

PLEASE READ THE ENTIRE CONTENTS OF THIS MANUAL PRIOR TO INSTALLATION AND OPERATION. BY PROCEEDING YOU AGREE THAT YOU FULLY UNDERSTAND AND COMPREHEND THE FULL CONTENTS OF THIS MANUAL. FORWARD THIS MANUAL TO ALL OPERATORS. FAILURE TO OPERATE THIS EQUIPMENT AS DIRECTED MAY CAUSE INJURY OR DEATH.

REV A 09-18-09

INSTALLATION AND OPERATION MANUAL

Model PCL-16HD

Portable Column
Lifting System

READ FIRST



Keep this operation manual near the machine at all times. Make sure that ALL USERS read this manual.

SHIPPING DAMAGE CLAIMS

When this equipment is shipped, title passes to the purchaser upon receipt from the carrier. Consequently, claims for the material damaged in shipment must be made by the purchaser against the transportation company at the time shipment is received.

BE SAFE

Your new lift was designed and built with safety in mind. However, your overall safety can be increased by proper training and thoughtful operation on the part of the operator. DO NOT operate or repair this equipment without reading this manual and the important safety instructions shown inside.



1645 Lemonwood Dr.
Santa Paula, CA. 93060, USA
Toll Free 1-800-253-2363
Tel: 1-805-933-9970
Fax: 1-805-933-9160
www.bendpak.com

PCL-16HD

Portable Column Lift

This instruction manual has been prepared especially for you.
Your new lift is the product of over 35 years of continuous research, testing and development;
it is the most technically advanced lift on the market today.

READ THIS ENTIRE MANUAL BEFORE INSTALLATION & OPERATION BEGINS.

RECORD HERE THE LIFT AND
POWER UNIT INFORMATION WHICH IS LOCATED
ON THE SERIAL NUMBER
DATA PLATES ON THE LIFT AND
ON THE POWER UNIT

Power Unit Model # _____
Power Unit Date Of Mfg. _____
Power Unit Serial # _____

  		
1645 Lemonwood Dr., Santa Paula, CA 93060 USA Tel: 1-805-933-9970 Fax: 1-805-933-9160 www.bendpak.com		
Model No.	Lifting Capacity	Serial No.
Date of Mfg.	Power Unit No.	Voltage / Amperage

This information is required when
calling for parts or warranty issues.

PRODUCT WARRANTY

BendPak PCL Lifts are covered under warranty for one year on equipment structure, to be free of defects in material and workmanship. Power units, hydraulic cylinders, and all other assembly components such as turnplates, slip plates, cables, chains, valves, switches etc. are covered under warranty for one year against defects in material or workmanship under normal use. BendPak Inc. shall repair or replace at their option for the warranty period those parts returned to the factory freight prepaid which prove upon inspection to be defective. BendPak Inc. will pay labor costs for the first 12 months only on parts returned as previously described.

The warranty does not extend to...

- ◆ defects caused by ordinary wear, abuse, misuse, shipping damage, improper installation, voltage or lack of required maintenance;
- ◆ damages resulting from purchaser's neglect or failure to operate products in accordance with instructions provided in the owner's manual(s) and/or other accompanying instructions supplied;
- ◆ normal wear items or service normally required to maintain the product in a safe operating condition;
- ◆ any component damaged in shipment;
- ◆ other items not listed but may be considered general wear parts;
- ◆ damage caused by rain, excessive humidity, corrosive environments or other contaminants.

THESE WARRANTIES DO NOT EXTEND TO ANY COSMETIC DEFECT NOT INTERFERING WITH EQUIPMENT FUNCTIONALITY OR ANY INCIDENTAL, INDIRECT, OR CONSEQUENTIAL LOSS, DAMAGE, OR EXPENSE THAT MAY RESULT FROM ANY DEFECT, FAILURE, OR MALFUNCTION OF A BENDPAK INC. PRODUCT OR THE BREACH OR DELAY IN PERFORMANCE OF THE WARRANTY.

**WARRANTY IS NOT VALID UNLESS
WARRANTY CARD IS RETURNED.**

IMPORTANT NOTICE

Do not attempt to install this lift if you have never been trained on basic automotive lift installation procedures. Never attempt to lift components without proper lifting tools such as forklift or cranes. Stay clear of any moving parts that can fall and cause injury. These instructions must be followed to insure proper installation and operation of your lift. Failure to comply with these instructions can result in serious bodily harm and void product warranty. Manufacturer will assume no liability for loss or damage of any kind, expressed or implied resulting from improper installation or use of this product.

PLEASE READ ENTIRE MANUAL PRIOR TO INSTALLATION.

DEFINITIONS OF HAZARD LEVELS

Identify the hazard levels used in this manual with the following definitions and signal words:



DANGER !

Watch for this symbol: It Means: Immediate hazards which will result in severe personal injury or death.



WARNING !

Watch for this symbol: It Means: Hazards or unsafe practices which could result in severe personal injury or death.



CAUTION !

Watch for this symbol: It Means: Hazards or unsafe practices which may result in minor personal injury, product or property damage.

OWNER'S RESPONSIBILITY

To maintain the lift and user safety, the responsibility of the owner is to read and follow these instructions:

- ◆ Follow all installation and operation instructions.
- ◆ Make sure installation conforms to all applicable Local, State, and Federal Codes, Rules, and Regulations; such as State and Federal OSHA Regulations and Electrical Codes.
- ◆ Carefully check the lift for correct initial function.
- ◆ Read and follow the safety instructions. Keep them readily available for machine operators.
- ◆ Make certain all operators are properly trained, know how to safely and correctly operate the unit, and are properly supervised.
- ◆ Allow unit operation only with all parts in place and operating safely.
- ◆ Carefully inspect the unit on a regular basis and perform all maintenance as required.
- ◆ Service and maintain the unit only with authorized or approved replacement parts.
- ◆ Keep all instructions permanently with the unit and all decals on the unit clean and visible.

BEFORE YOU BEGIN

Receiving:

The shipment should be thoroughly inspected as soon as it is received. The signed bill of lading is acknowledgement by the carrier of receipt in good condition of shipment covered by your invoice. If any of the goods called for on this bill of lading are shorted or damaged, do not accept them until the carrier makes a notation on the freight bill of the shorted or damaged goods. Do this for your own protection.

NOTIFY THE CARRIER AT ONCE if any hidden loss or damage is discovered after receipt and request the carrier to make an inspection. If the carrier will not do so, prepare a signed statement to the effect that you have notified the carrier (on a specific date) and that the carrier has failed to comply with your request.

IT IS DIFFICULT TO COLLECT FOR LOSS OR DAMAGE AFTER YOU HAVE GIVEN THE CARRIER A CLEAR RECEIPT. File your claim with the carrier promptly. Support your claim with copies of the bill of lading, freight bill, invoice, and photographs, if available. Our willingness to assist in helping you process your claim does not make BendPak responsible for collection of claims or replacement of lost or damaged materials.

**INSTALLER / OPERATOR
PLEASE READ AND FULLY
UNDERSTAND.
BY PROCEEDING YOU AGREE TO
THE FOLLOWING.**

- ◆ I have visually inspected the site where the lift is to be installed and verified the concrete to be in good condition and free of cracks or other defects. I understand that installing a lift on cracked or defective concrete could cause lift failure resulting in personal injury or death.
- ◆ I understand that a level floor is required for proper installation and level lifting.
- ◆ I understand that I am responsible if my floor is of questionable slope and that I will be responsible for all charges related to pouring a new level concrete slab if required and any charges.
- ◆ I understand that the lifts are supplied with concrete fasteners meeting the criteria of the American National Standard "Automotive Lifts - Safety Requirements for Construction, Testing, and Validation" ANSI/ALI ALCTV-1998, and that I will be responsible for all charges related to any special regional structural and/or seismic anchoring requirements specified by any other agencies and/or codes such as the Uniform Building Code (UBC) and/or International Building Code (IBC).
- ◆ I will assume full responsibility for the concrete floor and condition thereof, now or later, where the above equipment model(s) are to be installed. Failure to follow danger, warning, and caution instructions may lead to serious personal injury or death to operator or bystander or damage to property.
- ◆ I understand that Bendpak lifts are designed to be installed in indoor locations only. Failure to follow installation instructions may lead to serious personal injury or death to operator or bystander or damage to property or lift.



Failure to follow danger, warning, and caution instructions may lead to serious personal injury or death to operator or bystander or damage to property.



Please read entire manual prior to installation. Do not operate this machine until you read and understand all the dangers, warnings and cautions in this manual. For additional copies or further information, contact:

BendPak Inc. / Ranger Products

1645 Lemonwood Dr.

Santa Paula, CA. 93060

1-805-933-9970

www.bendpak.com

**INSTALLER / OPERATOR
PROTECTIVE EQUIPMENT**

Personal protective equipment helps makes installation and operation safer, however, it does not take the place of safe operating practices. Always wear durable work clothing during any installation and/or service activity. Shop aprons or shop coats may also be worn, however loose fitting clothing should be avoided. Tight fitting leather gloves are recommended to protect technician hands when handling parts. Sturdy leather work shoes with steel toes and oil resistant soles should be used by all service personnel to help prevent injury during typical installation and operation activities.

Eye protection is essential during installation and operation activities. Safety glasses with side shields, goggles, or face shields are acceptable. Back belts provide support during lifting activities and are also helpful in providing worker protection. Consideration should also be given to the use of hearing protection if service activity is performed in an enclosed area, or if noise levels are high.



THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS, WHICH IF NOT FOLLOWED COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OF YOURSELF AND OTHERS AND CAN CAUSE PERSONAL INJURY OR DEATH. READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE THIS MACHINE.

1. Carefully remove the crating and packing materials. **CAUTION!** Be careful when cutting steel banding material as items may become loose and fall causing personal harm or injury.

2. Check the voltage, phase and proper amperage requirements for the motor shown on the motor plate. Wiring should be performed by a certified electrician only.

IMPORTANT SAFETY INSTRUCTIONS

Read these safety instructions entirely!

IMPORTANT NOTICE!

Do not attempt to install this lift if you have never been trained on basic automotive lift installation procedures. Never attempt to lift components without proper lifting tools such as forklift or cranes.

Stay clear of any moving parts that can fall and cause injury.

1. **READ AND UNDERSTAND** all safety warning procedures before operating lift.

2. **KEEP HANDS AND FEET CLEAR.** Remove hands and feet from any moving parts. Keep feet clear of lift when lowering. Avoid pinch points.

3. **KEEP WORK AREA CLEAN.** Cluttered work areas invite injuries.

4. Consider work area environment. Do not expose equipment to rain. **DO NOT** use in damp or wet locations. Keep area well lighted.

5. **ONLY TRAINED OPERATORS** should operate this lift. All non-trained personnel should be kept away from work area. Never let non-trained personnel come in contact with, or operate lift.

6. **USE LIFT CORRECTLY.** Use lift in the proper manner. Never use lifting adapters other than what is approved by the manufacturer.

7. **DO NOT** override self-closing lift controls.

8. **REMAIN CLEAR** of lift when raising or lowering vehicle.

9. **CLEAR AREA** if vehicle is in danger of falling.

10. **ALWAYS INSURE** that the safeties are engaged before any attempt is made to work on or near vehicle.

11. **DRESS PROPERLY.** Non-skid steel-toe footwear is recommended when operating lift.

12. **GUARD AGAINST ELECTRIC SHOCK.** This lift must be grounded while in use to protect the operator from electric shock. Never connect the green power cord wire to a live terminal. This is for ground only.



13. **DANGER!** The power unit used on this lift contains high voltage. Disconnect power at the receptacle before performing any electrical repairs. Secure plug so that it cannot be accidentally plugged in during service.



14. **WARNING! RISK OF EXPLOSION.** This equipment has internal arcing or sparking parts which should not be exposed to flammable vapors. This machine should not be located in a recessed area or below floor level.



15. **MAINTAIN WITH CARE.** Keep lift clean for better and safer performance. Follow manual for proper lubrication and maintenance instructions. Keep control handles and/or buttons dry, clean and free from grease and oil.

16. **STAY ALERT.** Watch what you are doing. Use common sense. Be aware.

17. **CHECK FOR DAMAGED PARTS.** Check for alignment of moving parts, breakage of parts or any condition that may affect its operation. Do not use lift if any component is broken or damaged.

18. **NEVER** remove safety related components from the lift. Do not use lift if safety related components are damaged or missing.

IMPORTANT INSTRUCTIONS

These instructions must be followed to insure proper installation and operation of your lift. Failure to comply with these instructions can result in serious bodily harm and void product warranty. Manufacturer will assume no liability for loss or damage of any kind, expressed or implied resulting from improper installation or use of this product.

PLEASE READ ENTIRE MANUAL PRIOR TO INSTALLATION.

(Selecting Site)

Before installing your new lift, check the following.

1. **LIFT LOCATION:** Always use architects plans when available. Check layout dimension against floor plan requirements making sure that adequate space is available.
2. **OVERHEAD OBSTRUCTIONS:** The area where the lift will be located should be free of overhead obstructions such as heaters, building supports, electrical lines etc.
3. **DEFECTIVE FLOOR:** Visually inspect the site where the lift is to be installed and check for cracked or defective concrete.



4. **OPERATING TEMPERATURE.** Operate lift only between temperatures of 41° -104° F.

5. Lift is designed for **INDOOR INSTALLATION ONLY.**

(Floor Requirements)



This lift must be installed on a solid level concrete floor with no more than 3-degrees of slope. Failure to do so could cause personal injury or death.

A level floor is suggested for proper use and installation and level lifting. If a floor is of questionable slope, consider a survey of the site and/or the possibility of pouring a new level concrete slab.



- ◆ **DO NOT** install or use this lift on any asphalt surface or any surface other than concrete.
- ◆ **DO NOT** install or use this lift on expansion seams or on cracked or defective concrete.
- ◆ **DO NOT** install or use this lift on a second / elevated floor without first consulting building architect.
- ◆ **DO NOT** install or use this lift outdoors.

CONCRETE SPECIFICATIONS

LIFT MODEL	CONCRETE REQUIREMENTS
PCL-16HD	4" Min Thickness



All models **MUST** be installed on 3000 PSI concrete only conforming to the minimum requirements shown above. New concrete must be adequately cured by at least 28 days minimum.

Attention

1. Connect the circuitry according to the electric principle drawings, and be sure all connections are all right before powering on. There must be a protective breaker against creepage at the power-input connection, the specifications are required as bellows: if the input power is 220v/1ph, the rated current is 100A; if the input power is 220v/3ph, the rated current is 40A; if the input power is 380v/3ph, the rated current is 32A. (Users provide for themselves.)
2. Use the machine within the rated load range, the maximum rated load of each column is 7.5 tons, the maximum of upholding point is not more 1.5 times than the minimum one.
3. You should ensure no parts on the column out of the track surface, keep the track surface smooth from damaging the surface of the slide blocks.
4. Turn off the power supply immediately, if the “FAULT” light is on. And check if the safety relay is disengaged, if so, please press the button “RESET”. Get through the power after 10 seconds, turn the selection knob to “SINGLE”, and adjust each carriage to make the vehicle horizontal by raising or lowering it, then turning the selection knob to “PAIR” & “FOUR”, Get through the power after 10 seconds.
5. The load type of the electric motor is S3, duty percent is 10%.
6. There should be dual safety with the safety hooks and hydraulic systems when the technicians are working under the elevated vehicle. It is necessary to inspect all the connection parts of the lift regularly, and make sure every part is in good condition.
7. Please select high quality hydraulic oil as diagram 1, fill at least 12 litres of the hydraulic oil into the oil tank, but don't fill too much, in case the oil might overflow after being pressed. (see Fig.1) After the first 100 hours' work, it is necessary to change the hydraulic oil and recharge it every 3000 working hours correspondingly.

