

INVENTO



ORIGINAL MANUAL

INSTALLATION AND MAINTENANCE

SCISSOR LIFT

INVENTO SL S32

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TYPEFACES AND SYMBOLS

The following symbols and typefaces are used in this manual for ease of reading:

	Indicates activities that require special attention
	Indicates a ban
	Indicates a dangerous situation for the operator
	Indicates the direction of access of motor vehicles to the jack
BOLD	Important information

	NOTE: Before operating the jack and modifying the settings, please read section 7 "Installation" carefully, which describes all the steps to ensure better operation of the jack.
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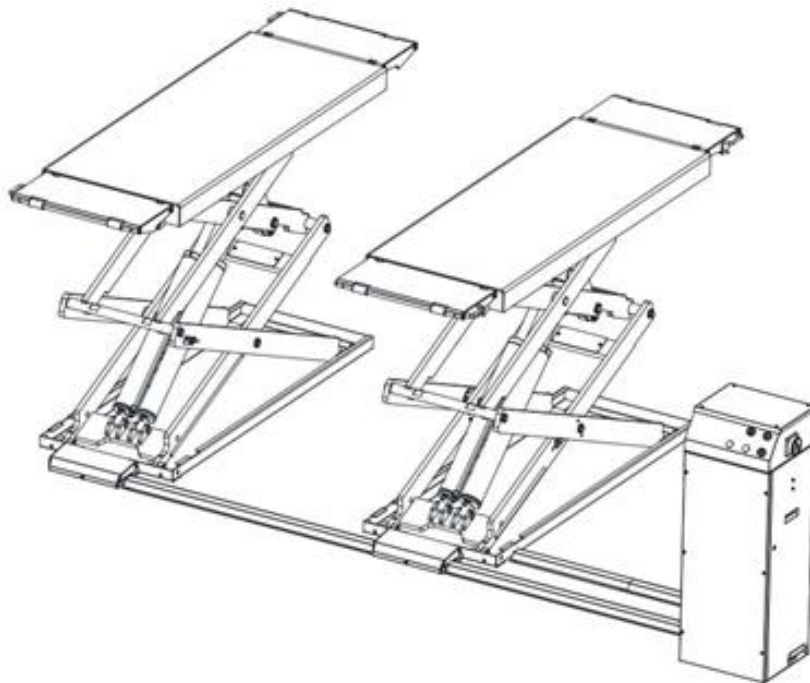


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ROZDZIAŁ 1 – GENERAL INFORMATION

This section contains warnings and information to help you operate the lift correctly and prevent injury to operators and damage to objects.

This manual is intended for use by technicians operating the lift (operators) and technicians responsible for routine maintenance (maintenance technicians).

The manual is an integral part of the appliance and must remain with it for the entire period of use.

Before unpacking and starting the jack, read each chapter of the manual carefully, as they contain helpful information on:

- **HUMAN SAFETY**
- **LIFT SAFETY**
- **SAFETY OF LIFTED VEHICLES**

The jack manufacturer is not responsible for possible problems, damages, accidents, etc., resulting from failure to follow the instructions given in this manual.

Only qualified technicians of an AUTHORIZED DEALER **or** a SERVICE CENTER AUTHORIZED **by the manufacturer** are authorized to carry out lifting, transportation, assembly, installation, adjustment, calibration, change of settings, unscheduled maintenance, repair, inspection and disassembly of the lift.

THE MANUFACTURER OF THE LIFT IS NOT RESPONSIBLE FOR POSSIBLE INJURY TO PERSONS AND DAMAGE TO VEHICLES OR OBJECTS IF THE ABOVE ACTIVITIES HAVE BEEN PERFORMED BY UNAUTHORIZED PERSONNEL OR IF THE LIFT HAS BEEN USED INCORRECTLY.

It is forbidden to use the machine by operators who have not read the procedures and information in this manual.

1.1 MANUAL STORAGE

In order to use this manual correctly, it is recommended:

- Keep the manual near the jack, in an easily accessible place.
- Keep the manual in a place protected from moisture.
- use the manual in a way that does not expose it to damage.

It is forbidden to use the machine by operators who have not read the procedures and information in this manual.

This manual is an integral part of the lift: if it is sold, the manual must be passed on to the new owner.

1.2 EMERGENCY ORDER

	If the device fails, follow the instructions in the following sections.
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1.3 WARNINGS FOR OPERATOR SAFETY

The lift operator must not be under the influence of sedatives, drugs or alcohol while operating the lift.

	Before operating the lift, the operator must familiarize himself with the location and operation of all controls, as well as with the characteristics of the equipment, as included in the chapter "Operation and use".
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1.4 WARNINGS

	The manufacturer of the lift is not responsible for any personal injury or damage to objects resulting from unauthorized changes or modifications to the device. Removing and deactivating security features are prohibited and constitute a violation of health and safety rules and regulations.
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	The use of the device in a manner inconsistent with the one provided for by the lift manufacturer is strictly prohibited.
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	The use of non-genuine parts may result in personal injury or damage to objects.
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1.5 SCRAPPING

When the service life of the machine has reached the end of its life and can no longer be used, it must be switched off and withdrawn from use by disconnecting it from all power sources.

These devices are treated as special waste, so they must be disassembled into uniform parts and disposed of in accordance with current legal regulations.

If the packaging is not biodegradable or contaminating, it must be delivered to an appropriate waste collection point.

WARRANTY STATEMENT AND LIMITATION OF LIABILITY

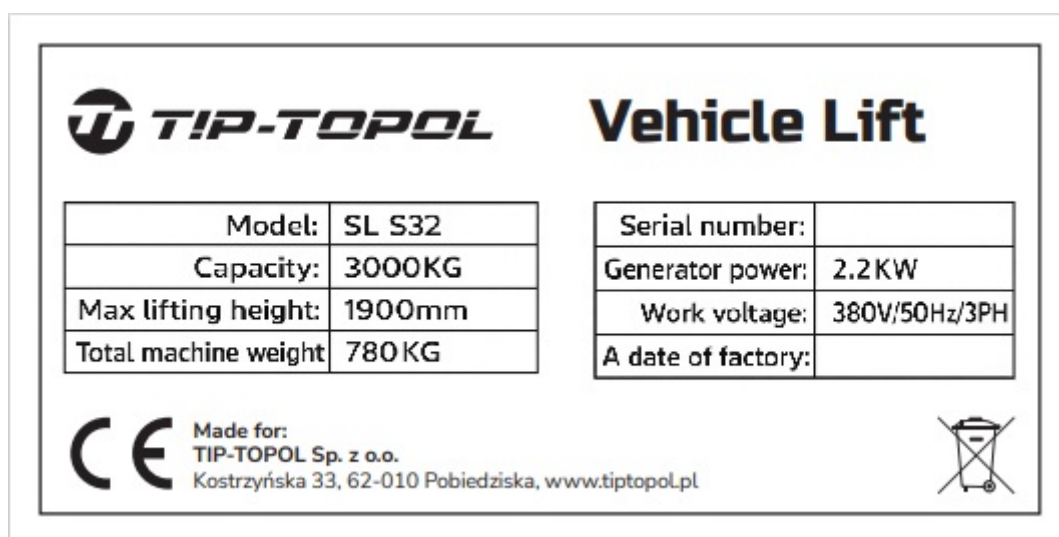
This manual has been prepared by the lift manufacturer with due care. Nevertheless, nothing contained therein shall in any way alter the terms of the contract with the manufacturer under which the device was purchased, nor shall it in any way increase the scope of the manufacturer's liability to the customer.

