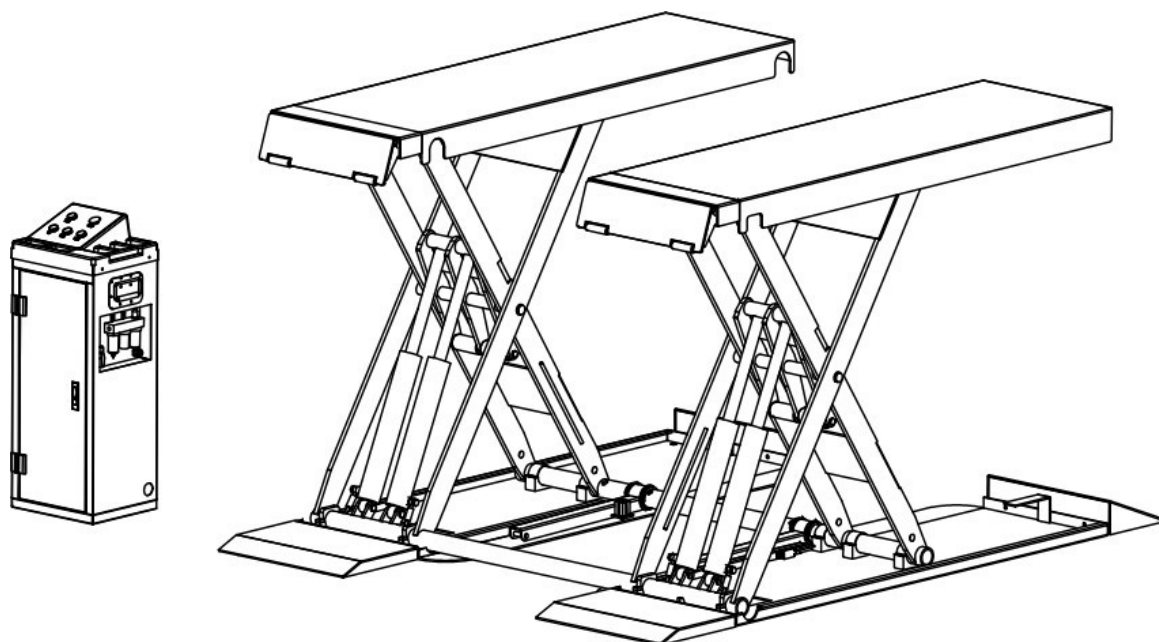




ORIGINAL USER MANUAL

Scissor Lift

INVENTO SL 140

TIP-TOPOL Sp. z o.o.

62-010 Pobiedziska

33 Kostrzyńska St.

www.sklep.tiptopol.pl

Original EC/EU Declaration of Conformity

Tip-Topol Sp. z o.o.
33 Kostrzyńska St.
62-010 Pobiedziska

Declares that the product:

Scissor lift Model: SL
140

is complies with the essential requirements of Directive:

2006/42/EC

Directive 2006/42/EC

and the specific requirements contained

in the harmonized standards:

EN

Safety of machinery – Electrical equipment of machines – Part 1:

60204-1:2006+A1:2009

General requirements

EN 1493:2023-05

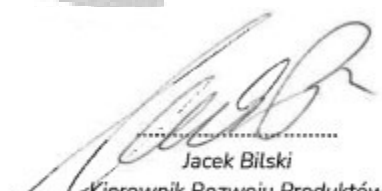
Vehicle lifts.

This declaration serves as the basis for affixing the CE marking to the product.

This declaration applies exclusively to the machines in the condition in which they were placed on the market and does not cover components added by the end user or subsequent actions carried out by them.

The technical documentation is available at the headquarters of TIP-TOPOL Spółka z o.o., 62-010 Pobiedziska; ul. Kostrzyńska 33, from the responsible person – Jacek Biłski.

Pobiedziska


Jacek Biłski
Kierownik Rozwoju Produktów

"TIP-TOPOL" Spółka z o.o.
62-010 Pobiedziska, ul. Kostrzyńska 33
tel. 61 815-22-00, fax 61 815-22-22
NIP 779-00-00-706 (20)

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This symbol indicates that you should be aware of the risk to your hands associated with the scissor beam.



2

This

symbol indicates a ground connection via a grounding wire in the electrical box.

2

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PACKAGING, TRANSPORT, AND STORAGE

PACKAGING

A major advantage of the lift is its ease of transport.

It can be disassembled into the following parts:

- 1 Complete left-hand trolley (1560×560×350)
 - 2 Complete right-hand trolley (1560×550×350)
 - 3 Cabinet for electrical equipment with hydraulic drive
- kg The set weighs 670 kg (net weight is 650 kg)

Weight (kg)

320 kg

320 kg

50

MOVING AND TRANSPORT

The crates can be moved using a forklift (Fig. 1). When using hooks, the crates must be secured with at least two slings.

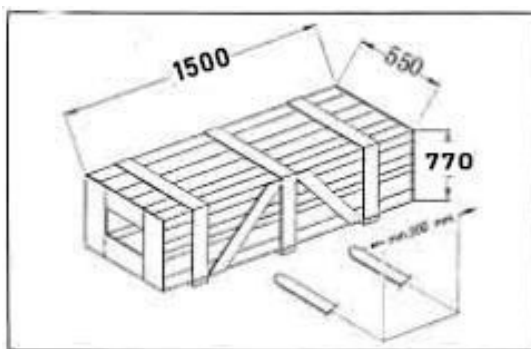


Fig. 1

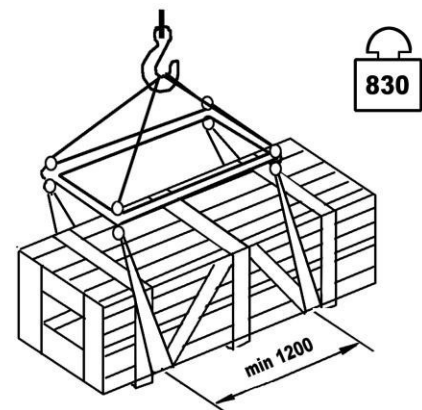


Fig. 2

STORAGE

Packages must always be stored in a covered, protected area at temperatures ranging from -10°C to $+40^{\circ}\text{C}$ and must not be exposed to direct sunlight.

STACKING

The type of packaging allows for stacking up to 3 layers.

If there is sufficient space and protection against falling, a maximum of 3 crates can be stacked on top of each other on trucks or in containers.

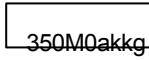
UNPACKING

Upon delivery of the crates, check that the device has not been damaged during transport and that all listed parts are present. Open the crates with all possible precautions to avoid damaging the device or parts. Ensure that no parts fall out of the crate during opening.

WARNING INTRODUCTION

This manual has been prepared for operators and technicians responsible for routine maintenance (mechanics): read this manual before performing any operations related to the lift and/or unpacking. This manual contains important information regarding:

PERSONAL SAFETY of operators and maintenance personnel

 The maximum load is 3500 kg; do not exceed the lift's load capacity of 3500 kg



This symbol indicates that caution is required due to the risk of electric shock in the control box



This symbol indicates that you must be careful of the risk to your feet on the scissor beam.



This symbol indicates that you must be careful of the risk to your hands on the scissor beam.



This symbol indicates that the electrical control box is grounded.

Machinery Directive: 2006/42/EC, EN60204-1: 2006+A1 :2009, EN1493: 1998+A1 : 2008

Lifting, transport, unpacking, assembly, installation, commissioning, pre-adjustment and testing, work related to EXTRAORDINARY maintenance, repairs, overhauls, transport, and disassembly of the lift must be performed by specialized personnel from a LICENSED DEALER or SERVICE CENTER authorized by the manufacturer (see authorized dealer on the title page).

The manufacturer assumes no liability for personal injury or damage to vehicles or property if any of the above-mentioned activities were performed by unauthorized personnel or if the lift was subject to improper use.

This manual contains only guidelines regarding operational and safety aspects that may be useful to the operator and maintenance personnel for a better understanding of the lift's construction and operation, as well as its optimal use.

To understand the terms used in this manual, the operator must have specific experience in workshop operations, servicing, maintenance, and repairs, as well as the ability to correctly interpret the drawings and descriptions contained in the manual and be familiar with the general and specific safety regulations in force in the country where the equipment is installed.

The same applies to the maintenance technician, who must also possess the specific and specialized knowledge (mechanical, engineering) necessary to perform the activities described in the manual in complete safety. The terms "operator" and

"maintenance technician" used in this manual are to be understood as follows:

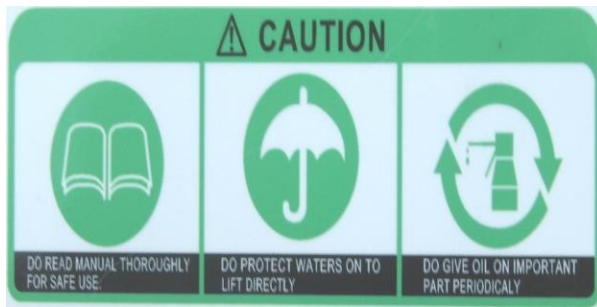
OPERATOR: a person authorized to use the elevator.

SERVICE TECHNICIAN: a person authorized to perform periodic maintenance on the elevator. The

end user may use the equipment only in the correct manner, in accordance with the manual.

Do not wear loose clothing; people with long hair should wear protective caps, etc. Perform periodic lubrication as specified in the manual.

WARNING LABELS:



CHAPTER 1 DESCRIPTION OF THE DEVICE

The horizontal hydraulic lift is a stationary device. This means that it is anchored to the ground in accordance with the installation diagram provided by the manufacturer and can operate smoothly only if it has been installed correctly.

