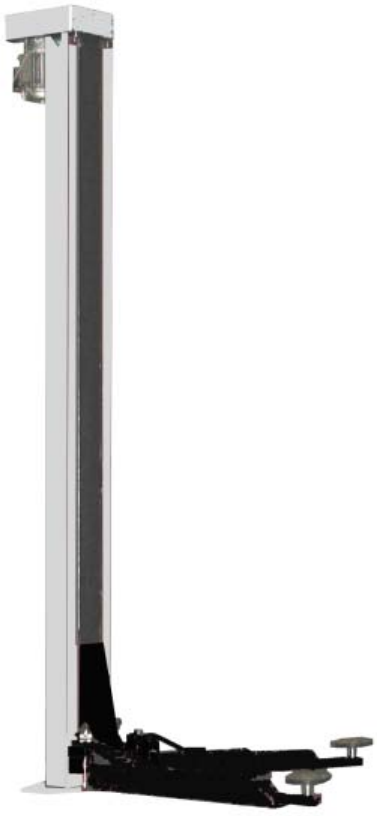
STENHØJ

T62262

INSTALLATION AND MAINTENANCE MANUAL

M 2.30 F



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EC Declaration of Conformity

in accordande with the EC Machine Directive 2006/42/EC, Annex II A

Automotive lift:	M 2.30 F Model No.: 097001 Serial No.: 2-post surface-mounted lift Max. lifting capacity: 3000 kg	Year: 2010
Manufacturer:	STENHØJ AUTOLIFT A/S Barrit Langgade 188-190 DK – 7150 Barrit	

We hereby declare that the above mentioned machine, by its design and construction and equivalent with the version put on the market by us, complies with the essential fundamen-tal health and safety requirements. In case of any modification in the machine unapproved by us this certificate becomes void.

Relevant EC-Directives:
- EC-Machinery Directive 2006/42/EC
- Low Voltage Directive 2006/95/EC
- Electromagnetic Compatibility Directive 2004/108/EC

Harmonized standards applied:
- EN 1493:1998 + A1:1:2008
- EN 12100-1; EN 12100-2
- EN 60204-1
- EN 954-1:1996

Responsible for documentation
Søren Madsen, Barrit Langgade 188-190, DK-7150 Barrit

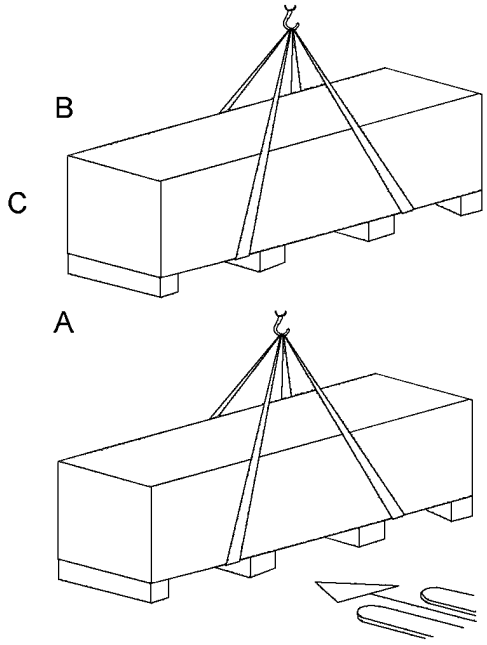
Barrit, 2010

Anders Jul Nielsen

Anders Jul Nielsen
Engineering Manager

EC Declaration of Conformity - Form EC-GB

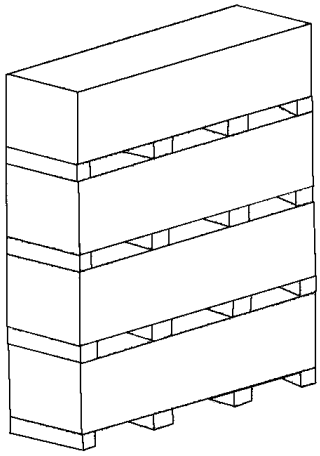
Delivery / Transport / Stacking



Dimensions:

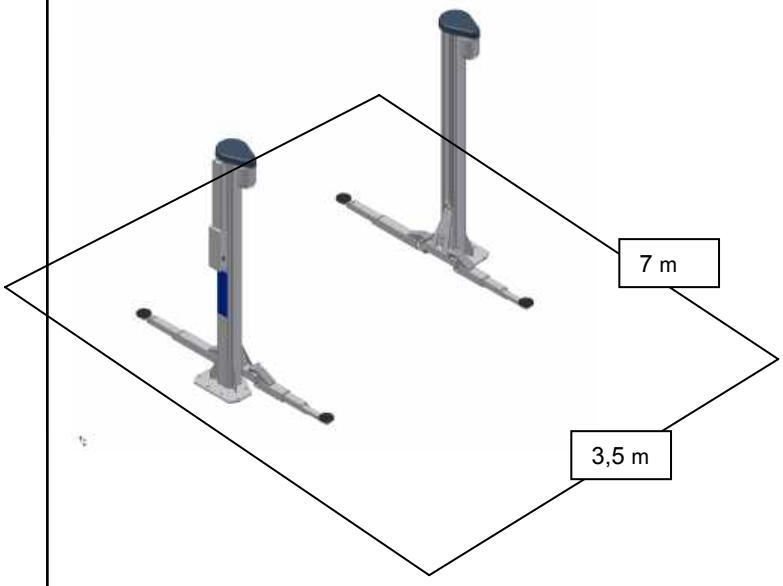
Lift type	A	B	C
1-post lift	700	3100	700
2-post lift	690	3100	570
4-post lift	970	3100	450
	+ Platforms		
Scissor lift	800	5000	450
Scissor lift with free wheel lift	680	1660	790

Dimensions in mm!



Max. 4 pieces

Working place area



2-post lift
Required floor space
Minimum 1 m in front, laterally and behind the vehicle / lift

Delivery and Installation Requirements

1. Delivery by forward company invoiced with standard freight charge: A forklift must be made available at short notice. Weight of the lifts: approx. 650 – 2700 kg, depending on lift type.

2. Delivery by truck with off - loading equipment invoiced with increased freight charge: Equipment for deposition assistance must be provided at short notice. Weight of the lifts approx. 650 – 1000 kg, depending on lift type

3. Preparations for installation
Prior to setting up following work must be arranged by the operator:

- ♦ Preparation of the fundament (see standard foundation).
- ♦ Laying of electrical connection to place of installation site.
- ♦ Transport of lift to place of installation site.

4. Minimum foundation requirements
The foundation surface must be flat and horizontal for all lifts. The foundation must correspond to the general guidelines for foundations (DIN 1054). For lifts installed outside, the foundation must be frost-proof. In case of ceiling installation, the floor conditions must be certified by a structural engineer. Lifts are be anchored with special chemical bolts or through bolts, minimum strength 8.8 and washers (are not delivered with the lift).

5. Performances of our customer service section
The customer service or the authorised partners take on the setting up of the lift with the following criteria:
- Fixing to the floor.
- Fitting of the lift. When installing the lift, additional personnel, and/ or auxiliary lifting means must be provided at short notice.
- Electrical functional check and trial run without final mains connection (which must be carried out by a local specialist).
- Permanent connection of cables between posts on 2-post lifts only if the cable portal is used
- Short instruction.

6. Average time for installation (providing the conditions above are met):

Approx. 4 hours working time
The electrical connection cables are only assembled permanently with the use of a cable portal (accessory). Otherwise these cables must be fixed by the operator.

If the lift is installed by the operator himself, the attached assembly and operating instructions must be observed. Subsequently the lift must be subjected to safety acceptance by the customer service. This includes the following performances:

- Electrical functional check and trial run.
- Examination of the individual structural components.
- Short instruction.

7. Annual check

In addition to the check prior to the initial commissioning of the lift by our customer service department, the official regulations demand at least one safety inspection per year by experts. Our customer service will be pleased to submit you a quotation for a maintenance contract.

8. Installation cost rates and invoicing

The performances of the customer service stated are invoiced in accordance with the respectively applicable terms and conditions of installation, hourly rates and lump-sum travelling amounts. Fixing material is not included in the scope of delivery of lifts.

9. Guarantee

Based on the fact that lifts must satisfy specify safety requirements for protection of persons working of them, we draw your attention to the fact that we must tie the guarantee entitlement of the operator to the correct performed safety acceptance. Always uses original spare parts. The use of any other parts invalidates the design permit and all claims under warranty.

The most important designations according to the new concrete standard B 4710-1

Exposition classes (environmental classes)

XO	no corrosion risk, no frost;
XC1 XC2 XC3 XC4	corrosion released by carbonation
X0	non-reinforced concrete, concrete in buildings with < 30% air humidity
XC1	concrete in buildings (flats, offices), kitchens, bathrooms, laundries; foundations in the groundwater
XC2	interiors with high air humidity, laundries, cattle sheds, indoor swimming pools, not oppressive groundwater, water pressure height under 2 m
XC3	water pressure height 2 to 10 m; seal concrete buildings (in former times: WU)
XF1	Rain and **frost demand** for curved (> 5 %) and vertical surfaces, all under-faces with frost
XF2	concrete with **frost and rope means** (salt) for curved (< 5%) and horizontal surfaces
XF3	rain and **frost demand** for horizontal surfaces; hydraulic engineerings
F4	concrete with frost and **rope means** (salt) for horizontal surfaces (in former times: FTB)

Concrete strength classes

The new strength classes are to be compared approximately as follows:

C 8/10	B 8/B 80
C12/15	B 15/B 160
C16/20	B20 / B225
C20/25	**B25**

Conventional applications

Your lift has been design-tested in its basic concept, this lift offers you maximum economic efficiency and safety. It is up to you to make use of these advantages.

A prerequisite for this is correct operation, perfect maintenance and good care of the lift. Please read these operating instructions carefully. They provide you with all necessary data and show how simple it is to keep your lift ready for use at all times.

