



SPOA3T-5/5AP/5AF

S & M & C



(700 Series)

Two Post Surface Mounted Lifts



Installer: Please return this booklet to literature package and give to lift owner/
operator.

**EG-Konformitätserklärung
EC Declaration of Conformity**

im Sinne der EG-Richtlinie 2006/42/EG über Maschinen (Anhang II A)
according to EC directive 2006/42/EC on machinery (Annex II A)

Name und Anschrift des Herstellers
Name and address of the manufacturer:

BlitzRotary GmbH
Hüfinger Str.55
78199 Bräunlingen, Germany

Diese Erklärung bezieht sich nur auf die Maschine in dem Zustand, in dem sie in Verkehr gebracht wurde; vom Endnutzer nachträglich angebrachte Teile und/oder nachträglich vorgenommene Eingriffe bleiben unberücksichtigt. Die Erklärung verliert ihre Gültigkeit, wenn das Produkt ohne Zustimmung umgebaut oder verändert wird.
This declaration relates exclusively to the machinery in the state in which it was placed on the market, and excludes components which are added and/or operations carried out subsequently by the final user. The declaration is no more valid, if the product is modified without agreement.

Name und Anschrift seines in der EU
niedergelassenen Bevollmächtigten
his authorised representative in EU

BlitzRotary GmbH
Hüfinger Str.55
78199 Bräunlingen, Germany

Hiermit erklären wir, dass die nachstehend beschriebene Maschine
Herewith we declare, that the machinery described below

Produktbezeichnung / product denomination:

Serien- / Typenbezeichnung / model / type:

2-Säulen-Hebebühne / 2-post vehicle lift

SPOA3TS-5AP

Tragfähigkeit 3500 kg / capacity 3500 kg

Basistyp in verschiedenen Ausführungen / base type in different versions;

gekennzeichnet mit /marked with

E, M, S, C, TT, EH0, EH1, EH2, MB, WM, MC, RD, ST,
B, BL, BL2, 7015, SC

Maschinen-/Seriennummer / machinery / serial number:

Baujahr / Year of manufacture: 20.....

allen einschlägigen Bestimmungen der Maschinenrichtlinie 2006/42/EG entspricht.
is complying with all essential requirements of the Machinery Directive 2006/42/EC.

Angewandte harmonisierte Normen / Harmonised Standards used

EN 1493: 2010	Fahrzeug-Hebebühnen / Vehicle lifts
EN ISO 12100:2010	Sicherheit von Maschinen - Grundbegriffe / Safety of Machinery- Basic concepts
EN 60204-1:2006/AC: 2010	Elektrische Ausrüstung von Maschinen / Electrical equipment of machines

Alle Hebebühnen des Typs von oben genanntem Hersteller gefertigt nach dem geprüften Baumauster / All lifts of the same model manufactured by the named company in accordance with the tested type of lift.

Für Anhang IV der Maschinenrichtlinie / For MD Annex IV machinery:

Ein Muster dieser Maschine wurde der benannten Stelle Nr. 1105 vorgestellt. / A sample of this machinery has been presented to Notified Body number 1105.

CCQS UK Ltd., Level 7, Westgate House, Westgate Rd., London W5 1YY UK.

Die EG-Baumusterprüfung wurde am 16.01.2017 mit der Bescheinigung Nr. CE-C-0116-17-07-02-5A ausgestellt. / Who have issued an EC type-examination certificate Number CE-C-0116-17-07-02-5A dated 2017.01.16.

Die Ausrüstung, für die diese Erklärung vorliegt, entspricht dem Muster, auf das sich diese Bescheinigung bezieht, so dass die Bescheinigung weiterhin gültig ist. / The equipment in respect of which this declaration is made conforms to the example to which that certificate relates, so that the certificate remains valid.

Bevollmächtigter für die Zusammenstellung der relevanten technischen Unterlagen:/The person authorised to compile the relevant technical documentation: Herr Maier; Hüfinger Str. 55; 78199 Bräunlingen

Ort / Place: Bräunlingen

Datum / Date: 16.10.2019

Authorized Signature:

Title of signatory:



Doris Wochner-McVey
Geschäftsführer / Managing Director

EG-Konformitätserklärung
EC Declaration of Conformity

im Sinne der EG-Richtlinie 2006/42/EG über Maschinen (Anhang II A)
according to EC directive 2006/42/EC on machinery (Annex II A)

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2-Säulen-Hebebühne / 2-post vehicle lift

SPOA3TS-5

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Basistyp in verschiedenen Ausführungen / base type in different versions;

gekennzeichnet mit /marked with

E, M, S, C, TT, EH0, EH1, EH2, MB, WM, MC, RD, ST,
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ANNEX

- SPOA3TS/C/M
Hydraulic circuit diagram, Electric wiring diagram, Parts break down, spare parts list.
- Protocol of installation
- Completion certificate
- Maintenance schedule: Instructions for conducting visual inspections and function testing
- Inspection log
- Master sheet for vehicle lift
- Test report

1. Introduction

1.1 About this operating manual

The post lift conforms to state of the art technology and complies with the applicable occupational health & safety and accident prevention regulations. Notwithstanding, improper use or use other than that which is intended may result in a risk of fatal or physical injury to the user or third parties and may also result in damage to property.

It is therefore imperative that the relevant people *carefully read and understand this operating manual. Read the instructions carefully to prevent incorrect use, potential hazards and damage. The post lift should always be operated according to regulations.*

Please note the following:

- The operating manual must be kept near the lift and be easily accessible for all users.
- This operating manual provides information on the two post lifts SPOA3TS/C/M-5, SPOA3TS/C/M-5AP, SPOA3TS/C/M-5AF variant with column extension EH0, EH1, EH2.
- **Make sure that you have read and understood Chapter 2, Safety and also the operating instructions supplied with the machine.**
- We assume no liability for damage and operational breakdowns which may occur as a result of non-compliance with the instructions contained within this operating manual.
- Installation and commissioning of the lifts is described in detail in Chapters 11 to 12. Installation may only be carried out by authorized installation specialists and qualified electricians.
- If you should run into difficulties please contact a specialist, our customer service or spare parts department or one of our representatives.
- Illustrations may differ from the supplied version of the machine. Functions or processes to be carried out remain the same.

Disclaimer:

We assume no responsibility for printing errors, mistakes and technical changes.

The brands and trademarks mentioned in this document refer to their owners or the products thereof.

1.2 Warning and information symbols

1.2.1 Symbols in this documentation

Warnings are identified by the following symbols, depending on the hazard classification.

Be especially aware of safety and hazards when working in situations identified by warning symbols.

Comply with the occupational health & safety and accident prevention regulations which are applicable in your country.



DANGER

Risk of death or injury

Direct threat to life and health of people. Non-compliance may lead to death or serious injury.



WARNING

Risk of death or injury

Potential risk to life and health of people. Non-compliance may lead to serious or critical injury.



CAUTION

Risk of injury

Potentially hazardous situation. Non-compliance may lead to minor or moderate injury.

ATTENTION

Damage to property

Potentially hazardous situation. Non-compliance may lead to damage to property.

Other Symbols



INFO symbol

Useful information and Tips.



Bullet point:

For lists with key information on the respective subject.



Handling instructions:

Carry out the detailed steps in sequence.



Handling instructions, warning

Carry out the detailed steps in sequence.

1.2.2 On the product



Observe all warning notices on products and ensure they remain legible.

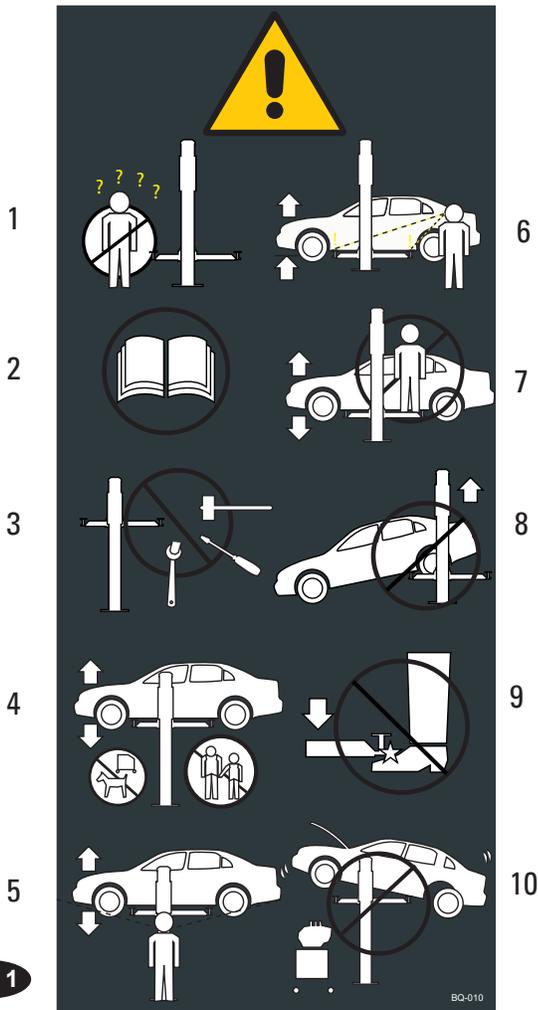


Fig. 1

Warning sticker on control column

1. Only authorized person operate the post lift.
2. Read original operating instructions.
3. Never place any objects on the lifting platform.
4. Keep people and animals away from lifting platform.
5. Watch vehicle when raising and lowering.
6. Check the pick up position after short raising.
7. Riding prohibited.
8. One-side, one end, one corner raising of vehicle prohibited.
9. Risk of crushing feet on lowering.
10. Throwing objects under the lift when lowering.

Operating instructions in brief

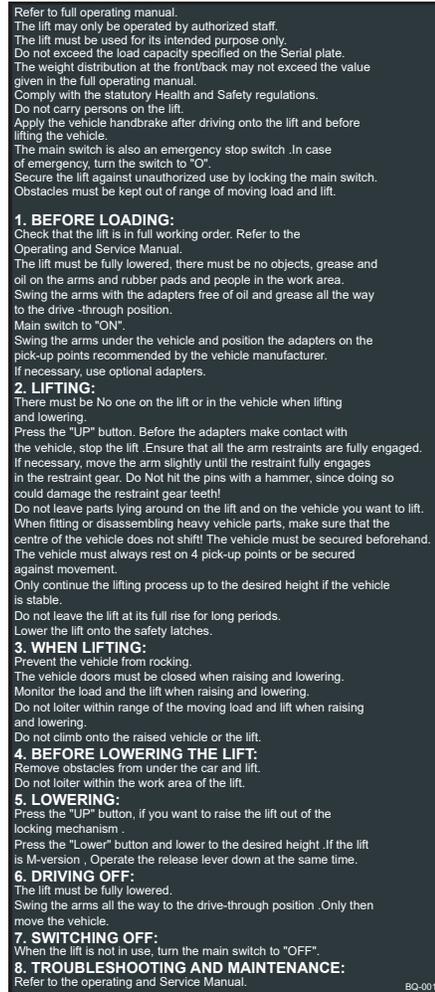


Fig. 2

These instructions contain information on operation of the lifting platform.

1.3 Intended use

The post lift may only be used:

- In indoor areas for lifting unoccupied motor vehicles.
- For lifting vehicles with a max. load capacity of 3500kg, according to the lift variant.
- If the weight is distributed correctly. By default, the load should be centered in the direction of motion. If the main load (e.g. engine) is however at the front or the back, the following applies:
at front max. 3/5,
at back 2/5 of load or vice versa.
- In accordance with the technical data in Chapter 7, in technically sound condition.

1.4 Incorrect use, incorrect behavior

Incorrect behavior presents a residual risk to the life and health of the people working in the lift area.

The manufacturer assumes no liability for damage resulting from use other than the intended purpose and from incorrect behavior.

The following is prohibited:

- Climbing onto or riding on the post lift or the load.
- Lifting when there are people in the vehicle.
- Lifting/lowering when people or animals are in the danger zone, in particular below the lift.
- Jerky lifting or lowering. Do not cause the lift to vibrate.
- Throwing objects onto or under the lift.
- Lifting a load on only one arm of the lift.
- Loitering or working in the danger zone when it is not lowered into the lock position (latch bars).
- Activating the machine when safety equipment or mechanisms are not in place (Example: locking latches are not fitted).

- Lifting loads not listed in Chapter 1.3.
- Lifting vehicles containing hazardous goods.
- Operating outdoors or in workshops at risk from fire or explosion.
- Washing cars on the post lift.
- Modifications of any kind.

1.5 Internal accident, health and safety, and environmental information

This operating manual does not include the operating instructions which need to be drafted by the user of the post lift. The internal operating instructions regulate actions within the company for the prevention of accidents, and risks to health & safety and the environment.

These also include actions in the case of an emergency, first aid measures etc.

2. Safety

2.1 Operators

The post lift may only be operated without supervision by persons who:

- Are 18 years old and above.
- Are familiar with the basic regulations on health & safety and accident prevention.
- Have been trained to handle and operate the post lift.
- Have proven their ability to do so to the company.
- Have been expressly appointed in writing to operate the lift.
- Have read and understood the operating manual.

2.2 Basic safety requirements

- Only operate the post lift after a specialist has certified in the inspection log that it has been correctly set up.
- Always follow the operating instructions (labels on the post lift).
- If several people work on the post lift, a supervisor must be appointed by the company.
- The post lift may only be operated in technically sound condition with regard to safety and with all safety mechanisms in place.
- The control box or control unit may only be opened by a qualified electrician.
- Safety inspections must be conducted regularly, at least once annually.
- If signs of a defect appear, immediately shut down the post lift, inform a supervisor and contact the customer service if necessary.
- Keep the work area clean and free of oil, grease, and contamination.
- Before standing or working in the danger zone underneath the lift, lower it into the lock position (latch bars) using the "Down" button.
- There must be no obstacles in the path of the main lift.
- Always monitor the load carefully when lifting and lowering.
- Always stop the vehicles safely, centered on the columns. Secure the vehicle against shaking with pick up points.
- Take steps against traffic in the area of the post lift. Do not park other vehicles in the danger zone.
- Do not load lifts beyond the permitted capacity, comply with the permitted axle loads and load distribution in accordance with Chapter 2.3.

- When disassembling or fitting heavy vehicle parts, watch out for dangerous shifts in the weight balance, in particular when the vehicle is supported by extension arm. Secure the vehicle beforehand.
- Always fully lower, switch off and secure main lifts to prevent unauthorized use after completion of work (turn main switch to "OFF" and lock).
- Follow the maintenance and service schedule, record performance of maintenance and servicing (Chapter 9).
- Installation, maintenance and servicing may only be carried out by authorized specialists (maintenance contractors) (Chapter 9).
- Only qualified electricians may work on the electrics.
- Only trained people with knowledge of hydraulics/pneumatics may work on hydraulic or pneumatic equipment.
- Appropriate personal protective equipment must be worn when working in the area of the lift in accordance with the applicable health & safety and accident prevention regulations. For example, protective gloves, protective goggles, safety shoes.
- Only original spare parts from the manufacturer may be used.
- The lift must be inspected by a specialist after repairing any supporting parts.

2.3 Permitted axle loads and weight distribution

Before lifting the vehicle, you must ensure that the weight distribution is correct.

When the weight distribution is correct (default position in direction of motion) the main load is located at the front (e. g. engine).



WARNING

Risk of injury through toppling of the vehicle when incorrectly loaded.

- ➔ Comply with the permitted load capacity as in Fig. 3 and 4.
- ➔ Comply with the permitted weight distribution as in Fig. 3 and 4.

Figure 3&4:

- Main lift 3500kg

Permitted weight distribution

- Main lift
 - front max. 3/5:
F1 = max. 2100kg
 - back max. 2/5:
F2 = max. 1400 kg

Minimum distance between two adapters

- Not less than 1000 mm
- If the distance is less, the load capacity of the lift will be reduced



The weight distribution must match the guidelines specified in this chapter. We therefore recommend distributing the weight as centrally as possible in relation to the axis of the posts.

2.4 Ban on unauthorized modifications or alterations

- Unauthorized modifications and alterations to the post lift are not permitted for safety reasons.
- The operating permit shall also be deemed null and void.
- The Declaration of Conformity also becomes null and void.

2.5 Experts, competent persons

The post lift must be inspected after commissioning and at regular intervals (after max. one year), as well as after design modifications or repair of supporting parts. **Inspections may be carried out by the following people:**

Certified expert

These are people who have specialist knowledge in the field of lifts based on their professional training and experience.

Experts should be able to inspect lifts and make an expert assessment thereof.

TÜV experts, specialist engineers from the manufacturer or self-employed specialist engineers can be used for inspections.

Fig. 3

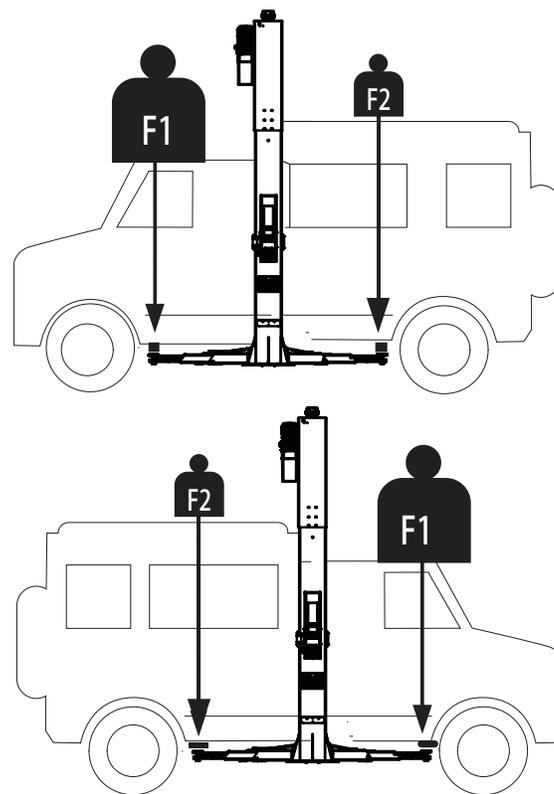
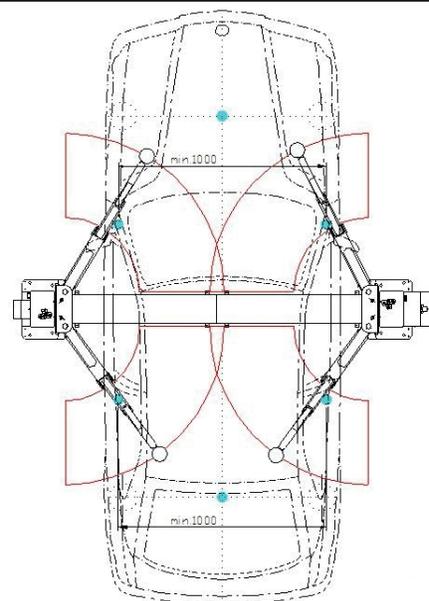


Fig. 4



Competent persons

These are people who have adequate knowledge in the field of lifts based on their professional training and experience.

They are sufficiently familiar with health & safety and accident prevention regulations as well as with lift technology in order to be able to assess the occupational health & safety compliance of lifts.

2.6 Maintenance contractors, installation staff

Maintenance, servicing and installation work may only be done by companies or specialists authorized by the manufacturer.

These people trained in the field of lifts are competent persons, who are trained for maintenance as well as repair work.

A competent person is a person who has adequate knowledge based on his professional training and experience and is also familiar with key regulations so that he:

- Can assess the work assigned to him,
- Can recognize potential risks,
- Can take actions required to eliminate the risk,
- And has the required knowledge of repair and fitment.

The specialist knowledge of a competent person must enable him to be in a position to

- Read and fully understand circuit diagrams,
- Fully understand the context with particular regard to any installed safety equipment.
- Possess knowledge of the function and design of system components.

Simple faults on the post lift may be rectified by operating staff.

In the event of a more serious fault, contact an authorized maintenance contractor.

2.7 Safety inspections by competent persons

Safety inspections must be carried out to guarantee the safety of lifts.

Safety inspections should be carried out in the following cases:

- Before initial operation, after initial installation. Use the form "Initial safety inspection before installation".
- After initial operation at regular intervals, but at least once a year. Use the form "Regular Safety Inspection".
- After any design modification to parts of the lift. Use the form "Unscheduled Safety Inspection".



The initial safety inspection as well as the safety inspections must be carried out by a **competent person**. We recommend that you also perform maintenance in the course of the inspection.



Unscheduled safety inspections and special maintenance work are required in the event of design modifications to the lift (fitting additional parts). The safety inspection must be carried out by a **competent person**.



Use the form supplied in the Annex containing lists for carrying out safety inspections. Please use the relevant form and staple it to the manual after completion.

2.8 Obligations of the plant operator

Operation of lifting platforms

In Germany, the use of lifting platforms is governed by the mandatory "Employers' liability insurance association regulations on health and work safety as defined in DGUV-100-500 (before BGR 500) Section 2.10". In all other countries, the applicable national regulations, laws and directives must be observed.

Checking of lifting platforms

Checks are to be based on the following directives and regulations:

- Basic principles for testing lifting platforms (DGUV-308-002 before BGG 945)
- The basic health and safety requirements stipulated in the directive 2006/42/EC
- Harmonized European standards
- The generally acknowledged rules of engineering
- The directive on the use of equipment 89/655/EEC and changes with DIRECTIVE 95/63/EC.
- The applicable accident prevention regulations

The checks are to be organized by the user of the lifting platform. The user is responsible for appointing an expert or qualified person to perform checking. It must be ensured that the person chosen satisfies the requirements of BGG 945 as per Section 3.



The user bears special responsibility if employees of the company are appointed as experts or qualified persons.

Scope of checking

Regular checking essentially involves performing a visual inspection and a functional test. This includes checking the condition of the components and equipment, checking that the safety systems are complete and functioning properly and that the inspection log book is completely filled in.

The scope of exceptional checking depends on the nature and extent of any structural modification or repair work.

Regular checking

After initial commissioning, lifting platforms are to be checked by a **qualified person** at intervals of not longer than one year.

A qualified person is somebody with the training and experience required to possess sufficient knowledge of lifting platforms and who is sufficiently familiar with the pertinent national regulations, accident prevention regulations and generally acknowledged rules of engineering (e.g. BG rules, DIN Standards, VDE provisions, the technical regulations of other European Union member states or other parties to the agreement in the European economic area) to be able to assess the safe operating condition of lifting platforms.

Exceptional checking

Lifting platforms with a lift height of more than 2 meters and lifting platforms intended for use with people standing under the loadbearing elements or the load are to be checked by an expert prior to re-use following structural modifications and major repairs to loadbearing components.

An expert is somebody with the training and experience required to possess specialist knowledge of lifting platforms and who is sufficiently familiar with the pertinent national work safety regulations, accident prevention regulations and generally acknowledged rules of engineering (e.g. BG rules, DIN Standards, VDE provisions, the technical regulations of other European Union member states or other parties to the agreement on the European economic area) to be able to check and give an expert opinion on lifting platforms.

Inspection log

An inspection log is to be kept as a record of the lifting platform checks performed. The inspection log book must contain a report on the test performed prior to initial commissioning and the regular and exceptional checks, as well as the applicable certification on (EC) type testing and the EC declaration of conformity.

- The report must include:
- The date and scope of testing with details of any test items not yet performed
- The results of the test with details of any shortcomings established
- An assessment of whether there are any impediments to start-up or further use
- The details of any follow-up testing required
- The name, address and signature of the person carrying out the checks



The acknowledgement and rectification of any shortcomings found must be confirmed by the plant operator in the report.

3. The 2-Post Lift

3.1 Overview of parts

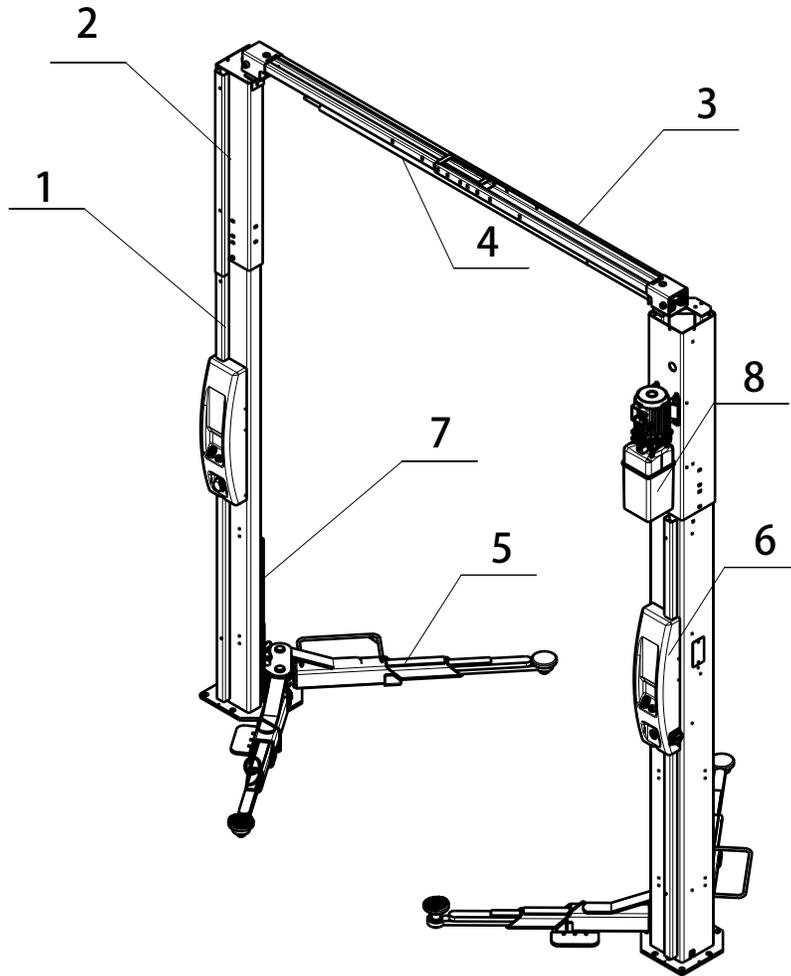
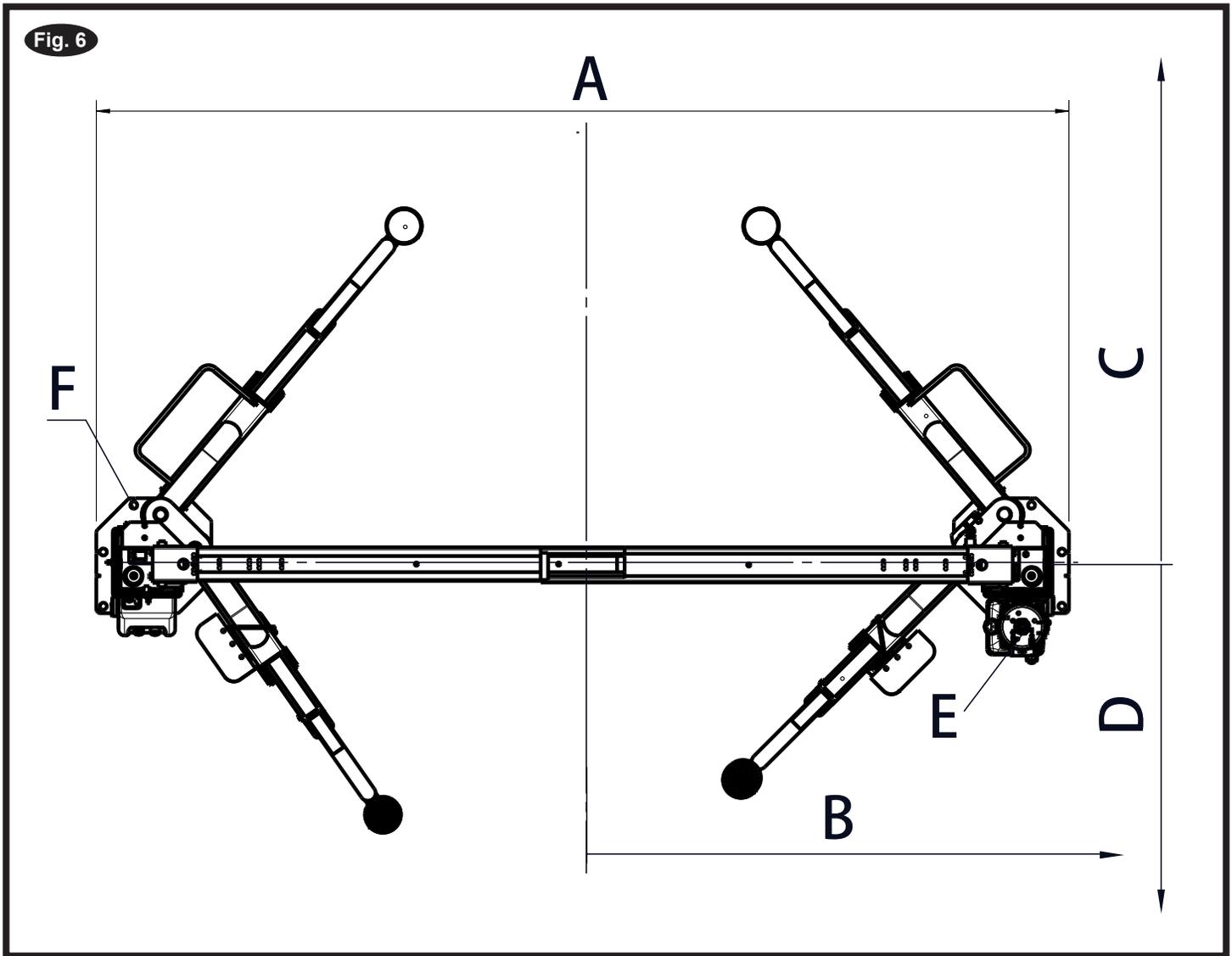


Fig. 5

Figure 5: Example of a 2-post lift with extension arm

1. Standard lift column
2. Extension column
3. Cross beam
4. Up limit bar
5. Lifting arm
6. Control box
7. Lifting carriage
8. Power unit



3.2 Work area, danger zones

Figure 6: Work area, danger zones.



WARNING

Risk of injury in the danger zone of the post lift in the event of incorrect behavior.

- ➔ Only remain in the danger area if you have been trained and briefed and assigned to the area.
- ➔ Keep the work area clean.
- ➔ Keep escape routes clear so that you can leave the danger zone quickly and safely in the event of an emergency.

Figs. 6 Detail	
A	3301mm/3121mm detail see chapter 7, technical data
B	1800mm Minimum to nearest obstruction or bay.
C	4572mm Minimum to nearest obstruction.
D	2743mm Minimum to nearest obstruction.
E	Power unit
F	(8) 20mm Anchors in regarding of the requirements

i Lift Location: Use architects plan when available to locate lift. Fig. 6 shows dimensions of a typical bay layout.

3.3 Safety mechanisms

See figures 7 ... 12



Safety mechanisms protect both people and lift. They must not be disabled!

WARNING

- Post lift danger zones are protected by safety mechanisms.
- Function and condition of the safety mechanisms must be checked daily!
- If safety mechanisms are triggered, the post lift stops immediately.
- If the post lift is moved or taken out of use for long periods, check the safety mechanisms before re-commissioning and repair if necessary.
- If safety mechanisms are defective, the post lift must be taken out of use immediately and the main switch locked with a padlock. Any further use must be prevented until the machine is fully repaired!

1. Lockable main switch

"ON" setting: Post lift ready for use.

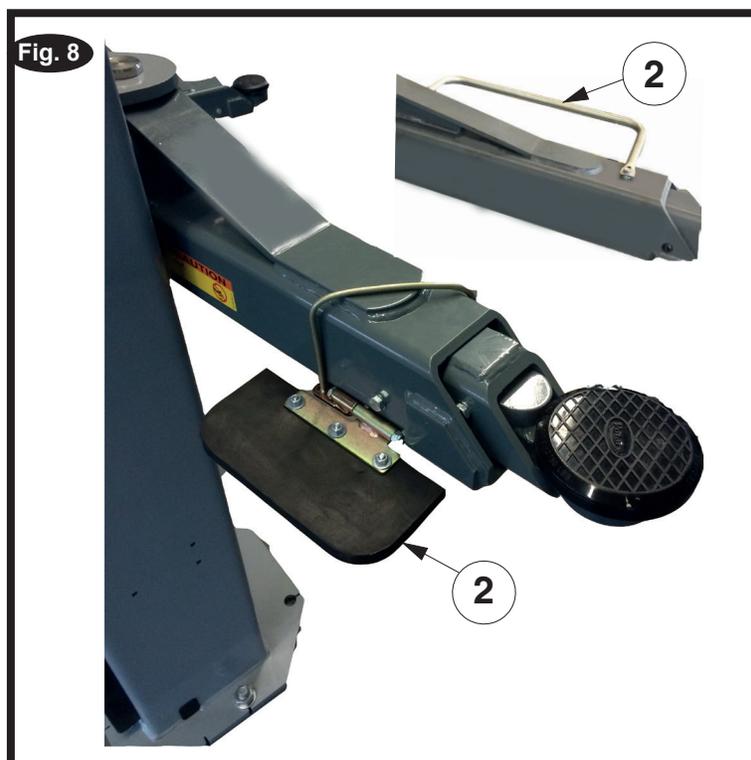
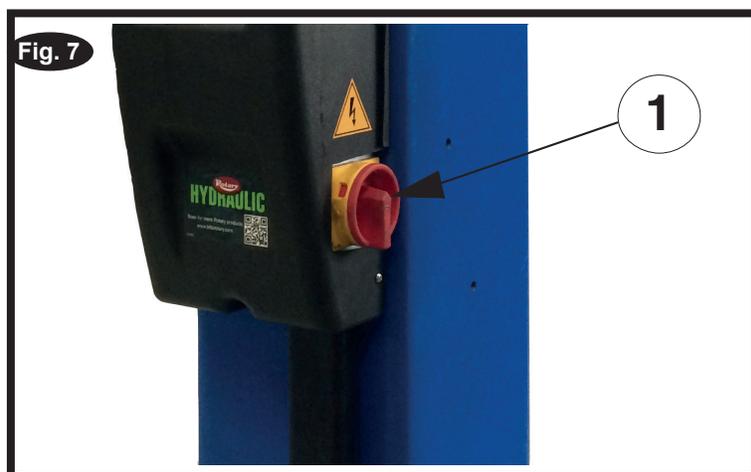
"OFF" setting: Post lift out of use. The mains voltage is still present inside the control box. Switching off (OFF) immediately stops any movement of the post lift (= emergency stop).

2. Foot protection arm guard on each lifting arm

When lowering the lift, the arm guard keep the foot away from the arm (foot protection, otherwise a crushing or shearing exists).

Always keep the foot and any other objects away from the lifting arm when lowering the lift.

Different model with different arms, so only drive direction with arm guard as standard.



3. Up limit bar on the crossbeam

An limit bar prevents the vehicle from being lifted too high. This feature effectively protects taller vehicles from being damaged. (→ 3)

4. Pressure relief valve

The pressure relief valve (→ 4) is factory set to ca. 175-190 bar.

Prevents the lift with the limit of overload.

5. Lowering valve (emergency release)

Pos.5 Lowering valve for emergency release of the lift ,push the spool (→ 6). before this step ,please double check the lift without any objects below. detail steps see section in operation.

6. Locking latch on each lift column

The locking mechanism consists of a latch dog (7.2) and windows on the carriage (7.1).

If a fault occurs in the hydraulic system, the brake mechanism is activated. The windows on the carriage is pressed against the latch bar.

7. Arm gear and locking block on each lift

The locking mechanism consists of a arm gear (8.2) and locking block (8.1).

