

2-post hydraulic car lift

ZY-PLC2.5

Manual

Designed by Gausel Trading AS



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Introduction

Dear customer.

Thank you for choosing the PLC-lift, designed by Gausel Trading AS. Please assemble, use and maintain the lift in accordance with the contents of this manual. Read the manual carefully before use.

The lift is designed to lift cars of maximum 2500 kg, for you to attain the correct height to perform the work needed. The lift is not designed for washing or the parking of a car, nor the lifting of other objects than a car. Gausel Trading cannot be held liable for any potential injuries or damages due to the incorrect use of the lift.

This manual is meant solely for the people who are performing the work, and any people without sufficient knowledge of the lift shall not use it. Those who are to use the lift should possess knowledge of this kind of work as well as general garage work, such as repairs and maintenance. Those who are to use the lift must also be able to read and understand the text and tables rendered in this manual as well as understand the safety precautions. This also applies to service personell.

This manual explains the responsibility caused by incorrect use on people, cars and other property. The manual furthermore explains the maintenance scheme, which will be of use to service personell and users.

This manual is part of the equipment and should at all times be kept easily available, for referencing. You should keep the manual for as long as you keep the lift.

The lifetime of the major parts (coloumns, bases etc) is 10 (ten) years, or what is stipulated in local laws. The guaranteeperiod for disposables and spare parts is 1 (one) year. When the lift is scrapped the major parts may be recycled. All electric parts, hydraulic oil etc. should be treated for environmental reasons.

Any person operating the lift is responsible for the safety. Please maintain the safety of both the equipment and any people while operating the lift.

Declaration:

Gausel Trading AS is not liable for any injury caused in part or full by the following conditions:

- The end user does not assemble, operates or maintains the lift in accordance with the manual;
- Asks a person without due knowledge of the lift to operate and maintain the lift;
- Accidents and fault caused by power failure etc.;
- Accidents caused by weak foundation which does not comply with the requirements;
- Unauthorized reconstruction of the lift;
- Overloading, use over time or problems with power supply;
- Damages or problems occurring when using compatible units.



Introduction

- Gausel Trading AS is responsible for any possible upgrade of the functions of the lift in accordance with the varying demands of the customer. If this manual does not correspond with the physical product, you must refer to the physical product. Gausel Trading AS maintains every right of explanation.



Safety instructions

- Please read the entire manual carefully before assembly, and follow the maintenance guidelines.
- Only people with sufficient knowledge or approved certification are allowed to operate the lift.
- The user should check the condition of the lift prior to every use. Please do not use the lift if you discover any faults or you do not consider the lift safe to use. You may only use the lift after it has been serviced by certified personell.
- Do NOT overload the lift.
- Please note the following: **When lifting, the lifting point of the lifting arms must correspond with the lifting points indicated by the car manufacturer. As soon as the car has lifted from the ground the user must ensure the car is correctly placed by rocking the car powerfully. By rocking the car you check if the car is correctly placed on the lifting points. Only lift the car to the desired height when you are sure the car is correctly placed. When the car is lifted to the desired height you must plug both safety pins in the columns under the loadbearing You can now lower the onto the safety pins.**
- **You may now work safely underneath the car.**
- Please make sure the car is correctly placed on the lifting points during the entire lifting process. If you notice anything irregular you must immediately abort the process.
- The area around the car must be kept free of all persons when lifting.
- Please refer to the service manual of the car should the operator need to make any alterations to the car which may affect the centre of gravity.
- Please make sure that the safety pins in every column are safely plugged in before any work takes place underneath the car.
- The operator must ensure that the lifting arms are in such a position that the car may safely pass when entering and leaving the lift area. Please ensure there are no obstacles between the columns. Please avoid the arms, not to cause any damage to either lifting arms or car.
- Ensure there are no obstacles or rubbish in the lifting area. Please remove any oil spill within due time.

- Make sure you use the correct cable in accordance with local regulations when replacing/extending the power cable.
- When the lift is not in use you must turn off the power and remove the plug from the socket. Use your hands when removing the plug. Do not pull the plug to remove it.

Safety remarks



The lift must not be used by people without sufficient knowledge. Erroneous use may cause life threatening injuries.



The lifting points on the lift must correspond with the lifting points on the car. Please refer to the instruction manual of the car. Failure to adhere to the above mentioned instructions may cause the car to fall.



Do not use external lifting equipment or support which may alter the centre of gravity of the car.



Do not shake the car. This may cause the car to fall.



Only use original parts.



The centre of gravity of the car must not be outside the lift.



Do not lift 1 (one) side of the car.



The cable must not come into contact with water or any



Be mindful of any body parts when lowering the lift.