Diagram 1

Item Name	Acclimation temperature	Sport viscosity (40℃)mm ² /s	Solidifying point ≤	Choice variety
N32 [#] Low solidifying point hydraulic oil	-20~40℃	30	-35	MOBIL ESSO SHELL HME
N46 [#] wearable hydraulic oil	0~40℃	40	-25	

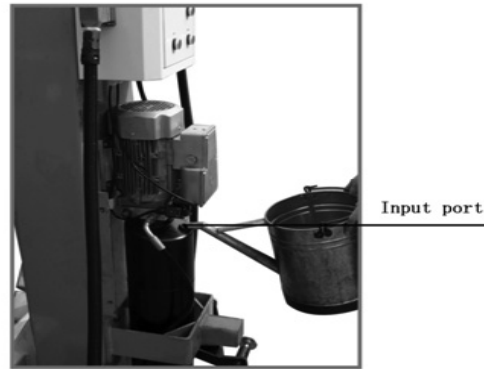


Fig.1

8. Lubricate the relevant parts every other month. Clear the slide block track and put some lubricant on; Lubricate safety hooks and their axles.
9. The elevated vehicle should follow up the bellows:
 - No one is allowed to stay in the vehicle during lifting it up and down.
 - Please make sure that there is enough air in every tyre, it is forbidden to lift the vehicle without enough air in its tyre.
 - The elevated tyres should be horizontal with the vehicle body.
10. Be sure the minimum space between the vehicle roof and the ceiling is no less than 150mm, when operating the lift indoors.
11. It is forbidden to operate the lift loaded if there is any fault on it.
12. The operator must be sure the vehicle is fully lowered onto the ground before leaving.
13. During repairing the elevated vehicle, please be sure the horizontal power on it no more than 20% of the vehicle burden.
14. Except the operation of “SINGLE” option, you should operate the lift up&down uninterruptedly and continuously without any short stroke interruptions.
15. Protect the cable against all kinds of sharp or other items which may damage it.
16. Operate the lift strictly according to the instructions and the below warnings.

(Fig.2)

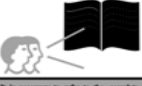








Safety Instruction	Warning	Caution
 It is necessary to refer to the complete operation instructions, especially the operation of the lift is permitted by authorized person only.	 Never exceed lift	 The field of motion of the load and of the load carrying device shall be free of obstructions.
Safety Instruction	Warning	Caution
 Proper inspection and maintenance before each operation.	 It is forbidden to climb onto the load or load carrying device when they are raised unless it is specifically designed to do so.	 It shall draw attention to the safe method of moving the load and in the case that, when working a short distance, the vehicle shall be checked to ensure that it is correctly and safely positioned.
Warning	Warning	Caution
 It is forbidden for people to stand in the field of motion of the load and the load carrying device during the movement.	 Position motor vehicle with center of gravity on roadway between supports.	 It shall draw attention to the fact that the load carrying device shall be observed by the operator throughout the motion of the lift.

Fig.2

Feature

PCL-16HD Heavy Duty Vehicle Lift is the most up-to-date hydraulic heavy vehicle lift made . Driven by hydraulic cylinder in each column, the holding fork arms rise and lower easily and smoothly. High-accuracy balancing system ensures the cylinders work synchronously. Unique design aims to fit heavy duty vehicle assembling & repair shop.

The **PCL-16HD** lift is available for the vehicles within 30 tons for the purposes of assemble, repair, maintenance, oil changing, washing and all the possible services.

Unique synchronization system

This ensures a smooth lift up&down cycle, even when the load is unequally distributed.

Human engineering

Each column is equipped with a control box, there are one master control box and three slave control box. Each column has a hydraulic pump unit.

Safety measures

Double load-safety measures are at your disposal: Both the continuous hydraulic safety device with sealing valve and the mechanical safety, self-inhibiting with safety hook. Each column is equipped with up limit switch.

Diagnosing trouble function

PCL-16HD | will stop immediately if there are any problems.

Specification

PCL-16HD is designed and manufactured under the items EN1493:1998 European Standard. The technical parameters are shown in the diagram 2.

Ground requirements: the surface and the foundation should be able to bear the pressure of at least 15 MPa; The gradient of the floor surface must be not more than 1:200; Within the area of the columns, the level difference must be not more than 10 mm.

Diagram 2

Specifications/Models		PCL-16HD		
Lifting Capacity		7.5 tons per column		
Max. Lifting Height		1700mm		
Time of Full Rise		120 sec.		
Voltage (option available)		220v/50Hz、 1ph	220 v/60Hz、 3ph	380v/50Hz、 3ph
Motor power per column		2.2Kw		
Weight per column		550Kg		
Lifting forks range		870~1156mm		
Available options	the hydraulic trolley	One unit per column & One unit for four columns		
	Mobile jack stands	One unit per column		

Structure sketch

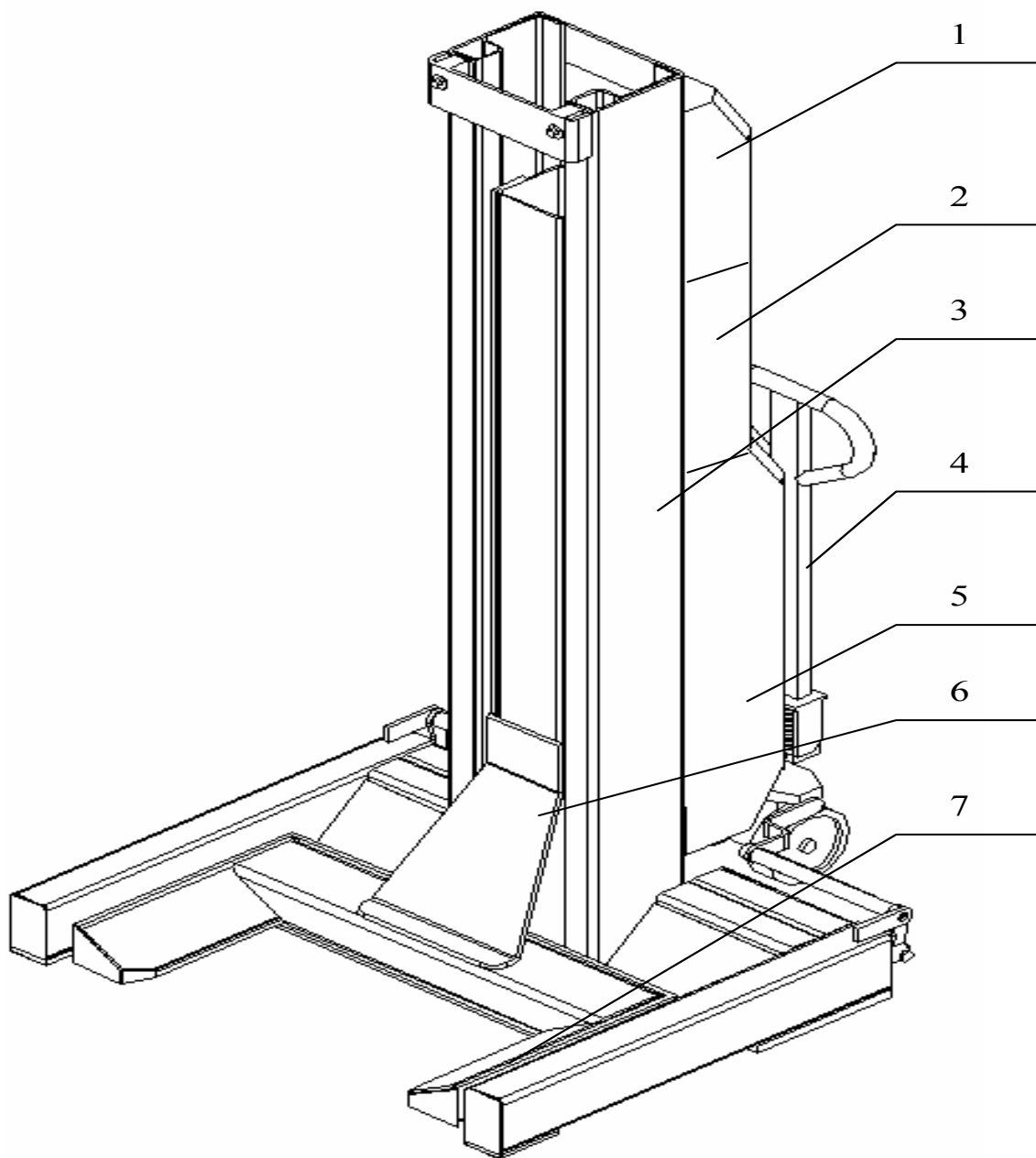
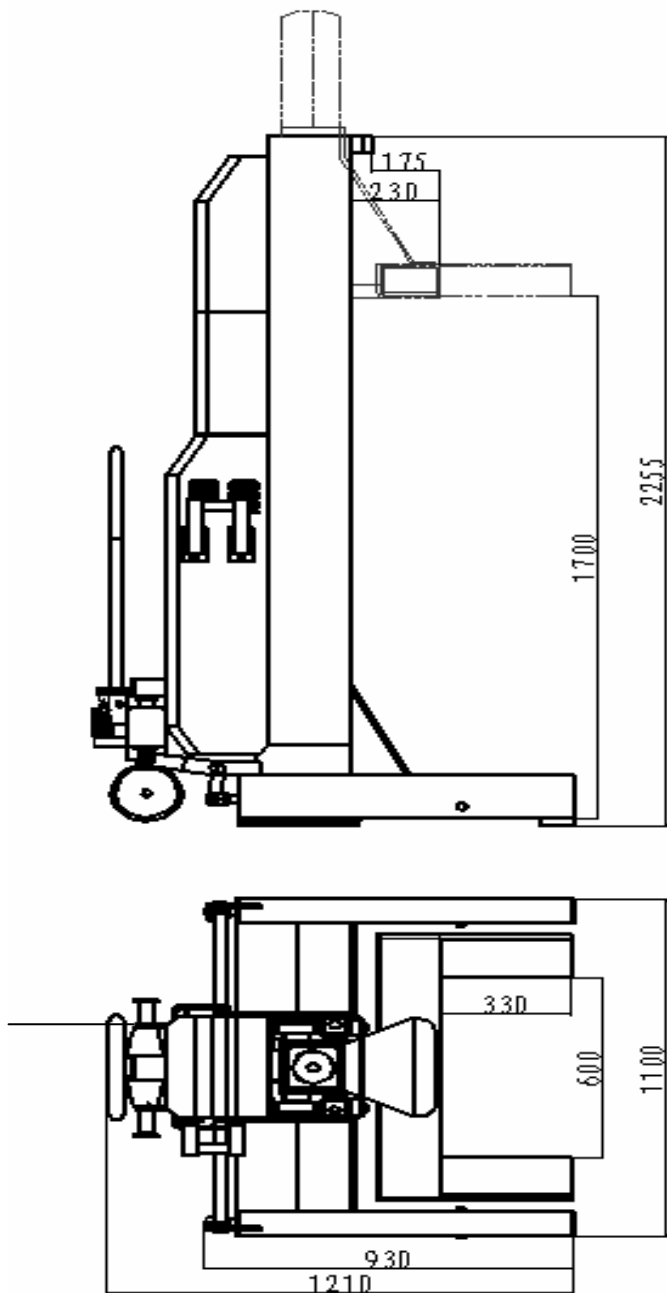
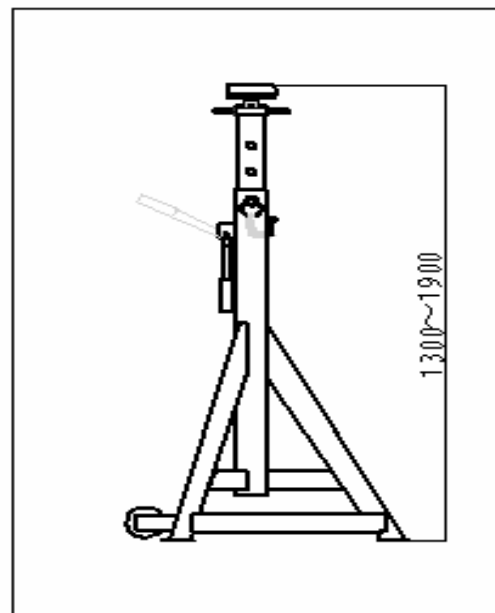


Fig.3

- | | | |
|------------------------|-------------------------|---------------------|
| 1. safety hook cover | 2. electric control box | 3. column |
| 4. hydraulic transport | 5. pump cover | 6. carriage |
| | | 7. holding fork arm |



PCL-16HD heavy duty vehicle lift



Mobile jack stands
(available options)

Fig.4 Equipment sketch

The electronics

There are 6 main parts of the electric control system, they are of a master control box, three slave control boxes, displacement sensor, electric hydraulic pump, up limit switches and electromagnets. The master control box includes power switch, selection switch, power socket, raising button, lowering button, lock button, emergency switch, relay and transformer etc; and the slave control box includes the same components except power switch and selection switch (Fig.5,6,7).

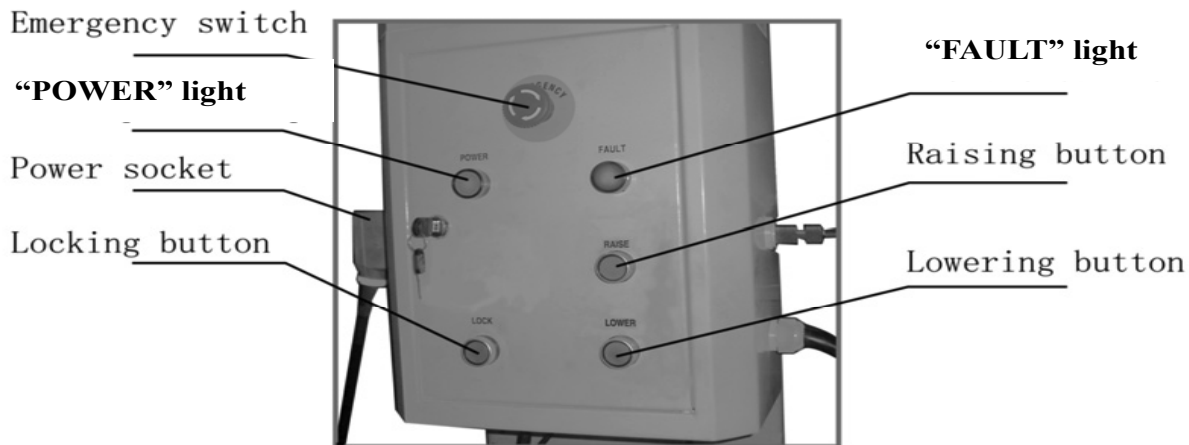


Fig.5



Fig.6

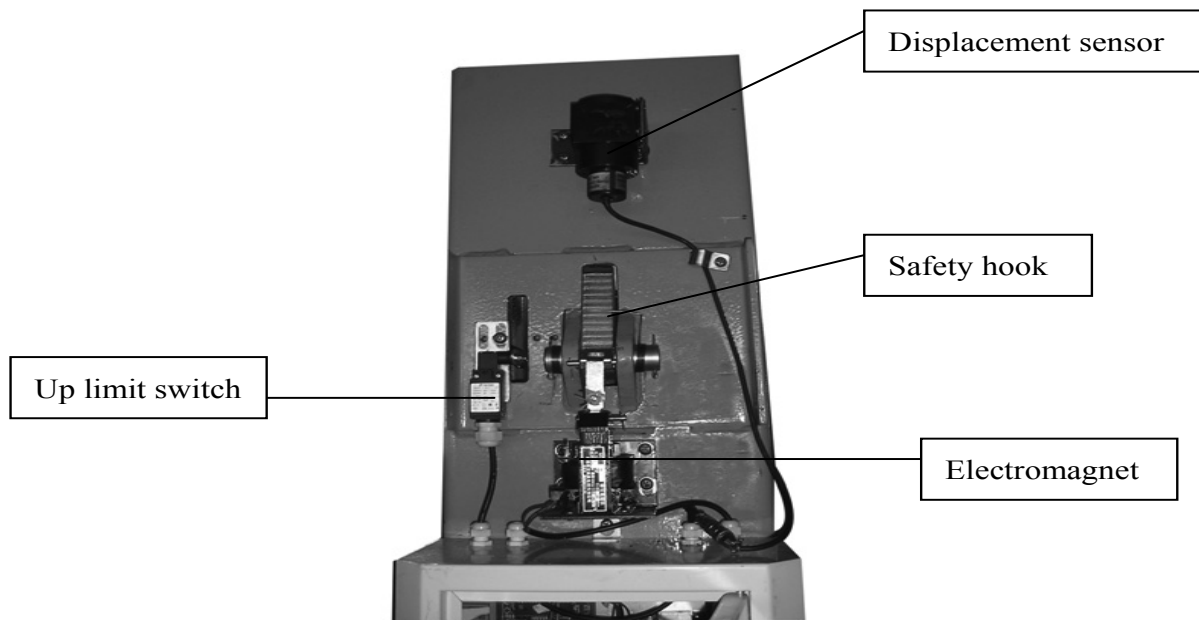


Fig.7

1) Control switch

1、Power switch

When the switch is at “OFF”, the lift is powered off and no operation is available; when the switch is at “ON”, the lift is powered on and prepared for operation.