Prevents the lifting arm rotating when the lift raising and lowering.

8. Flow control valve in each cylinder

The protection for a high lowering speed for broken hose.

9. Dead man control of the push buttons

If you leave the button ,the control stops immediately the movement.

10. Synchronization cable

The both wire ropes synchronise the both carriages in the movement.

Fig. 9

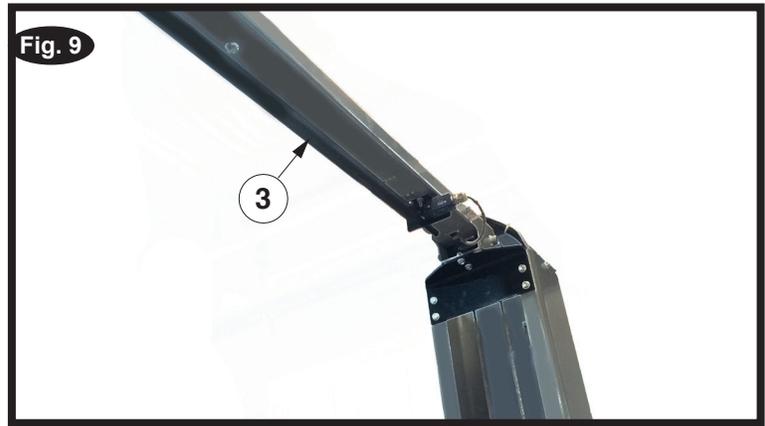


Fig. 10

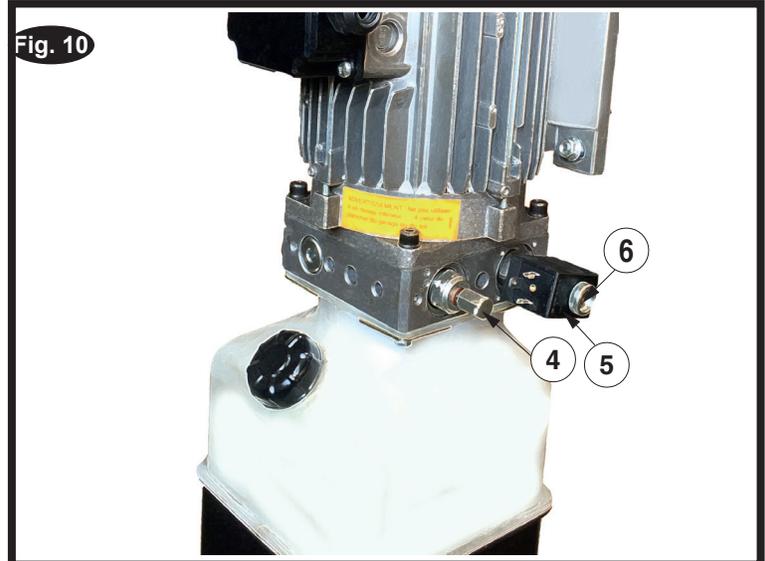


Fig. 11

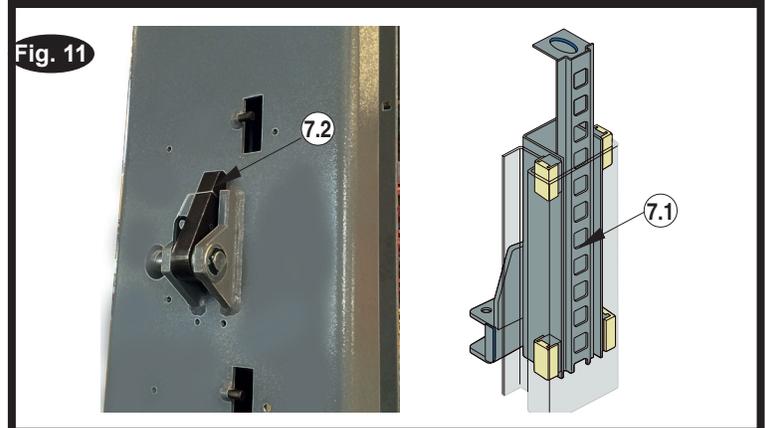
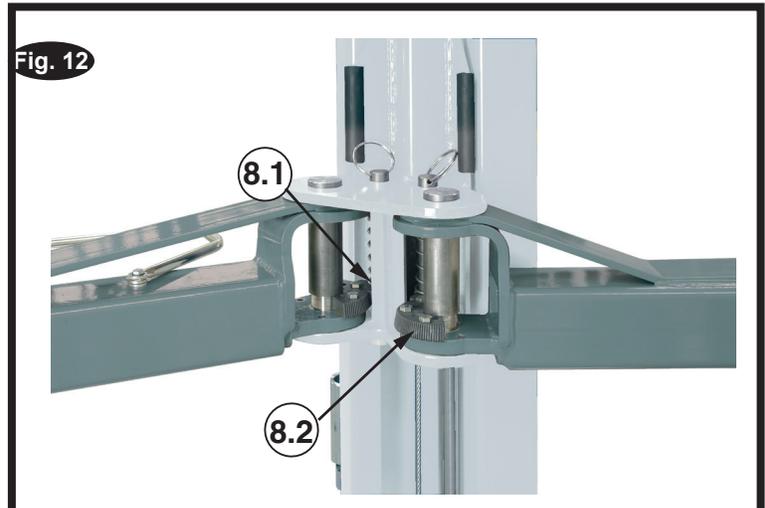


Fig. 12



3.4 Control unit



All movement of the lift stops immediately when you release a pressed button.

- 1. Lockable main switch(For all Version)**
"ON" setting: Post lift ready for use.
"OFF" setting: Post lift out of use. The mains voltage is still present inside the control box.
Switching off (OFF) immediately stops any movement of the post lift (= emergency stop).
- 2. UP button (For all Version)**
Functions only if the button is pressed,the lift raise.
- 3. Down button (For all Version)**
Functions only if the button is pressed,the lift lower.
For M version,it need work together with the release handle,the lift lower,and if only down button pressed ,the lift locked on the latch dog.
- 4. Down button (For S&C Version)**
Functions only if the button is pressed,the lift locked on the latch dog.keep button pressed until both carriages lock securely into the latch dog.
- 5. Safety latch release handle (For M Version)**
Functions only if the handle fully down and hold work together with down button pressed ,the lift lower.



More detail in next operation section.



Fig. 13



Fig. 14

4. Operation



To avoid personal injury and/or property damage, permit only trained personnel to operate lift. After reviewing these instructions, get familiar with lift controls by running the lift through a few cycles before loading vehicle on lift.



Always lift the vehicle using all four adapters. NEVER raise just one end, one corner, or one side of vehicle.

DANGER Assure vehicle frame can support its weight & overhead bar or sensor will contact highest point on the vehicle.



Risk of fatal injury in the event of malfunction or damaged parts.

DANGER



Shut down post lift. To do so, set the main switch to "OFF" and lock it with a padlock.



Consult a competent person.



Risk of injury when lowering the load onto objects below the lift or the vehicle. Vehicle may topple over.

DANGER



Before lowering, you must remove all objects from underneath the lift. This applies in particular to chassis stands and auxiliary jacks.



Always monitor the lift and vehicle carefully when lifting or lowering.



Risk of fatal injury if load is incorrectly distributed on both lifting tables. Vehicle may topple over.

DANGER



Check that axle loads and weight distribution are correct in accordance with Chapter 1.3.



Secure the load with adequately sized chassis stands.



When working with the post lift, make sure you follow the instructions listed in Chapter 2. **Safety.**

4.1 Before Loading:

- Inspect Lift - See "Operator Inspection And Maintenance". Never operate if lift malfunctions or has broken or damaged parts.
- Lift must be fully lowered and service bay clear of all personnel before the vehicle is positioned onto lift.
- Swing arms out to full drive-thru position.
- Assure area around lift is free of tools, debris, grease, and oil.
- Assure Adapter Pads are free from grease and oil.
- Do Not allow unauthorized persons in shop area while lift is in use.
- Do Not use any part of the lift as a crane or as a support for another lifting mechanism (i.e.: block & tackle, etc.).
- Turn E-Stop switch to "ON" Position, Fig 14. For E series lifts turn both E-Stop switches "ON", Fig 13.

4.2 Loading:

- Do Not allow unauthorized or untrained persons to position vehicle or operate lift.
- Do Not drive over arms.
- Do Not overload lift. See capacity label on lift.
- Use Only adapter extenders provided by the manufacturer. Do Not use wood, concrete blocks, or other improvised extenders.
- Spot vehicle over lift with left front wheel in proper spotting dish position, Fig. 15. Position vehicle according to the center of gravity, not for door opening clearance.
- Check the condition of the pickup points of the vehicle.
- Swing arms under vehicle and position adapters at vehicle manufacturer's recommended lift points, Fig. 15. Adjust adapters to the required height to keep the vehicle level and properly balanced.

- Use optional adapters for under body clearance when required.
- Use adapter extension combination to keep lift as level as possible.

4.3 To Raise Lift:

- **Do Not** permit anyone on lift or inside vehicle when it is being raised or lowered.
- Maintain visual contact with arms, pickup points, & vehicle throughout the motion of the lift while remaining clear of lift.
- For Lifts: Actuate RAISE Switch  on Control Box to raise lift, Fig. 13/14.

Note: Allow 2 seconds between motor starts. Failure to comply may cause motor burnout.

- Stop before making contact with vehicle. Check arm restraint pins for engagement. If required, slightly move arm to allow restraint gear and pawl to mesh. **DO NOT** hammer pin down as this will damage the restraint gear teeth.
- Raise vehicle until tires clear the floor.
- Stop and check adapters for secure contact at vehicle manufacturer's recommended lift points.
- Continue to raise to desired height only if vehicle is stable on lift.
- Lower lift onto safety latches after desired height is reached. (Lift is to be raised high enough for locking latches to engage.)
- For M Series Lifts: Actuate LOWERING Switch  to lower lift onto locking latches.
- For E Series Lifts: Actuate  control panel to lower lift onto locking latches.
- **DO NOT** go under vehicle if all four adapters are not in stable contact at vehicle manufacturer's recommended lift points.
- Repeat complete spotting, loading, and raising procedures if vehicle is unstable.

4.4 While Using Lift:

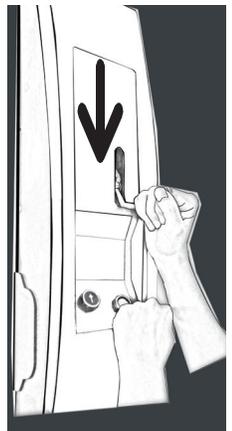
- Avoid excessive rocking of vehicle while on lift.
- Always use safety stands as needed for stability when removing or installing heavy components. (i.e.: engines, transmissions, etc.) Use 4 safety stands.
- Raise safety stands to meet vehicle, do not lower vehicle onto stands.
- Avoid accidental touching of exposed exhaust system on raised vehicles. Watch for air hoses and electrical cords which may be tripped over.
- Wear safety glasses while working under vehicle.

4.5 Before Lowering Lift:

- Remove all tools or other objects from lift area.
- Assure personnel are not in lift area.

4.6 To Lower Lift:

- Remain clear of lift when lowering vehicle. Keep Feet Clear!
- **For M Series Lifts:**
 - Actuate RAISE switch to raise lift off locking latches.
 - Actuate SAFETY LATCH RELEASE handle fully and hold.
 - Actuate LOWERING Switch to lower Fig. 14.



LATCH release handle is deadman-type design. Must be held down to lower lift. Do not override these self-closing lift controls.

• For E, Series Lifts:

- Push  on control panel to raise lift off of locking latches.
- Push  on control panel to lower lift.

4.7 Unloading:

- Remove adapters from under vehicle and swing arms to full drive-thru position before moving vehicle.
- Assure Exit area is clear of objects and personnel before removing vehicle from lift.

4.8 Power Off:

- Turn E-Stop switch to "OFF" position while lift is not in use. If need, lock the switch with a padlock.

5. Problems, causes, actions

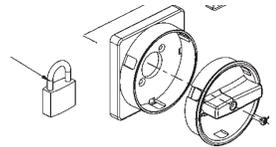
The following lists contain information on potential problems, their causes, and actions to rectify the fault.

i Repairs to safety mechanisms on the lift may **only** be carried out by authorized maintenance contractors (component persons).

During a breakdown (power failure), the lift remains automatically in safe mode. This means that all movement is halted.

i If the lift is out of order for long periods, carry out the following steps:

1. Lower the lift to the lowest position.
2. Switch the main switch to Off and lock with a padlock.
3. Disconnect the power supply.



5.1 Troubleshooting by the operator

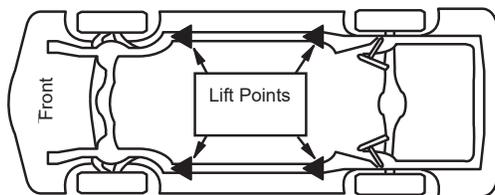
The following troubleshooting measures may only be carried out by an authorized operator.

Before doing so, make sure that power supply is connected, the main switch is in the "ON" position.

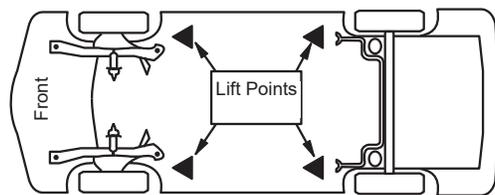
i If the problem is not rectified by the listed measures, you must seek advice from a competent person.

i The troubleshooting measures listed in 5.2 may only be carried out by maintenance contractors.

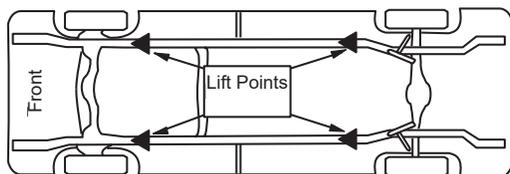
Typical Lift Points



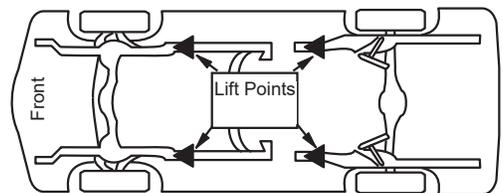
Perimeter Frame



Unitized Body



Pickup Truck



Stub Frame

Fig.15



Most specialty or modified vehicles cannot be raised on a frame engaging lift. Contact vehicle manufacturer for raising or jacking details.

WARNING

Problem	Possible cause	Actions
The motor is not running.	<ul style="list-style-type: none"> • Blown fuse or circuit breaker. • Overhead Sensor Actuated. • Up button not functioning. 	<ol style="list-style-type: none"> 1. Replace blown fuse or reset circuit breaker (customer side). 2. Check sensor or incorrect connection. 3. Check UP button. 4. Contact service representative for further assistance.
Motor runs but will not raise lift.	<ul style="list-style-type: none"> • Low oil level. • Overloading lift. 	<ol style="list-style-type: none"> 1. Check and Fill tank. 2. Check vehicle weight and/or balance vehicle weight on lift.
Lift won't lower.	<ol style="list-style-type: none"> 1. Down button not functioning. 2. Safety Latches won't release. 3. Lowering Valve not functioning. 	Contact service representative for further assistance.
Lift going up unlevel.	See actions	Contact service representative for further assistance.
Anchors will not stay tight.	See actions	Contact service representative for further assistance.
Locking latches do not engage.	See actions	Contact service representative for further assistance.
Slow lifting speed or oil blowing out filler breather cap.	See actions	Contact service representative for further assistance.
Lift slowly settles down.	See actions	Contact service representative for further assistance.

5.2 Troubleshooting by authorized maintenance contractors

Problem	Possible cause	Actions
Motor does not run.	<ol style="list-style-type: none"> 1. Blown fuse/circuit breaker. 2. Incorrect voltage to motor. 3. Bad wiring connections. 4. Up switch burned out. 5. Overhead limit switch burned out. 6. Motor windings burned out. 	<ol style="list-style-type: none"> 1. Replace fuse or reset breaker. 2. Supply correct voltage to motor. 3. Repair and insulate all connections. 4. Replace switch/control buttons. 5. Replace overhead limit switch. 6. Replace motor.

Motor runs but will not raise lift.	<ol style="list-style-type: none"> 1. Overloading lift. 2. Motor running on low voltage. 3. Debris in lowering valve. 4. Pump sucking air. 5. Suction stub off pump. 6. Low oil level. 7. Improper relief valve adjustment. 8. Open lowering valve. 	<ol style="list-style-type: none"> 1. Check vehicle weight and/or balance vehicle weight on lift. 2. Supply correct voltage to motor. 3. Clean lowering valve. 4. Tighten all suction line fittings. 5. Replace suction stub. 6. Fill tank to proper level . 7. Replace relief valve. 8. Repair/replace lowering valve.
Lift slowly settles down.	<ol style="list-style-type: none"> 1. Debris in check valve seat. 2. Debris in lowering valve seat. 3. External oil leaks. 	<ol style="list-style-type: none"> 1. Clean check valve. 2. Clean lowering valve. 3. Repair external leaks.
Slow lifting speed or oil blowing out filler breather cap.	<ol style="list-style-type: none"> 1. Air mixed with oil. 2. Air mixed with oil suction. 3. Oil return tube loose. 	<ol style="list-style-type: none"> 1. Change oil . 2. Tighten all suction line fittings. 3. Reinstall oil return tube.
Lift going up unlevel.	<ol style="list-style-type: none"> 1. Equalizer cables out of adjustment. 2. Lift installed on unlevel floor. 	<ol style="list-style-type: none"> 1. Adjust equalizer cables to correct tension. 2. Shim lift to level columns .
Anchors will not stay tight.	<ol style="list-style-type: none"> 1. Holes drilled oversize. 2. Concrete floor thickness or holding strength not sufficient. 	<ol style="list-style-type: none"> 1. Relocate lift using new bit to drill holes. Reference installation instructions for proper anchoring method and minimum spacing requirements. 2. Break out old concrete and re-pour new pads for lift per lift installation instruction.
Lift stops short of full rise or chatters.	<ol style="list-style-type: none"> 1. Air in hydraulic lines or cylinder. 2. Low oil level. 	<ol style="list-style-type: none"> 1. Start unit, raise lift about 610mm. Open cylinder bleeders approximately 2 turns. Close bleeders when fluid streams. Fully lower lift and refill power unit per Step 2 below. 2. Fully lower lift. Fill tank .
Locking latches do not engage.	<ol style="list-style-type: none"> 1. Latch shafts rusted. (Usually occurs on outside installations or in high humidity areas such as wash bays.) 2. Broken latch spring. 	<ol style="list-style-type: none"> 1. Remove covers, oil latch mechanism. Depress latch release handle several times to allow oil to coat shaft. 2. Change the latch spring.
Locking latches do not disengage (M series).	<ol style="list-style-type: none"> 1. Latch cable is broken. 2. Cable is off sheaves. 3. Latch cable is loose. 	<ol style="list-style-type: none"> 1. Replace cable. 2. Check position of upper sheaves. 3. Replace cable.
Locking latches do not disengage (E series). lift can not lower down.	<ol style="list-style-type: none"> 1. solenoid burning hot. 2. solenoid broken 	<ol style="list-style-type: none"> 1. Waiting 5-10 mintues . 2. Replace solenoid

6. Authorized lowering

Only by authorized competent persons

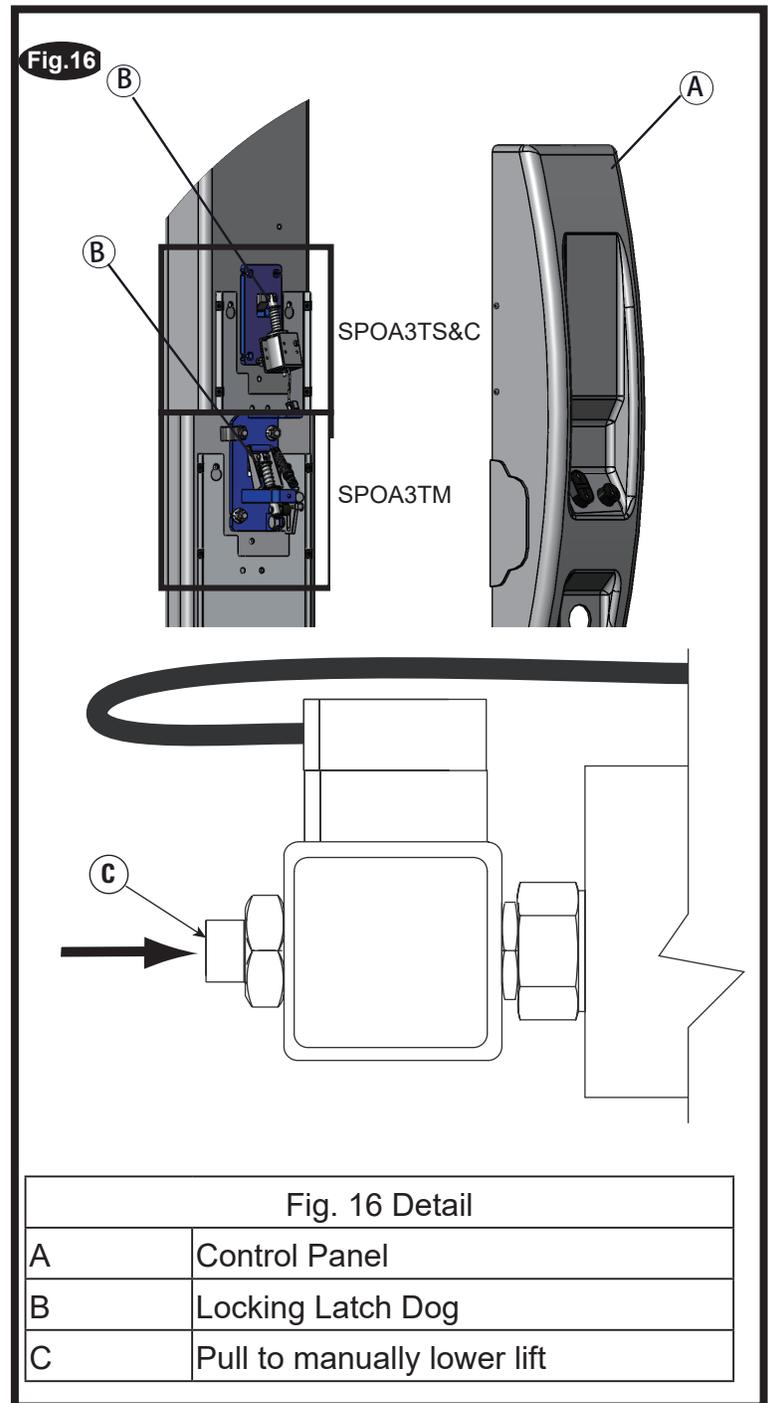


Risk of injury in the case of incorrect behavior. Only authorized competent persons may lower lifts as described below.

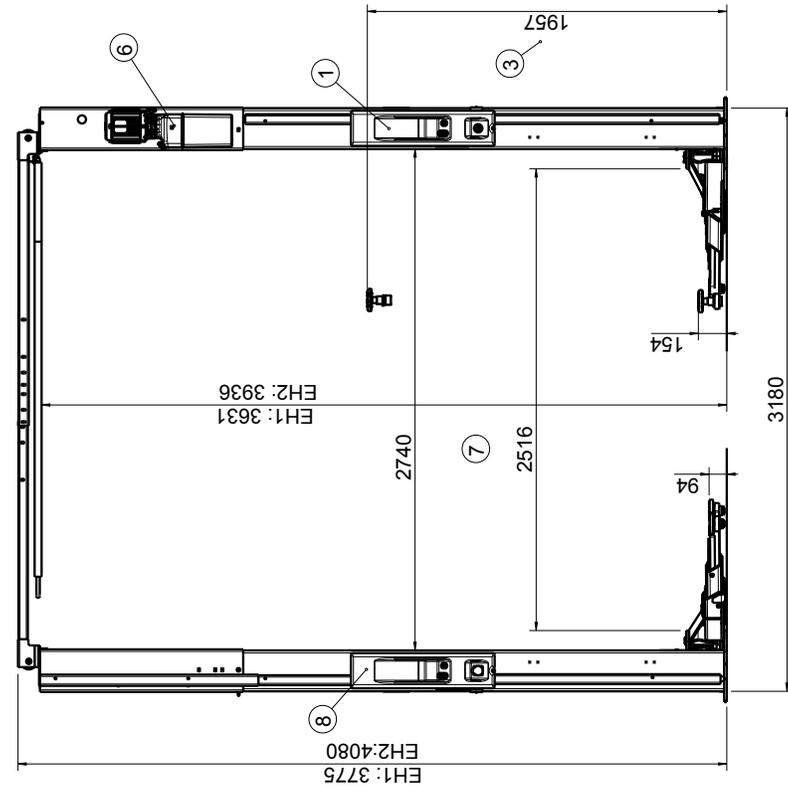
Cordon off the danger zone, prevent access by all persons.
Constantly monitor the danger zones when lifting or lowering.
No-one may remain in the lift traffic zone.
Only qualified electricians may carry out work on the electrics.

If your lift is in a raised position and you lose power it is important to know how to lower the lift manually. Make sure nothing is under the lifting structure of vehicle and all unauthorized personnel are away from the lift area.

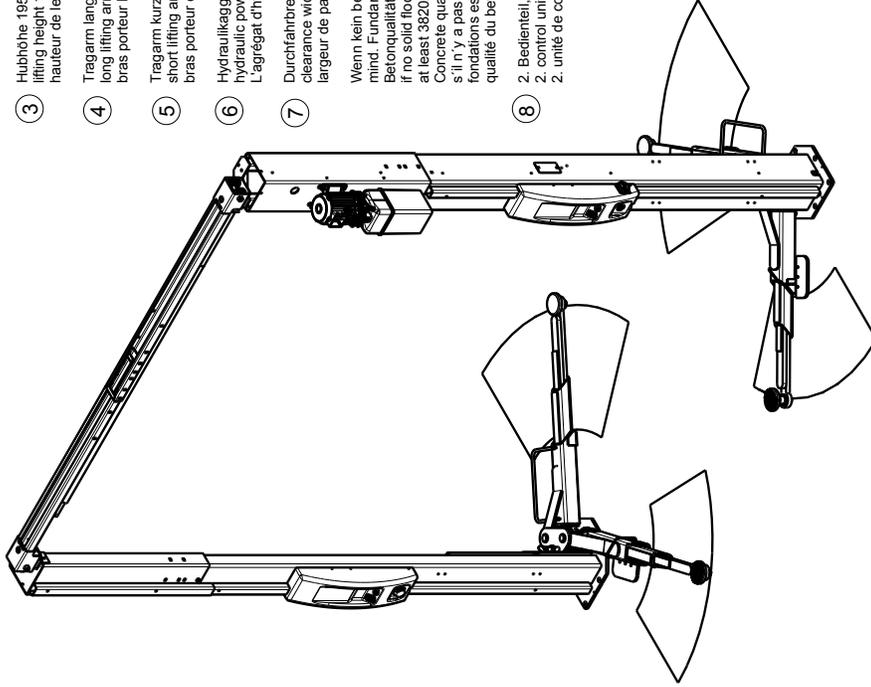
1. Place a hydraulic jack and pipe under the carriage on the master control side. Jack should be rated to lift the capacity of the vehicle.
2. Raise lift off of the locking latch. You should only have to raise lift approximately 1/4" to disengage the lock.
3. Remove control panel and pull locking latch back, Fig. 16. If you can not pull it back with your fingers then you don't have the latch off of the lock. Repeat Step 2 until lock is disengaged.
4. Place a flat piece of steel behind latch dog and back of column to keep it off of the lock.
5. Slowly lower hydraulic jack and pipe out from under the arm carriage.
6. Repeat step 1 thru 5 on slave control panel column.
7. The lift is now being held up by hydraulics at this point.
8. Remove cap from lowering valve on power unit and twist and pull to lower lift, Fig. 16. The lift will lower at a slow speed. Replace cap on lowering valve after the lift has been lowered.
9. If your facility lost power your lift will operate when you regain power.
10. If your facility power was not lost, have a certified electrician check wiring to lift or call an authorized Rotary repair person.



Tragfähigkeit: 3500 kg.
Lifting capacity: 3500 kg.
capacité de levage: 3500 kg.

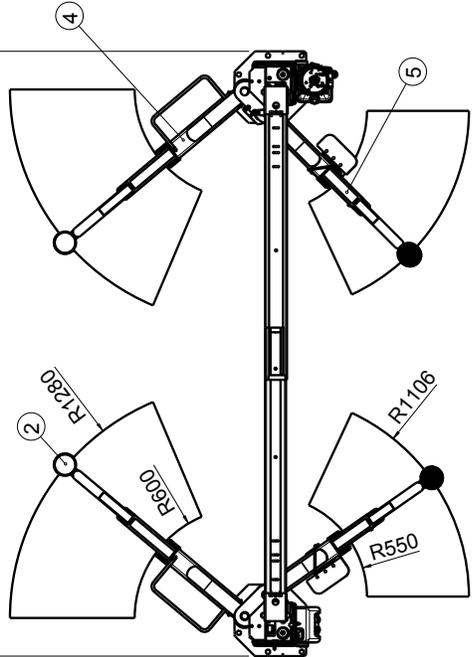


- ① Steuereinheit E- Anschluss 3Ph/400V/50Hz/4kW
Schutzart IP 54, Lufenschutz
control unit electric supply 3Ph/400V/50Hz/4kW
protection IP 54, air plug
 - ② Aufnahmelleiter Durchmesser 125 mm
lifting pad diameter 125 mm
pain support diameter 125 mm
 - ③ Hubhöhe 1957 mm- Hubzeit: ~30 sec
lifting height 1957 mm- lifting time: ~30 sec
hauteur de levage 1957 mm- temps de levage: ~30 sec
 - ④ Tragarm lang 600 - 1280
long lifting arms 600 - 1280
bras porteur long 600 - 1280
 - ⑤ Tragarm kurz 550 - 1106
short lifting arms 550 - 1106
bras porteur court 550 - 1106
 - ⑥ Hydraulikaggregat
hydraulic power unit
L'agrégat d'hydraulique
 - ⑦ Durchfahrbreite 2536 mm
clearance width 2536 mm
largeur de passage 2536 mm
- Wenn kein befestigter Untergrund vorhanden ist,
mind. Fundamentgröße 3820x1650x200
Betonqualität B25(C25/20) mit Bewehrung
if no solid floor is available, the foundation must be
at least 3820x1650x200
Concrete quality B25 (C25/20) with reinforcement in concrete
s'il n'y a pas de fondation fixes la dimension mini. des
fondations est de 3820x1650x200
qualité du béton B25(C25/20) avec béton arme
- ⑧ 2. Bedienteil, Steckdose (Zubehör)
2. control unit, socket (accessories)
2. unité de commande, prise de courant (Accessoires)



Konstruktionsänderungen vorbehalten.
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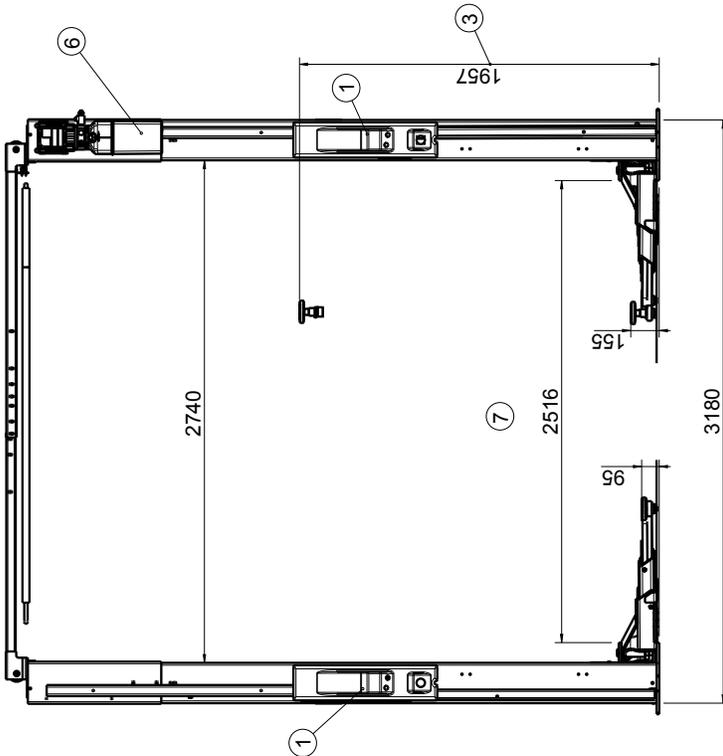
Flächenpressung $p=1.73\text{daN/cm}^2$
surface pressure $p=1.73\text{daN/cm}^2$
pression de surface $p=1.73\text{daN/cm}^2$



TOLERANCE UNLESS OTHERWISE SPECIFIED:		THIRD ANGLE PROJECTION	SPOA3T-AP Specification
FRACTIONAL DIMENSIONS: $\pm 1/32"$ ($\approx 1/2'$)	DO NOT SCALE DRAWING	UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES 1/32" MIN. CORNER BREAK REMOVE ALL BURRS	ROTARY LIFT
DECIMAL DIMENSIONS: $\pm .010"$	UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN MILLIMETERS MIL. READ POSITION: $\pm .1/2'$		A JDOXBYANY
REV/CO NUM	DATE	BY	SCALE: 1:25
a	05.08.16	hp/	REVISED DATE: 13.Jan.14
-	13.Jan.14	hp/	PROJECT NUMBER: SPOA3T-AP
SPOA3T-5 APVAS6814		SHEET: 3 of 4	