Your lift is only designed to raise passenger vehicles or vehicles whose total weight does not exceed the lifts's maximum permitted load capacity and whose specified lifting points are within the lift's lifting area.

All 4 lifting points have to be used.
Your lift is designed to raise motor vehicles. The transportation of people is not permitted. When using the lift in painting plants or rooms in which a large amount of work is carried out with solvent-containing materials, pay attention to the risk of explosion. In its standard form the drive is not protected against explosion.

Safety devices

Your lift is equipped with several safety devices, to ensure workers safety, if the lift is used according to this manual.

Please take care of these safety devices, when installing the lift and check them after any case of failure.

Only trained service people are allowed to repair this lift.

Only original parts are to be used for repair. If third parts equipment is used for repair, the CE certificate of conformity will become void.

In accordance with the regulations regarding the operation of lifts, lift devices must be checked for their operational safety by an expert at the latest after one year.

Records must be kept of inspections.

In this respect please pay attention to ensuring that only company-trained experts, who have been instructed in the function of lifts and who are in possession of a certificate from the manufacturing company, check and accept your lift.

Attention!

Important instructions for assembling the 2-Post-Lift!

1. The assembly should be carried out by qualified staff in accordance with the construction and operating instructions (otherwise the guarantee will be invalidated).
2. Check that all parts have been delivered before starting installation.
3. Final installation checks must be carried out.
4. Test instructions are to be complied with.
5. Instructions for the foundation of the lift must be strictly observed.
6. Ensure that the motor axis is hanging parallel to the spindel axis. For any adjustment please loosen the screws from base plate and retighten them.
7. Check the locking mechanism of the swing arm, then ensure that the bolt is vertical and parallel to the front of the post.
8. The lift is pre-programmed in the factory and must be adjusted to local conditions. Check that the foot protection facility is at the correct height.
9. Beware of the alignment (outward leaning) of the posts.
10. Check the gap between the steering frame and the cover band (correct and grease the back of the cover band when necessary).
11. The self-securing swing arm screws (retaining device) is only completely hardened after 24 hours (check for a gap of 1 to 2 mm between the screw head and the swing arm bearing).
12. Observe maintenance schedule (swing arms, spindles, lifting pads).
13. For lifting, use all 4 swing arms only at the lifting points recommended by the manufacturer.

Practical use of the post-lifts

The operating knob is in "ON" position. Turn the control knob to move the lift in the direction indicated by the arrows. On release of the operating knob it returns automatically to the “off” position.

Operating of the lift is only permitted by authorised persons!

According to the regulations for prevention of accidents, persons under the age of 18 are not permitted to operate the lift without supervision.

The lift is designed only as a vehicle lift, it should not be used for other purposes.
See instruction on the lift column.

If there are any faults with the lift, turn off electricity, make safe, secure against unauthorised use and contact the service department.

See the operation label on the lift column!

Before lifting or lowering a vehicle check that nobody is in danger, that nothing is leaning against the vehicle and no obstacles are underneath it.

Attention:
With some vehicles, higher lifting apparatus is necessary. If necessary, a set (4) spacing bushes is available. This ensures safe lifting of the vehicle.

The total vehicle weight **must not** exceed the authorised capacity and load dispatching.

Only original accessories may be used as load supporting devices (type tested parts), wooden blocks or other devices for load lifting are not permitted. It is advisable that the vehicle should be driven on so that the centre of gravity is between the lift columns (especially with the asymmetric swing arms).

In order to guarantee a safe raising of the vehicle it may only be lifted at all 4 lifting points as stipulated by the manufacturer.
Check the safety of the lifting once again after having raised the vehicle a little.

Pay attention to the centre of gravity when working with heavy parts as it can cause the vehicle being raised to fall. Only use the lift as intended: for lifting vehicles. Other, apparently practical uses are not among is intended purposes.

It is forbidden to use the lifts to raise heavy vehicle parts, eg, engines. The swing arms are fitted with blocking devices which work automatically. They will block the moving of the swing arms after a short lifting distance and release again when lowered (approx. 15 mm).

If the arms have to be swung in a greater height, eg, in order to place a vehicle on a bench, then a hand lever can be installed, so that the arm locking device can be released manually.

Testing of lifts

The testing of lifts is to be carried out in accordance with the local safety regulations !

The required tests are carried out by manufacturer’s construction department according to the regulations. Please ask your commercial partners for their reasonably priced maintenance contracts.

Disposal of the post lift

The lift can be disassembled and be disposed of only through an authorised specialist. The same regulations must be considered, as when installing the lift. For the case of scrapping, all materials must be disposed in accordance with the laws of the appropriate country, in which the lift is installed.

The scrapping of the lift must be documented according to the country, in which this was installed.

Attention!

When loading/unloading, moving, installing, assembling or dismantling the lift all precautionary measures are specified by rules for the prevention of accidents (safety helmets, gloves, shoes) are to be obeyed. These rules are in accordance with the laws of the appropriate country.

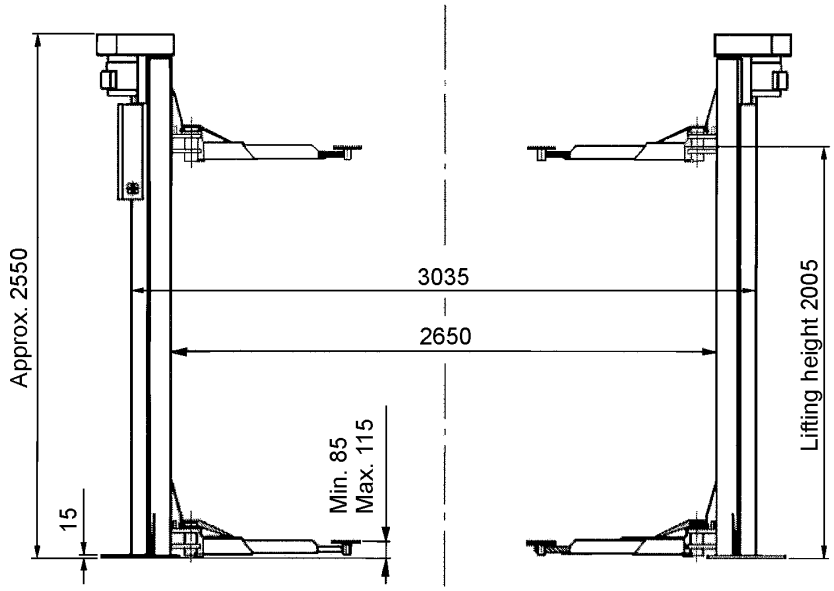
Technical details

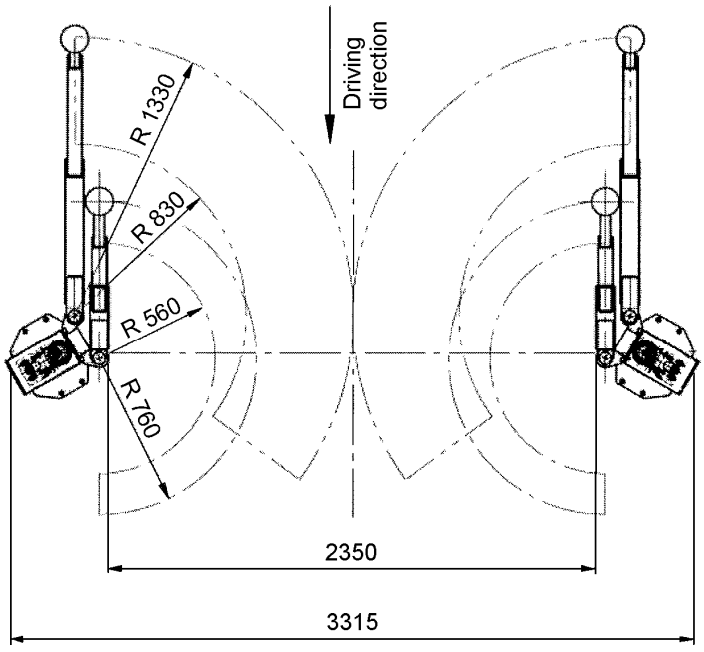
Type:	M 2.30 F
Remark:	with asymmetric swing arms
Width (mm):	3315
Height (mm) approx.:	2550
Max. vehicle width (mm):	2350
Range (mm):	1.920
Lifting height (mm):	2005
Min. arm clearance (mm):	85
Lifting time (sec):	45
Nett weight (kg):	500
Capacity (kg): *	3000
Motor power (kW):	2x3
Voltage (V):	400
ED-power:	S3 – 10%
Current (A):	16
Fuse rating (A gl):	20
Noise level (dB(A)):	78

Subject to change without prior notice !

* **The load distribution should not exceed the ration 3:2 !!!**

Dimensions of the 2-post lift M 2.30 F





Subject to modification without prior notice !

Product description

The lift basically consists of the main post and a slave post. In both posts the lifting spindles and the lifting carriages with load bearing device are to be found.

The drive turns the lifting spindle. On the spindles there are nuts which are attached to the lifting carriage which, according to the turning direction of the drive, moves up or down and thus performs the raising and lowering operation. The lifting carriage is driven on maintenance free roller bearings within the column.

In each post a motor driven belt turns the spindles. The even running of the lifting carriages is ensured via an electronic synchronizing system (potentiometers). Any uneven running of the lifting carriages (eg, because of an uneven load, lack of lubrication, etc) is regulated by the synchronization control within a distance of approximately 10 mm. The lifting carriage which is in front is briefly stopped until the slower carriage reaches the same height. This levelling may be observed several times in the course of the lift.

By shifting the operating knob on the control box the lifting motion corresponding to the movement symbols is switched on. When the lift reaches top position it stops automatically (potentiometer); the same happens in bottom position. The potentiometer also controls the safety stop: For safety reasons, the downward movement is programmed to automatically stop at a height of 200 mm (between the floor and the underside of the lifting device). By releasing and the re-engaging the operating knob the carriages lower together with the sound of a warning tone.

