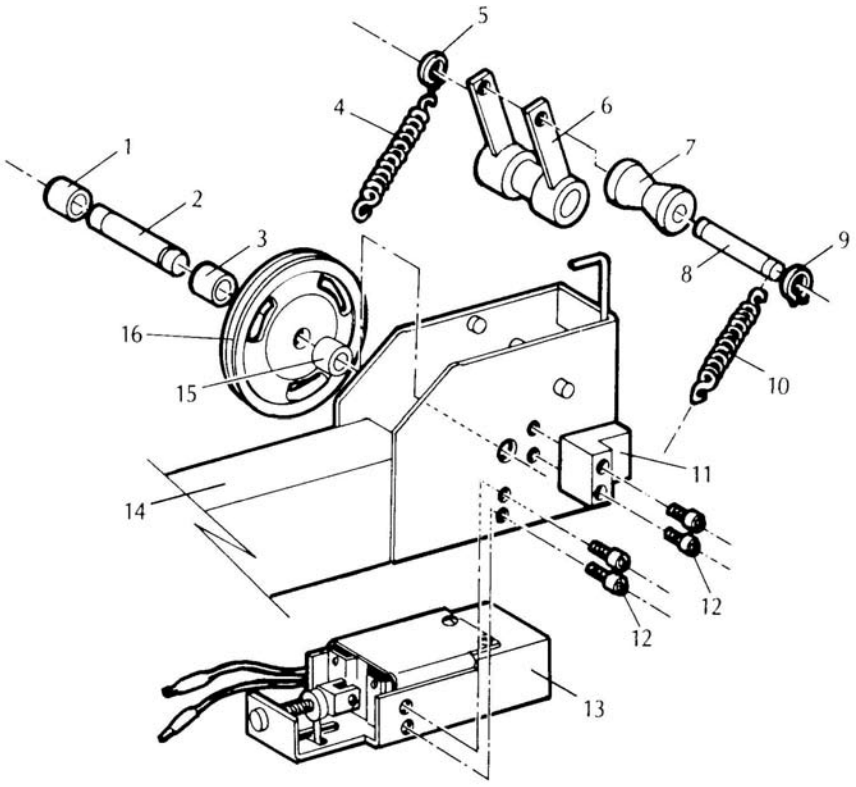
2-2 Description of Construction

2-2-1 Assembly



Part No.	Part Name	Part No.	Part Name
1	Hyd. Unit Box	9	Inlet Ramp
2	Post Cap	10	Sub. Ram
3	Tire Stopper	11	1 Step Operated Jack 1
4	Main Board(Drive)	12	Control Box
5	1st Post(Drive)	14	2nd Post
6	2 Step Operated Jack 2	15	2nd Post
7	Main Board(Tail)	16	2nd Post
8	Main Board Support		

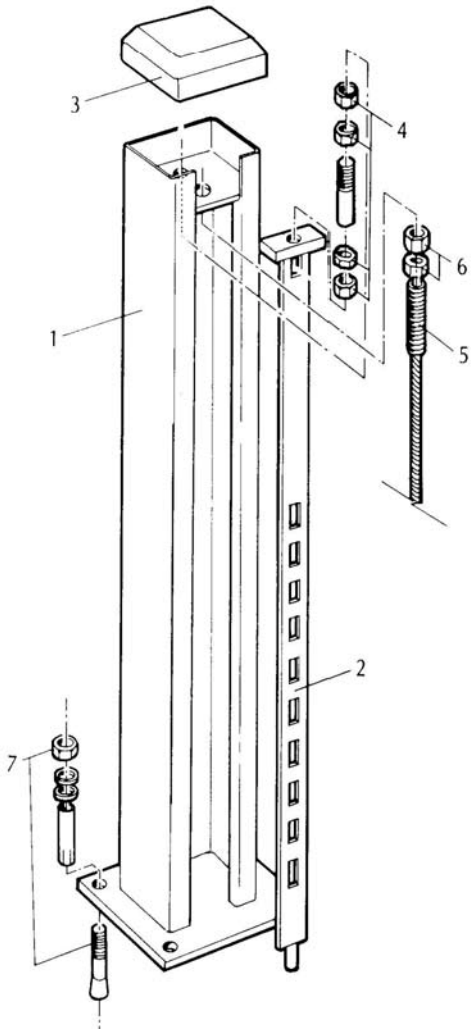
2-2-2 Costruction of Track Support



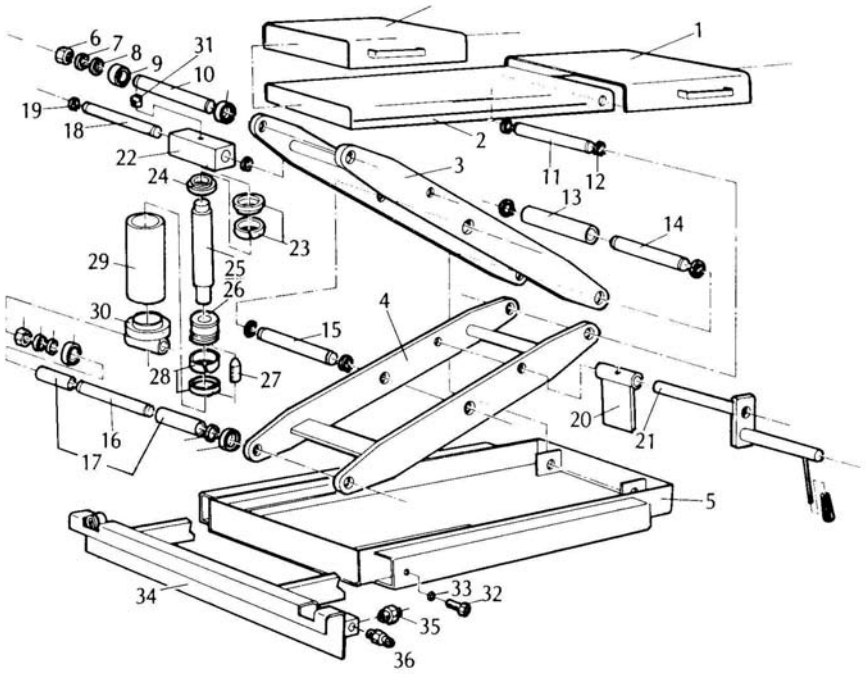
Part No.	Part Name	Part No.	Part Name
1	Wire Pulley Collar	9	Snap Ring
2	Wire Pulley Shaft	10	Coil Spring
3	Wire PulleyCollar	11	Post Guide
4	Coil Spring	12	L-Wrench Bolt
5	Snap Ring	13	Safety Rocker Set
6	Safety Lock Roller	14	Mainboard Supprt
7	Wire Guide Roller	15	Oiless Bearing
8	Wire Shaft	16	Wire Pulley

OVERVIEW OF MACHINE

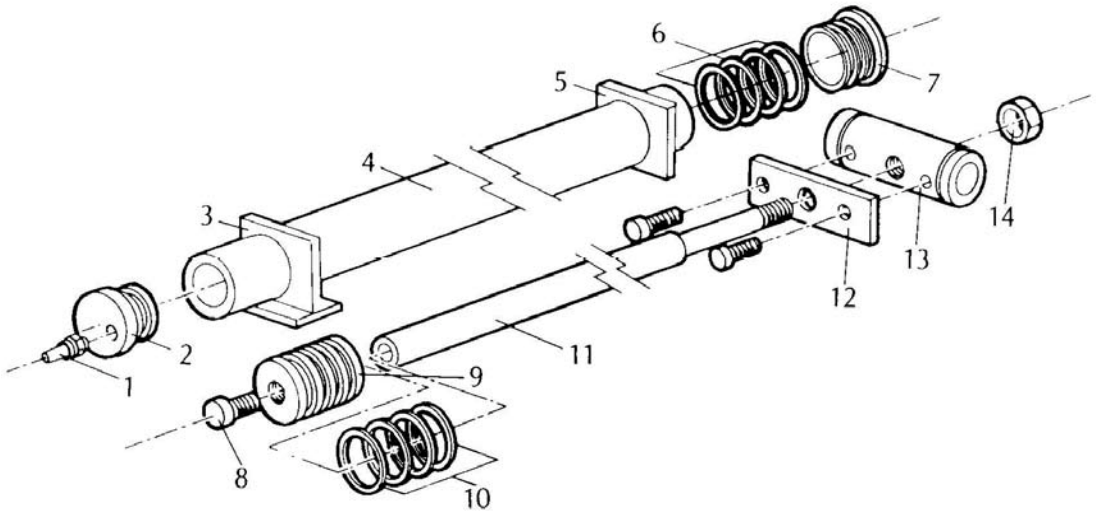
2-2-3 Construction of Post 2-2-4 Construction of 2 Step operated Jack (Option) 2-2-5 Construction of Cylinder



Part No.	Part Name	Part No.	Part Name
1	Main Post	5	Wire Rope Set
2	Locker Rail	6	Wire Rope Nut
3	Post Cap	7	Set Anchor Bolt
4	Locker Rail Bolt Set		

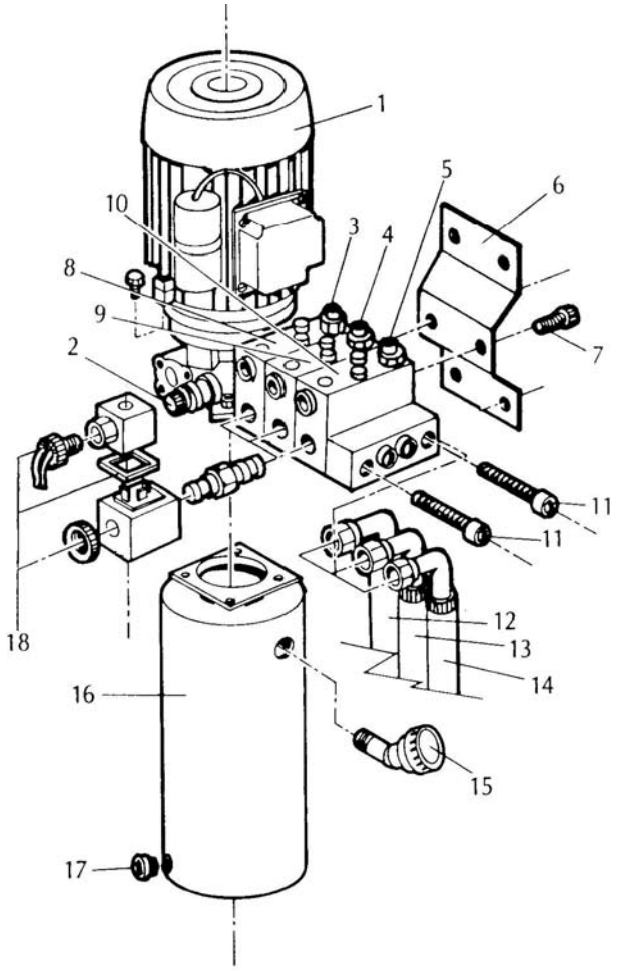


Part No.	Part Name	Part No.	Part Name
1	Slide Table	19	Snap Ring
2	Main Board	20	Stopper
3	Link 1	21	Stopper Pin
4	Link 2	22	Head Mount
5	Base	23	Head Seal Kit
6	Hex. Nut	24	Rod Cover
7	Spring Washer	25	Rod
8	Flat Washer	26	Piston
9	Ball Bearing	27	Set Screw
10	Upper Roller Pin	28	Piston Seal Kit
11	Upper Static Pin	29	Tube
12	Snap Ring	30	Tail Cover
13	Spacer	31	Grease Nipple
14	Lower Static Pin	32	L-wrench Bolt
15	Middle Link Pin	33	Hex. Nut
16	Lower Roller Pin	34	Rail Guide
17	Spacer	35	Push One Nipple
18	Upper Cylinder Pin	36	One Touch Hose Coupler



