



CHAMPION DISTRIBUTORS LLC

INSTALLATION MANUAL & OPERATION INSTRUCTIONS

MR-6 MIDRISE LIFT



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PACKING, TRANSPORT AND STORAGE

ALL PACKING, LIFTING, HANDLING, TRANSPORT AND UNPACKING OPERATIONS ARE TO BE PERFORMED EXCLUSIVELY BY EXPERT PERSONNEL WITH KNOWLEDGE OF THE LIFT AND THE CONTENTS OF THIS MANUAL

PACKING

The lift is shipped disassembled into following parts:

- | | Weight (kg) |
|--|-------------|
| 1. Complete vehicle body including frame and arms | 360kg |
| 2. The rests spare parts including hydraulic station, trolley and so on. | 30kg |
| 3. The gross weight of the lift is | 420 kg. |

LIFTING OPERATING

The pack boxes may be lifted and moved with a lift truck (Fig.1 and Fig.2). If either of the latter two are used, boxes must be harnessed with at least 2 slings.

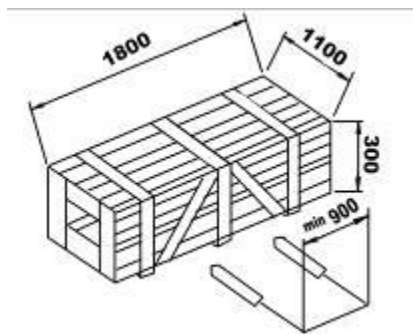


Fig.1

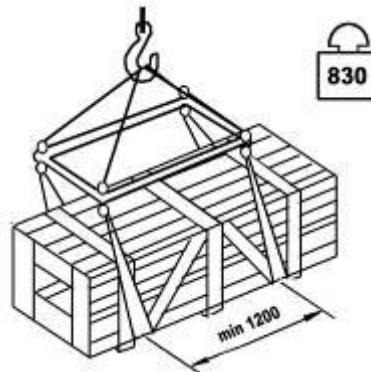


Fig.2

STORAGE

Pack boxes always be kept in a covered, protected place, at a temperature between -10° And +40° And must not be exposed to direct sunlight and must not be caught in the rain.

STACKING

The type of packing allows the possibility of stacking up to 5 cases.

Up to 5 cases may be stacked one upon the other on lorries or in containers if property positioned and provided they are restrained to prevent falling.

OPENING

When the crates arrive, check that the machine has not been damaged during transport and that all parts listed are present. The crates must be opened using all possible precautionary measure to avoid damaging the machine or its parts. Make sure that parts do not fall from the crate during opening.

INTRODUCTION WARNING

This manual has been prepared for workshop personnel expert in the use of the lift (operator) and technicians responsible for routine maintenance (maintenance fitter): read the manual before carrying out any operation with the lift and /or the packing. This manual contains important information regarding:

THE PERSONAL SAFETY OF operators and maintenance workers

LIFT SAFETY

THE SAFETY OF LIFTED VEHICLES

2700kg

Express the rated load is 2700kg. Don't allow lifting load weigh excess 2700kg.



This symbol express attention should be taken for electrical hazards on the control box.



This symbol express attention should be taken for foot hazard on the scissor beam.



This symbol express attention should be taken for hand hazard on the scissor beam.



This symbol expresses connection to the ground on the earth wire of the electrical box.

Operation instruction

This symbol is on the side of the motor.

CONSERVING THE MANUAL

The manual is an integral part of the lift, which it should always accompany even if the unit is sold .The manual must be kept in the vicinity of the lift in an easily accessible place so that the operator and maintenance staff must be able to locate and consult the manual quickly at any time.

ATTENTIVE AND REPEATED READING OF CHAPTER 3, WHICH CONTAINS IMPORTANT INFORMATION AND SAFETY WARNINGS, IS PARTICULARLY RECOMMENDED.

Lift rack has been designed and built in compliance with the following:

LAWS

The lifting, transport, unpacking, assembling, installation, starting up, initial adjustment and testing, the work relate to EXTRAORDINARY maintenance, repair, overhauls, transport and dismantling of the lift must be performed by specialist personnel from the LICENSED DEALER or an SEVICE CENTRE authorized by the manufacturer (see authorized dealer on frontispiece).

The manufacturer declines all responsibility for injury to persons or damage to vehicles or objects when any of the above mentioned operations have been performed by unauthorized personnel or when the rack has been subject to abuse.

This manual indicates only the operative and safety aspects that may prove useful to the operator and maintenance works better understanding the structure and operation of the lift and for best use of the lift.

In order to understand the terminology used in this manual, the operator must have specific experience in workshop, service, maintenance and repair activities, the ability to interpret correctly the drawings and descriptions contained in the manual and be acquainted with the general and specific safety rules relevant to the country in which the machine has been installed.

The same applies to the maintenance fitter, who must also possess specific and specialized knowledge (mechanical, engineering) needed to perform the operations described in the manual in complete safety.

The words “operator” and “maintenance fitter” used in this manual are construed as follows:

OPERATOR: person authorized to use the lift.

