

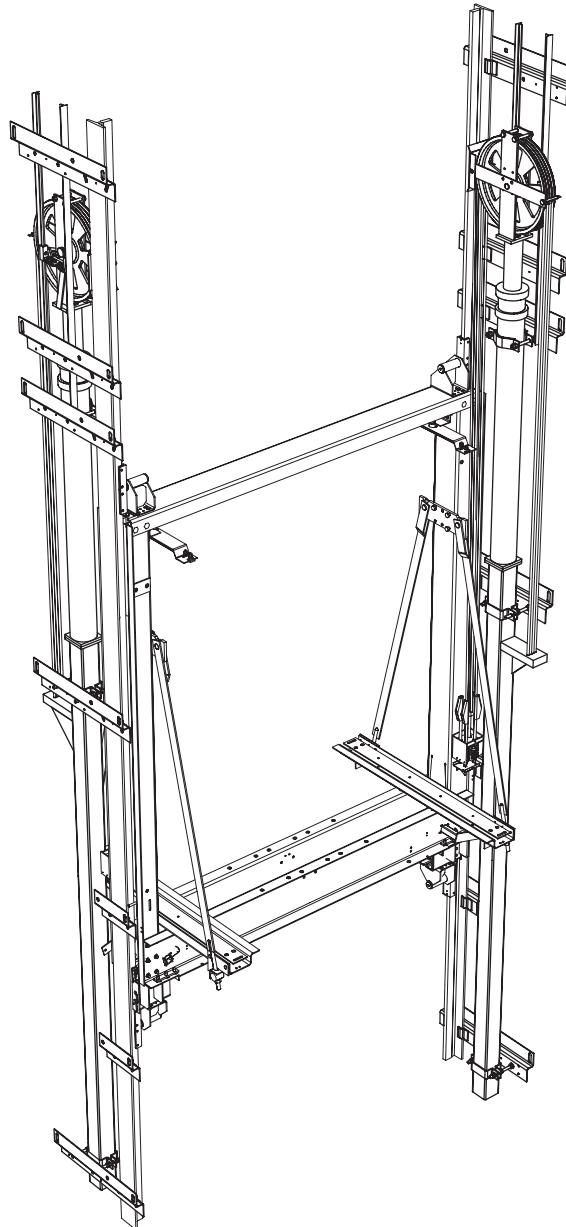
Shaft Components Car Frame WHF35

Operating instructions

Blatt/sheet D562MGB.000
Datum/date 10.12.2002
Stand/version B-23.07.2015
Geprüft/approved WAT/FLE



Shaft Components for Hydraulic Car Frame WHF35



D562MGB 07.2015

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1 General information prior to installation

1.1 Introduction

The installation of a lift begins with the guide rails and the material for linking and affixing them.

It is the precise installation of these first mounting parts that will determine the travel safety and travel quality of the lift. Installation and dimensions of the guide rails need to guarantee safe functioning under the loads and forces occurring during normal operation and also when actuating the safety gear device.

The hydraulic car frame WHF35 is used for passenger-goods elevators according to EN81-2.

The car frames are available for 1:1 (direct) and 2:1 (indirect rope hydraulic) suspension as well. All adequate accessories – guide rail brackets, cylinder brackets, pillar, ... are delivered with the car frame package.

1.2 Liability and guarantee

This instruction handbook is written for people who are familiar with lift servicing and installation. Sufficient knowledge of lifts is essential.

WITTUR accept no responsibility for damage caused by improper handling, or for damage caused as a result of actions other than those stated in these operating instructions.

The WITTUR guarantee may be voided if parts other than those described in these instructions are installed, or if the component has been used other than described in these instructions.

Unless stated otherwise, the following are **not** permissible due to technical safety reasons:

- using guide rails from different orders within one path
- installing incorrect guide rails or guide rails differing from the specifications stated in the instructions
- any modifications concerning fastening without prior approval by WITTUR or fastening in ways other than those stated in the instructions
- using unsuitable accessories, spare parts or operating material which has neither been released by the WITTUR Company nor consists of original WITTUR spare parts

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1.3 Safety precautions

Maintenance and installation personnel of WITTUR machinery are chiefly responsible for safe working practice.

It is essential to comply with and keep abreast of all safety rules and legal obligations in order to avoid personal injury / product damage during installation, maintenance and repair work.