Do NOT modify the security equipment.



The lift must not be used for washing the car.



The safety pins must be securely plugged in before you start



The electrical parts must not come into contact with the ground, as this may lead to an electric shock.



Specifications and technical data

1, Specifications

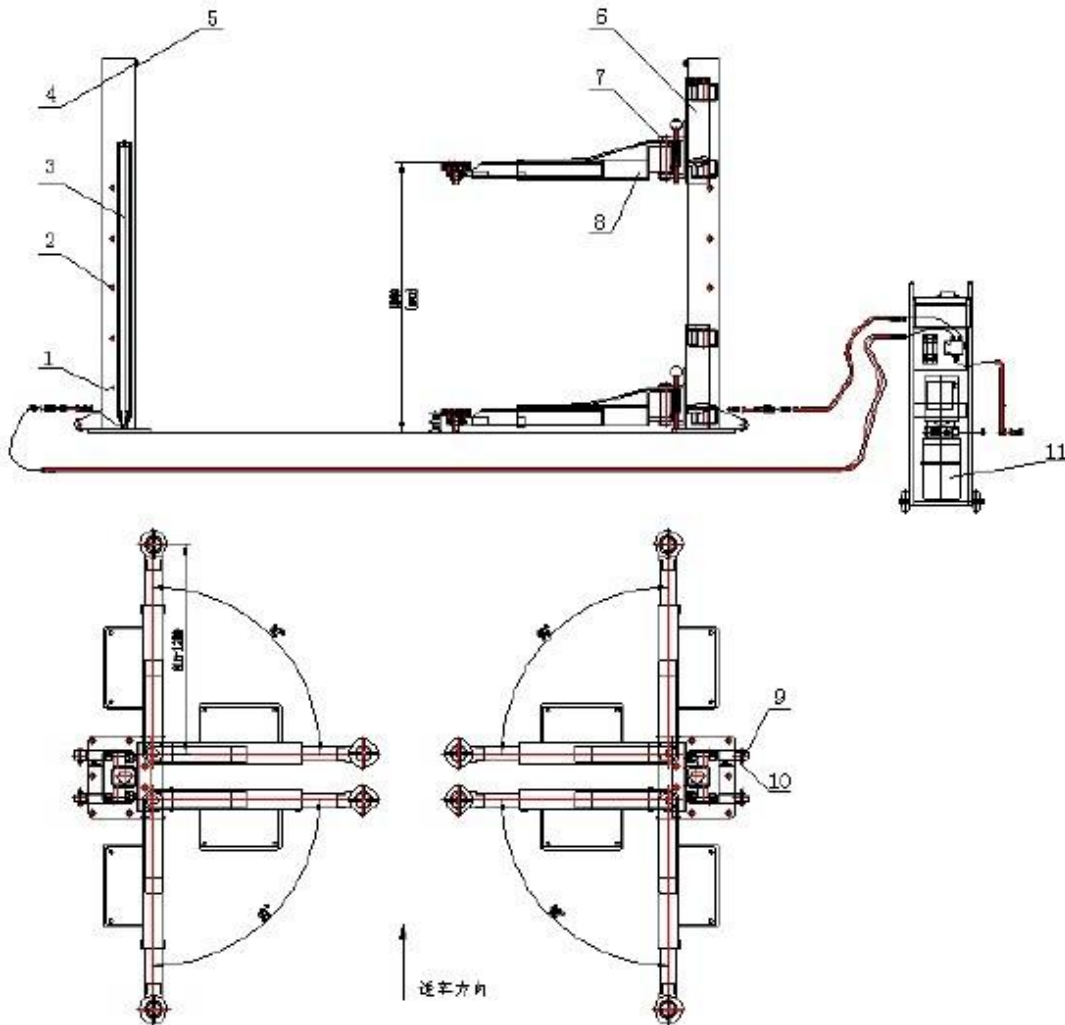
Category	2-post hydraulic car lift
Model	ZY-PLC2.5
Standard pump	Chinese type pump
Power supply	Phase, 220V, 50Hz

2, technical data

Model	ZY-PLC2.5
Size	3120mm*400mm*2700mm
Net weight	425KG
Approved lifting capacity	2500KG
Maximum lifting height	1300 mm
Minimum lifting height	120 mm
Length of lifting arms	650-1350 mm
Time to reach full lifting height	40—60S
Engine	4.0KW
Noise	≅ 80dB(A)

External structure

The external structure of ZY-PLC 2.5:



1, column; 2, safety pin holes; 3, hydraulic cylinder; 4, latch ; 5, bolt ; 6, loadbearing ; 7, lifting arm locks; 8, lifting arm ; 9, bolt; 10, wheels; 11, hydraulic pump