TO THE READER

The lift manufacturer has made every effort to ensure that the information in this manual is correct, complete, and current. The manufacturer is not responsible for errors that occur during the creation of the instructions and reserves the right to make any changes resulting from the development of the product at any time.

ROZDZIAŁ 2 – PRODUCT DESIGNATION

The identification data of the machine is placed on a plate located on the control unit.



The above data should be used both when ordering spare parts and when contacting the manufacturer (questions). Removing the plaque is strictly prohibited.

Devices may be updated or slightly modified visually, which may change their appearance from the one described in the manual, without affecting its content.

2.1 WARRANTY CERTIFICATE

The warranty is valid for 12 months from the date stated on the purchase invoice.

The warranty expires immediately in the event of unauthorized modifications to the device or its components.

The occurrence of manufacturing defects must be verified by authorized personnel of the manufacturer.

2.2 TECHNICAL MAINTENANCE

For all service and maintenance not listed in this manual, contact the dealer from whom you purchased the unit or the manufacturer's sales department.

ROZDZIAŁ 3 – PACKAGING, TRANSPORT AND STORAGE

Packing, lifting, moving, transporting, and unpacking the appliance must only be handled by qualified personnel who have read the lift and this instruction manual.

3.1 PACKAGING

The jack is supplied in the form of the following components:

- 2 bases packed in a steel frame, wrapped in a scratch-free, waterproof material and fastened with 2 straps.
- 1 power unit packed in a plywood box.
- 4 ramps wrapped in scratch-free, waterproof material, containing 4 rubber washers, 4 hydraulic hoses and 8 anchor bolts.

(Optional accessories are available to meet each customer's requirements if required.)

The set weighs about *830 kg*.

3.2 LIFTING AND MOVING

When loading/unloading and transporting the device to the place of use, use appropriate loading and transport means (e.g. crane, forklift). Components of the equipment must be lifted and transported in a safe manner that prevents falling, taking into account the size, weight and center of gravity of the component and parts susceptible to damage.



Packages should be lifted one at a time.

3.3 STORAGE AND STORAGE OF PACKAGES

The components of the appliance must be stored under a roof, protected from direct sunlight, in low humidity conditions, at a temperature of -10°C to +40°C.

Stacked storage is not recommended: the narrow base of the package, as well as its considerable weight and size, make it difficult and risky.

3.4 DELIVERY AND INSPECTION OF PACKAGES

Once the lift has been delivered to the site, it must be checked that it has not been damaged during transport and storage, and that it complies with the order confirmation received from the manufacturer. In the event of transport damage, the customer must immediately notify the carrier of this fact.

Packaging must be opened in such a way as not to endanger people (keep an appropriate distance when cutting the belts) and not to damage the elements of the lift (care must be taken to ensure that objects do not fall out of the packaging when opening it).

ROZDZIAŁ 4 – PRODUCT DESCRIPTION

4.1 JACK (see Figure 1)

The jack is designed to lift motor vehicles and position them at any level between the smallest and maximum height supported by the jack.

The maximum lifting height, including additional vehicle load, is specified on the nameplate.

All mechanical components such as platforms, extensions, base frames and arms are made of thick sheet steel to provide the frame with rigidity and strength while maintaining low weight.

The operation of the electric-hydraulic system is described in detail in Chapter 8.

This chapter describes the main components of the jack so that the user can familiarize themselves with the device.

As shown in Figure 2, the lift consists of two platforms: P1 (1) and P2 (2) equipped with ramps (3), which can be locked as extensions of the platforms, fixed to the ground by means of bases (4).

The platforms are connected to the base via a scissor lift system.

The lifting system of each platform consists of 4 arms: two lower (5) and two upper (6) and a pair of cylinders: main (7) and slave (8).

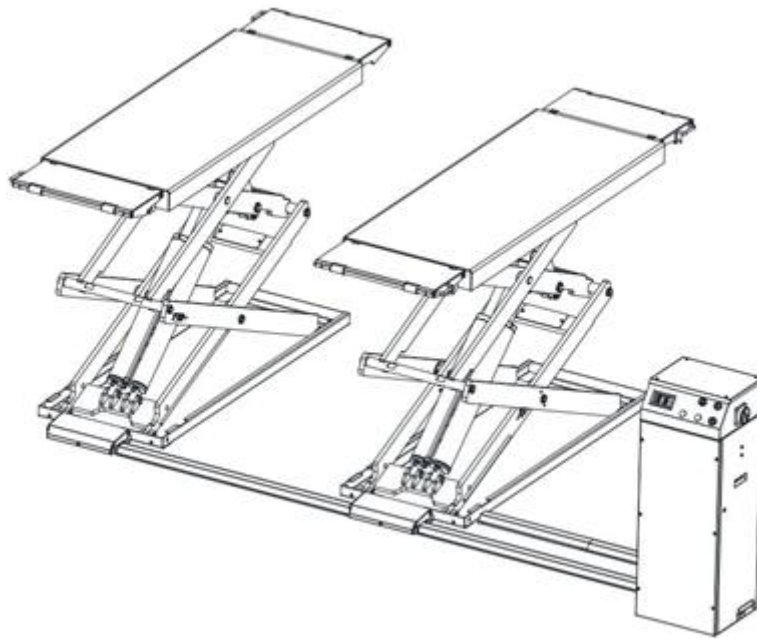
The movement is transmitted through the lever system, from the cylinders to the lever on each scissor system (6).

Lifting and lowering is carried out by means of a control unit (9) located next to the lift.

Two sensors (10) are mounted on the P2 platform shears: for the upper limit position and the safety height position.

Photocells (11) are placed in the scissor arm to control the alignment of the platforms.

Figure 1 – JACK



4.2 OPERATION

The lifting of the platforms is carried out by a hydraulic unit that acts on the cylinders. The platforms are lifted simultaneously thanks to the cross-feeding of hydraulic cylinders.

Lowering, even if electrically controlled, is carried out thanks to the weight of the platforms and the lifted load.