MAINTENANCE FITTER: person authorized for routine maintenance of the lift.

The end user can only use the machine in correct way as defined in instruction.

Loose clothes shall not be used protection cap shall also be used for long hair person, etc.

Lubricate the machine periodically according to the manual.

CHAPTER 1 DESCRIPTION OF THE MACHINE

The hydraulic movable lift is can work on a flat ground or the grade of a slop less than or equal 3°.

The lift consists of the following main parts:

1. Fixed structure (frame + arms);
2. Mobile units (idler wheel and hydraulic vehicle);
3. Lift units (2hydraulic cylinders + power unit);
4. Control station;
5. Safety devices;

Figures 3 illustrate the various parts of the lift and the work areas reserved for use by operators around the lift.

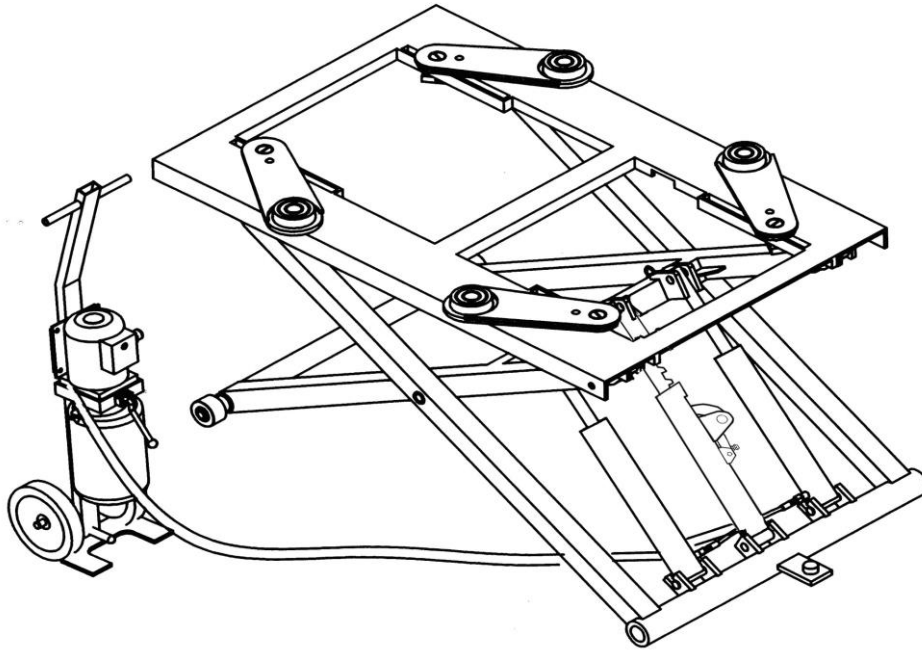


Fig.3 whole construction

1.1 FIXED STRUCTURE (FIG.3)

This structure consists of:

The frame and the arms are all combined with steel plate and several of the profiled bar, which are the basal components of the movable lift.

1.2 MOVING UNITS (SEE FIG.3)

Each unit consists of:

Six idler wheels. Four are mounted on the base angle of the frame arms; the other two ---a little bigger---are mounted on the bottom of the movable hydraulic vehicle. A connection --- a pin shaft between the movable vehicle and the under beam of the frame.

1.3 LIFT UNIT (SEE FIG.5)

It consists of:

1. Two hydraulic cylinders (8), to lift the frame.
2. One hydraulic unit (see fig.5), mount on the movable vehicle.

1.4 HYDRAULIC POWER UNIT (FIG.4, FIG.5)

The hydraulic power unit consists of:

1. An electric motor (1)
2. A geared hydraulic pump (2)
3. Descent hand-valve (3) equipped with a manual oil drain valve (see the use and maintenance chapter)

4. A adjusting pressure valve (4)
5. Two oil cylinders (5)
6. oil tanks
7. Two steel wire flexible pipes to delivery oil. (6)

Note: The pressure of the oil delivery pipe may be not less than 40Mpa

1.5 CONTROL BOX (FIG.5)

The panel that houses the electric control box contains the following:

- 1 Main switch (IG) (power supply plug)
- 2 Rise push button (p1)



Fig.4 hydraulic system

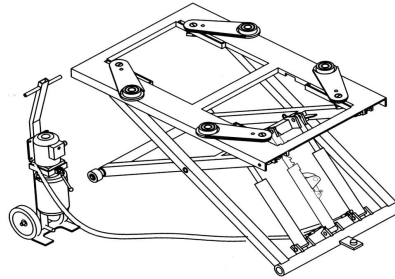


Fig.5 safety device

1.6 SAFETY DEVICE (Fig.5)

The safety devices include:

- 1 Arms locking system
- 2 Support
- 3 Explosion valve

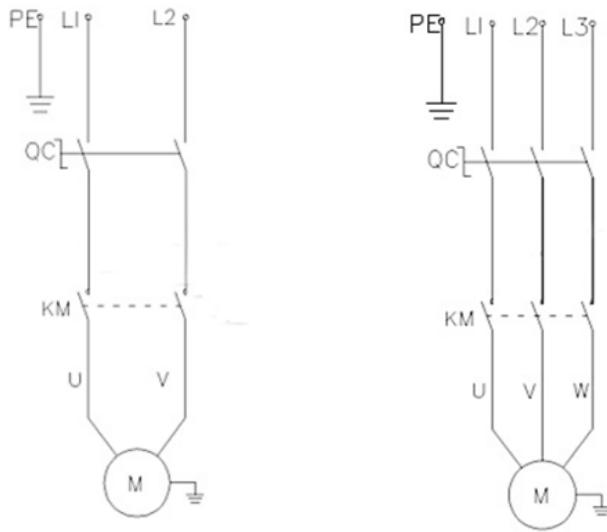
These safety devices will be described in further detail in the following chapters

CHAPTER 2 TECHNICAL SPECIFICATIONS

Capacity.....	2700kg
Car max lifting height.....	1200mm
Lift min stand height.....	145mm
Lifting Arm Maximum Width.....	1650mm
Lifting Arm Maximum Length.....	2600mm
The frame width.....	1015mm
The frame length.....	1680mm
Rise time with three-phase motor.....	20sec
Rise time with single-phase motor.....	25sec
Descent time.....	25sec
Gross weight	420kg
Net weight.....	390kg
Noise.....	≤70db (A) 1m
Operating temperature.....	-10c/+50C
Work environment:	a flat ground, the grade is less than 3o in a fine day
Relative humidity.....	90% at 20°C
Sea level height.....	≤3500m

2.1 POWER DEVICE

2.1.1 ELECTRIC PRINCIPLE DIAGRAM AND ACCESSORIES

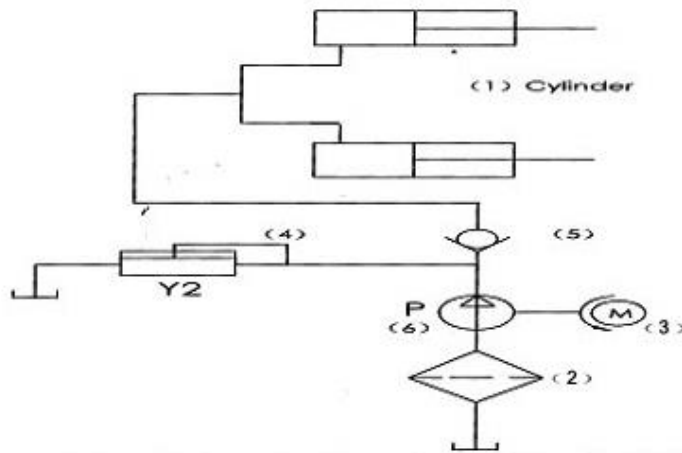


M1-Motor KM-Contactor SB –Button SQ- Limit switch

The motor must be connected with reference to the attached wiring diagrams.

2.2 HYDRAULIC UNIT PUMP

2.2.1 PRINCIPLE DIAGRAM AND ACCESSORIES



- 1.oil cylinder 2. oil filter 3.motor 380v,50hz,2.2kw 4.Y5 overfall valve
5. Y4 Non ro-tun valve 6.pump

Hydraulic drawing

2.3 OIL

The oil reservoir contains hydraulic mineral oil in accordance with ISO/DIN 6743/4 with a level of contamination according to ISO 4406, for example IP HYDRUS OIL 32; SHELL TELLUS OIL T32 or equivalent.

2.4 LIFTING WEIGHT

The lift weight is 2700kg.

2.5 MAXIMUM DIMENSIONS OF VEHICLES TO BE LIFTED

Max width: 2400mm

Max wheelbase: 3000mm

The underbody of cars with low ground clearance may interfere with the structure of the lift .Pay particular attention in the case of low body sports cars.

Always keep the capacity of the lift in mind in the case of vehicles with particular characteristics.

THE SAFETY area will be determined by the dimensions of the vehicle.

The diagrams below include the criteria for defining the limits of use of the carrack.

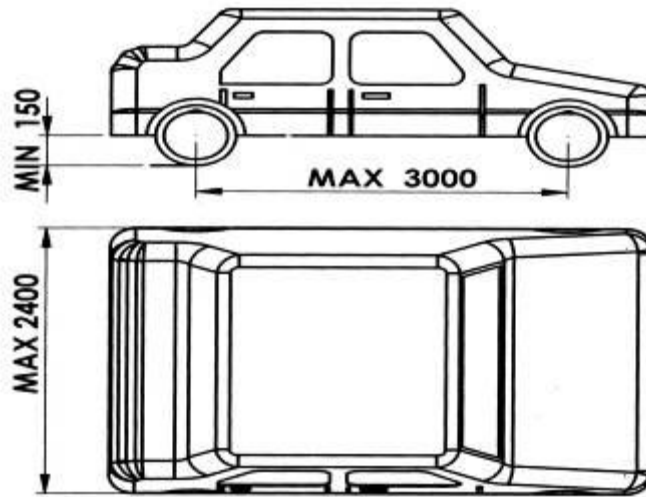


Fig.8 Minimum and maximum dimensions

**CHECK MAXIMUM LOAD CAPACITY AND LOAD DISTRIBUTION IN CASE OF LARGER VEHICLES.
MAXIMUM WEIGHT OF THE VEHICLE TO BE LIFT**