Assembly instructions

1. Required tools

- Electric hammer drill
- Carpenter's level, minimum length 1,2 m
- kombinasjonsnøkler: metrisk
- Socket wrench; metric
- Fork wrench
- Big screwdriver
- Chalk
- screddriver with a flat head
- measuring tape

Step 1: choose site

Please note the following before you assemble the lift:

1. **PLACEMENT OF THE LIFT:** Make use of architectural drawings if possible. Check the floor plan against the requirements of the lift, and make sure there is enough room.
2. **OBSTACLES ABOVE THE LIFT:** Make sure there are no obstacles above the lift, such as heaters, power cables etc.
3. **DEFECTIVE FLOOR:** Inspect the floor where the lift is to be assembled for any cracks or defective concrete.
4. **TEMPERATURE REQUIREMENTS:** The lift may only be used between 5 and 40°C.
5. The lift is only to be used **INDOORS**.

Step 2: Floor requirements

The lift is only to be assembled on a solid and level concrete floor, with an incline of maximum 3°.

DO NOT assemble the lift on asphalt or any other surface than concrete.

DO NOT assemble the lift on a joint floor, or cracked or defective concrete.

DO NOT assemble the lift on the 1st or 2nd floor without prior consultation with a construction architect.

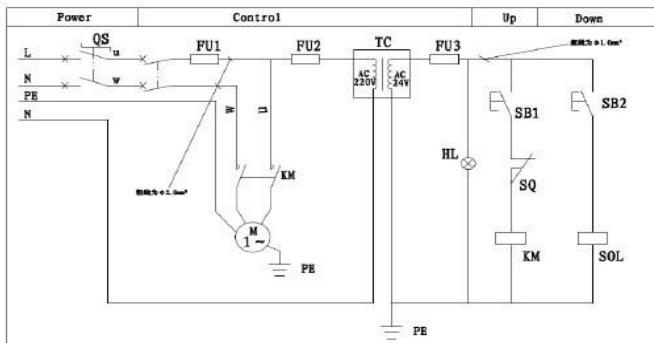
DO NOT assemble the lift outdoors.



Assembly instructions

Step 3: Assemble the hydraulic cylinders

1. After you have assembled the wheels to the columns, turn the columns up side down with the open end up. Push the loadbearing upwards until they are at the top of the columns. Remove the cylinders
2. Assemble the cylinder fittings as shown by using thread tape on the pipe threads
3. Assemble the cylinders through the bottom of the loadbearing and lead them through the top.
4. Assemble the fittings on the cylinder through the access hole on the backside of the columns.
5. Lower the loadbearing until it rests on the base plate. Raise the columns.
6. Attach the tie bar to the top of the columns using M10x455 mm bolts, nuts and washer.

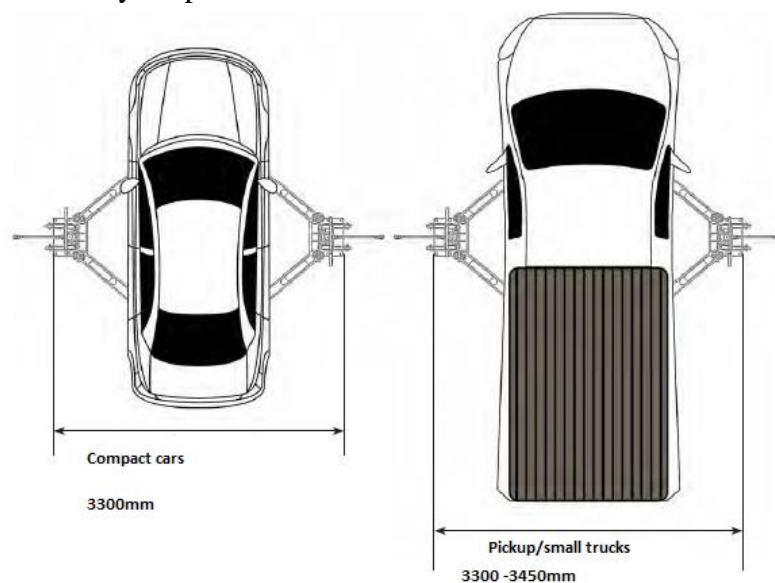


Step 4: floor plan

1. Decide the breadth and location of the lift based on the vehicle you intend to use, as well as the size of the garage.
2. After deciding the location mark the location of the columns with a chalk line. Keep all dimensions and correct angles within 3,8 mm to avoid potential functional faults.
3. After you have marked the location of the columns, make an outline drawing of the location of the columns using the bottom plate of the columns.
4. Double check all dimensions and make sure the outline is square.