The hydraulic system is protected by a maximum pressure valve that prevents the set maximum safe pressure value from being exceeded.

The synchronization of the platforms is performed by a double circuit (main/slave) and protected by photocells to prevent misalignment.

Whenever the lift is to be lowered to the ground, pressing the lower button will stop the jack at a height of approximately *400 mm*.

In this way, the operator must verify that no people and objects are in the safety area. If not, you can press the end lowering button and lower the lift. A beep sounds during the final lowering.

ROZDZIAŁ 5 – SPECIFICATIONS

5.1 DIMENSIONS AND MAIN FEATURES (see Figure 2)

LIFTING CAPACITY	3000 kg
Maximum Lifting Height	1900 mm
Minimum Lifting Height	105 mm
Length of platforms	1495-2025 mm
Platform width	595 mm
Suggested free space between platforms	800 mm
Overall length	2025 mm
Overall width	1990 mm
Lifting time	45-50 s
Lowering time	60 sec
Noise	70 dB(A)/1 m
Total Weight of the Lift	830 kg
Operating temperature	-10°C - 40°C

5.2 ELECTRIC MOTOR

Type	CB3000
Tension	400 V / 380 V - 3 Phase
Power	3 kW
Number of poles	2
Velocity	1400 rpm
Engine Body Type	B14
Insulation class	IP54

The motor connection must be in accordance with the enclosed wiring diagrams (Figure 5).

The direction of rotation of the motor is shown on a plate located on the engine.

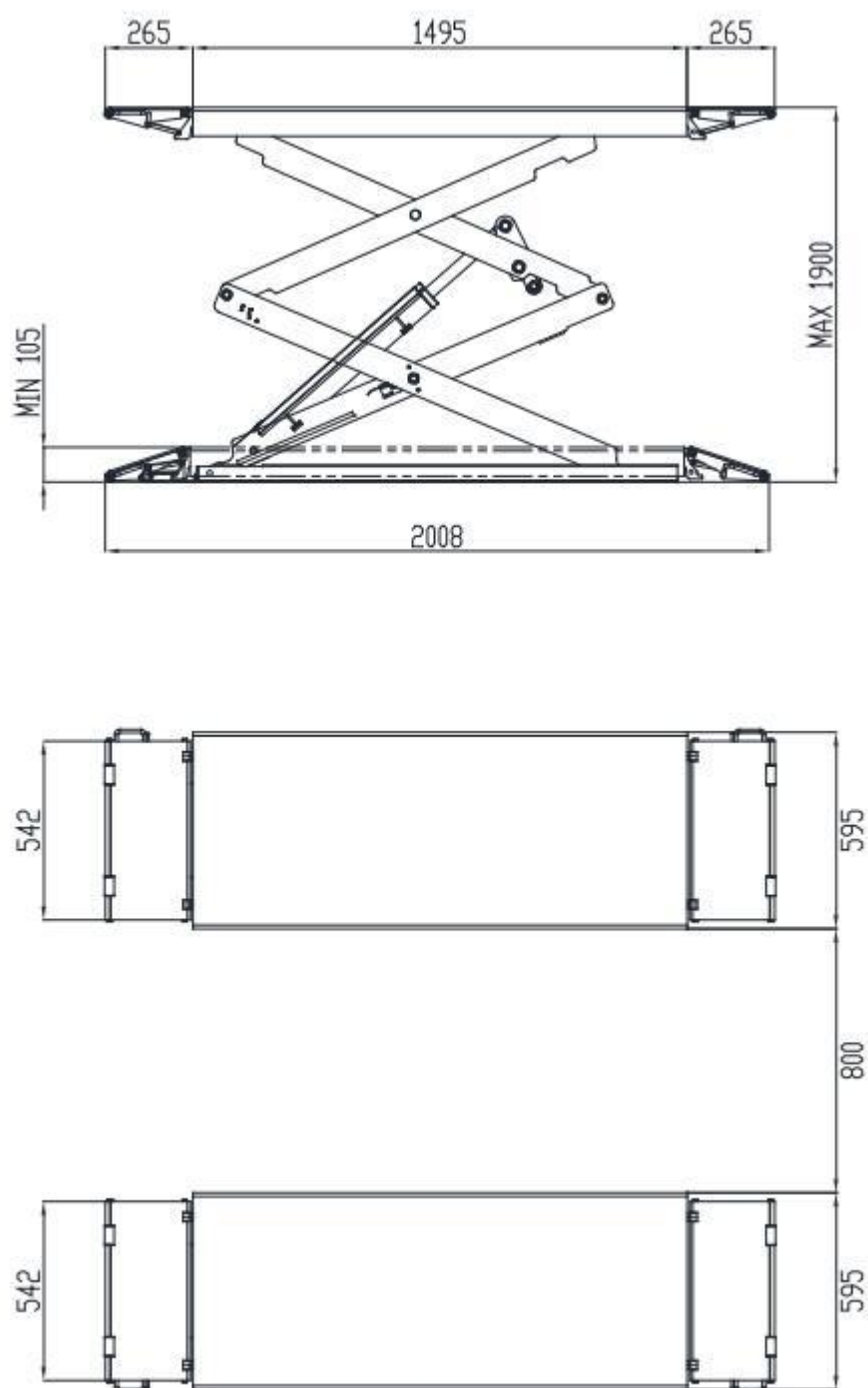
Before using the lift, make sure that the motor specification specified on the rating plate is compatible with the local power supply.

If the fluctuations in the electrical supply value are more than 10%, it is recommended to use a voltage stabilizer to protect against overloading the electrical parts and the system.

5.3 PUMP

Type	Gear
Flow rate	1.6 cm ³ /g
Constant working pressure	260 bar
Peak pressure	280 bar