The lift consists of the following main parts:

1. Fixed structure (chassis + platforms);
2. Moving parts (arms);
3. Lifting assemblies (2 hydraulic cylinders + pump station);
4. Electrical controls;
5. Safety devices (mechanical lock + pneumatic valve + hydraulic safety system); Figure 3 illustrates the various parts of the lift and the work areas intended for use by operators.

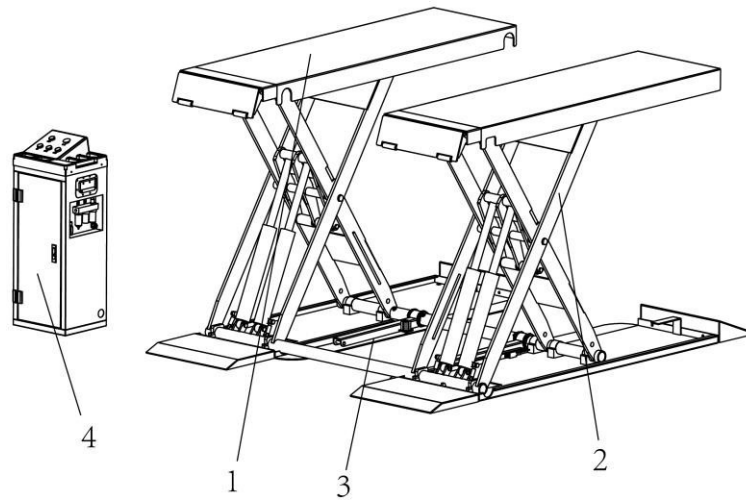


Fig. 3: Entire structure

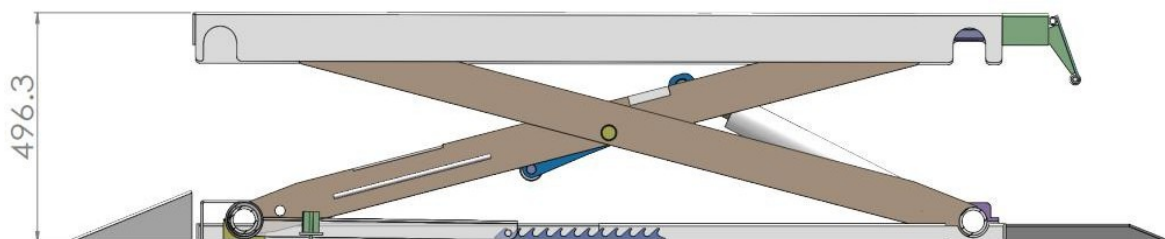
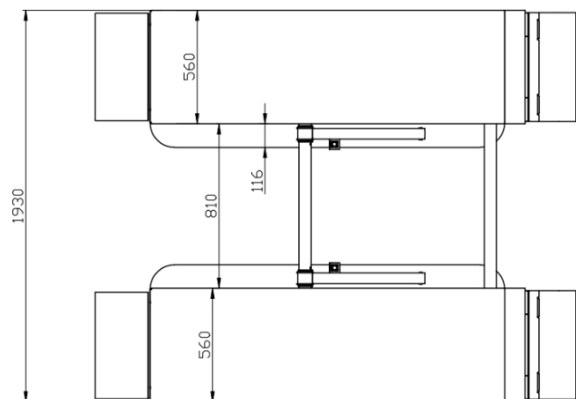
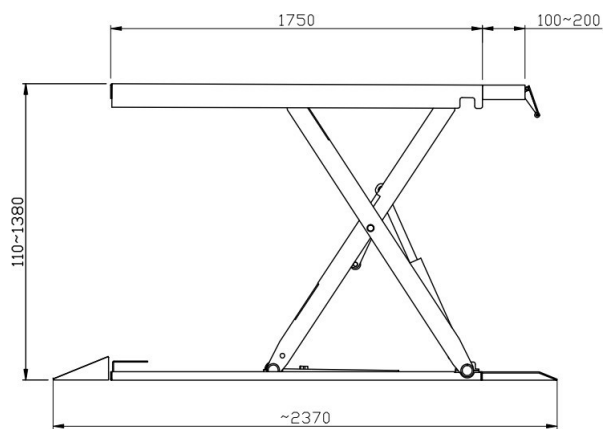
1.1 FIXED STRUCTURE (FIG. 3)

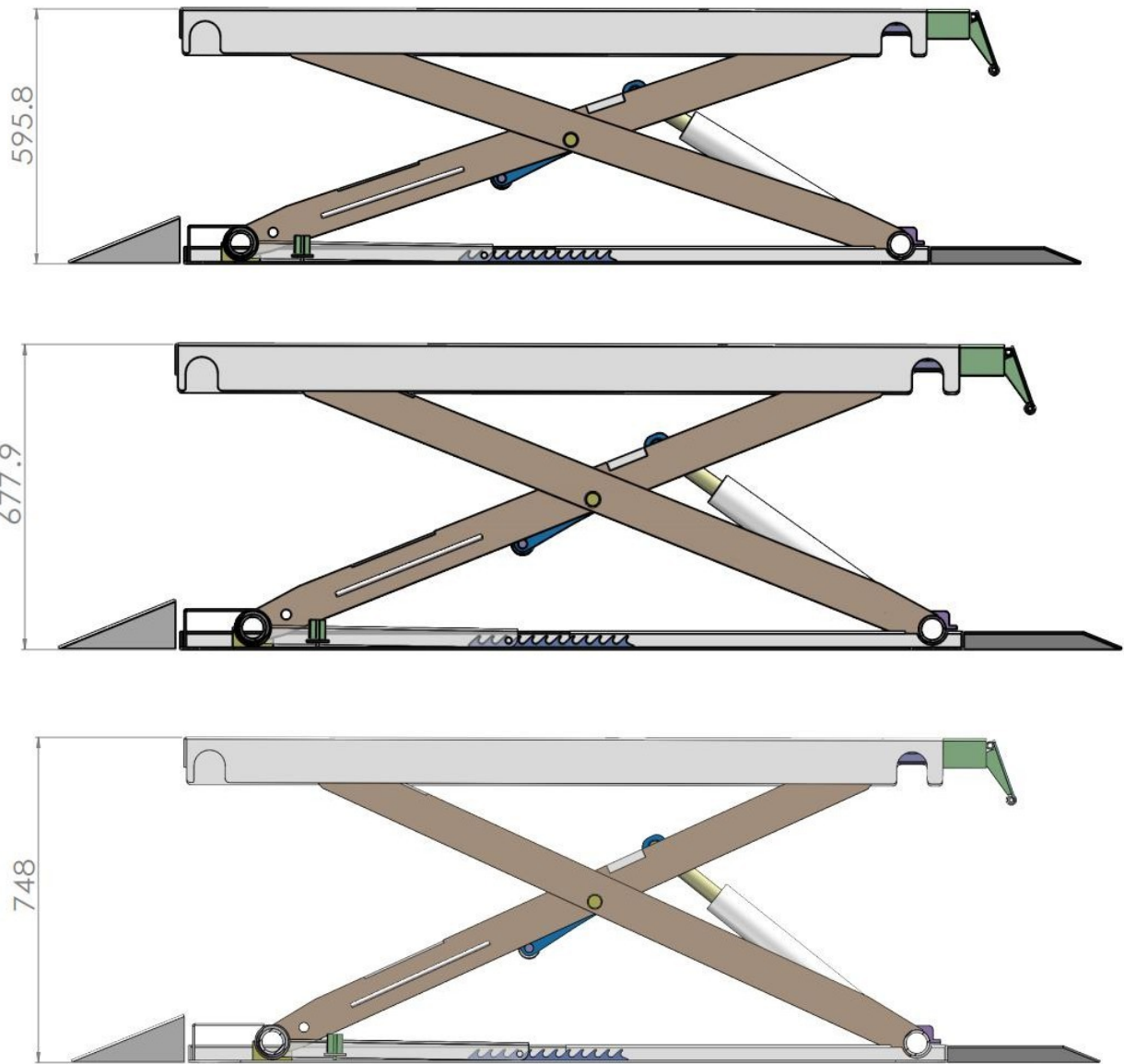
This structure consists of:

1. Chassis and platforms

These two parts are joined by welding using prefabricated components made of various steel profiles.

2. The top beam is made of bent steel sheet, with bolts mounted on the inside of the frame of both arms.





1.2 MOVING PARTS (SEE FIG. 3)

Each assembly consists of:

1. The moving units are the left and right scissor arms, which are identical.
2. Each arm is driven synchronously by the main hydraulic cylinder and the auxiliary cylinder.

1.3 LIFTING ASSEMBLY (SEE FIG. 3)

It consists of the following parts:

1. two hydraulic cylinders (3), used to lift the arms.
2. one hydraulic unit, a control system for electric, hydraulic, pneumatic power, etc.

1.4 HYDRAULIC UNIT (FIGS. 3-4)



Fig. 4

THE HYDRAULIC UNIT CONSISTS OF:

1. an electric motor
2. a valve
3. The gear pump includes an oil line and a filter
4. up button (Fig. 4)
5. lower button (Fig. 4)
6. power supply (Fig. 4)
7. Three flexible hoses made of a 40 MPa steel wire blend, two groups of 1.2 MPa hoses (Fig. 3).