Please note: You can assemble the lift narrow and wide. You may even assemble several anchor points for the columns to work on different size vehicles.

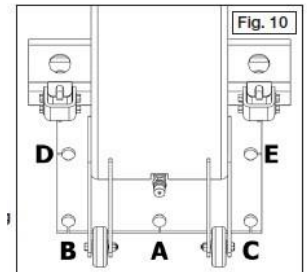
Test fit the arms to the columns and measure with a car to make sure you choose the correct distance for your preference.



Step 6: Making the anchor point

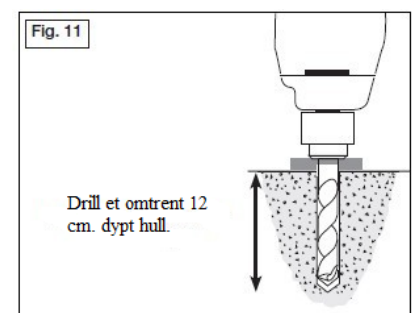
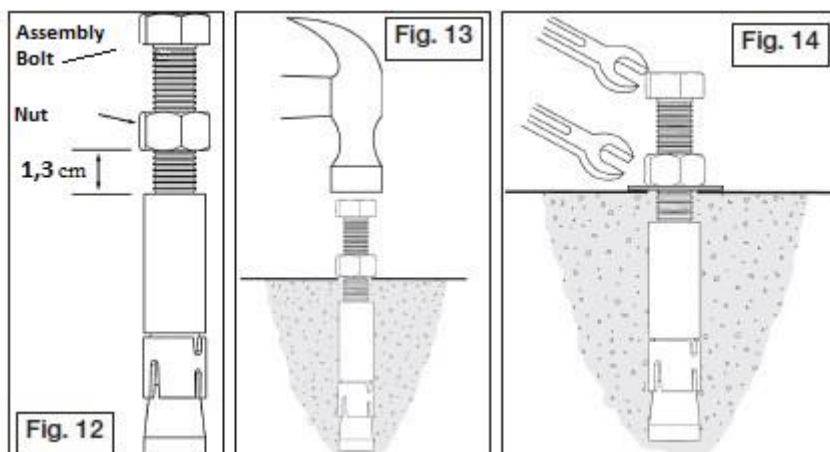
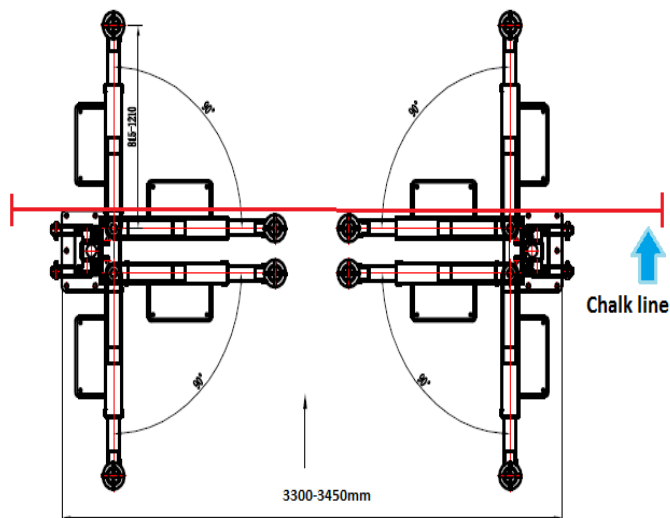
1. Before you continue, please double check the location and measurements, and make sure the bottom plate of each column is correctly placed in accordance with the chalk lines.

PLEASE ADHERE TO THESE GUIDELINES FOR EXACT AND CORRECT MAKING OF THE ANCHOR POINTS. THE HOLES MUST BE DRILLED IN ACCORDANCE WITH THE LOCATION DIAGRAM AS SHOWN TO THE RIGHT.



2. Use the bottom plate as a starting point, keep the drill vertical towards the concrete floor and drill a test hole at point "A". The hole should be about 5 cm. deep, and you must use a rotating hammer drill using a 15mm drill bit.

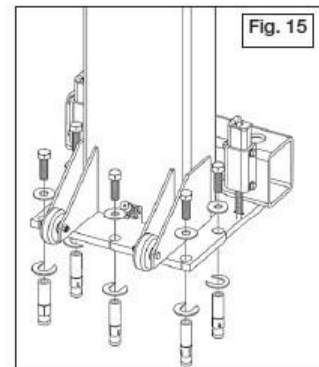
NOTE: The easiest solution for mounting the anchors; is to drill directly with a 22 mm drill using the base of the columns as template.