2、“POWER” light

When the power switch is at “ON”, it is shining.

3、“FAULT” light

When the carriages overrun the limit synchronous value of the each column or the tie-ins of the cables become loose, it shines. And all the other switches do not work.

4、Selection knob

Turn the knob to “SINGLE”, you can operate each separate column.

Turn the knob to “PAIR”& “FOUR”, you can just operate the lift by the master control box.

NOTE:

1. Before turning the knob, please power off the lift first.

2. “PAIR” option is used when there are only two columns connected together; “FOUR” option is used when there are four columns connected together; “SINGLE” option can be used at all the options of “SINGLE, PAIR, FOUR”.

5、Emergency switch

When you press this switch, and no operation is available right now. There is one emergency switch on each control box.

It must be released before operating the lift. Then turn on the power switch.

6、Operating button

“RAISE” button: Press and hold this button, the carriages rise.

“LOWER” button: Press and hold this button, the carriages go down to the required height after rise a bit to unlock the hooks.

NOTE: When the up limit switch works, Press and hold the “LOWER” button, the carriages

go down after the hooks are unlocked.

“LOCK” button: Press and hold this button, the carriages go down to the hooks.

NOTE: In order to avoid the vehicle out of balance, and make sure all the safety hooks are locked at the horizontal shifts, you must get the initial values of the four carriages at the same height.

- Firstly, turn the knob at “SINGLE” option, and hold the “RAISE” button of each column respectively to get each carriage rise to $50 \pm 3\text{mm}$ (It means the height from the rear bottom of the carriage to the floor.). power off the lift, then turn the knob at “FOUR” option and power on it after ten minutes;
- Secondly, hold the “RAISE” button to get the four carriages rise at the same time, then make sure the lifting height of the master column is $125 \pm 3\text{mm}$;
- Finally, hold the “LOCK” button to get the carriages locked. So that you can be sure that the four safety hooks are at the first shift horizontally.
- Repeatedly, try all the other shifts with the safety hooks by lifting the carriages every 100mm (viz. $225 \pm 3\text{mm}$, $325 \pm 3\text{mm}$, $425 \pm 3\text{mm}$ $1725 \pm 3\text{mm}$), then hold the “LOCK” button and get the safety hooks at the horizontal shifts.

7、Up limit switch

If the carriages rise above the switch, the switches works, and the lifts stop rising.

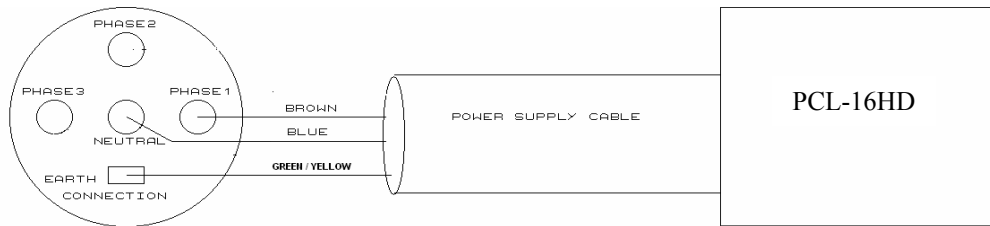
2) Instruction and FAQ

- 1) Working voltage: according to the nameplate of the motor. voltage $\pm 10\%$.
- 2) Working frequency: 50Hz/60Hz $\pm 1\%$.
- 3) Working temperature: 5~40℃
- 4) Working humidity: 50%@40℃-90%@20℃
- 5) Working altitude: $\leq 1000\text{m}$
- 6) The power cable for the lift should be three-core & five-core with jacket on, and the diameter of each core is required of 6.0mm^2 .
- 7) Without permission, any changes and repairs to the control box is forbidden.

Debugging

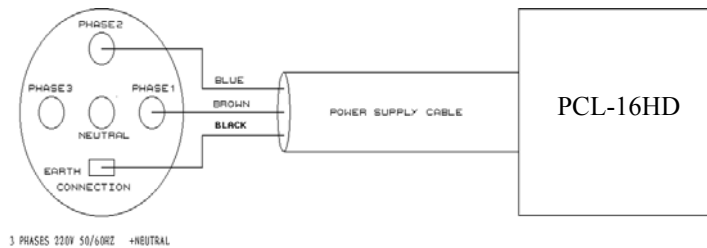
1) Power supply

If you have a 3-phase 380v electric plug, but the power supply is single phase 220V, please do the connections as follows.



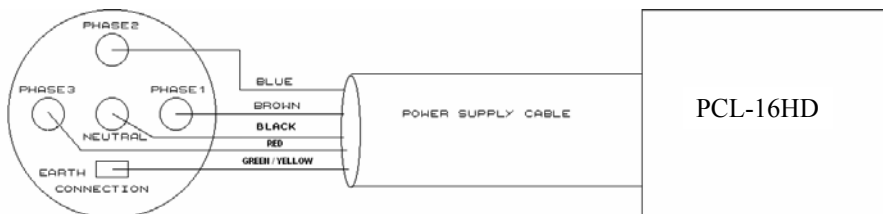
3 PHASES 380V 50/60HZ +NEUTRAL

If you have a 3-phase 220v electric plug, but the power supply is single phase 220V, please do the connections as follows.



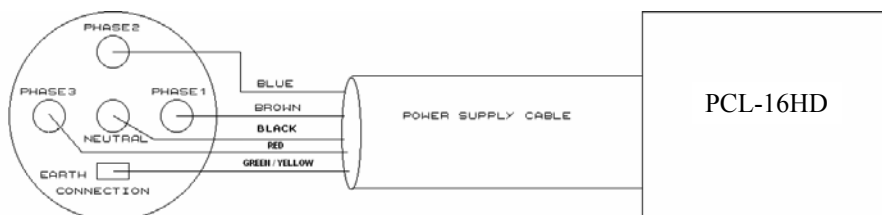
3 PHASES 220V 50/60HZ +NEUTRAL

If you have a 3-phase 380v electric plug, and the power supply is 3-phase 380v, please do the connections as follows.



3 PHASES 380V 50/60HZ +NEUTRAL

If you have a 3-phase 220v electric plug, and the power supply is 3-phase 220v, please do the connections as follows.



3 PHASES 220V 50/60HZ +NEUTRAL

Fig.8

2) Connecting mode

Note: Before operating, you should ensure the cables have been connected well according to the Fig.9 & Fig.10. Relevantly, you should ensure the power is cut off before taking down the cables.

(1) “PAIR” mode (see Fig.9)

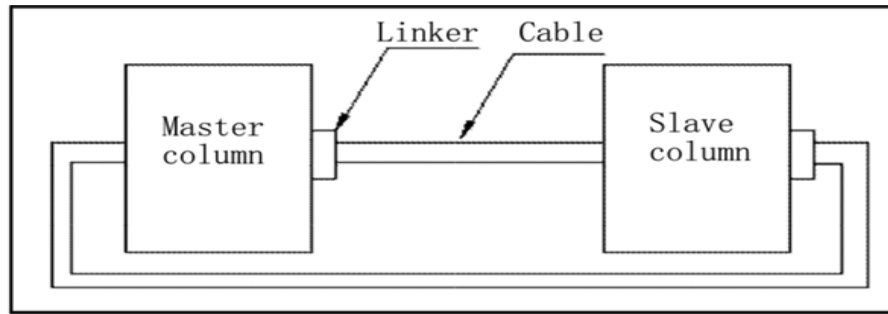


Fig.9

(2) “FOUR” mode (see Fig.10)

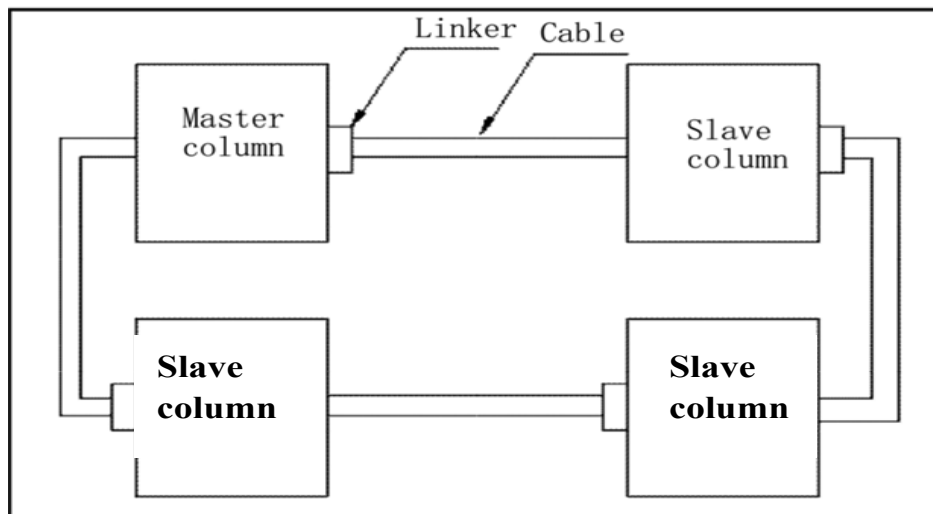


Fig.10

Single column test

1. **Power on:** First turn the selection knob to “SINGLE” option at the master control box, then power on the lift, turn the power switch to “ON” to see if the indicator lights work normally.
2. **Rise:** Unloaded, press and hold the “RAISE” button at the master control box, to check if the carriage rises normally. Repeat to try the other columns.

Air release: Raise the carriages about 600mm, and open cylinder drain tap approximately 2 turns as Fig.11. then tighten the drain tap when the oil streams out.

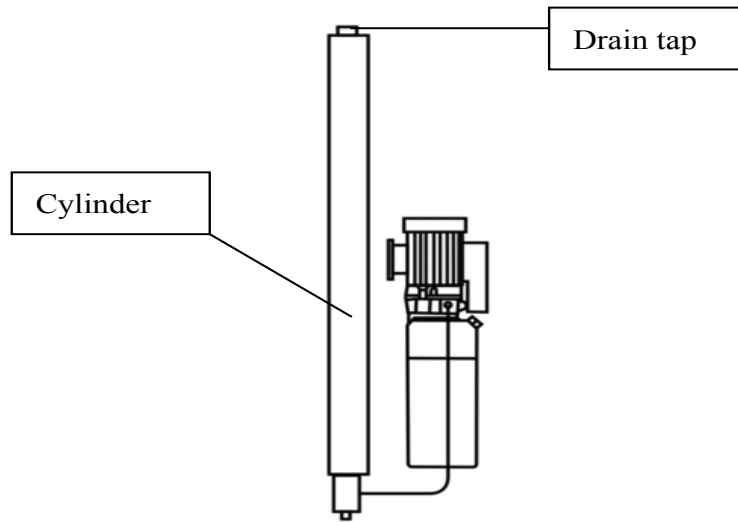


Fig.11

Lock: Unloaded, when the carriage is at the very working height, press and hold the “LOCK” button to lower the carriage to be locked.

Lower: Press and hold the “LOWER” button, the carriages go down to the requested height after rising a bit to get the hooks unlocked.

3. **Urgency Pause:** When emergency occurs, right press the red emergency switch to stop the machine, and release it after all is in good condition.

Pair & four columns test

1. **Power on:** First turn the selection knob to “PAIR” & “FOUR” option at the master control box, then turn the power switch to “ON” .
2. **Rise:** Unloaded, press and hold the “RAISE” button at the master control box, to check if the corresponding two or four carriages rise normally.
3. **Lock:** Unloaded, when the carriages are at the very working height, press and hold the “LOCK” button to lower the carriages to be locked. In order to avoid the vehicle out of balance, and make sure all the safety hooks are locked at the horizontal shifts, you must accord to the rule from **The electronics**.
4. **Lower:** Press and hold the “LOWER” button, the carriages go down to the requested height after rising a bit to get the hooks unlocked.
5. **Urgency Pause:** When emergency occurs, right press the red emergency switch button at any column. To check if all carriages can stop immediately. Then release it after all is in good condition.

Operation

Raise

1. After testing successfully, move the four holding fork arms to their very positions. The contacting range must be equal with the width of the tyre. The right position of each column should be as Fig.12.



Fig.12

2. After connecting the cables well (Fig.13), Turn the select knob to “Pair”& “FOUR” option, and then turn the power switch to “ON”.

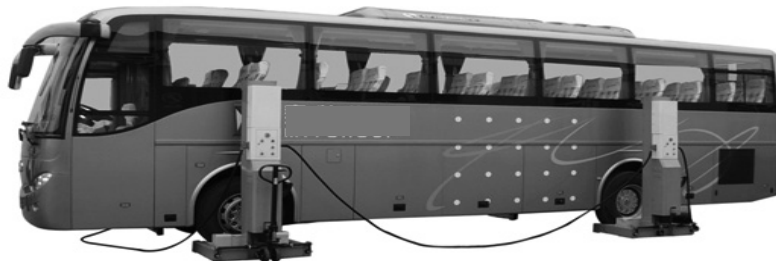


Fig.13

3. Press and hold the “RAISE” button at the master control box, when the vehicle reaches to the height of 50mm, check and make sure all lifting points is in good condition. Make the carriage continue rising to the working height,.

LOCK

Press and hold the “LOCK” button to lower the carriages to be locked. In order to avoid the vehicle out of balance, and make sure all the safety hooks are locked at the horizontal shifts, you must accord to the rule from **The electronics**.

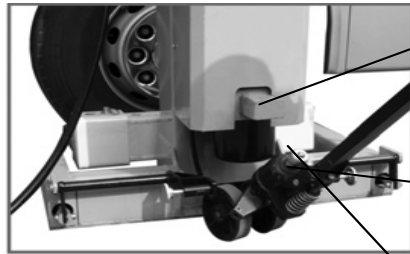
Note: When repairing under the vehicle, you must be sure the safety hooks of all columns locked normally.

LOWER

1. Press and hold the “LOWER” button, the carriages go down to the requested height after rising a bit to get the hooks unlocked.
2. After lowering the vehicle to the floor, move the lift away from it, then drive the vehicle off.

Hydraulic trolley

Installation: Pull the hydraulic trolley to the column rear, put the top of the trolley to the bushing of the lifting bracket, draw out the two pins on both sides, then turn the pins anticlockwise at 45° in order to insert the sockets of the trolley. See Fig.14,15.



Lifting bracket

The hydraulic trolley

The top of the trolley

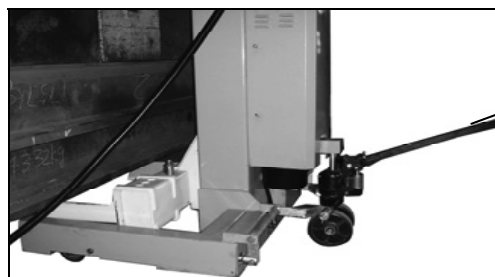
Fig.14



Pin

Fig.15

Lifting: Put down the handlebar, press the handle up and down several times, in order to lift the column at 30~60mm height from the floor. Fig.16.



Handlebar

Fig.16

Moving: Move the holding fork arm under the tyre of the vehicle by pushing the handlebar.

Falling: Put up the release bar (Fig.17), lower the column to floor.



Release bar

Fig.17

Drawing: It is reverse to the “Installation” process.

Maintenance

- 1、If the carriage does not work when you operate the lift to rise, first check if the up limit switches or emergency switches work normally.
- 2、It may happen that some carriage stops suddenly while the other carriages are still going up or down, but the fault lights don't shine. It's natural, don't worry about it. Because the carriages are adjusting the height respectively.
- 3、Replacing fuse: When the fuse of the motor & the electromagnet & the valve is broken, please replace the fuse from the spare parts.(see Fig.18,19).