The operating knob goes automatically back to stop position when released and the movement of the lift is stopped in the corresponding position of the carriage. In addition, the lift is equipped with a variety of both passive and active safety devices. An example of this would be the safety device for broken load bearing nuts which transfers the load to a safety nut in the event of a worn thread. At the same time, a mechanical blocking system is engaged which prevents continued movement to the lowered position in the event of worn threads. In this way, unintentional travel on the safety nuts is avoided.

The swing arm lock locks the load arms moving after running upward a short distance from the lowered position. This is to prevent the lifting device slipping from the lifting points on the vehicle being raised. The safe positioning is to checked !

The thermo sensors in the motors stop the lift in the event of overheating and only allow the lift to re-start after a cooling down period.

The M 2.30 2-post lift is used with asymmetrical arms. A maximum capacity of only 3.000 kg and a maximum weight distribution of only 3:2 is allowed.

When using the asymmetrical version of the arms, the swing arms have difference length. The vehicle has to be placed in drive-on direction with the short-double telescopic pick up arms in front and the long arms, only single telescopic, backwards.

The vehicle to be lifted is positioned so that the front door hinges are close to the lift columns in order to facilitate a wide opening of the doors. It is desirable that the vehicle’s engine is towards the short swing arm (the centre of gravity of the vehicle as close as possible to the centre of the lift)!. All 4 lifting points are positioned at the jacking points stipulated by the vehicle manufacturer!

Foundation

As the M 2.30 F is of a “baseless” design, the floor fixing is critical .The entire load (dead weight of lift and moving weight of vehicle) are transferred to the floor through the chemical bolts.

Before installing the lift, it is necessary to ensure that the floor is adequate (see supplement anchoring for lifts).

When installing the lift on a ceiling, the floor’s suitability must be verified by a structural engineer, or other competent person.

Only after checking of the available underground, a decision can be made about the corresponding anchoring.

The penetration depths of the anchors (anchors are **not** supplied) have to be followed (see instructions of the anchor manufacturers). Otherwise the safety of the lift may be compromised.

The correct length (L) of the active part of the anchor bolt is obtained by adding the measurements „h“ + thickness of the floorcover and height of the files and the height of the installation base. Drill size and the thightening torque are in accordance to the bolt manufacturers instructions.

To achieve a perfect installation, the undamaged concrete floor should be flat and level (min. C20/25, frost proof) with the corresponding load capacity.

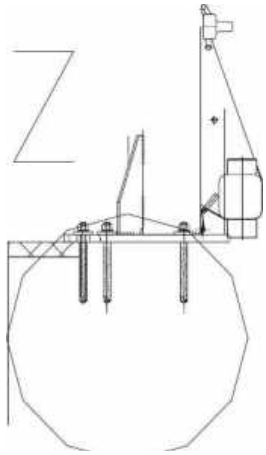
According to the type of anchor used for the 21^{+1} mm hole in the base plate, the washers must be of sufficient size!

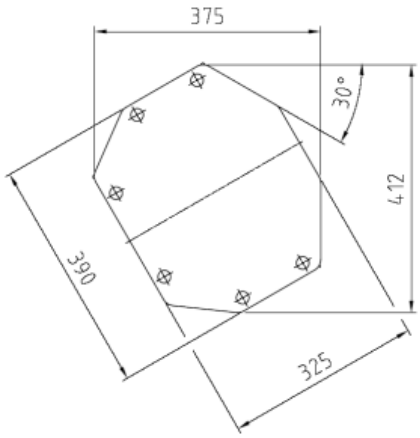
Floor fixing for lifts up to 4 t

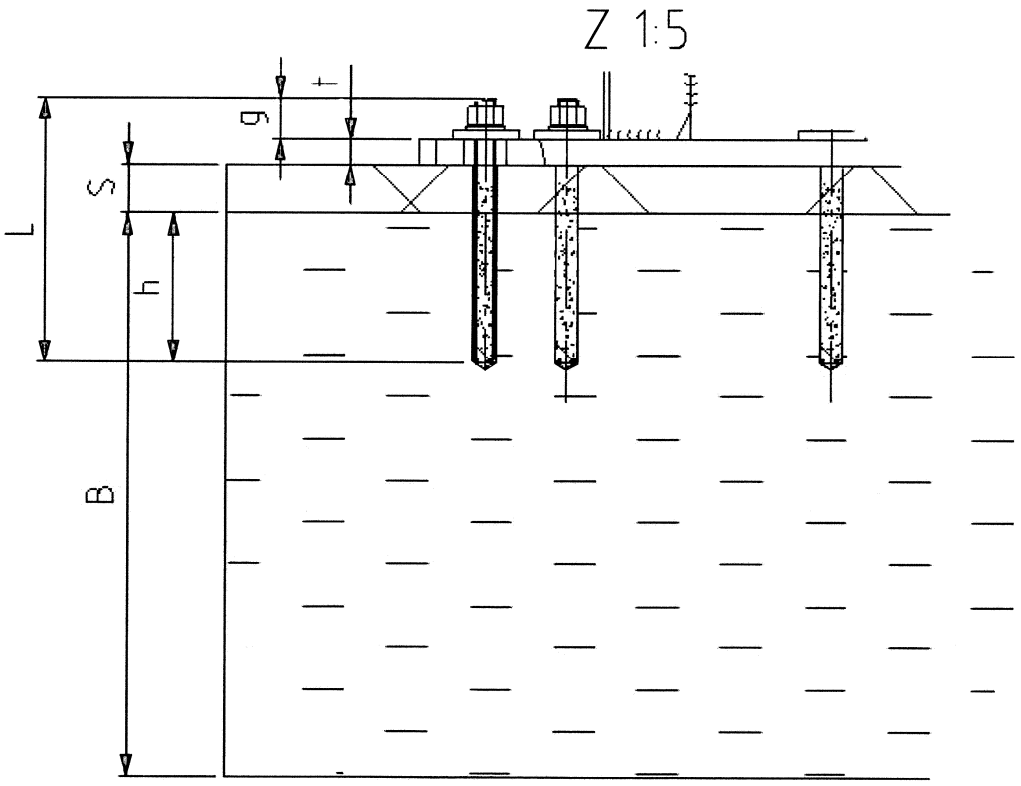
B = floor thickness (21 cm)
H = anchoring depth of anchors
s = thickness of ground covering - concrete C20/25
t = thickness of component
g = threaded length
L = length of anchors
X = according to indications of manufacturer
Length of anchors: L = h + s + t + g

Depending on the type of anchoring, use approximately-sized washers for 21+1 mm drill holes in the base plate.

Subject to change without prior notice !

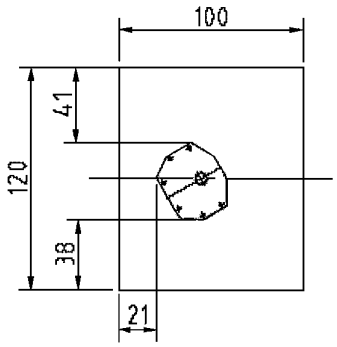




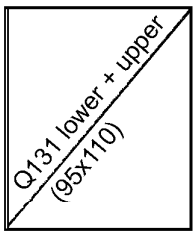


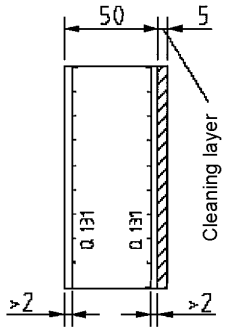
Foundation work for lifts up to 4 t

Single foundation



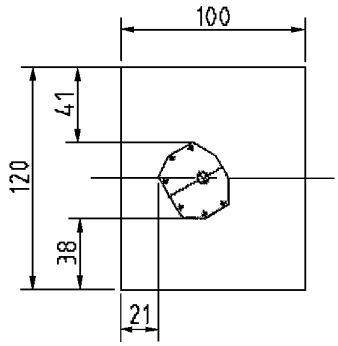
Reinforcement

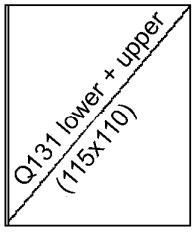


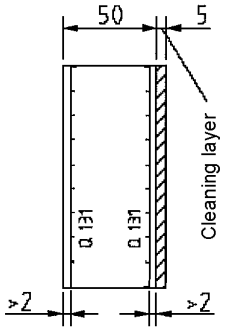


Underground:
Concrete without damage
Perm. SigmaB >= 200 kN/m²
C20/25 BST 500 M
Concrete floor> 2,0 cm

Shuttering

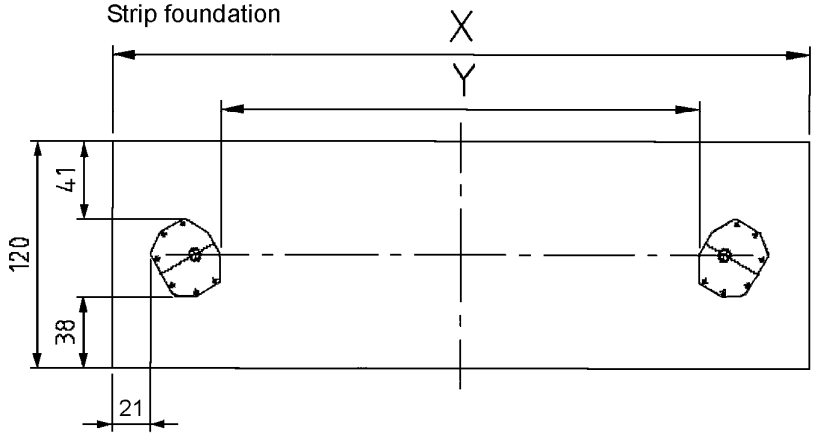






Perm. SigmaB >= 150 kN/m²

Strip foundation



M 2.30 F
X = 374 cm
Y = 257 cm

Floor plate C 20/25 concrete without damage
Thickness: d ≥ 21 cm

necessary asx	= 2,57 cm²/m	- lower reinforcement	BST 500 M
necessary aSx,y	= 3,77 cm²/m	- upper reinforcement	BST 500 M

Fixing of post: Hilti HVA/HAS-M12x110 mm (or equivalent quality)

Important: Always follow the installation instructions and keep to the min. anchoring depths specified by the anchor manufacturers !
Tests on existing concrete floor are necessary for anchoring !