Important safety advice and danger warnings are emphasised with the following symbols:



General danger warning



High danger risk warning (i.e. crushing edge, cutting edge etc.).



Risk of damage to machinery parts (i.e. due to incorrect installation, or such like).



Important information sign

These operating instructions belong with the whole installation and must be kept in a safe place at all times (i.e. machine room).

Proper installation of the guide rails requires trained professional personnel. The firm carrying out the work shall be responsible for training the personnel.

Before starting installation work:



Only properly trained personnel may carry out work, or be allowed access to the installation site.

- Attach safety devices to guard against falling (platform or harnesses)
- Cover any floor openings
- Secure installation tools or objects against accidental falling
- Lift shaft openings should be cordoned off and suitable warning signs should be erected when working in shaft openings
- Work involving electrical equipment should only be carried out by an electrical engineer or qualified personnel.

1.4 Preparation

Before beginning installation work it is in your own interest to ascertain the constructional and spatial conditions. Where (workshop or on site) and when which installation operations can or must be carried out.

It is recommended therefore, taking into account all the given circumstances, to plan the various operational sequences in advance, rather than carrying them out prematurely and in an unconsidered manner.



Observe the applicable safety measures when working with lift installations.



Before installation, clean the guide rails thoroughly at the fish plate fastening points, points of impact and rubbing surfaces. Remove protective film if provided.

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1.5 Content of supply

On receipt of the delivery, the components should be checked for correctness, for damage and completeness with the order sheet. The content of supply covers:

- Operating instructions manual
- Guide rail brackets
- Cylinder brackets
- Pillar brackets
- Cylinder support (pillar)
- Rope pulley yoke for 2:1 rope hydraulic suspension



1.5.1 Notes on storage

For best possible storage keep in a room which is:

- lockable
- heatable
- dry and
- free of dust (especially cement dust)



For storage rest the guide rails on a wooden support and make sure they are free of tension and do not sag!