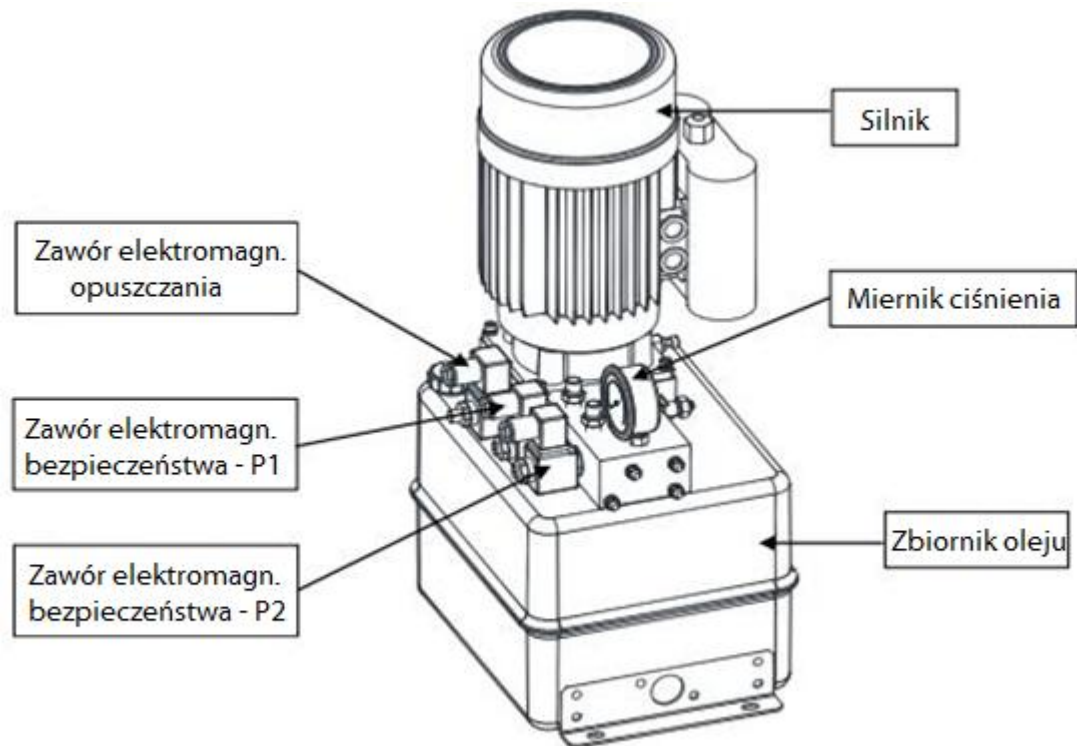
Figure 2 – DIAGRAM



5.4 HYDRAULIC UNIT

The hydraulic unit is equipped with:

Figure 3 – HYDRAULIC DRIVE UNIT



5.5 OIL

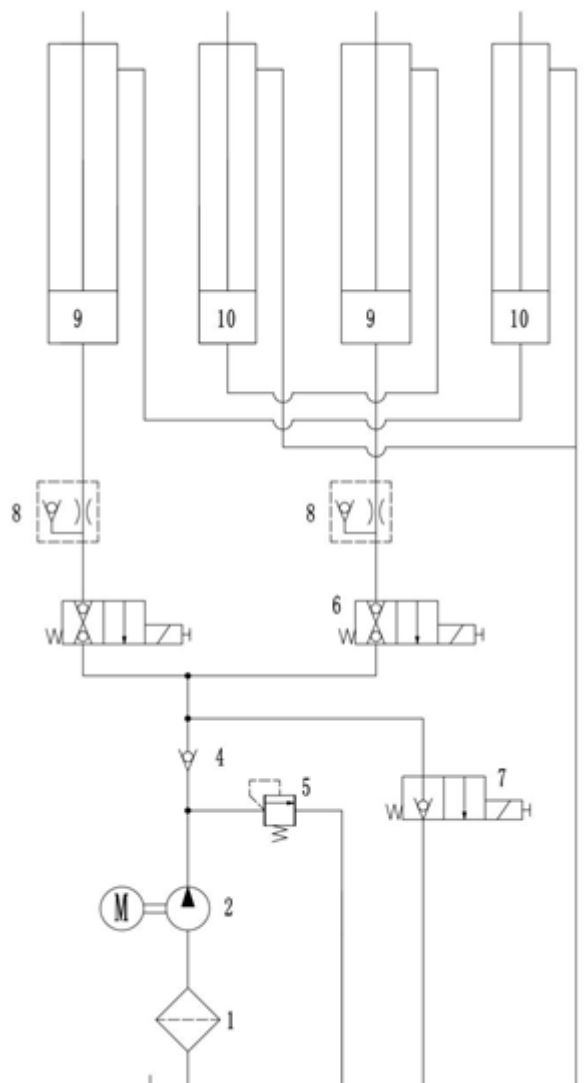
For the hydraulic drive, a non-degradable oil that meets the requirements of *ISO 6743/4* (HM class) must be used.

RESEARCH METHODS	PROPERTY	VALUE
ASTM D 1298	Density at 20°C	0.8 kg/l
ASTM D 445	Viscosity at 40°C	32 cSt
ASTM D 445	Viscosity at 100°C	5.43 cSt
ASTM D 2270	Viscosity Index	104 N°
ASTM D 97	Freezing point	~ 30°C
ASTM D 92	Flash point	215°C
ASTM D 644	Number of inert	0.5 mg KOH/g



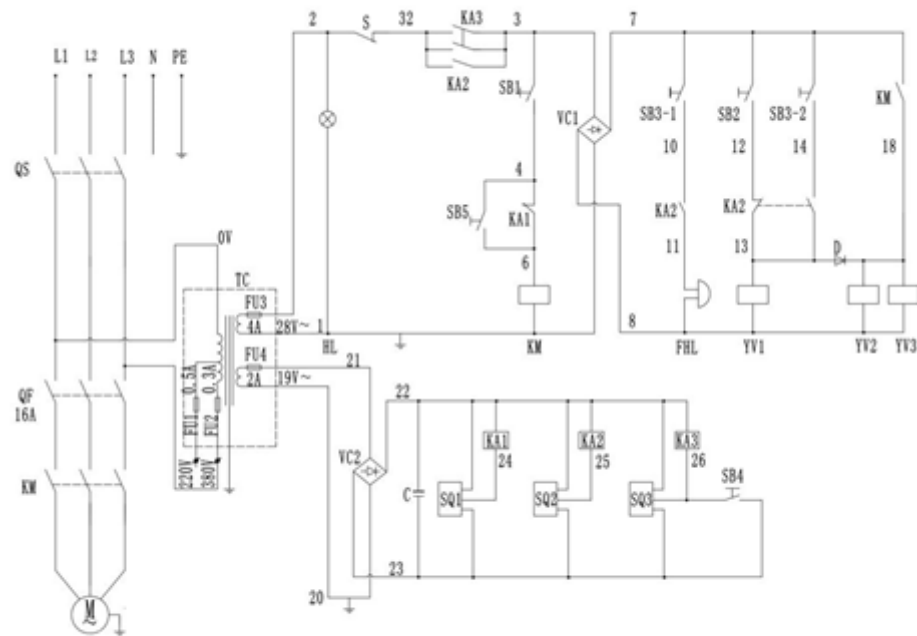
HYDRAULIC OIL SHOULD BE CHANGED EVERY 1 YEAR

Figure 4 – DIAGRAM OF THE HYDRAULIC SYSTEM



1	Subordinate Actuator
0	
9	Main Actuator
8	Lowering Speed Control Valve
7	Lowering solenoid valve
6	Safety solenoid valve
5	Pressure Relief Valve
4	One-way valve
3	Engine
2	Gear pump
1	Oil filter

Figure 5a – ELECTRICAL DIAGRAM (3 PHASES)



C	Electrolytic Capacitor	D	Diode
TC	Transformer	HL	Light
VC	Bridge	SB	Button
FU	Fuse	S	Emergency stop
QS	Power switch	KA	Relay
QF	Circuit breaker	YV	Release valve
SQ	Limit switch	FHL	Buzzer
M	Engine		

ROZDZIAŁ 6 – SAFETY

This section should be read carefully and in its entirety as it contains important safety information for the operator and maintenance of the lift.