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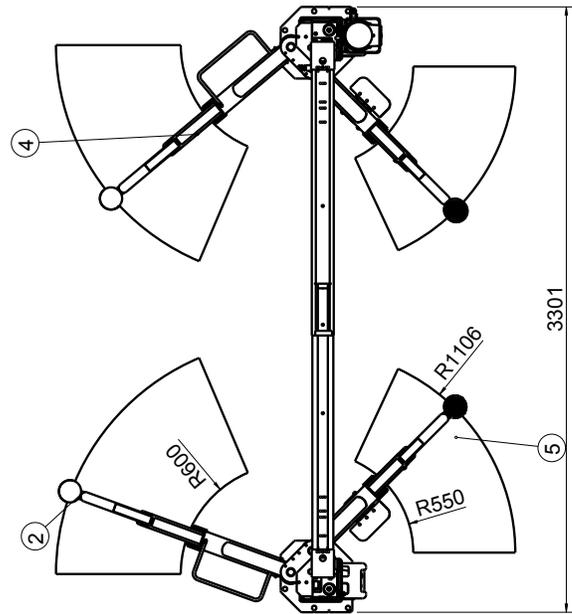
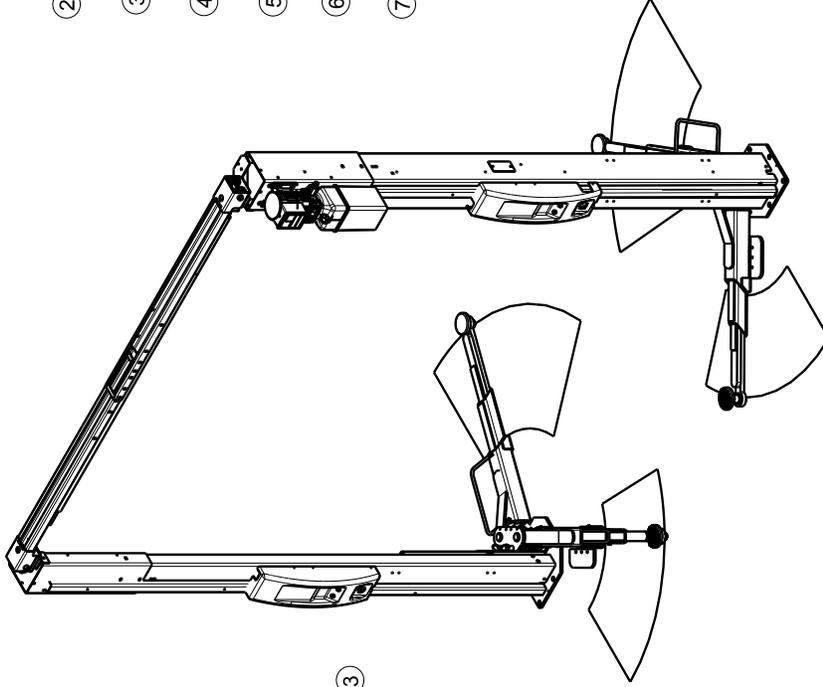
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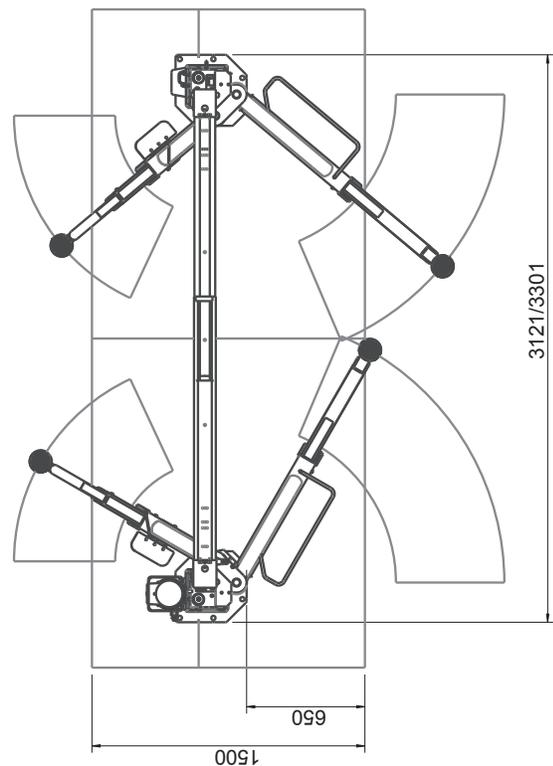
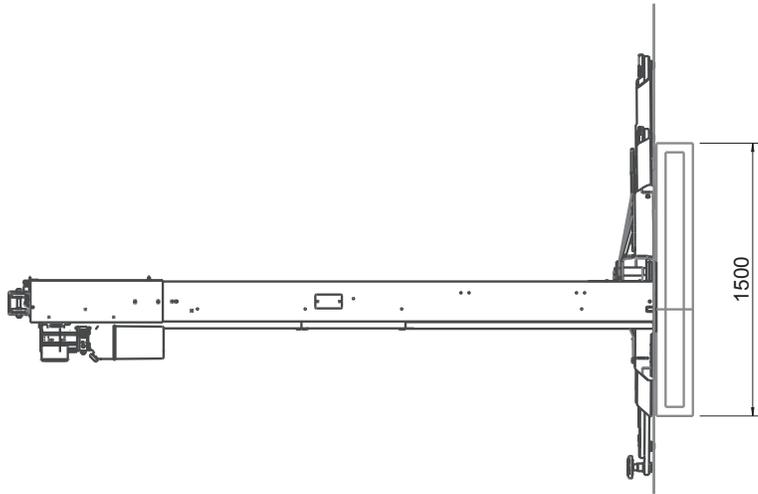
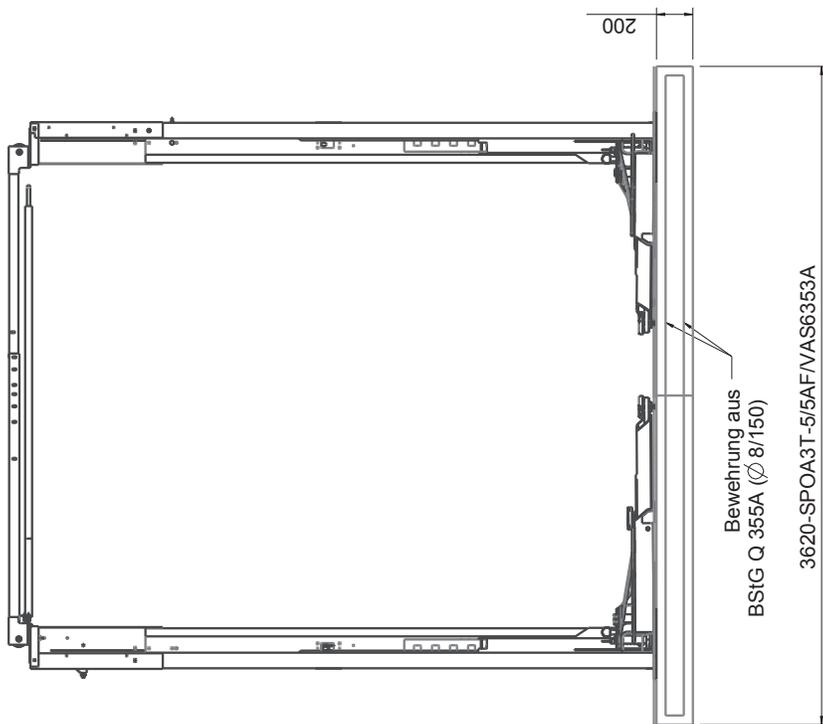
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ANGULAR DIMENSIONS: $\pm 010^\circ$	WELDING DIMENSIONS: SEE LENGTH - 102" & 102" MIN. CORNER BREAK REMOVE ALL BURRS
WELD BEAD POSITION: $\pm 1/2"$	NOTES:

REV/CO NUM	DATE	BY
-	15. Dez. 15	hp/

SPOA3TS-5-MB Specification	
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SHEET	2 of 2
REVISED DATE	15. Dez. 15
ROTARY LIFT	
A. JDOVBYANY	
SPOA3TS-5-MB	

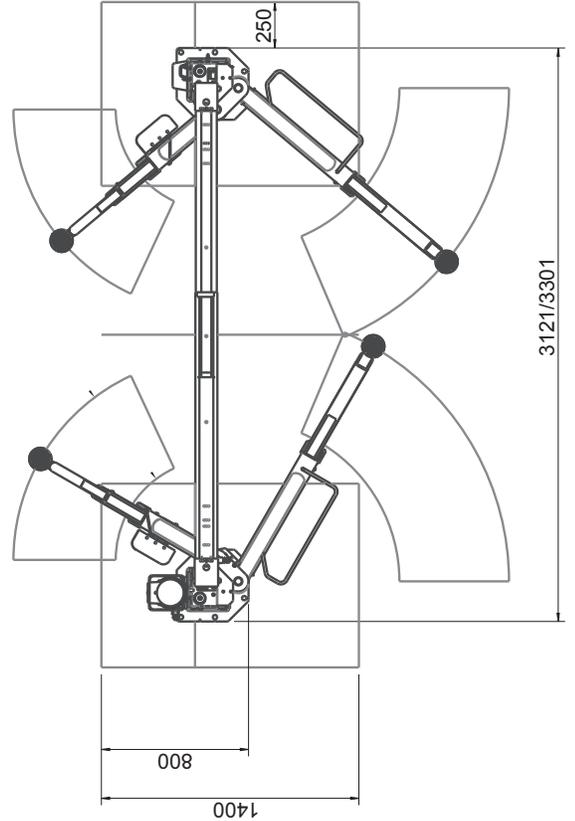
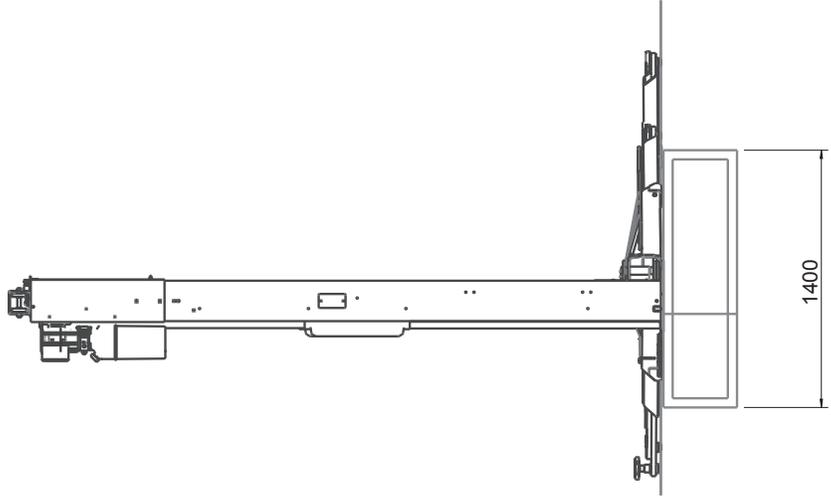
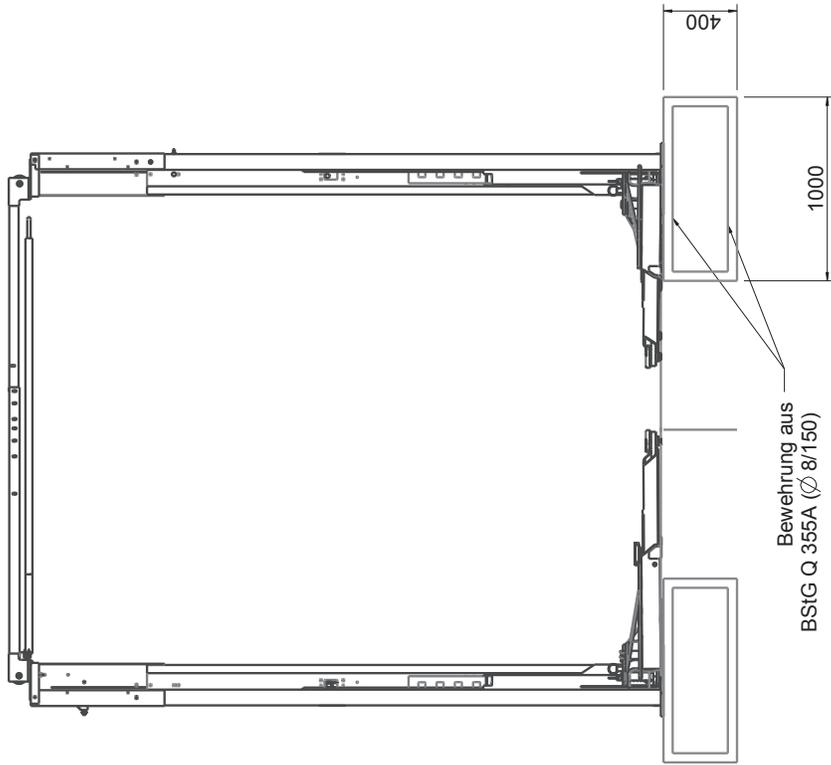


Beton auf Sauberkeitsschicht!
Auf ausreichende Deckschicht achten!

Maße des Fundaments:
in Fahrtrichtung: 1650 mm
quer zur Fahrtrichtung: 3620 mm
Dicke: 200 mm
empfohlene Anker für gerissenen Beton:
MKT Injektionssystem VMZ (chem.): 125/M16
HILTI Bolzenanker HST M20
Betonqualität: mind. C20/25 (EN 1026-1; DIN 1045-2:2008-08).

Tragfähigkeit Hebebühne= 3500 KG
Lastverteilung entsprechend EN1493
(dyn. Faktor berücksichtigt)

 THIRD-ANGLE PROJECTION		 DO NOT SCALE DRAWING UNLESS OTHERWISE SPECIFIED 0.8mm MIN. CORNER BREAK REMOVE ALL DIMS		SPOA3T Fundament	
ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED DIMENSIONS IN PARENTHESIS: OTHER DIMENSIONS ± 0.8mm (-0.05mm) ± 1.6mm (+0/- 305mm)		ROTARY LIFT A [DOWNSIDE] ANY		SCALE: 1:25 DATE: 21-Jan-14	
NOTES: The design and detail illustrated in this drawing is the property of Rotary Lift. It is being loaned with the expressed condition that it will not be duplicated or used except by permission, and is subject to return upon request.		REV: CO NUM: - DATE: 21-Jan-14 BY:		SHEET: 1 of 1 DRAWING NO.: FP_SPOA3T	



Beton auf Sauberkeitsschicht!
Auf ausreichende Deckschicht achten!

Maße der Fundamente:
in Fahrtrichtung: 1400 mm
quer zur Fahrtrichtung: 1000 mm
Dicke: 400 mm

empfohlene Anker für gerissenen Beton:
MKT Injektionssystem VMZ (chem.): 125/M16;
HILTI Bolzenanker HST M20
Betonqualität: mind. C20/25 (EN 1026-1; DIN 1045-2:2008-08).

Tragfähigkeit Hebebühne= 3500 KG
Lastverteilung entsprechend EN1493
(dyn. Faktor berücksichtigt)

ALL DIMENSIONS IN MILLIMETERS		PRODUCTION	SPOA3T Fundament	
UNLESS OTHERWISE NOTED: ANGULAR DIMENSIONS: ± 0.5°		DO NOT SCALE DRAWING USING CURVES OR DIMENSION LINES (MIN. CONSPICUOUS) REMOVE ALL BURRS	ROTARY LIFT	
OTHER DIMENSIONS: ± 0.8mm (<0.05mm) ± 1.0mm (curv. >0.5mm)		NOTES:	A <u>DOVER</u> COMPANY	
REV	CO NUM	DATE	BY	1 of 1
-	-	21.Jan.14	tp	1:25
The design and detail illustrated in this drawing is the property of Rotary Lift and shall remain the property of Rotary Lift. It is to be used only for the project specified and is subject to return upon request.			APPROVED DATE	21.Jan.14
			DRAWING NUMBER	FP_SPOA3T_S

8. Cleaning

- Only clean the lift when not loaded (without vehicle).
- Clean main lift, and all work areas daily. In doing so, always keep all post lift components clean.

 **If the lift is in a particularly dirty environment, clean accordingly more frequently.**

- Do not use abrasive cleaning materials on lift parts and covers. Use lint-free cloth.
- Do not use compressors or high pressure cleaners for cleaning work.
- Always consult a maintenance contractor if you identify a hazard.
- Prior to maintenance make sure that fittings and fixtures are free of oil, lubricants, and cleaning materials.
- Do not clean cable with water. If Cables (running steel cable) be lubricated with a suitable lubricant, from example from Duotac, CRC or Mobil (Mobilarma 798).

This can significantly increase the service life of the cable. Lubricant can be applied by spraying, dipping, or brushing.

9. Maintenance and repair



Inadequate maintenance and repair work may cause serious injury and also lead to damage to property. A safety risk as well as a risk of fatal injury exists during operation.

- ➔ Follow the maintenance and repair instructions below carefully.
- ➔ Regularly clean the post lift (→ Chapter 8).
- ➔ Comply with maintenance intervals (→ Chapter 9.3). This will keep the post lift in perfect working condition and guarantee safe operation.
- ➔ Maintenance and repair work must be documented (→ annex, maintenance schedule, regular maintenance reports, and repair reports).

9.1 Qualification of maintenance and repair staff

Maintenance and repair work may only be carried out by an authorized **maintenance contractor** (→ Chapter 2.6).

9.2 Maintenance and repair safety regulations

- Only qualified electricians may work on electrical equipment on the machine.
- Only qualified staff with specialist knowledge and experience with hydraulics or pneumatics may work on hydraulic or pneumatic equipment.
- **Ensure that you follow the instructions listed in 2, Safety.**
- When working on the hydraulics or on pneumatic equipment, ensure that you follow the safety regulations listed in the supplied power unit operating instructions annexed to this manual.
- Only perform maintenance on unloaded lifts and lifting tables.
- Main lifts must be lowered completely or latched into the lock positions (locking latches).

- Prevent environmental hazards:
 - Mineral-oil-based hydraulic oil is combustible and a water pollutant. It must only be used in conjunction with the relevant safety data sheet and if all specified measures contained therein are implemented.
 - Provide suitable oil drain pans and oil absorbers.
 - Ensure that no hydraulic oils, lubricants or cleaning materials contaminate the soil or leak into the drainage system.
 - Comply with local regulations for handling water pollutants, for example for absorbing leaking fluids or fluids from oil separators.
- Avoid contact with or inhalation of toxic substances such as hydraulic fluid.
- Wear protective clothing, for example protective goggles, protective gloves etc.
- Before all maintenance and repair work:
 - secure the post lift zone with a red-white chain and warning notices.
 - turn the main switch to OFF ("OFF" Position).
 - disconnect the air supply (manometer on the compressor unit to 0 bar) (only for E version).
 - inform all persons in the area about the maintenance and repair work.
- Only use original spare parts from the manufacturer.
- Tighten all fittings after maintenance work according to the specified torque figures.
- The default setting for safety valves must be a maximum of 10 % or a minimum of 20 bar above the operating pressure of the machine. The safety valve settings may not be adjusted.
- Remove all used materials, tools and other objects from the danger zone after cleaning, maintenance, and repair work.
- Dispose of hydraulic oils, lubricants, cleaning materials, and replaced parts in accordance with environmental regulations.

9.3 Maintenance work



WARNING

Potential crushing and shearing hazard to limbs caused by uncontrolled lowering motion.

- ➔ In particularly dirty environments, maintain the post lifts accordingly more frequently.
- ➔ Only perform maintenance on unloaded lifts, i.e. without vehicle.



WARNING

Risk to people and the environment caused by toxic substances when emptying or filling the hydraulic oil tank.

- ➔ Avoid contact with or inhalation of hydraulic oil or Vaseline oil.
- ➔ Provide a suitable oil drain pan and oil absorbent.
- ➔ Ensure that used oil doesn't contaminate the soil or wash away into the drainage system.
- ➔ Comply with local regulations for handling water pollutants.
- ➔ Dispose of used oil in an environmentally friendly manner.
- ➔ Hydraulic oil is highly inflammable, combustible.



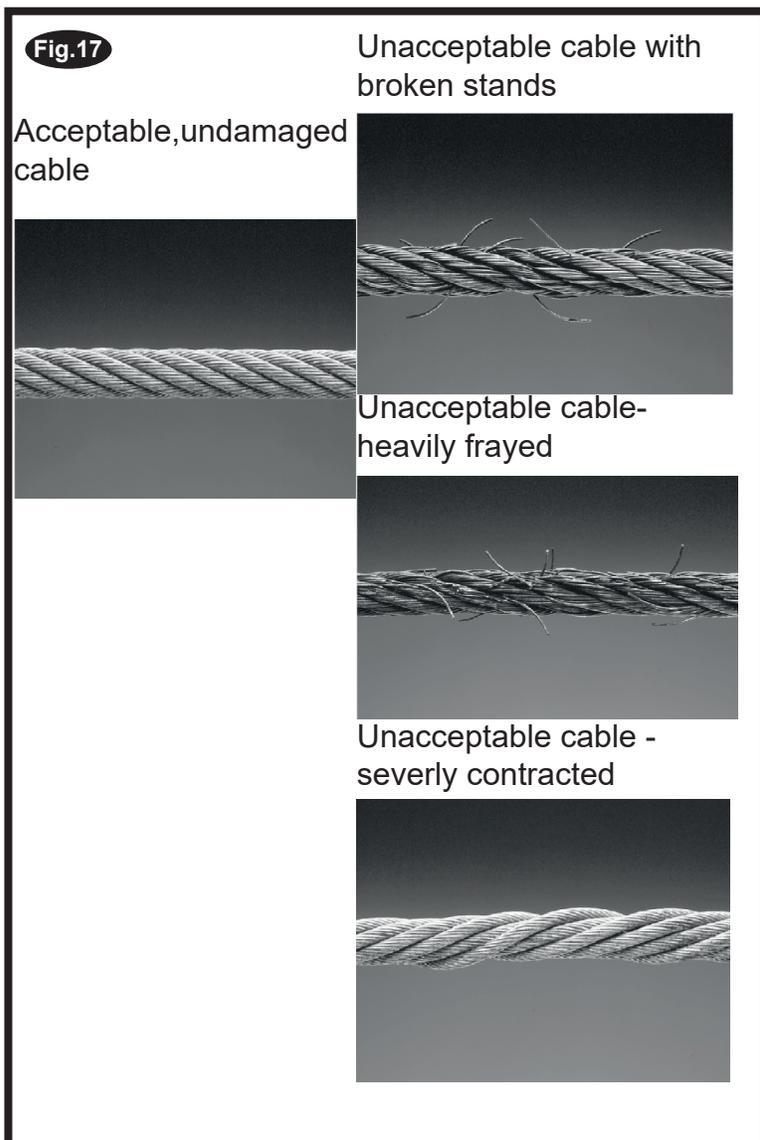
DANGER

Risk of fatal injury if anchor bolts are loose. Post lift may slip, the load may collapse.

- ➔ Stop operating the post lift.
- ➔ Secure the post lift. If this cannot be done, provide an approved foundation then anchor and secure the post lift properly.

Daily inspection

1. Check cables and sheaves for wear. If parts are worn, call local service representative.
2. Inspect adapters for damage or excessive wear. If parts are worn, call local service representative.
3. Check for permanent deformation to the latches. If present, call local service representative to replace parts.
4. Check the function of overhead sensor.
5. Check the operation of the synchronization or equalization system so that both sides raise and lower equally. Perform check with and without a vehicle representative load.
6. With a representative vehicle on the lift, check the lowering speed (not to exceed 0.15m/s).
7. Check for proper function of swing arm restraints.



Monthly maintenance

1. Turn the main switch to OFF ("OFF" setting) and lock with a padlock.
2. Check whether the lifting arms are horizontally aligned during lifting and lowering. Re-adjust stretched cables (→ Chapter 12. Commissioning).
3. Check whether screw fittings have come loose.
4. Check the hydraulic oil level (Hydraulic tank). If necessary, refill with approved hydraulic oil (→ Chapter 9.4)
5. Inspect the tank cover of the hydraulic tank. The vent cap must be clean so that no vacuum can form.
Clean if necessary.
6. Check hydraulic component seals (visual inspection).
7. Clean and check base of lift. Remove any rust and touch-up with paint.
8. Monthly check the rubber pads for wear, replace defective pads if need.
9. Lubricate locking latch shafts. Actuate latch handle several times for oil to penetrate joints.
10. Turn main switch to ON ("ON" setting).
11. Check that control buttons and switches function properly.
12. Carry out a function test with and without load.
13. Complete a maintenance report (→ Annex).

Six month maintenance

1. Raise lift.
2. Turn main switch to OFF ("OFF" setting) and lock with a padlock.
3. Lubricate post lift with approved lubricant
 - Lightly grease the lifting slides running surface.
 - Lightly grease the thread of the disk adapters for smooth operation.
4. Check the nuts of the cable, make sure all nut works well and not loose. Also Check anchor bolts for tightness.
5. Turn the main switch on ("ON" setting).
6. Conduct function test. Lower lift completely.
7. Complete a maintenance report (→ Annex).

Annual maintenance

1. Turn the main switch off (Position "OFF") and lock with padlock.
2. Check Hydraulic cylinder and Hydraulic hoses for leaks (visual inspection). With lift loaded, stop the lift at midpoint of travel and observe for drifting down and hydraulic leaks.

3. Inspect electrical cables for damage (visual inspection).
4. Turn the main switch on again (Position "ON").
5. Check that control buttons and switches function properly.
6. Replace illegible or missing labels on the post lift. Reorder from the manufacturer.
7. Conduct safety inspections (→ Chapter 2.7).
8. Complete maintenance report and inspection report from safety inspection (→ Annex).
9. Check the tightening torque of anchor bolts.

9.4 Approved hydraulic oils



Important information

- Only use hydraulic oils in accordance with DIN 51524 for the hydraulic system.
- Only use biodegradable oils (HEES-based on synthetic esters).
- Use PTFE seals or foam elastomers if the water content is high.

ATTENTION Seals may be destroyed if the incorrect hydraulic oil is used.

- Do not use rapeseed based oils. The water content of the hydraulic oil must not exceed 2%.
- Do not mix bio-oils with mineral oils. Mixing leads to foaming problems and corrosion damage.
- Make sure that the oil is not contaminated by any other oil or water.
- Use a proportionally lower viscosity bio-oil as a replacement for mineral oil. This improves the lubrication properties, reduces energy consumption and generates less heat.

HEES32-bio-oils can, for example, be used as a replacement for mineral oil HLP46:

- PLANTOSYN 3268
- BECHEM HYDROSTAR HEES 32
- BP Biohyd 32
- Mobil EAL Hydraulic Oil 32



Oils and grease

Only use consistency classification II oils and grease.



Water pollutants

Oils and grease are water pollutants in terms of the Water Management Act (WGH).

Always dispose of these in an environment-ally friendly manner in compliance with the applicable regulations in your country (→ Chapter 14. Disposal).

9.5 Check, refill, change the hydraulic oil



Risk to people and the environment from toxic substances when filling the hydraulic oil tank.

WARNING

- ➔ Avoid contact with and inhalation of hydraulic oil.
Wear protective clothing (protective goggles, protective gloves).
- ➔ Provide suitable oil drain pans and oil absorbers.
- ➔ Ensure that no hydraulic oils, lubricants, or cleaning materials contaminate the soil or leak into the drainage system.
- ➔ Comply with local regulations for handling water pollutants, for example for absorbing leaking fluids or fluids from oil separators.
- ➔ Hydraulic oil is highly inflammable, combustible.

1. Check hydraulic oil level on the hydraulic oil tank.

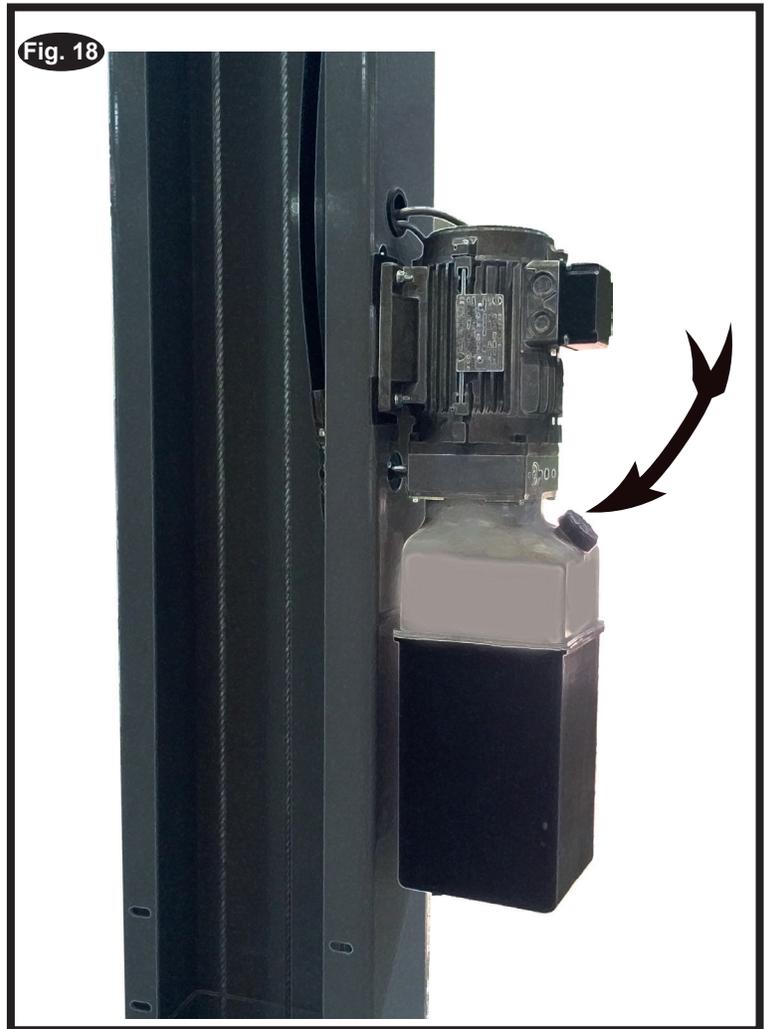
i The oil level must not exceed the minimum value ("min").

2. Place the oil drain pan under the tank, remove tank cap and refill hydraulic oil to the "max" mark.
3. Ensure that the vents work and that no vacuum is generated.
4. Screw on the tank cap so that the tank is properly sealed.
5. Remove oil residues on the floor or on the lift with an approved detergent. Dispose of used cleaning cloths in the correct manner.
6. Complete a maintenance report (→ Annex).

An oil change is carried out depending on the extent to which the hydraulic oil has degraded. To do so, proceed as follows:

1. Lower arriages completely, turn main switch off ("OFF" position) and lock it.
2. Place the oil drain pan under the hydraulic oil tank, completely disassemble the tank and empty out the remaining oil into the drain pan.

Fig. 18



3. Replace the hydraulic oil tank in the correct manner.
4. Fill approved hydraulic oil up to the "max"-mark. Maximum capacity of empty tank.
5. Bleed the cylinders both column.
6. Remove oil residues on the floor or on the lift with an approved detergent. Dispose of used cleaning cloth in the correct manner.
7. Turn main switch back on ("ON" setting).
8. Check that control buttons and switches function properly.
9. Carry out function tests with and without load.
10. Complete maintenance report (→ Annex).

9.6 Repair work (Repairs)



DANGER

If repairs are carried out incorrectly, they may cause serious injury and also lead to damage to property. A safety risk as well as a risk of fatal injury exists during operation.

- ➔ Repairs may only be carried out by trained customer service staff.
- ➔ Follow all safety regulations and warnings in this chapter.
- ➔ Always follow the repair instructions below.
- ➔ Repair work must be documented (→ Annex, inspection logbook).



Always refer to the information received during the manufacturer's training.

Changing the cylinder or seal kit.

Before removing cylinder make sure you have the correct seal kit or cylinder (see-Annex).

Cylinder Removal Procedure

- 1) Loosen the equalizer cable on the opposite carriage.
- 2) Raise the lift to the top and rest the carriage on the top latch position.
- 3) Check to make sure the carriage is secure on latches.
- 4) Make sure the pressure has been relieved from the system.
- 5) Follow the proper LOCKOUT/TAGOUT procedures for disconnecting power to lift.
- 6) Remove the lower sheave cover at base of column.
- 7) With lowering valve depressed, manually pull cylinder down out of carriage.
- 8) Disconnect the swivel hose fitting at base of cylinder.
- 9) Cap hose ends and cylinder adapter to prevent fluid loss.
- 10) Carefully remove cylinder from column.

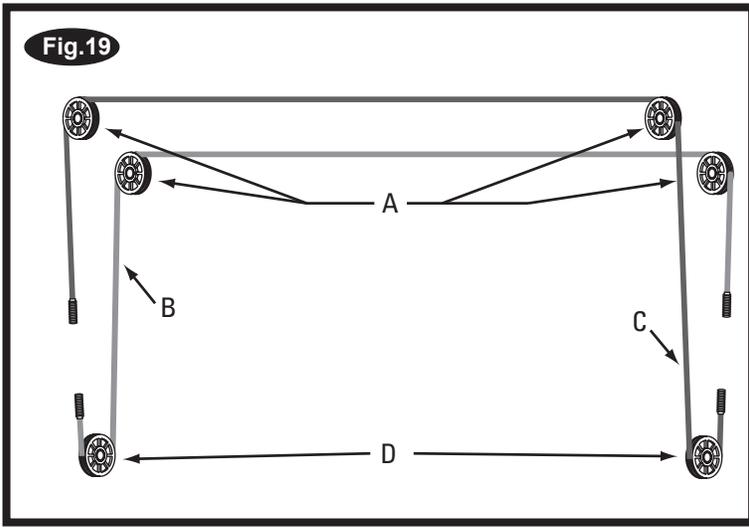
Cylinder Rebuilding (for changing the seal kit)

- 1) Remove manual bleeder and extend plunger from casing.
- 2) Remove piston retaining ring or clip.
- 3) Remove plunger from casing.
- 4) Clean inside of casing, making sure all debris is removed with mineral spirits.
- 5) Inspect seal for damage.
- 6) Replace seal and all other components (wiper, wear ring, etc.).
- 7) Coat seal with oil or white grease.
- 8) Reinstall plunger, retaining ring, and manual bleeder being careful not to scratch or dent plunger surface.

Cylinder Replacement

- 1) Reinstall cylinder and reconnect hose fitting.
- 2) Reconnect power source.
- 3) Install lower sheave cover.
- 4) Raise cylinder in column through the carriage lifting plate and cylinder centering bar.
- 5) Lower both carriages.
- 6) Adjust equalizer cables.
- 7) Carefully raise carriages about two feet. Bleed air from both cylinders.
- 8) Fully lower lift.
- 9) Check and add fluid as necessary.
- 10) Raise lift to full rise and check for leaks.
- 11) Tag lift back in service.

Fig.19



Replace cables/cable sheaves

- Damaged cables must be replaced promptly.
- **If cables / cable sheaves are damaged, inform maintenance contractors and customer service immediately.**
- **Always replace all cables together as a set.**
- If the cable is too slack → Chapter 12. Commissioning.
- Replace cables as per the manufacturers training.

10. Transport, Storage



DANGER

Crushing and shearing hazard for limbs when unloading. Caused by collapsing or slipping of the load.

- Only unload the packing unit and transport to the installation site with a fork-lift truck or pallet jack with a sufficient load capacity.
- Only use hoists approved for the total weight (straps, chains etc.).
- Attach these so that the load cannot slip (check the center of gravity of the load).
- Only secure individual components to loadbearing parts. Always lift vertically, steadily and without jerking.
- Carry out a visual inspection before offloading.
- Do not stand close to or underneath swinging loads.
- Constantly monitor the danger zone when lifting or lowering.
- Always transport hydraulic components empty of oil.

ATTENTION

Lift components may be damaged if offloaded incorrectly.

- Do not damage plates on the underside of the lift when lifting.
- Several parts are inserted into the components, for example into the columns. Off load these carefully to prevent damage.
- When offloading, proceed from top to bottom.

10.1 Transport

The lift is supplied in a packing unit (base unit) plus a separate extension columns. The packing unit comes with the following documentation:

- Transport description giving suitable suspension points, total weight, centre of gravity, required cable lengths, transport locks, etc.
- List of all individual components included in delivery.

10.2 Offloading

1. Inspect the shipment for any shipping or transport damage. Immediately report any damage to your supervisor and to the transport firm.
2. Transport the packing unit to the installation site. This must conform to the approved environmental conditions (→ Chapter 7. Technical data).
3. Unfasten the transport locks for the large parts on the front of the packing unit.
4. Offload the columns and column extensions and set down carefully.
5. Remove all other components from the pallet and set down carefully.
6. Inspect the supplied parts according to the packing list provided.
7. Dispose of packaging in an environmentally friendly manner, in compliance with the regulations applicable in your country (→ Chapter 14. Disposal).

10.3 Storage

Lift components must always be stored in a dry place (no corrosion protection).

Recommended Storage Conditions

- Ambient temperature: -5 ... +50
- Relative humidity, with condensation, at 20 °C 30 % ... 95 %



The manufacturer provides no warranty for corrosion damage caused by incorrect storage.

11. Assembly(installation)



DANGER

Incorrect installation work may lead to serious injury and material damage. A safety risk as well as a risk of fatal injury exists during operation.

- Follow the instructions below carefully.
- Only customer service staff authorized by the manufacturer may assemble and commission the post lift.
- Correct installation and commissioning must be documented in the inspection logbook. To do so, use the form "Initial safety inspection before installation".