1.5 CONTROL CABINET (Fig. 5)

Control box mounted on the pump station:

Fig. 5

- 1 Main switch
- 1 Up button
- 2 Down button
- 3 Power on
- 4 Lock

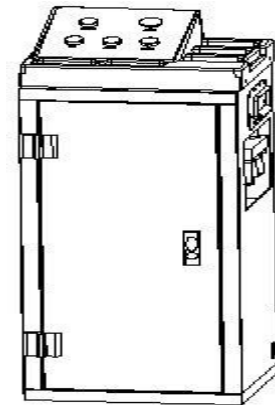


Fig. 5

CHAPTER 2 TECHNICAL SPECIFICATIONS

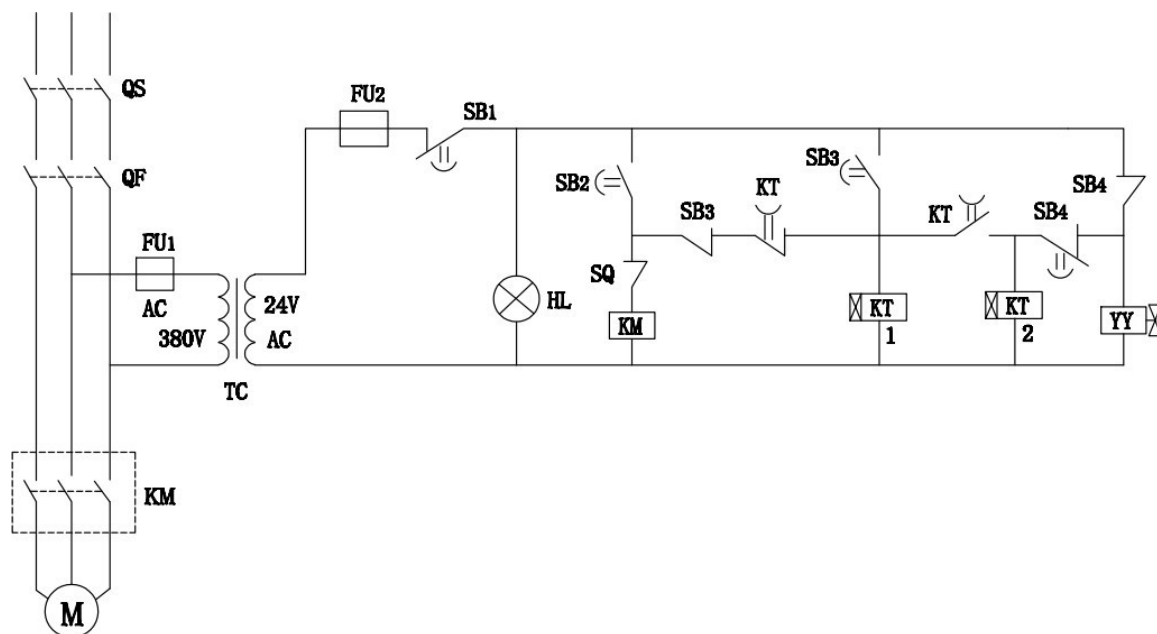
LIFTING CAPACITY3500 kg
 Maximum lifting height.....1380 mm (with pad).
 Min. support height.....110 mm
 Clearance between the platform.....810 mm

Overall width.....1930 mm
Platform length1850–1950 mm
Platform width560 mm
Lifting time with three-phase motor.....≤60 s
Lifting time with single-phase motor.....≤60 s
Lowering time18 s ≤ t ≤ 60 s
Total weight675 kg
Noise≤70 dB(A) at a distance of 1 m
Operating temperature.....-10°C – 50°C
Operating environmentenclosed room
Relative humidity.....90%
Altitude.....≤1000 m

LANGPONG MEQUE Scissor vehicle lift CE2834	
Model LP-M14E	Technical specification Max.Lifting capacity3500kg
Serial No.	Lifting height110-1380mm
Manufacturing Date Dec. 03 2025	Length of platform1850-1950mm
Made in China	Width of platform560mm
www.langpong.com Liaoning Langpong Auto Maintenance Equipment Co., Ltd Add.No.48, Xinhua Street, Free Trade Zone, Yingkou City, Liaoning Province, China	
	Oil pressure22Mpa
	Air pressure0.6Mpa
	Power Supply400V, 3Ph, 50/60Hz
	Motor Power2.2kW
	Lifting time50s

2. MAIN STRUCTURE

2.1 ELECTRICAL CAUSALITY DIAGRAM



2.1.1 ELECTRIC MOTOR

	Three-phase 400 V	Single-phase 230 V
Rated power of the electric motor	2.2 kW	2.2 kW
Voltage	400 V, 3-phase, +/-5%	230 V, 1 phase, +/-5%
Frequency	50 Hz	50 Hz
Current	6.4 A	11 A
Number of poles	Three-phase, five-wire	Single-phase, four-wire
Speed	1400 rpm	1380 rpm
Design		
Insulation class	IP54	IP54
Type	90L4	90L4

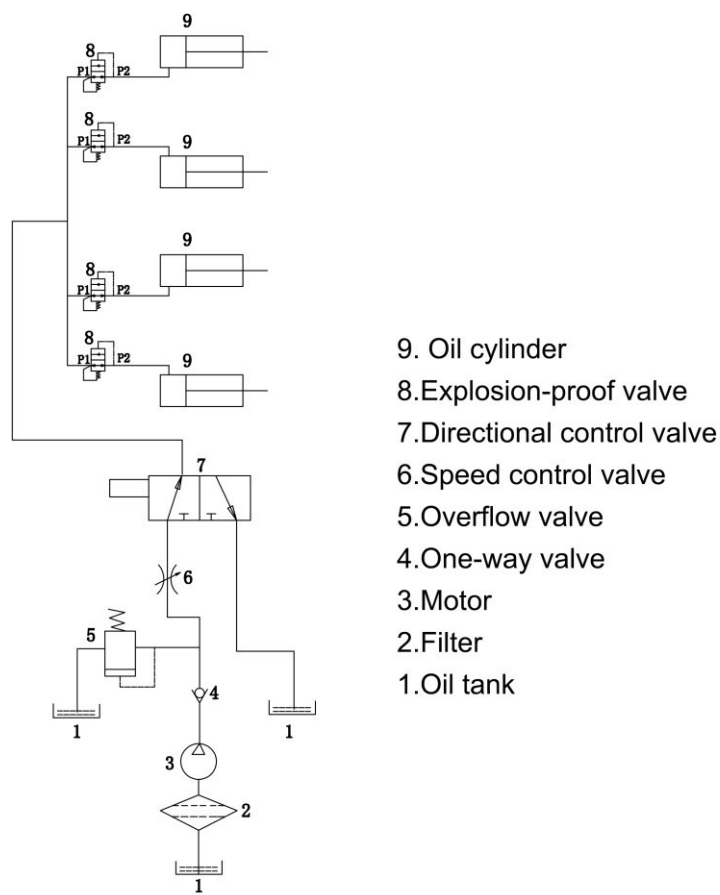
The motor connection must comply with the enclosed wiring diagrams.

The direction of motor rotation must match the arrow on the pump: otherwise, the electrical connections must be modified (see Chapter 4 – Installation – Motor Connection)

2.1.2 TABLE OF OTHER ELECTRICAL COMPONENTS (TYPE, NAME, MANUFACTURER, CE MARKING)

Components of the 230 V and 400 V three-phase system Parts of the 230 V and 400 V three-phase system			
No.	Description	Item No. Type	Quantity
KM	Alternating connector	CJX2-1810	1
M	Oil pump motor	G-90K4 380 V/5.6 A/2.2 kW	1
QS	Main power switch	LW26-20	1
TC	Power supply transformer	24 VAC	1
HL	Power indicator	24 V AC	1
SD	Push-button switch	GXB2-BE	1
FU	Fuse	SA	1
SQ	Safety switch	LXJMS8108	1
SB	Push-button switch	GXB2-BE	1
KT	Time relay	JSZ6-2AC24V	1
YY	Solenoid return valve		1
AC	AC power supply		1

2.2 HYDRAULIC SYSTEM
2.2.1 DIAGRAM AND ACCESSORIES



Hydraulic system

Fig. 7

The pump consists of a gearbox and various valves; the system pressure is 30 MPa, the maximum operating pressure is 22 MPa, and the pressure in the oil line is 60 MPa.

The main oil cylinder and the auxiliary cylinder operate synchronously, which depends on the balancing valve to ensure that both platforms are always at the same height.

2.2.2 OIL AND TANK

The oil tank holds 13 liters of mineral hydraulic oil; ensure that the oil complies with ISO/DIN 6743/4 and has a contamination level compliant with ISO 4406, for example IP HYDRUS OIL 32; SHELL TELLUS OIL T32 or equivalent.

2.3 PNEUMATIC SYSTEM

The pneumatic system is used solely to assist in releasing the mechanical lock. Required pressure above 0.8 MPa, see Fig. 8.

2.3.1 OPERATING DIAGRAM

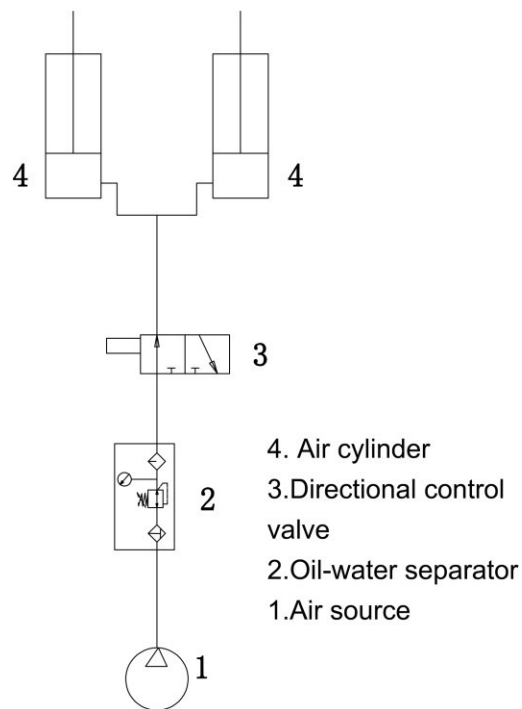


Fig. 8

2.3.2 Component Table

Serial No.	Name	Type	Q. ty	Specifications	Authorized mark
1	Air supply	Included own		0.8–1.0 MPa	
2	Regulator	AC2000	1	0.8 MPa	ISO 9000
3	Solenoid valve	3V210-28	1		ISO 9000
4	Pneumatic actuator	In-house production	2		

2.4 LIFT CAPACITY

The lift capacity is 3,500 kg, and vehicles weighing more than 3,500 kg must not be lifted.