Part No.	Part Name	Part No.	Part Name
1	Air Filter	8	L-wrench Bolt
2	Tail Cover	9	Piston
3	Tail Bracket	10	Piston Seal Kit
4	Cylinder	11	Rod
5	Head Bracket	12	Wire Clamp Plate
6	Rod Seal Kit	13	Wire Clamp York
7	Head Cover	14	Hex. Nut

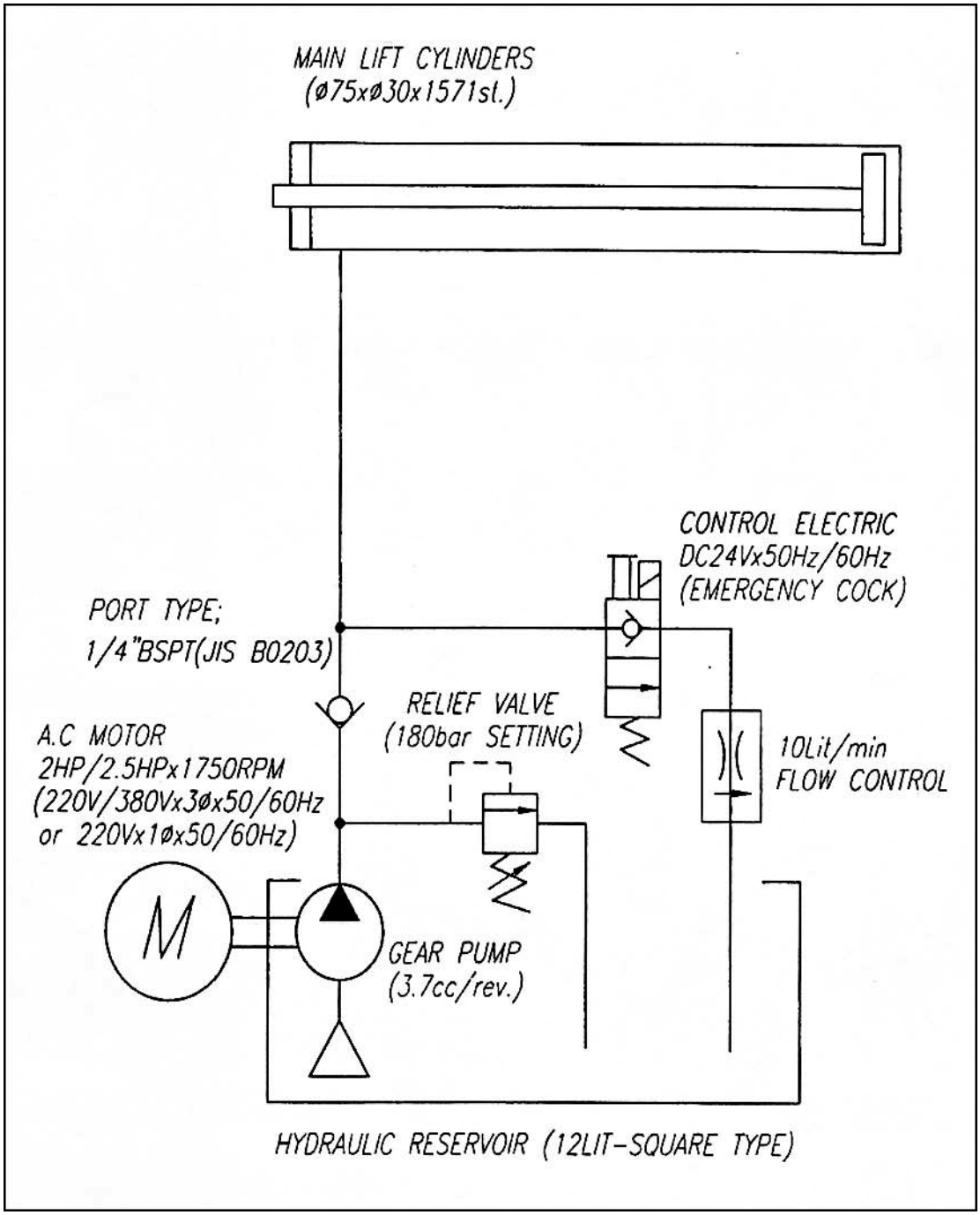
2-2-6 Construction of Hydraulic unit



Part No.	Part Name	Part No.	Part Name
1	Motor	10	Valve Block(Jack 2)
2	Relief Valve	11	Valve Block Bolt
3	Manual Valve(Main Board)	12	Hydraulic Hose(Main Board)
4	Manual Valve(Jack 1)	13	Hydraulic Hose(Jack 1)
5	Manual Valve(Jack 2)	14	Hydraulic Hose(Jack 2)
6	Support	15	Breather Cap
7	Support Bolt	16	Oil Tank
8	Valve Block(Main Board)	17	Drain Cap
9	Valve Block(Jack 1)	18	Solenoid Valve Set

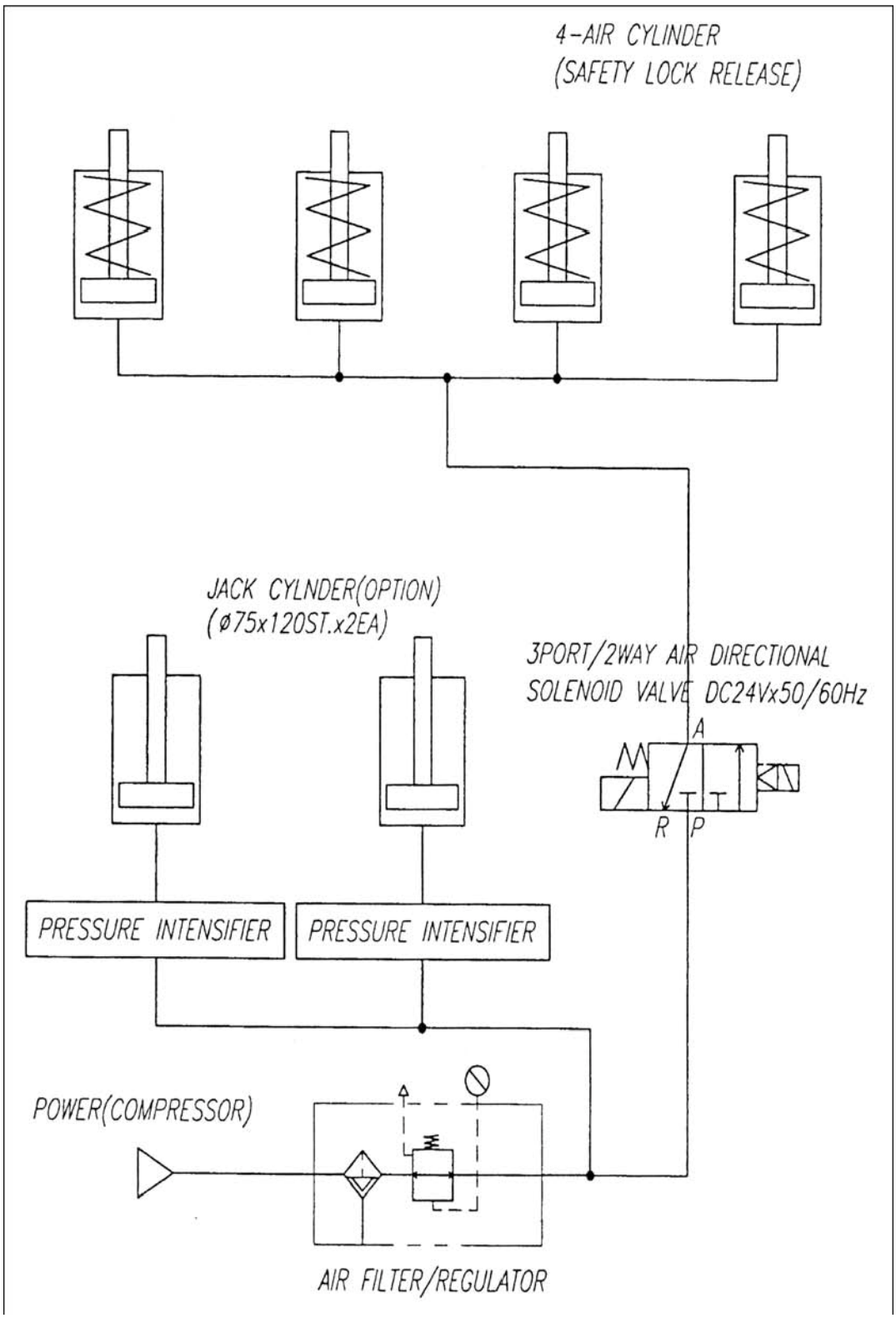
OVERVIEW OF MACHINE

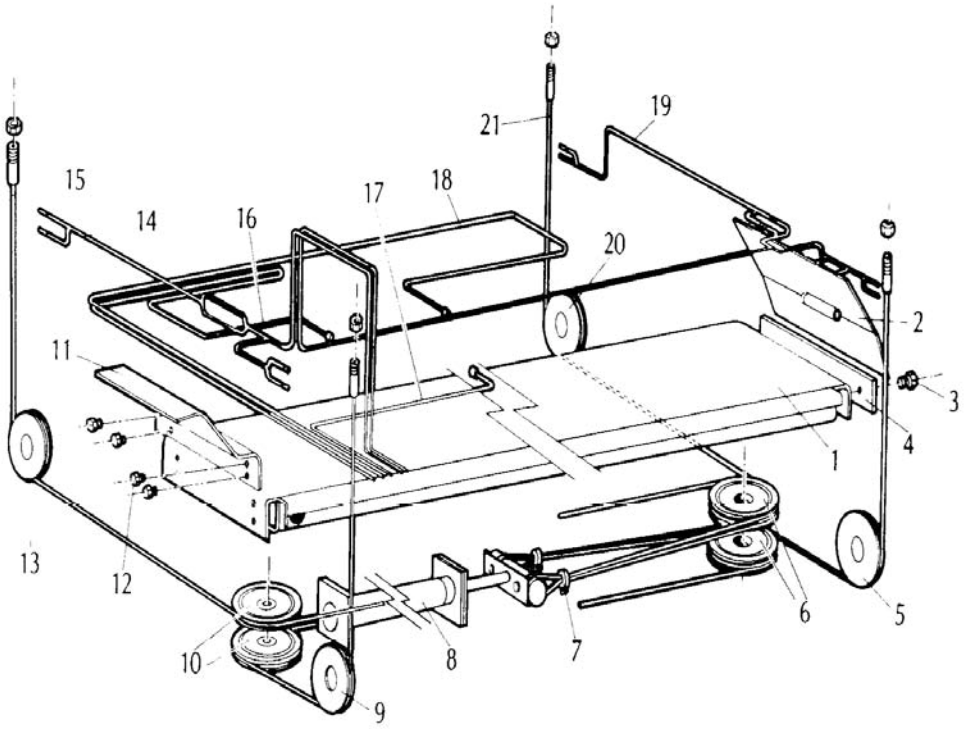
2-2-7 Hydraulic Circuit



OVERVIEW OF MACHINE

2-2-8 Pneumatic Circuit 2-2-9 Wiring Diagram


4-AIR CYLINDER
(SAFETY LOCK RELEASE)
JACK CYLNDER(OPTION)
(ø75x120ST.x2EA)
3PORT/2WAY AIR DIRECTIONAL
SOLENOID VALVE DC24Vx50/60Hz
A
R
P
PRESSURE INTENSIFIER
PRESSURE INTENSIFIER
POWER(COMPRESSOR)
AIR FILTER/REGULATOR