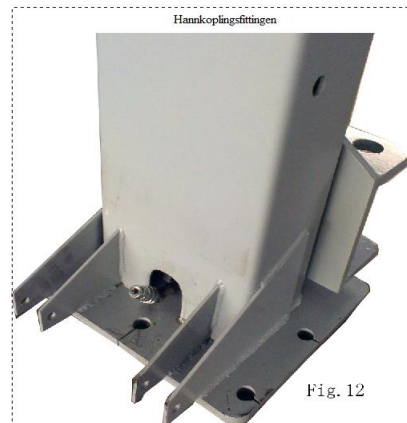
Assembly instructions

3. Remove the column.
4. Keep the drill vertical towards the concrete floor and drill hole "A" to a minimum of 12 cm using a rotating hammer drill with a 22mm drill bit.
5. Vacuum the hole properly to remove any dirt and dust.
6. Attach the 15mmx10cm long hex-bolt (assembly bolt) in the anchor hole. Place the 15mm big nut on a point on the bolt thread so that the anchor may be placed 15mm below the concrete surface (see figure 12).
7. Knock the anchor down hole "A" until the bottom of the bolt reaches the concrete and the anchor is about 15mm below the surface (see figure 13).
8. How to tighten the anchor: Remove the hex-bolt and attach a washer for better support during the assembly. Attach the hex-bolt while holding the drill bit (to avoid the anchor spinning) until the anchor is 3 mm below the surface. Do not use an electric screwdriver for this.
9. After you have assembled and attached anchor "A", remove the column back to the position and attach the column to the anchor by standard anchor bolts and washers.
10. When the column is attached use the bottom plates as a guide and drill pilot holes "B", "C", "D" and "E" about 5 cm. deep by using a rotating hammer drill with a 15mm drill bit.
11. Remove the column.
12. Repeat steps 5-9 and make sure the bottom plate fits exactly to each pilot hole.
13. If you need to use shims you must insert the shims under the bottom plat making the columns vertical when the anchors are attached (see figure 15).



14. When you have assembled the shims and the anchor bolts you must attach the 15mm x 10cm anchor bolts to the bottom plate. Turn them around their axis. Do not use an electric screwdriver for this.

PLEASE NOTE: YOU SHOULD MARK THE PLACEMENT OF EVERY SHIMS FOR EASIER SUBSEQUENT ASSEMBLY.

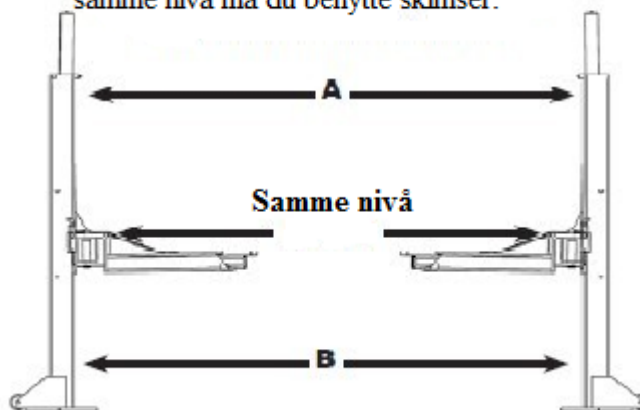


Please inspect the anchor points for any damage or other issues prior to every assembly of the columns. Please also inspect the concrete for any cracks or damages. Do not assemble the lift if you notice any problems of any kind.

You may have to use shims to make sure the columns are vertical. To avoid any damage when in use, the columns must be vertical and square. If you use the included anchors the shims must not be thicker than 0,3 cm thick.

Viktig informasjon om planering

Sjekk at punkt "A" og "B" er like før du starter løftebukken. Løftearmene må være på samme nivå. Dersom de ikke er på samme nivå må du benytte skimser.



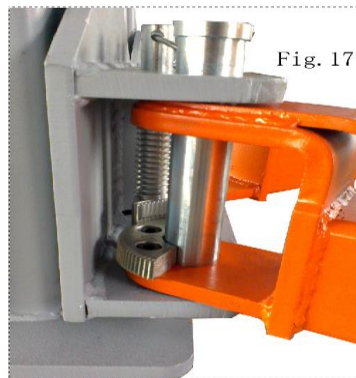
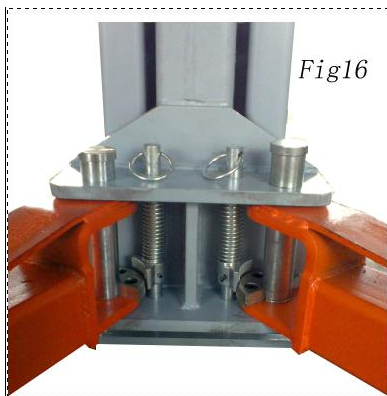
Step 7: Coupling of hydraulic hoses