2.5 MAXIMUM DIMENSIONS OF LIFTED VEHICLES

Maximum width: 1930 mm

The chassis of vehicles with low ground clearance may interfere with the lift structure. Special attention should be paid to sports cars with low-slung bodies.

For vehicles with special characteristics, always keep the lift's load capacity in mind. The safety margin will depend on the vehicle's dimensions.

The diagrams below show the criteria defining the limits of use.

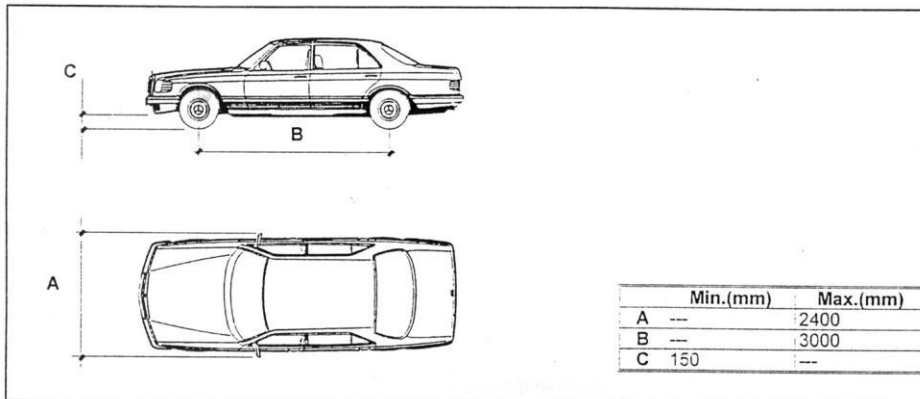


Fig. 9 Minimum and maximum dimensions

CHECK THE MAXIMUM LIFT CAPACITY, LOAD DISTRIBUTION FOR THE LARGEST VEHICLES, AND THE MAXIMUM WEIGHT OF THE VEHICLE BEING LIFTED.

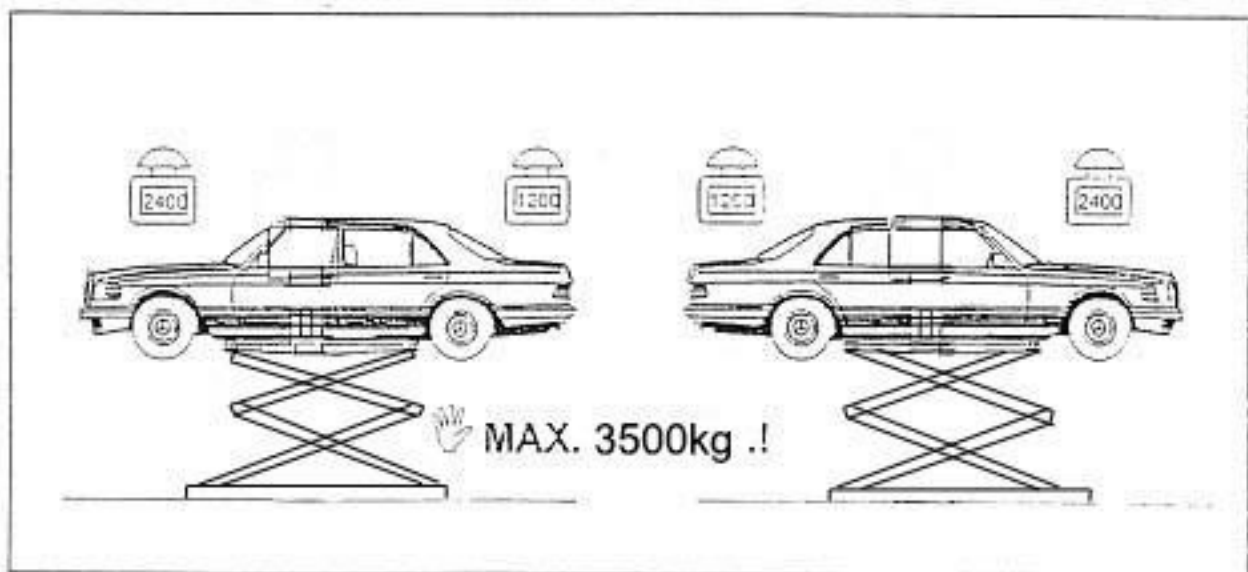


Fig. 10 Weight distribution

The weight is distributed evenly. Ensure that the center of gravity is exactly in the middle between the two platforms.

CHAPTER 3 SAFETY

It is essential to read this section of the manual carefully from beginning to end, as it contains important information regarding the risks to which the operator and maintenance personnel may be exposed in the event of improper use of the lift.

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

WARNING

The lift has been designed and built to lift vehicles and keep them in a raised position in a closed workshop. Any other uses are prohibited; in particular, the lift is not suitable for:

- Frequent lifting
- Creating elevated platforms or lifting personnel;
- Use as a temporary substitute for a crushing device;
- Use as a freight elevator
- Use as a lift for lifting vehicles or changing tires.

The manufacturer is not liable for any personal injury or property damage caused by improper or unauthorized use of this machine.

The operator must remain at the control panel during lifting and lowering. It is prohibited to remain in the danger zone. Personnel may only be under the vehicle once the vehicle has come to a complete stop in the raised position.

Do not operate the machine without safety devices or if safety devices are missing. Failure to follow safety rules may result in personal injury or property damage.

During lifting and lowering operations, the operator must remain at the control station. The presence of persons in the danger zone is strictly prohibited. Persons are permitted to be under the vehicle during operation only when the vehicle is parked in the raised position.

DO NOT USE THE LIFT WITHOUT SAFETY DEVICES OR WITH SAFETY DEVICES DISABLED. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN SERIOUS INJURY AND IRREPARABLE DAMAGE TO THE LIFT AND THE VEHICLE BEING LIFTED.

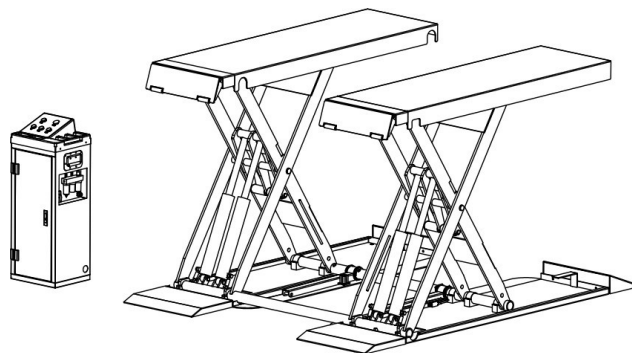


Fig. 11 WORKING ZONES

3.1 GENERAL PRECAUTIONS

The operator and maintenance personnel are required to comply with accident prevention regulations. In addition, the operator and maintenance personnel must:

1. Always work within the designated work area, in accordance with the instructions
2. Never remove mechanical, electrical, or other safety devices.
3. Read the safety warnings on the machine and the safety information contained in this manual.

In this manual, all safety warnings are presented as follows:

DANGER: indicates an immediate hazard that could result in serious injury or death. **WARNING:** indicates situations and/or types of operations that are hazardous and could result in injury of varying severity or death.

CAUTION: indicates situations and/or types of maneuvers that are hazardous and may result in minor injury to persons and/or damage to the lift, vehicle, or other property.

3.2 RISK OF ELECTRIC SHOCK

A specific safety warning placed on the lift in areas where the risk of electric shock is particularly high.

3.3 HAZARDS AND SAFETY DEVICES

We will now examine the hazards to which the operator and maintenance personnel may be exposed when the vehicle is immobilized in the raised position, along with the safety devices used by the manufacturer to minimize all such hazards.

3.4 LONGITUDINAL AND LATERAL MOVEMENT

Before lifting, check the vehicle's weight and ensure that the center of gravity is located at the center of the platform. Lateral movement is permitted before lifting. If the center of gravity is in the wrong position, stop immediately. Do not adjust it until the vehicle has lowered.

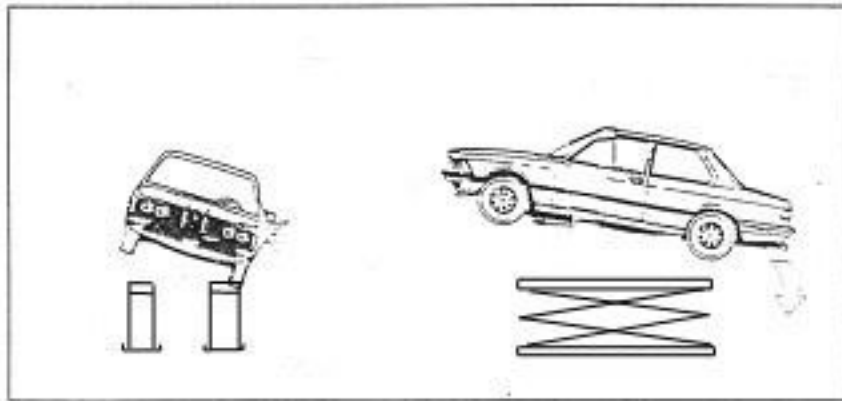


Fig. 12 Risk of vehicle tipping

WARNING

DO NOT ATTEMPT TO MOVE THE VEHICLE WHILE IT IS RESTING ON THE SUPPORT PLATES.