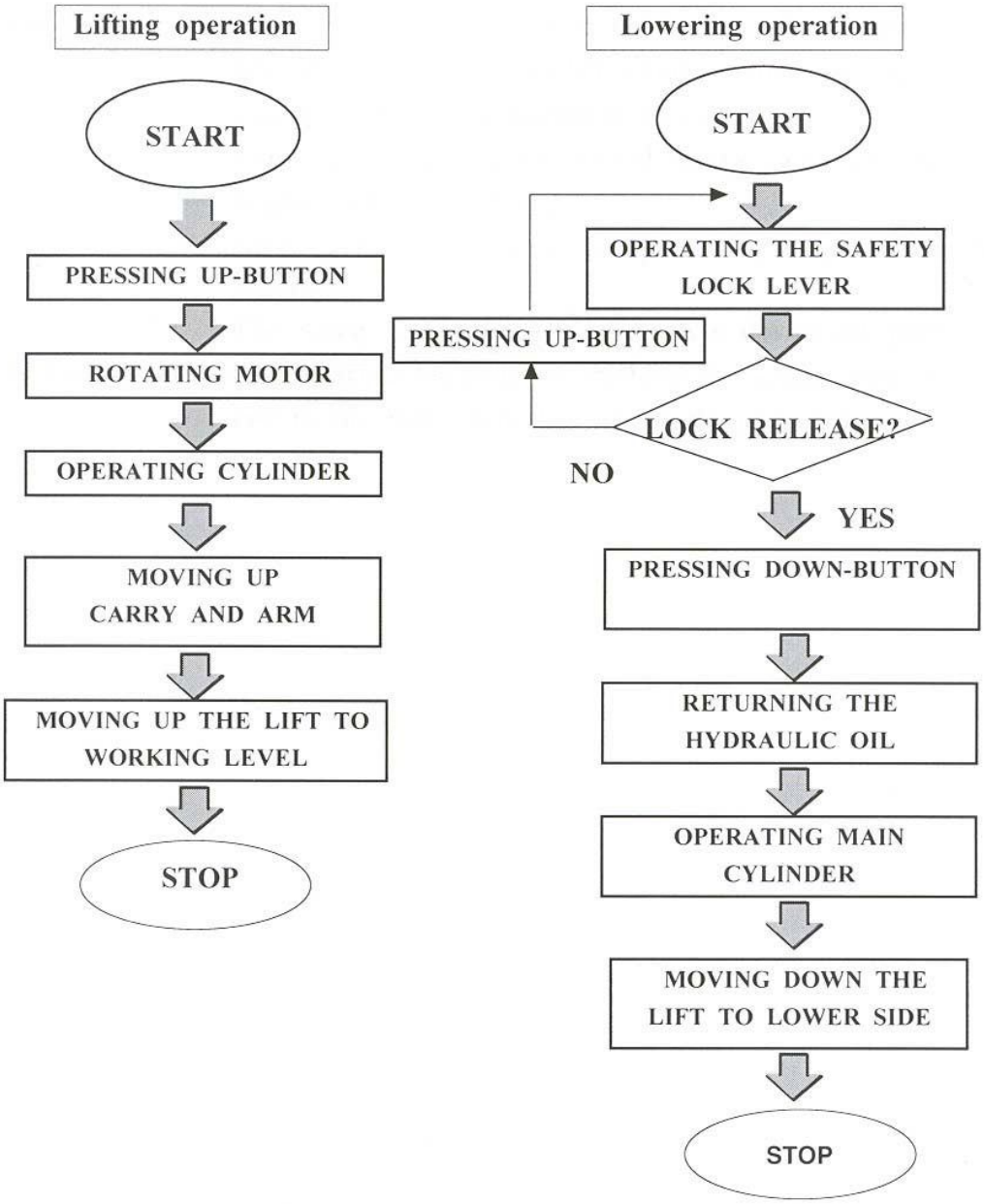
Part No.	Part Name	Part No.	Part Name
1	Main Board(Drive)	12	Hex. Bolt
2	Sub. Ramp	13	2nd Post Wire Pulley
3	Hex. Bolt	14	Locker Set Electric Wire(Front
4	Sub. Ramp Support	15	Wire(2～3)
5	Post Wire Pulley	16	Hydraulic Hose(Jack 1)
6	Double Wire Pulley	17	Hydraulic Hose(Main)
7	Wire Clip	18	Hydraulic Hose(Jack 2)
8	Cylinder Ass'y	19	Locker Set Electric Wire(Rear)
9	1st Post Wire Pulley	20	4th Post Wire Pulley
10	Single Wire Pulley	21	Wire(1～4)
11	Tire Stopper		

OVERVIEW OF MACHINE

2-3

on the control box. The followings

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



2-4 Safety device **The following safety devices ares 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.)
Safety Lock Roller	The Safety Lock Roller is the safety device for protect the lift from lowering by sticking the safety lock roller fast to the rail when the wire is disconnected.

INSTALLATION OF MACHINE

CHAPTER 3. TRANSPORTATION AND INSTALLATION

This chapter sxplains how to install your lift. Always read it ahead of time, even when the lift is installedBy GUANGZHOU GUANGLI ELECTROMECHANICAL FACILITIES ENGINEERING CO.,LTD.Or the place of purchase. Please refer to this chapter when yoi re-locate your lift.

3-1 Preparation for installation

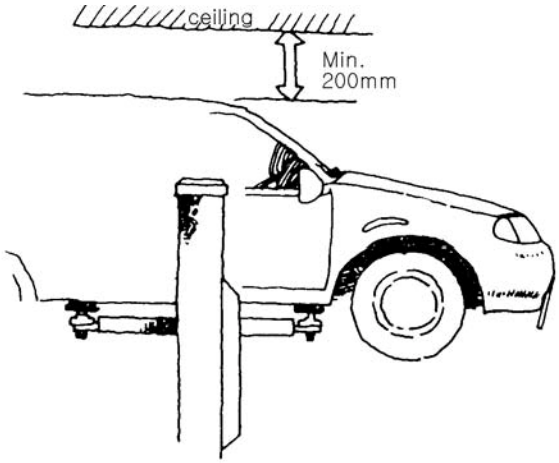
< Before Installation> This is a lift that has been made precisely by the advanced technologies and unique features ofGUANGLI not known to other engineers. Therefore, for higher reliability, it must be installedBy our engineer or local representative or under the witness of our staffs or local representative 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 strength should be at least 15KN/ ㎡ or stronger. And , anchor bolts should withstand a strength of at least 8 KN/ ㎡(The load strength of surface under the post shall have more than 350 KN/ ㎡)

2) The lift should be installed at the suffient place so that the lift is not interfeted with the surroundings. 3) The distance between the ceiling and highest point of load while lifting to the upper limit should be maintained more than 200mm

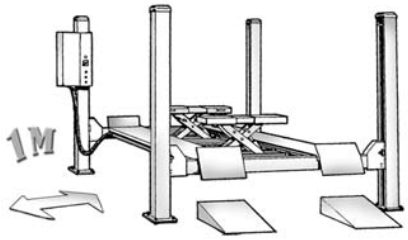
If there is not enough clearance, adjust the maximum ascending limit to reduce the height of the lift. . Warning



INSTALLATION OF MACHINE

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.

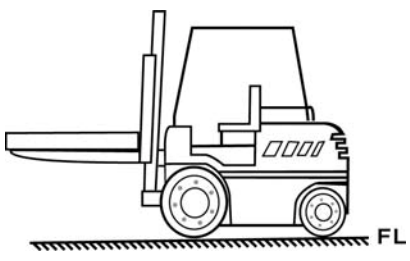


2) Do not change the specifications (lifting or lowering speed, and pressure) that have been pre-set at the Factory.
3) Do not install the lift at outdoor. When the lift is installed at outdoor under unavoidable circumstances, the Cable entrance of control panel should be water-proofed.
4) When a gaps 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.)

3-3 Transportation

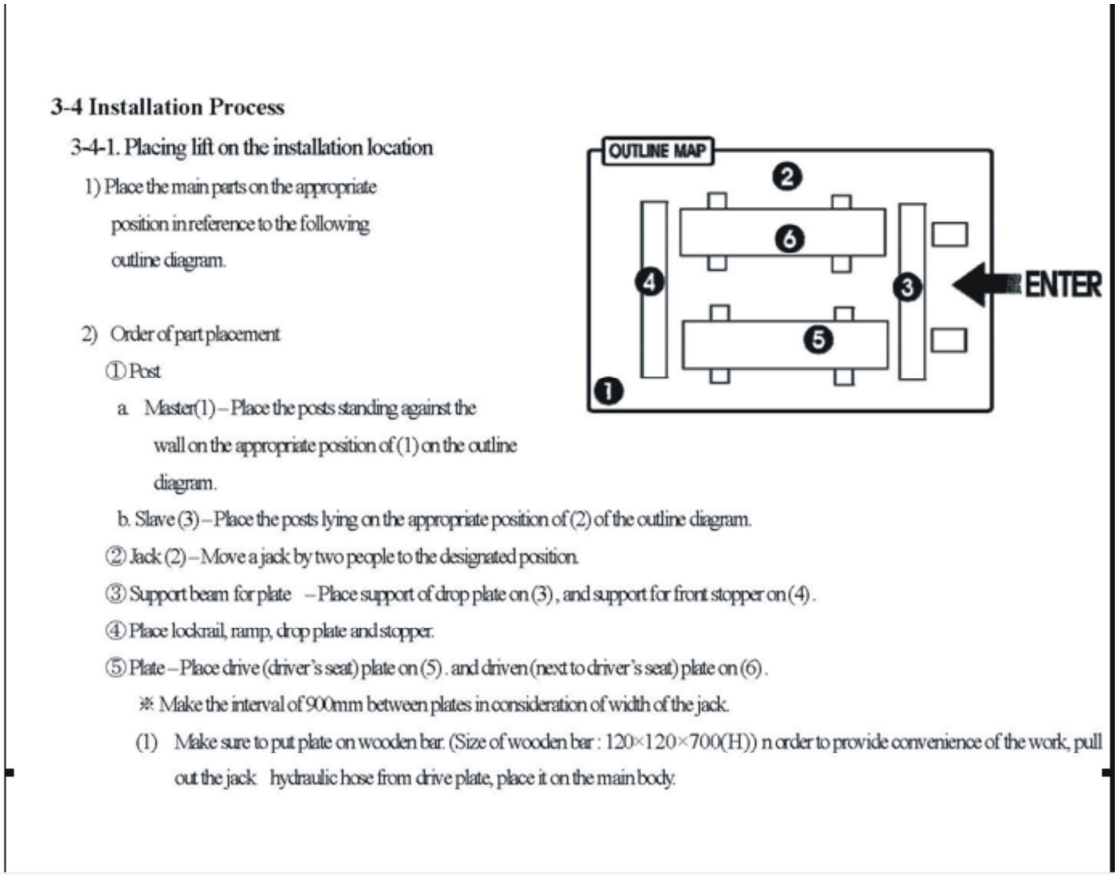
The lift is packaged in a wooden box at the factory. After the lift is arrived at the installation site, transport the product to the installation location in accordance with following procedure.