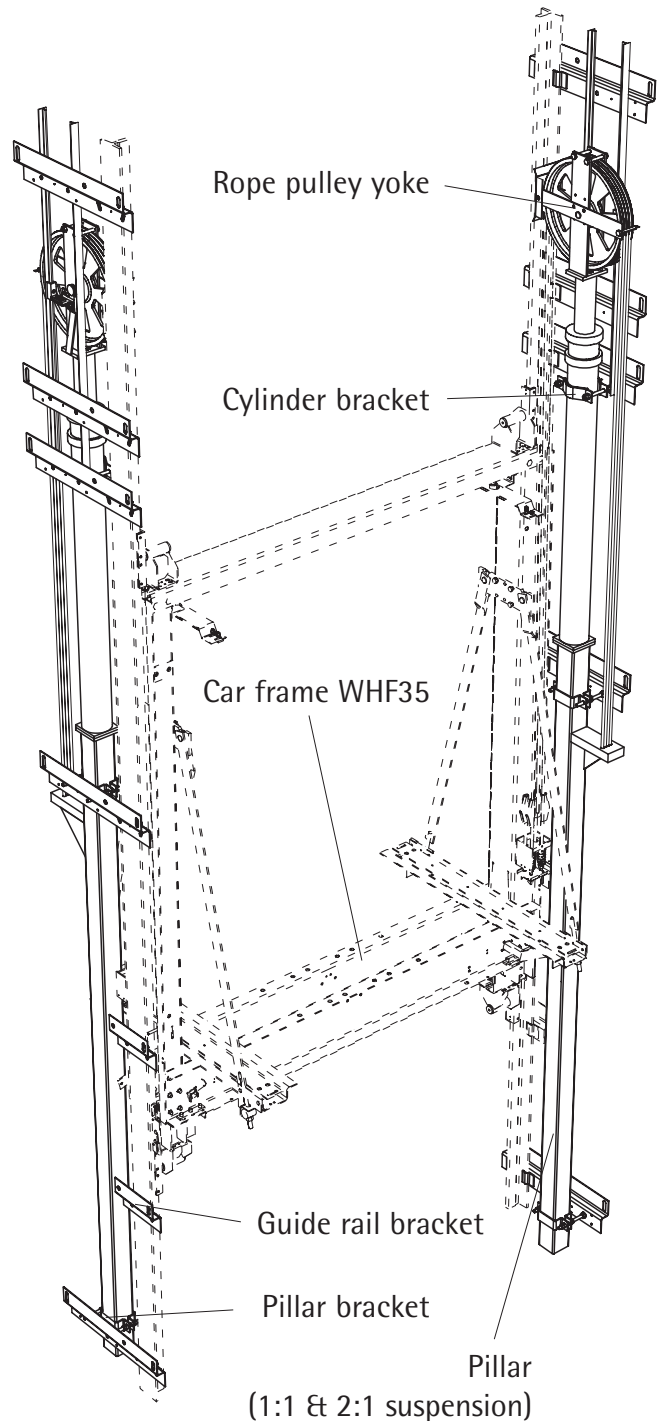


Fig. 1: WHF35
Suspension 2:1

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2 Installation

2.1 Installation of the guide rail brackets


The bracket installation is the most crucial phase in the procedure. This determines the guide rail alignment, elevator car and landing door positions as usual.

Moreover, many mounting parts are fixed in relation to the guide rails.

 Mounting the guide rails must therefore be carried out with great care!


2.1.1 Before installing

The following section describes the preparatory and inspection work imperative for mounting guide rails.

 Before commencing installation:

- check delivered guide rails and erection material for correctness, completeness and perfect condition
- thoroughly inspect assembly area (dry, clean well; no other objects or installations in the well; no structural damage etc.)


Determining the well dimensions:

 Determine the dimensions of the well with the help of two plumb lines.


Make sure the line between the two plumb lines is parallel to the landing sill (see figure).

Set the final, exact position of the gauge between the rails according to the smallest measured well depth and well width.

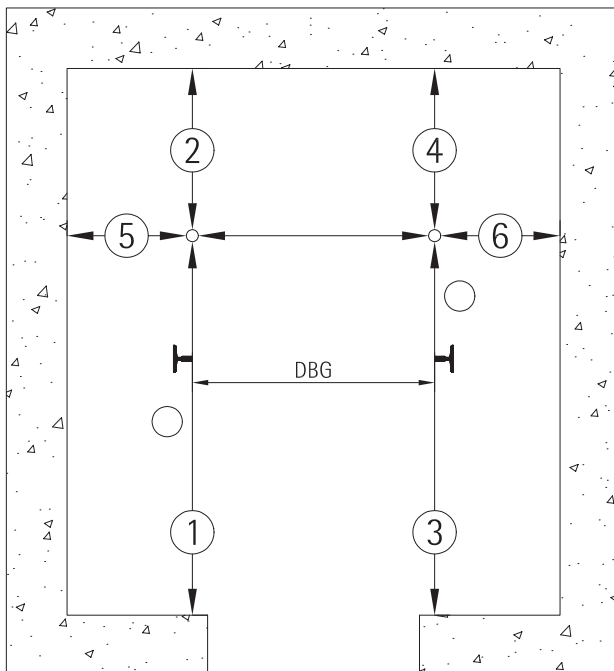
Determine the distances \llcorner - - on each floor.

 Then compare the actual well dimensions with those given in the project plans. Shift the gauge between the rails accordingly if necessary.

Checking the door positions:

 Check the positions of all the landing doors before determining the exact positions of the guide rails in the well.

Determine the max. deviation on the left and right side. Then determine the axis which makes the least or no corrections necessary to all the landing door openings.




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2.1.2 Fixing the guide rail bracket

 Observe the local regulations when mounting brackets (anchor rail or wall anchor).

WHF35 guide rails brackets do have a reference points that can be used for plumbing and aligning:

A ... Guideline centre line

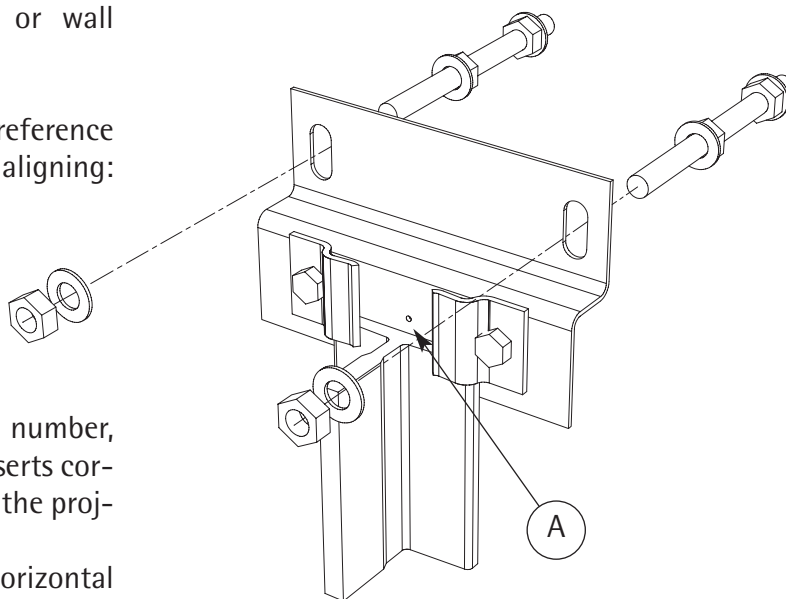
Installation procedure:

 Before you begin, check whether number, position, and type of all anchor inserts correspond with the specifications in the project documents.
In particular check for precise horizontal position.
Remove any dirt (Styrofoam, remains from cleaning) from anchor inserts if necessary.

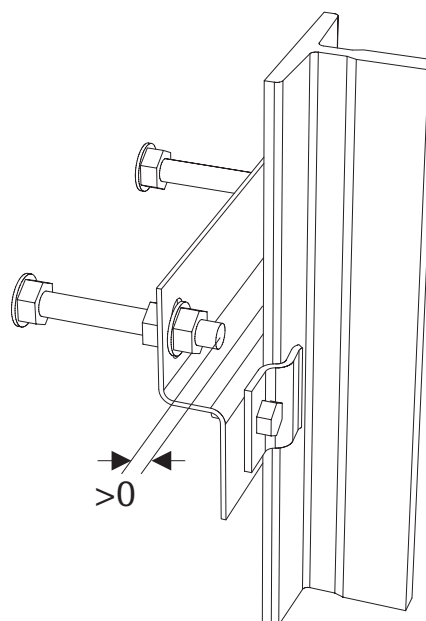


Take special care about the right locations and division of the guide rail brackets over the whole shaft height given from the layout drawing!

- Mount the topmost guide rail bracket according to layout drawing. Make sure to align centre of bracket with plumb line / reference line of the centre of the car frame
- Attach one plumb line each on the right and left side on level of guide rail centre line of the top guide rail bracket
- Align all other brackets with these two outer plumb lines
- When mounting the guide rail, the rail clip is tightened only to such an extent, that the guide rails are kept in their place. Final tightening is performed, when aligning the guide rail.



After completing the installation, the fastening bolts of the fixing brackets are to be cut off behind the guide rail (see arrow).