It is important to position the vehicle on the lift so that the weight is properly distributed across the platform (Fig. 14). For the safety of people and equipment, it is important that:

1. People remain in the safety zone while the vehicle is being lifted (Fig. 11).
2. The engine is turned off and the locking clamp is resting on the gears.
3. The vehicle is properly positioned (Fig. 15).
4. Only vehicles approved for lifting, which do not exceed the load capacity or overall dimensions, may be lifted.

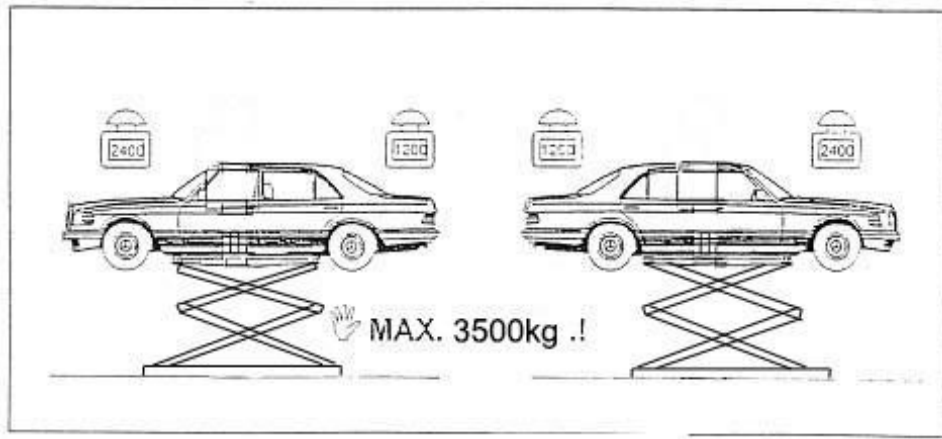


Fig. 13 Correctly loaded vehicle

3.5 HAZARDS DURING VEHICLE LIFTING

The following safety devices have been installed to prevent overloading and equipment failure:

1. A thermal relay in the electrical box will activate in the event of motor overload.
2. The control valve (Fig. 7), located on the hydraulic unit, will activate in the event of a lift overload.
3. In the event of a sudden, significant leak in the hydraulic circuit (broken pipe), a mechanical lock is immediately activated, which prevents the platform from slipping and ensures the safety of the vehicle.
4. When the lift reaches its highest point, the limit switch (Fig. 15) engages to ensure smooth operation of the device.
5. In the event of a hydraulic cylinder failure, the mechanical lock will engage to ensure safety.



Fig. 14 Movement limit switch



Fig. 15 Pneumatic mechanical lock

3.6 PERSONAL HAZARDS

This section describes the hazards to which the operator, maintenance technician, or any person in the vicinity of the lift's operating area may be exposed, even when the equipment is used properly.

3.6.1 RISK OF CRUSHING (OPERATOR)

Possible if the operator controlling the lift is not in the designated position at the control panel. While lowering the platform and the vehicle, the operator must never be partially or completely under the moving structure. During this phase, the operator must remain in the control zone (Fig. 16).

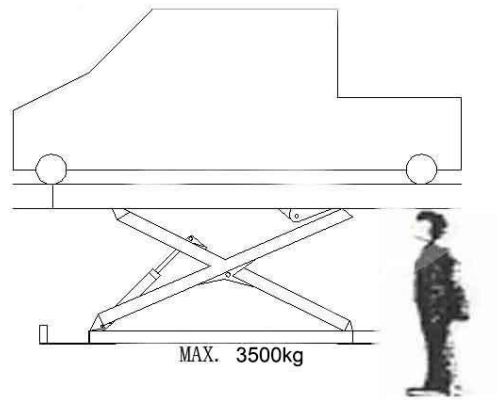


Fig. 16

3.6.2 RISK OF CRUSHING (PERSONNEL)

While lowering the platform and vehicle, personnel are prohibited from entering the area beneath the moving parts of the lift. The lift operator must not begin the maneuver until it has been clearly established that there are no persons in potentially hazardous areas.

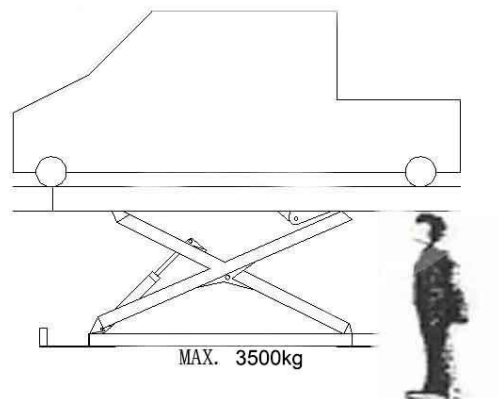


Fig. 17

3.6.3 IMPACT RISK

Caused by parts of the lift or vehicle located at head height. When, for operational reasons, the lift is stationary at relative heights (less than 1.7 m from the ground), personnel must exercise caution to avoid striking parts of the machine not marked with a special warning color (Fig. 18).

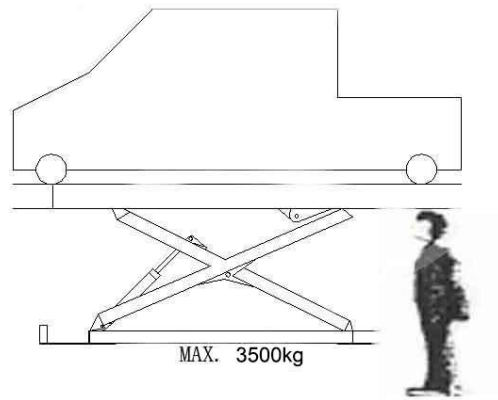


Fig. 18

3.6.4 RISKS ASSOCIATED WITH VEHICLE MOVEMENT

During operation, movements may occur that involve sufficient force to displace the vehicle. If the vehicle is large, its weight and the shift in its center of gravity may lead to overloading or loss of balance; all measures must be taken to avoid such a situation.

3.6.5 RISK OF THE VEHICLE FALLING FROM THE LIFT

This risk may result from incorrect positioning on the support plates of the arm or from an incorrect position relative to the lift. To avoid this risk, adjust the center of gravity and the position of the joint (Fig. 18).

NEVER ENTER THE VEHICLE AND/OR START THE ENGINE WHEN THE LIFT IS RAISED. NEVER REST OBJECTS AGAINST THE UPRIGHTS OR LEAVE THEM WITHIN THE RANGE OF MOVING PARTS. OTHERWISE, THIS MAY PREVENT THE LIFT FROM LOWERING OR CAUSE THE VEHICLE TO SLIP.

3.6.6 SLIPPING

This risk may result from spilled lubricants in the surrounding area (Fig. 19).

ALWAYS KEEP THE AREA AROUND THE LIFT CLEAN BY REMOVING ANY SPILLED LUBRICANTS.

To avoid the risk of slipping, use the recommended personal protective equipment (non-slip footwear).

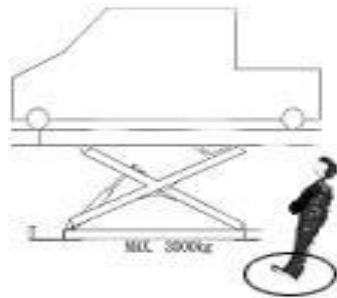


Fig. 19

3.6.7 RISK OF ELECTRIC SHOCK

Risk of electric shock in areas of the lift housing where electrical wiring is present. Do not use water jets, steam (high-pressure washers), or solvents. Do not paint in the immediate vicinity of the lift and take special care to ensure that such substances do not come into contact with the electrical control panel.

3.6.8 RISKS ASSOCIATED WITH INADEQUATE LIGHTING.

The operator and maintenance technician must ensure that all areas of the elevator are properly and evenly lit in accordance with the regulations in effect at the installation site.

3.6.9 RISK OF COMPONENT FAILURE DURING OPERATION.

The manufacturer has used appropriate materials and construction techniques for the specific intended use of the equipment to produce a reliable and safe lift. However, please note that the lift must be used in accordance with the manufacturer's instructions, and the inspection and maintenance intervals recommended in Chapter 6 "MAINTENANCE".
RISKS ASSOCIATED WITH IMPROPER USE.

Persons must not stand or sit on the platforms during the lifting operation or when the vehicle is already raised. Any use of the lift other than that for which it was designed may result in serious accidents involving people working in the immediate vicinity of the equipment. Therefore, it is essential to strictly follow all operating, maintenance, and safety instructions contained in this manual.

CHAPTER 4 INSTALLATION

THE FOLLOWING PROCEDURES MAY ONLY BE PERFORMED BY SPECIALISTS AUTHORIZED BY THE MANUFACTURER OR AN AUTHORIZED DEALER. IF THESE PROCEDURES ARE PERFORMED BY OTHER PERSONS, THIS MAY RESULT IN SERIOUS BODILY INJURY AND/OR IRREVERSIBLE DAMAGE TO THE LIFT.

4.1 INSTALLATION REQUIREMENTS CHECKLIST

The lift is designed for indoor installation in areas adequately protected from the elements. The installation site must be located away from areas designated for washing or painting, as well as away from storage areas for solvents or paints and areas where there is a risk of an explosive atmosphere.