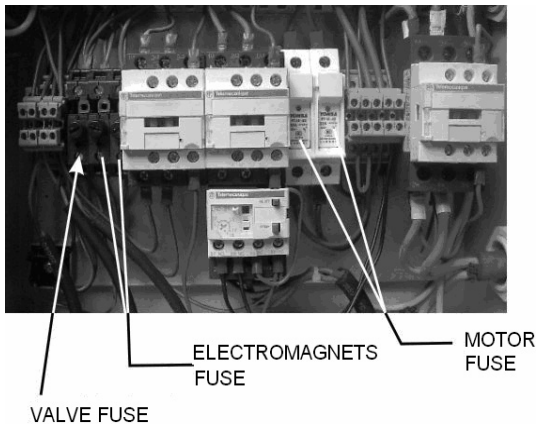


Fig.18 Master control box

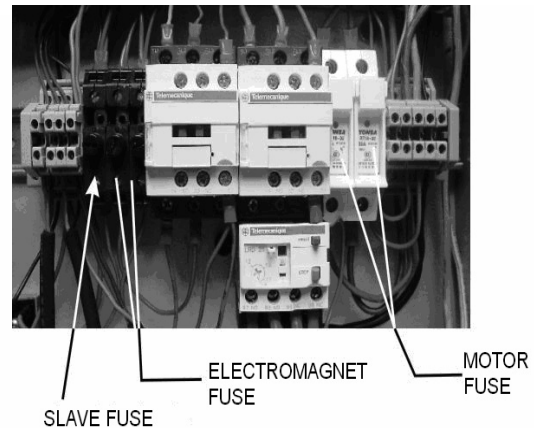


Fig.19 Slave control box

Diagram 3

Fuse mode Motor voltage	the electromagnet fuse	the motor fuse	the valve fuse
220v、1-phase	5A	25A	2A
220v、3-phase	5A	16A	2A
380v、3-phase	5A	10A	2A

- 4、If the fault light is on, please do the followings:

- Check if the cables are connected well.
- Check if the emergency button is released, or the up limit switch is touched by other items.
- During lifting up & down, if there is any paranormal asynchronization, the possible faults are as follows:
 - a) There may be no enough oil in the tank of one of the columns, and the carriage cannot go up & down. So please fill some more oil into the tank.
 - b) Maybe, one of the columns is overloaded so that it can not go up. It means the elevated vehicle is overweight and should not be lifted with this lift.
 - c) The motor at one of the columns may be over-heated and disengaged, So please open the control box and check if the overload safety relay is disengaged, if so, press the “RESET” button, the motor will restart. Turn off the power switch, then turn on the power switch until the motor cool .
 - d) The data transfer may be interfered. So turn off the main power supply, and restart after 10 minutes.

- e) Maybe the hydraulic system (motor valve, oil hose or cylinder) leaks. If the oil hose leaks, loosen the hose connector, clean it and put some sealed glue on, then fasten it. If the cylinder leaks, please replace it with a new one. If the motor valve leaks, please refer to the below paragraph.
- 5、 During operating, if the carriage can be elevated without load, but it can not be elevated with load, even slide down, there are two possible problems besides the leaking problems:
- a) The manual screw may be released (fig.23), the solution is to lock the screw by switching the button clockwise while pressing; Oppositely, you can release it.
 - b) Another possible problem is that the pump valve leaks inside. If the carriage can be elevated without load, and can not with load, but does not slide down, it means there is some problem with the circuit, which controls the rising of the lift, you can try replacing the pressure relief valve or three way two position valve; if the carriage can be elevated without load, but can not with load, even slide down, it means there is some problem with the circuit, which controls the descending of the lift, you can try replacing the 1# two way two position valve or 2# two way two position valve or check valve; You can also replace the pump totally. The pump valves are as the following fig. 20:

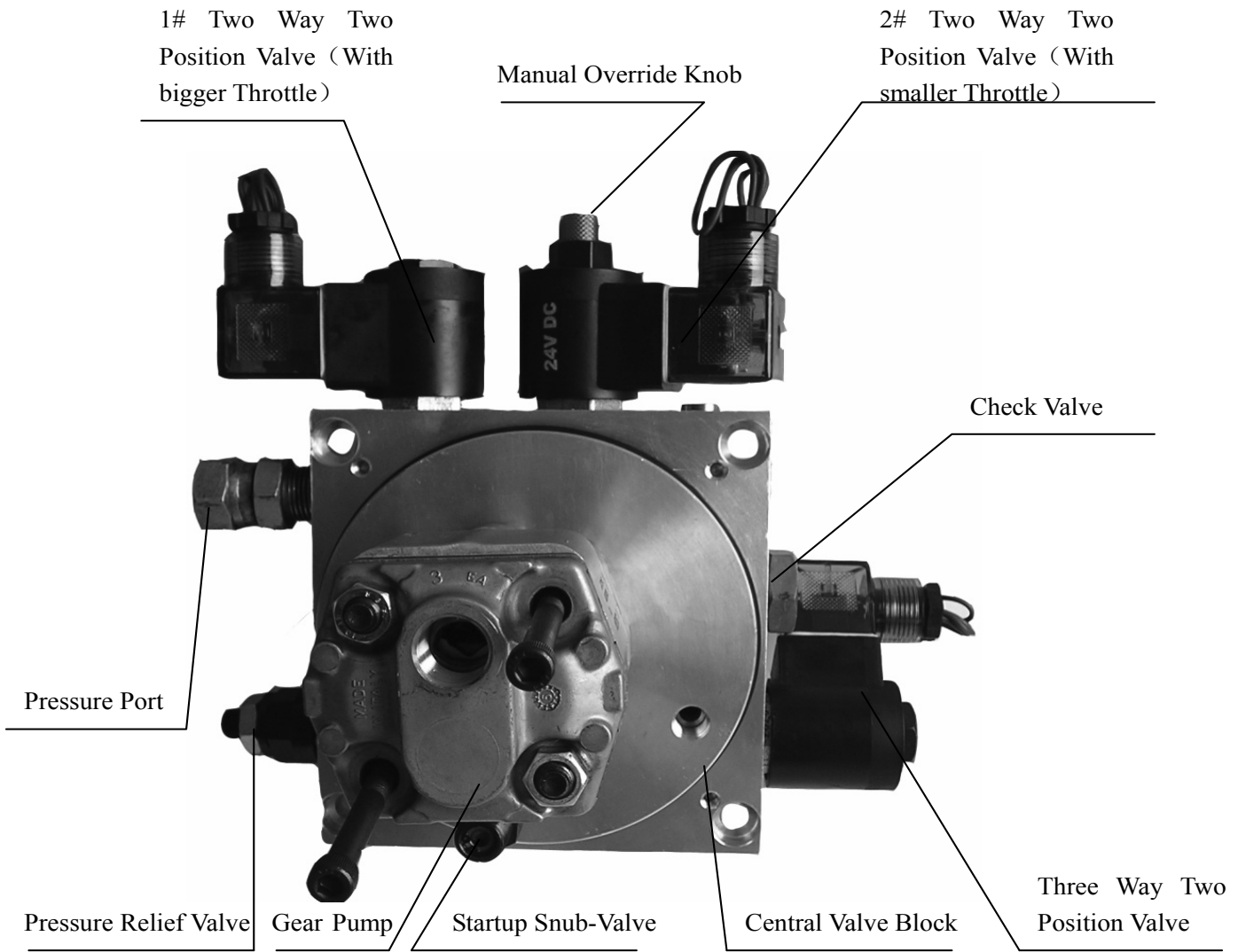


Fig.20

6. How to replace the valves:

- Cut off the main power supply;
- Unlock the manual screw, or get the carriage come down to be locked or to the ground automatically, open the cover of the safety hook, and check if the hook is locked solidly. It will be much safer to put some supporting items under the vehicle, such as Mobile jack stands.
- Judging by the above steps, replace the right valve correspondingly.
 - A. Firstly unscrew the nut outside of the problem valve bar;
 - B. Get the loop out off the valve bar, and unscrew the valve bar with a wrench;
 - C. Replace it with a new valve bar;
 - D. Put the loop on. (Note: Do not upend the position of each connector plug at the loop.)
- Turn the selection knob to “SINGLE”, power on the lift, and hold the “Raise” button to balance the vehicle body, and check if the leaking problem is solved. Cut off the lift.
- Then turn the selection knob to “FOUR”, power on the lift, and hold the “LOWER” button to get the vehicle down to the ground.

7. How to change the hydraulic cylinder?

- 1) Lower the carriage down to the ground, take off the cover of safety hook on the column, and take out the up limit switch.
- 2) Take out the displacement sensor and its bracket: Firstly loosen the setscrew of the sensor cable from the hole at the rear bottom of the column (fig.21), meanwhile hold the cable and draw it back slowly; Secondly take out the bracket; Then take out the signal cable in the control box. Finally take off the sensor and position it safely against any possible impact. Please refer to the connection of the signal cable as Fig. 22,23 to take out the signal cable;

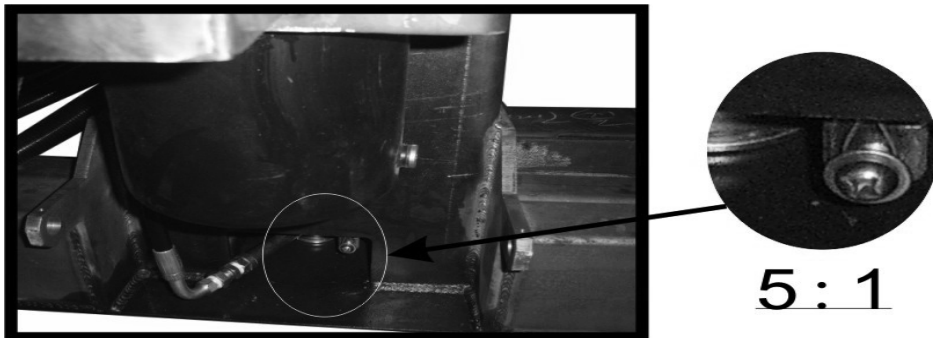


Fig.21

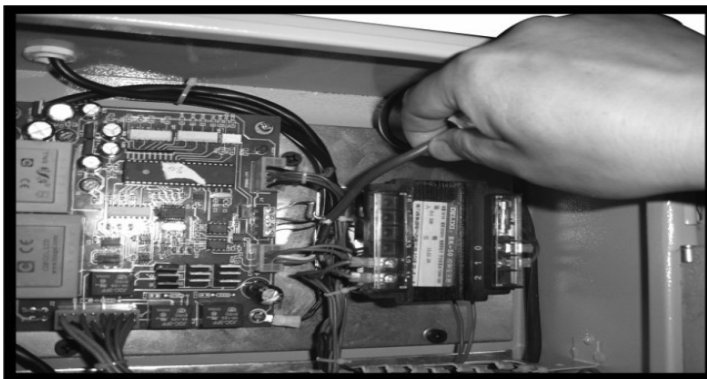


Fig.22

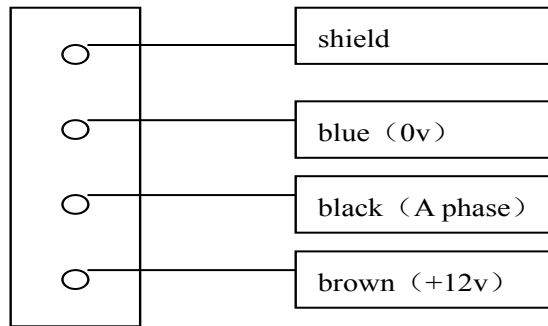


Fig.23

3) In order to avoid the column moving backwards, move the column to a corner and get the control box face the wall, and keep space between the corner and the control box surface no more than 500mm;

4) Raise the carriage to the height of 1775mm from the ground with a forklift.

NOTE: Do not raise the carriage too high to get the sliding block out of the guideway. And put two mobile jack stands under the carriage.

NOTE: After change the cylinder, it is necessary to fill some more oil and release the air out of the cylinder.

8、 It is important to know how to lower the carriages manually, when powered off unexpectedly. Make sure nothing is under the carriages and all unauthorized personnel must be forbidden to near the machine.(Fig.24)

- A. Place a hydraulic jack to raise the carriage on the master control side 50mm. Then release the safety hook and get it unlocked.
- B. Slowly lower the jack, and repeat the process on the slave control sides.
- C. Loose the manual screw on the lowering valve to lower the carriages at the same time.

NOTE: If some carriage lowers faster than the others, please tighten them immediately, until the vehicle body is horizontal. Repeat like this to ensure the vehicle lower to the floor smoothly. At last, tighten up the screw cap.

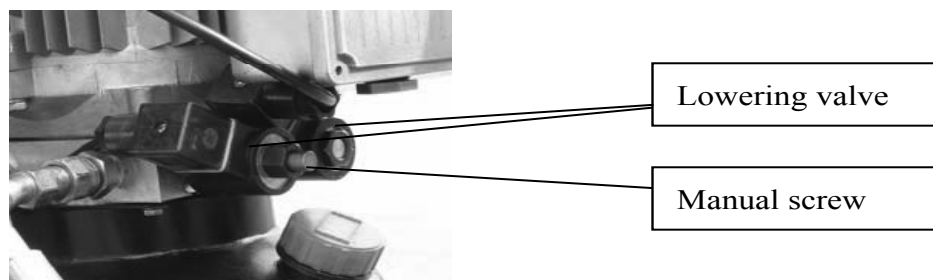


Fig.24

(Operation)

To Raise Lift;

1. Load vehicle onto the lift using Vehicle Lifting Guide to determine proper lifting points.
2. Set parking brake or use wheel chock to hold vehicle in position.
3. Before raising vehicle, be sure all personnel are clear of the lift and surrounding area. Pay careful attention to overhead clearances.
4. Raise the lift to the desired height by pressing the push button on the power unit.



VISUALLY CONFIRM THAT ALL PRIMARY SAFETY LOCKS ARE ENGAGED BEFORE ENTERING WORK AREA.

Suspension components on this lift are intended to raise and lower lift only and are not meant to be load holding devices. Remain clear of elevated lift unless visual confirmation is made that all primary safety locks are fully engaged and the lift is LOWERED onto the safety locks. Refer to installation /operation manual for proper safety lock procedures and /or further instruction.

5. After vehicle is raised to the desired height, **lower the lift onto the nearest safety lock.** Do not allow cables to become slack. **ALWAYS INSURE ALL SAFETY LOCKS ARE ENGAGED** before entering work area.

To Lower Lift;

1. Before lowering vehicle, be sure all personnel are clear of the lift and surrounding area. Pay careful attention to overhead clearances. Insure all tools and equipment have been cleared from under the lift.
2. Raise the lift off of the safety locks by pressing the push button on the power unit. Make sure you raise the lift by at least two inches to allow adequate clearance for the locks to clear.
3. Press the push button air safety valve and HOLD.
4. Push the LOWERING HANDLE on the power unit until the lift has descended completely.

When lowering the lift PAY CAREFUL ATTENTION that all personnel and objects are kept clear. ALWAYS keep a visual line of site on the lift AT ALL TIMES. ALWAYS make sure that ALL LOCKS are disengaged. If one of the locks inadvertently locks on descent the lift and/or vehicle may disrupt causing personal injury or death,

WEEKLY MAINTENANCE

1. Lubricate all rollers with general purpose oil or WE-40.
2. Check all cable connections, bolts and pins to insure proper mounting.
3. Lubricate safety lock pivot points with general purpose oil or WE-40.

MONTHLY MAINTENANCE

1. Check safety locks to insure they are in good operating condition.
2. Check all cables for excessive signs of wear.
3. Make a visual inspection of ALL MOVING PARTS and check for excessive signs of wear.
4. Replace ALL FAULTY PARTS before lift is put back into operation.



- ◆ **NEVER EXCEED THE RATED CAPACITY** of lift.
- ◆ **DO NOT USE LIFT** if any component is found to be defective or worn.
- ◆ **NEVER OPERATE LIFT** with any person or equipment below.
- ◆ **ALWAYS STAND CLEAR** of lift when lowering or raising.
- ◆ **ALWAYS INSURE SAFETY LOCKS ARE ENGAGED** before entering work area.
- ◆ **NEVER LEAVE LIFT IN ELEVATED CONDITION** unless all safety locks are engaged.

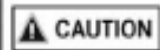
IMPORTANT SAFETY INSTRUCTIONS



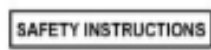
Lift to be used by trained operator only.



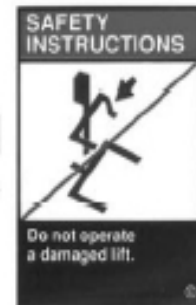
Read operating and safety manuals before using lift.