11.1 Assembly safety instructions

- Verify that the foundation is suitable before assembling. (→ Chapter 7 Technical data.)
- Think about and prevent potential sources of danger before assembly (→ Chapter 1. Intended use, improper use, incorrect behavior, and internal incident, health & safety, and environmental information).
- Operators must be able to view the post lift and the danger zone in full from the control unit (→ Chapter 3.2. Work area, danger zone).
- Refer to the technical data in chapter 7.
- Route and protect on-site power cables according to manufacturers specifications.
- Only qualified electricians may carry out electrical work on the electrical equipment of the machine.
- Only qualified staff with specialist knowledge and experience with hydraulics or pneumatics may work on hydraulic or pneumatic equipment.
- When working on the hydraulics or on pneumatic equipment, ensure that you follow the safety regulations listed in the supplied power unit operating instructions annexed to this manual.
- **Ensure that you also follow the instructions listed in 2. Safety.**

11.2 Quick assembly instructions



The lift components are already pre-assembled ex works. When assembling these must simply be joined together, electric, pneumatic, and hydraulic lines must be properly connected.

1. Determine the installation site of the post lift. Check the foundation. If necessary, reinforce the foundations at the point where the lift columns will be positioned.
2. Make preparations for installation. Prepare electrical and pneumatic connections (only E version). Check the foundation for unevenness and level it out. Use spacers and shims.
3. Set down both columns, crossbeams, extensions and prepare them for assembly.
4. Fasten the extension column to base column, and bracket.
5. Stand the lift columns upright, anchor and secure to the floor.
6. Fasten the overhead assembly to the columns.
7. Assemble the hydraulic module, rotate hydraulic hose, electric wires (especially for E version).
8. Connect the equalizing cables.
9. For M version, connect and rotate the locking latch cable.
10. Connect the electricals and other components.
11. Power up the post lift and carry out initial commissioning. Make minor adjustments to the post lift.

11.3 Site specifications

- The post lift may only be installed above ground and indoors.
- Refer to the building plans when selecting a site.
- When anchoring to the floor, take into account any pipes, cables, and supply lines lying there.
- Ensure that the load capacity of the foundation is adequate.
- Support surface for lift columns:
Reinforced concrete, concrete quality C20/C25
- Floor must be designed for a floor anchor.
- Concrete dimension 3820/3620x1650x200 mm. (→ Chapter 7 Technical data.)



Do not fit post lifts onto asphalt or a similar unstable surface, since the anchor may come loose in the floor.

- Comply with the specified minimum distances and clearances (→ Chapter 3.2. Work place, danger zone)

11.4 Installation preparations

1. Provide an electrical outlet close to the lift column with the control unit:
 - Electrical, according to the lift variant :
400 V (3xL+N+PE) for power
220V AC for control and solenoid.
see electric wiring diagram in annex.
2. Level out any uneven floor areas around the lift columns. If required, fill bearing surfaces for lift columns with reinforced concrete (concrete quality C20/C25).
3. Equalize slight differences in height between lift columns using spacers or shims.

11.5 Prepare the columns.

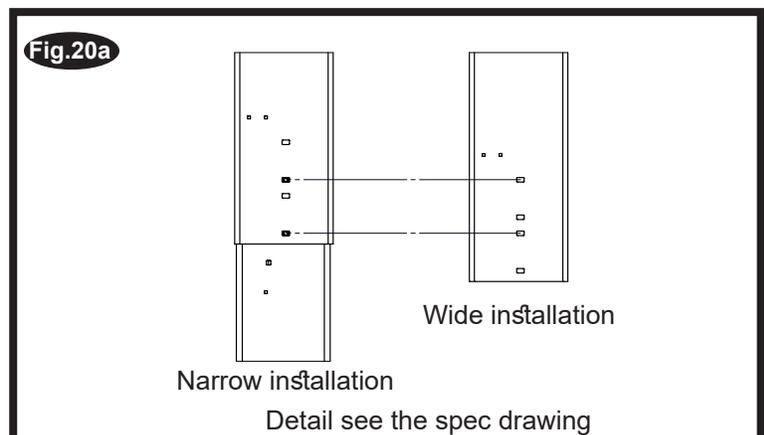


Fig.20b

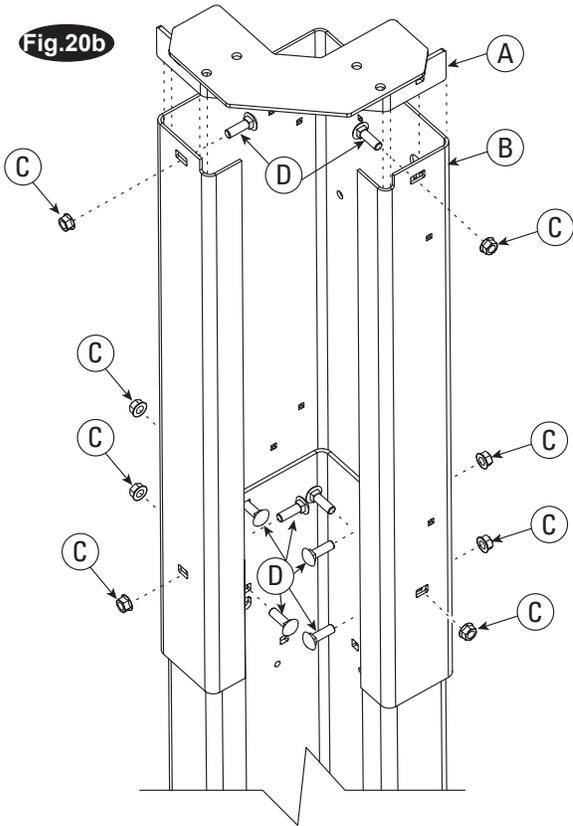


Fig. 20 Detail

A	Overhead mounting bracket
B	Column extension
C	M10 Locknut
D	M10*20mm carriage bolt



Lift Height: See Chapters 7, technical data for overall lift height of each specific lift model. Add 25mm to overall height to lowest obstruction.



DO NOT install this lift in a pit or depression due to fire or explosion CAUTION risks.

1. Column Extensions: Before standing columns upright, Install the column extensions and Overhead Mounting Bracket: using (12) M10*20mm Carriage Bolts and Flanged Locknuts, as shown, Fig. 20a & 20b.
2. Lift Setting: Position columns in bay using dimensions shown in spec drawings. With column lying on the floor, two people can lift the top of the column and walk towards the base. As the column approaches vertical, one of the two people should move to the opposite side of the column and assist in slowly setting the column flat on its base. Both column base plate backs must be square on center line of lift. Notches are cut into each base plate to indicate center line of lift. Using appropriate equipment, raise carriage to first latch position. Be sure locking latch is securely engaged. Fig. 21.

Fig.21

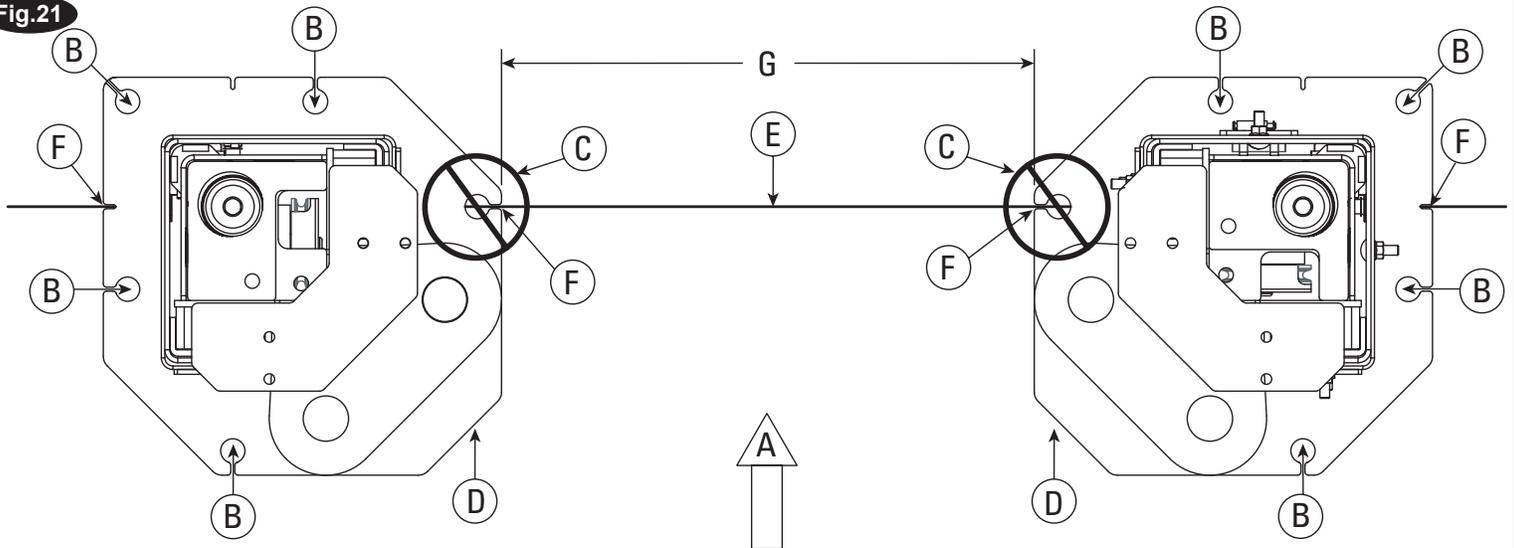


Fig. 21 Detail

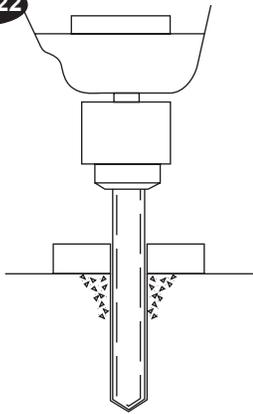
A	Approach	E	Chalk line
B	Anchor Here	F	Align notches in baseplates with chalk line
C	DO NOT ANCHOR HERE	G	see spec drawing
D	Use long flat shims here		

- Concrete and Anchoring: Concrete shall have a compression strength of at least C20/25 and a minimum thickness of 200mm. Drill (8) holes with required diameter in concrete floor, using holes in column base plate as a guide. See Fig. 22. Detail information, please contact customer service.

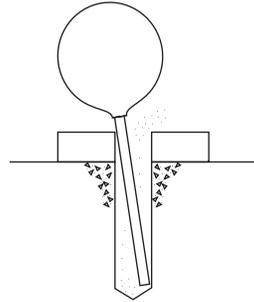


DO NOT install on asphalt or other similar unstable surfaces. Columns are supported only by anchors in floor.

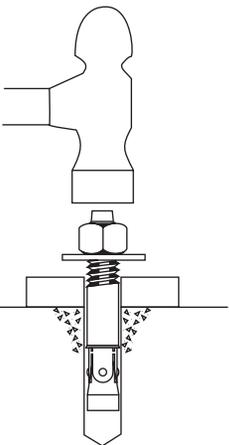
Fig. 22



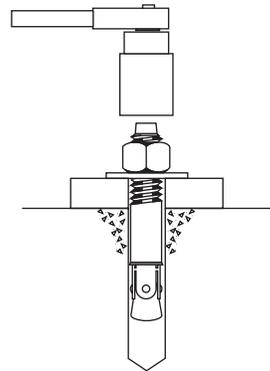
Drill holes using correct carbide tipped masonry bit drill bit.



Clean Hole



Run nut down just below impact section of bolt. Drive anchor into hole until nut and washer contact base.



Tighten nut with torque wrench. For chemical anchor bolts, please read the manual of the anchor manufacturer.

- IMPORTANT:** Using the horse shoe shims provided, shim each column base until each column is plumb, Fig. 23. If one column has to be elevated to match the plane of the other column, full size base shim plates should be used (Reference Shim Kit). Recheck columns for plumb. Tighten anchor bolts to an installation torque. Shim thickness MUST NOT exceed 13mm. If anchors do not tighten to the requirement by installation torque, replace concrete under each column base with a new strengthened concrete pad keyed under and flush with the top of existing floor. Let concrete cure before installing lifts and anchors. Detail information, please contact customer service.

Fig.23

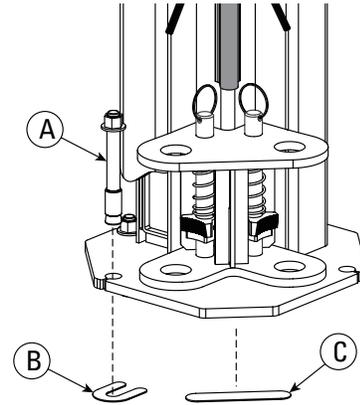


Fig. 24 Detail

A	Anchor Bolt
B	U Shim (13mm maximum)
C	Front shim

11.6 Prepare the Overhead assembly.

- Adjust overhead to 2676/2756mm between centerline of sheave pins, Fig. 25. Install (4) M10*20 lg. HHCS & Lock nut M10, do not tighten.
- Mount Overhead switch assembly towards power unit column using (2) M6*20, HHCS, M6 Nuts and 6mm Star Washers, Fig. 26.
- Insert M6*70 HHCS through pivot hole in end of switch bar. Insert opposite end of bar through slot in switch mounting bracket Fig 24. Then secure HHCS and Switch Bar to over-head as shown, using (2) 19mm spacer and M6 Lock Nut. Tighten Hex bolt leaving 1.6mm gap between the spacer and the overhead assembly. Fig. 24

4. With a ladder by each column, two people position the overhead assembly onto column mounting brackets and fasten with (2) M10*20 Lg. HHCS. and (2) M10 Lock nuts each column, Fig. 27. Tighten bolts at center of overhead assembly.

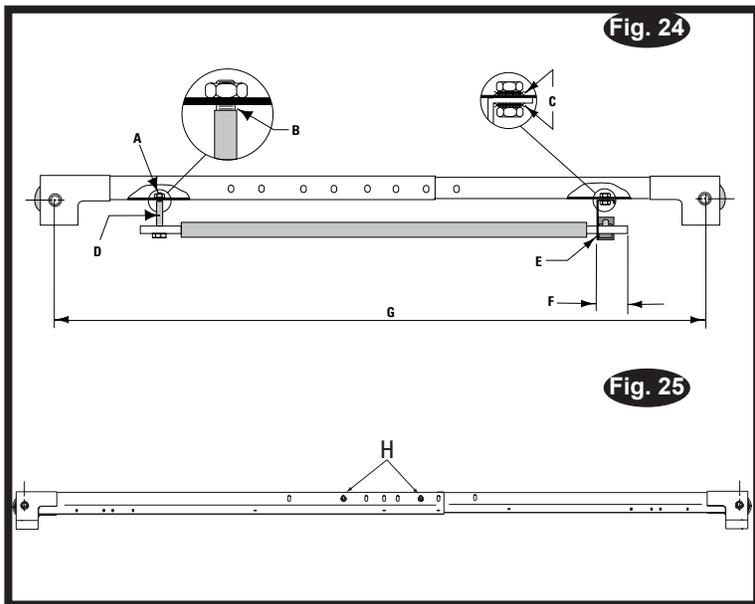


Fig. 24/25 Detail	
A	M6*70 HHCS and lock nut.
B	1.6mm gap
C	Star washers
D	(2) 19mm Spacers
E	Overhead Switch
F	50mm minimum
G	2676mm SPOA3T-5, AF 2756mm SPOA3T-5Ap, VAS, MB, SC Detail see technical data
H	(4)M10*20 lg .HHCS

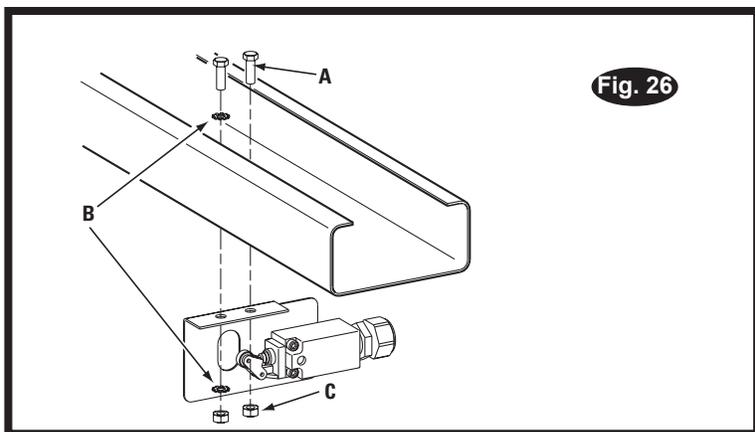


Fig. 26 Detail	
A	(2) M6*20 lg. HHCS
B	On one side use (2) $\Phi 6$ External Tooth Lock washers.
C	(2) M6 Zinc Hex Nuts

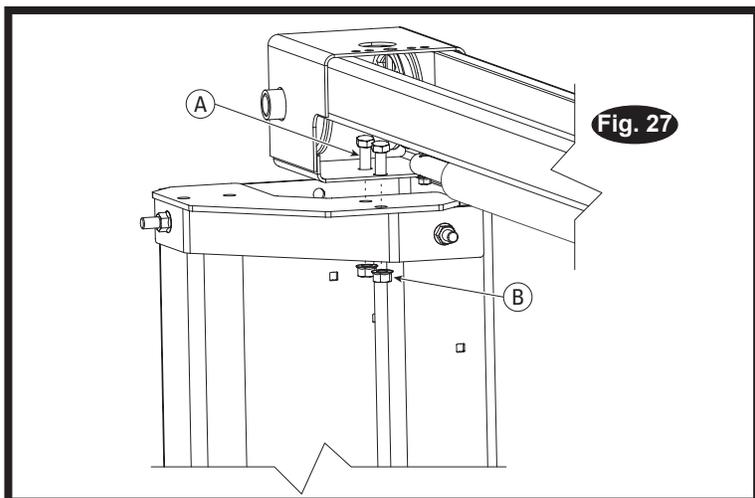


Fig. 27 Detail	
A	(2 each column) M10*1.5 20LG HHCS bolt
B	(2 each column) M10 flanged Lock Nut

11.7 Assemble the hydraulics module.

- Only qualified staff with specialist knowledge and experience of hydraulics may work on hydraulic equipment.
- Always follow the safety regulations in the hydraulic power unit instructions in the annex to this manual.

The hydraulic power unit with motor and tank is supplied separately and is assembled as follows:

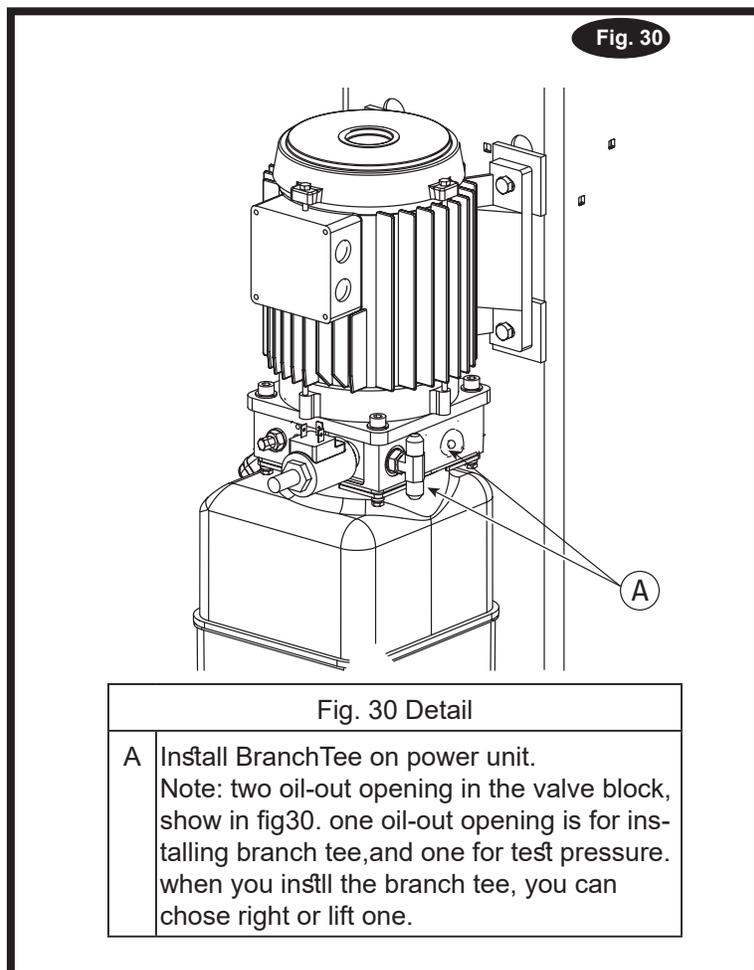
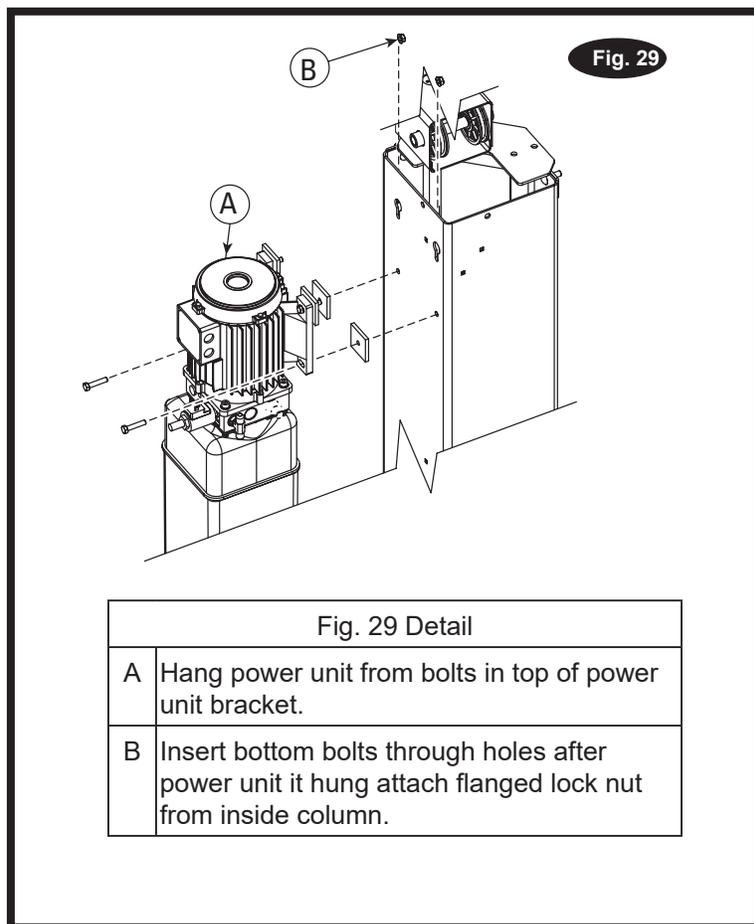
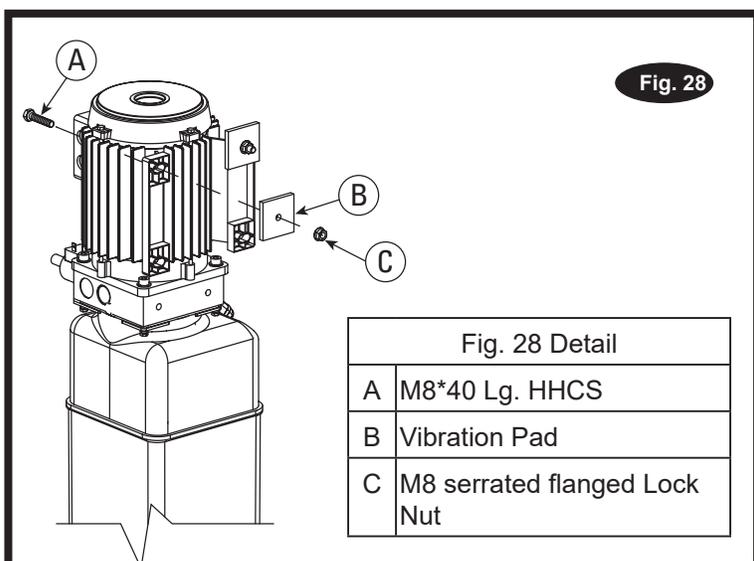
1. Put (4) M8*40 HHCS through top holes in power unit bracket using Vibration Pad to hold in place, Fig. 28.
Install M8 serrated flanged lock Nuts until bolt end is flush with end of nut.
Install power unit onto column extension, Fig. 29.
Slide bolt/nut combination into top set of holes and down to bottom of slot.
Install HHCS, Vibration Pad, and Flanged HHCS in bottom power unit holes and tighten. (Be sure to place vibration pad between power unit and column extension). Tighten top HHCS and Nut.
Install and hand tighten branch tee to pump until O-ring is seated, Fig 30. Continue to tighten the lock nut to 14 - 20Nm (1.4 - 2.1kg-m), or until the nut and washer bottom out against the pump manifold.



Risk of injury from heavy hydraulic power units.

CAUTION

- ➔ If possible, assemble the complete unit in pairs.



2. Flared Fittings Tightening Procedure:



Over tightening lock nut may tear O-ring.

- ➔ Install Female Swivel Tee To Male Extension, Fig. 30. Use Flared Fittings Tightening Procedure to tighten the Female Swivel Tee to the Male Extension.

Flared Fittings Tightening Procedure

1. Screw the fittings together finger tight. Then using proper size wrench rotate the fitting 2-1/2 hex flats.

IMPORTANT Flare seat **MUST NOT** rotate when tightening. Only the nut should turn.

2. Back the fittings off one full turn.

3. Again tighten the fittings finger tight then using a wrench, rotate the fitting 2-1/2 hex flats. This will complete the tightening procedure and develop a pressure tight seal.

IMPORTANT Over tightening will damage fittings resulting in fluid leakage.

3. Clean adapters and hose. Inspect all threads for damage and hose ends to be sure they are crimped. Install hose using Flared Fittings Tightening Procedure, Section 2.

Adapter & Hose Installation (see Fig. 31)

- 3.1. Install item (F) with hose clamps, on power unit column side connecting it to the cylinder first.
- 3.2. Install item. (E) with hose clamps item (B) starting at opposite cylinder and working toward the power unit. All excess hose should be at bends & inside overhead assembly.
- 3.3. Connect item (E) & item (T) to branch Tee (Fig30).

4. Oil Filling: Remove fill-breather cap on power unit, Fig. 31. Fill to MIN _____ mark on tank with approved hydraulic oils (→ Chapter 9.4, approved hydraulic oils) Replace fill-breather cap

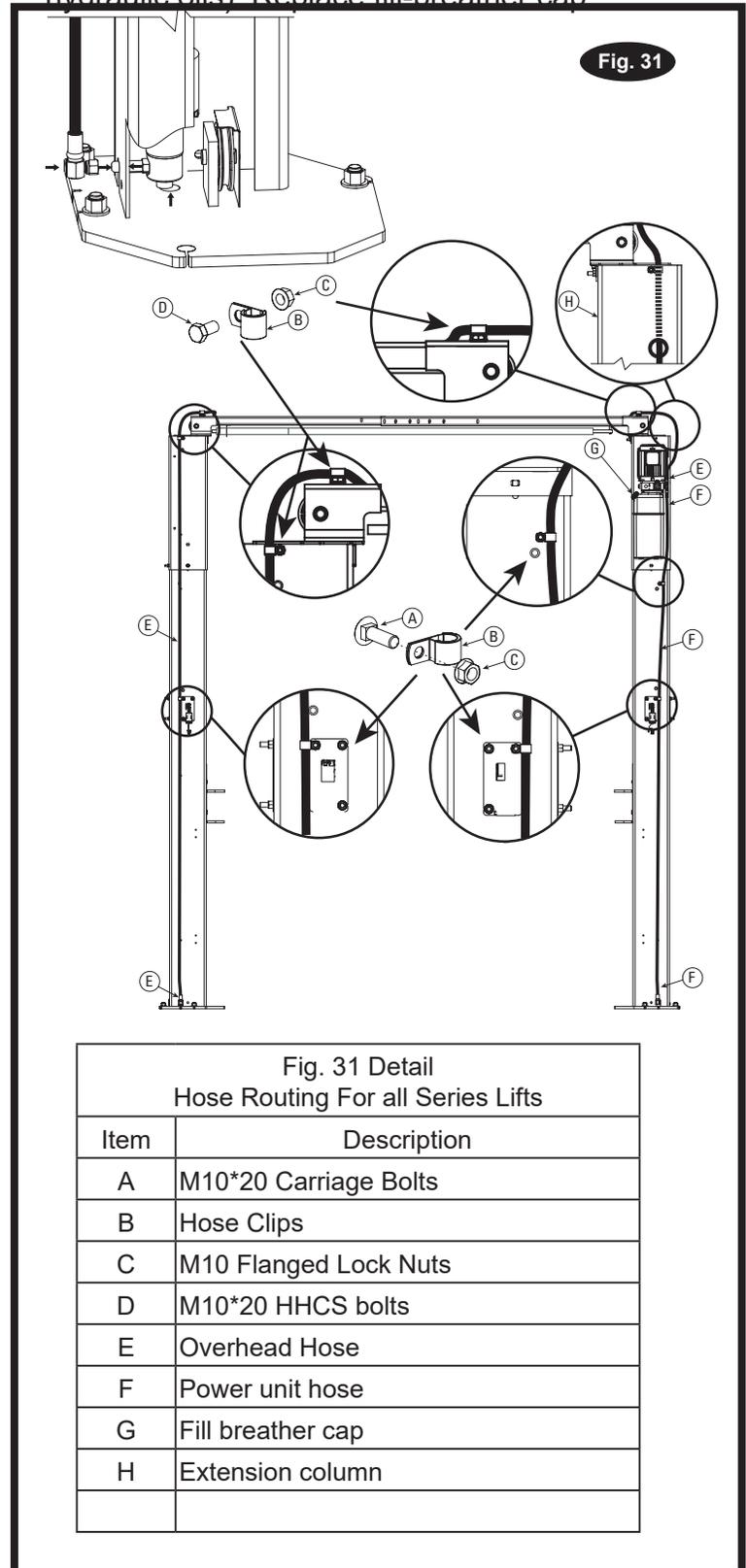


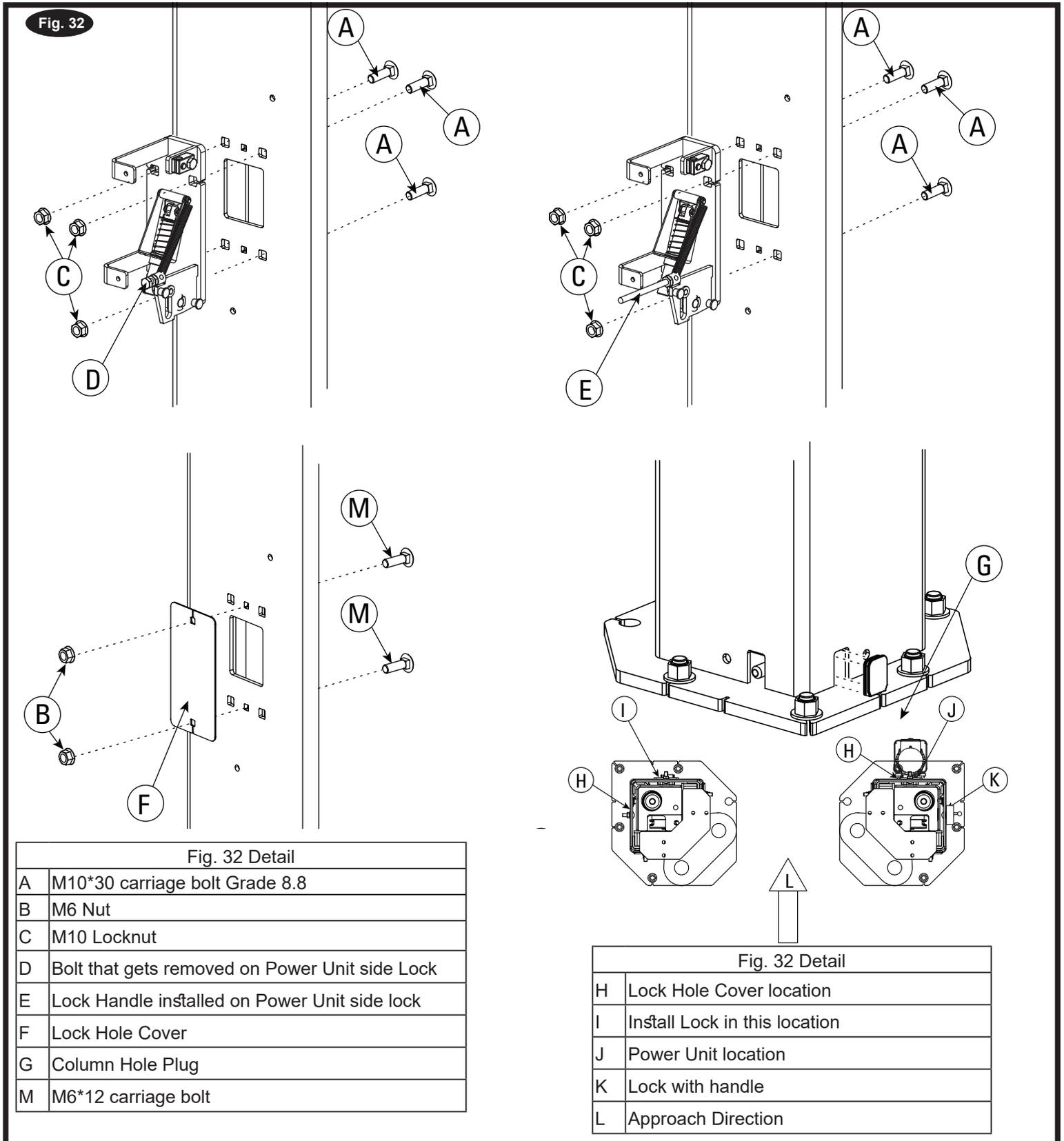
Fig. 31 Detail
Hose Routing For all Series Lifts

Item	Description
A	M10*20 Carriage Bolts
B	Hose Clips
C	M10 Flanged Lock Nuts
D	M10*20 HHCS bolts
E	Overhead Hose
F	Power unit hose
G	Fill breather cap
H	Extension column

11.8 Assemble the locking latch system .

11.8.1 For M Version

1. Install locking latches, lock hole covers, and lower column hole plugs onto column, Fig32. Note Graphic which locates which side of column to install locks and lock hole covers.