1. Attach the male attachment fitting to the rear cylinder fitting by using thread tape on the pipe threads (prefitted).
2. Attach 1 of the male npt-fittings to one of the upper ports on the flow valve Turn to a torque of 100 N m. Do this to both hoses (see figure 17).
3. Attach the female attachment fitting to the end of each male npt-hose (see figure 18).
4. Inspect all attachments and check that they are properly attached before moving on.
5. Position the pump either in front of, or behind the vehicle.
6. Attach the available ends of each cylinder hose to the detachment fitting at the base of each column (see figure 19).



Step 8: Assemble the lifting arms

1. Place the lifting arms on the lifting head. Thread the attachment bolts in through the lifting head and down through the lifting arms. Attach thereafter the C-clips to the bolts (see figure 20/21).



Step 9: Assembly of the hydraulic power unit.

1. Fill the unit tank with 6,6 l. ISO 32 hydraulic oil or Dexron III automatic transmission oil. Make sure the funnel you use is completely clean before filling. After draining the air, replenish 1,4 l. This must be done with lift at 1/3 or 1/2 full height. Do not refill when lift is at full height.
2. Standard engine of lift is 110/120 volt, 50/60 hz, one phase. The lift must be coupled to a dedicated electric circuit with a 16 amp circuit breaker.

All electrical work must be performed by a certified electrician.

FOLLOW GUIDELINES ATTACHED ON THE ENGINE.

DANGER OF EXPLOSION.

The lift has internal flame arcs or parts which may spark, and must not be subject to flammable liquids.

The engine must not be placed in a submerged area or underneath floor level.

IMPORTANT

DO NOT start the engine without oil. This can damage the engine.

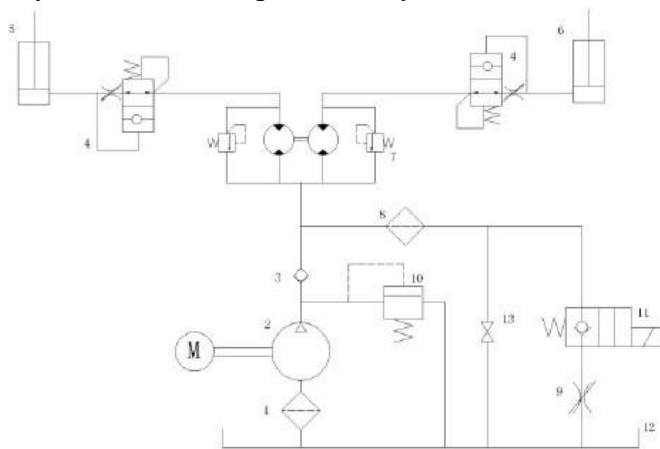
The power unit must be kept dry at all times. The warranty does not cover damages incurred by water or other liquids.

Incorrect electrical coupling may damage the engine and is not covered by the warranty.

The engine can not run on 50 hz without physically altering the engine.

Each power unit requires its own switch.

Every circuit must be protected by a circuit breaker with time delay or power switch.



Step 10: start up and final adjustments

Please check that lift and all other parts are functioning correct during start up. DO NOT lift the vehicle until you are sure the lift works as it should.

1. Spray the inside of the columns, where the loadbearing glide with a white lithium-based grease, or similar.
2. Remove both safety pins from the columns.
3. Test the power unit by pressing the "ON" button. If the unit works normally lift the lifting arms 5 cm and check for any leaks. If the engine gets warm or makes abnormal sounds immediately stop the operation and check all electrical couplings.
4. Keep pressing "ON" button until arms move.

KEEP HANDS AND FEET AWAY FROM LIFT WHEN MOVING.

Avoid all clamping points.

5. Lift arms until about 60 cm above ground.

6. Loosen bolts on arm attachment points. Adjust attachment points so that the gears attach properly to each other. Tighten attachment points. Lubricate the gears (see figure 17).



Step 11: Draining of air

1. With the lift elevated, hoses connected and oil tank full, loosen the screws on top of each hydraulic cylinder using an Allen wrench. Do not screw the air screws all the way off. Look and listen as confined air leaves the cylinders and liquid starts appearing from the screws. When a steady stream of liquid appears, tighten the screws (see figure 18).

The lift automatically lowers when draining air, so keep area free of any obstacles or body parts before draining.