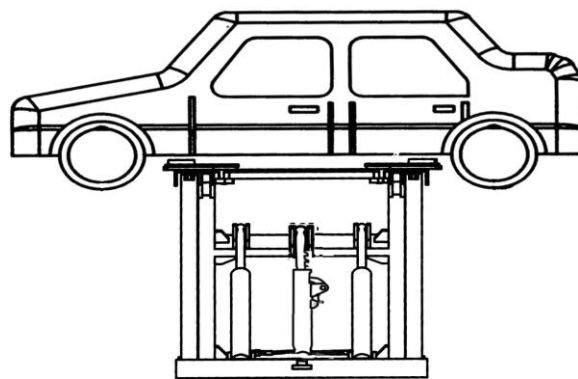


Fig.9 Weight distribution

CHAPTER 3 SAFETY

It is vital to read this chapter of the manual carefully and from beginning to end as it contains important information regarding the risks that the operator and the maintenance fitter may be exposed to in the eventuality that the lift is used incorrectly.

The following text contains clear explanations regarding certain situations of risk or danger that may arise during the operation or maintenance of the lift, the safety devices installed and the correct use of such systems, residual risks and operative procedures to use (general and specific precautions to eliminate potential hazards).

WARNING

Lift is designed and built to lift vehicles and hold them in the elevated position on a flat ground which grade is less than 3° in a fine day. All other uses are unauthorized; in particular, the lift is not suitable for:

- Washing and respire work;
- Creating raised platforms or lifting personnel;
- Use as a makeshift press for crushing purpose;
- Use as goods lift

THE MANUFACTURE DISCLAIMS ALL LIABILITY FOR INJURY TO PERSONS OR DAMAGE TO VEHICLES AND OTHER PCABLERTY CAUSED BY THE INCORRECT AND UNAUTHORISED USE

OF THE LIFT.

During lift and descent movements, the operator must remain at the front of the vehicle. The presence of persons inside the danger zone indicated in the same figure is strictly prohibited. The presence of persons beneath the vehicle during operations is permitted only when the vehicle is parked in the elevated position.

DO NOT USE THE LIFT WITHOUT PROTECTION DEVICES OR WITH THE PROTECTION DEVICES INHIBITED. FAILURE TO COMPLY WITH THESE REGULATIONS CAN CAUSE SERIOUS INJURY TO PERSONS, AND IRREPERABLE DAMAGE TO THE LIFT AND THE VEHICLE BEING LIFTED.

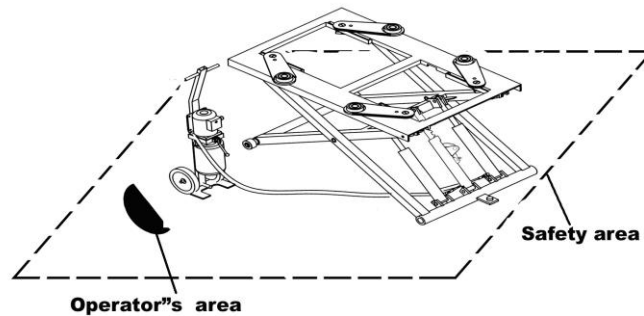


Fig.10 safety operating zone

3.1 GENERAL PRECAUTIONS

The operator and the maintenance fitter are required to observe the prescriptions of accident prevention legislation in force in the country of installation of the lift.

Furthermore, the operator and the maintenance fitter must:

1. Always work in the scheduled working area as shown in the manual
2. Never remove deactivate the guards and mechanical, electrical, or other types of safety devices.
3. Read the safety notices affixed to the machine and the safety information in this manual.

3.2 RISKS OF ELECTRIC SHOCK

Specific safety notice affixed to the lift in areas where the risk of electric shock is particularly high.

3.3 RISKS AND PROTECTION DEVICES

We shall now examine the risks to which the operator and the maintenance fitters may be exposed when the vehicle is immobilized in the raised position, together with the protection devices and adopted by the manufacture to reduce all such hazards to the minimum.

3.4 LONGITUDINAL AND LATERAL MOVEMENT

The equipment chosen must be suitable for safe lifting and moving, bearing in mind the dimensions and weight. It is not allowed when get to the height, to shift the load backward and forward or left and right, which will cause the vehicle falls off and slant.

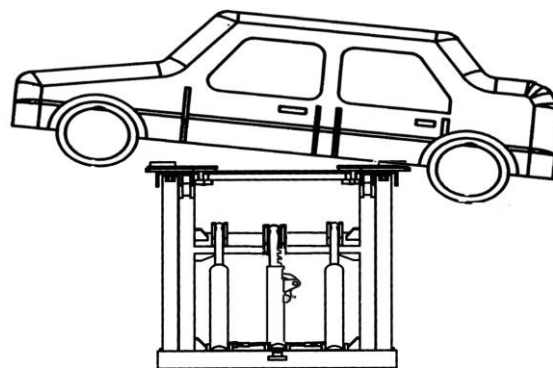


Fig.11 Risk of vehicle falling

WARNING

DO NOT ATTEMPT TO MOVE THE TOTARY TABLE AND THE VEHICLE SUPPORT WHEN IT IS LIFTING.