Installation and initial operation

In order to install a lift correctly the concrete must be flat and horizontal and have the required load strength (minnimum C20/25). First of all the posts are placed on their staying positions. The distance dimensions of the base plates of the posts are shown in the relevant sketch of dimensions.

In accordance with EN1493 there must be a safety margin of 500 mm minimum between the posts and any other obstacle (wall, etc) and, similarly, between any load to be raised and another obstacle.

After repeated checking of the installation situation, the base plate is anchored through the existing drilled holes (the base plates must lie on with their entire surface!). According to the chapter “Foundation”, 12 special chemical bolts M12 are required. Other equivalent chemical bolts can also be used that have been appproved for the concrete by the building supervisory authorities, resp. for this region. Chemical anchors are ***not*** supplied.

The posts of the lift must be vertical. They must in no case lean inwards.
A slight outward lean (up to 10 mm) is desirable. If necessary, extra shims can be placed between the column base plates and the floor for levelling purposes.

In the slave post there are the cables which are connected to the main post. These cables are connected to the main post. A cable portal can also be purchases additionally for this connection. When installing the cables it is important to ensure that the wires are not mixed up! Before starting the electrical work, please read and observes the instructions regarding initial installation (following pages) carefully! For further questions, our service department is available.

The electrical installation for the lift must be carried out by an electrical engineer and according to the enclosed circuit diagram. The lift should operate in accordance with the travel direction symbols when the operating knob is activated. If necessary, change the direction of turn by interchanging the 2 phases.

Grease the arm locking bolts thoroughly. When the arms have been fitted it has be checked that the locking piece has engaged in the toothing.

The lift has to be lubricated at the post according to the lubrication schedule (following pages).

Securing of the lifting device (eg, swing armes) against being disconnected:

Fit the arm locking device in such a way that there remains a gap of 1 to 2 mm between the screw head and the upper edge of the swing arm.

Attention: *The self-securing screws are completely hardened only after 24 hours.*

There must be sufficient space between the bracket for the cover band and the post so that the cover does not get damaged. The brackets may need to be adjusted.The spindles must be greased.

Should there be a noise from the cover bands when the lift is running then multi-purpose grease can be applied to the back of the cover band.

By doing a test run, check the limits and the safety stop.
If the lift does not come down to the height required the following has to be done:
- Lower lift to bottom position
- Loosen the bolt for potentiometer bracket
- On both post 1 and post 2: disengage potentiometer (allen bolt), turn the spindle manually down to the height required.
- When the distance required to floor has been reached re-fit potentiometer.
- Test the lift.

After examination of the function of the lift by experts, the start-up can take place.

Safety lock device (load nut failure)

Your lift is equipped with a safety lock that stops the operation if a nut has failed. For explanation of the function of the safety lock device, please check the following sketch.

Fig. 2 and 3 show the position of load nut and respectively safety nut with the angled safety catch between nuts on the driving angles. The load carrying device is fitted into the lifting carriage and cannot be accessed from outside.

When using the lift in normal operation, there is a clearance between safety nut and carriage which allows the safety nut to run without load.

If the thread of the load nut is worn out, the load nut will fail. In this case the carriage falls on the safety nut and activates the safety lock which presses against the back wall of the post (see fig. 3).

If the lift is running on the safety nut once, it can be lowered. If the carriage is moved upwards again, the safety lock catches on the back wall of the lift and stops the raising of the lift.

The locking mechanism must under no circumstances be disconnected.

If the lift stops about 10 mm above the ground level, the safety catch is engaged.

Load nut failures can only be repaired by qualified lift engineers !

To prevent load nut failure, the below check-up should be carried out periodically:

Faulty or improper repairs can be a danger to people remaining below the lift !

Load nut testing (once a year)
With inspection nut „trapezoidal thread Tr45x6”, available as special accessory (Ident-Nr.: 35416.7).

1. Remove the flexible cover so that the load nut can be seen in the carriage.
2. Using a bar, lift the carriage as and hold.
3. Fix the testing nut (accessory) on the spindle, turn anti-clockwise until it touches the load nut
4. Lower the carriage
5. Measure the gap between the load nut and the testing nut with a gauge or vernier.

If the wear is over 1mm, the load nut must be replaced!

Load nut failure

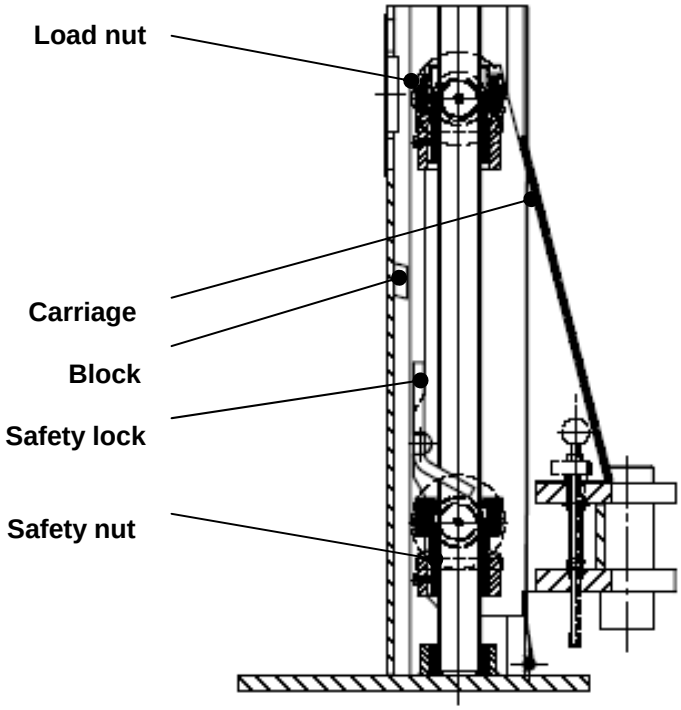


Fig. 2
Load nut okay

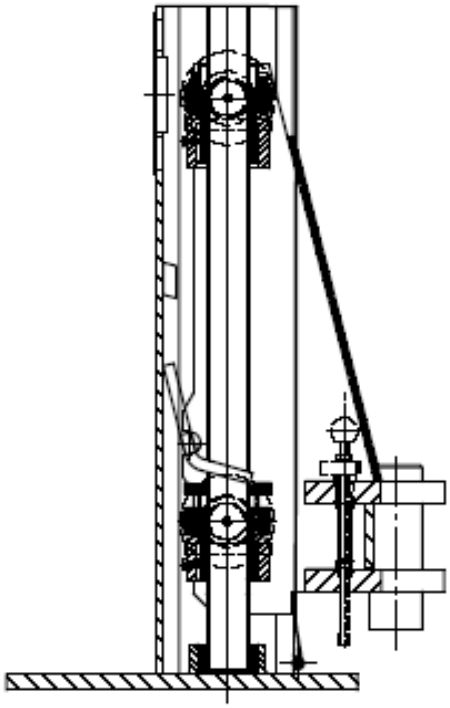
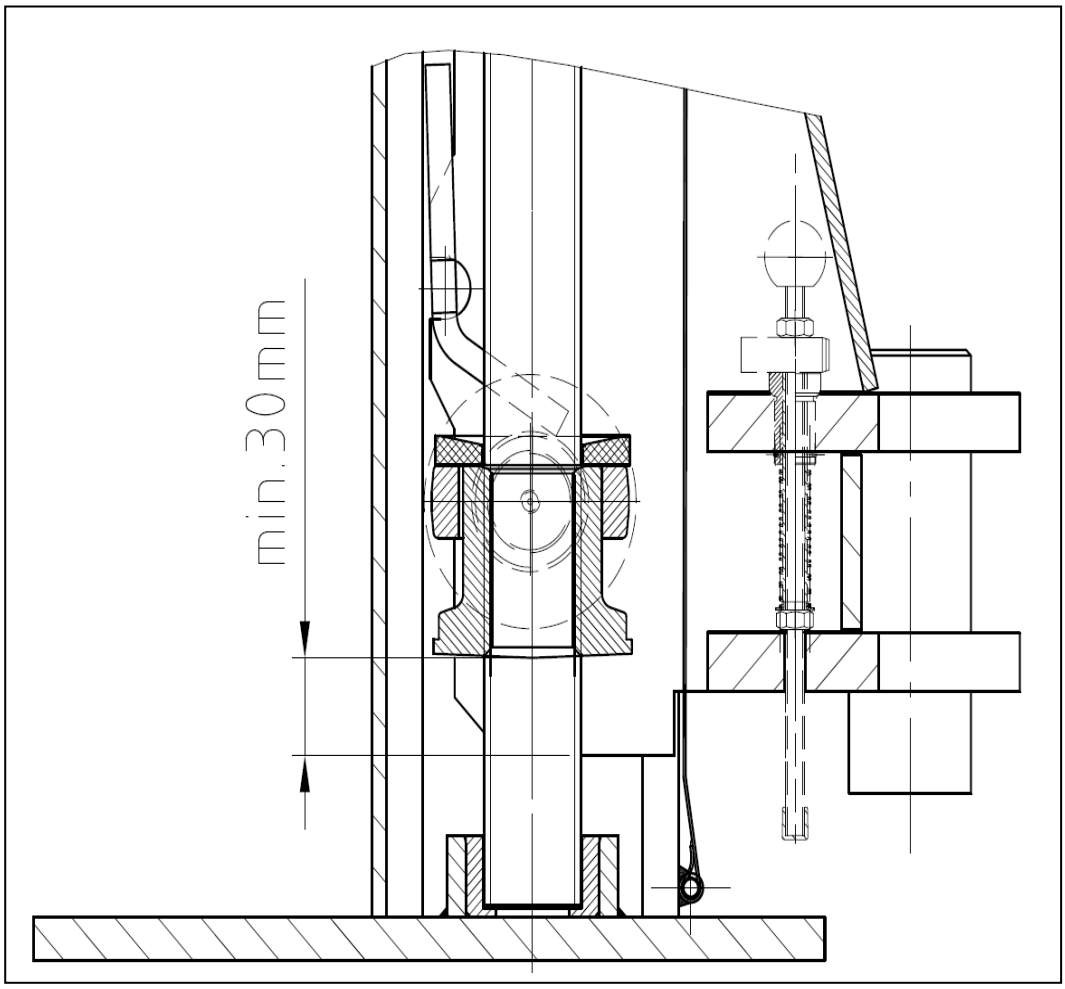


Fig. 3
Load nut destroyed

To be greased every 3 monts (see Maintenance and Service)

Replacement of nut set

When replacing the nut set please take care that the distance between bottom of carriage and bottom of safety nut must be at least 30 mm.