APPROPRIATE INSTALLATION SPACE DIMENSIONS AND SAFETY CLEARANCES.

The lift must be installed maintaining the clearances from walls, columns, other machinery, etc., indicated in Figure 31 and in accordance with all legal requirements applicable in the country of installation.

In particular, check the following:

1. Max. height: the maximum vehicle height is 5000 mm, the maximum platform height is 1400 mm.
2. Minimum distance from walls: 1500 mm
3. Minimum work surface area: 600 mm
4. Command post area: 500 × 500 mm
5. Area designated for maintenance, access, and escape routes.
6. Location relative to other machines.
7. Proximity to a power source to ensure trouble-free connection.

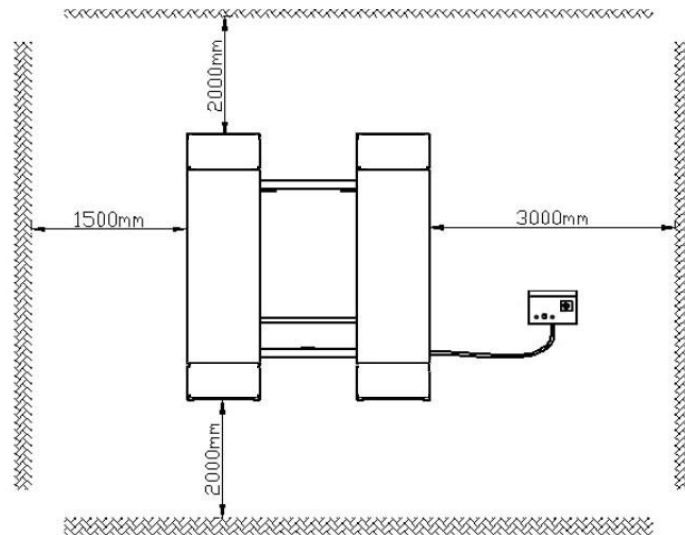


Fig. 20

4.2 PROTECTION AGAINST ATMOSPHERIC DISCHARGES

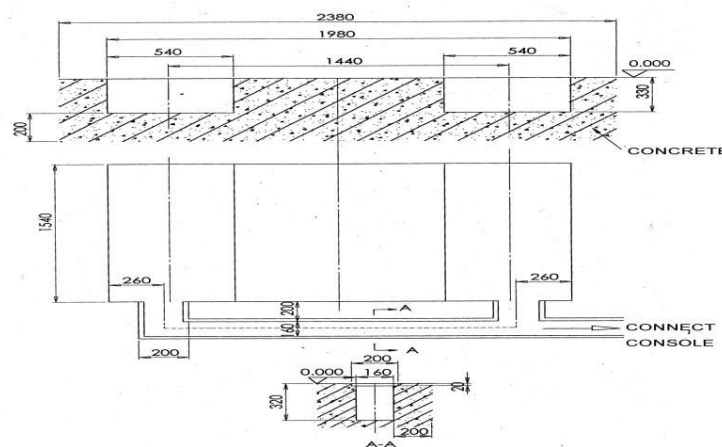
All parts of the machine must be evenly illuminated with light of sufficient intensity to perform the adjustment and maintenance operations specified in the manual, without shadows, reflected light, or glare, and avoiding any situations that could cause eye strain.

Lighting must be installed in accordance with the regulations in force at the installation site (the responsibility lies with the lighting installer).

4.3 GROUND THRESHOLD DIAGRAM

The lift must be installed on a level concrete foundation with a minimum thickness of 550 mm and a strength of $\geq 30 \text{ N/mm}^2$

The floor must also be flat and level (leveling tolerance 5 mm). For special applications, consult the manufacturer (Fig. 21).



Level the lift, then drill four holes with a diameter of $\phi 20$

holes for anchor bolts

4.4 INSTALLATION

WARNING

ONLY AUTHORIZED PERSONS ARE PERMITTED TO WORK DURING INSTALLATION

To assemble the lift, take into account the weight of the individual parts to ensure a lifting device with a lifting capacity of at least 1000 kg

The maximum lifting height is 4 m or installation using a forklift.

Before beginning the lift assembly, check that the box contains all necessary components.

4.4.1 ASSEMBLY OF THE LIFT AND SCISSOR PLATFORM

1. Transport the lift packaging to the installation site. Open the box; if it is undamaged, inspect the components and prepare a report. At the same time, remove any dust. To install the device, prepare the components and tools accordingly.
2. Clean the prepared base; according to the diagram, position the hydraulic pump, connecting pipe, and prepared set—namely, an air compressor with a pressure of 0.8–1.2 MPa and a pipe with a pressure of 1 MPa, where the larger diameter is 8 mm and the smaller is 5 mm.

Locate all parts of the lift, then measure the centerline and the balance point to ensure a leveling tolerance of ± 2.5 mm for both platforms. Next, mark the positions of the eight M20 anchor bolts.

3. Drill eight anchor bolts with a diameter of 20 mm and a depth of 132 mm, then position the lift and insert the bolts. Place a spring washer/shim and tighten the bolts. The main components have now been installed.

4.4.2 INSTALLATION OF THE HYDRAULIC AND PNEUMATIC SYSTEMS

Open the housing and inspect the pneumatic system. Clean out any dust, then install it.

Fill the hydraulic unit reservoir with ISO 20 hydraulic oil and check that the oil level is correct. Connect the lines according to the hydraulic and pneumatic diagrams. There is no need to adjust the valves.

4.4.3 INSTALLATION OF ELECTRICAL EQUIPMENT

Review the electrical diagram, then proceed with installation.

- a) Check the supply voltage to ensure it meets the requirements. Our products have different voltages depending on customer requirements. The voltage complies with the statement in the contract. Check the cable diameter.
- b) Check that the electrical components are secure and not loose. Clean them and install them according to the instructions. Check the connection of the limit switch. Check the circuit breaker (fuse).
- c) Check the control panel. Ensure that the up button, down button, main switch, and indicator light are functioning properly.
- d) After completing the above steps, plug the power cord into the outlet and observe the motor rotation. If not, replace it with another one.

4.4.4 Information on mounting and moving the lifting device (workplace)

Select a location where the device can be installed in accordance with applicable workplace safety regulations. The floor should not be damaged or uneven so that the device is stable and the platform can move freely.

The car lift can be installed on any surface, provided it is perfectly level and sufficiently sturdy.

(Concrete class above C20, concrete thickness ≥ 150 mm). The car lift must be

secured to the ground before it can lift a vehicle.

When relocation is necessary, after removing the anchor bolts, the moving handle can be used to move the device. Thanks to its design with rollers or sliding wheels, the position can be adjusted horizontally or vertically, and the device allows for free movement within a specified range.

4.5 TESTS AND INSPECTIONS TO BE PERFORMED BEFORE COMMISSIONING

4.5.1 MECHANICAL TESTS

1. Fastening and tightening of screws, fasteners, and connections.
2. Free movement of moving parts
3. Cleanliness of the various machine parts
4. Position of the protective cover
5. The arm and all parts requiring lubrication should be filled with the appropriate amount of oil.

4.5.2 ELECTRICAL TESTS

1. Connection in accordance with the diagrams
2. Machine grounding

4.5.3 OPERATION OF THE FOLLOWING DEVICES

1. Limit switch
2. Mechanical safety lock
3. Hydraulic devices and hoses
4. Pneumatic equipment, valves, and hoses

4.5.4 HYDRAULIC OIL TEST

1. Sufficient oil in the reservoir
2. No leaks
3. Cylinder operation

NOTE: If there is no oil, fill the unit with the appropriate amount of oil. See the procedure in Chapter 6: MAINTENANCE

4.5.5 ROTATION DIRECTION TEST

The motor should rotate in the direction indicated by the arrow on the unit's pump; check by briefly starting the unit (each start should last no longer than two seconds). If problems occur in the hydraulic oil system, see the "Troubleshooting" table in Chapter 7.

4.6 TESTING AND WARNINGS DURING LIFTING

THESE OPERATIONS MUST ALWAYS BE PERFORMED BY A MECHANIC FROM AN AUTHORIZED SERVICE CENTER LISTED AT THE BEGINNING OF THIS MANUAL.

4.6.1 VACUUM TEST (with no vehicle load)

In this phase, check whether:

The lift, lower, and park buttons are functioning properly;

-
- . The rack reaches its maximum height;
 - . There are no abnormal vibrations on the platforms, base plate, and arms;
 - . The safety wedges engage the locking position of the lifting cylinder.
 - . The upper gears mesh with the lower gears;
 - . Does the limit switch operate correctly?

To perform the tests listed above, complete two or three full lifting and lowering cycles.

This should also be done to bleed air from the hydraulic circuit.

4.6.2 LOAD TESTS

Repeat the previous tests with the vehicle on the lift

After completing the load tests, visually inspect the equipment and check again that all bolts are tightened.

CHAPTER 5 OPERATION AND USE

The lift control panel is shown below:



Fig. 22 Control box

5.1 CONTROL UNIT

1. The power indicator light indicates that power is supplied correctly.
2. Power switch: located to the right of the power button. It has two positions: "0" and "1". In the "0" position, the electric lock is engaged. Switching to the "1" position enables smooth operation.
3. "Up" button: on the right side of the control panel. When pressed, the platform rises; otherwise, it stops.
4. Down button: between the up button and the power switch. Pressing the button releases the lock, and after a moment the raised platform begins to lower; otherwise, it stops.