It is important to position the vehicle on the lift so that the weight is correctly distributed on the arms .

1. People rest inside the safety area while the vehicle raising
2. The engine is off, the lock engaged and it should be pulled to activate the lock to work.
3. The vehicle is correctly positioned. (Fig.12).
4. Only authorized vehicle are raised without exceeding the rate capacity and overall dimensions.

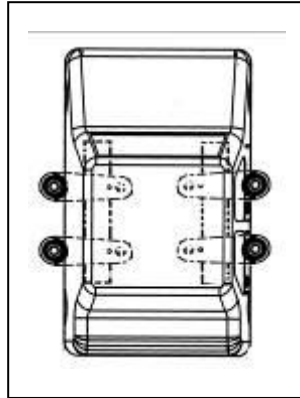


Fig.12 Correctly loaded vehicle

3.5 RISKS WHILE THE VEHICLE IS BEING RAISED

The following safety devices have been installed to protect against overweight conditions and equipment failure:

1. The pressure-limit valve, located on the hydraulic oil power unit, will trip if the lift is overloaded.
2. In case of a sudden, great leakage in the hydraulic circuit (a broken pipe), the blocking valves, at the bottom of each Cylinder, will trip.

3.6 RISKS OF PERSONS

This paragraph illustrates risks to which the operator, maintenance worker, or any person near the operating area of the lift may be exposed in the case of impeccable use of equipment.

3.6.1 RISK OF CRUSHING (OPEARATOR)

Possible if the operator controlling the lift is not in the specified position at the command panel. When the platform and the vehicle are descending, the operator must never be partly or completely underneath the moving structure. During this phase the operator must remain in the command zone.(Fig.13)

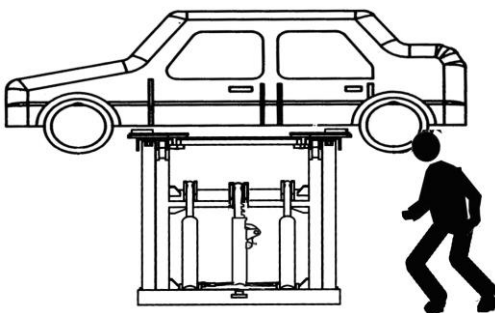


Fig.13 Crushing risk

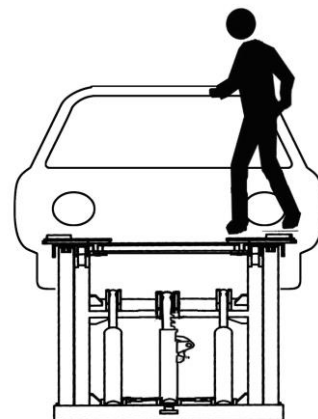


Fig.14 Falling risk

3.6.2 RISK OF VEHICLE FALLING FROM LIFT

This risk could be caused by the incorrect positioning on the arm disk support plates (fig.14) or in incorrect position of the arm disk support plates in relation to the lift. Ensure the center of gravity of the vehicle, then put four arms at the correct place to avoid such an occurrence.

NEVER BOARD THE VEHICLE AND/OR TURN THE ENGINE ON WHEN LIFT IS RAISED.

NEVER LEAN OBJECTS AGAINST THE POSTS OR LEAVE THEM IN THE AREA WHERE MOVING PARTS ARE LOWERED

This could hamper lowering or cause the vehicle to fall from the rack (Fig.14).

3.6.3 SLIPPING

This risk may arise due to spillage of lubricants in the surrounding area.

ALWAYS KEEP THE AREA SURROUNDING THE LIFT CLEAN BY REMOVING ALL OIL SPILLS.

To avoid the risk of slipping, make use of the recommended personal protection (anti-slip footwear).

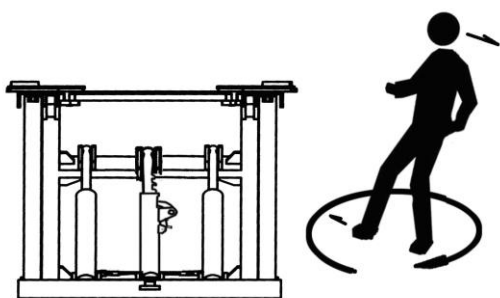


Fig.15 Slipping risk

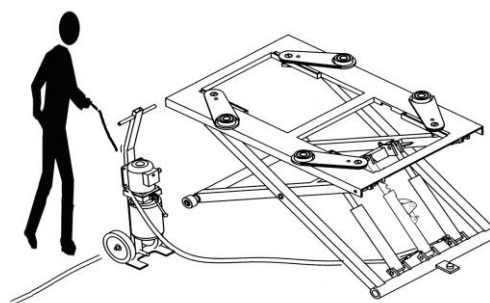


Fig.16 Electrical shocking risk

3.6.4 RISK OF ELECTRIC SHOCK

Risk of electric shock in areas of the lift cable. Do not use jets of water, steam (high pressure wash units). Or paint in the immediate vicinity of the lift, and take special care to keep such substances clear off the electrical command panel. (Fig.16)

3.6.5 RISK RELATED TO INAPPROPRIATE LIGHTING.

The operator and the maintenance fitter must be able to assure that all the areas of the lift are properly and uniformly illuminated in compliance with optics principle and the laws in force in the place of installation.