Emergency lowering

Important:

During emergency lowering procedure, the automatic end limits are switched off. If lowering the lift onto mechanical limit stops the lift might be damaged

Notes:

The procedure described below for lowering in an emergency case must only be executed by authorised and trained personnel. A second person should take care about this procedure from outside the operating area to ensure the safety of the operator and vehicle.

The emergency lowering procedure must be stopped immediately, if any danger should arise and re-started when cause of danger has been removed. It is only possible to lower the lift once, making sure that the arms do not touch the floor.

Operation of emergency lowering procedure:

An emergency lowering by using the motors can be necessary if the electronic controls fail. If other elements fail, then the lift should be lowered manually (by turning the bolt on the large pulley). The control knob must be turned on position “0” or off.

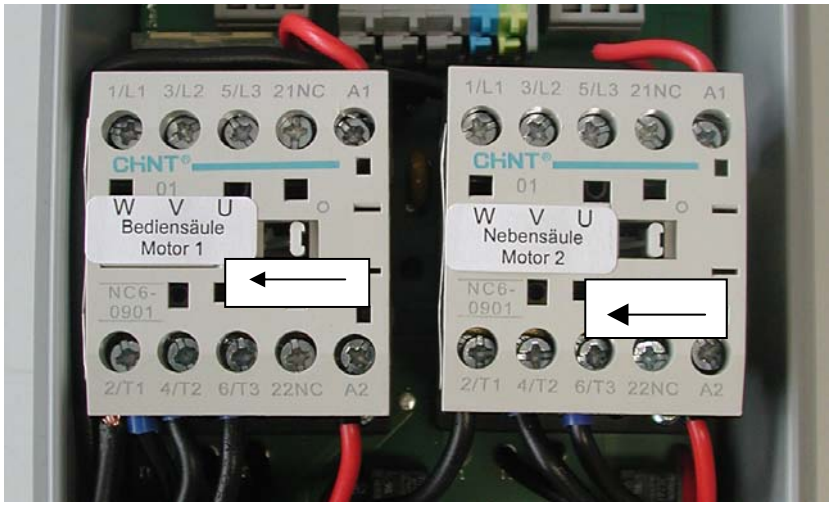
If both carriages are not at the same height, it is possible to lock only one contactor from „0“ position to „1“ position and the arms can be brought on the same level. This levelling should be done in small steps and with increased attention.

Operation the contactors

The emgergency lowering can be carried out through mechanical operation of the contactors, by turning the operating knob onto 1 (down) and operate the contactor manually.

Warning: ***<u>No</u>*** automatic end limit switching-off

When the maximum necessary lower position of the arms has been reached, the emergency lowering can be stopped immediately. The lift can be used again, only after removing of all defects by authorised personnel.



K1 – Contactor main post Motor 1 down
K2 – Contactor slave post Motor 1 down

Different contactors can be used.

ABB contactor
Colour: black

Condor contactor
Colour: grey

Maintenance and service

Before doing any servicing or maintenance the electricity supply must be cut off and the lift should be protected from any unauthorised use!

For a long lift cycle and constant readiness of the lift the maintenance is an absolutely paramount issue.

In certain conditions (e.g. increased use, low temperature, etc.) the spindle has to be greased separately (Molybdenum disulphide grease Mo_2S). At least once a month you should check that the grease provision is sufficient.

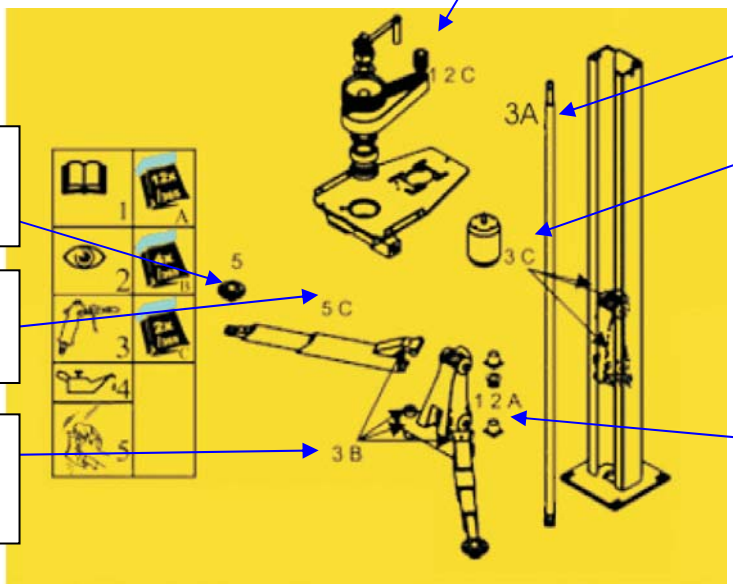
After installation and commissioning there may be some stretching of the power transmission elements, depending on the type of lift. For example, stretching of the drive belt, cables, consequential adjustments, adjustments to the safety systems, etc. These changes do not constitue wear and tear of the parts. They are routine aspects of working and must form part of the customer's maintenance and care. With missing or poor care break downs can occur which are not covered by the guarantee. In this case, any costs arising may have to be paid by the customer.

The swing arm joints must be greased when necessary and at least every 3 months (oil underneath the safety screws). Where lifts are exposed to the weather, the lubrication programme should be doubled (see the lubrication instructions on the main post).

The lifting arms must always be kept in working condition. The buffer points must be kept clean and free of grease. The spindles of the turntables must be greased. They must not be able to unscrew themselves completely.

Maintenance Schedule

Abstract from „operation label"



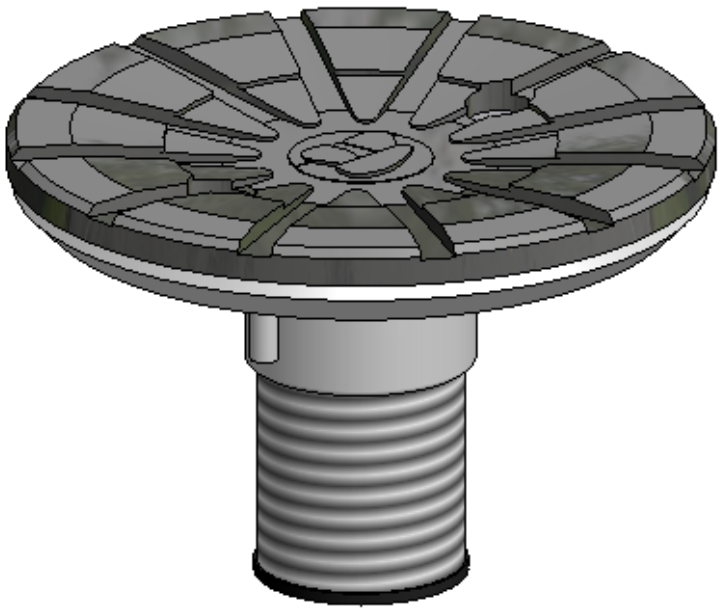
If the lift is used more heavily maintenance periods are to be shortened.

Icon	Meaning	Icon	Meaning
	Please read the manual and the inspection logbook.		Keep clean and free of grease !
	Visual check		Maintenance period every 6 months
	Lubricate with oil		Maintenance period once a month
	Grease with multipurpose grease		Maintenance period every 3 months