1) Machine should be transported to installation place by fork lift 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.



3-4 Installation Process

3-4-1. Placing lift on the installation location

1) Place the main partson the appropriate position inreference to the followingoutline diagram.

2) Order of partplacement

① Post

a. Master(1) – Place the posts standing against the wall on the appropriate position of (1) on the outline diagram.

b. Slave (3) – Place the posts lying on the appropriate position of (2) of the outline diagram.

② Jack (2) – Move a jack bytwo people to the designated position.

③ Support beamfor plate – Place support of drop plate on (3) , and support for front stopper on (4) .

④ Place lockrail, ramp, drop plate and stopper.

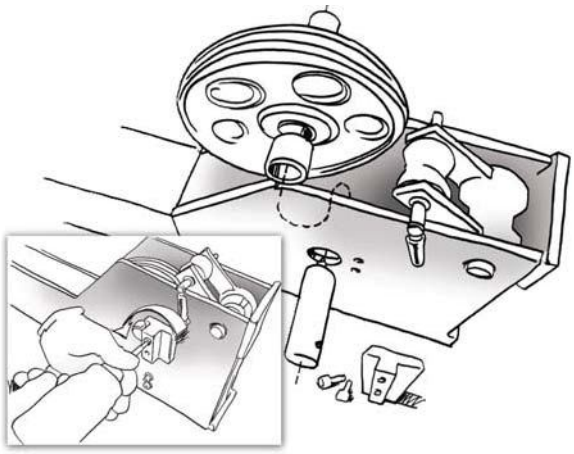
⑤ Plate – Place drive (driver's seat) plate on (5) . and driven (next to driver's seat) plate on (6) . ※ Makethe interval of 900mm between platesin consideration of width of the jack.

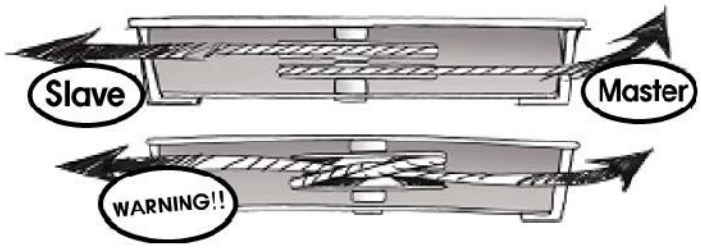
(1) Make sure to putplate on wooden bar. (Size of wooden bar : 120×120×700(H)) n order to provide convenience of the work, pull out the jack hydraulic hose from drive plate, place it on the main body.

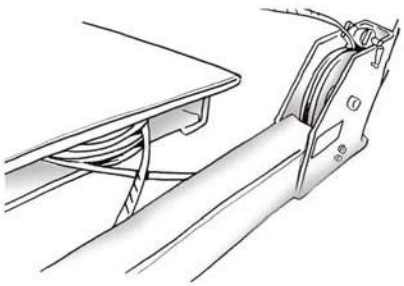
3-4-2. Assembling support beam for plate

(1) Take the pins fixing MC guide, pull out the pins, and take out the wire pulleys (4 positions).
(2) Take outthe drive plate wire and putitto the support beam for plate.

▶ Putthe lower wire tothe wire pulley of support beam for drive plate, and the upper wire to the wire pulley of support beam for driven plate .

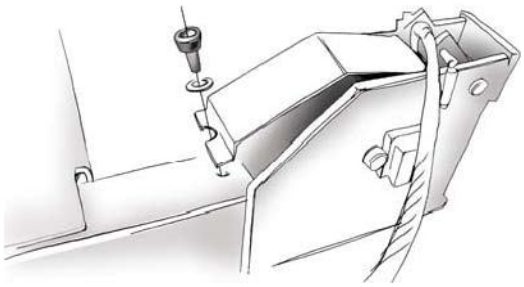






(3) Assemble the wire pulley in reverse order of the disassembling process.

(4) Assemble the cover of support beam for plate.

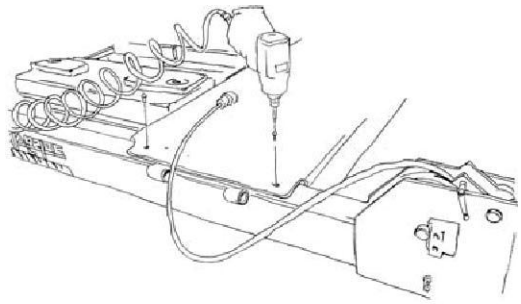


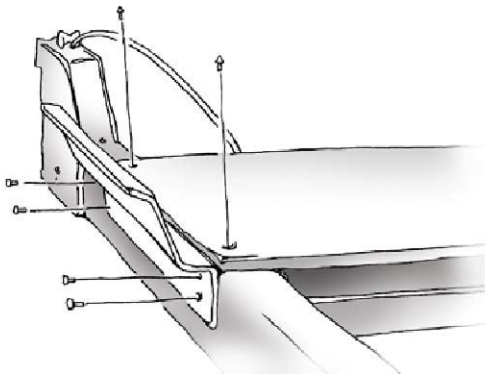
(5)Assemblesupport beam for plate and plate together.

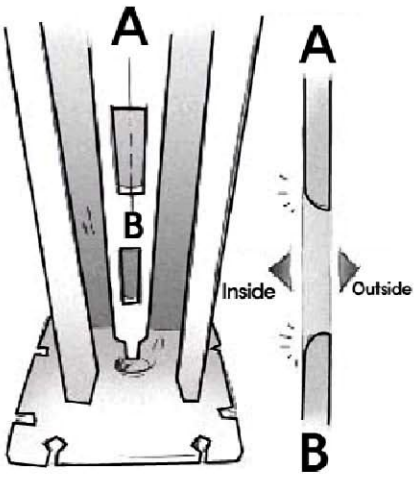
Set the location with wooden bars, and assemble support beam for plate and plate applying round head cross bolts M10X20Lateightpositions.

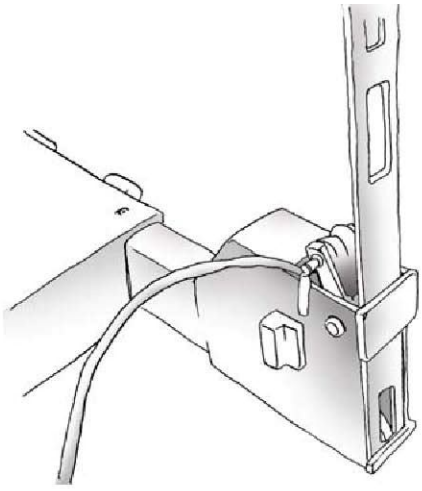
(6) Assemble the front tire stopper.(Socket head boltM10×15L)

3-4-3. Assembling lockrail Put the lockrails tosupportbeamfor plate.







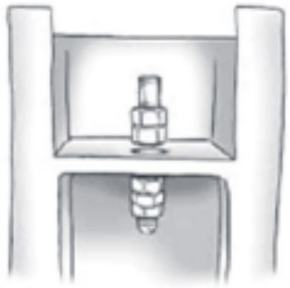


Warning	When assembling lockrail, place round part of the rail hole facing inside.

3-4-4. Assembling post

(1) Before setting up posts, put the lockrail fixing full-thread bolts to the Ø20 holes in fixing plates of the top of the posts. (4 positions)

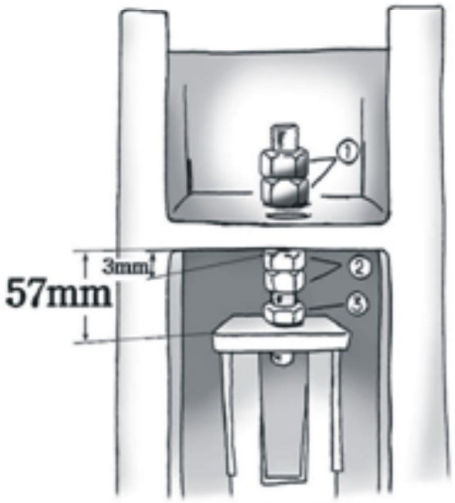
(2) Assemble the remote control wire assembling eyebolt to the upper part of the post. (2 positions) (No.1,3).



Before setting up posts...

(3) Put the bottom of the lockrail to the base hole (Ø 35) on the lower part of the post, and set up the post.

(4) Fasten two ① nuts (16mm). As shown in the figure, fasten the upper nut clockwise and the lower nut counterclockwise, maintaining the space to the lockrail for 57mm~60mm. Fasten two ② nuts (11.5mm), each to opposite direction, maintaining 2~3 threads (3mm) between the nuts. Fix ③ nut tight to the lockrail.



3-4-4. Assembling post

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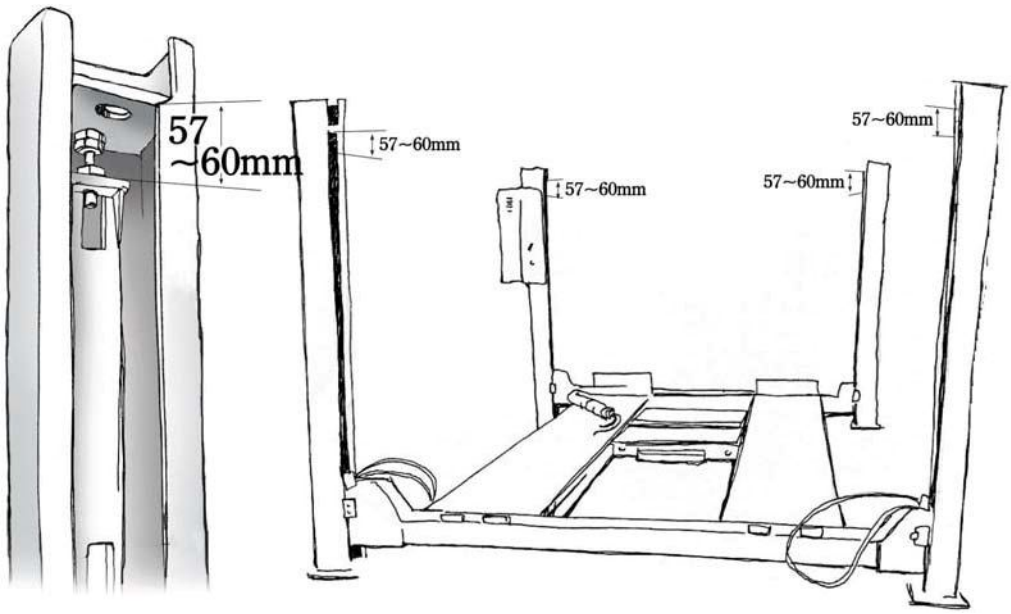
(5) Set up4 posts, maintaining the space of57~60mm between fixingplateofthetopofthepost and lockrail upper bracket.