When moving lift, be careful to avoid tipping.



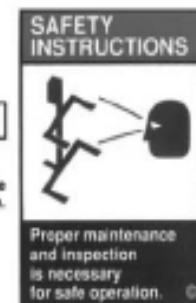
Do not operate a damaged lift.



Remain clear of lift when raising or lowering vehicle.



Proper maintenance and inspection is necessary for safe operation.



Do not drive over or pinch electrical cables.



Keep feet clear of lift while lowering.



IMPORTANT SAFETY INSTRUCTIONS



Locate lift on firm, level surface, preferably concrete.



Be sure intended lifts are moving together evenly.



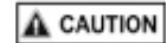
All lifting forks must properly engage vehicle tires or supports.



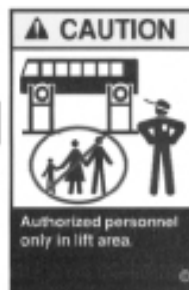
Clear area if vehicle is in danger of falling.



Check for overhead obstructions before raising vehicle.



Authorized personnel only in lift area.



Safe Lift Operation

Automotive and truck lifts are critical to the operation and profitability of your business. The safe use of this and other lifts in your shop is critical in preventing employee injuries and damage to customer's vehicles. By operating lifts safely you can insure that your shop is profitable, productive and safe.

Safe operation of automotive lifts requires that only trained employees should be allowed to use the lift.

TRAINING SHOULD INCLUDE, BUT NOT LIMITED TO:

- ◆ Proper positioning of the vehicle on the runway. (See manufacturers minimize wheel base loading requirements.)
- ◆ Use of the operating controls.
- ◆ Understanding the lift capacity.
- ◆ Proper use of jack stands or other load supporting devices.
- ◆ Proper use, understanding and visual identification of safety lock devices and their operation.
- ◆ Reviewing the safety rules.
- ◆ Proper housekeeping procedures (lift area should be free of grease, oil, tools, equipment, trash, and other debris)
- ◆ A daily inspection of the lift should be completed prior to its use. Safety devices, operating controls, lift arms and other critical parts should be inspected prior to using the lift.
- ◆ All maintenance and repairs of the lift should be completed by following the manufacturer's requirements. Lift repair parts should meet or exceed OEM specifications. Repairs should only be completed by a qualified lift technician.
- ◆ The vehicle manufacturer's recommendations should be used for spotting and lifting the vehicle.

LIFT OPERATION SAFETY

- ◆ It is important that you know the load limit. Be careful that you do not overload the lift . If you are unsure what the load limit is, check the data plate found on one of the lift columns or contact the manufacturer.
- ◆ The center of gravity should be followed closely to what the manufacturer recommends.
- ◆ Always make sure you have proper overhead clearance. Additionally, check that attachments, (vehicle signs, campers, antennas, etc.) are not in the way.
- ◆ Be sure that prior to the vehicle being raised, the doors, trunk, and hood are closed securely
- ◆ Prior to being raised, make sure there is no one standing closer than six feet from the lift
- ◆ After positioning the vehicle on the lift runways, set the emergency brake, make sure the ignition is off, the doors are closed, overhead obstructions are cleared, and the transmission is in neutral.
- ◆ Double check that the automatic chock devices are in position and then when the lift is raised, observe the chocks
- ◆ Put pads or adapters in the right position under the contact points that have been recommended
- ◆ The lift should be raised just until the vehicle's wheels are about one foot off the ground. If contact with the vehicle is uneven or it appears that the vehicle is not sitting secure, carefully lower the lift and readjust.
- ◆ Always consider potential problems that might cause a vehicle to slip, i.e., heavy cargo, undercoating, etc.
- ◆ Pay attention when walking under a vehicle that is up on the hydraulic lift.



- ◆ **DO NOT** leave the controls while the lift is still in motion.
- ◆ **DO NOT** stand directly in front of the vehicle or in the bay when vehicle is being loaded or driven into position.
- ◆ **DO NOT** Go near vehicle or attempt to work on the vehicle when being raised or lowered.
- ◆ **REMAIN CLEAR** of lift when raising or lowering vehicle.
- ◆ **DO NOT** rock the vehicle while on the lift or remove any heavy component from vehicle that may cause excessive weight shift.
- ◆ **DO NOT** lower the vehicle until people, materials, and tools are clear
- ◆ **ALWAYS INSURE** that the safeties are engaged and lowered on to the safety ladders before any attempt is made to work on or near vehicle.
- ◆ Some vehicle maintenance and repair activities may cause the vehicle to shift. Follow the manufacturer's guidelines when performing these operations. The use of jack stands or alternate lift points may be required when completing some repairs.
- ◆ **READ AND UNDERSTAND** all safety warning procedures before operating lift.
- ◆ **KEEP HANDS AND FEET CLEAR.** Remove hands and feet from any moving parts. Keep feet clear of lift when lowering. Avoid pinch points.
- ◆ **ONLY TRAINED OPERATORS** should operate this lift. All non-trained personnel should be kept away from work area. Never let non-trained personnel come in contact with, or operate lift.
- ◆ **USE LIFT CORRECTLY.** Use lift in the proper manner. Never use lifting adapters other than what is approved by the manufacturer.
- ◆ **DO NOT** override self-closing lift controls.
- ◆ **CLEAR AREA** if vehicle is on danger of falling.
- ◆ **STAY ALERT.** Watch what you are doing. Use common sense. Be aware.
- ◆ **CHECK FOR DAMAGED PARTS.** Check for alignment of moving parts, breakage of parts or any condition that may affect its operation. Do not use lift if any component is broken or damaged.
- ◆ **NEVER** remove safety related components from the lift. Do not use lift if safety related components are damaged or missing.
- ◆ When the lift is being lowered, make sure everyone is standing at least six feet away.
- ◆ Be sure there are no jacks, tools, equipment, left under the lift before lowering.
- ◆ Always lower the vehicle down slowly and smoothly.

LIFT WILL NOT RAISE

POSSIBLE CAUSE

1. Air in oil, (1,2,8,13)
2. Cylinder binding, (9)
3. Cylinder leaks internally, (9)
4. Motor run backward under pressure, (11)
5. Lowering valve leaks, (3,4,6,10,11)
6. Motor runs backwards, (7,14,11)
7. Pump damaged, (10,11)
8. Pump won't prime, (1,8,13,14,3,12,10,11)
9. Relief valve leaks, (10,11)
10. Voltage to motor incorrect, (7,14,11)

REMEDY

INSTRUCTION

- | | |
|---|---|
| 1. Check for proper oil level. | The oil level should be up to the bleed screw in the reservoir with the lift all the way down. |
| 2. Bleed cylinders. | See Installation Manual |
| 3. Flush- Release valve to get rid of. | Hold release handle down and start unit allowing it possible contamination to run for 15 seconds. |
| 4. Dirty oil. | Replace oil with clean Dexron ATF. |
| 5. Tighten all fasteners. | Tighten fasteners to recommended torques. |
| 6. Check for free movement of release. | If handle does not move freely, replace bracket or handle assembly. |
| 7. Check motor is wired correctly. | Compare wiring of motor to electrical diagram on drawing. |
| 8. Oil seal damaged or cocked | Replace oil seal around pump shaft. |
| 9. See Installation Manual | Consult Lift Manufacturer. |
| 10. Replace with new part | Replace with new part. |
| 11. Return unit for repair | Return unit for repair. |
| 12. Check pump-mounting bolts | Bolts should be 15 to 18 ft. lbs. |
| 13. Inlet screen clogged | Clean inlet screen or replace. |
| 14. Check wall outlet voltages and wiring | Make sure unit and wall outlet are wired properly. |

MOTOR WILL NOT RUN

POSSIBLE CAUSE

1. Fuse blown, (5,2,1,3,4)
2. Limit switch burned out, (1,2,3,4)
3. Microswitch burned out, (1,2,3,4)
4. Motor burned out, (1,2,3,4,6)
5. Voltage to motor incorrect, (2,1,8)

REMEDY

- | | |
|---|---|
| 1. Check for correct voltage | Compare supply voltage with voltage on motor nametag. Check that the wire is sized correctly. N.E.C. table 310-12 requires AWG 10 for 25 Amps. |
| 2. Check motor is wired correctly | Compare wiring of motor to electrical diagram on drawing. |
| 3. Don't use extension cords | According to N.E.C. : " The size of the conductors... should be such that the voltage drop would not exceed 3% to the farthest outlet for power..." Do not run motor at 115 VAC – damage to the motor will occur. |
| 4. Replace with new part | Replace with new part. |
| 5. Reset circuit breaker/fuse | Reset circuit breaker/fuse. |
| 6. Return unit for repair | Return unit for repair. |
| 7. See Installation Manual | See Installation Manual. |
| 8. Check wall outlet voltage and wiring | Make sure unit and wall outlet is wired properly. Motor must run at 208/230 VAC. |

LIFT LOWERS SLOWLY OR NOT AT ALL

POSSIBLE CAUSE

1. Cylinders binding, (1)
2. Release valve clogged, (5,4,2,3)
3. Pressure fitting too long, (6)

REMEDY

INSTRUCTION

- | | |
|---|--|
| 1. See Installation Manual | Consult Lift Manufacturer. |
| 2. Replace with new part | Replace with new part. |
| 3. Return for repair | Return for repair. |
| 4. Check oil. | Use clean 10-WT hydraulic oil or Dexron-III automatic transmission fluid only. If ATF is contaminated, replace with clean ATF and clean entire system. |
| 5. Clean release valve | Wash release valve in solvent and blow out with air. |
| 6. Replace fitting with short thread lead | Replace fitting with short thread lead. |

WILL NOT RAISE LOADED LIFT

POSSIBLE CAUSE

1. Air in oil, (1,2,3,4)
2. Cylinder binding, (5)
3. Cylinder leaks internally, (5)
4. Lift overloaded, (6,5)
5. Lowering valve leaks, (7,8,1,5,9)
6. Motor runs backwards, (10,12,9)
7. Pump damaged, (5,9)
8. Pump won't prime, (1,2,3,4,5,11,9)
9. Relief valve leaks, (8,5,9)
10. Voltage to motor incorrect, (10,12,5)

REMEDY

INSTRUCTION

- | | |
|--|---|
| 1. Check oil level | The oil level should be up to the bleed screw in the reservoir [with the lift all the way down. |
| 2. Check/Tighten inlet tubes | Replace inlet hose assembly. |
| 3. Oil seal damaged or cocked | Replace oil seal and install. |
| 4. Bleed cylinders | See Installation Manual. |
| 5. See Installation Manual | Consult Lift Manufacturer. |
| 6. Check vehicle weight | Compare weight of vehicle to weight limit of the lift. |
| 7. Flush release valve | Hold release handle down and start unit allowing it to run for 15 seconds. |
| 8. Replace with new part | Replace with new part. |
| 9. Return unit for repair | Return unit for repair. |
| 10. Check motor is wired correctly | Compare wiring of motor to electrical diagram on power unit drawing. |
| 11. Inlet screen clogged | Clean inlet screen or replace. |
| 12. Check wall outlet voltage and wiring | Make sure unit and wall outlet is wired properly. |

LIFT WILL NOT STAY UP

POSSIBLE CAUSE

1. Air in oil, (1,2,3)
2. Check valve leaks, (6)
3. Cylinders leak internally, (7)
4. Lowering valve leaks, (4,5,1,7,6)
5. Leaking fittings, (8)

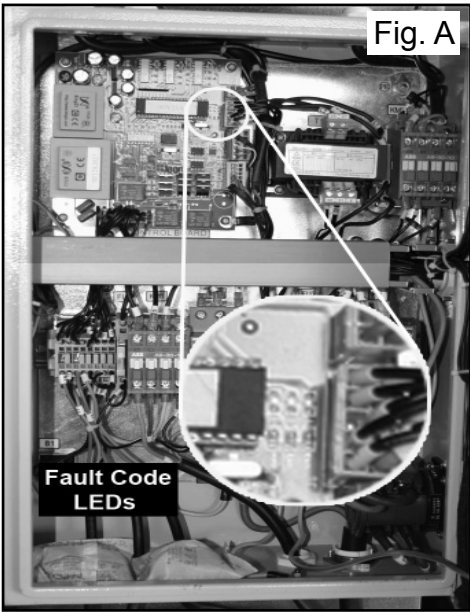
REMEDY

INSTRUCTION

- | | |
|---|--|
| 1. Check oil level | The oil level should be up to the bleed screw in the reservoir with the lift all the way down. |
| 2. Oil seal damaged and cocked | Replace oil seal around pump shaft. |
| 3. Bleed cylinder | Refer to Installation Manual. |
| 4. Flush release valve | Hold release handle down and start unit allowing it to run for 15 seconds. |
| 5. Replace with new valve | Replace with new valve. |
| 6. Return unit for repair | Return unit for repair. |
| 7. See Installation Manual | Consult Lift Manufacturer. |
| 8. Check complete hydraulic system for leaks. | Tighten all hydraulics fittings and inspects all hoses. |

Fault Codes

1. The Master Column Electronic Control Board has a set of three Blue LED lights. The set of three LEDs will display a Fault Code when a faulty Condition is detected. (See Fig. A)

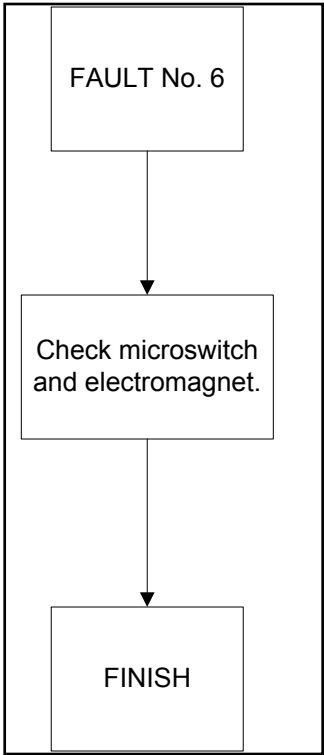
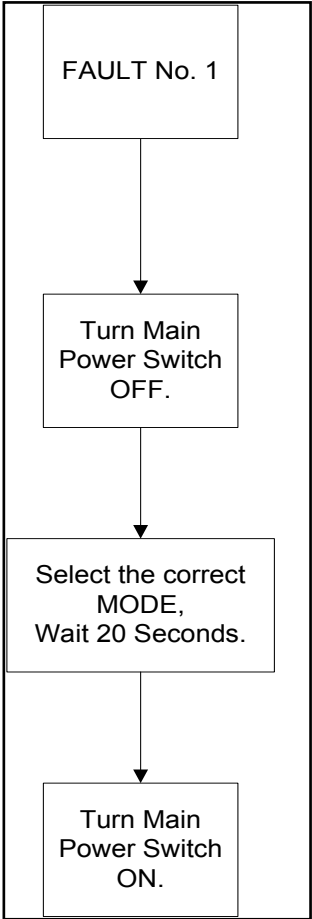