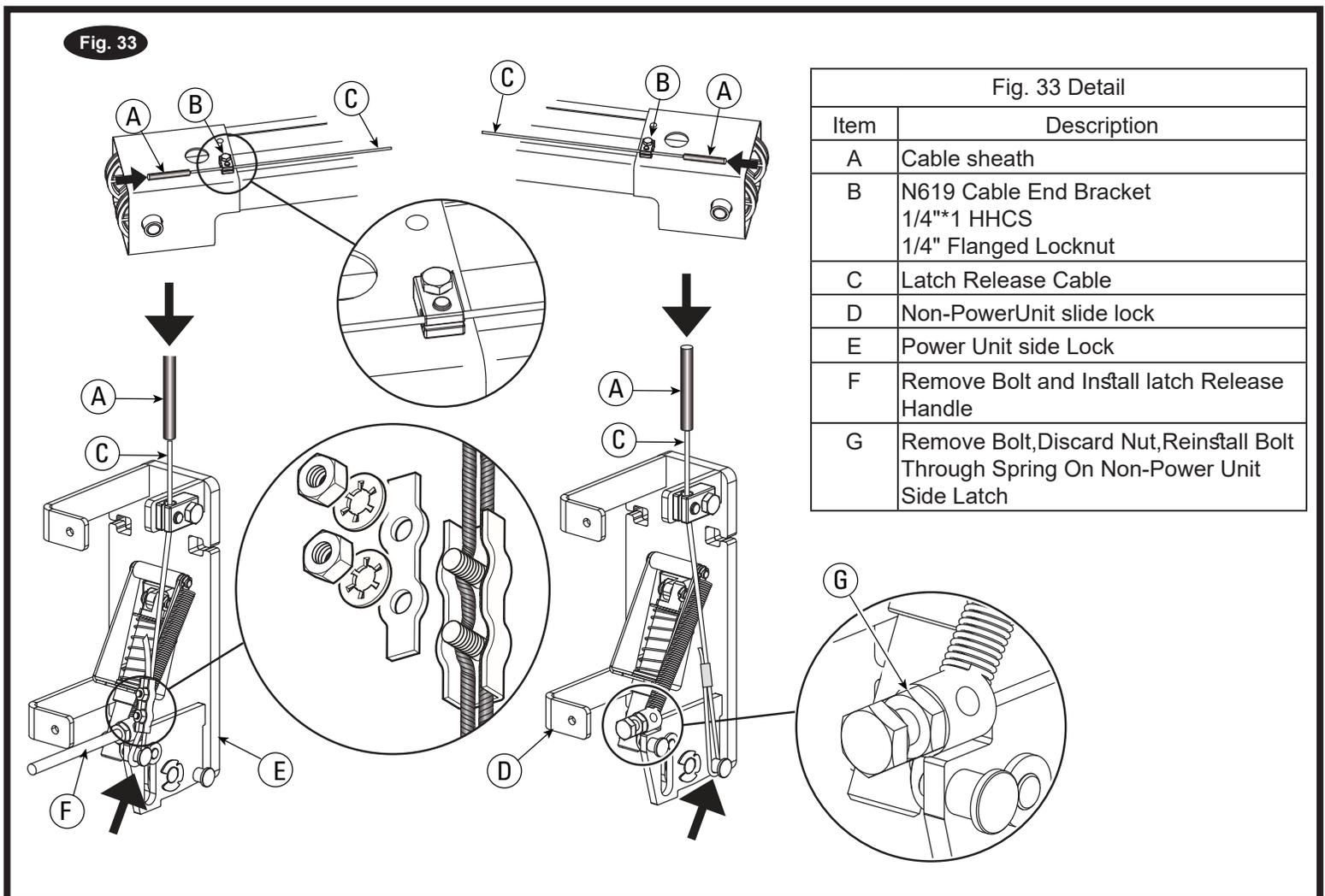
2. Installing Latch Release Cables:

Remove bolt on Power Unit side lock and install Release Handle, (F) Fig. 33. Remove bolt, discard nut, reinstall bolt through spring on non-power unit side latch, (G). Slip looped end over lower cable hook on non-power unit side latch as shown, Fig. 33. NOTE: You must attach on Lower Stud (see arrow). Route up through Cable End Bracket. Put Cable through the Sheath and slide Sheath down into Cable End Bracket.

Attach Cable End Bracket to overhead as shown. Slide cable through Bracket and push other end of Sheath into Bracket. Run cable across to other side of overhead. Repeat process and run sheath and cable down to Cable End Bracket on power unit side lock assembly.

Insert cable in cable clamp along one side, loop around Upper Stud (see arrow) and back up, inserting cable along other side of cable clamp. Place top back on clamp, barely tightening. Using Pliers, pull cable tight and secure the clamp close to the Upper Stud. Tighten clamp. Cut off excess cable length.

Using Pliers, pull cable tight and secure the clamp close to the Upper Stud. Tighten clamp. Cut off excess cable length.



11.8.2 For S&C solenoid Version

Install locking latches, lock hole covers, (1 hose clamp each side) and lower column hole plugs onto columns, Fig. 34.



Locking latch solenoids get extremely hot when lift is being lowered.

Fig.34

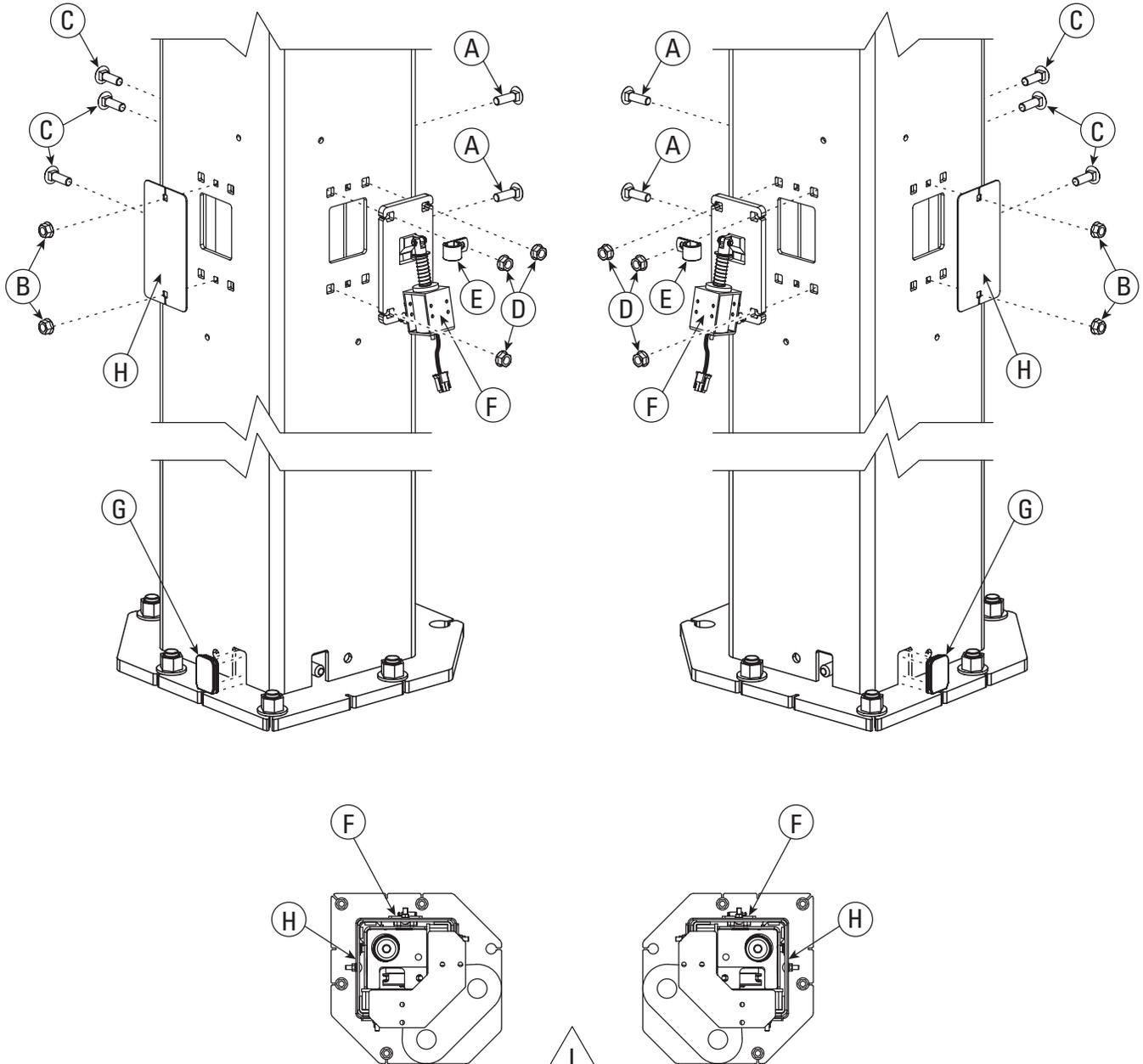


Fig. 34 Detail

Item	Description
A	(2 each column) M6 x 1.0 x 12Lg. carriage bolt
B	(2 each column) M6 x 1.0 lock nut
C	(3 each column) M10 x 1.5 x 20Lg. carriage bolt
D	(3 each column) M10 lock nut

Fig. 34 Detail

Item	Description
E	Hose clamp (1 on each locking latch assembly)
F	Locking latch assembly
G	Lower column hole plug
H	Lock hole cover
I	Approach

11.9 Assemble the equalizing cables.

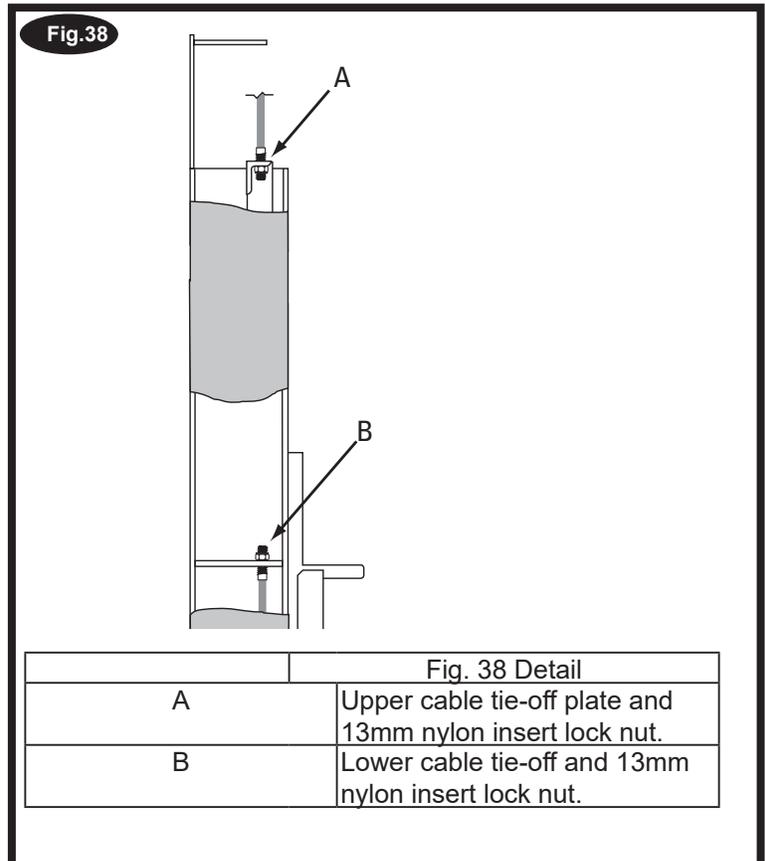
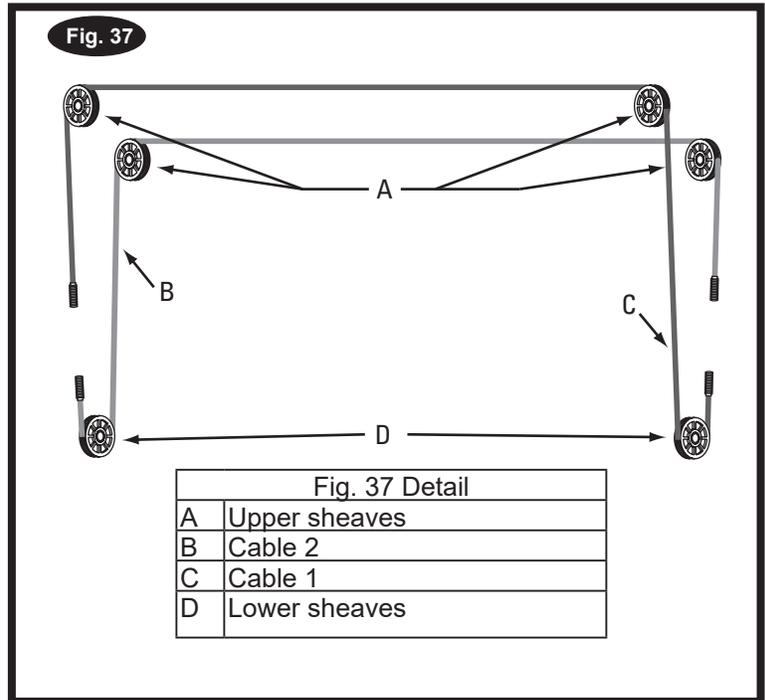
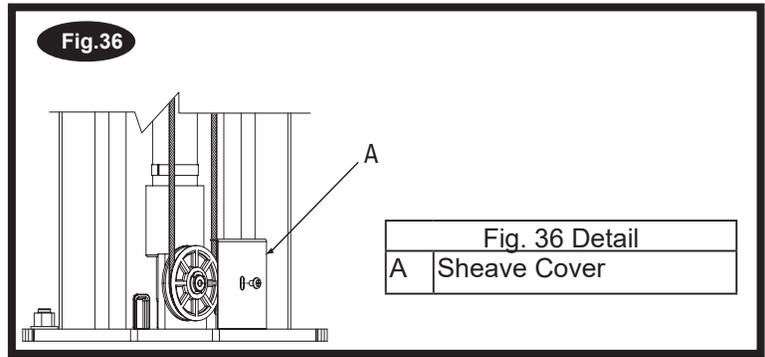
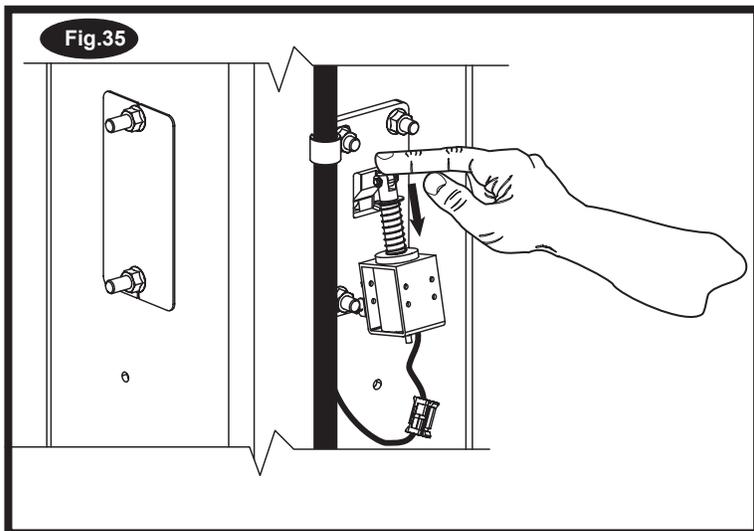
Raising Carriages :Using appropriate equipment, raise carriage to lowest latch position. Be sure Locking latch is securely engaged.

Note:

For solenoid version,when lower the carriage,you should push the top pin of the solenoid like fig. 35 show, 2 side of column,

For M version, you just pull down the latch release handle.

1. Remove sheave cover, Fig. 36.
2. Refer to Fig. 37 for the general cable arrangement. First, run a cable end up through the small hole in the lower tie-off plate, Fig. 38.
3. Push the cable up until the stud is out of the carriage top opening.
4. Run a nylon insert lock nut onto the cable stud so 13mm of the stud extends out of the lock nut.
5. Pull the cable back down, Fig. 38.
6. Run cable around the lower sheave, then up and around overhead sheave and across and down to the opposite carriage, Fig. 37. Install sheave cover, Fig. 36.
7. Fasten the cable end to the carriage upper tie-off bracket. Tighten the lock nut enough to apply light tension to the cable.
8. Repeat procedure for the second cable. Adjust the tension of both cables during the final adjustments in Chapter 12 commissioning.



11.10 Assemble the electrical connections



Risk of electrocution. Faulty electrical work may lead to critical injury and also to damage to property.

DANGER

- Always follow the instructions below. Proper installation and commissioning must be documented in the inspection logbook.
- Use the form "Initial safety inspection before installation"

1. Safety instructions for connecting power cables

- Electrical connection work may only be carried out by qualified electricians.
- Before commissioning, check the mains voltage of the building wiring. This must match the specified post lift voltage (→ see Annex).
- The connection to the mains supply must be hard-wired!
The mains supply cable from the fuse box to the control box of the post lift must be hard-wired according to the wiring diagram. No plug outlets must be used.
- The motor is designed for clockwise phase rotation. The direction of rotation must be checked during connection (if necessary, reverse the polarity!).
- A motor protection switch designed for rated current and rated voltage must be fitted as overload protection. This must be provided by the lift user (not supplied). The relief valve is a point of the motor protection against overload and protected with a cap.
- All leads/cables/hoses must be routed in cable conduits. Trip hazards must be avoided in the traffic and work zone.
- As with all electronic equipment, the inbay control modules can be affected by voltage irregularities. It is the lift owner's responsibility to ensure that adequately protected power sources are available for connecting this equipment.
- Use separate circuit for each power supply. Protect each circuit with time delay fuse or circuit breaker by lift owner.

1. Installing Control Panel

- Fasten control control base plate using 5 pcs Hex socket screw M8*10 and 4m thickness washer Fig 40,41&42 .
- Routing the Motor cable, power harness cable and control connection cable from control to the top of column and round to crossbeam. (for M version, no cable round over crossbeam), Fig43.

2. Routing Motor cable and overhead cable

- From the master control panel route cables up through column along the hose routing, Fig. 43.
- Locate the overhead switch cable at the master cable connector. Feed the overhead switch cable through the strain relief and into the overhead switch box, Fig. 43.
- Attach lowering valve cable to lowering valve and tighten screw on top, Fig. 43.
- Run the motor cable through strain relief in the motor junction box. Motor wiring and wire diagrams are detailed in, Fig. 39.

3. Assemble the overhead switch

- Check overhead switch assembly to assure that switch bar activates the switch when raised. Switch is wired normally closed and will cut off motor when activated, see Fig. 44, 45, 46 and Fig. 47.

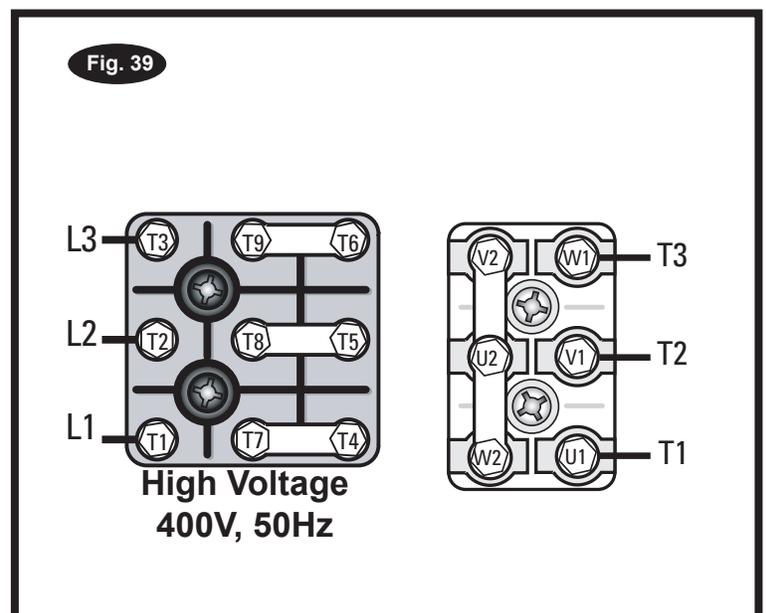


Fig. 40

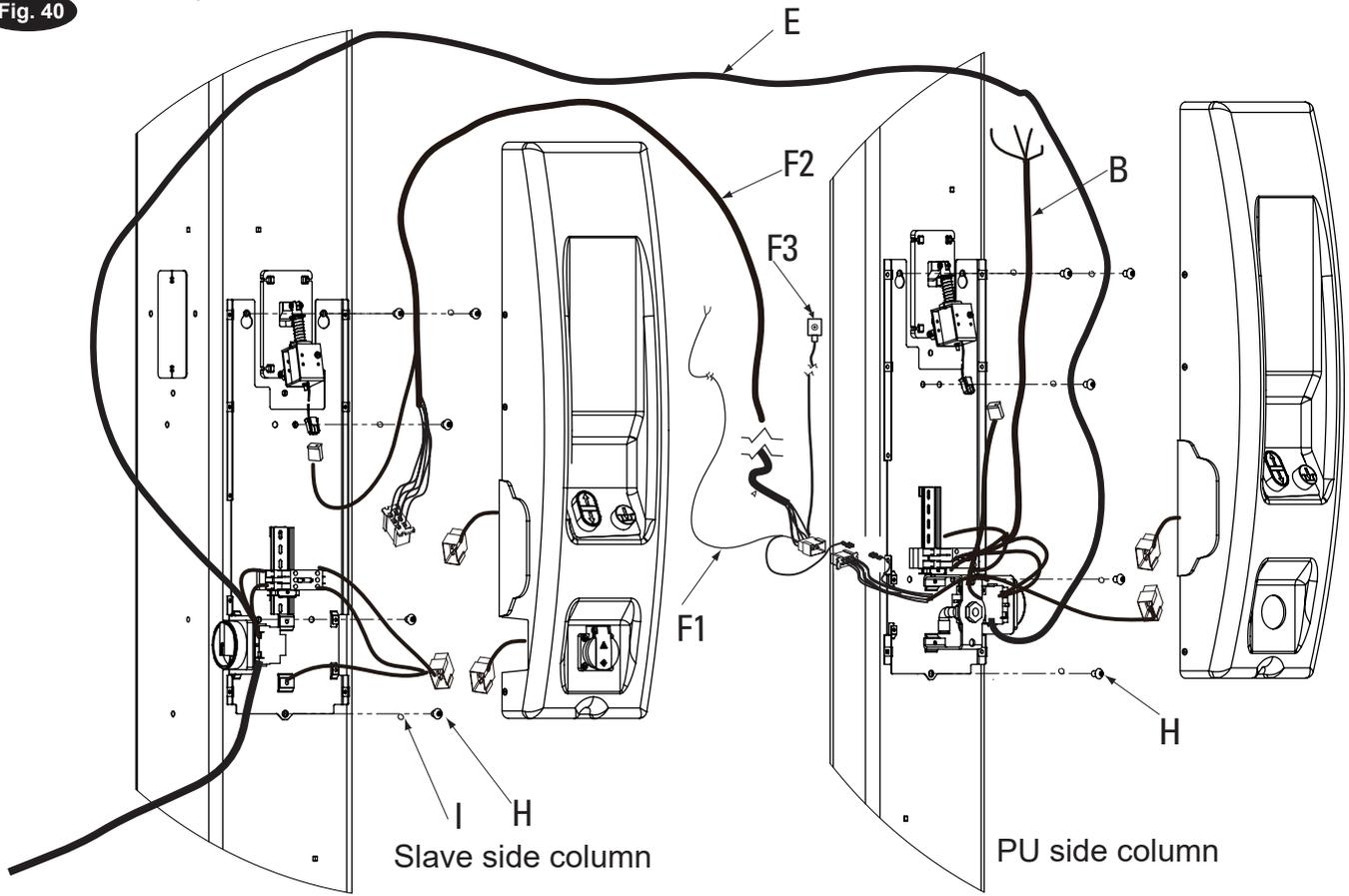


Fig. 41

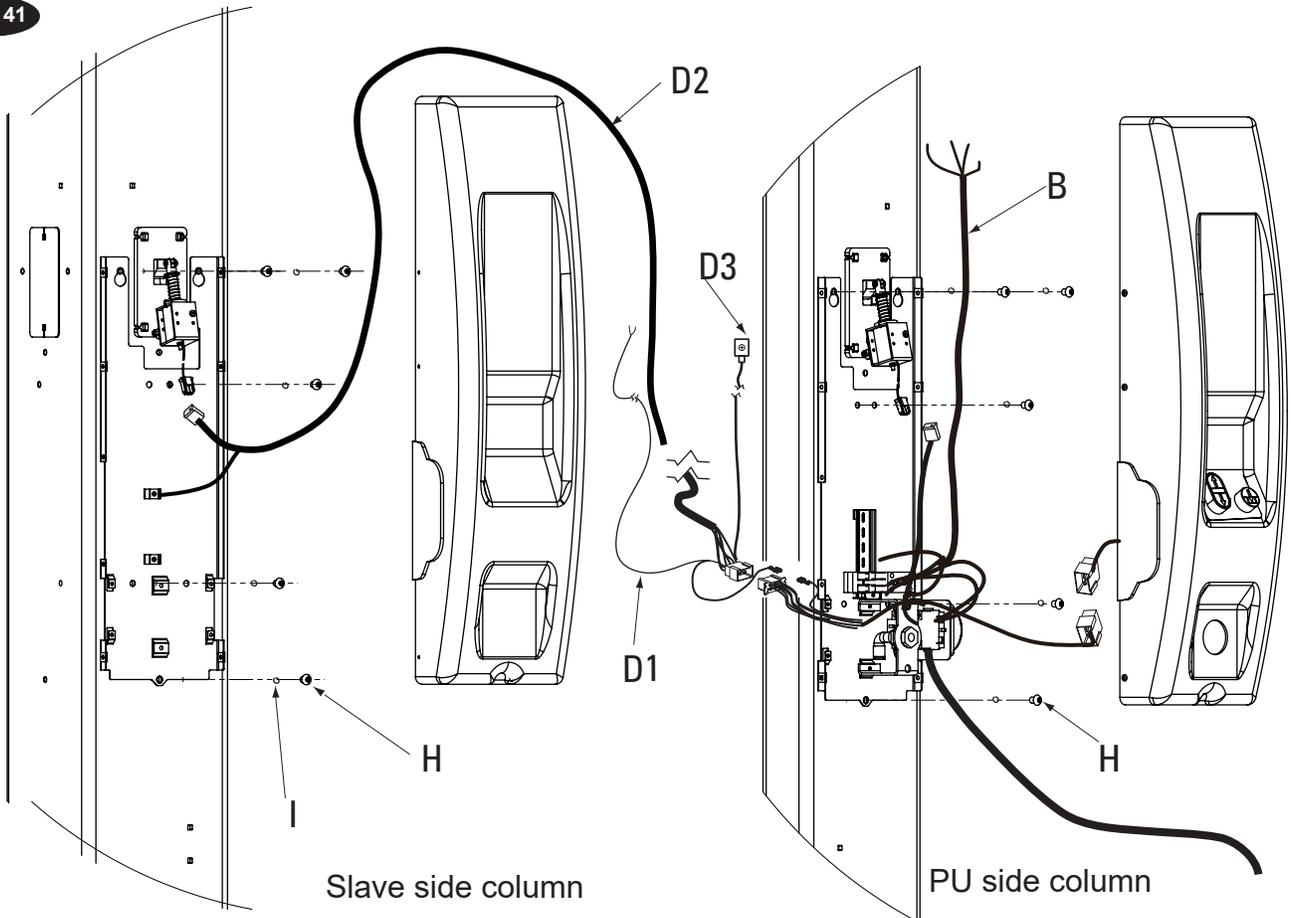
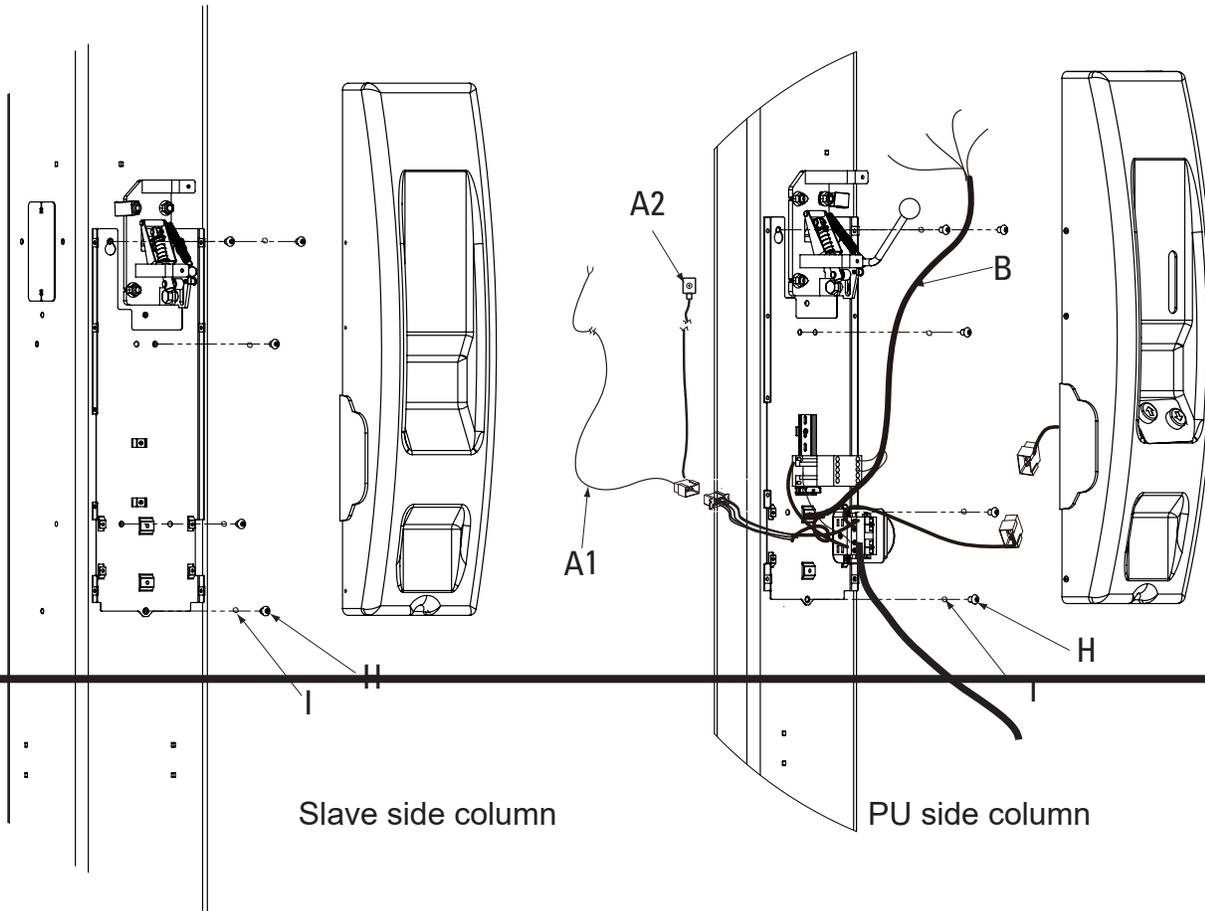


Fig. 42



Slave side column

PU side column

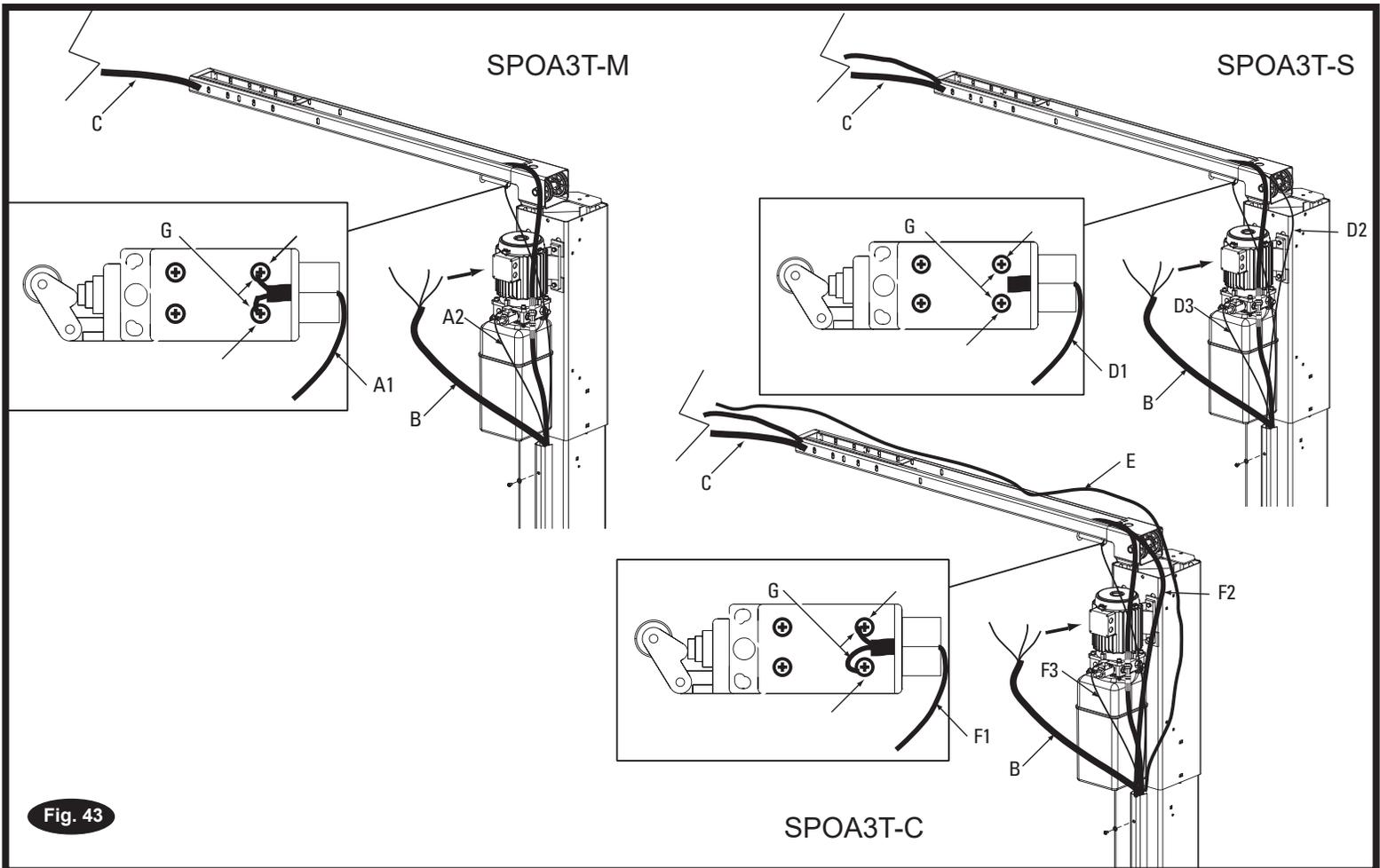


Fig. 43

Fig. 43 Detail		Remark
A	Control harness cable SPOA3TM-DQ7	M version
	A1: to overhead switch	
	A2: to lowering valve	
B	Motor cable SPOA3TM-DQ5	
C	Overhead hydraulic hose	
D	Control harness cable SPOA3TS-DQ5	S version
	D1: to overhead switch	
	D2: to slave side solenoid	
	D3: to lowering valve	
E	Power connection cable SPOA3TC-DQ9	C version
F	Control harness cable SPOA3TC-DQ6	C version
	F1: to overhead switch	
	F2: to slave side solenoid and socket	
	F3: D3: to lowering valve	
G	N.C. contacts	
H	Hex socket screw M8*10	
I	B41H-8 4mm thickness washer	