3-4-5. Setting up posts (Tightening anchor bolt)

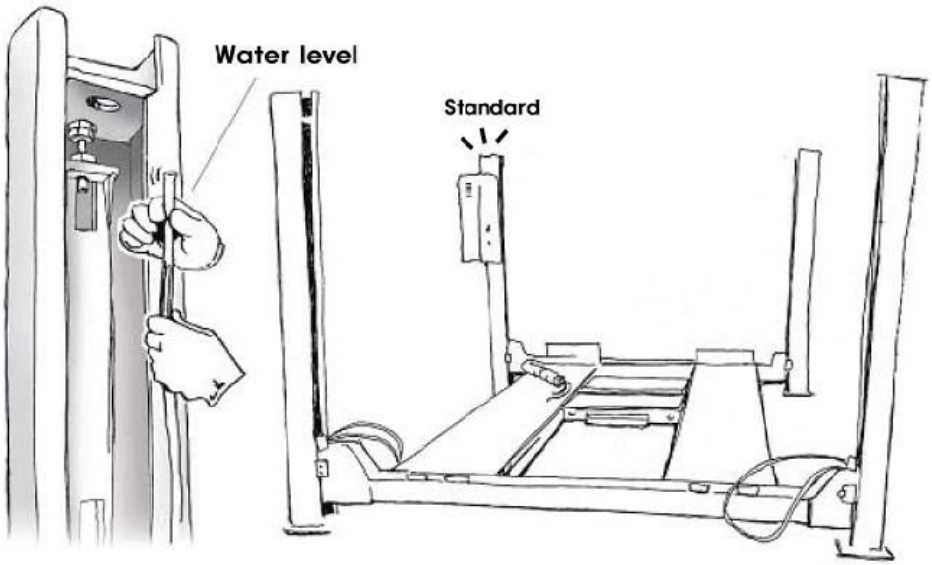
(1) Based on the lower part of the top hole of the lockrail (No.1) of the reference post (the highest post), measure the height ofthe remaining 3 posts

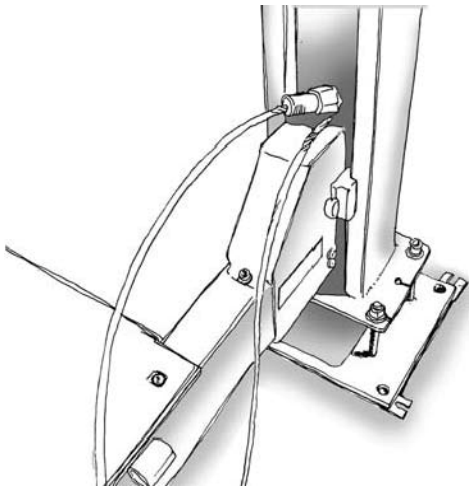
(No. 2, 3 and 4), and measure the length. ※ It is requiredtomatchthe heights of the 4 posts.

(2) Putthe shim or something equivalent under the posts lower than thereference toplacethe 4posts in level.

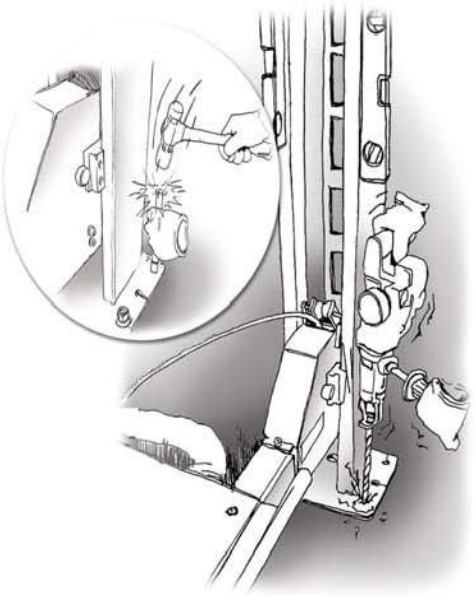
(3) Make a hole on the base of post, fasten the anchor bolttight,and then tighten the nutlightly.

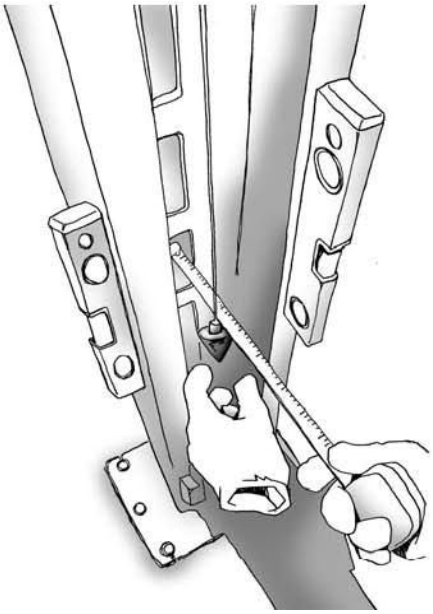
(5) Adjust verticalityand level of the 4 posts by putting the shims, and then tighten the nuthard.





Warning	Adjust the depths so that the 4 anchor bolts have the same height.

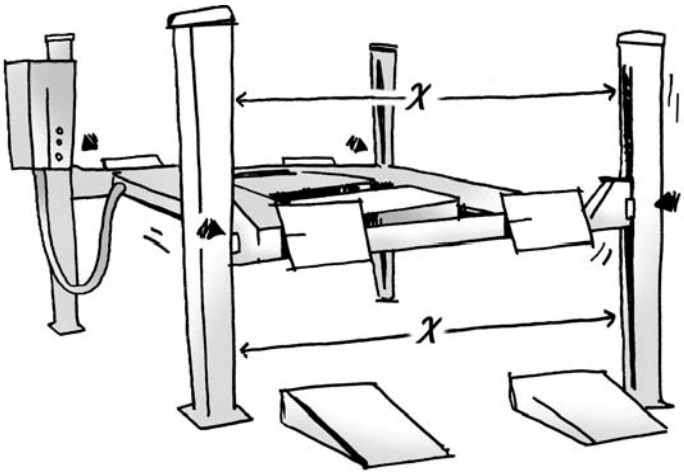




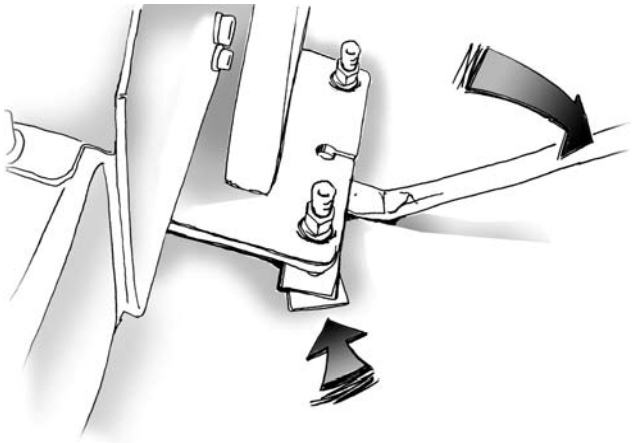
(4) Place the level meters on the posts, and using shims, adjust the posts to be vertical to the ground in front/rear/right/left of the posts.

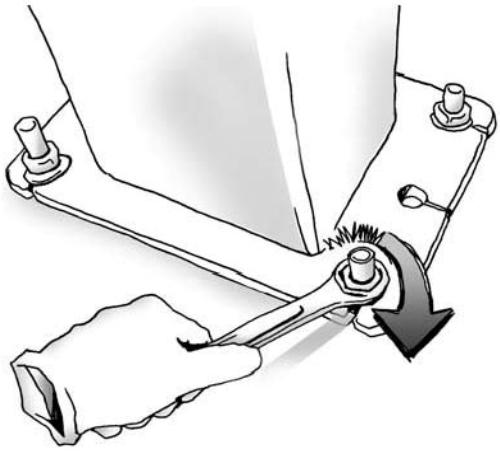
(16 positions in total for 4 posts.)

▶ Put the weight and check the verticality and level.



※ Set the posts so that MC guides lightly contact and hold the posts when lifting up/down the plate.



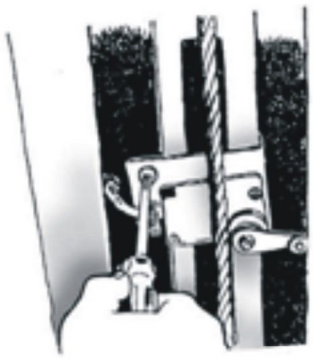


▶If there is any gap madebyshim on the bottomofthepost, make sure to put thincement or mortar. (The user himself shall do the work.)

3-4-6. Assembling limit switch

Assemble the limit switch to the lockrail of the drive post.

Set the fixed position to the ceiling height.

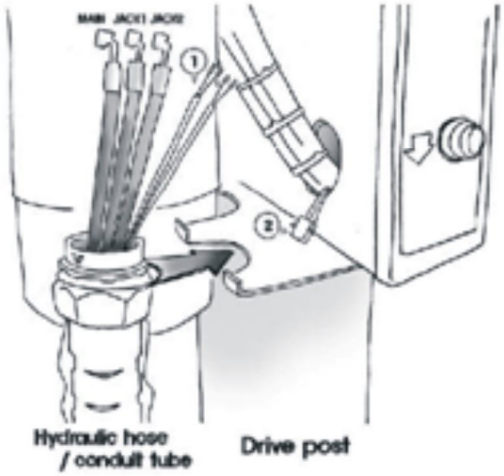


3-4-7. Assembling wire rope

Fasten the wire rope fixing full-thread bolt to the fixing plates of the top of the posts (4 positions).

3-4-8. Assembling control panel

(1) Assemble the conduit tube from the outside of the drive plate to the control panel connector.



3-4-6. Assembling limit switch Assemble the limit switch to the lockrailof thedrive post. Set the fixed position tothe ceiling height.

3-4-7. Assembling wire rope Fastenthe wire rope fixing full-thread bolt tothe fixingplates ofthe top of the

posts (4 positions).