Ribbed V-belt

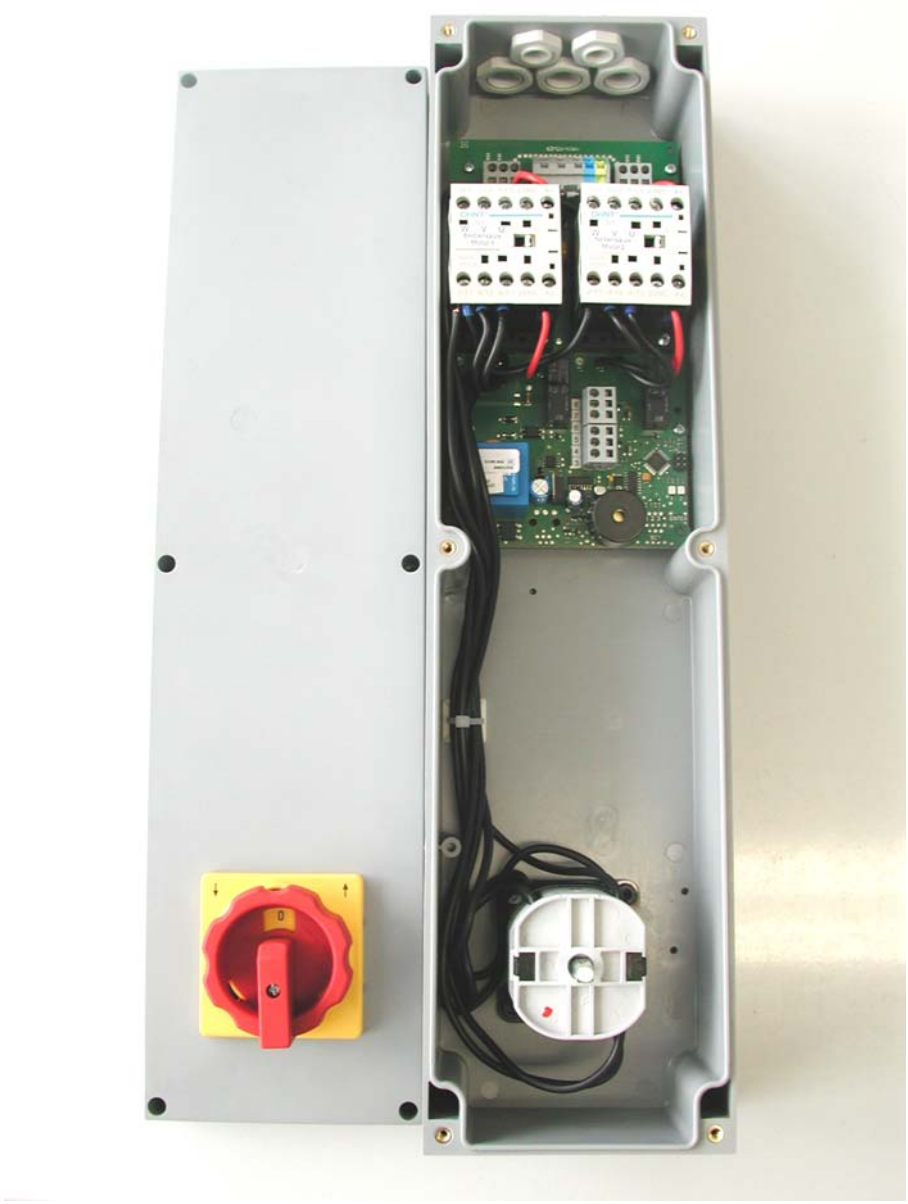
When the motor cover is removed and the lift is without load then the big belt pulley should be rotatable by hand (rough-running). The correct tension of the belt is 220-240 Hz. During operation: 195-220 Hz.

Flex pick-up pad with attachable sleeve

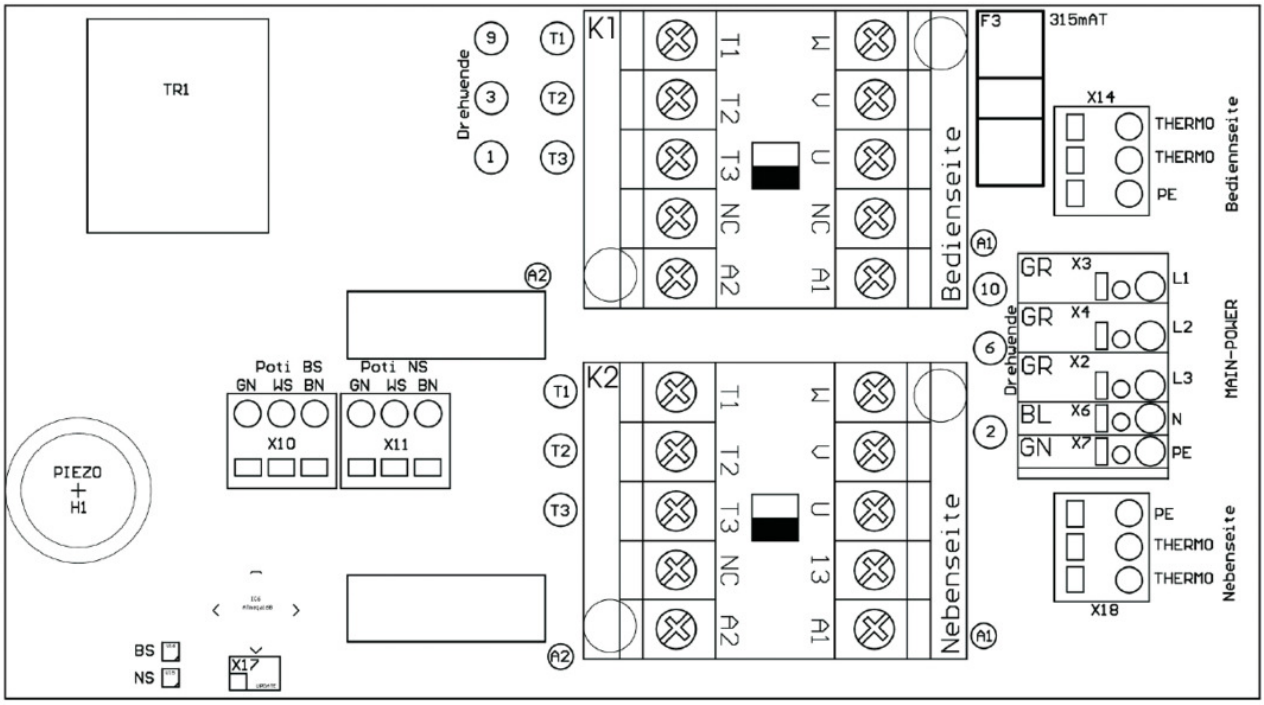


Subject to change without prior notice.

Control unit



Main circuit board – Connection and initial operation



1. **Connect main supply – clockwise direction of rotation.**
   X3 - **L1** ; X4 - **L2** ; X2 - **L3** ; X6 - **N** ; X7 - **PE**

2. **Connect motor slave post on K2 slave post.**
   Cable 1 – **U** ; Cable 2 – **V** ; Cable - **W**

3. **Connect thermo motor slave post and PE.**
   Cable 4 – **THERMO** ; Cable 5 – **THERMO** ; PE – **PE**
   Attention: take care about correct connection of PE !!!!

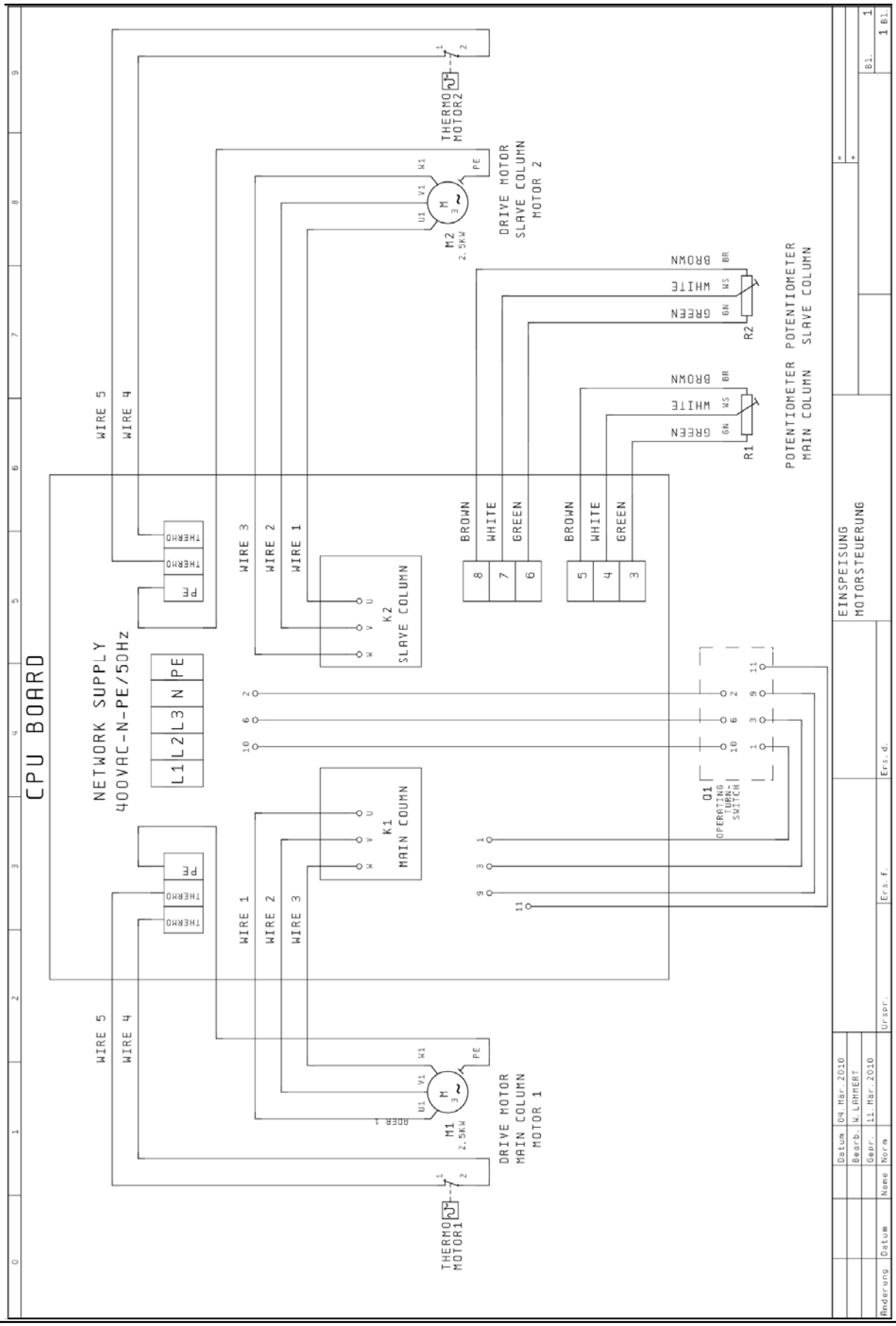
4. **Connect potentiometer slave post.**
   GREEN – X11- 6 ; **WHITE** – X11 - 7 ; **BROWN** – X11 - 8

5. **400V AC POWER ON – Drive mode.**
   Lift is moving upwards.
   Attention: please observe sequence !!