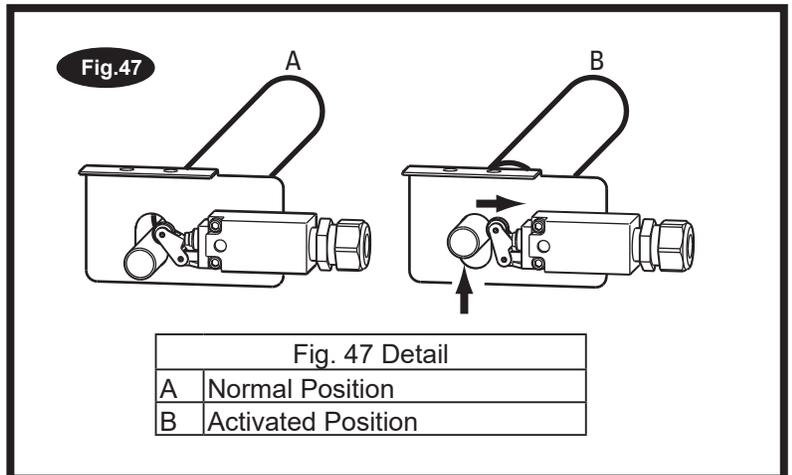
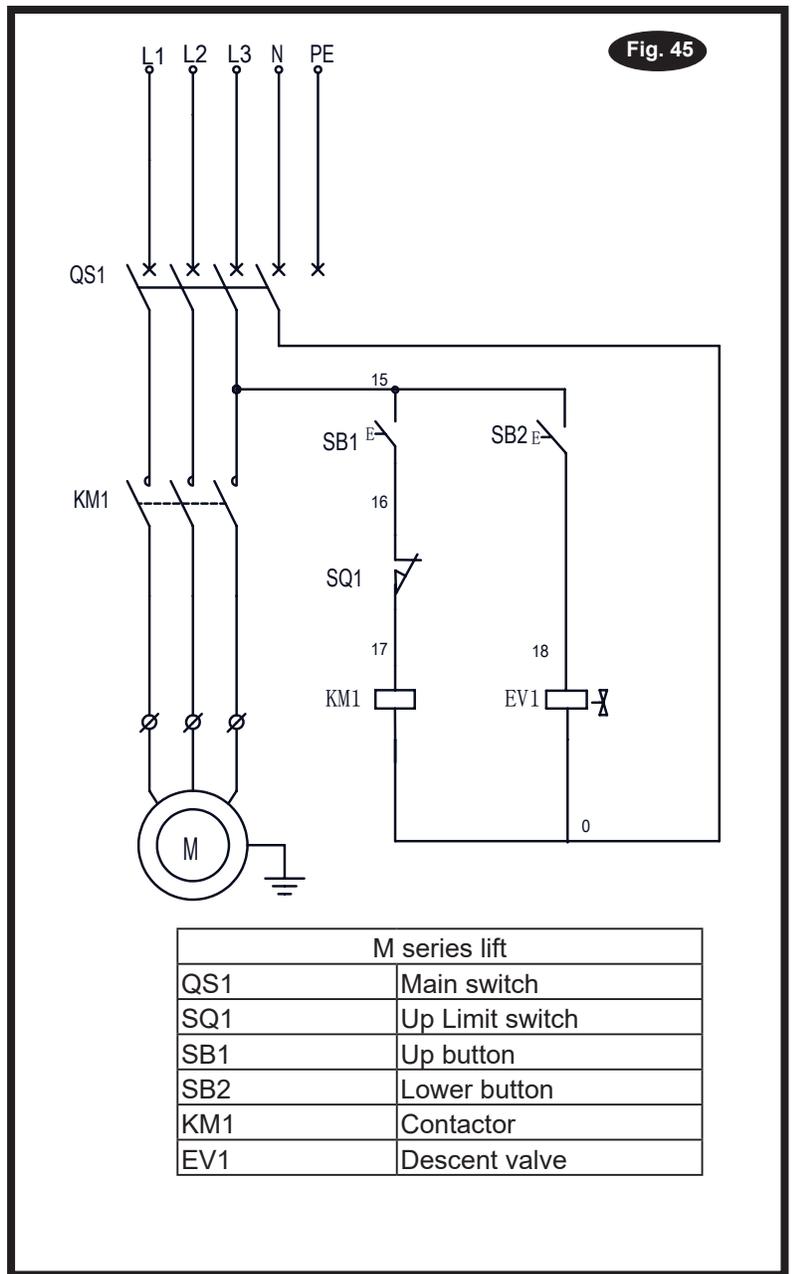
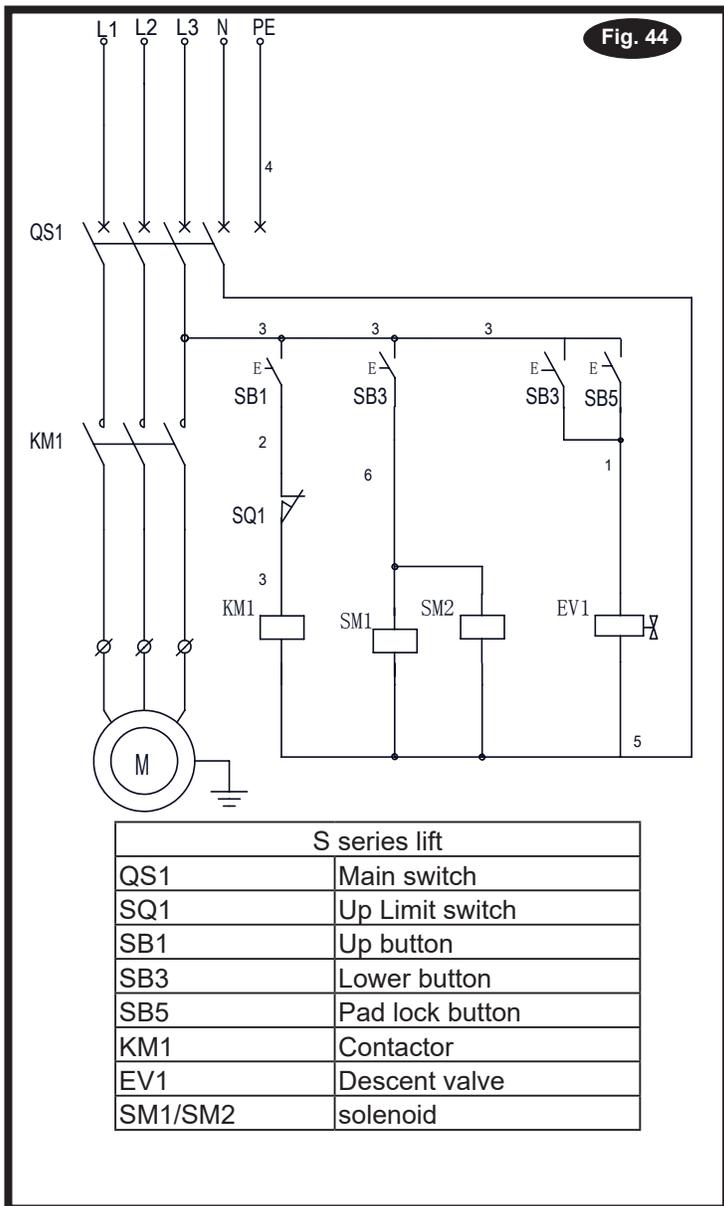
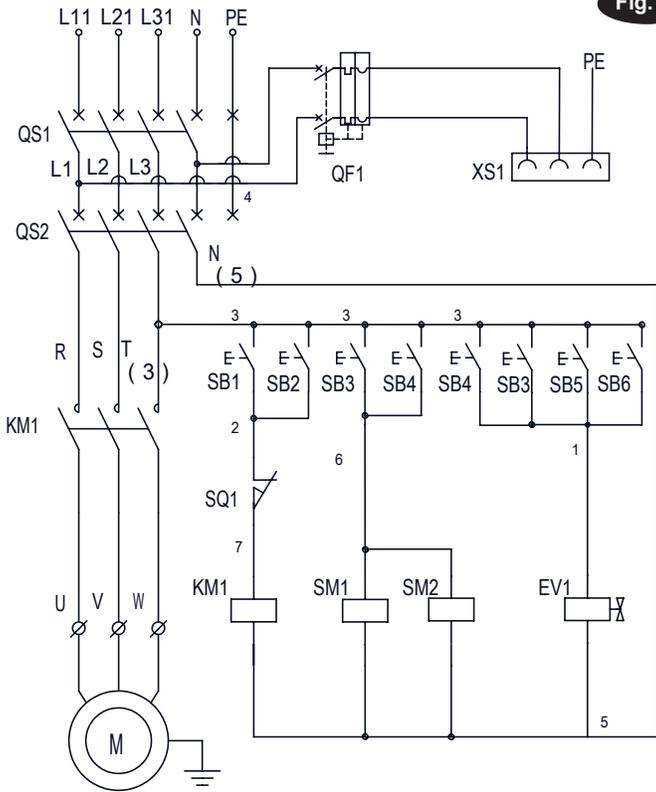


Fig. 46

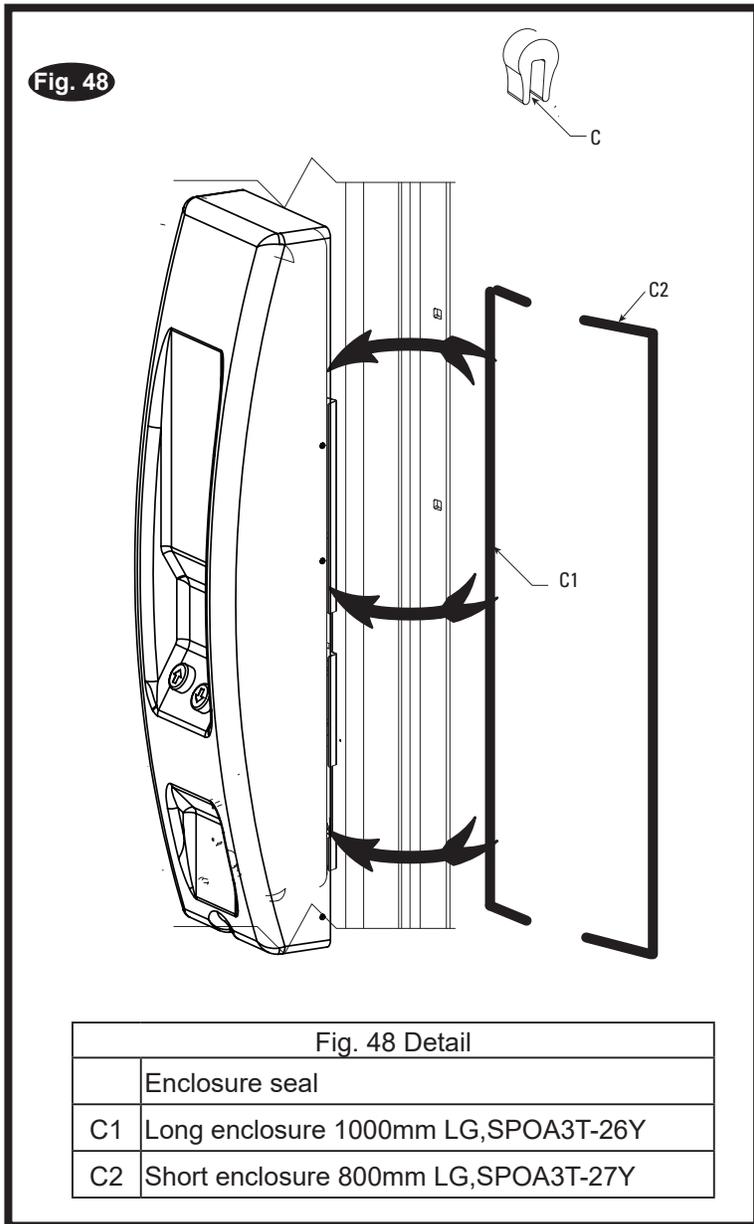


E series lift	
Slave side	
QS1	Main switch
QF1	Leakage protector
SB2	Up button
SB4	Lower button
SB6	Padlock button
XS1	Socket
Main side	
QS2	Main switch
KM1	Contactor
SB1	Up button
SB3	Lower button
SB5	Padlock button
SQ1	Up limit switch
EV1	Descent valve
SM1/SM2	Solenoid

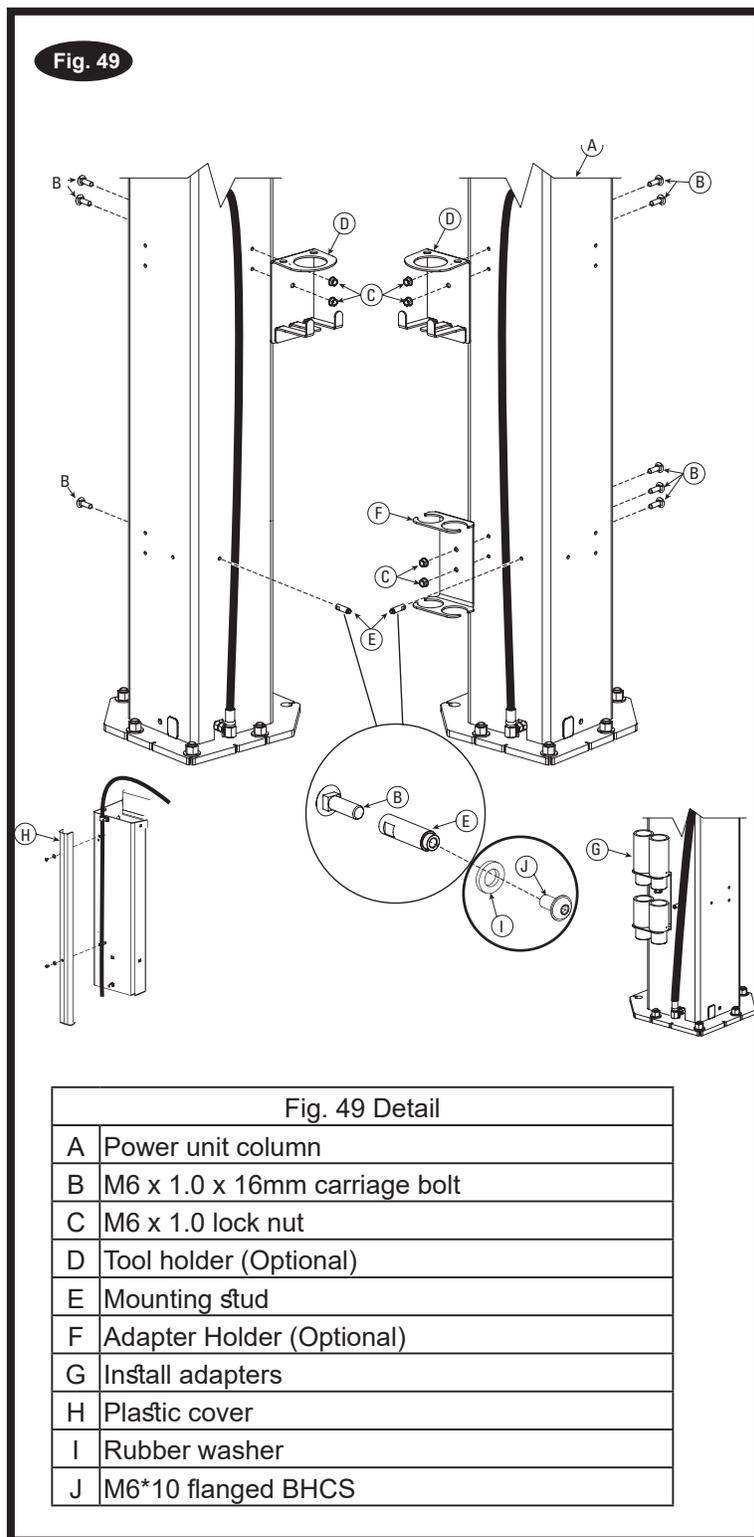
11.11 Installing Gaskets, web cover, tool

i These gaskets must be installed to a higher protection.

- Route the plastic gaskets around edge of control cover by 4 turns. Close the cover to base plate on the column, Push tighten by hand, then use screw to attached panel to the back plate. Fig 48.



- Install lower enclosure mounting studs, (adapter holders and tool holders optional), Fig. 49
- (Install adapters optional) Fig. 49



11.12 Installing the arms & restraints

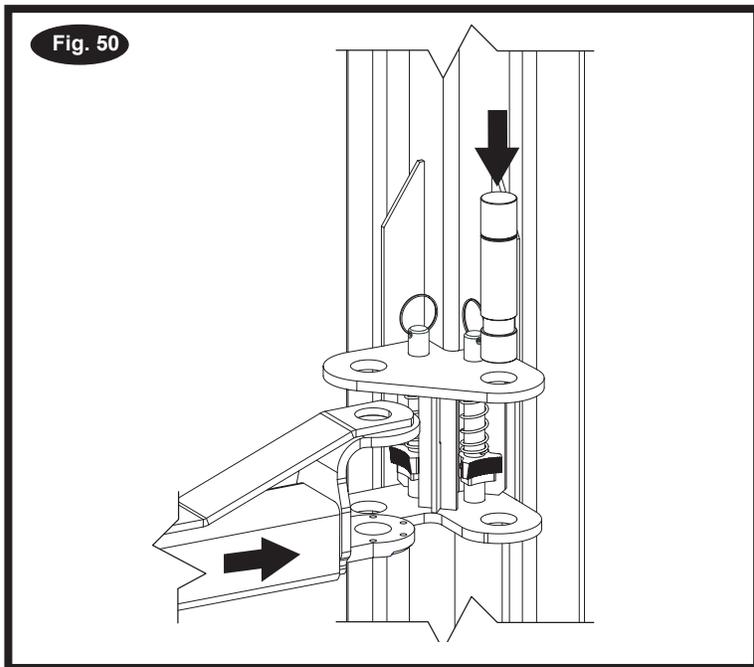
- Before installing arms, raise carriages to a convenient height. Grease swivel arm pins and holes with Lithium grease. Slide arm into yoke, Fig. 50. Install 1-3/4" diameter arm pin(s), Fig. 50&51.
- After installing arms and pins, install arm Restraint Gears as follows: Install Restraint Gear onto arm clevis, as shown, Fig. 54. Ensure side of gear marked TOP is facing upward, Fig. 54.



TOP is stamped on top side of gear. You may need to pull up on the pin-ring to allow enough room to install Restraint Gear.

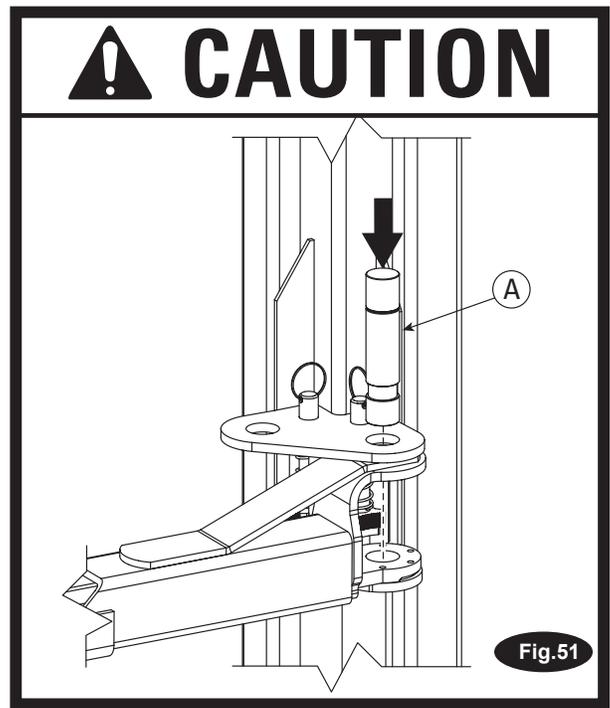
- Then, install the (3) 3/8"-16NC x 1-1/2" grade 8 HHCS (12 total for all 4 arms) and 3/8" Spring Lock washers into the gear and arm, but do not tighten. Reference Fig. 52, Fig. 53.

Torque the Restraint Gear bolts to 30-34 ft.-lbs.



i To check operation of arm restraints, raise carriage 25 cm. from full down position. Pull up on pin-ring and adjust arms to desired position. To engage restraint, let pin-ring down allowing gear teeth to mesh together. It may be necessary to rotate arm slightly to engage gear teeth.

i Pin & Ring, Spring, & Gear Block are all pre assembled.



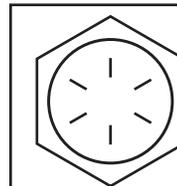
A **IMPORTANT** Installation Pinch Point Keep Hands Above Groove



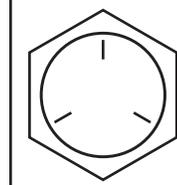
Once arm is installed in yoke, pull up actuator pin and swing arm fully around, being sure that the Restraint Gear and

Gear Block always stay aligned. If they do not stay aligned, remove restraint gear and install in the opposite position.

Fig. 52



ATTENTION
Use Grade 8 Bolts When Specified



ATTENTION
All Hardware is Grade 5 Unless Otherwise Noted

11.13 Installing others

- Arm Guard Installation: Install arm guards, Fig. 54.

Fig. 53

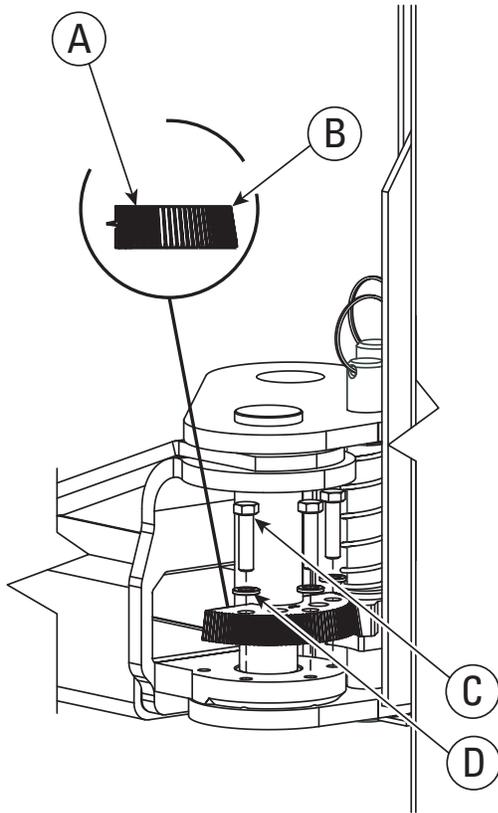


Fig. 53 Detail

A	TOP will be marked on top side of restraint gear
B	Note beveled orientation
C	(3) Each arm- 3/8"-16NC*1-1/2" HHCS
D	(3) Each arm -3/8" Lock washer

Fig. 54

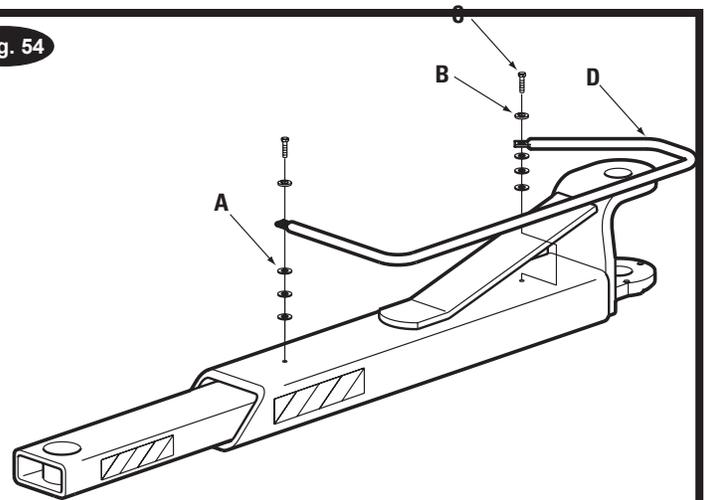


Fig. 54 Detail

A	(6) 5/16" Flat Washers
B	(2) 5/16" Spring Lock Washers
C	(2) 5/16"-18NC HHCS (per arm)
D	Arm Guard (For SPO40M the different arm guard goes on the right front arm, see Fig. 2b)

Fig. 55

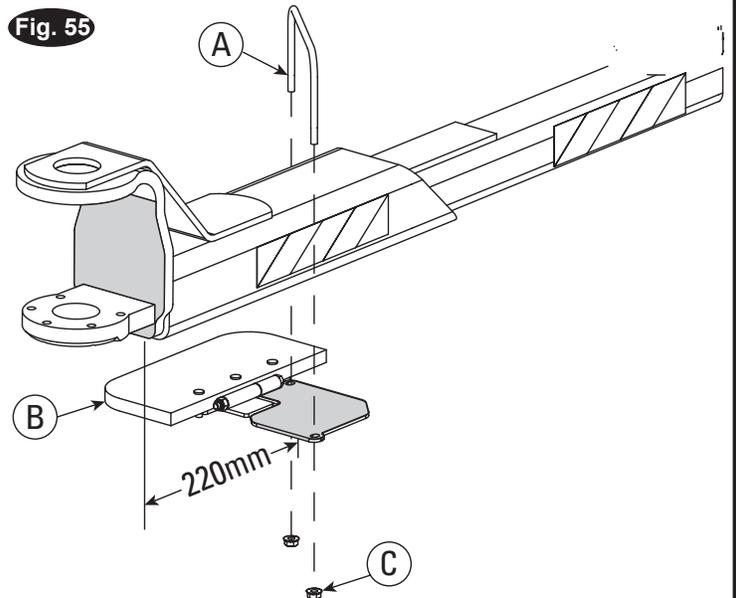
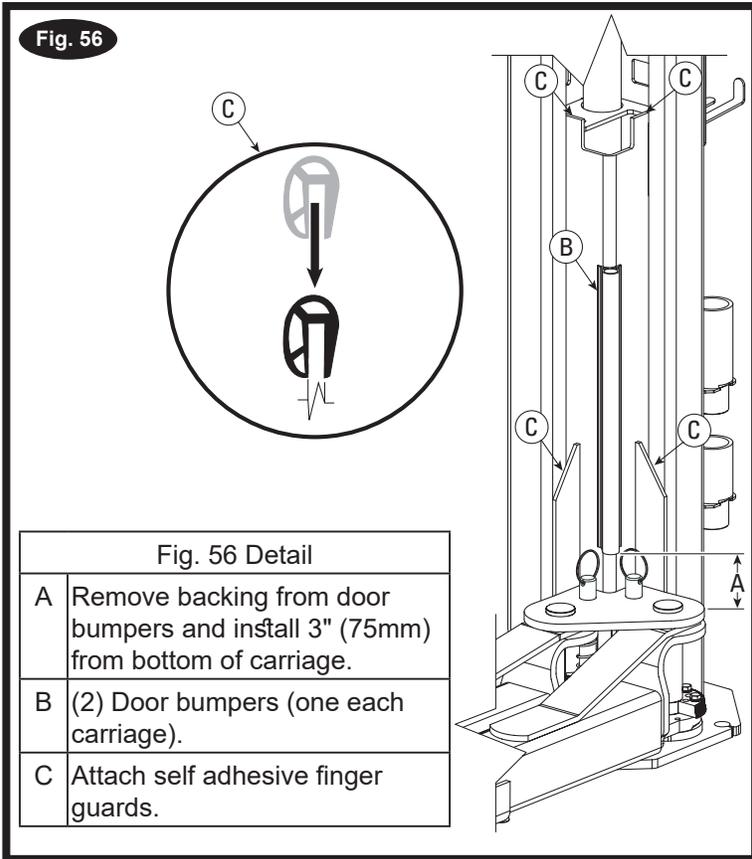


Fig. 55 Detail

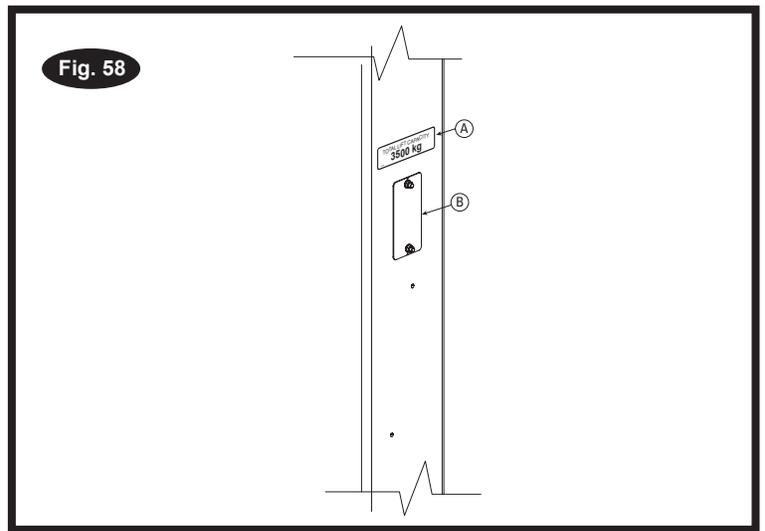
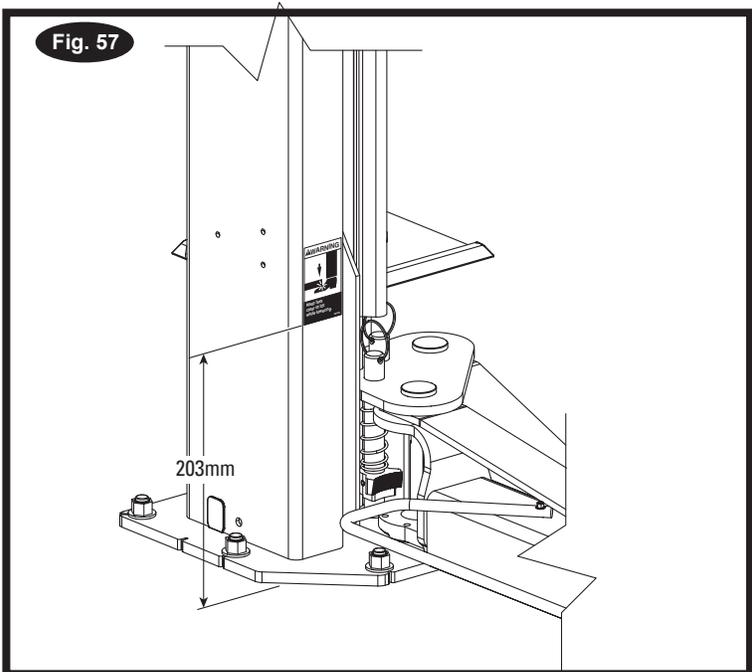
A	(2) Straps
B	(2) Arm guard assemblies
C	(4) 1/4-20NC Hex Flgd Wzlock nuts Pltd

- Door Bumper Installation.
Install door bumpers and finger guards, Fig. 56.

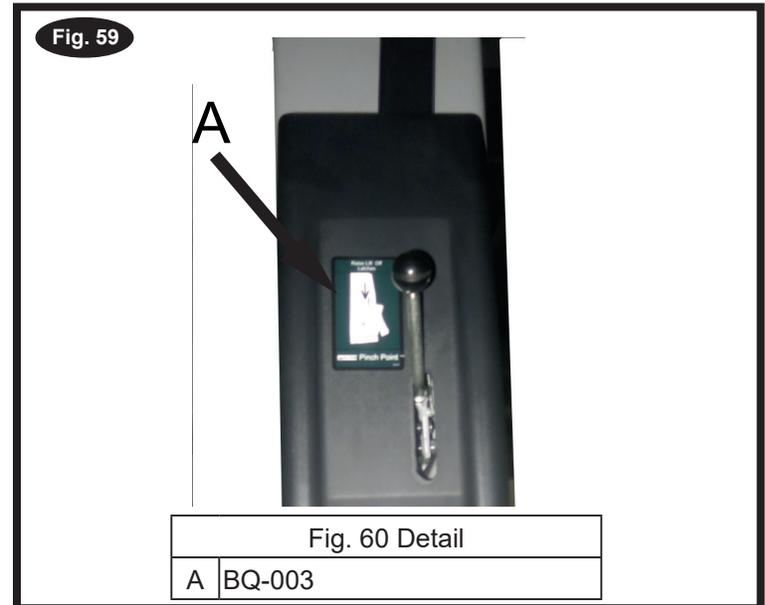


- Pinch Point Decal / Capacity Decal Location:

Decals should be a minimum of 203mm from the bottom of decal to the ground. Capacity decals should be located just above the lock hole covers on each column.



- Latch Release Decal For M Series Lifts: Install latch release decal on cover above latch release handle, Fig. 59.



12. Commissioning

12.1 Check Operation

Operate lift and assure that push button raises lift when pushed and stops lift when released. Check disconnect switches for cutting power to push-buttons. Also check that overhead switch stops lift from raising when actuated and that lift regains power when deactivated.



Lubricate the surface of slide between columns and slider before commissioning. It can be applied by brushing. This can significantly increase the service life of the lift.

12.2 Test the hydraulic system

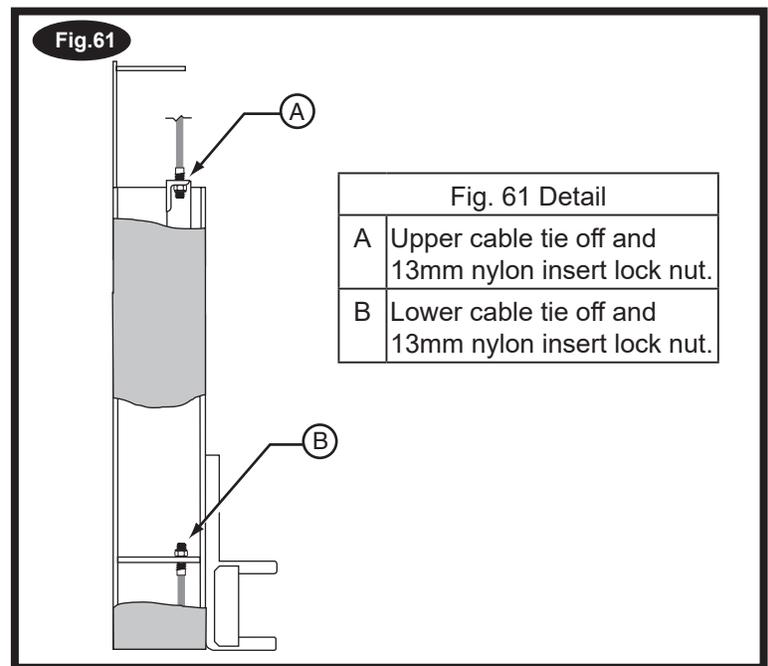
1. Set the main switch to ON.
2. Move the unloaded lift to full rise and the bottom position several times using the Up and Down buttons. This will completely remove any air pockets in the hydraulic system.
3. Press up button to raise lift to full rise and keep motor running for 5 seconds. Stop and check all hose connections. Tighten or reseal if required.
4. Carry out a visual inspection of the hydraulic and pneumatic system. In doing so, check all lines, especially the couplings. No leaks must be found.
5. Lower the lift completely and check the hydraulic oil level. This must also correspond to the maximum level.
6. Finally check that the hydraulic components are fitted securely.

12.3 oil bleeding

Press Up button to raise lift about 600mm Open cylinder bleeders approximately. 2 turns, Fig. 31. Close bleeders when fluid streams. Press on the down button to fully lower lift. Fill tank until it reaches the MIN _____ mark on the tank. Replace fill-breather cap.

12.4 Checking and Adjusting Equalizer Cables

Raise lift to check equalizer cable tension. Below carriage, grasp adjacent cables between thumb and forefinger, with about 67N effort you should just pull cables together. Adjust at upper tie-offs (Fig. 61).



12.5 Checking and Adjusting Latch cable for M series

1. Raise carriages past the first latch position and then lower onto latches.
2. Check that the latches have fully engaged when the latch handle is released. Be sure carriage is resting on latch dog.
3. Raise carriages fully off latches, actuate latch handle and check that the latches have fully disengaged.
4. Make necessary adjustments if required, see Fig. 66, recheck latch function. Latch handle must be positioned at the top of the latch control slot, Fig. 65.
5. Pull Control Plate down, making sure the Latch Dog itself does not move, to eliminate clearance between Control Plate slot and Latch Dog pin (Fig. 64). Loosen clamp and remove slack in the cable. Tighten the clamp.

Fig. 62

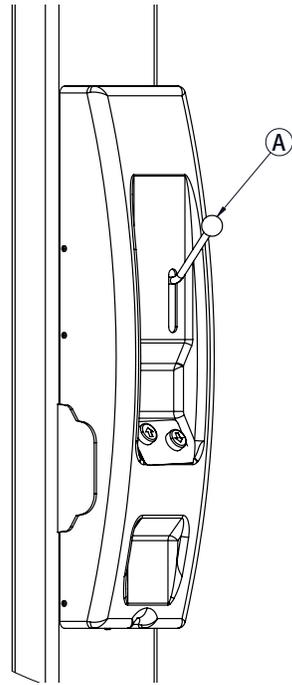


Fig. 62 Detail

A	Latch handle MUST be positioned at the top of the latch control cover slot.
---	---

12.6 Locking Latch Engagement Test:

Before test, please take off the cover to check the locking latch engagement.