3-4-8. Assembling control panel

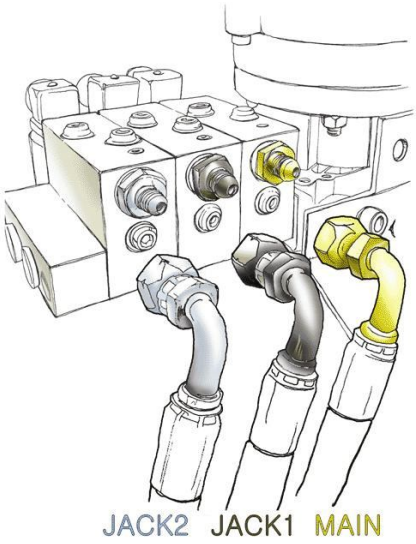
(1) Assemble the conduit tubefrom the outsideof the drive plate to the control panel connector.

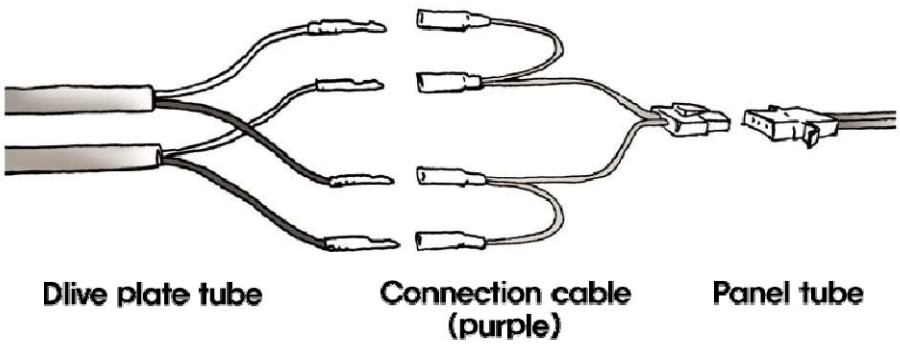
(2) Connect the hydraulic hoseto the power pack block. MAIN (Gold) – Plate JACK1 (Silver) – Front pack JACK2 (Black) – Rear pack

(3) Connect the main plate conduit tube ① and the control panel cable ② with the connection cable (purple), and assemble the power pack tank cover. (Connection line, tank cover-Power pack front vinyl cover) ※To secure safety, make the connection after assembling safetylocker solenoid.

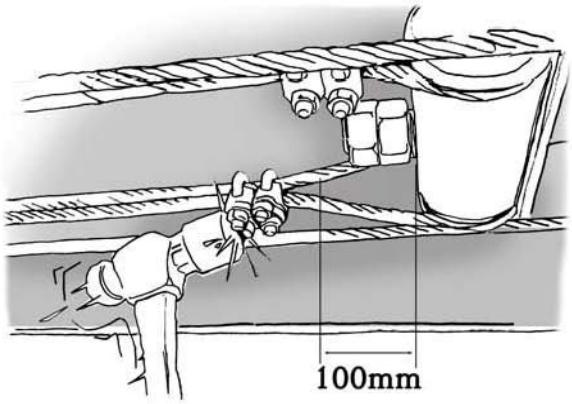
(4) Connectthe power pack main power supply.

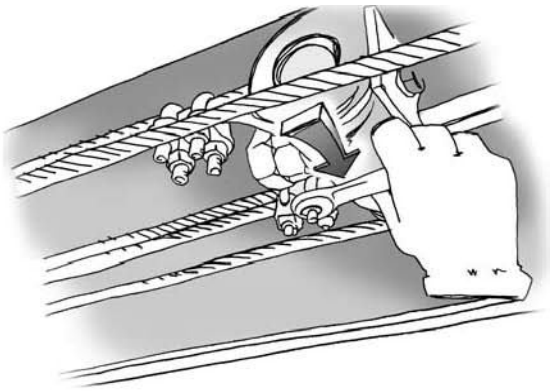
(5) Bind thehydraulichose and cables with tiestring.





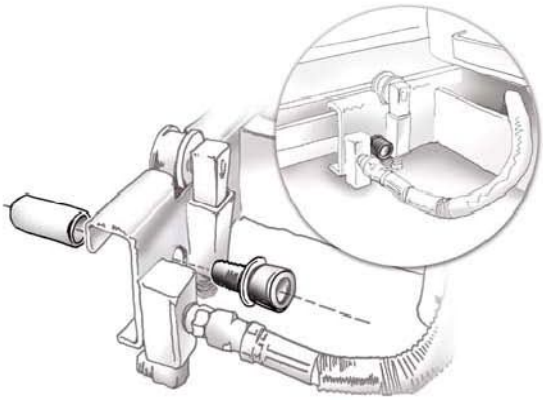
Warning	Turn off the main switch on the power supply distribution panel, place the warning sign, and then, connect the power cable.





3-4-10. Assembling jack

Assemble the jack deletion preventive bar.

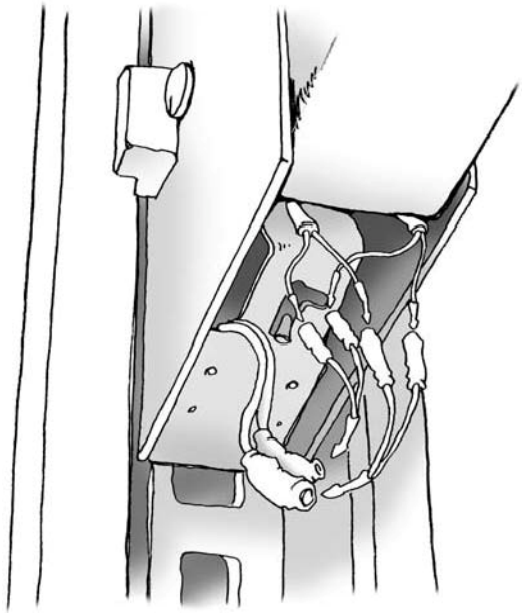


3-4-9. Leveling wire rope

(1) Turn on the lift, lift up the plate, and press the lockingswitchtotightenthe wire rope. Lift up the plate to the position appropriate for work (1M~1.3M).

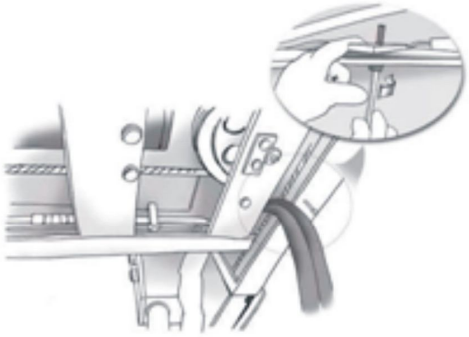
(2) Fasten the wire clamp on the cylinder fixing wire of the drive plate.

3-4-11. Assembling safety locker solenoid Connectthe safety locker solenoid cable of supportbeamfor plate to the main line, and fix the cables withtie strings. (4).

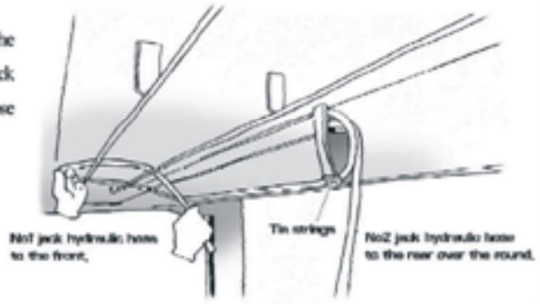


3-4-12. Connecting hydraulic hose for jack

(1) Put the jack hydraulic hose under the front support beam for plate (apply the fixing bolt), and push in to the hose protection cover on the right wall inside the driven plate.



(2) Pull down the hydraulic hose in the middle of plate, place the No.1 jack hydraulic hose to the front and the No.2 jack hydraulic hose to the rear over the round bar protecting hose hang.



(3) Connect the jack hydraulic hose Nos. 1 and 2 to the jack hydraulic pipe.

(4) Press the jack up button on the remote controller, and deflate air from the jack hydraulic hoses (Nos. 1 and 2).

3-4-12. Connecting hydraulic hose for jack

(1) Put the jack hydraulic hose under the front support beam for plate (apply the fixing bolt), and

push in to the hose protection cover onthe right wallinside the driven plate.

(2) Pull down the hydraulic hose in the middle of plate, place the No.1 jack hydraulic hose to the front and the No.2 jack hydraulic hose to the rear over the round bar protecting hose hang.

(3) Connect the jack hydraulic hose Nos. 1 and 2 tothe jack hydraulic pipe.

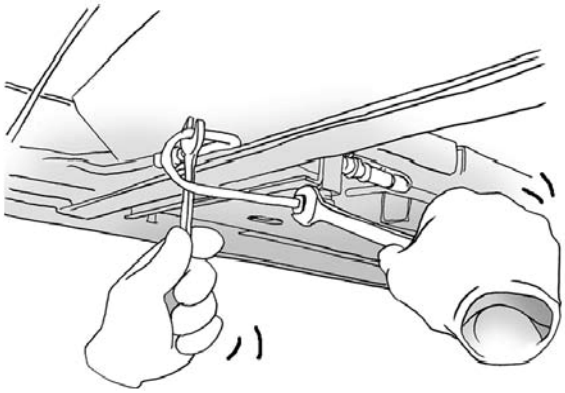
(4) Press the jack up button on the remote controller,and deflate air fromthe jack hydraulic hoses (Nos. 1 and 2).

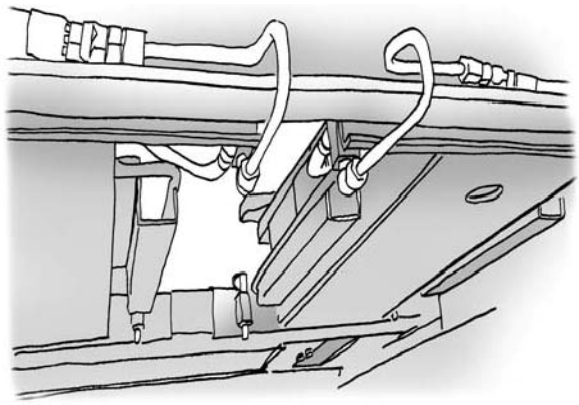
(5) Assemble the hydraulic pipeto the hydraulic block of the jack.

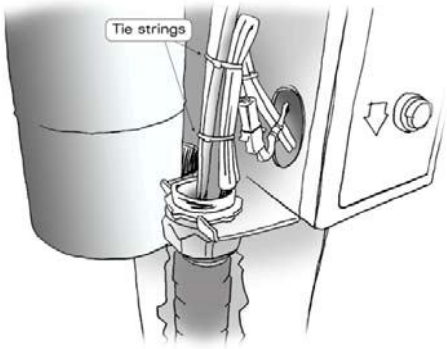
(6) To prevent the safety locker solenoid line drooping under the plate, pull the line and bind it tothe hydraulic hose withtie strings.

(7) Tie the hydraulic hose and the solenoid line at intervals of 200~300mm.

(8) Movethe jacks front/rear tocheck if they roll normally.