3.6.6 RISK OF COMPONENT FAILURE DURING OPERATIO

The manufacturer has used appropriate materials and construction techniques in relation to the specified use of the machine in order to manufacture a reliable and safe lift. Note however, that the lift must be used in conformity with the manufacturers' prescriptions and the frequency of inspections and maintenance work recommended in chapter 6 "MAINTENANCE" must be observed. RISK RELATED TO IMPROPER USE

Persons are not permitted to stand or sit on the platforms during the lift maneuver or when the vehicle is already lifted (Fig.14).

All uses of the lift other than the uses for which it was designed are liable to give rise to serious accidents involving the persons working in the immediate vicinity of the unit. It is therefore essential to adhere scrupulously to all regulations regarding use, maintenance and safety contained in this manual.

CHAPTER 4 INSTALLATION

THE FOLLOWING OPERATIONS MUST BE PERFORMED EXCLUSIVELY BY SPECIALISED TECHNICAL STAFF WITH AUTHORISATION FROM THE MANUFACTURER OR LICENSED DEALER. IF THESE OPREATIONS ARE PERFORMED BY OTHER PERSONS, SERIOUS PERSONAL INJURY AND/OR IRREPERABL DAMAGE TO THE LIFT UNIT MAY RESULT.

4.1 INSTALLATION REQUISITE CHECKLIST

The LIFT can work outside and inside, but it can't work in the rain. It is also considered that the place of installation must be well clear of areas destined to washing or painting, and away from solvent or paint storage areas or areas where there is a risk of potentially explosive atmosphere.

INSTALLATION

Lift is really simple. When transportation, just need to separate the frame, which include arms, extendable arms, safety lock and so on, from the vehicle and pack them respective. Open the packaging, check the components, and then install the lift.

When the frame has been mounted, which include the extendable arm, safety lock, idler wheels and so on, please check it, whether it loose or not.

After mounting, connect the hydraulic station and the oil pipe, and then switch on the power. But at first, check the voltage. If it isn't the same as the requirement of the lift, replace the voltage. Then find a plug suitable for the lift.

Insert it according to the relative number. If the motor does work, it must be something wrong with the hydraulic pump. Change another phase.

4.2 TEST AND CHECK TO PERFORM BEFORE START-UP

MECHANIAL TESTS

1. Attachment and tightness of bolts, fittings and connections
2. Free sliding of moving parts
3. Clean state of various parts of the machine
4. Position of the protection device
5. Arms and lifting vehicle and other parts should be filled with lubricating oil.

ELECTRIC TESTS

1. Connection comply with diagrams
2. Machine earth connections

OPERATING OF THE FOLLOWING DEVICES

1. Mechanic lock inserting pole.
2. Security device electromagnets
3. Hydraulic oil plant solenoid-valve

HYDRAULIC OIL TEST

Sufficient oil in the tank

No leaks

Cylinder operation

NOTE: If oil is not present, fill the reservoir of the power unit with the necessary amount of oil .See the procedure in chapter 6: MAINTENANCE

ROTATION DIRECTION TEST

The motor should turn in the direction of the arrow located on the power unit pump; check using brief start-ups (each start-up must last a maximum of two seconds). If problems arise in the hydraulic oil plant, see the "Trouble-shooting" table in chapter 7

4.3 SET UP

WARNING

THESE OPERATIONS MUST ALWAYS BE PERFORMED BY TECHNICIONS OF THE AUTRORIZ SERVICE CENTRE INDICATED IN THE FRONT OF THIS MANUAL

POSTS ASSEMBLEING

Mount the command post

Assemble the hydraulic station on the command post, with the screws fixed on the installation panel of the hydraulic

station.

CHAPTER 5 OPERATIONS AND USE

The lift Commands (control box) is shown as Fig.17:



Fig. 17 Control station

5.1 CONMANDS

5.1.1 UP BUTTON (1)

If pressed, activates the electric motor and mechanisms that lift the carriage.

5.1.2 DOWN HANDLE (2)

If the handle moved, the overload valve will release the press of the system. The lift will descend.

5.2 OPERATING SEQUENCE

Position the lift frame in the two axes prescribed for the vehicle, adjusting the disks to the same height.

Each time the carriages are brought down to the ground, check the position of the disks under the chassis of the vehicle before raising the carriages again.

5.2.1 LIFTING

Press the up push button until reaching the required height. As the carriages are raised the safety wedges are inserted automatically into each the limit block. Regarding lift limits and safety devices, see “**RISKS WHILE THE VEHICLE IS BEING RAISED**”.