2. Press the "ON" button until both cylinders reach maximum height. Do not press the button after cylinders reach maximum height as this can cause damage to engine and/or flow divider.

3. Repeat the drainage process.

4. Press the lever for lowering until the lift reaches the floor. Repeat the above mentioned procedure until the lift is lifted and lowered horizontally.

Utblodningsskruer



Fig. 18

DO NOT use the lift if it does not lift or lower horizontally with a variance of 3° or 2,5 cm. If the lift becomes unbalanced you must follow procedures for air drainage described on this page or contact the factory. The lift must be adjusted horizontally, add shims if needed, and perform air drainage at each re-assembly. Failure to adhere to these guidelines may lead to serious injury or death.

If you experience problems with synchronizing the lifting arms.

If one of the columns are lifting higher than the other. Open the bleed screw on the cylinder that has the highest arm and bleed through oil until the arms are sync.

During the bleed process the valve might be troublesome to synchronize due to the weight of the arms is too low.

By lifting a car, after the correct bleeding procedure has been performed helps getting the correct pressure/flow in the flow valve.

Only lift the car just above the ground, open the bleed screw on the highest cylinder carefully. (DO NOT OPEN THE SCREW FULLY, ½ - 1 turn is adequate to bleed some oil through). Until the lifting arm are at the bottom.

If you experience trouble getting the lifting arm to lower during the bleeding process. (NOT TO be done with the CAR/load on the lift).

1. Disconnect the power source.
2. Disconnect the quick-connection of the cylinder you wish to lower.
3. Dismantle the hydraulic hose from the flow-valve, and put this end of the hose in the hydraulic oil tank of the pump. And connect the quick- connection to the cylinder to lower the lift/drain the cylinder.
4. Repeat the bleed process.

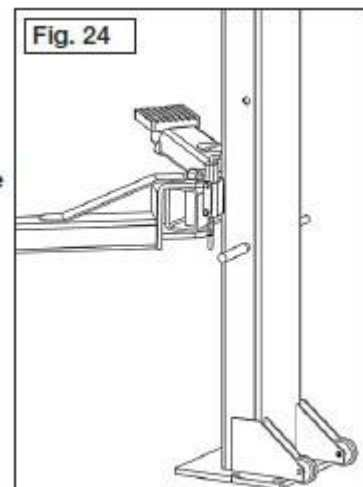
Post assembly check list:

- Columns are stable (check possible shims)
- Anchor bolts are tight
-/.... is correctly attached.
- Electricity is connected and in working order.
- Tie bars are attached and tightened.
- Safety pins are removed.
- Hydraulic oil leaks checked.
- Oil level
- Lubrication of critical components.
- Any obstacles above the lift are removed.
- The lifting arms are horizontally at same level.
- The arm locks are properly adjusted.
- All screws, bolts etc are properly tightened.
- The area around the lift is clean.
- All manuals are easily accessible.

USE:

Lifting:

1. Drive the vehicle in between the columns in accordance with the lifting points on the vehicle.
2. Never use the lift pads without a rubber cover.
3. Engage the parking brake, or use a brake chock to keep the vehicle in place.
4. Before lifting, make sure there are no obstacles over the lift, and that no people are within the working area of the lift.
5. Lift the lift to the desired height using the "ON" button.
6. When the vehicle has reached desired height, plug in the safety pins in the columns and lower the vehicle onto the pins. Make sure the safety pins are in place before entering the work area (see figure 24).



Important information concerning lifting

Make sure the lift is drained of air in accordance with the instructions in this manual before use.

Read the manual and all safety instructions before use.

Always use recommended lifting points provided by the producer.

Place the vehicle between the columns. Adjust the lifting arms so that the vehicle is placed with centre of gravity between the lifting pads.

Place the lifting pads in accordance with lifting points provided by the vehicle manufacturer.

Lift the lift by pushing "ON" button on the power unit until the pads come into contact with the vehicle. Make sure the lifting arms do not come in contact with the chassis before the lifting pads. Such damages is the lift operator responsibility.

Check that the vehicle is stable and safe.

Lift vehicle to desired working height.

Lower lifting arms until they rest on closest safety pins.

Maintain visual contact with vehicle and surrounding area at all times.

Stop immediately if vehicle becomes unstable.

Make sure the safety pins are correctly assembled before working on, and close to vehicle.

Make sure the contact pads are in full contact with vehicle before working with, and close to vehicle.



Use

Lowering of lift

1. Before lowering lift, make sure no people or obstacles are in vicinity of, or above lift. Make sure any tools are removed from underneath lift.
2. Lift lifting arms from safety pins by pressing "ON" button on aggregate. Lift the arms at least 3 cm to ensure adequate clearance for removing safety pins. Remove safety pins.
3. Press lever to lower lift until floor level.