	The lift is designed and manufactured to lift vehicles and keep them off the ground indoors. Any other use is prohibited. The manufacturer of the lift is not responsible for possible injury to persons and damage to vehicles and objects resulting from improper or unauthorized use of the lift.
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For the safety of the operator and other persons, a free area of at least 1 m around the machine must be empty when lifting and lowering. The lift must only be operated from the designated operator location in this safety area.

The presence of the operator under the vehicle during operation is only permitted when the vehicle is raised and the platforms are not moving.

	It is forbidden to use the jack if the safety features are switched off. Failure to follow the safety instructions could result in serious personal injury and damage to lifted vehicles.
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6.1 GENERAL WARNINGS

The operator and maintainer of the equipment must comply with the health and safety regulations of the country where the lift is installed.

These individuals must also follow the following instructions:

- It is forbidden to remove or disconnect hydraulic, electrical and other safety devices.
- Follow the safety instructions on the appliance and in the instructions carefully.
- carefully observe the safety area when lifting the vehicle.
- Make sure that the vehicle's engine is switched off, the gear is engaged and the parking brake is applied.
- ensure that only permitted vehicles whose weight does not exceed the maximum lifting capacity of the jack are lifted.
- Make sure that no one is standing on the jack arms during lifting and when the vehicle is lifted.

6.2 HAZARDS WHEN LIFTING THE VEHICLE

In order to avoid overloading and possible breakage of the jack, the following safety devices have been used:

- Maximum pressure valve, placed in the hydraulic unit, preventing excessive load.
- Special hydraulic system design to prevent the jack from suddenly lowering in case of hose failure.

	The maximum pressure valve has been set by the manufacturer to the appropriate value. DO NOT attempt to adjust it to exceed the fixed lifting capacity of the lift.
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6.3 HAZARDS TO HUMANS

All hazards that can be caused by personnel improperly operating the lift are described in this section.

6.4 RISK OF CRUSHING

When leaving ramps, personnel must not be in the abandonment area. Before operating the lift, the operator must be sure that no one is in danger.



Fig. 6a

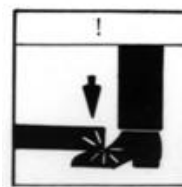


Fig. 6b



Fig. 6c

6.5 IMPACT HAZARD

When the jack is stopped at a relatively low height, there is a risk of hitting protruding parts.



Fig. 7

6.6 RISK OF VEHICLE FALLING FROM A JACK

A vehicle falling from a jack can be caused by its incorrect placement on platforms, incorrect vehicle sizes relative to the jack, or excessive vehicle movement. In this case, you should move away from the work area immediately.



Fig. 8a



Fig. 8b



Fig. 8c

6.7 RISK OF SLIPPING

The risk of slipping can be caused by spilled oil or dirt on the floor around the lift.



Fig. 9



Keep the area under and around the lift clean. Remove all oil stains.

6.8 ELECTRIC SHOCK HAZARD

Avoid the use of water, steam, solvents and varnish in the area where electrical cables are located and, in particular, at the electrical panel.

6.9 HAZARD DUE TO IMPROPER LIGHTING

The entire environment of the lift must be well and evenly lit, in accordance with local regulations.

6.10 RISK OF DAMAGE TO COMPONENTS DURING OPERATION

The manufacturer has used materials and procedures appropriate to the designed parameters of the lift to build a safe and reliable product.

Use the lift only for the purpose for which it was designed and follow the maintenance schedule in the "Maintenance" section.



Fig. 10

6.11 UNAUTHORIZED USE HAZARD

The presence of unauthorized persons near the jack is strictly prohibited when lifting the vehicle, as well as when it is already lifted on the platforms.



Fig. 11



Any use other than as specified in this manual may result in injury to persons in the vicinity of the machine.

ROZDZIAŁ 7 – INSTALLATION



Installation may only be carried out by qualified technicians appointed by the manufacturer or an authorized dealer. Installation of the lift by unqualified personnel may result in serious personal injury or damage to the lift.



Before carrying out any action, please insert a piece of wood between the lower booms and the base frame for safety.

7.1 CHECKING IF THE ROOM IS SUITABLE FOR INSTALLATION

The lift is designed for use in covered and sheltered places free of obstacles.

The lift must not be installed near washrooms, paint shops, and solvent or varnish depots. The lift must not be installed near rooms where there may be a risk of explosion. Comply with the relevant standards set by the applicable health and safety regulations, such as the minimum distance from walls or other equipment.

7.2 LIGHTING

The lighting must be adapted to the regulations in force at the installation site. The entire environment of the lift must be well and evenly lit.

7.3 MOUNTING SURFACE

The lift must be placed on a 425 concrete floor with FEB 215 K reinforcement, at least 15 cm thick, which complies with local regulations.

If a substrate with the above characteristics is not available, it is necessary to use a foundation slab or several fixing points of appropriate size and thickness (made of concrete of the same quality as specified above).

The surface on which the lift will be installed must be level and level in all directions. A deviation of no more than 2 cm in the direction of entry on the lift and 1 cm in the transverse direction can be compensated by means of leveling wedges.

When installed on an elevated surface, it is recommended that you comply with the recommended maximum load capacity of the ground.

The new concrete must dry properly – at least 21 days.

7.4 MOUNTING THE RAMPS AND POSITIONING THE CONTROL UNIT



Unauthorized persons must not be at the jack during assembly.

- Then place the jack according to Figure 2. Use carpenter's chalk to plan the arrangement of the base in the direction of the lift entry.
- Transport the platforms to the installation site using lifting equipment with a load capacity of at least *500 kg*. To prevent the platforms from dropping during transportation, they must be lifted according to their center of gravity.
- Always transport platforms by lifting them under the bases.
- Place the control unit in the designated location.