5.2 OPERATING SEQUENCE

5.2.1 LIFTING

Once the vehicle has driven onto the platform, determine the center of gravity. After checking, press the button and the vehicle will rise smoothly; once the desired height is reached, release the button to stop the lift. If the platform reaches the highest level, the limit switch will activate to stop the lift; at the same time, check that the disengagement gear is locked.

5.2.2 PARKING

Once the required height is reached, release the button. The platforms will stop in the correct position; adjust the upper disengagement button if it is not in the working position. When the disengagement gears are fully locked, the parking operation is safe and reliable, and work under the vehicle is permitted.

5.2.3 LOWERING

Before lowering the platforms, remove the safety chocks. Press the lower button; the platforms will rise briefly, and then the pneumatic valve will activate the release mechanism, causing

the platforms will lower. Lowering stops when the lower button is fully released.

CHAPTER 6. MAINTENANCE

6.1 WARNING

Maintenance may be performed **ONLY BY QUALIFIED PERSONNEL WHO ARE FAMILIAR WITH THE LIFT.**

When performing maintenance on the lift, observe all necessary precautions to **PREVENT ACCIDENTAL START-UP OF THE LIFT:**

1. The main switch on the control box must be locked in the 0 POSITION or the power supply must be completely disconnected.
2. The main switch must be kept by the SERVICE TECHNICIAN
3. When performing maintenance on the device, always be aware of all major potential hazards and the safety instructions listed in Chapter 3, "Risk of Electric Shock," near the device's power terminal block.

If the hydraulic or pneumatic cylinder is damaged, it must be replaced, not repaired.



IMPORTANT

CABLE MAINTENANCE

1. Use only genuine replacement parts and tools suitable for the task at hand and in good condition;
2. Follow the maintenance schedule specified in the manual: these frequencies are approximate and should always be treated as general guidelines to be followed.
3. Proper preventive maintenance requires constant attention and continuous monitoring of the machine. The cause of any irregularities, such as excessive noise, overheating, fluid leaks, etc., must be identified quickly.

Particular attention should be paid to:

1. The condition of the lifting components (cylinder, drive assembly);
2. Safety devices (limit switches, pneumatic valves, and disconnect mechanism)

To perform maintenance properly, please review the following documents provided by the manufacturer:

1. Complete functional diagram of electrical and auxiliary equipment, including power connections
2. Hydraulic diagram, pneumatic diagram, along with a parts list and maximum pressure values
3. Exploded view drawings containing the data necessary to order spare parts
4. List of possible causes of failure and recommended solutions (Chapter 7 of the manual)

6.2 PERIODIC MAINTENANCE

6.2.1 FREQUENCY OF USE

To ensure the elevator operates at full capacity, the specified maintenance schedule must be followed. The manufacturer assumes no liability and will not honor the warranty if the above instructions are not followed



NOTE

The specified frequency applies to normal operating conditions; different frequencies will apply under particularly difficult conditions

ALL MAINTENANCE TASKS MUST BE PERFORMED WITH THE POWER SWITCHED OFF AND THE MAIN SWITCH LOCKED WITH A KEY.

After installing the device, check the following:

- 1 that the base connection anchor bolts are tight
- 2 that the bolts securing the beam to the posts are tight
- 3 Whether the left and right arms of the carriage are at the same level
- 4 The oil level in the tank. Top up the oil to the appropriate level if necessary

6.2.2 MONTHLY MAINTENANCE OF THE HYDRA- STREET UNIT

- 1 Check the oil level in the reservoir, which is attached to the filler cap. If necessary, top up the oil through the cap to the required level. Information on the type of oil can be found in the "TECHNICAL DATA" section.
- 2 After the first 40 hours of operation, check the oil contamination level. (If contamination is high, clean the filter and replace the oil.)

HYDRAULIC CIRCUIT

Check for oil leaks in the circuit between the pump station and the cylinder, as well as in the cylinder itself. If leaks are found, inspect the condition of the seals and replace them if necessary.

6.2.3 EVERY 3 MONTHS HYDRAULIC PUMP

Under normal operating conditions, check for any changes in the noise of the engine and gear pump, and ensure that the relevant bolts are properly tightened.

SAFETY SYSTEMS

1. Check the operational condition and efficiency of the safety devices, as well as the wear on the safety wedges and the corresponding hinge pins. Lubricate the pins on the safety wedges. If there is excessive wear, replace the safety wedges and/or pins.

Using a torque wrench, check that the anchor bolts securing the column bases to the ground, as well as the connecting bolts, are properly tightened.

2. Clean and lubricate the shafts and the shaft mounting sleeve.
3. Check that all bolts are tightened
4. Check that the arm locking system is working properly.
5. Lubricate all moving parts.

6.2.4 MAINTENANCE EVERY 6 MONTHS HYDRAULIC SYSTEM E

Check the oil for contamination or deterioration. Contaminated oil is the main cause of valve malfunction and shortens the service life of gear pumps.

6.2.5 MAINTENANCE EVERY 12 MONTHS

General inspection: visual inspection of all structural components and mechanisms to ensure there are no problems or irregularities.

Electrical system: qualified electricians (contact the service center) should test the electrical system, including the drive unit motor, cables, limit switch, and control box.

HYDRAULIC SYSTEM OIL

Change the oil by following the instructions below:

1. Lower the lift to its minimum height (close to the ground).
 2. Make sure the hydraulic cylinder is at the end of its stroke.
 3. Disconnect the power supply from the lift rack.
 4. Drain the oil from the hydraulic system by unscrewing the plug located at the bottom of the unit's reservoir.
 5. Close the drain plug
 6. Fill the unit with oil through the plug located at the top of the unit's reservoir.
-

The oil must be filtered

The characteristics and types of oil are specified in the technical specifications.

1. Close the fill plug
2. Power the lift stand
3. Perform two or three lifting and lowering cycles (to a height of approximately 20–30 centimeters) to circulate the oil.

When changing the oil: use only the recommended oil or an equivalent; do not use oil that has gone bad or has been stored for a long time. Dispose of the oil as shown in the illustration above.

AFTER EACH MAINTENANCE OPERATION, THE MACHINE MUST BE RESTORED TO ITS ORIGINAL CONDITION, INCLUDING THE REMOVAL OF PROTECTIVE AND SAFETY DEVICES.

To ensure proper maintenance, it is important to:

1. Use only tools suitable for the task at hand and genuine replacement parts
2. Follow the minimum maintenance schedule as recommended
3. Immediately determine the cause of any abnormalities (excessive noise, overheating, fluid leaks, etc.)
4. Pay special attention to lifting components (cylinders) and safety devices
5. Use all documents provided by the manufacturer (electrical diagrams, etc.)

6.3 PERIODIC LUBRICATION TABLE

1. Lubricate the rack as shown in Fig. 27. Grease must be taken from completely sealed cans and/or those that have been stored properly. Old or spoiled grease can damage the lubricated part.
2. Lubricate the center shaft, the pump's cross shaft, and the four rotating shafts on a rotating basis.
3. Lubricate the remaining components once a week.

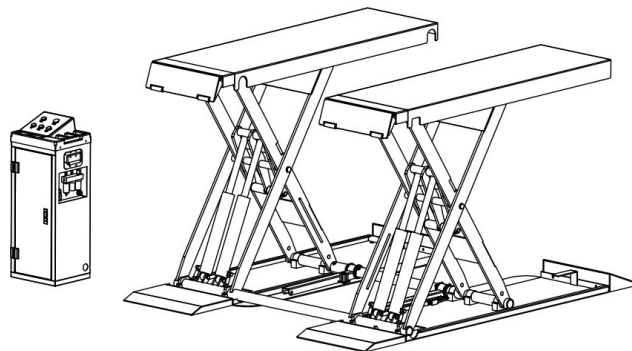


Fig. 27

1. ONCE PER SHIFT
2. WEEKLY
3. MONTHLY

6.4: Information on checking the fuel level

Refill the fuel tank (at least about 5 liters each time). Refill the fuel in three stages until the fuel level reaches the middle of the gauge.