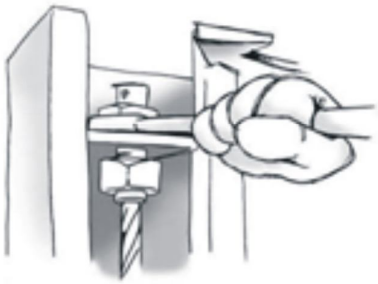


3-4-13. Main connection of panel safety locker solenoid Connect the safetylocker solenoid main connector. Apply tie strings.

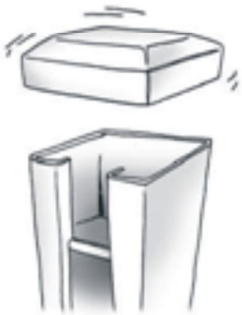
3-4-14. Final leveling of plate

(1) Set the support beam for plate lock to the 4th hole from the ground ofthe safety lockrail, and thenpress the lock switch tolevel the plate.

(2) Pullthe wire ropes of the 4 posts evenly, and tighten the wirerope fixing bolt withthe 46mmspanner.



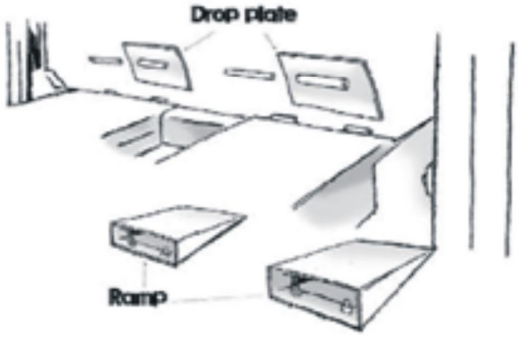
3-4-15. Finish of post Applythe post covers on the top of the posts (4).



3-4-16. Assembling drop plate ramp

(1) Assemble the drop plate.

(2) Lift down the plate to set the position of the ramp to the main body, mark the position for anchor bolt, drill a hole, and then fix the ramp to the ground. (at the intervals of 100mm on the support beam for plate.)



3-4-16.Assembling drop plate ramp

(1) Assemblethe drop plate.

(2) Lift down the plate to set the position of the ramp to the main body, mark the position for anchor bolt, drill a hole, and then fix the ramp to the ground. (atthe intervals of 100mm on the support beam for plate.)

3-4-17 Check if the hydraulic oil of hydraulic unit tank is properly maintained.

3-4-18 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.

3-4-19 After finishing all 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 and then check the following items.

Check items	Result
① Check if the oil at the hydraulic line and nipple is leaked.	
② Check if the electrical parts are damaged.	
③ Check if the abnormal noises at the lift are occurred.	
④ Check if the oil at the cylinder is leaked.	
⑤ Check if the valve for manually lowering is properly operated.	
⑥ Check if the lock device is properly operated.	

Should something wrong be found as the result of the test run, refer to troubleshooting.

3-4-20 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.

Check items	Result
① Check if the oil at the hydraulic line and nipple is leaked.	
② Check if the oil at the cylinder is leaked.	
③ Check if the lift is properly moved up and down.	

CHAPTER 4. OPERATION 4-1 Warning for use

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

CAUTION

4-2 Checking point before operation

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

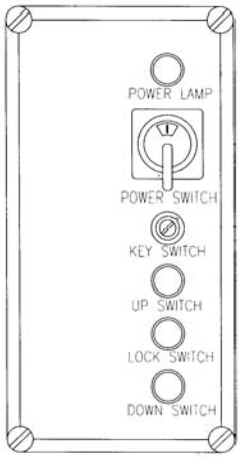
Check the following items before loading a car into the lift;

(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

4-4-2 Description of control panel

The configuration of control panel is as follows.



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 supplying the control power. When KEY switch is positioned to ON, Up, DOWN and LOCK switch can be operated.
	Push button switch for moving up the lift. When KEY switch is positioned to ON and UP button is pressed, the lift is moved up.
	Push button switch for lowering the lift. When KEY switch is positioned to ON and DOWN button is pressed, the lift is moved down.
	Push button switch for locking the lift. When KEY switch is positioned to ON and LOCK button is pressed, the lift is locked at locker (4 position).
	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

The lift is operated in accordance with the following procedures. 1.How to operate the lift for repairing the car

> Make sure that the lift is operated by qualified personnel only.

1) After putting the car on the main board by driving the car, should lock the parking brake and get off at the car.

2) Turn on the power switch on the control panel.

3) Raise the lift to a desired height by pressing UP button of control panel.

4) To ensure the safety, press the locking button of control panel and fix the lift in the locking position.

5) When the DOWN button of control panel is pressed, the lift moves upfor 2～3 sec and then, starts the lowering operation. When the limit switch for prohibiting the lifting operation is on the operation, it is lowered after staying for 2～3 seconds without the raisingoperation if the DOWN button is pressed.

2. How to operate the lift for wheel alignment

1) Raise the lift to a height of about 850 ㎜or higher depending on the wheel pull-in/pull-out order.

2) Press the locking button of control panel in order to fix the lift into the lock position.

3) After raising the vehicle using the two step operated jack depending on the wheel installation and removing order, place the alignment turntable below the 4 wheels.

4)Lower two step operated jack and then, place the wheel onto the table.

5) The vehicle should be aligned toward the left and right in order to carry out the alignment job.

6) Once the alignment job is completed, move up the two step operated jack and then, remove the alignment turntable. And lower the two step operated jack in order to move down the wheels on the main board.

7) After raising the lift slightly by pressing UP button for a short time, press DOWN button to lower the lift of lift.

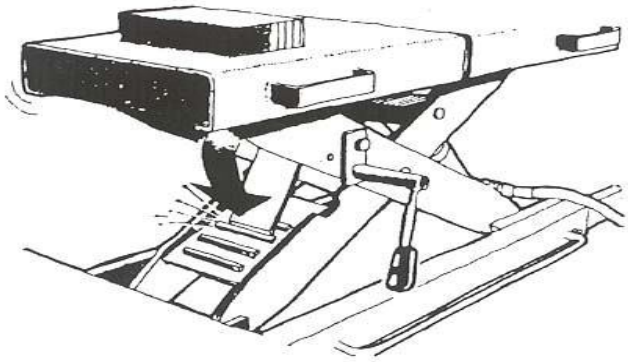
3. How to pull out and pull in the wheel

1) Raise the platform to a height where wheels can be easily replaced in accordance with the procedures to operate the lift for repairing the vehicle.

2) Move the two step operated jack under the supporting part of the vehicle and then, place a rubber plate on the upper slides that have been widened properly.

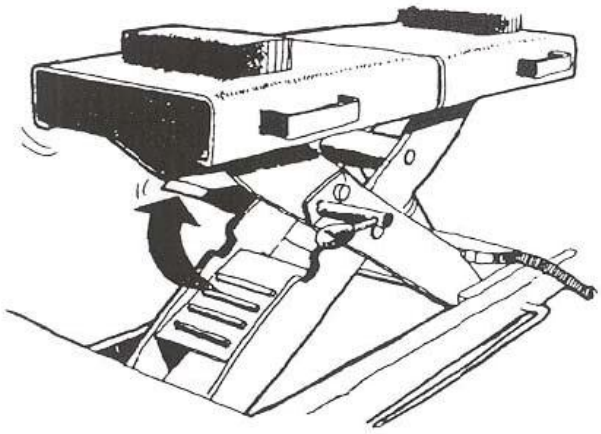
3) Raise the two step operated jack to a wanted position by pressingthe jack UP button of the control panel. Do not move up the cylinder to full stroke.

4) For your safety, turn the safety lever of the two step operated jack as shown in Fig.



5) Press the LOCKING button at control panel

A. Once the wheel pull-out/pull-in job is completed, raise the lift slightly by pressing UP button for a short time, and then, release the safety lever



7) Lower the vehicle first by pressing the jack down button and then, lower the main board by pressing the DOWN button of control panel

OP

4-6 How to lower manually the lift during emergency

4-6-1 Manual Lowering Condition

- Workers should lower the manually in the following cases;

1) In case the lift cannot be lowered due to power failure.
2) When the hydraulic circuit experiences trouble.
3) When the lift can not be lowerd manually due to power supply conditions.

4-6-2 Preparation Before Operation

1) Remove obstacles under the lift before lowering it. 2) Turn off the power switch. 3) Check whether the four locking devices are in the locked position. (pis.2) 4) If in the locking position, use the separate hydraulic jack. 5) Be sure that are no persons under the lift. 6) Use a 19mm spanner and + driver for adjustment.

4-6-3 Lowering Order

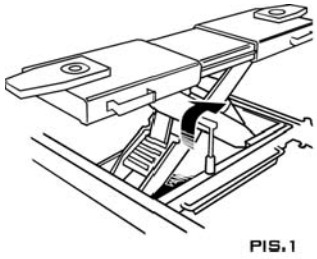
1) Loosen the round head 4bolt of the unit panel using the + driver and then, open the cover.
2) When requiring to lower the two staged jack.
3) Release the safety lever of the two staged jack as shown in (pis.1).
4) Change the locking solenoid release device of the both posts into the manual mode.

(pis. 2-1)

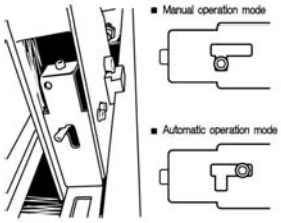
5) Once the main platform is lowered complrtrly, return the locking solenoid release device into the automatic mode.(pis. 2-2)

⚠ When the self-repairing can not be carried out, Contact our campany for A/S as soon as possible.

Warning



PIS.1

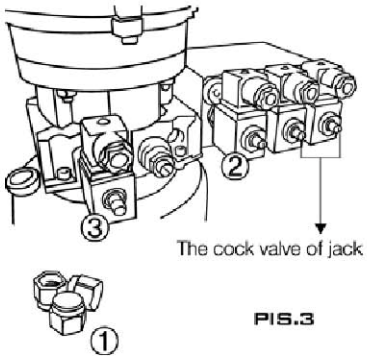


pis. 2-1

pis. 2-2

4-6-4 Take out two 19mm cap nut for main plate on manifold as (pis.3/fg 1) 4-6-5 Turn cock valve counterclockwise as (pis.3/fg 2) carefully and turn cock valve on manifold counterclockwise as (pis.3/fg 3) 4-6-6 Then main plate will be downed.

⚠ WARNING	Loosen the bolts slowly in order not to descend the lift too fast, Especially with the behicle in the lift.
⚠ WARNING	Make sure be careful while work above, The downward can be stopped by closing the cock clockwise when any problem to be occurred.



PIS.3

4-6-7 Make sure above things must be recovered after done the work.

1) Restore the manual descend valve into orignal status. 2) Return the locking solenoid release device into the automatic operation mode. 3) Close the cover of the unit panel.4) Contact our company for A/S when faults are found as a result of the inspection

▶ **PRECAUYION**

- Be sure to turn the slowly if there is vehicle. When jack and jack 2 are untightened in the above order, the 2 stage jack is lowered slowly due to it's own weight. Ones completely lowered, it should be locked in the reverse other.
- Jacks may be damaged and accordingly, should not be tightened force fully lowering when the main lift is in the locked state by the locking button.