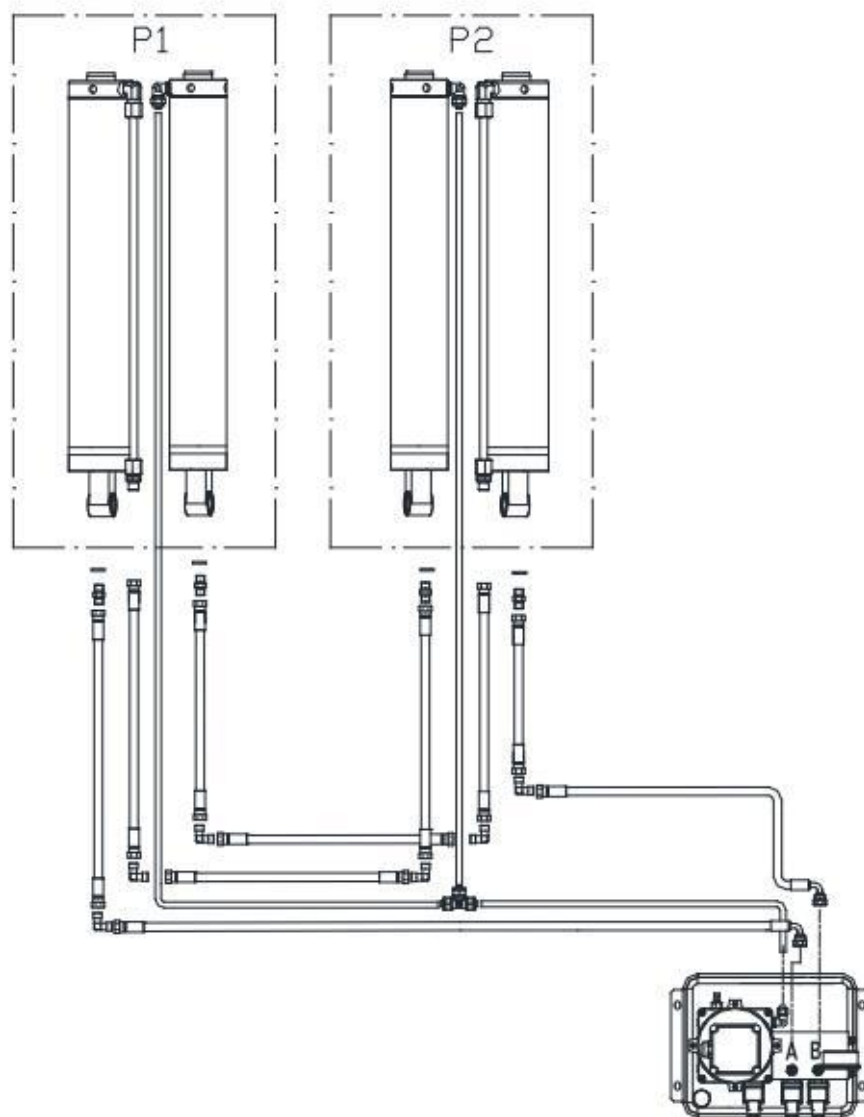
7.5 HYDRAULIC SYSTEM CONNECTIONS (see Fig. 12)

- Open the front cover of the control unit.
- Referring to Figure 12, connect the hydraulic lines to the connectors according to the letter markings.
- Tighten the connectors well.



Check that there are no moving parts in the cable route. Keep wires and connectors clean. Otherwise, the hydraulic lines may malfunction, which may result in damage or personal injury.

Figure 12 – HYDRAULIC CONNECTION



7.6 CONNECTING THE ELECTRICAL POWER SUPPLY



Connection work must be carried out by a qualified electrician.

Make sure the power supply is correct.

Make sure the phases are correctly spaced. Incorrect electrical connection may damage the motor and is not covered by the warranty.

DO NOT turn on the hydraulic assembly without oil. Doing so may cause damage to the pump.

The control unit must be dry. Damage to the powertrain caused by the presence of water or other liquids such as detergents, acids, etc., is not covered by the warranty.

- Use the supplied cables to make an electrical connection to the hydraulic drive unit, taking into account the wiring diagram in Figure 5.
- Make sure that the phase connection is correct and the lift is grounded.

7.7 PRELIMINARY CHECKS

	During this procedure, all working components should be observed and their correct assembly and adjustment should be checked. DO NOT lift the vehicle before performing a detailed operation check.
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7.7.1 CONTROL

- Make sure all pins and bolts are properly attached.
- Make sure that the input voltage of the electrical system is consistent with the voltage specified on the rating plate on the motor.
- Make sure that the electrical connections are in accordance with the wiring diagrams (Figure 5).
- Make sure that there are no leaks and blows in the hydraulic and pneumatic lines.
- Make sure the jack is connected to ground.

7.7.2 START-UP

- Make sure that there are no people or objects in the workspace.
- Check that the control unit is powered.
- Fill the tank with oil (several times, about 16 liters).
- Power the jack using the power switch.
- Check by pressing the lift button that the direction of rotation of the motor is as shown on the plate. IF THE ENGINE BECOMES VERY HOT OR MAKES STRANGE NOISES, STOP IT IMMEDIATELY AND CHECK THE ELECTRICAL CONNECTIONS AGAIN.

7.8 ADJUSTING THE LIMIT SWITCHES

	These activities may only be performed by qualified personnel. Improper adjustment of the limit switches may cause damage to the lift or other objects and personal injury.
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The limit switches must be adjusted during the installation of the lifter.

Two proximity sensors are mounted on the P2 platform shears: for the upper limit position and the safety height position.

If the limit switches are not working properly, it is possible to adjust them as follows:

7.8.1 ADJUSTING THE UPPER LIMIT SWITCH (fig. 13 - 1)

	Since the cylinders need an additional stroke of about 70 mm for venting, NEVER lift the machine above the upper limit height of 1900 mm. The manufacturer is not responsible for any damage to the jack resulting from failure to comply with the above command.
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- Place the jack at a height of 1900 mm.
- Loosen the nuts of the limit switch and set it to the desired height.
- Tighten the nuts after adjustment.

7.8.2 ADJUSTING THE SAFETY HEIGHT LIMIT SWITCH (fig. 13 - 2)

- Place the jack at a height of 400 mm.
- Loosen the nuts of the limit switch and set it to the desired height;
- Tighten the nuts after adjustment.



7.9 OIL SUPPLY AND VENTING



During the venting procedure, DO NOT load the lifter.

The upper limit switch must be installed prior to this procedure.

- Press and hold the lift button (1) for about 30 seconds to supply oil to the actuators.
- Move the lift upwards by pressing the lift button and the bypass button (2) until the lift is in the highest position.
- In this position, press the bypass button and the lift button for a few seconds until the platforms are at the same height. In this procedure, the limit switch is bypassed and the actuators exceed the upper limit position by about 70 mm.
- Lower the lift completely by pressing the lower button (3). If the safety height limit switch is already installed, the lift will lower to the safety height. At this height, use the lower button to lower the jack completely. A beep sounds during the final lowering.
- Follow this procedure and repeat the lifting and lowering cycle at least twice to completely bleed the actuators.