Important information concerning lowering

Lift lifting arms from safety pins by pressing "ON" button on aggregate. Lift the arms at least 3 cm. to ensure adequate clearance for removing safety pins.

Remove safety pins.

Before lowering lift, make sure no people or obstacles are in vicinity of, or above lift. Make sure any tools are removed from underneath lift.

Press lever to lower lift until floor level.

Maintain visual contact with vehicle and surrounding area at all times.

Stop immediately if vehicle becomes unstable.

Make sure lifting arms are placed away from vehicle before removing vehicle.

Do never driver over lifting arms.



Common problems and solutions

Incident

Causes and solutions

(1) the engine does not run during lifting.

- Faulty electrical connection or line connection Check connection
- The main circuit of AC-engine is not live. Check the AC-engine. If the voltage of the connection is abnormal, please change the plug.

(2) the engine runs, but lift does not lift.

- The engine runs counter clockwise. Check the power lines.
- Not enough hydraulic fluid in aggregate. Refill oil.

(3) abnormal sound when lifting or lowering.

- Not enough lubrication. Lubricate all connections and moveable parts (including piston rod).
- Lift is askew. Re-adjust using ...

- The catch lever does not disconnect from ... Lift it up a bit, then lower it.
- The downward solenoid is turned on, but does not work. Check the plug for any faults as well as nuts on the end for tightness.
- The hydraulic oil is too viscous or frozen (in winter). Replace hydraulic oil in accordance with manual.



Common problems and solutions

1. Routine maintenance
 - Before start-up of lift Squirt some engine oil on moveable parts in the lift, lift and lower the lift 2 times without load. Listen to the lift. If sound is abnormal check the entire lift and if possible consult a professional for assistance.
 - Check oil tank Level must not be below 10 mm. under the charging funnel. When oil level is fine, fill hydraulic oil.
 - When finished working, lower lift to floor level and turn lift off by cutting power Clean work area and remove any dirt from lift.
 - Re-fill oil in accordance with instructions.

2. Periodic maintenance
 - Clean inside of both columns using a petroleum product, especially the rails. Lubricate.
 - Clean all fittings/hoses and check for cracks or leaks. If you find any anomalies immediately replace hose.
 - Conventional hydraulic oil must be replaced yearly (after 3 months at first filling). NB: when changing oil, lift must be lowered to floor level.
 - The hydraulic circuit must not be exposed to pressure after cleaning. Re-fill with hydraulic oil. The oil should be disposed of in accordance with local environmental rules.
 - All connections must be tightened.
 - Open the fuse box and check the electrical connections as well as earthing. Contact an electrician if anything is faulty.



Common problems and solutions

Fill lubricating oil in accordance with the list over parts needing lubrication.

Parts needing lubrication

Nr.	Name of part	Lubrication interval	Lubrication points
1	Column surface	Every 3 months	Lithium-based grease
2	Wheels and shafts	Every 3 months	Lithium-based grease
3	The ...	Every 3 months	Lithium-based grease

Wear parts

Nr.	Name of part	Replaced after
1.1	Hydraulic oil	3-6 months after first fill, every 12 months after that
2	Cylinder seal	Leak in the cylinder
3	Rubber hose	Replace every 2 years, or if damaged
4	Oil sleeve	If the crack is > 1mm., or every 3 or 4 year.
5	Cotter pins, bolt and other standard parts	If damaged or loose

Weekly maintenance

1. Lubricate all moving parts with a white lithium-based grease.
2. Check all connections, bolts and pins, and make sure everything is tight.

Monthly maintenance

1. Check all moving parts and check for wear and tear.
2. Check condition of lifting pads and adapters (if any).
3. Check condition of arm locks.
4. Replace all damaged parts before using lift.



Common problems and solutions

Disassembling

1. Press handle to lower lifting arms.
2. Make sure lifting arms are at lowest possible level.
3. Unplug power to avoid lift moving while disassembling.
4. Unplug cylinder hoses from cylinder. The hoses may be rolled together and stored in the power unit. Before removing cylinder hoses ease hydraulic pressure by pressing "DOWN" button until lift is at lowest level, or any load rests on safety pins. Make sure power is unplugged before performing any maintenance or assembly of any components. Do not plug in power until all maintenance/assembly is finished.
5. Clean any possible waste oil.
6. Insert locking pins in top hole.
7. Remove lifting arms.
8. Loosen anchor bolts. Do not move columns until ready to be removed.
9. Move columns to suitable area for storage. Secure columns using straps.

External size