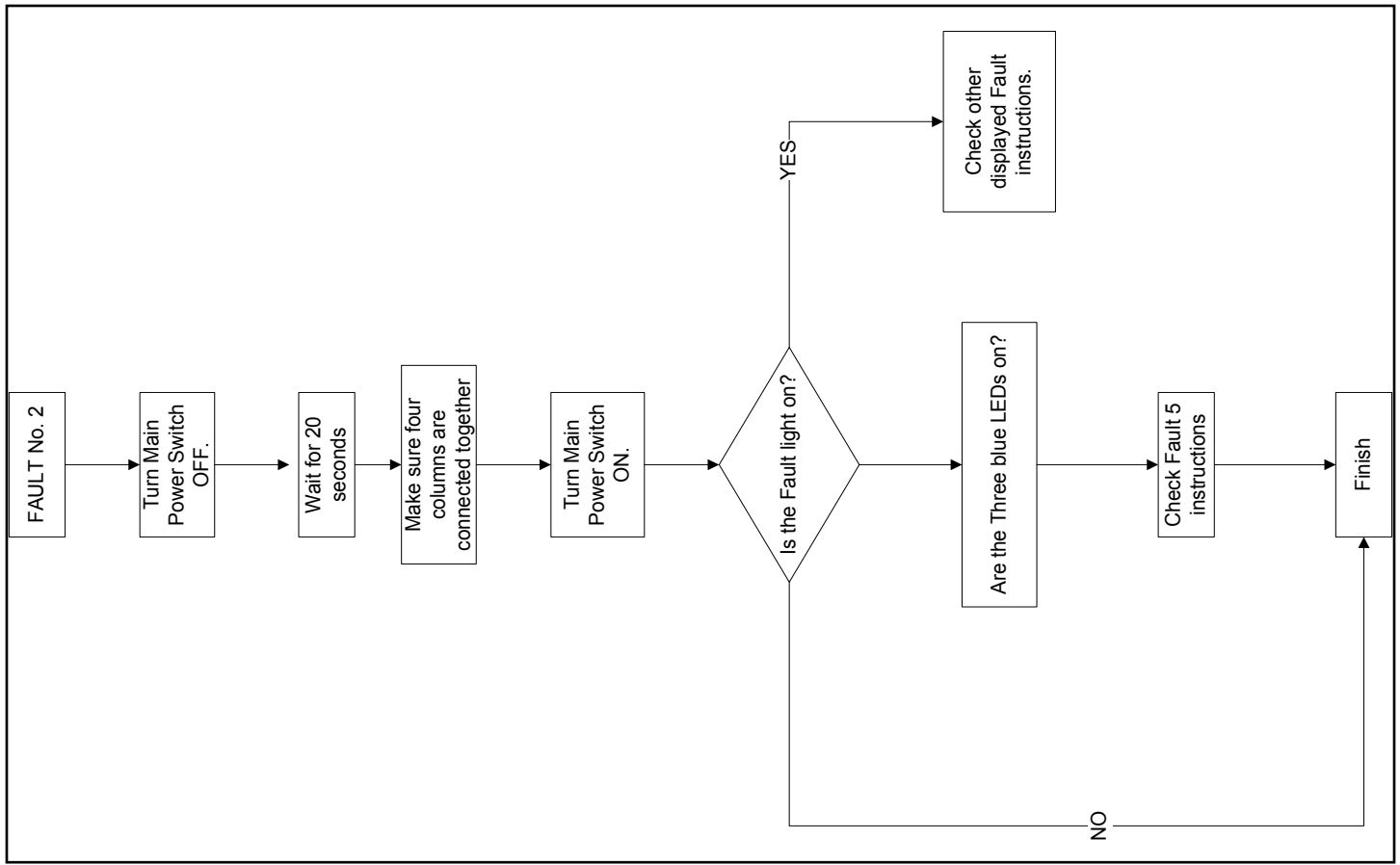
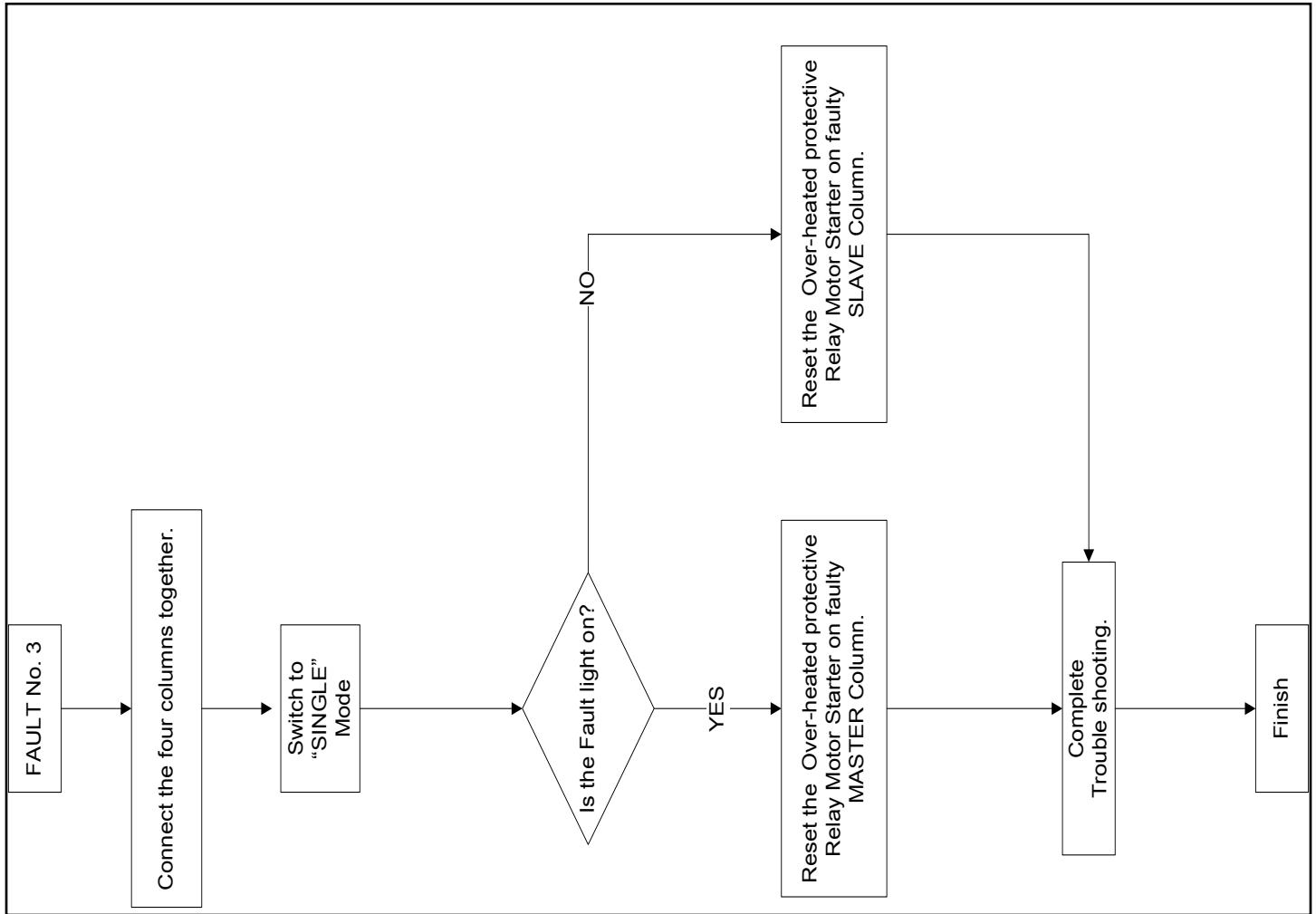
Refer to the Chart below for an explanation of the Fault lights displays.

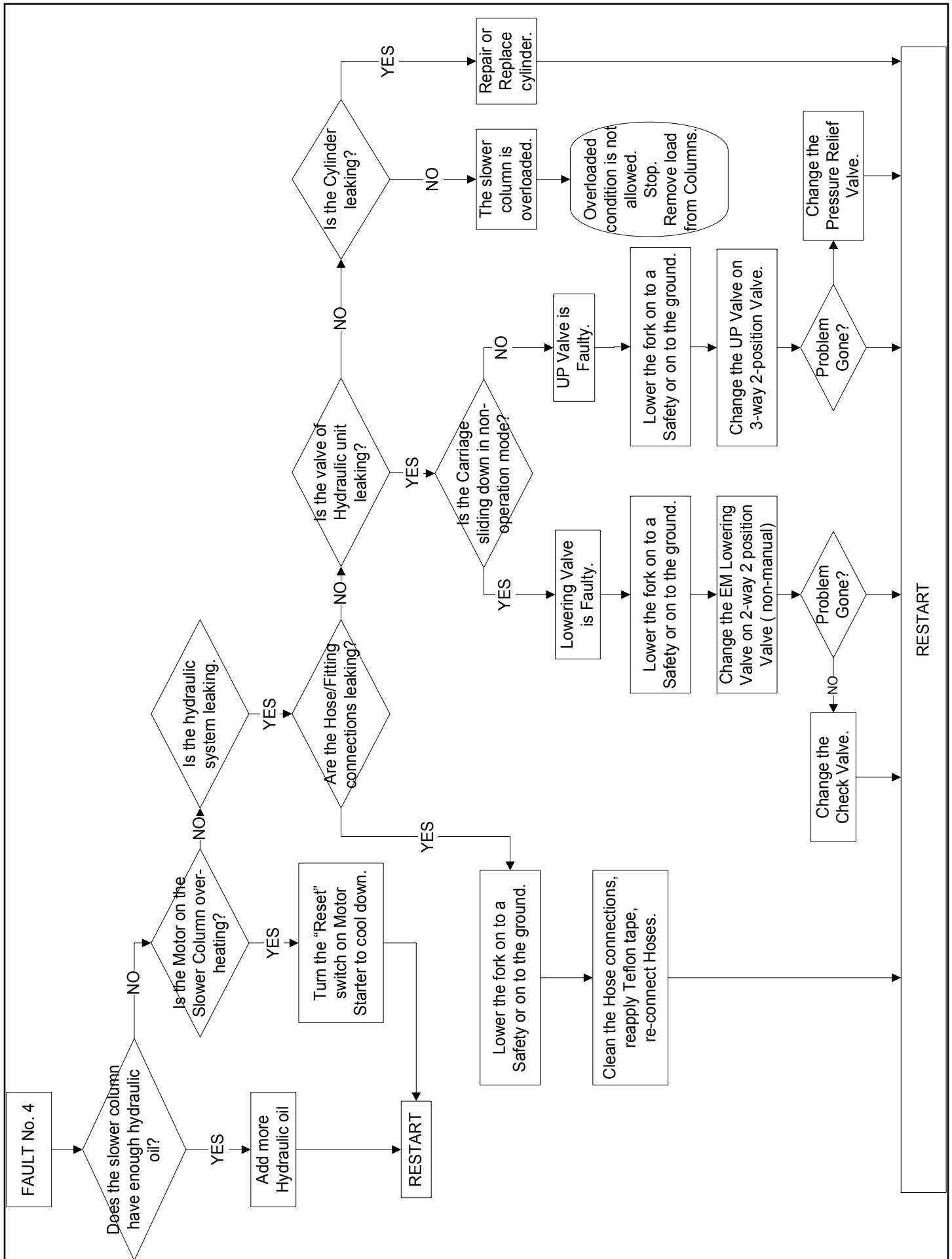
FAULT	LED 2	LED 3	LED 4
1	●	○	○
2	●	●	○
3	○	○	●
4	○	●	●
5	●	●	●
6	✱	✱	✱
●= ON	○=OFF	✱= BLINKING	

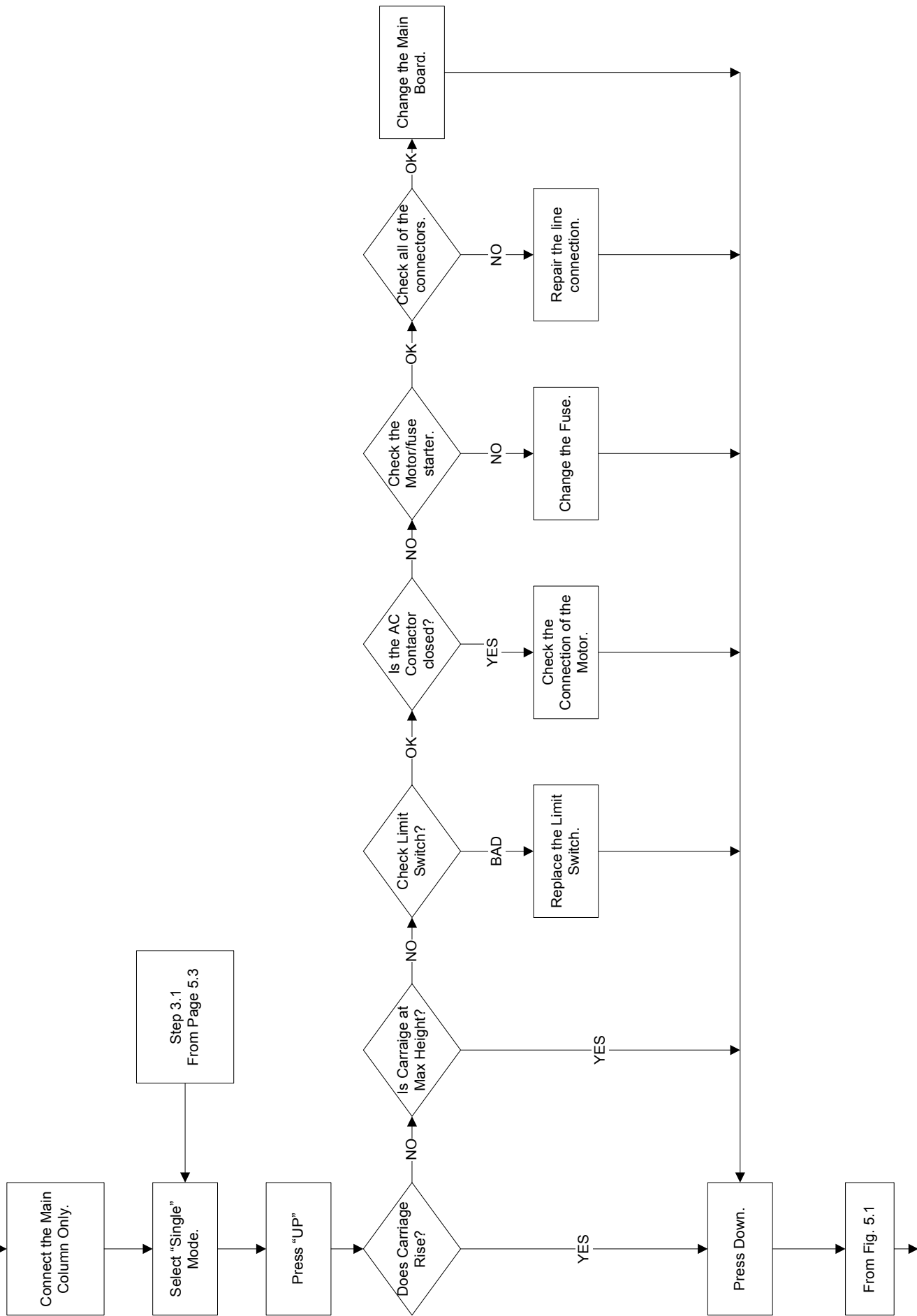
3. Once you determined which Fault Code is being displayed. Refer to the trouble shooting flowcharts on the following pages to determine the course of the Fault and the possible remedies.

2. The three Fault Pilot lights, LED2, LED3, LED4 will be illuminated in different configurations to display one or more of six different Fault Codes.