7.10 ATTACHING THE JACK TO THE GROUND

- Raise platforms to a height of about 1 m.
- Using the base frames as a template, drill holes in the concrete to a depth of about 120 mm with a hammer drill, drill bit: 16. To ensure the best fixture, do not ream, and do not allow the drill to move sideways.
- Once drilling is complete, you should thoroughly remove the dust from each hole using compressed air or a wire brush.
- Place washers and nuts on the anchors, then hammer them into each hole with a hammer until the washer rests on the base. If adjustment washers are required, leave the screw thread section exposed.
- If adjustment washers are required, insert them as required around the anchor bolts.
- Once the adjustment washers and anchor bolts are in place, tighten the nuts, securing the whole thing to the base.

7.11 NO-LOAD CONTROL

Perform two or three full lifting and lowering cycles, checking:

- fixing the jack to the ground and tightening all anchor bolts
- correct oil level in the tank
- no leaks and blow-offs in the hydraulic system hoses
- Proper operation of the actuators
- Alignment of platforms
- Reaching the maximum lift height
- operation of the upper limit switch, adjust if necessary
- correct operation of the safety height limit switch, adjust if necessary
- correct operation of the beep during the final lowering
- proper functioning of photocells

7.11 INSPECTION WITH LOAD



WARNING: Follow the instructions in the next paragraph to prevent damage to the jack.

Before performing a load check, check the machine and the bolts and nuts for proper tightening.

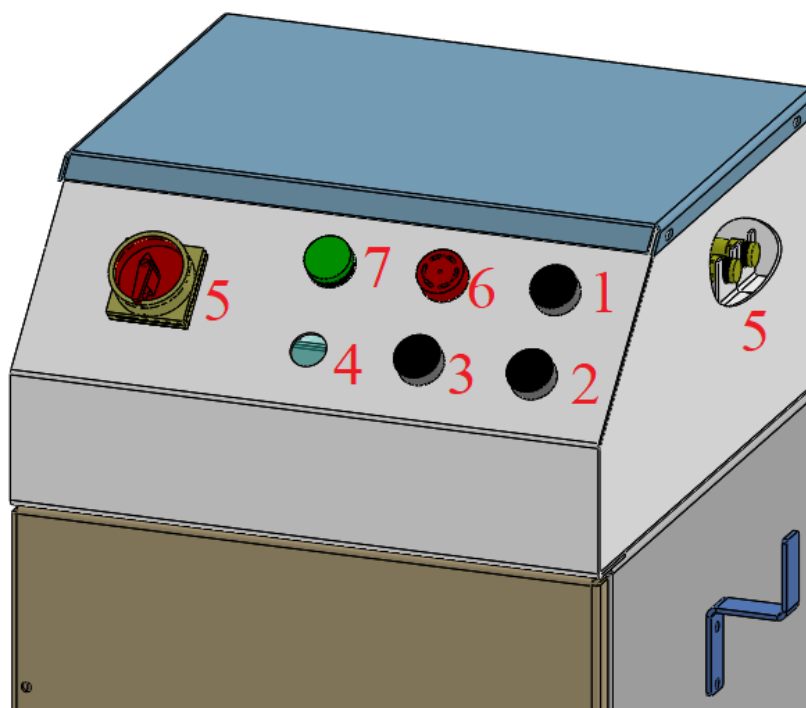
- Repeat the checks described in section 7.11 with the jack loaded with the vehicle.
- Check for leaks and blows.
- If the platforms are not aligned, repeat the steps in section 7.8.

ROZDZIAŁ 8 – OPERATION AND USE

	Never operate the lift if there are people or equipment underneath. Never exceed the nominal lifting capacity of the lift. If the anchor bolt becomes loose or a fault is detected in any part of the jack, DO NOT USE THE MACHINE until repairs are made. Do not allow the electric control unit to come into contact with water!
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8.1 CONTROLLERS

Figure 15 - CONTROL PANEL



The lift controllers are:

POWER SWITCH (5)

The switch can be set in two positions:

- ⇒ **Position 0:** The electrical circuit of the jack is not powered. The switch can be fastened with a padlock to prevent the jack from being used.

⇒ **Position 1:** The jack's electrical circuit is powered.

BUZZER (2)

EMERGENCY STOP BUTTON (4)

LIFT BUTTON (1)

⇒ When pressed, the motor and hydraulic circuit are powered and started to perform lifting.

LOWER BUTTON (2)

⇒ When pressed, the jack is lowered.

ADDITIONAL LOWERING BUTTON (3)

- ⇒ When pressed, the jack starts lowering to a safety height (approx. 400 mm).
- ⇒ When pressed at safety height, the jack begins to lower completely to the ground.
A beep sounds during the final lowering.

BYPASS BUTTONS (5)

- ⇒ When these two yellow buttons are pressed, the upper limit switch is bypassed and the machine is lifted an additional 70mm to bleed the hydraulic system.
- ⇒ When pressed, the photocell is also switched off.

The operation of the lift can be summarized to the following stages:

8.2 LIFTING

- Place the vehicle in the middle of the platform and lock the extensions.
- Check that the vehicle is well secured.
- Place the pads under the locations specified by the vehicle manufacturer as lifting points.
- Set the power switch to position 1 and press the lift button to raise the vehicle to the desired height.
- To keep the vehicle at the selected height, release the lift button.

8.3 LOWERING

- Press the lower button.

- The jack will be lowered under its own weight and the car's weight to a safety height of 400 mm.
- Make sure that there are no people or objects in the safety area.
- Press the lower button again until the lift is completely lowered to the ground. A beep sounds during the final lowering.

8.4 MANUAL EMERGENCY LOWERING

In an emergency situation (power failure), the jack can be lowered manually to the starting position as follows (see Fig. 16):

- Lock the power switch.
- Open the front cover of the control unit.
- Loosen the emergency lowering screw (B) of the lower solenoid valve by turning it to the left, and in the meantime continuously press the slider (A) until the ramps are completely lowered.
- Re-tighten the emergency lowering screw (B) by turning it clockwise after lowering the ramps.

	After manually lowering the jack, restore normal working conditions. The jack will not make an upward movement if the manual lowering valve is open.
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ROZDZIAŁ 9 – MAINTENANCE

	Maintenance of the lift may only be carried out by qualified personnel who know the principles of its operation.
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To properly maintain your lift, follow these commands:

- Only use original spare parts and equipment suitable for the job performed.
- Observe the maintenance and operation control periods of the lift specified in the manual.
- Investigate the causes of possible faults, such as excessive noise, overheating, oil blowout, etc.

During maintenance, use the documentation provided by the dealer:

- Functional diagram of electrical and hydraulic equipment
- Wide-out views with all the data needed to order spare parts
- a list of possible failures and appropriate solutions.