- A) Raise carriages past the first latch position and then lower onto latches.
- B) Check that the latches have fully engaged when the release switch is not depressed.
- C) Raise carriages fully off latches. Now depress release switch and check that the latches have fully disengaged.
- D) Install latch covers with 5/16"-18NC x 3/8" lg. BHCS.

Fig. 63

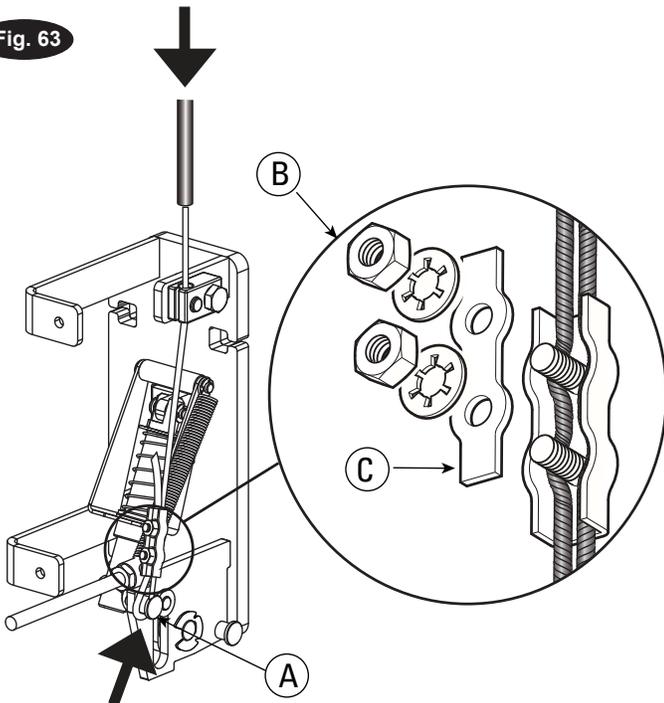


Fig. 63 Detail

A	Shoulder Bolt
B	Feed cable up through cable clamp, loop over end of shoulder bolt and feed back down through cable clamp.
C	Cable Clamp

13. Disassembly

- Disassembly work may only be carried out by authorized qualified staff.
- Only qualified electricians may work on the electrics.
- Only trained persons with specialist knowledge of hydraulics/pneumatics may work on the hydraulic or pneumatic equipment.

1. To carry out disassembly work, switch off the equipment at the main switch (position OFF).
2. Attach a warning sign to prevent reconnection.
3. Disconnect the hydraulic hoses.
4. Disconnect the electricity supply.



Risk of fatal injury through incorrect disassembly of hydraulic components. These are pressurized (up to 200 bar).

WARNING

- Never disassemble hydraulic components (lift cylinders). These should always be detached as a single component.
- The lift cylinder should only be properly disposed of by a certified company.

5. Empty the hydraulic oil tank, drain the hydraulic oil from the hydraulic hoses. Dispose of the hydraulic oil as described in Chapter 14.
6. Remove grease and other chemical substances. Dispose of as described in Chapter 14.
7. Disassemble lift columns, cross beams and arms.

14. Disposal

14.1 Environmental procedures for disposal

- Prevent environmental hazards.
- Avoid contact with or inhalation of toxic substances such as hydraulic fluid.

- Oils and lubricants are water pollutants under the terms of the Water Management Act WGH. Always dispose of these in an environmentally friendly manner in compliance with the regulations which apply in your country.
- Hydraulic oil-based on mineral oil is a water pollutant and is combustible. Refer to the relevant safety data sheet for disposal.
- Provide suitable oil drain pans and oil absorbents to drain the oil.
- Ensure that no hydraulic oil, lubricants, or cleaning materials contaminate the soil or wash away into the drainage system.

14.2 Packaging

Do not dispose of with domestic waste! The packaging contains some recyclable material which must not be disposed of with domestic waste.

1. Dispose of packaging materials in compliance with local regulations.

14.3 Oils, grease, and other chemical substances

1. When working with oil, grease and other chemical substances, comply with the environmental regulations which apply to the relevant product.
2. Dispose of oil, grease and other chemical substances in compliance with the environmental regulations which apply in your country.

14.4 Metals / Electronic waste

This must always be properly disposed of by a certified company.



Dispose of used electrical and electronic devices, including cables, accessories and batteries, separately from household waste.

Annex

2 column surface -mounted Lift

SPOA3T-5

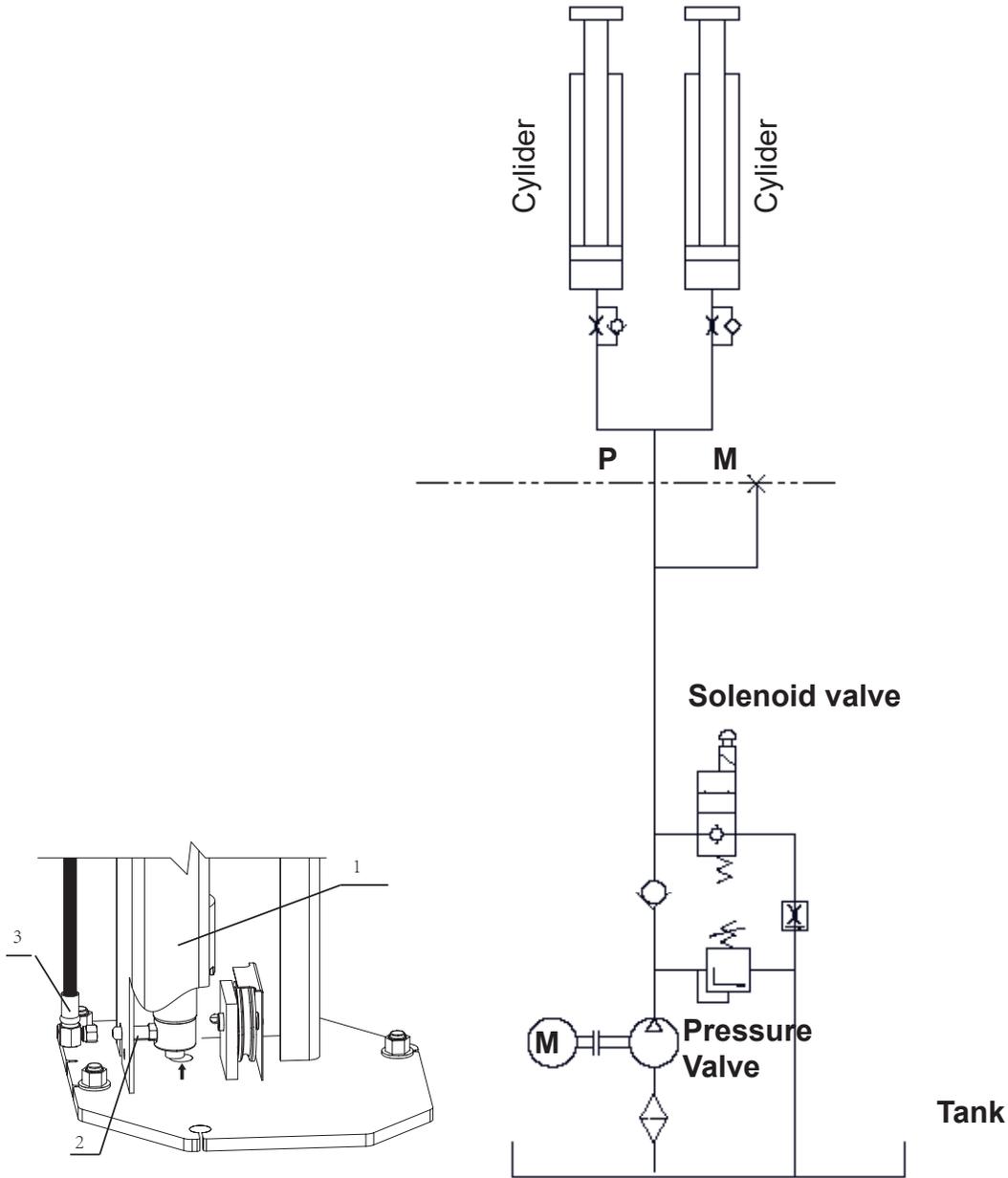
SPOA3T-5AP

SPOA3T-5AF

VAS/MB

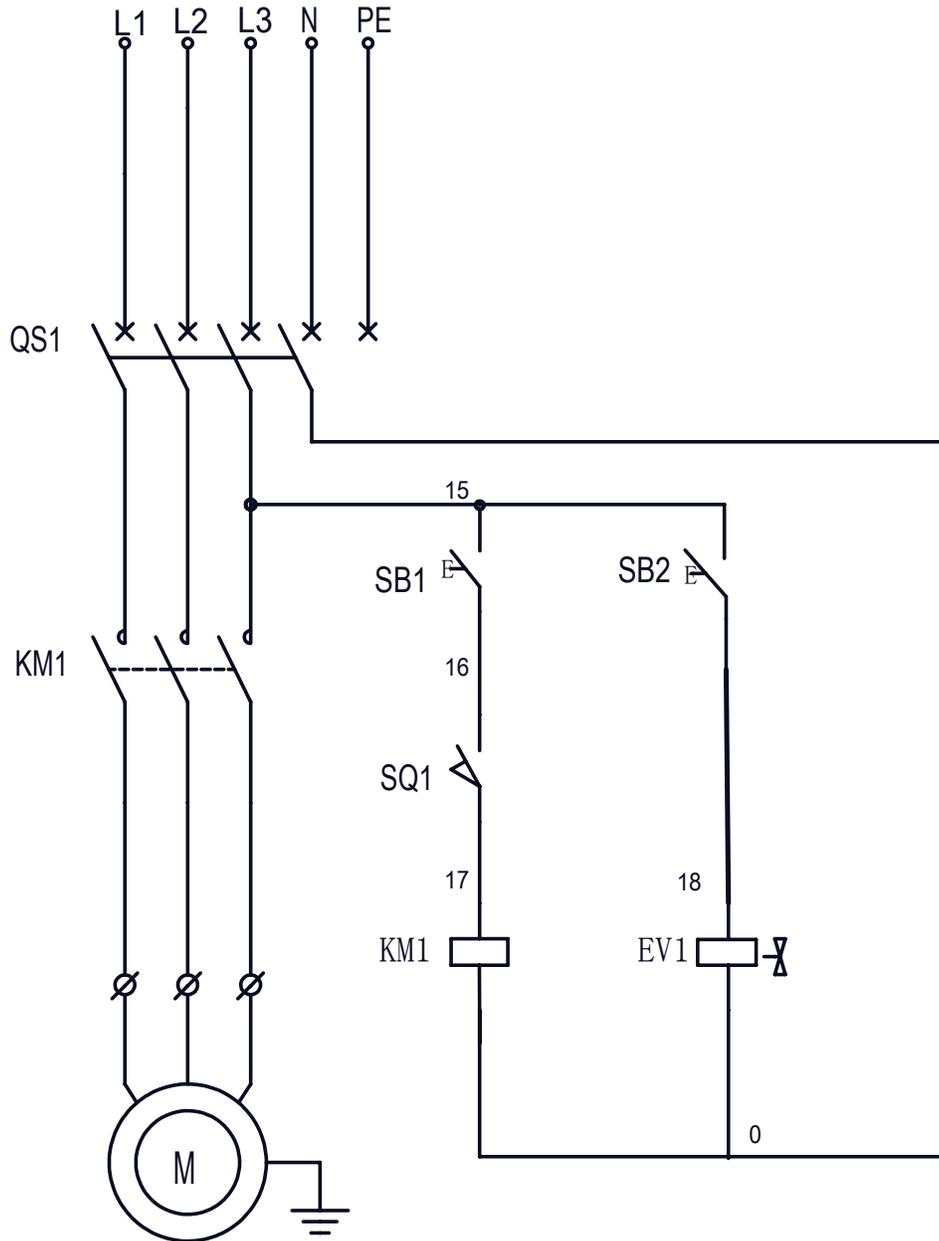
Series 700

I. Hydraulic circuit diagram



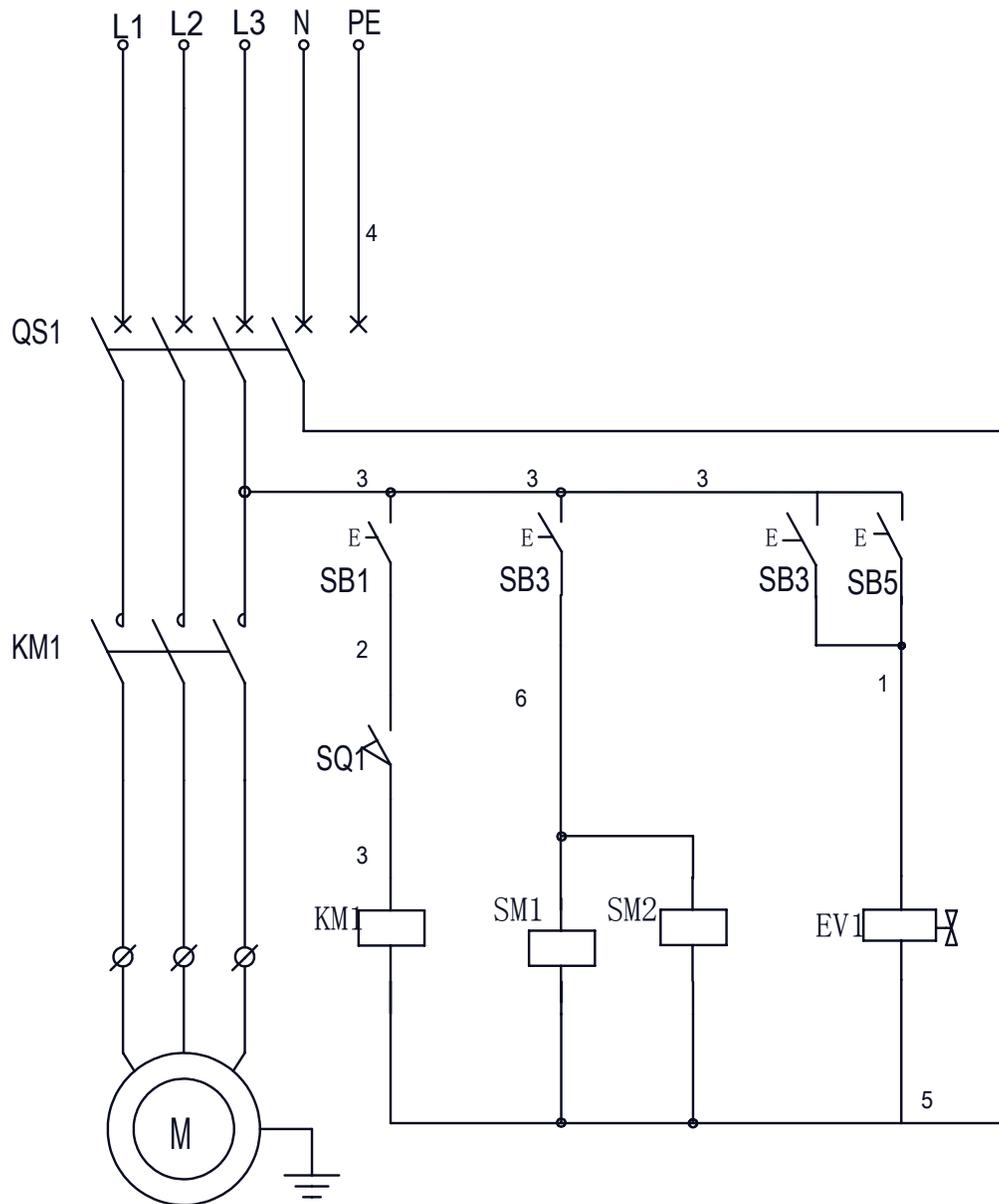
	Partno.	Description	Qty
1	N382Y	Hydraulic cylinder	2
2	ATO-7-9802-1	Fitting	2
3	N3113	Power unit hydraulic hose	1
	G3T-2103 (N3114)	Overhead hydraulic hose for EH1	1
	G3T-2203 (N3115)	Overhead hydraulic hose for EH2	

II. Electric wiring diagram

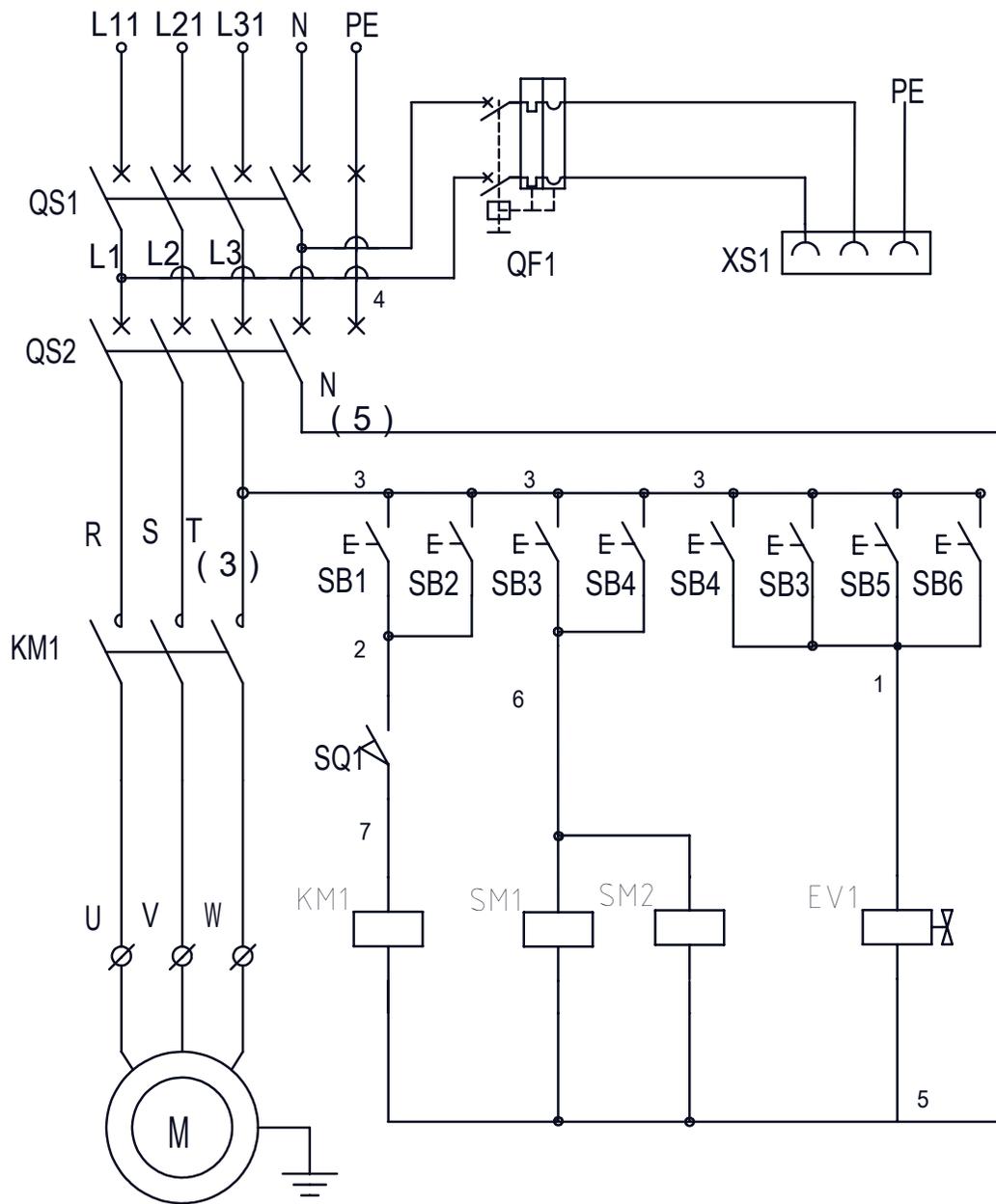


For SPOA3T M version

QS1	Main switch	EV1	Descent valve
SQ1	Up Limit switch	KM1	Contactor
SB1	Up button	SB2	Lower button



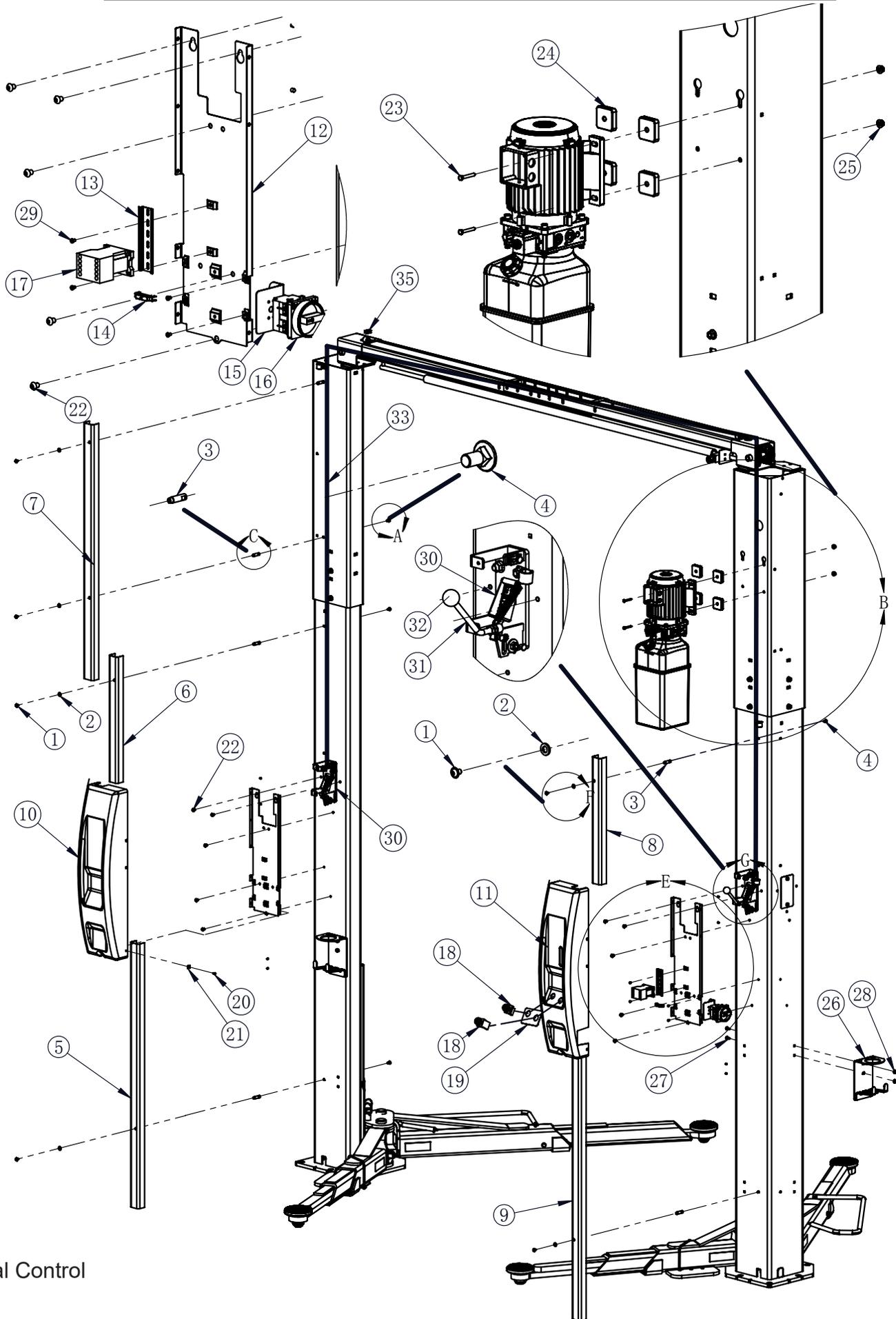
For SPOA3T S version (one side control)			
QS1	Main switch	EV1	Descent valve
SQ1	Up Limit switch	KM1	Contactor
SB1	Up button	SB3	Lower button
SB5	Padlock button		
SM1/SM2 Release of the solenoid			



For SPOA3T C version (two side control)			
Slave side		Main side	
QS1	Main switch	QS2	Main switch
QF1	Leakage protector	KM1	Contactor
SB2	Up button	SB1	Up button
SB4	Lower button	SB3	Lower button
SB6	Padlock button	SB5	Padlock button
XS1	Euro receptacle	SQ1	Up limit switch
		EV1	Descent valve
SM1/SM2 Release of the solenoid			

Annex III. Parts Break Down

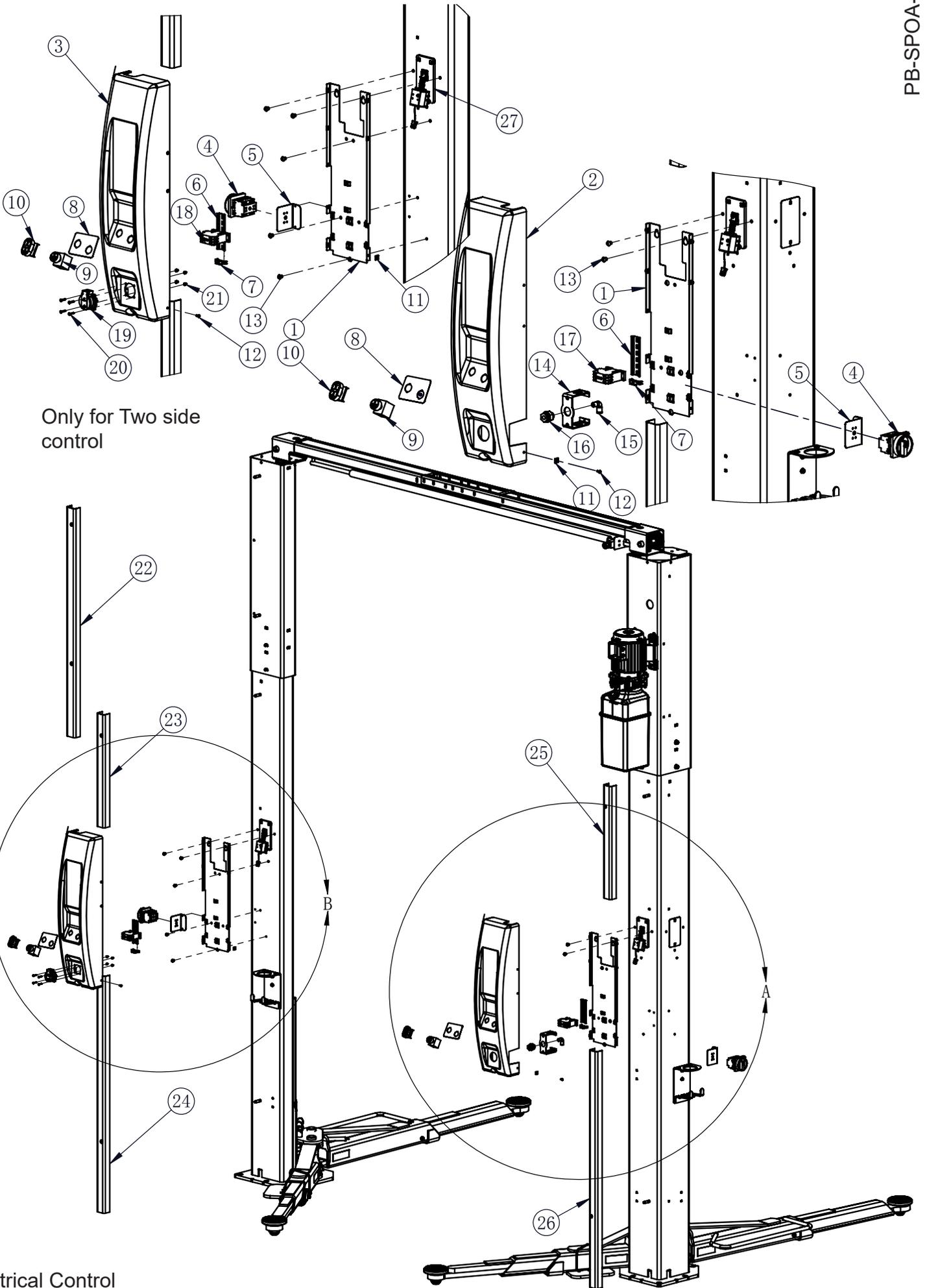
PB-SPOA-1



Manual Control

Detail for PB-SPOA-1

	PartNo.	Description	Qty
1	41659	M6*1.0*10mm Lg flanged BHCS	6
2	G3T-1005 (N1224-7)	Rubber washer	6
3	G3T-1004 (N1224-6)	Mounting stud	6
4	41658 (BCQ061012820)	Carriage bolt, plated M6*1.0*12	6
5	FA7417-11A	Plastic wire cover	1
6	FA7417-11C	Plastic wire cover	1
7	FA7417-11E	Plastic wire cover	1
8	FA7417-11D	Plastic wire cover	1
9	FA7417-11B	Plastic wire cover	1
10	SPOA-PC2	Plastic control cover	1
11	SPOA-PC1	Plastic control cover (main side)	1
12	FA7274-7Y	Cover mounting base plate	2
13	FA7274-10D	Mounting plate	1
14	KTB2-STB	End capped	1
15	FA7274-9D	Mounting plate	1
16	TO-2-8900 (XG150046)	Main switch	1
17	XTCG018C00DT	AC contactor	1
18	A22-RD-30/K10	Button	2
19	NP797-1	Labe1	1
20	B19-#8-1/2	Cross recessed head tapping screw #8-1/2	12
21	FA7180-11	U-type nut clip	12
22	B25-8*10	Pan head screw M8*10	10
23	B11-8*40 (41622)	Hexagon bolt M8*40 (8.8)	4
24	FA965	Vibration pad	4
25	NFS08100082S	Serrated flanged locknut, plated M8	4
26	G3T-1008	Tool holder	2
27	41647	Carriage bolt,plated M6*16	4
28	NFS06100082S (41656)	Serrated flanged locknut, plated M6	4
29	B23-4*6	Screw M4*6	4
30	N624	Lock system assembly	2
31	HTO-1210	Handle	1
32	FC134-91	Rubber ball1	1
33	FJ7595-1	Steel cable	1
34	SPOA3T-2001	Brake line pipe (For EH1)	2
	SPOA3T-2002	Brake line pipe (for EH2)	2
35	N619	Cable end bracket	2
36	N63-1	Latch cable clamp assembly (not show)	1

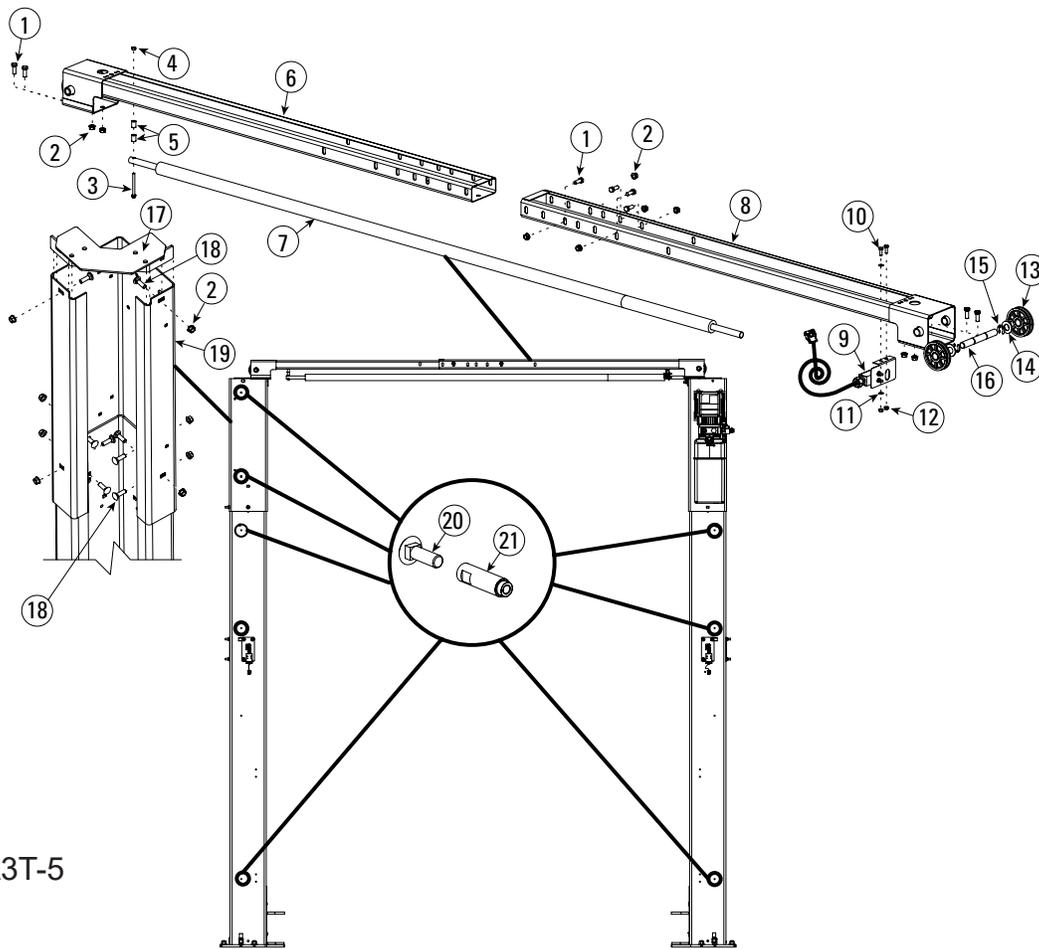


Only for Two side control

Detail for PB-SPOA-2

	Partno.	Description	QTY for S	QTY for C
1	FA7274-7Y	Cover mounting base plate	2	2
2	SPOA-PC3	Plastic control cover	1	1
3	SPOA-PC3	Plastic control cover	1	0
	SPOA-PC4	Plastic control cover	0	1
4	TO-2-8900 (XG150046)	Main switch	2	1
5	FA7274-9D	Mounting plate	2	1
6	FA7274-10D	Mounting plate	2	1
7	KTB2-STB	End capped	2	1
8	NP797-1	Label	2	1
9	A22-RD-50/K10	Pad lock button	2	1
10	A22-QDDL-30/30/K30	Up and down button	2	1
11	FA7180-11	U-type nut clip	12	12
12	B19-#8-1/2	Cross recessed pan tapping screw#8-1/2	12	12
13	B25-8*10	Hex socket screw M8*10	10	10
14	FA7274-8D	Mounting plate	1	1
15	SPOA40E-9803-02	Air Fitting	1	1
16	SPOA40E-9803-03	Air Fitting	1	1
17	XTCG018C00DT	AC contactor	1	1
18	PLD10-16/IN/C/003	Leakage protector	1	0
19	ME11012	Euro receptacle	1	0
20	B26-4*20	Hexgan socket screw M4*20	4	0
21	B33-4	Nylon nut M4	4	0
22	FA7417-11E	Plastic wire cover	1	1
23	FA7417-11C	Plastic wire cover	1	1
24	FA7417-11A	Plastic wire cover	1	1
25	FA7417-11D	Plastic wire cover	1	1
26	FA7417-11B	Plastic wire cover	1	1
27	G3T-1200 (N622)	Lock system assembly	2	2