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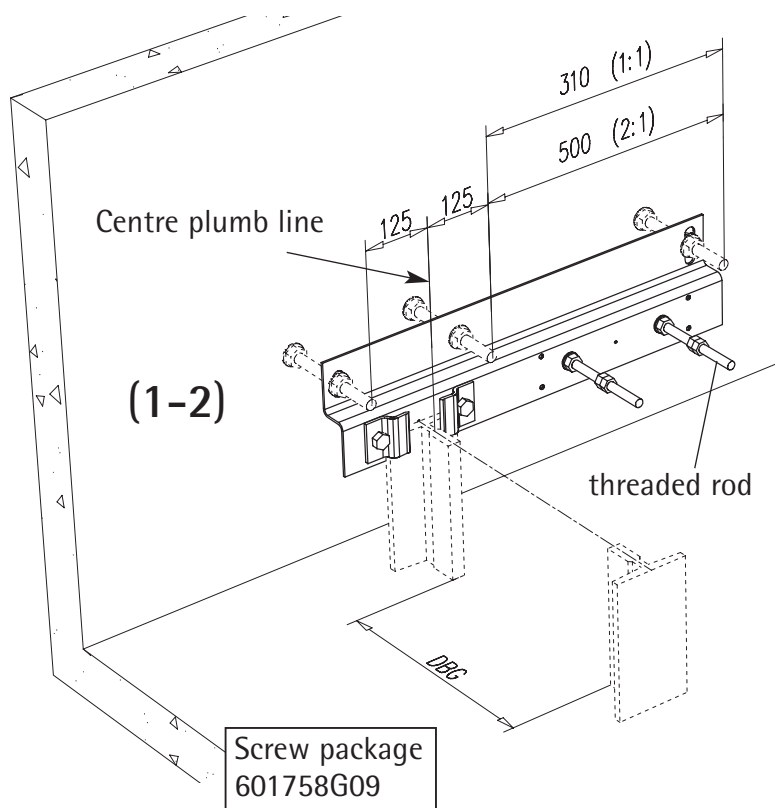
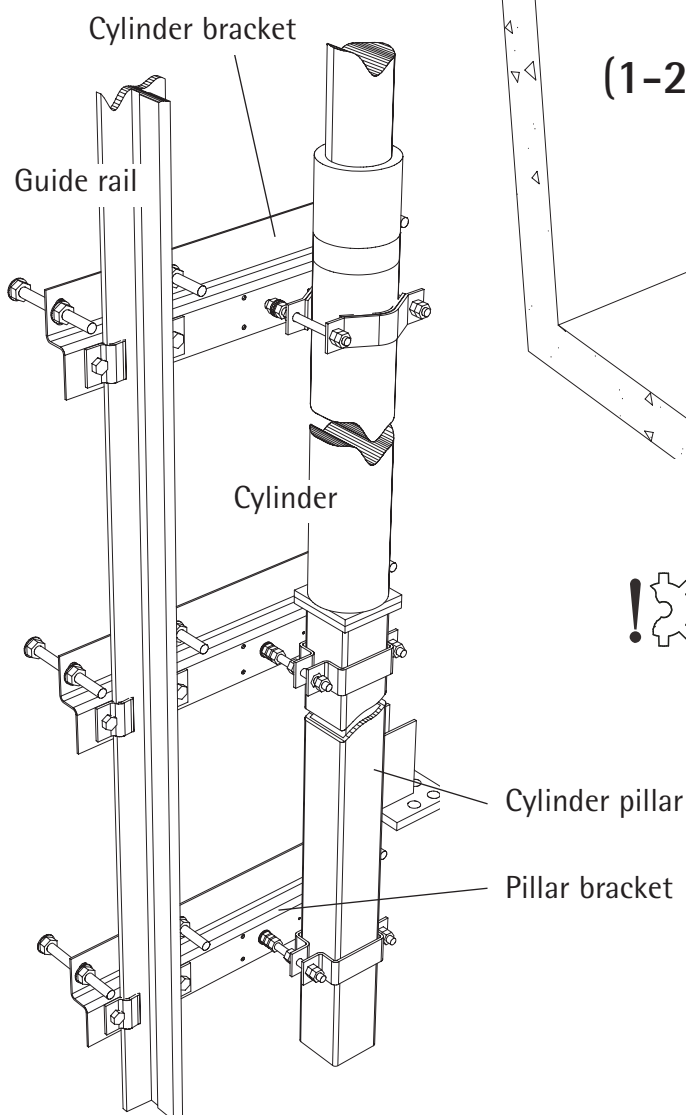
2.1.3 Cylinder - and pillar brackets

The cylinder - and pillar brackets are from same design than the guide rail brackets.



When mounting the brackets, pre-assemble the threaded rods (only) before.

- (1) Drill holes for the anchor bolts (M20)
- (2) Mount the guide rail brackets to the wall and adjust it to the correct position (see layout drawing)



Take care of tightening torque
Screw M16: 195Nm

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2.2 Fastening the guide rails

The guide rails must be faultless and installed with accuracy in order that the ride is smooth and comfortable.



Take care of the configuration of the lowermost guide rails because this is depending upon the shaft height.



Clean the springway and spring before joining the guide rails together, as well as the rubbing surface of the fishplate to prevent the formation of any gaps.