Before starting maintenance or repair of the lift, disconnect the power, lock the circuit breaker, and place the key in a safe place to prevent unauthorized persons from turning on or using the jack.

9.1 ONGOING MAINTENANCE

The lift should be cleaned at least once a month using a self-cleaning cloth. Lubricate the pins at least once a week.



The use of water or flammable substances to clean the lift is strictly prohibited.

Make sure that the pistons of the hydraulic cylinders are always clean and not damaged. Otherwise, leaks may occur from under the seals, which leads to failure.

9.2 PERIODIC MAINTENANCE

Every 3 months	Hydraulic circuit	• Check the oil level in the tank. Refill if necessary. • Check for oil leaks from the hydraulic circuit. • Check the condition of the seals and replace them if necessary.
	Ground Fixing Screws	• Check the screws for proper tightening.
	Security system	• Check that the safety devices are working properly.
Every 6 months	Oil	• Check the oil for contamination and aging. • Contaminated oil is the main reason for valve failures and shorter service life of gear pumps.
Every 12 months	General control	• Inspect all components and mechanisms for damage.

	Electrical	Inspection of the electrical system to verify that the control panel motor, limit switches and control panel are working properly must be performed by qualified electricians.
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ROZDZIAŁ 10 – TROUBLESHOOTING

Below is a list of possible problems and solutions:

PROBLEM:	POSSIBLE CAUSE:	SOLUTION:
Jacking does not work	The main switch is in the off position.	Change to On.
	No power supply.	Check if there is voltage, restore if necessary.
	The electrical wires are disconnected.	Rectify.
	The fuses are blown.	Replace.
	One of the limit switches is defective.	Check the correct operation of the circuit breaker and related connections. Replace if necessary.
The lift does not move upwards when the lift button is pressed	The direction of rotation of the motor is incorrect.	Swap phases on the main switch.
	There is a lack of oil in the hydraulic unit.	Add hydraulic oil.
	The lift button is damaged.	Check the lift button and its connection. Replace if necessary.
	The solenoid lowering valve does not close.	Check and clean if dirty, or replace in case of a fault.
	The emergency lowering screw does not close the valve.	Re-tighten the screw.

	The suction pump filter is dirty.	Check and clean if dirty.
The lift does not move down when the lower button is pressed	The engine does not work properly and does not release the mechanical protections.	Check the engine.
	The power board is damaged.	Replace the power board.
	The solenoid lowering valve does not perform lowering.	Verify that there is power and check the magneto for damage (replace if disconnected or burned out).
	The solenoid lowering valve does not work.	Verify that there is power and check the magneto for damage (replace if disconnected or burned out).
	The lower button is broken.	Check the button and its connection. Replace if necessary.
The lift does not stop at safety height	The safety height limit switch is not properly adjusted or is damaged.	Adjust or replace the limit switch.
	The power board is damaged.	Replace the power board.
	The lower button is damaged	Check the lower button and its connection. Replace if necessary.
	The solenoid lowering valve does not perform lowering.	Verify that there is power and check the magneto for damage (replace if disconnected or burned out).
The lift does not perform an upward movement	There is air in the hydraulic circuit or there are leaks.	Bleed the hydraulic circuit.

synchronously	Actuator seals may be damaged.	Check and replace if necessary.
The lifting capacity of the lift is insufficient	There is a lack of oil in the tank.	Top up the oil in the tank.
	The pump is damaged.	Check the pump, replace if necessary.
	The maximum pressure valve is not properly adjusted.	Adjust accordingly.
The lift does not raise or lower smoothly	Leaks or the presence of air in the hydraulic system.	Bleed the hydraulic system.
The motor does not stop when the jack reaches its maximum height	The maximum height limit switch does not work.	Check the limit switch and replace if necessary.
The lift does not raise or lower smoothly	Leaks or the presence of air in the hydraulic system.	Bleed the hydraulic system.
	The pump filter is dirty.	Check and clean if dirty.
	Pump suction incorrect.	Check the seal, replace if necessary.

11. Scrapping

When the service life of the machine has reached the end of its life and it can no longer be used, it must be switched off and taken out of service by disconnecting it from all sources

Power.

Regardless of any consideration about the possibility of reusing the machine, in part or in full, it should be emphasized that the release of potentially toxic substances is very dangerous.

Metals, plastics, electrical cables, oils and lubricants were mainly used in the construction of the lift. If scrapping is carried out by your personnel, you should sort the individual elements according to their type. These materials should be handed over to specialized (and authorized) companies for disposal.

WARRANTY CARD

Lift Type Serial 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 of the device.
2. During the warranty period, the Guarantor provides free parts in case of failures covered by the warranty.
3. Your obligations:
 - i. The user of the device undertakes to comply with the rules of use contained in the "User Manual" provided with the device
 - ii. The User undertakes to notify the Guarantor of any failure. The user can report a failure at the TIP-TOPOL headquarters in Pobiedziska tel. (0****61 8152 200)
 - iii. The completed "Warranty Card" is a documentation of the right to warranty and should be stored at the place where the device is installed and made available to TIPTOPOL service employees for the purpose of making annotations about repairs and possible extensions of the warranty period
 - iv. The User agrees to perform maintenance inspections in accordance with the applicable regulations and instructions.**
4. The warranty **expires** if:
 - i. the machine's serial numbers have been removed,
 - ii. the appliance has been operated for its intended purpose or under conditions and in a manner other than those specified in the operating instructions
 - iii. the damage is caused by the user's fault or as a result of random events
 - iv. No technical inspections have been carried out => No entries in the maintenance log by a person authorized to perform inspections and maintenance of the lift**
5. The guarantor provides free repairs during the warranty period at the headquarters of the TIP-TOPOL company located in Pobiedziska, after the user has delivered the device at his expense.

I declare that I have read the warranty conditions set out in this Charter.

Company stamp

Date and legible user signature

Repair annotations.

L.p.	Date Notification	Date Repair	Repair actions performed, components replaced, warranty extension annotations	Signature service technician

Thank you for choosing our products. As a company that is not indifferent to environmental protection, we ask you to read the following tips for dealing with used products.

If the product has a crossed-out bin symbol on the nameplate  , the following removal procedure should be used

This product may contain substances that are hazardous to the environment or health if not properly disposed of. 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 bins. Dispose of all equipment in accordance with applicable regulations at the place of installation. By doing so, you can avoid dangerous consequences for the environment and health.

According to the applicable regulations in a given country, disposing of the product in a manner other than described above will be punished. It is also recommended to segregate other waste: recycling the outer and inner packaging of the product and used batteries and accumulators (if the product requires them). Your help is very important to reduce the amount of raw materials needed for the production of equipment, minimize the use of landfills and

improve the quality of life by reducing the amount of potentially dangerous substances in the environment.

TIP-TOPOL Sp. z o.o.

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