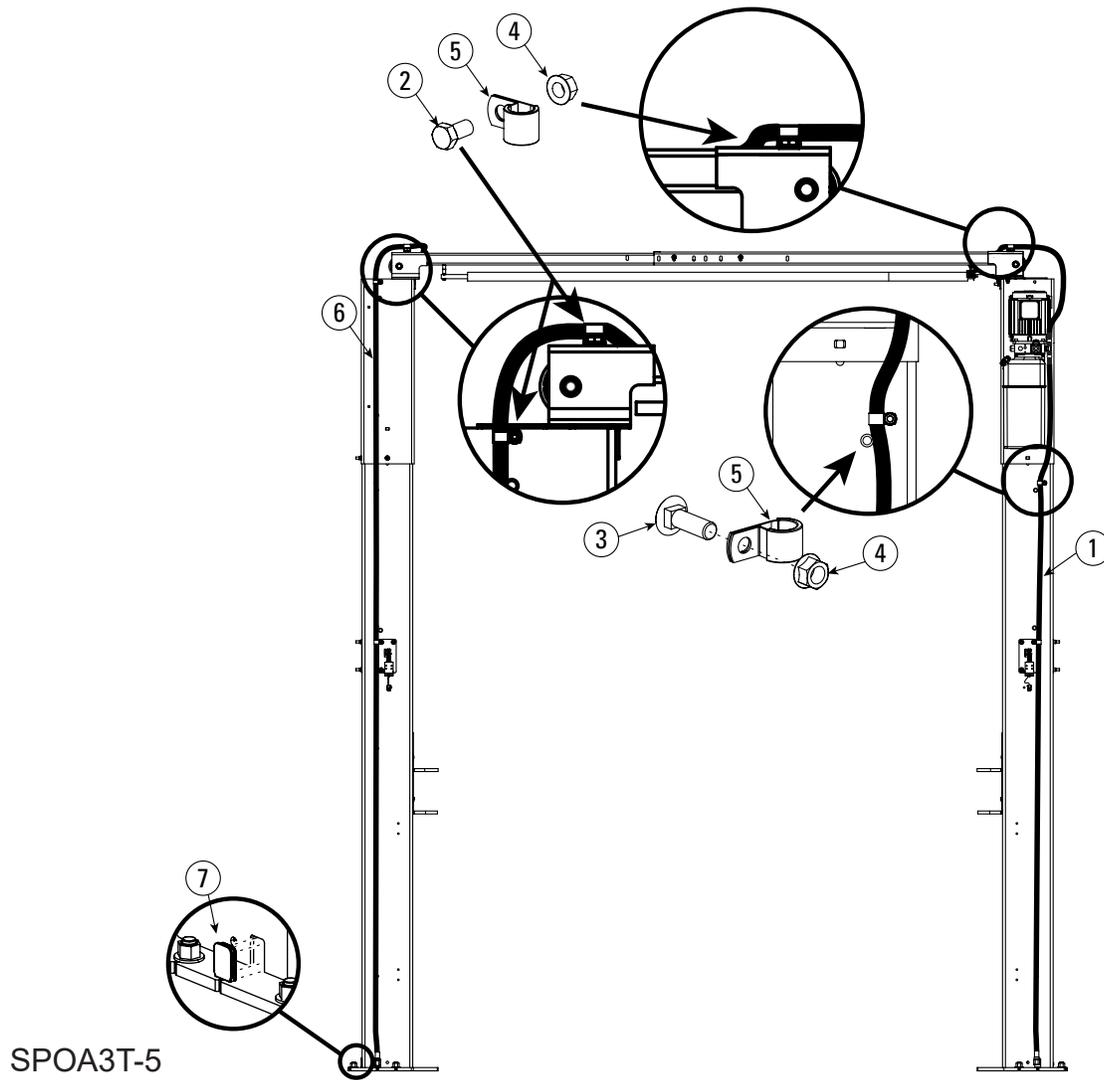
C mean the two side control, S mean only one side control



SPOA3T-5

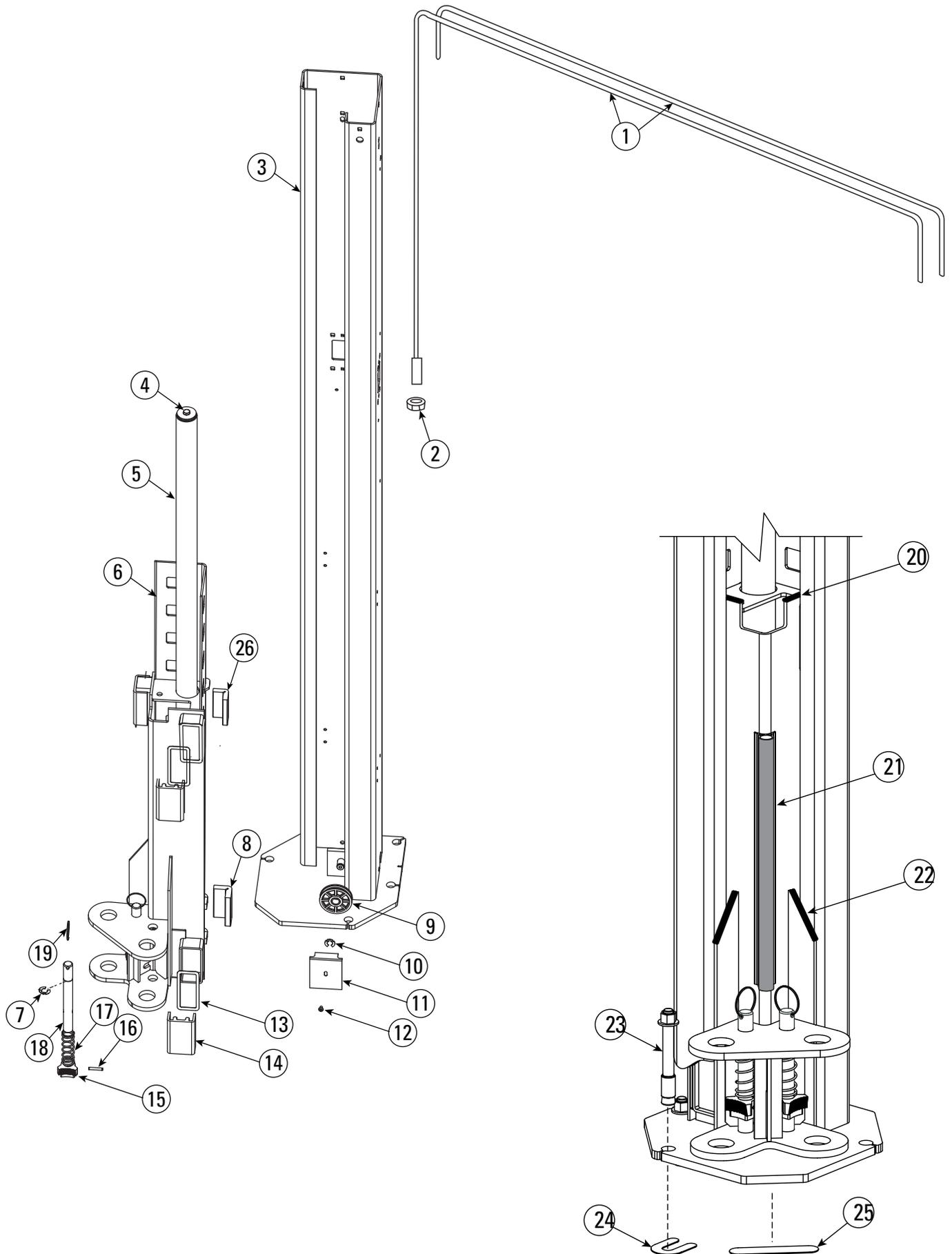
Detail for PB-SPOA-3

	Partno.	Description	Qty
1	41536 (B11-10*20)	M10*20 HHCS grade 8.8 plated	8
2	41655 (NFS10100082S)	M10 serrated flanged locknut,plate	24
3	41660 (B11-6*70)	M6*70 HHCS grade 8.8 plated	1
4	B33-6	M6 nylock nut ,plated	1
5	G3T-4003 (FJ7871)	Spacer	2
6	N481-1 (G3T-4200)	Right hand overhead weldment	1
7	N415 (G3T-4002)	Overhead switch bar	1
8	N480-1 (G3T-4100)	Left hand overhead weldment	1
9	N412 (G3T-4004)	Overhead switch assembly	1
10	41413 (B11-6*20)	M6*20 HHCS grade 8.8 plated	2
11	41599 (WLE061000220)	External tooth lockwasher, plated $\Phi 6$	2
12	41661 (B31-6)	Hexagon nut M6 grade8.8 plated	2
13	N377	Overhead sheave	4
14	41388	Washer 1-1/2"OD	4
15	41411	Klipring for shaft	4
16	G3T-4001 (GJ7444-8)	Sheave shaft	2
17	G3T-4300 (N4101)	Overhead mounting bracket	2
18	41646 (BCQ101020820)	Carriage bolt M10*20 grade8.8 plated	16
19	G3T-2101 (N4109-1)	EH1 column extension	2
	G3T-2201 (N4110-1)	EH2 column extension	2
20	41658 (BCQ061012820)	Carriage bolt,plated M6*1.0*12	6
21	G3T-1004 (N1224-6)	Mounting stud	6



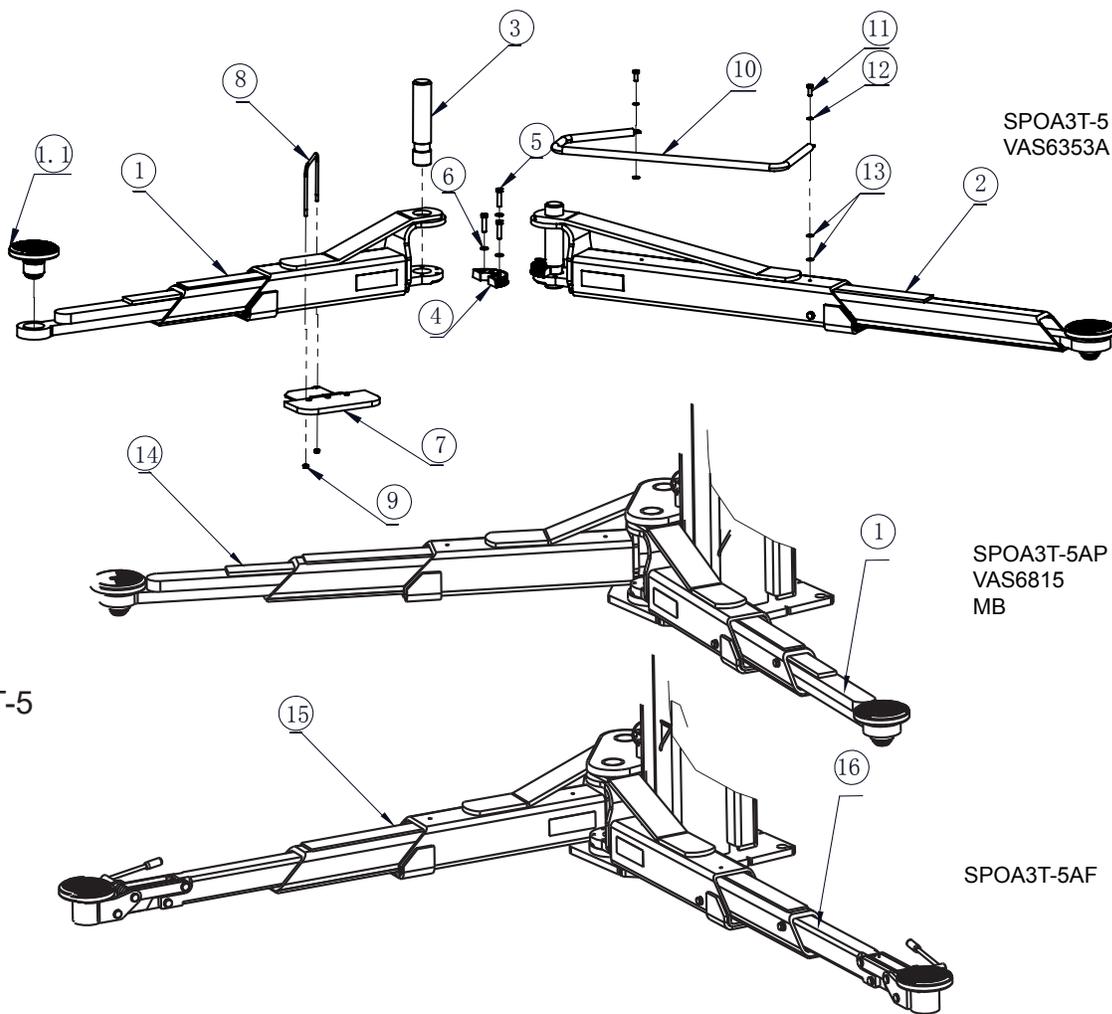
Detail for PB-SPOA-4

	Partno.	Description	Qty
1	N3113	Power unit hydraulic hose	1
2	41536 (B11-10*20)	M10*20 HHCS grade 8.8 plated	2
3	41646 (BCQ101020820)	Carriage bolt M10*20 grade 8.8 plated	2
4	41655 (NFS10100082S)	M10 serrated flanged locknut,plate	4
5	G3T-8005 (N3126)	Hose clamp	4
6	G3T-2103 (N3114)	Overhead hydraulic hose for EH1	1
	G3T-2203 (N3115)	Overhead hydraulic hose for EH2	1
7	G3T-8002 (FA964)	Lower column hole plug	2



Detail for PB-SPOA-5

	PartNo.	Description	Qty
1	G3T-2102 (N3120)	Equalizer cables for EH1	1
	G3T-2202 (N3121)	Equalizer cables for EH2	1
2	B33-12	Nylon lock nut M12	NA
3	G3T-1100 (N762)	Column weldment	2
4	N380-10Y	Bleeder screw	NA
5	N382Y	Hydraulic cylinder	2
6	PR160982	Carriage weldment	2
7	N119-3	Retaining ring 1"	4
8	G3T-3002 (N1224-2)	Real slider block	2
9	N377	Sheave	2
10	41411	Klipring for shaft 3/4"	2
11	G3T-1001 (N119-1)	Sheave cover	2
12	40063	Phillips PHMS, plated 1/4"-20NC*3/8"	2
13	G3T-3004 (N115)	Slider block shim	8
14	G3T-3003 (N1224-1)	Slider block	8
15	N2121Y	Arm restraint pawl	4
16	14427	Spring pin 1/4" *1-1/2"	4
17	G3T-3005 (FJ7656-2)	Arm restraint spring	4
18	G3T-3006 (N121-1Y)	Actuator pin	4
19	FJ7985-1	Actuator pin handle	4
20	G3T-8004 (FA962)	Upper carriage bumper	4
21	G3T-8001 FA961	Column door bumper	2
22	G3T-8003 (FA941)	Carriage gusset bumper	4
23		Anchor bolt	8
24	30400-1025 (FJ716-6)	U shim	22
25	G3T-1006 (FJ7659-3)	Front shim	6
26	HTO-2003 (N1224-9)	TOP block	2



SPOA3T-5

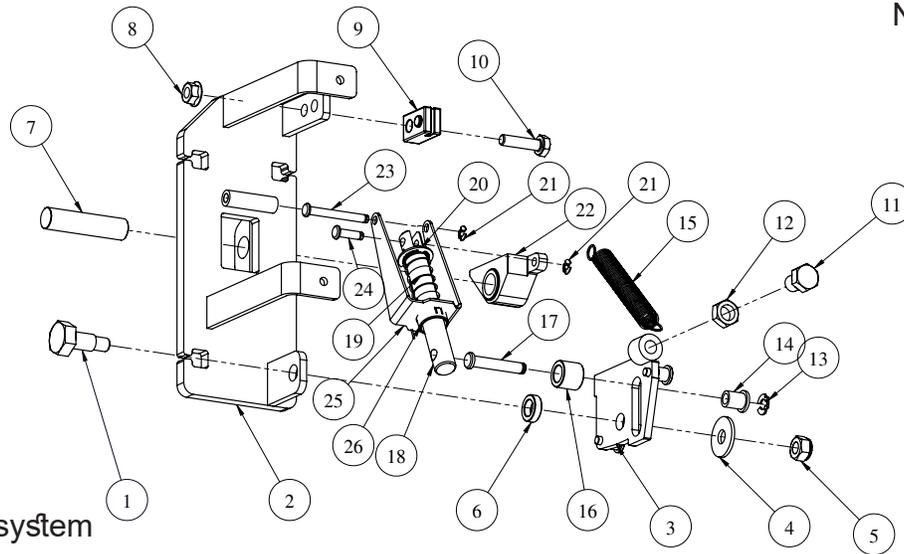
SPOA3T-5
VAS6353A

SPOA3T-5AP
VAS6815
MB

SPOA3T-5AF

Detail for PB-SPOA-6 (Arm assembly)

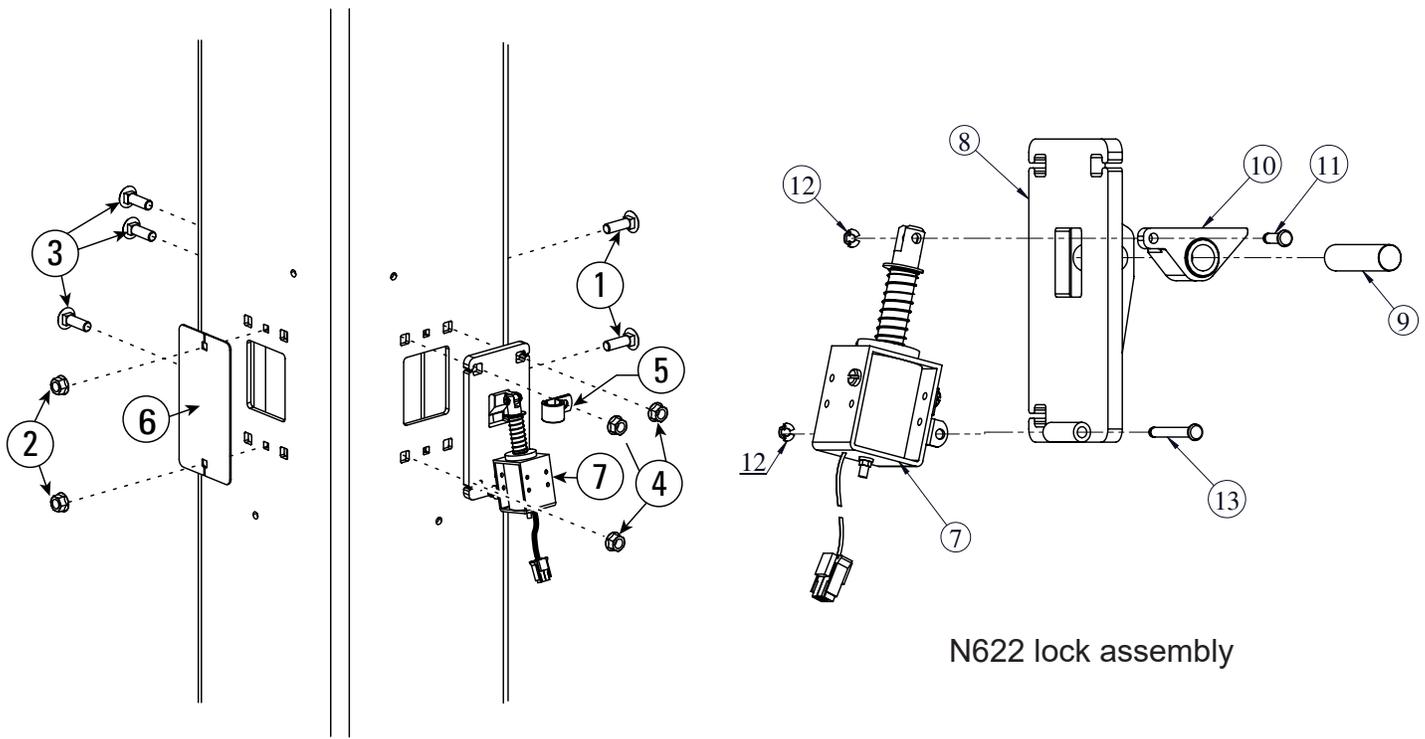
	PartNo.	Description	Qty
1	N2224Y	Front arm assembly	2
1.1	FJ6206	Low profile adapter assembly	4
2	N2225Y	Rear arm assembly	2
3	G3T-5001 (N2154)	Arm pin	4
4	N2122Y	Restraint gear	4
5	40373	3/8"-16NC*1-1/2"HHCS, grade 8.8, plated	6
6	40818	Spring lockwasher 3/8"	6
7	G3T-5500 (N2255-1)	Front arm guard assembly	2
8	G3T-5504 (N2255-10)	Long strap	2
	G3T-5505 (N2255-11)	Short strap	2
9	40641 (991490)	Hex FLGD wzlock nut PLTD 1/4"-20NC	4
10	G3T-6001 (N244-4)	Arm guard	2
	SGL35-6005	Arm guard (For AP/AF Arm/VAS6814)	2
11	40252	HHCS plated 5/16"-18NC*3/4"	4
12	40850	Spring lockwasher 5/16"	4
13	40856	Flat washer 5/16"	8
14	SPL35-4000G	Rear arm assembly	2
15	3SA-A-F-3	Fast Fit arm assembly	2
16	3SA-A-F-4	Fast Fit arm assembly	2



SPOA3T-M lock system

Detail for PB-SPOA-7 (M version lock system) 2pcs N624

	Partno.	Description	Qty
1	BS10-8-10	Shoulder bolt	1
2	ATO-1100 (N624-7)	Bracket weld	1
3	ATO-1200 (N624-3)	Latch control plated weld	1
4	B42-8	Big washer 8	1
5	B33-8	Nylon lock nut M8	1
6	ATO-1011 (N624-15)	Spacer	1
7	G3T-1202 (N621-7)	Latch shaft	1
8	40641	Hex flgd wzlock nut 1/4"-20NC	1
9	N619	Cable end bracket	1
10	40108	Hex bolt 1/4"-20NC*1"	1
11	40126	Hex bolt 3/8"-16NC*1/2"	1
12	40658	Hex Jam nut 3/8"-16NC	1
13	41687	Snap ring 1/4"	1
14	ATO-1007 (N624-11)	Flanged bushing	1
15	ATO-1004 (N624-12)	Spring	1
16	ATO-1010 (N624-14)	Spacer	1
17	ATO-1008 (N624-9)	Latch pivot pin	1
18	ATO-1006 (N624-1)	Latch control shaft	1
19	ATO-1005 (N624-2)	Spring	1
20	41686	Snap ring 1/2"	1
21	41472	Snap ring 3/16"	2
22	G3T-1205 (N621-5)	Latch	1
23	G3T-1203 (N621-8)	Shaft	1
24	G3T-1204 (N621-9)	Shaft	1
25	ATO-1003 (N624-6)	Mechanical latch spring bracket	1
26	ATO-1009 (N624-5)	Mechanical latch shaft bushing	1



SPOA3T-S/C lock system

N622 lock assembly

Detail for PB-SPOA-8 (S/C version lock system)

	Partno.	Description	Qty
1	41658	Carriage bolt, plated M6*12 8.8 grade	4
2	41656	Serrated flanged locknut M6	4
3	41648	Carriage bolt, plated M10*25 8.8 grade	6
4	41655 (NFS10100082S)	Serrated flanged locknut M10	6
5	G3T-8005 (N3126)	Hose clip	2
6	G3T-1201 (N1224-8)	Cover plate	2
7	N621-6	Solenoid	2
8	G3T-1210 (N622-1)	Bracket weld	2
9	G3T-1202 (N621-7)	Shaft	2
10	G3T-1205 (N621-5)	Latch	2
11	G3T-1204 (N621-9)	Shaft	2
12	41472	Snap ring 3/16"	4
13	G3T-1203 (N621-8)	Shaft	2

IV. Spare Parts List

1.



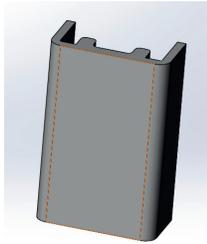
Part.No	Description	Qty	Dim
N377	Sheave with bearing	6	Φ88.9*19.05

2.



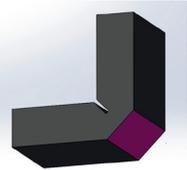
Part.No	Description	Qty	Dim
FJ6202	Adapter	4	

3.



Part.No	Description	Qty
G3T-3003	Slider	8

4.



Part.No	Description	Qty
HTO-2003	Slider on the top(38.1mm)	2

5.



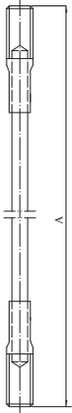
Part.No	Description	Qty
G3T-3004	Spacer for slider	8

6.



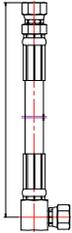
Part.No	Description	Qty
G3T-3002	Real slider block	2

7.



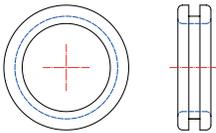
Part.No.	Description	Qty	Dim A
G3T-2102	Equalizer cable for EH1	1	9690mm
G3T-2202	Equalizer Cable for EH2	1	10299mm

8.



Part.No.	Description	Qty	Dim A
G3T-2103	Hydraulic hose for EH1	1	7523mm
G3T-2203	Hydraulic hose for EH2	1	8132mm
N3113	Power unit hydraulic hose	1	3105mm

9.



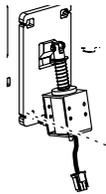
Part.No	Description	Qty
G3T-2105	Hose cover	1

10.



Part.No	Description	Qty
N624	Lock system assembly for M Version	2

11.



Part.No	Description	Qty
G3T-1200 (N622)	Lock system assembly for E Version	2
N621-6	solenoid	2

12.

Part.No	Description	Qty	Remark
N967-1-Bag-3	package for install	1	
Bolts and fitting for installing the Power unit			

13.

Part.No	Description	Qty	Remark
SPOA3T-D2	package for install	1	
Bolts for installing the plastic cover to the post			

14.

Part.No	Description	Qty	Remark
SPOA3T-D1N	package for install	1	
Bolts for installing arm restraint gear ,wire cover,lock system to the post			

Other hydraulic components

Part.No	Description	Qty	Remark
N382Y-9180	Seal kit for cylinder	1	

ATTACHMENT

Protocol of installation
Completion Certificate

Protocol of installation

BlitzRotary GmbH
Hüfinger Str.55
78199 Bräunlingen,
Germany

The lift, designation... (Address)... /

- After successful installation please filled completely this form, tick applicable points and sign the form.
- Copy the original and send them to the manufacturer within a week.
- Leave a copy in the test book.

The vehicle lift,

Type

Serial number:

was on

by the company
(Address)

.....

set up, checked for function and safety and put into operation.

The installation was carried out by the operator / Qualified person

the operator confirmed putting up the lift. All details of the operation. All information of the manual as well as the inspection book have been read and observed. These documents are available to the instructed operators at all time and are kept in an accessible place.

The expert (qualified person) confirms the correct installation of the lifting platform.

All information on the operating instructions and the inspection book have been read. The documents were handed over to the operator.

.....
Date Name of operator + company stamp Signature operator

.....
Date Name of qualified person Signature qualified person

.....
Customer service company

Completion certificate

The vehicle lift

Type

Machine -/serial number:

was on

by the company

(Address)

.....

installed, checked for function and safety and put into operation.

The following persons (operators) have been instructed in the handling of the vehicle lift by the trained installer of the manufacturer or contractor (expert) after the installation of the vehicle lift.

.....
Date Name Signature operator

.....
Date Name Signature qualified person

.....

Customer service company + company stamp

ATTACHMENT
Two column Lift
SPOA3T-5
SPOA3T-5AP
SPOA3T-5AF
VAS/MB

Maintenance schedule:

Notes for execution of the visual and
functional testing

Notes for execution of the visual and functional testing

In the scope of periodical inspections, the followings must be checked in particular:

1. Information on the lifting platform	Object to be checked
Nameplate Labeling Summary of the manual	Fastening Readability Completeness
2. Detailed operating instructions	Condition Readability
3. Warnings	Condition Noticeability
4. Protection against unauthorized use	Condition Function Mobility Safety key
5. Actuators	
Lifting, lowering Tilting, tipping Turning, pivoting Switching Opening and closing (of the loading tailgate) Driving Supports	Condition Function Mobility Clear assignment Permanent labeling of the direction of movement Protection against unintentional actuation Locking mechanism of the actuators with multiple controls
6. Emergency shutdown, Emergency drainage	Condition Function Mobility
7. Signalling devices, devices for communication	Condition Function Noticeability Reliability
8. Devices for the stable installation	
Spirit level Supports Spindles Bottom pan Elimination of the spring travel	Condition Function Mobility Wear Deformation Corrosion Cracks
9. Supporting structure	Cracks Deformation Corrosion Mobility of guides, pulleys, hinges, telescopes, Wear of guides, pulleys, hinges, fastening and securing of removable parts Effectiveness of locking mechanisms

10. Load suspension devices	
Protection against sliding Roll-off protection Holding device Protection of the hinged bracket	Condition Function
Safety fence	Condition Corrosion Fastening and securing of removable parts Effectiveness of locking mechanisms Mobility of movable parts
Ground	Surefootedness Deformation Corrosion Fastening and securing of removable parts
Parallel motion on operating platforms	Condition Function Wear Cracks Corrosion
Stowable operating platform	Condition and effectiveness of the locking mechanism
Stairs	Surefootedness Deformation Corrosion Damage Fastening and securing of removable parts Welded connections
11. Steel wire rope Cable connections	Wear Corrosion Wire breakages Wire break nests Pinch points Loosening of the outer layer Bird-caging
Sheaves and pulleys	Cracks Signs of wear Burr formation in the groove Correct aligning of the groove
Rope winding Clamping device Securing at rope bearings Protection against coming off of the rope	Condition Function
12. Steel link chains, chain linkings	Mobility Wear Cracks Securing of the studs, e.g. by rivet head, ring

Chain wheels Sprockets	Condition Function
Clamping device Securing of the chain guide	Condition Function
13. Spindles	Storage Deformation Contamination Wear of the threads Notches Striations Grooves, applications Efficiency of the covering
Main nut	Wear of the thread (play)
Compensation ring	Bearing Condition Notches Striations
14. Racks	Fastening Wear Contamination Joints of jointed racks
Pinions	Cracks Wear Contamination Fastening and play of the spindle
15. Hydraulics	Leakage Leak test Venting
Oil reservoir	Condition and readability of the display Control of the oil quantity Efficiency of the shut-off device in case of lack of oil
Lines Line connections	Fastening Damages Deformation Corrosion
Hoses Hose connections	Fastening Damage Age Brittleness Porosity
Cylinders	Fastening Cracks Pipe connections and hose connections Tightness of the sleeves
Pistons	Surface of the piston rod Striations Contamination

Filters	External condition
Pressure control valve	External condition Lead seal undamaged
16. Pneumatics	
Lines Line connections	Leakage Fastening Damage Deformation Corrosion
Hoses Hose connections	Fastening Damage Age Brittleness Porosity
Cylinders	Fastening, cracks, pipe connections and hose connections Tightness of the sleeves
Pistons	Surface of the piston rod, striations, contamination
Relief valve	External condition, lead seal undamaged
Gauge, pressure reducer	External condition and effectiveness
17. Driving mechanisms (without bogie)	Connections of parts of the driving mechanism shock-free starting
Brakes, self-locking gearbox, couplings	Wear, effectiveness
18. Driving carriage, bogie	
Service brakes, emergency brakes	Wear, effectiveness
Drawbar protection	Condition, effectiveness
Positive guide, guide rail Rail joints, end stops, cow-catcher Protection against derailling	Deformation, cracks, condition of the fastening
19. Points of access and points of loading	Surefootedness, deformation of handrails, damage Corrosion, securing of removable parts
20. Electrical equipment	
Lines	Damage, fastening, strain relief of external lines
Protective earth	Damage, fastening
21. Insulation on aerial work platforms, as far as the aerial work platform is intended for work on or near unprotected, live parts of electrical installations	
Insulation work platform/lifting equipment as well as lifting equipment/driving carriage	Contamination, damage, insulation resistance
22. Special safety devices	
Emergency limit switch, slack rope switch, rope break switch, chain fracture switch, control locks, switch-off strips, restart protection, anti-tipping device (for stowable work platforms), safety catch, completeness	Effectiveness, fastening, condition Deformation, effectiveness of the switch elements, contamination, condition of pressure springs

These notes do not claim to be complete, and they must be matched to the lifting platforms to be examined.

ATTACHMENT
Two post lift
Inspection log

Inspection log for Two Post Lift

Type: _____

Serial number: _____

Year of construction: _____

Operator: _____

Day of first commissioning: _____

BlitzRotary GmbH
Hüfinger Straße 55
D-78199 Bräunlingen



Telephone +49.771.9233.0
Fax +49.771.9233.99
europe@rotarylif.com
www.rotarylif.com

Master sheet for vehicle lift

General information

Manufacturer or supplier of the vehicle lift:

BlitzRotary GmbH

Huefinger Str.55, 78199 Braeunlingen, Germany

Description: 2-post lift

Type: Year of construction:
Serial-no: Date of first time operation:
Load capacity: 3500 kg
Permissible load distribution: 3:2 or 2:3 (front/rear)
For stay under the load suspension device means: **yes**
Set up for loading the suspension device: **no**
Suitable for driving on the load suspension device: **no**
Suitable for use as a lifting platform: **no**

Operating speeds

Maximum lifting speed **7.2 cm / sec**
Maximum lowering speed **6 cm / sec**

Engines

Drive type of supports: **Electrohydraulic**

Carrying equipment

Steel wire ropes: According to RR-W-410, Mil-DTL-83420
EN12385-4 (formerly DIN3060)
Diameter: 6 mm, 7x19 GAC (GWC)
Strength of the single wire: 1960N / mm²
Minimum breaking force: 7000 lbs
Corrosion protection: galvanic
Function: Synchronization control

Electrical equipment

Operating voltage: 3Ph/PE / 400V / 50Hz
Control voltage: 24V AC
Type of protection: IP54
Equipment suitable for use in workshops and workshops
Equipment not be used at explosion proof areas.

Safety devices

Securing of lifting device against unintended lifting or lowering movement in case of wire rope breakage:
Automatic mechanical locking device as catch system
Securing the lifting device against accidental raising or lowering in case of leakage in the pipe system:
Poppet valve – normal closed, automatic catch system, cylinder with flow control valve for lowering,
Securing the hydraulics against excessively high pressures:
Hydraulic circuit operating pressure: bar
Response pressure of the pressure relief valves: bar
Other security devices:
Main switch with emergency stop function, foot protection on the arms, dead man push button,
Restraint gear for the swivel arms, wire ropes for synchronization

Test Report

Of a periodic/special examination

The lifting platform underwent an examination regarding operational readiness on _____

The following/no*) faults found.

Test scope _____

Still pending _____

Partial tests

There are no*) reasons against continued operation, retesting is not*) required.

The technical expert/surveyor

(Place ,date)

(Signature)

Name and address

(in block letters) _____

Job title _____

Employed at _____

Operator or Representative

Deficiencies noted

(Place ,date)

(Signature)

Deficiencies fixed

(Place ,date)

(Signature)

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Installer: Please return this booklet to literature package, and give to lift owner/operator.

Thank You

Trained Operators and Regular Maintenance Ensures Satisfactory Performance of Your Rotary Lift.

Contact Your Nearest Authorized Rotary Parts Distributor for Genuine Rotary Replacement Parts. See Literature Package for Parts Breakdown.

BlitzRotary GmbH
Hüfingerring Straße 55
D-78199 Bräunlingen

A  COMPANY

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