5.2.2 PARKIGN

Once the required height has been reached, press the parking push button. The movement is stopped automatically when the safety wedge rests on the level of the first slot that they come in contact with while the carriages are coming down. See “the rising risk”.

5.2.3 LOWERING

Before lowering the carriages, the safety wedges must be pulled out. Move the descending handle. Lowering speed is regulated by the “flow regulating valve” in the pump. Regulate throttle to make it at the speed of 8~15sec. When assemble the lift, you’d better not regulate again for it has been done. Lowering stops when the hydraulic cylinders are completely unloaded.

CHAPTER 6. MAINTENANCE

6.1 PRECAUTIONS

WARNING

Maintenance must be carried out only by skilled personnel who are very familiar with the lift.

When performing maintenance on the lift, follow all the necessary precautions to prevent the lift from being started accidentally:

1. Cut off the power and pull the plug out of the jack.
2. The key for the main switch must be kept by the fitter.
3. While maintenance is being performed on the machine, always keep in mind all the main possible risks and the safety instructions indicated in chapter 3 “safety risk of electric shock” at the machine power supply terminal strip.

IT IS PROHIBITED TO PERFORM MAINTENANCE ON THE OIL CYLINDER. IT SHOULD BE REPLACED WHEN DAMAGED.

 **IMPORTANT**

1. Only use original spare parts and tools that are suitable for the job and in good condition;
2. Follow the maintenance schedule indicated in the manual: these frequencies are indicative and must always be considered as general rules to be respected.
3. Good preventive maintenance requires constant attention and continuous supervision on the machine. Quickly find the cause of any abnormalities such as excessive noise, overheating, leaking fluids, etc.

Special attention is required for:

1. The condition of lifting parts (cylinder, power unit);
2. Safety devices (oil cylinder and safety wedges)

To perform maintenance correctly, refer to the following documents supplied by the lift manufacturer:

1. Complete functional diagram of the electric equipment and auxiliary equipment indicating the power supply connections
2. Hydraulic diagram with lists of parts and max. pressure values
3. Exploded drawings with the data needed to order spare parts
4. List of the possible causes of malfunctions and recommended solutions (chapter 7 of the manual)

6.2 PERIODIC MAINTENANCE

6.2.1 OPERATION FREQUENCY

To keep the lift working at full efficiency, follow the indicated maintenance schedule. The manufacturer will not be responsible and will not honor the warranty as a result of non-compliance with the instructions indicated above.

 **NOTE**

The frequency indicated refers to normal operating conditions; different frequencies will apply to particularly server conditions.

ALL MAINTENANCE OPERATIONS MUST BE PERFORMED WITH THE LIFT STOPPING OR THE MAIN SWITCH PLACED AT “O”.

When after the machine has been installed, check:

- 1 That the opposite carriages arms are at the same level
- 2 The power unit oil level. Add oil up to the right level, if necessary

6.2.2 EVERY MONTH

HYDAULIC POWER UNIT

- 1 Check the oil level in the tank, using the special dipstick, which is attached to the filler cap. If necessary, add oil through the cap to reach the required level. For the type of oil, see “TECHNICAL SPECIFICATIONS”.
- 2 After the first 40 hours of operation, check the press oil contamination level. (Clean the filter and replace the oil if there is a high contamination level).

HYDAULIC CIRCUIT

Check that there are no oil leaks in the circuit between the power unit and cylinder and in the cylinder itself. In this case, check the condition of the gaskets and replace them, if necessary.

HYDAULIC PUMP

Under normal operating conditions, check that there is no change in the noise in the motor and gear pump and check that the

relative bolts are properly tightened.

SAFETY SYSTEMS

- 1 Check the operating condition and efficiency of the safety devices and the wear on the safety wedges and relative hinge pins. Oil the pins on the safety wedges. In case of excessive wear, replace the safety wedges and/or pins.
- 2 Use a torque wrench to check that the post bases anchor bolts screws are properly tightened to the ground as well as the connection bolts.
- 3 Clean and lubricate the carriage side runners and guides.
- 4 Check that all screws are tightened
- 5 Check that the arm locking system works properly.
- 6 Grease all the moving parts.

6.2.3 EVERY 6-MONTH...

HYDRAULIC

Check the contamination or aging level of the oil. Contaminated oil is the main cause of malfunctions of the valves and leads to a brief service life of the gear pumps.

6.2.4 EVERY 12-MONTH...

General check: visual inspection of all structural parts and mechanisms to guarantee that there are no problems or anomalies.

Electric plant: skilled electricians (contact the service center) should test the electric plant, including the motor of the power unit, cables, and limit switch and control box.

HYDRULIC PLANT OIL

Replace the oil, following the instructions listed below:

1. Lower the lift to the minimum height (on the ground)
2. Make sure that the hydraulic cylinder is at the end of its travel
3. Disconnect the power supply to the lift rack.
4. Drain the oil from the hydraulic circuit, unscrewing the plug located at the bottom of the power unit reservoir.
5. Close the drain plug
6. Fill the hydraulic station oil cylinder with oil through the plug located at the top of the hydraulic station.

The oil must be filtered.

Oil characteristics and types are reported in the technical specifications.