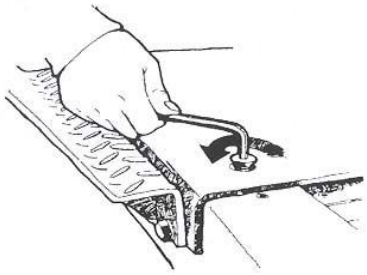
CHAPTER 5. TROUBLESHOOTING

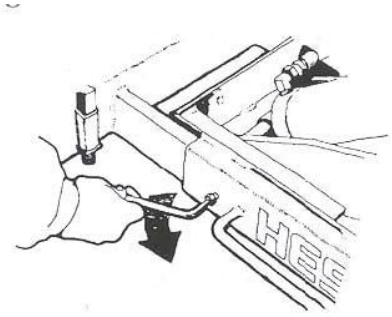
5-1 Inspection and repair 5-2 How to adjust the inner width of the Lift Platform

	Symptoms	Check point	Corrective Action to be taken
Wire Rope and Locking device	Platform is not leveled when lift is moving up by wire rope	1. Check if wire rope is partially loosened. 2. Check if clip of wire rope is loosened.	1. Adjust the fixing bolt of wire rope after checking the levelity. 2. Tighten clips after adjusting levelity.
	Lift is not moved when DOWN button is pressed.	1. Check if the carry is cached to lock device. 2. Check if the power is supplied t solenoid valve.	1. Lower again after moving up the lift. 2. Repair the wire connection and lower the lift in accordance with the manual operation procedure.
	Platform is inclined during lowering.	1. Check if the oil at load head cover is sufficient. 2. Check if the air is mixed at the hydraulic oil.	1.. Supply the oil. 2. Let air out of the hydraulic unit after supplying the oil.
	Lock is not working when lifting or lowering.	1. Check the connection of wire and connector. 2. Check the operation of manual lever.	1. Connect them and request A/S. 2. Release manual lever.
Hydraulic Cylinder and its units	The abnormal noise at motor is listened.	1. Rated capacity is exceeded. 2. Relief pressure is low. 3. Shortage of hydraulic oil.	1. Operate within rated capacity. 2. Adjust to 4 ton. 3. Let air out of the hydraulic unit after supplying the oil.
	Hydraulic Oil is leaked.	1. Defect in hydraulic hoses. 2. Leakage from connecting parts. 3. Bad cylinder packing.	1. Replace the hydraulic hose. 2. Tighten the connection. 3. Request A/S.
	Oil connections	1. Influx of water or Foreign substance	1. Exchange oil (annually) (Hydraulic oil : 32CST/12litter) Fist oil exchange : 2 months after operation Afterwards regular exchange
	The lift is not moved up.	1. Check if the oil is leaked or hydraulic units are damaged. 2. Check if the lift is operated improperly. 3. Check if the carrying load capacity is over. 4. Check if pressure at relief valve is proper.	1. Request A/S. 2. Relieve the air in hydraulic hoses 3. Load within the rated capacity. 4. Adjust to 2.5ton.
	The lift is not lowered.	1. Check if the safety device is locked. 2. Check if the electric circuit is damaged.	1. Re-lowering after lifting slightly. 2. Refer to electric check points.
		Lower it in accordance with the procedure to lower manually the lift during emergency, and then, request A/S.	
Electric Devices	Motor is not operated and the abnormal noise at motor is listened.	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.	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.
	NFB or circuit breaker (30A) is operated.	1. Check the Contact of magnetic contactor. 2. Check the capacity of circuit breaker. 3. Check if the wire is damaged.	1. Replacement (Request A/S). 2. Replacement (Request A/S). 3. Replacement after checking.
	Motor is operating but lift is not moved up.	1. Check if the rotating direction of motor is correct. 2. Check if hydraulic lines is damaged.	1. Re-operate after changing the phase connection. 2. Refer to check points for hydraulic cylinder and unit.

1) After moving down the lift to bottom, loosen four flat head wrench bolts located at the front and rear part of the lift platform as shown in Fig**.** (At this time, do not move the lift platform).

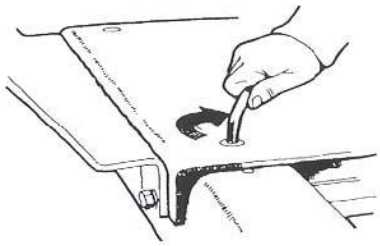
2) Loosen the bolts fixing the sliding arm of two step operated jack as shown in Fig.





3) Narrow or widen the width of the lift platform by using the lever and then, align wrench bolt holes (Narrowed width : 40mm, Widened width : 50mm).

4) Check if the sliding arm's width of two step operated jack has been adjusted properly. Then, tighten the flat headed bolts on the lift platform as shown in Fig.



5) After adjusting the position of the two step operated jack, fasten the bolts fixing the sliding arm

5-3 How to check and replace the Wire Rope

1) Check the wire rope before supplying the oil every month.If necessary, replace it immediately.

2) The life span of the wire rope can be extended considerablywhen applying watery turbine oil on it every month.

3) Be sure to use only wire ropes manufactured or approved by our company.

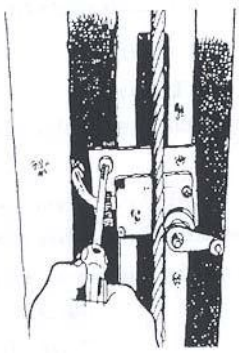
4) The wire rope can be replaced by our technicians only or when they are present.

5) The wire rope should not be used in excess of the rated capacity of the lift. Our company is not responsible for problems and accidents generated as a result of doing so.

5-4 How to adjust the upper limit position

1) The maximum height of the lift can be adjusted freely.

2) Loosen the limit bracket that is fixed on the activation post with a "+" driver and then move it into a desired position before fixing it as shown in Fig.



3) At this time, the lock should be located in the middle or higher position of the lock rail groove.

CHAPTER 6. MAINTENANCE 6-1

General caution during maintenance

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) Clean the control box inside by air once a month. 10) Check once a week whether the bolts are loosen, and if the bolts are loosen, fasten the bolts tightly. 11) 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
	Wire Rope	Abrasion, deformation and Breaking of wire	Visual	Replacement	2 year

3 months	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

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.

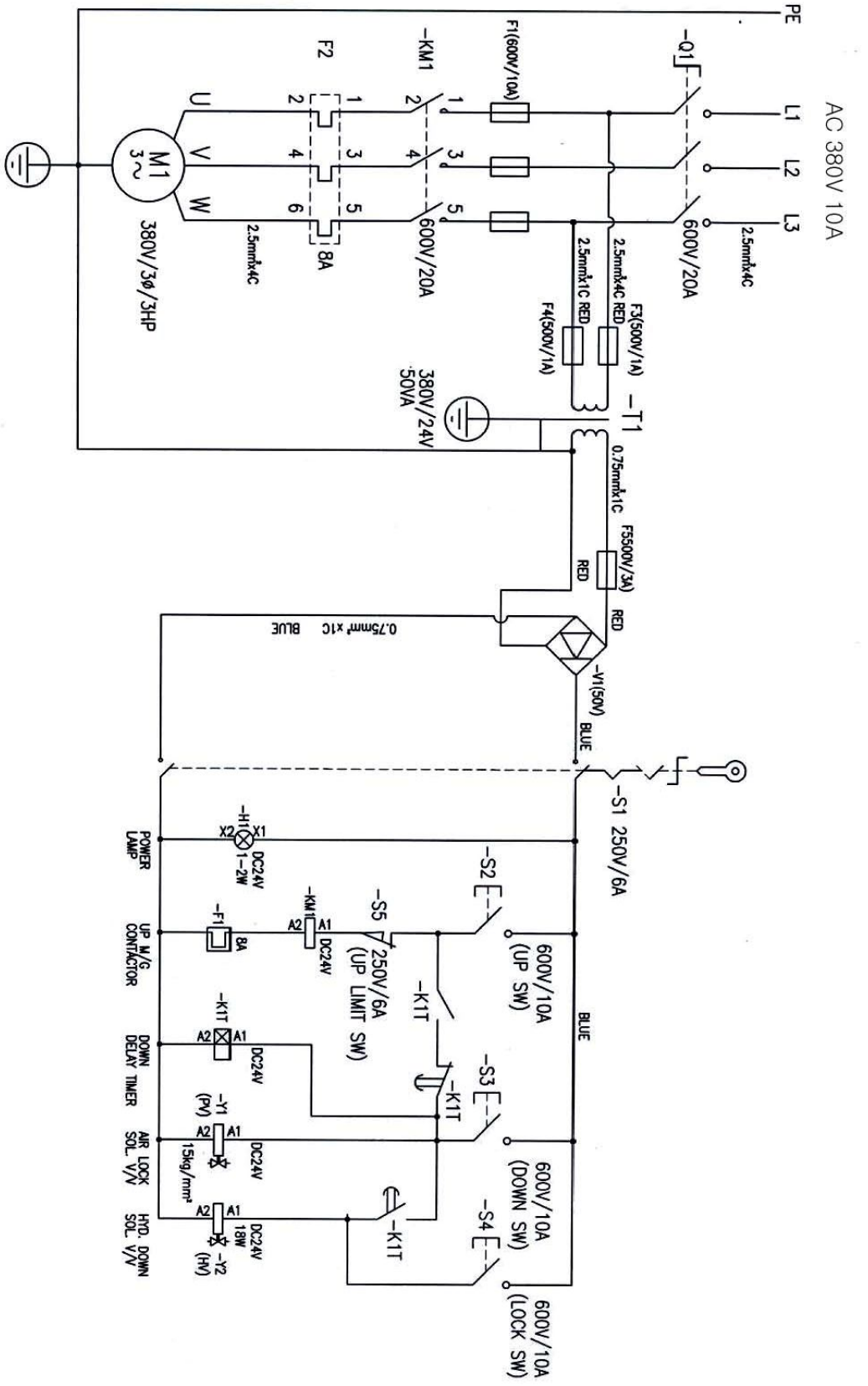
Oil supplying plan

Location to be applied	Kinds of oil or grease	Period of exchange
Post	SAE 20 or SAE 30	Supply every 6 months

APPENDIX

1 ELECTRIC DRAWING
2 RECOMMENDED SPARE PARTS LIST

1. ELECTRONIC CIRCUIT –46H(AC 380 10A)



SPARE PARTS LIST

NO	DWGNO	DESCRIPTION	STANDARD	Q'TY	MANUFACTURE	REMARKS
1		Magnetic Contactor	LP1K0910-8D	1		
2		Cam Switch	V01 690V 20A	1		
3		Timer	MA4-C DC 24V 50/60Hz	1		
4		Air Solenoid V/V	SV-121 DC 24V	1		
5		Bridge Diode	KBPC 10A 50V	1		
6		Limit Switch	M-904	1		
7		Micro Switch	ZCN P-501A 10A 250V	1		
8		Push Button Switch	KD5BRRER10S	2		
9		Pilot Lamp	DC24	1		
10		Fuse	250V 1A 110V 3A	2 1		
11		Over Load Relay	LR2K0316	1		
12		Key Switch		1		