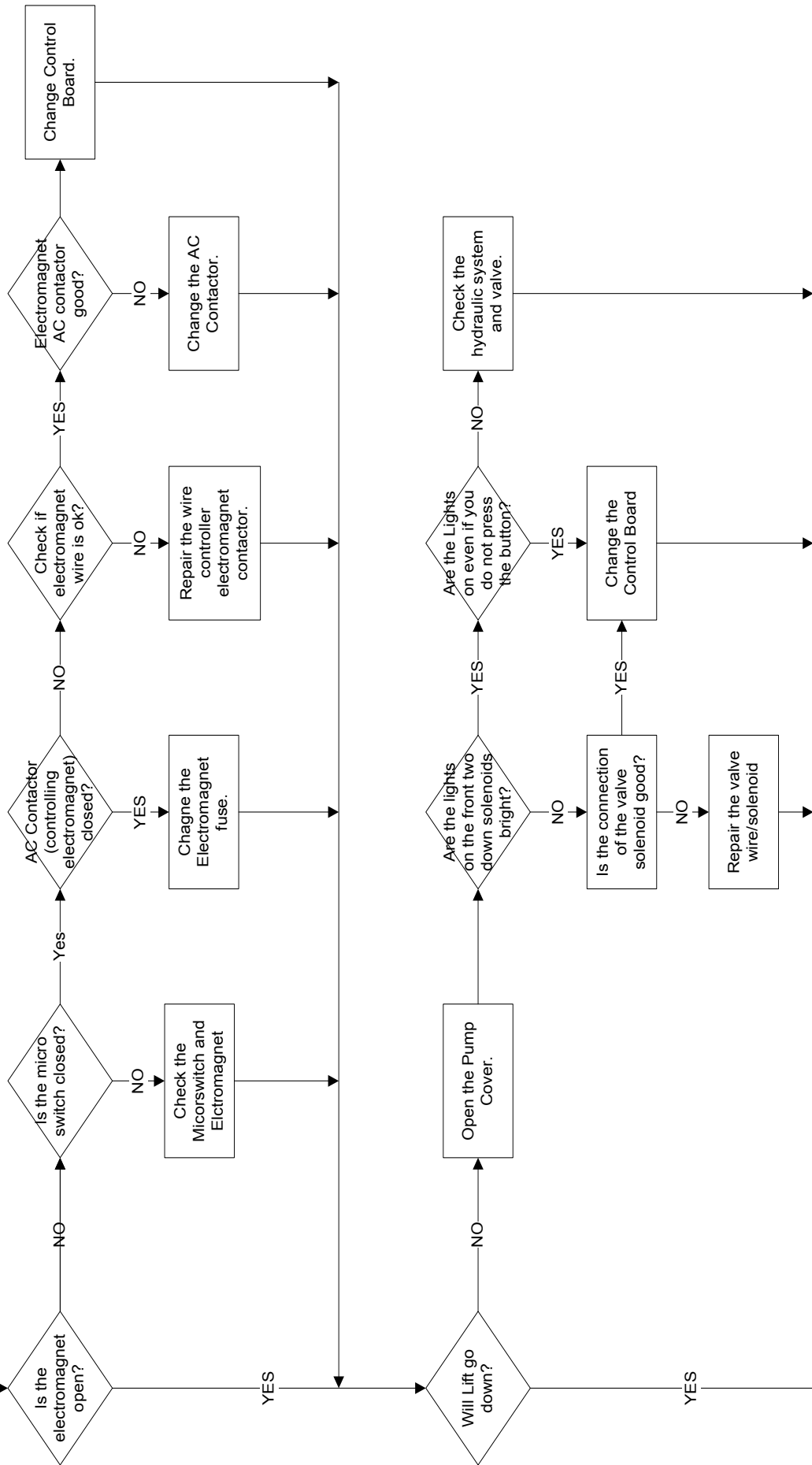


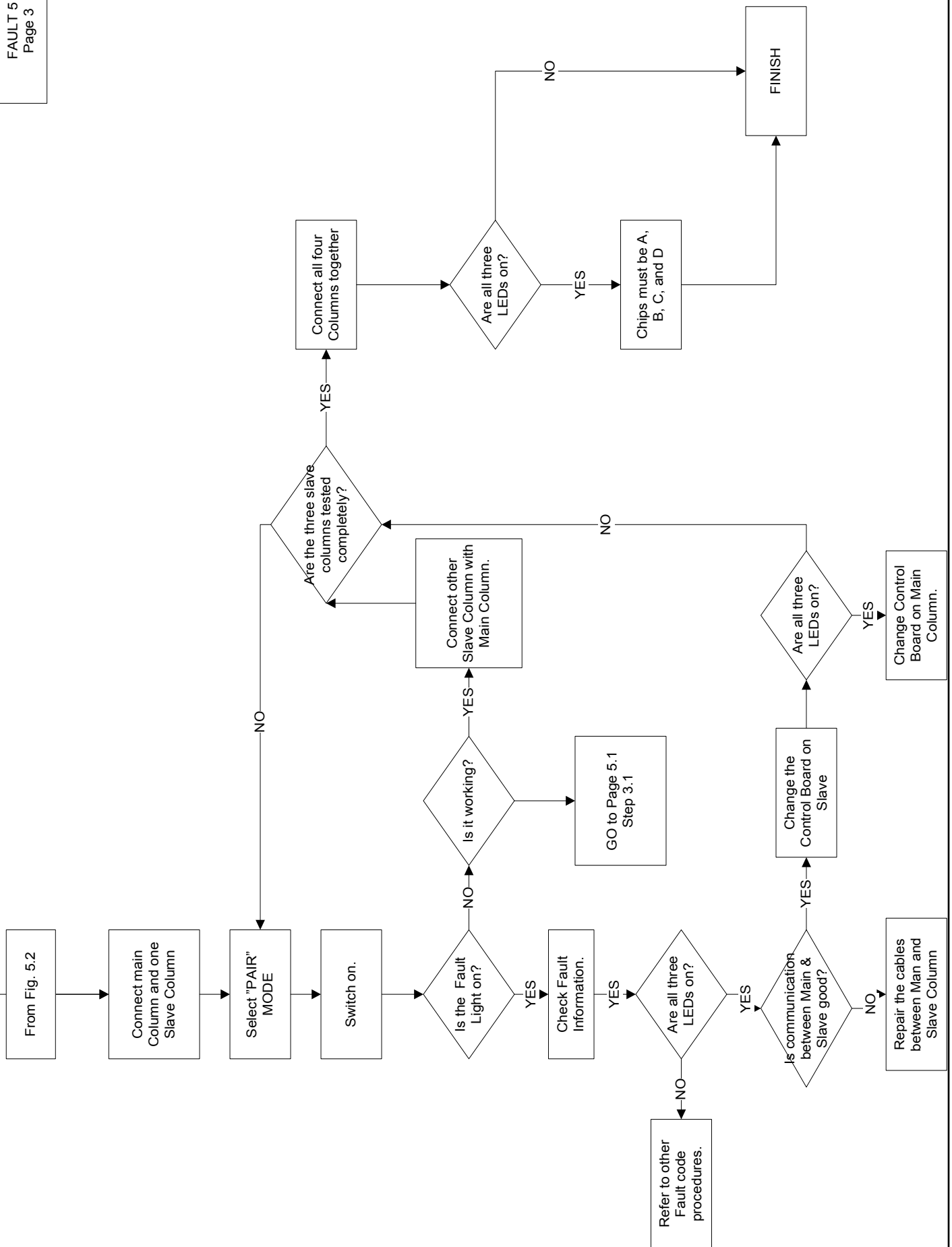




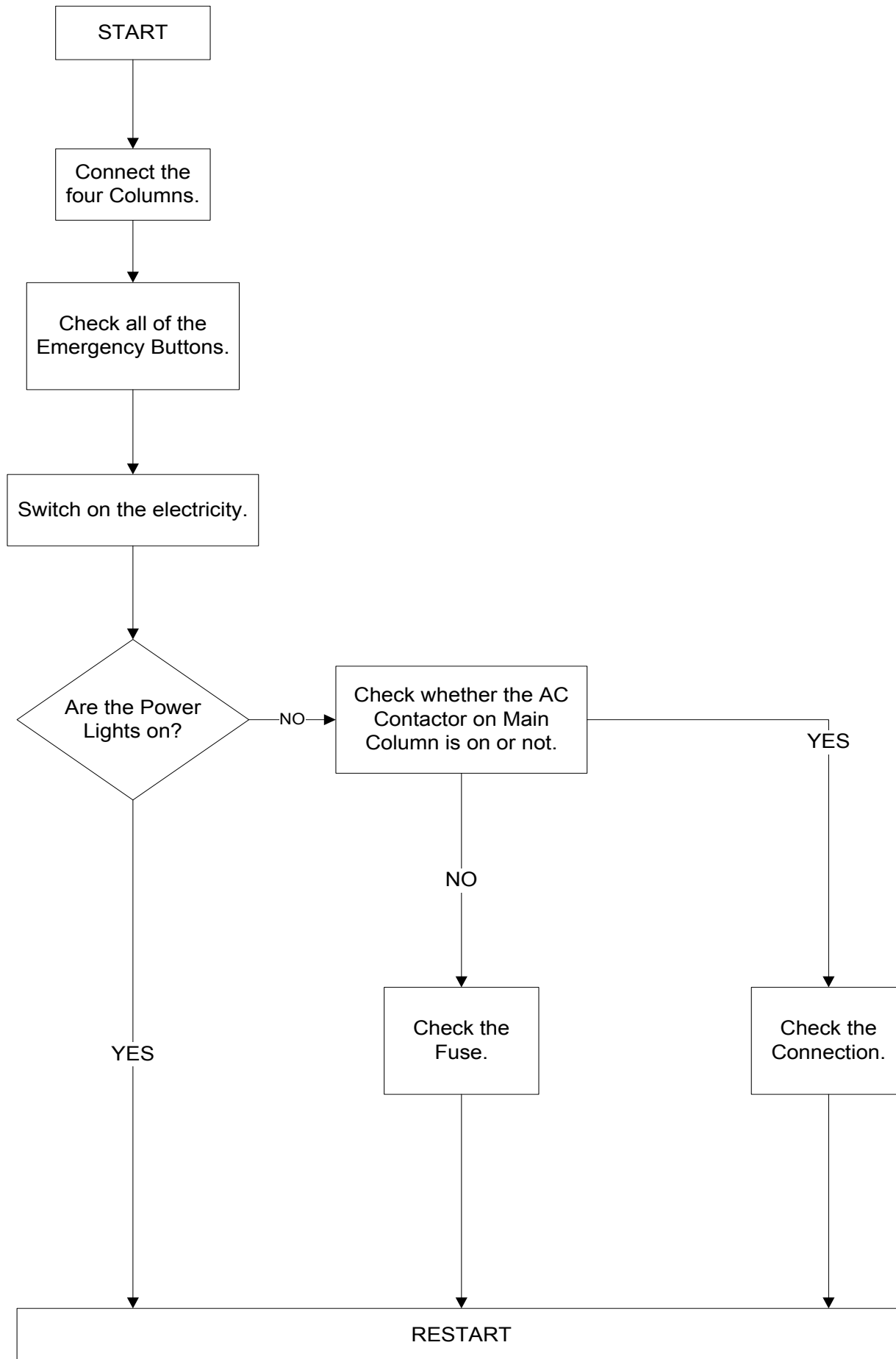
From Fig. 5.1

Press Down.





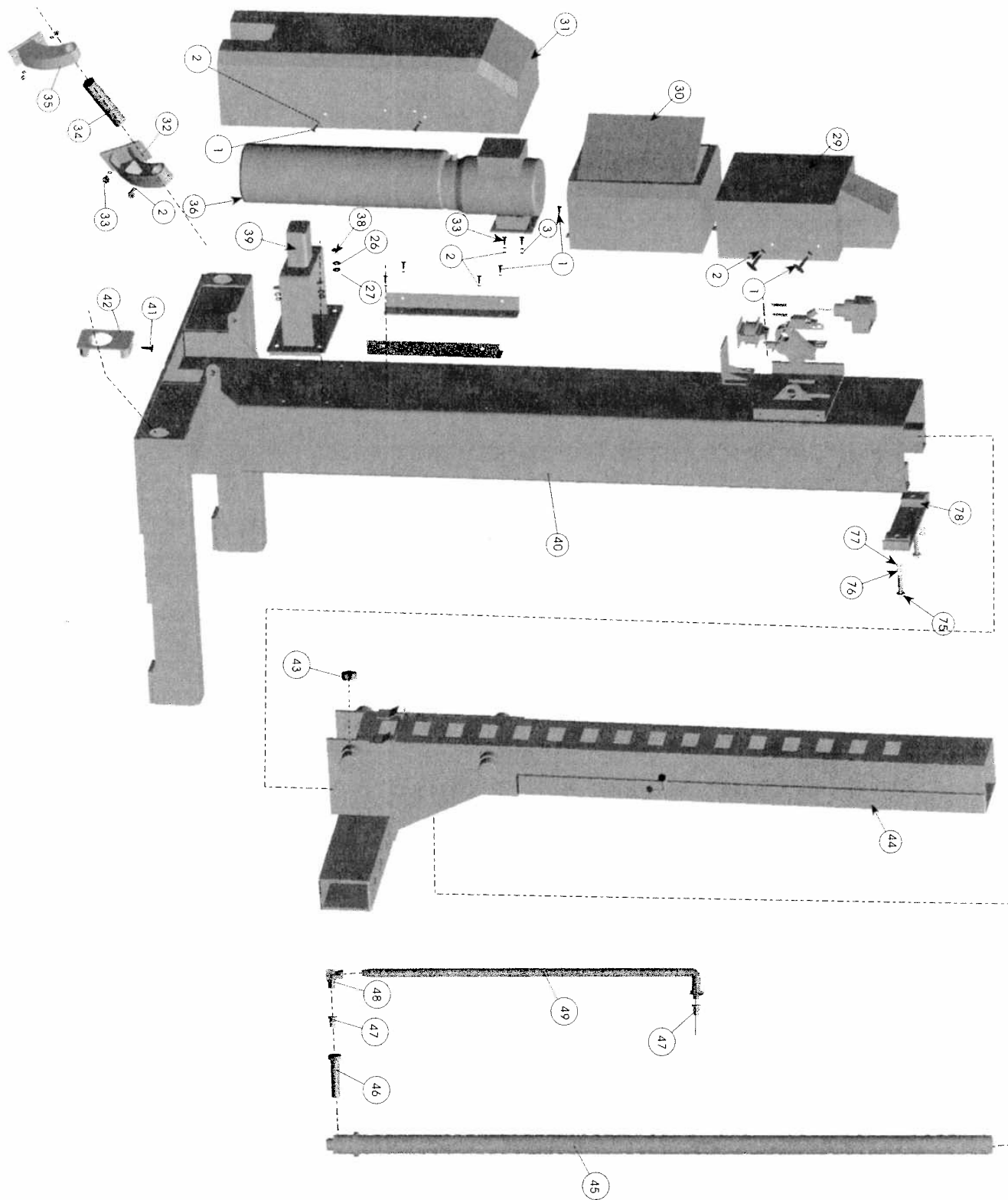
NO POWER - TROUBLE SHOOTING

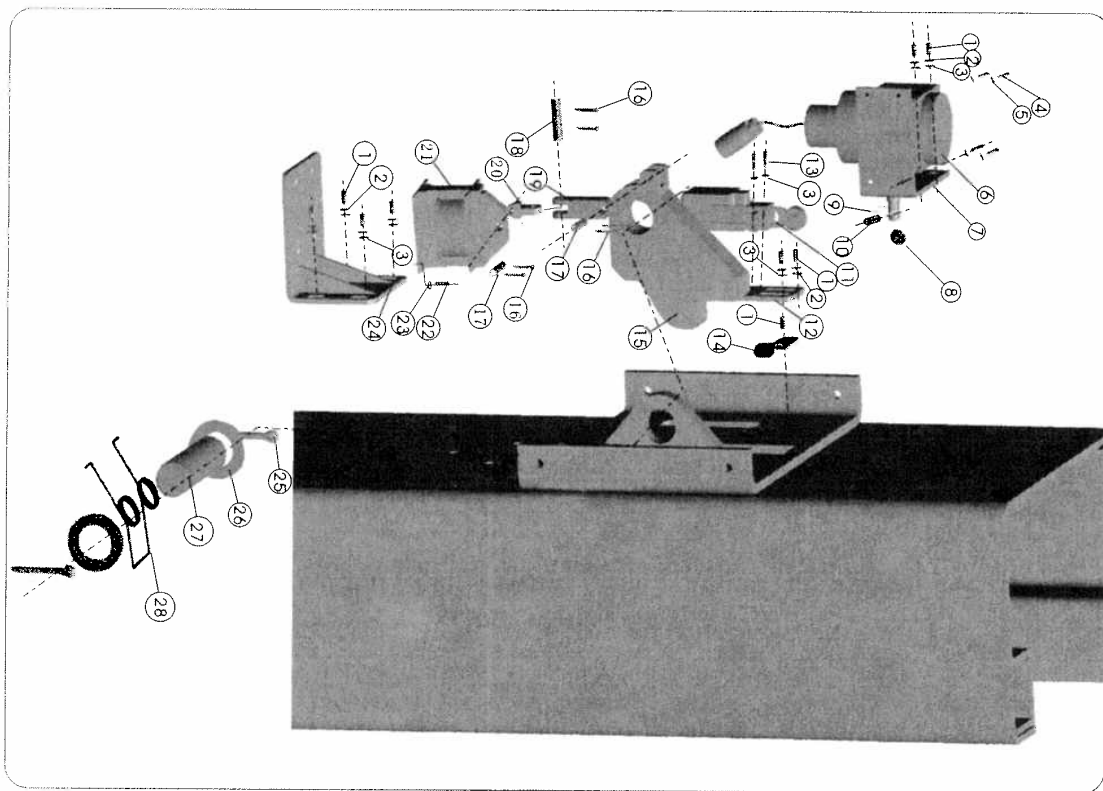


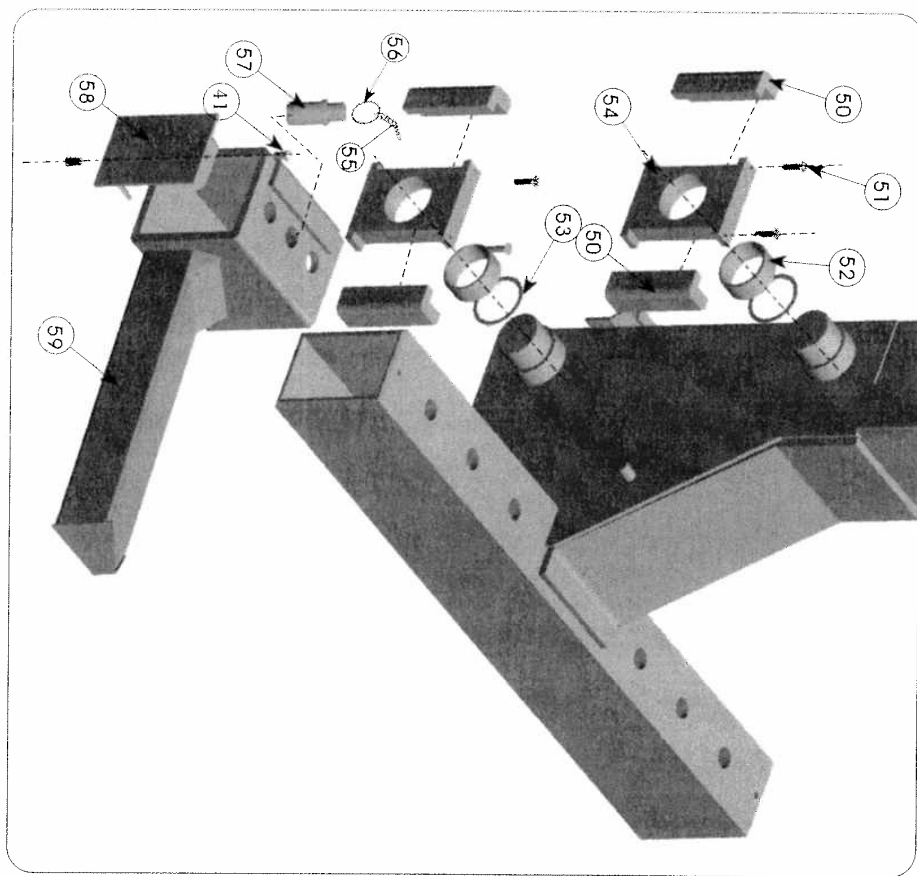
[illegible]