6. **Turn knob "UP" – main post moves downwards.**
   Interchange main supply L1 and L2.

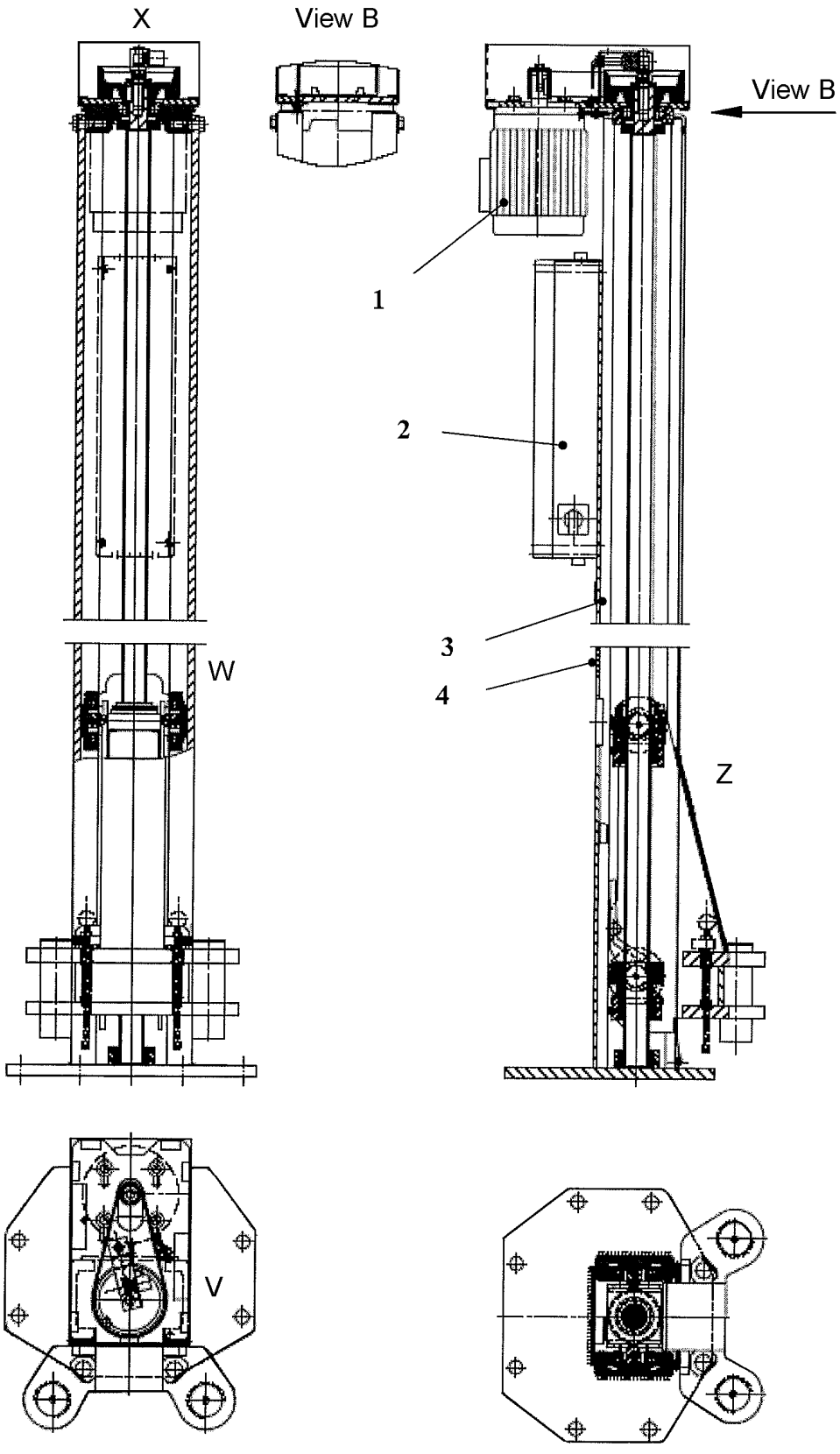
7. **Turn knob "UP" – slave side moves downwards.**
   Interchange cable 1 - U and cable 2 - W **on contactor K2 – slave side.**

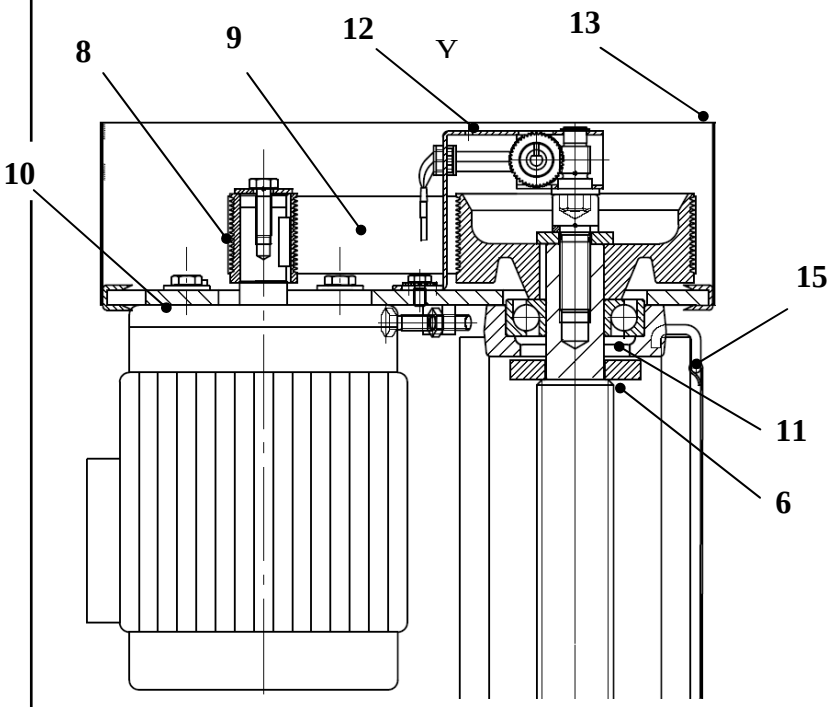
Electric diagram



Revision:

Spare parts drawing

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Y
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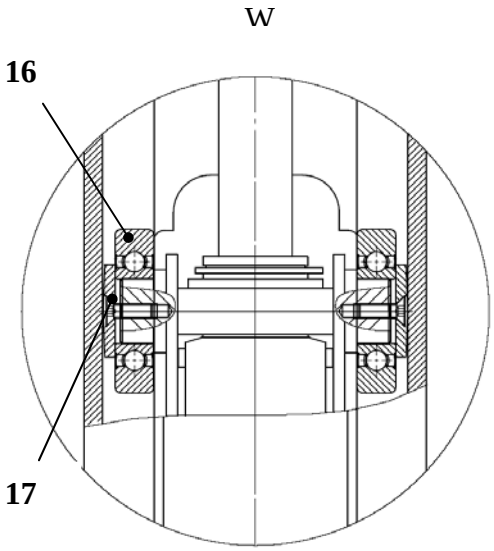
W
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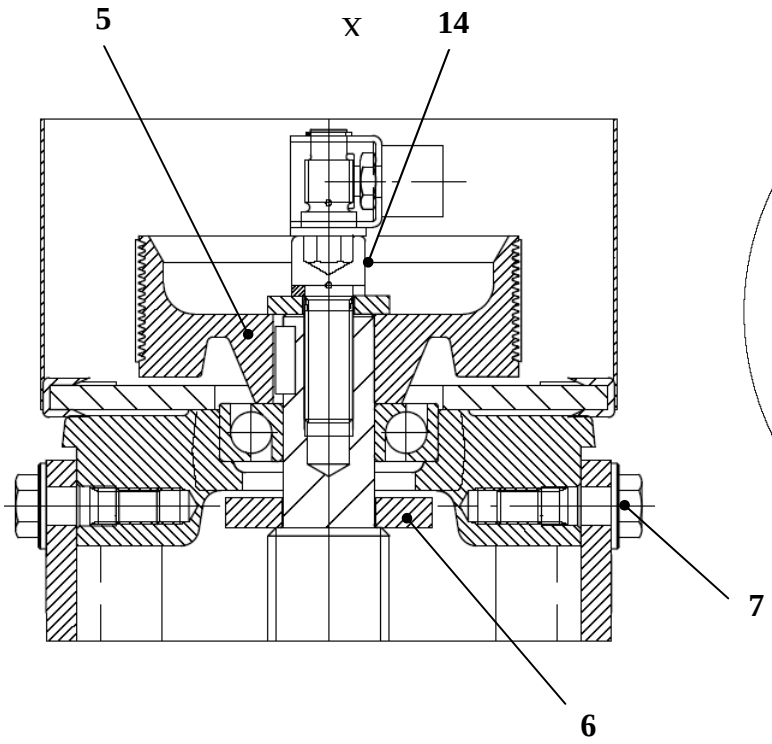
17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X
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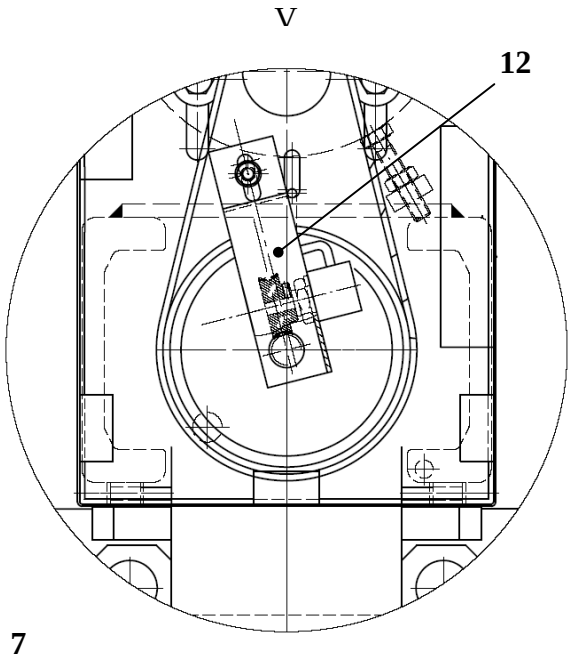
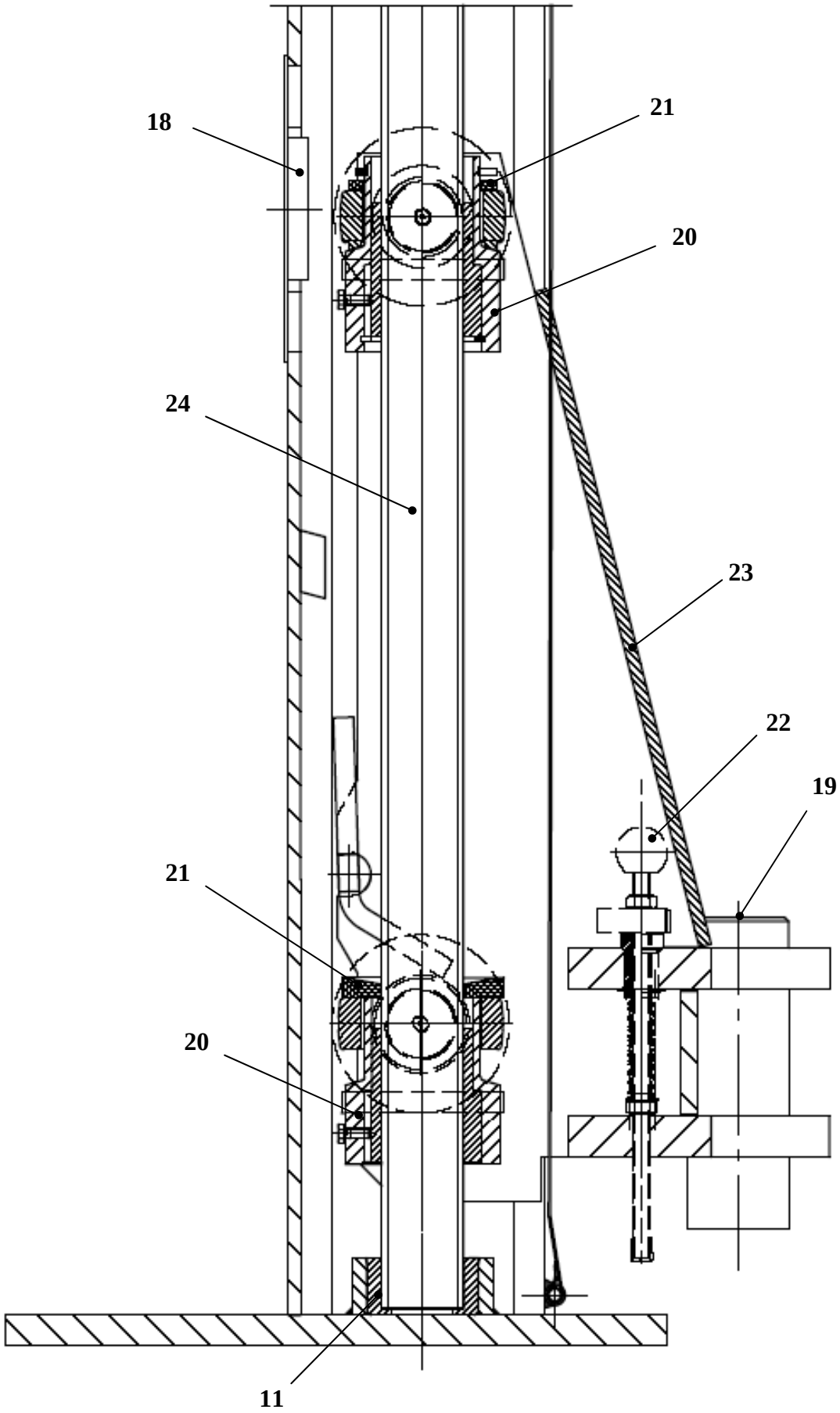
7
6


V
12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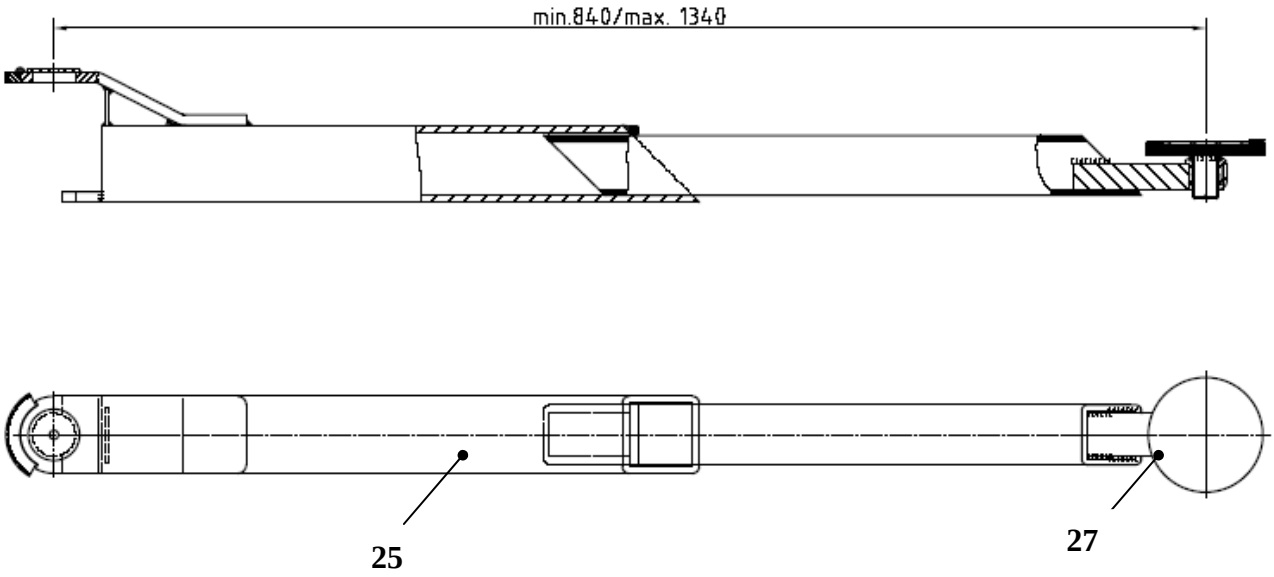
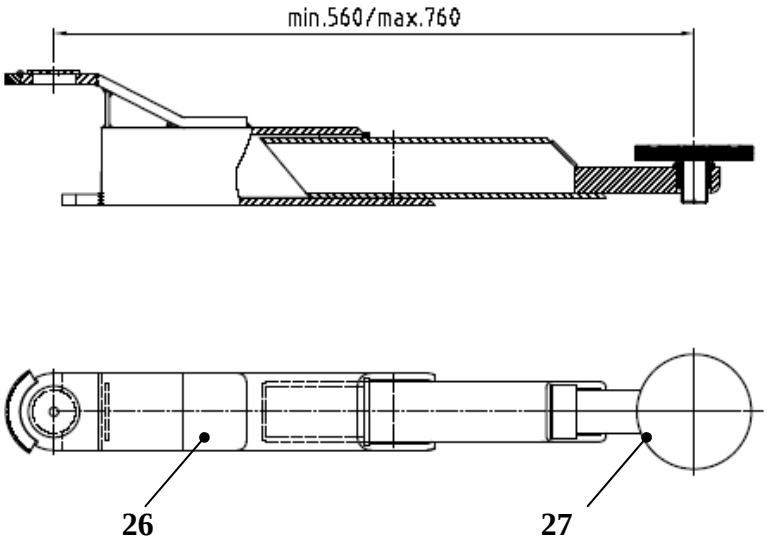
Swing arm





Spare parts list

See page:	Item No.:	Reference:	Description:
24	-	CN491092	Operating knob
24	-	CN491118	Control box empty
24	-	CN488734	Control board cpl
27	1	CN484857 CN484873	Motor cpl., main post Motor cpl., slave post
27	2	CN483727	Control unit
27	4	CN489088	Operation instructions sticker
28	5	CN479600	Ribbed V-belt pulley (big)
28	7	CN259457	Bolt for top plate (1 set for 1 column)
28	8	CN479972	Ribbed V-belt pulley (small)
28	9	CN481879	Ribbed V-belt
28	10	CN480087	Top plate
28	11	CN485342	Spindle bearing (bottom and top)
28	12	CN484816	Potentiometer bracket cpl.
28	13	CN484808	Top cover
28	14	CN485359	Bolt for V-belt pulley
28	15	CN484527	Post cover band cpl. (for 1 post)
28	16	CN410084	Carriage guiding rollers (4 pieces)
28	17	CN483818	Set of guiding blocks (1 set = 4 pieces)
29	18	CN199703	Cover (plastic)
29	19	CN358333	Bolt for arm locking device (4 pieces)
29	20	CN485243	Nut set cpl. (1 set for 1 post)
29	21	CN485367	Nut set accessories (1 set for 1 post)
29	22	CN456434	Arm locking device cpl.
29	23	CN484832	Lifting carriage cpl.
29	24	CN482943	Lifting spindle
30	25	CN483065	Swing arm asymmetric long (without pick-up pads)
30	26	CN483214	Swing arm asymmetric short (without pick-up pads)
30	27	777112	Pick-up pads complete vertical adjustable (1 set for 1 arm)
-	-	CN358671	Motor cable, 10 m - slave post
-	-	CN362780	Potentiometer 3-core cable - main post
-	-	CN362798	Potentiometer 3-core cable, 10 m long - slave post
-	-	CN488684	Door stop - rubber
-	-	777231	Chemical anchors

Subject to change without prior notice !