- Lift the rails into position



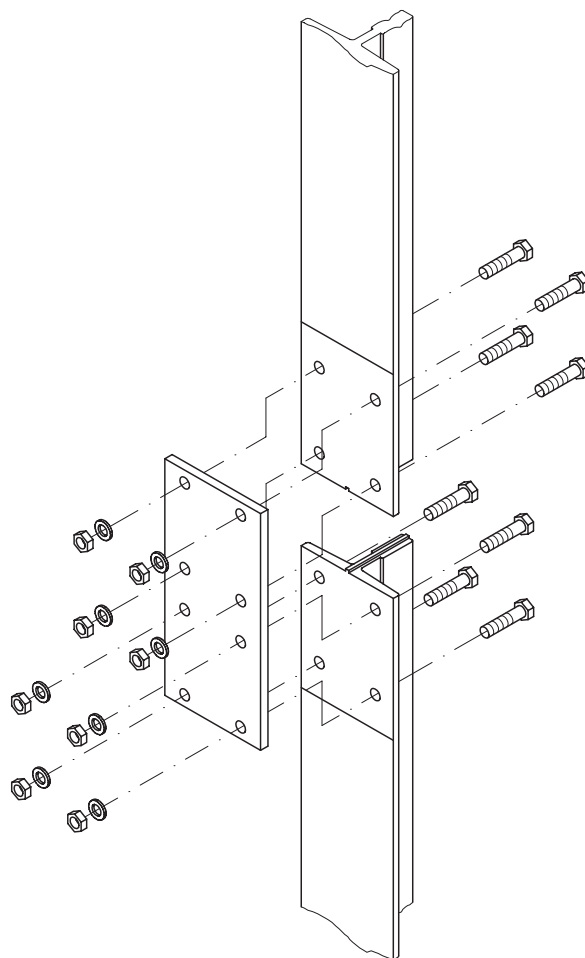
Do not go under suspended load.

- Align the joint using a 1 metre straight edge / spirit level and tighten the joint.
- Screw the guide rails together with fishplates



Make sure that there is a clean rubbing surface transition.

- Tighten first the out most nuts and then the centre nuts and finally tightening cross the opposite nuts.
- Fasten all additional guide rails from bottom to top with clamping clips to the guide rail brackets



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2.2.1 Aligning guide rails

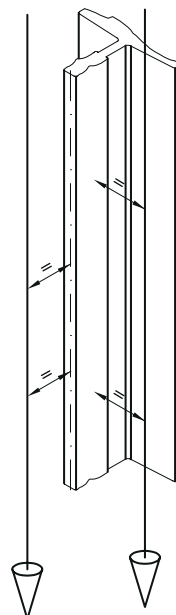


Check the position of the guide rails with the aid of the drawing provided!

- Use only the auxiliary screws for making adjustments.

The clamping clips of the guide rails remain tightly screwed during this process.

- Set each guide rail in a precise vertical position using two plumb lines



Correct state:

- Check whether the rubbing surfaces of the guide rails are level

Guide rails laterally offset:

- Open clamping clips. This permits the guide rail to be shifted by about 1 mm on each side.

Non-parallel rubbing surfaces:

- Check attachment surfaces for levelness. Remove any soiling or drops of paint which may be present.
- Check guide rail brackets for warping. Align them where necessary.

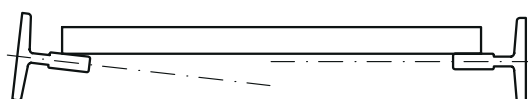
Correct state



Laterally offset



Not parallel



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2.3 Installation of the hydraulic cylinder



Additional instructions for installing hydraulic components can be found in the separate operating instructions "Hydraulic Components".

- Lift the cylinder pillar into the shaft
- Align the pillar and fix it with the topmost pillar fixing bracket