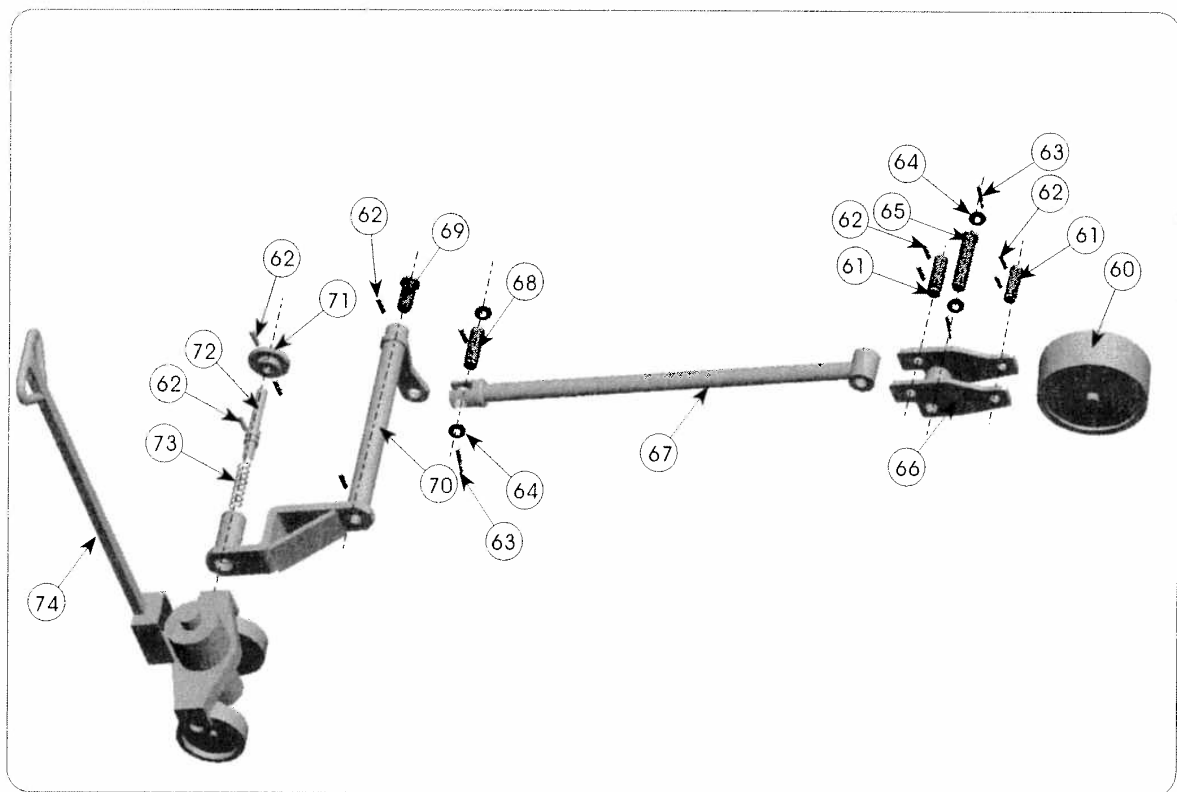
INSTALLATION FORM

Customer Name:		Date of Installation:			
Company Name:					
Street Address:					
City:	State:	Zip:			
Phone:		Fax:			
Pre-Install Agreement					
<p>I, (the undersigned) acting as the owner of the business listed above assume responsibility for any permits required, either state or county mandated, related to the installation and/or operation of this equipment. I assume responsibility for the concrete floor and condition thereof, now or later, where the above equipment model(s) are installed. I will assume all liability for losses, damages (including loss of use), expenses, demands, claims, and judgments in connection with or arising out of any personal injury or alleged damage to property, sustained or alleged to have been sustained in connection with, or to have arisen out of the condition and/or drilling of the concrete near or adjacent to the equipment model(s) listed above. If my employee(s) offer assistance of any kind during installation of the above equipment model(s) I hold the manufacturer and installation company harmless of all liability for losses, damages, expenses, claims, and judgments in connection with or arising out of any personal injury or alleged damage to property, sustained or alleged to have been sustained in connection with the installation of the above equipment model(s).</p> <p>I understand that the lifts above are supplied with concrete fasteners meeting the criteria of the American National Standard "Automotive Lifts - Safety Requirements for Construction, Testing, and Validation" ANSI/ALI ALCTV-1998, and that I will be responsible for all charges related to any special regional structural and/or seismic anchoring requirements specified by any other agencies and/or codes such as the Uniform Building Code (UBC) and/or International Building Code (IBC).</p>					
Customer Signature:		Print Name:	Date:		
Post-Installation Check-Off					
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top; padding: 5px;"> <input type="checkbox"/> Base and Columns Properly Shimmed And Stable <input type="checkbox"/> Anchor Bolts Tightened <input type="checkbox"/> Runways Properly Attached and Secured <input type="checkbox"/> Electric Power Supply Confirmed <input type="checkbox"/> Cables / Chains Adjusted Properly <input type="checkbox"/> Safety Locks Functioning Properly <input type="checkbox"/> Check For Hydraulic Leaks <input type="checkbox"/> Oil Level </td> <td style="width: 50%; vertical-align: top; padding: 5px;"> <input type="checkbox"/> Lubrication of Critical Components <input type="checkbox"/> Lift Adapters <input type="checkbox"/> Check For Overhead Obstructions <input type="checkbox"/> Runways Level <input type="checkbox"/> All Screws, Bolts, and Pins Secured <input type="checkbox"/> Surrounding Area and Lift Clean In Appearance <input type="checkbox"/> Proper Operation, Maintenance and Safety Explained <input type="checkbox"/> Operation and Safety Manual(s) Left at Site </td> </tr> </table>				<input type="checkbox"/> Base and Columns Properly Shimmed And Stable <input type="checkbox"/> Anchor Bolts Tightened <input type="checkbox"/> Runways Properly Attached and Secured <input type="checkbox"/> Electric Power Supply Confirmed <input type="checkbox"/> Cables / Chains Adjusted Properly <input type="checkbox"/> Safety Locks Functioning Properly <input type="checkbox"/> Check For Hydraulic Leaks <input type="checkbox"/> Oil Level	<input type="checkbox"/> Lubrication of Critical Components <input type="checkbox"/> Lift Adapters <input type="checkbox"/> Check For Overhead Obstructions <input type="checkbox"/> Runways Level <input type="checkbox"/> All Screws, Bolts, and Pins Secured <input type="checkbox"/> Surrounding Area and Lift Clean In Appearance <input type="checkbox"/> Proper Operation, Maintenance and Safety Explained <input type="checkbox"/> Operation and Safety Manual(s) Left at Site
<input type="checkbox"/> Base and Columns Properly Shimmed And Stable <input type="checkbox"/> Anchor Bolts Tightened <input type="checkbox"/> Runways Properly Attached and Secured <input type="checkbox"/> Electric Power Supply Confirmed <input type="checkbox"/> Cables / Chains Adjusted Properly <input type="checkbox"/> Safety Locks Functioning Properly <input type="checkbox"/> Check For Hydraulic Leaks <input type="checkbox"/> Oil Level	<input type="checkbox"/> Lubrication of Critical Components <input type="checkbox"/> Lift Adapters <input type="checkbox"/> Check For Overhead Obstructions <input type="checkbox"/> Runways Level <input type="checkbox"/> All Screws, Bolts, and Pins Secured <input type="checkbox"/> Surrounding Area and Lift Clean In Appearance <input type="checkbox"/> Proper Operation, Maintenance and Safety Explained <input type="checkbox"/> Operation and Safety Manual(s) Left at Site				
<p>I, (the undersigned) confirm that the above installation procedure(s) were completed. I understand that I will be responsible for maintaining this equipment as outlined in the accompanied Installation and Operation Manual and ANSI/ALI ALOIM Safety Requirements for Operation, Inspection and Maintenance. I understand that personal injury and/or damage to property can occur if the above equipment model(s) are not maintained or used improperly and take full responsibility for training my employees on proper use and maintenance of this equipment. I hold the manufacturer and installation company harmless of all liability for losses, damages (including loss of use), expenses, demands, claims, and judgments in connection with or related to improper use, improper training, or lack of required maintenance. I understand that the warranty does not cover replacement of parts worn or damaged due to normal use or lack of required maintenance</p>					
Customer Signature:		Print Name:	Date:		
Installer Signature:		Print Name:	Date:		
Installer Company Name:					
Street Address:					
City:	State:	Zip:			
Phone:		Phone (Other):			









1	十字槽沉头螺钉M6X16		21	牵引电动机	
2	弹簧吊钩8		22	十字槽沉头螺钉M5X10	
3	吊钩8		23	吊钩3	
4	十字槽沉头螺钉M4X10		24	电磁铁支架	
5	垫圈4		25	开口销2 5X40	
6	位移传感器		26	垫圈10	
7	位移传感器座	BL4030-01-16-00	27	转向轴	BL4030 01 10
8	导向轮	BL4030-01-15	28	扭簧弹簧	BL4030-01-08
9	开口销1X15		29	安全挂钩护套	BL4030 01-03-00
10	带孔销	BL4030-01-12	30	电控箱	BL4030-03-00
11	限位开关		31	油泵护套	BL4030 01 05 00
12	开关调整板	BL4030 01-07	32	左扶手	
13	十字槽沉头螺钉M4X25		33	六角头螺栓M6X16	
14	管卡	BL4030-01 17	34	吊臂	BL4030 01 23
15	安全挂钩	BL4030-01-19	35	右扶手	
16	开口销1 6X15		36	油泵	
17	带孔销	BL4030 01-12	37	固定条	BL4030-01-04
18	带孔销	BL4030-01-12	38	六角头螺栓M12X20	
19	长拉杆	BL4030-01-11	39	顶车架	BL4030-01-06-00
20	限位杆	BL4030-01-13	40	立柱	BL4030-01-02-00-00

41	十字槽沉头螺钉M8X16		61	内销轴	BL4030-05-05
42	后封板	BL4030-01-18-00	62	开槽性能差定螺钉M5X15	
43	螺母M6		63	开口销2X30	
44	提升型	BL4030-02-01-00	64	垫圈20	
45	油缸	BL4030-04-02	65	长销轴	BL4030 05 06
46	短油管	BL4030-04-03	66	摆动块	BL4030-05-04 00
47	活接头		67	长连杆	BL4030-05 03 00
48	直角接头		68	外销轴20	BL4030-05-02
49	油管		69	支撑轴	BL4030-05-07
50	油杯	BL4030-02-08	70	曲柄组件	BL4030-05-08-00
51	开槽性能差定螺钉M5X10		71	手柄	BL4030-05-09
52	销套	BL4030-02-05	72	销钉	BL4030-05-10
53	调整垫圈	BL4030 02 02	73	压帽弹簧	
54	垫块	BL4030-02-07	74	限位螺栓在	
55	链条		75	高强度六角头螺栓	
56	子扣环	BL4030-02 03 00	76	弹簧垫圈12	
57	销钉	BL4030-02-04	77	垫圈12	
58	堵头	BL4030-02-09-00	78	加时板	BL4030-01-01-00
59	提升支臂	BL4030 02 06 00			
60	脚踏				

1	Screw M8X16		43	Nut M6	
2	Lock Washer 8		44	Carriage	L40300201
3	Washer 8		45	Cylinder	L40300402
4	Screw M4x10		46	Short Hose	L40300403
5	Washer 4		47	Swivel Tie-in	
6	Displacement Sensor		48	Right-angle Tie-in	
7	Sensor bracket	L40300116	49	Hose	
8	Sheave	L40300115	50	Slider Block	L40300208
9	Cotter pin 1x15		51	Fastness Screw M5x10	
10	Hole pin 6x23		52	Shaft Sheath	L40300205
11	Limit Switch		53	Shim	L40300202
12	Switch Bracket	L40300107	54	Swing Block	L40300207
13	Screw M4x25		55	Chain	
14	Clip	L40300117	56	Tach	L40300203
15	Safety Hook	L40300119	57	Lock Shaft	L40300204
16	Cotter Pin 1.6x15		58	Plug	L40300209
17	Hole Pin 6x45	L40300112	59	Carriage Arm	L40300206
18	Hole Pin 6x30	L40300112	60	Truckle	
19	Long Bar	L40300111	61	Inner Shaft	L40300505
20	Short Bar	L40300113	62	Fastness Screw M5x15	
21	Electromagnet		63	Cotter Pin 2x30	
22	Screw M5x10		64	Washer 20	
23	Washer 5		65	Long Shaft	L40300506
24	Electromagnet Bracket	L40300114	66	Truckle Bracket	L40300504
25	Cotter Pin 2.5x40		67	Long Pole	L40300503
26	Washer 30		68	Outer Shaft 20	L40300502
27	Hook Shaft	L40300110	69	Shore	L40300507
28	Torsion Spring	L40300108	70	Crank	L40300508
29	Safety Hook Cover	L40300103	71	Handle	L40300509
30	Electric Control Box	L40300300	72	Action Bolt	L40300510
31	Pump Cover	L40300105	73	Compressed Spring	
32	Left Armrest		74	Hydraulic Dolly	
33	Bolt M8x16		75	Bolt M12x60	
34	Aluminium Tube	L40300123	76	Lock Washer 12	
35	Right Armrest		77	Washer 12	
36	Pump		78	Reinforce Bracket	L40300101
37	Settled Bracket	L40300104			
38	Bolt M12x20				
39	Action Pole Holder	L40300106			
40	Column	L40300102			
41	Screw M8x16				
42	Rear Cover	L40300118			



The best automotive service equipment on the planet.

**For Parts Or Service
Contact:**

**BendPak Inc. / Ranger Products
1645 Lemonwood Dr.
Santa Paula, CA. 93060**

**Tel: 1-805-933-9970
Toll Free: 1-800-253-2363
Fax: 1-805-933-9160**

**www.bendpak.com
www.rangerproducts.com**