CHAPTER 7 TROUBLESHOOTING

7.1 TROUBLESHOOTING CHECKLIST

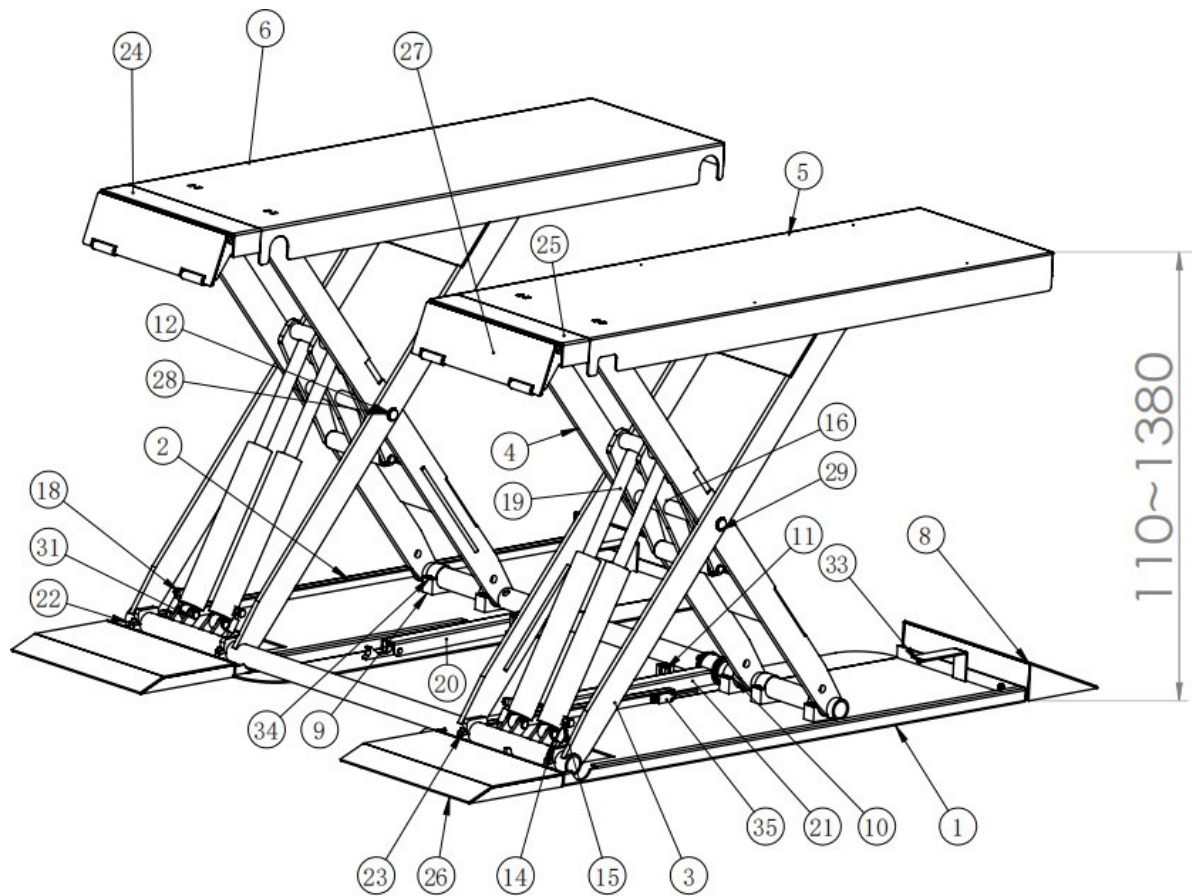
Troubleshooting and any repairs require strict adherence to ALL SAFETY PRECAUTIONS outlined in Chapter 6 “MAINTENANCE” and Chapter 3 “SAFETY”

7.2 POSSIBLE PROBLEMS AND SOLUTIONS

Problem	Possible cause	Solution
The lift does not rise when the button is pressed (the motor does not run)	Blown fuse No power supply Fault in the electrical system: -Faulty limit switch -Blown motor	Replace the fuse Reconnect the circuit Call the service center Replace the limit switch Replace the motor
Cylinder does not lift when the button is pressed (motor is running)	Insufficient oil Sliding valve open Drain valve is operating Leaks in the hydraulic circuit	Top up the oil level Check electrical connections or replace them Reduce the load Repair the hose
The lift continues to rise after stopping Press the lift button.	Faulty button	Disconnect the lift from the power supply and call for service service
The lift does not descend	Obstruction Blocked Fault in the electrical system The carriages are still resting against the safety devices The shut-off valves have activated	Remove the obstruction Replace (call the Service Center) Call the Service Center Perform the lowering sequence Repair the hydraulic circuit damage
The lift does not rise to	Not enough oil	Add oil to the pump station

maximum height		oil reservoir This is normal
When the lift button is released, the lift stops and slowly descends	The drain valve does not close because it is clogged Damaged drain valve	At the same time, perform the lifting and lowering motions to clean the valve Replacement (call the service center)
Power Motor power supply motor Motor	Motor malfunction Incorrect voltage	Call the service center Check the voltage
Pump is noisy	Contaminated oil Incorrect installation	Change the oil Contact the service center
Oil leak from the cylinder	Damaged gaskets Contaminants in the system	Replace damaged gaskets Clean all parts Check that the valves are not damaged
Two sides are not synchronized.	Oil leak	Check and repair.
	Pressure relief valve Valve Valve incorrectly,	Check and replace.

CHAPTER 8 CONSTRUCTION AND LIST OF ACCESSORIES



LIST OF ACCESSORIES:

Serial number	Name	Quantity	Notes
1	Bottom plate 1	1	
2	Bottom plate 2	1	
3	Outer arm assembly	1	
4	Inner arm assembly	1	
5	Platform 1	1	
6	Platform 2	1	
7	Slide under the platform	4	
8	Ramp	2	
9	Slider on the bottom plate	2	
10	Slider retaining ring	2	
11	Pneumatic actuator	2	
12	Support arm shaft	2	
13	Platform shaft	4	
14	Oil cylinder shaft	4	
15	Oil port connector assembly	4	
16	Auxiliary arm assembly	2	

17	Side cylinder shaft (auxiliary)	2	
18	Cylinder outer housing	4	
19	Piston rod inside the cylinder	4	
20	Lock	1	
21	Lock	1	
22	Cover	4	
23	M8*30	8	
24 and 25	Platform extension	1	
26 and 27	Ramp	2	
28	Oil-filled bearing	20	
29	Flexible retaining rings	8	

CHAPTER 9 REGULATORY INFORMATION

Declaration of Conformity

Application of Council Directive 89/336/EEC; EMC Directive

Confirmation of compliance

Application of Council Directives 98/37/EEC (Machinery Directive), Low Voltage Directive

Standards to which conformity is declared

Annex I to the Machinery Directive; EN60204-1: 1997; EN1493: 1998

CHAPTER 10 Disposal at the end of service life

Disposal of the waste oil tank

Note: Used oil must be disposed of daily. For environmental reasons, do not pour oil into the sewer system or into a river. Used oil must be collected in a special container and handed over to the appropriate entities for disposal.

End-of-Life Disposal

Note: The machine is primarily made of steel. When the machine reaches the end of its service life, dispose of the components in accordance with local regulations or laws.

APPENDIX A – SPECIAL NOTES

A.1 DISPOSAL OF USED OIL

Used oil removed from the drive unit and system during an oil change must be treated as a hazardous waste in accordance with the legal regulations of the country where the elevator is installed.

A.2 DISASSEMBLY OF THE MACHINE

WHEN DISASSEMBLING THE MACHINE, ALL SAFETY PRECAUTIONS DESCRIBED IN

CHAPTER 3, WHICH ALSO APPLY TO INSTALLATION.

The machine must be dismantled by qualified technicians, just as in the case of installation. Metal parts can be scrapped as scrap iron. In any case, all materials resulting from dismantling must be disposed of in accordance with the applicable regulations of the country where the rack is installed. Finally, it should be noted that for tax purposes, the disassembly must be documented; applications and documents must be submitted in accordance with the regulations in force in the country where the rack is installed at the time of the machine's disassembly.

APPENDIX B SPARE PARTS

B.1 SPARE PARTS

When replacing parts and performing repairs, ALL SAFETY PRECAUTIONS described in Chapter 6 MAINTENANCE and in Chapter 3 SAFETY must be observed

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

1. The switch on the control box must be locked in the 0 position using a lock
2. The key for the lock must be kept by the service technician during maintenance operations.

B.2 SPARE PARTS ORDERING PROCEDURE

To order spare parts:

1. Provide the elevator's serial number and year of manufacture
2. Please provide the part code (see the "CODE" column in the tables)
3. Please specify the required quantity.

Place your order with an authorized dealer listed on the first page of the manual.

WARRANTY CARD

Lift typeserial number

1. TIP-TOPOL Sp. z o.o. guarantees trouble-free operation of the device for a period of months from the date of commissioning.
2. During the warranty period, the Warrantor provides free parts in the event of failures covered by the warranty.
3. User's Obligations:
 - i. The user of the device agrees to comply with the operating instructions contained in the "User Manual" provided with the device
 - ii. The User agrees to notify the Guarantor of any failure. The User may report a failure to the TIP-TOPOL headquarters in Pobiedziska, tel. (0****61 8152 200)
 - iii. This completed "Warranty Card" serves as proof of warranty eligibility and should be kept at the device's installation site and made available to TIP-TOPOL service personnel for the purpose of recording repairs and any warranty extensions
 - iv. **The user agrees to perform maintenance inspections in accordance with applicable regulations and instructions.**
4. The warranty **expires** if:
 - i. the device's serial numbers have been removed,
 - ii. the device was used for purposes other than those intended or under conditions and in a manner other than those specified in the user manual
 - iii. the damage was caused by the user's fault or as a result of unforeseeable events
 - iv. **technical inspections were not performed => no entries in the maintenance log by a person authorized to perform inspections and maintenance of the lift**
5. The warranty provider offers free repairs during the warranty period at the TIP-TOPOL headquarters in Pobiedziska, provided the user delivers the device at their own expense.

I hereby declare that I have read and understood the warranty terms and conditions set forth in this Card. Company

Company

Date and legible signature of the user

Repair notes.

No.	Date of	Date of repair	Repair work performed, components replaced components, notes on warranty extension	Signature of service technician

Environmental Information

Thank you for choosing our products. As a company that cares about the environment, we ask that you review the following guidelines for handling end-of-life products.

If the product has a crossed-out wheelee bin symbol
procedure below



, please follow the disposal

This product may contain substances that are hazardous to the environment or health if not disposed of properly. This information is provided to prevent the release of hazardous substances into the environment. Electrical and electronic components must never be disposed of in municipal waste containers. All equipment must be disposed of in accordance with the regulations in effect at the installation site. By doing so, you can avoid serious consequences for the environment and health.

In accordance with applicable regulations in your country, disposing of the product in any manner other than described above is punishable by law. We also recommend sorting other waste: recycling the product's outer and inner packaging, as well as used batteries and rechargeable batteries (if the product requires them). Your help is very important in reducing the amount of raw materials needed to manufacture equipment, minimizing the use of landfills, and improving quality of life by reducing the amount of potentially hazardous substances in the environment.

TIP-TOPOL Sp. z o.o.

62-010 Pobiedziska

33 Kostrzyńska St.

www.sklep.tiptopol.pl