1. Close the filler plug
2. Energize the lift
3. Go through two or three up-down cycles (for a height about 20-30 centimeters) to insert oil into the circuit.

When changing the oil: use only recommend oil or the equivalent; do not use deteriorated oil that has been in the warehouse for an extended period of time. Oil should be disposed as indicated in appendix "A".

AFTER EACH MAINTENANCE OPERATION, THE MACHINE MUST RETURN TO ITS INITIAL CONDITIONS, INCLUDING THE DISASSEMBLED PROTECTION AND SAFETY DEVICE.

To ensure good maintenance, it is important:

1. To use only tools that are suitable for the job and original spare parts
2. Follow the minimum maintenance schedule as indicated
3. Immediately find the cause of any abnormalities (excessive noise, overheating, leaking fluids, etc)
4. Pay special attention to lifting parts (cylinders) and safety devices
5. Use all the documentation supplied by the manufacturer (wiring diagrams, etc)

6.3 PERIODIC LUBRIFICATION CHART

Lubricate the rack as indicated in fig.18. Grease must be taken from perfectly closed tins and/or well preserved. Old or damaged grease may damage the lubricated part.

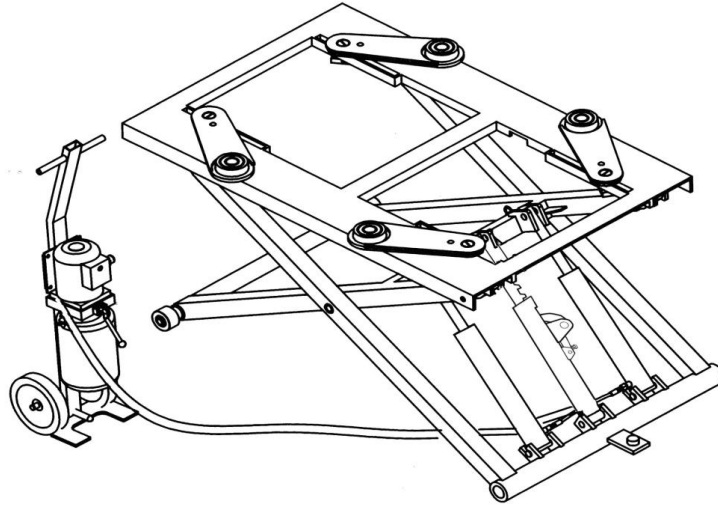


Fig.18

CHAPTER 7 TROUBLESHOOTING

7.1 TROUBLESHOOTING GUIDE

Troubleshooting and possible repairs require absolute compliance with ALL THE SAFETY PRECAUTIONS indicated in chapter 6 “MAINTENANCE” and chapter 3 “SAFETY”

7.2 TROUBLESHOOTING CHECKLIST

Problem	Possible cause	Solution
The motor doesn't rotate.	Bad contact Electric switch doesn't work.	Check and replace good wire. Check and replace switch.
The motor rotates, but the lift doesn't rise.	Damaged gear pump Hydraulic oil is not enough.	Replace gear pump. Supply hydraulic oil.
Can't go down.	The safety lock shaft is not drawn out. The electromagnetic valve is not open	Draw out the shaft Check and replace the electromagnetic valve.
Leak oil	Loosed tie-in. The oil seal of the tie-in is damaged	Screw the tie-in Replace the oil seal.
Two oil cylinders don't work synchronously.	Leak oil Blocked oil pipe	Check and eliminate Clear away the oil pipe.

APPENDIX A-SPECIAL NOTES

A.1 DISPOSAL OF USED OIL

Used oil, which is removed from the oil tank and the plant during an oil change, must be treated as a polluting product, in accordance with the legal prescriptions of the country in which the lift is installed.

A.2 MACHINE DEMOLITION

DURING MACHINE DEMOLITION, COMPLY WITH ALL THE SAFETY PRECAUTIONS DESCRIBED IN CHAPTER 3, WHICH ARE ALSO VALID FOR ASSEMBLING.

The machine must be demolished by authorized technicians, just like for assembling. The metallic parts can be scrapped as iron. In any case, all the materials deriving from the demolition must be disposed of in accordance with the current standards of the country in which the rack is installed. Finally, it should be recalled that for tax purposes, demolition must be documented; submitting claims and documents according to the current laws in the country in which the rack is installed at the time the machine is demolished.

APPENDIX B SPARE PARTS

B.1 SPARE PARTS

When replacing parts and making repairs, comply with **ALL THE SAFETY PRECAUTIONS** described in chapter 6 **MAINTENANCE** and in chapter 3 **SAFETY**

Take all the necessary precautions to **AVOID ACCIDENTAL START-UP OF THE LIFT**

1. The switch on the control box must be blocked.
2. The key of the lock must be kept by the maintenance fitter during the maintenance operation.

B.2 PROCEDURE FOR ORDERING SPARE PARTS

To order spare parts:

1. Indicate the serial number of the lift and the year built
2. Indicate the code of the piece requested (see the "CODE" columns in the tables)
3. Indicate the quantity required.

The request must be submitted to the authorized reseller as indicated in the front of the manual.