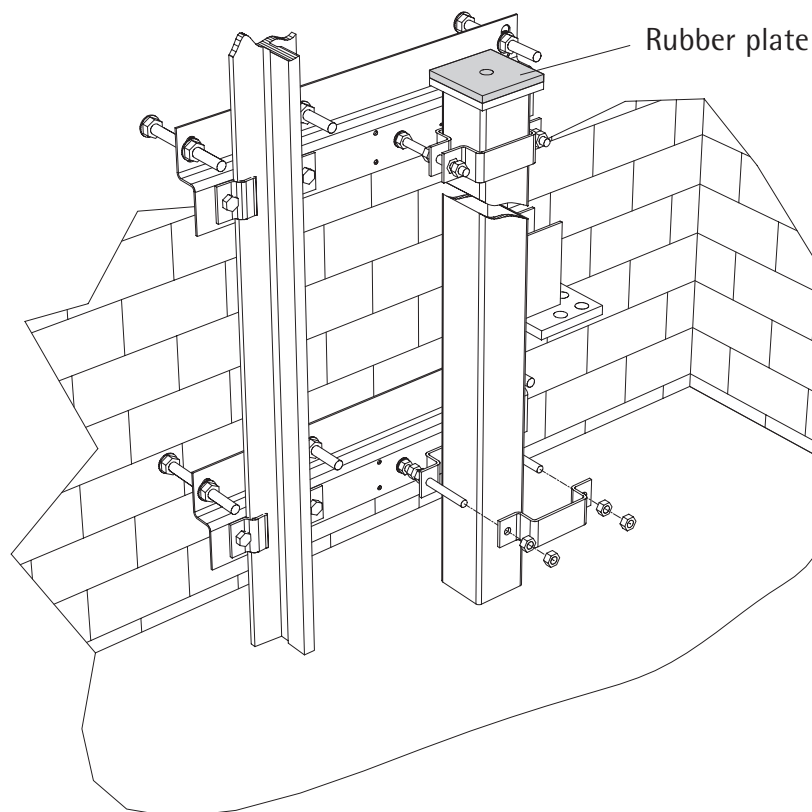
2.3.1 Mounting the pillar



Make sure of the correct position in relation to the distance between guides (DBG)!

The cylinder pillar is secured to the pillar brackets with special clamps (refer to chapter 2.1.3).

- Locate all further fixings evenly on the entire length of the pillar (according the layout)








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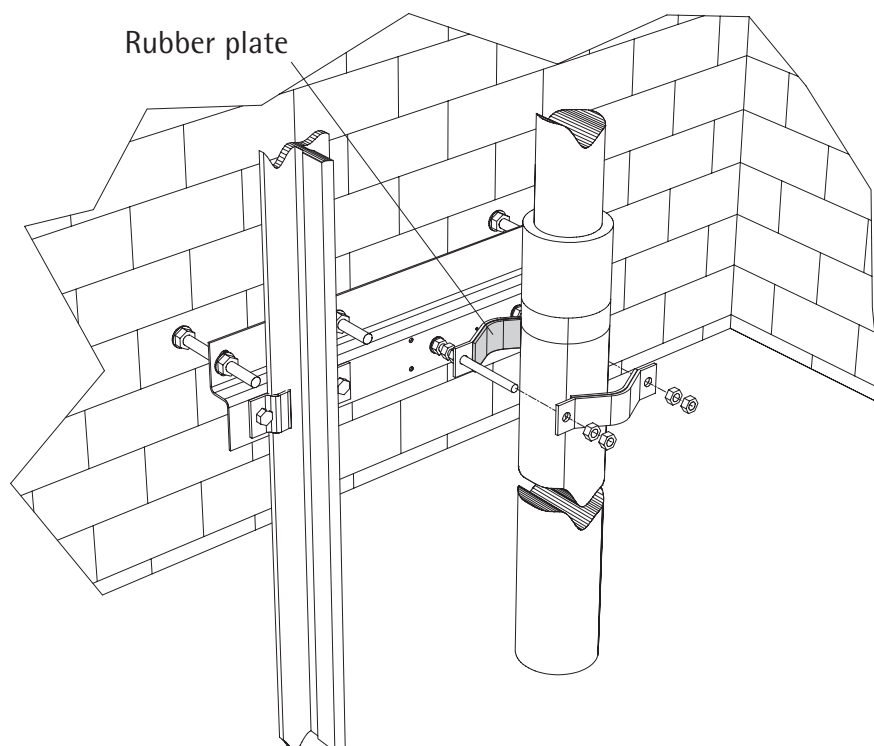
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2.3.2 Lifting the cylinder to the lift well

-  During installation of the jack, make sure that there is a favourable position for the connection bore hole for the oil hose and/or for the pipe rupture valve.
-  Protect the rupture valve against any damages when transporting.
-  Align the cylinder and the rupture valve position. Check that the rupture valve is turned between the guide rails.
-  Make sure hat the rubber isolation pieces are fitted.
-  Do not go under suspended load.



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2.4 Installing the rope pulley yoke

The rope pulley yoke can be installed completely pre-assembled (as delivered)



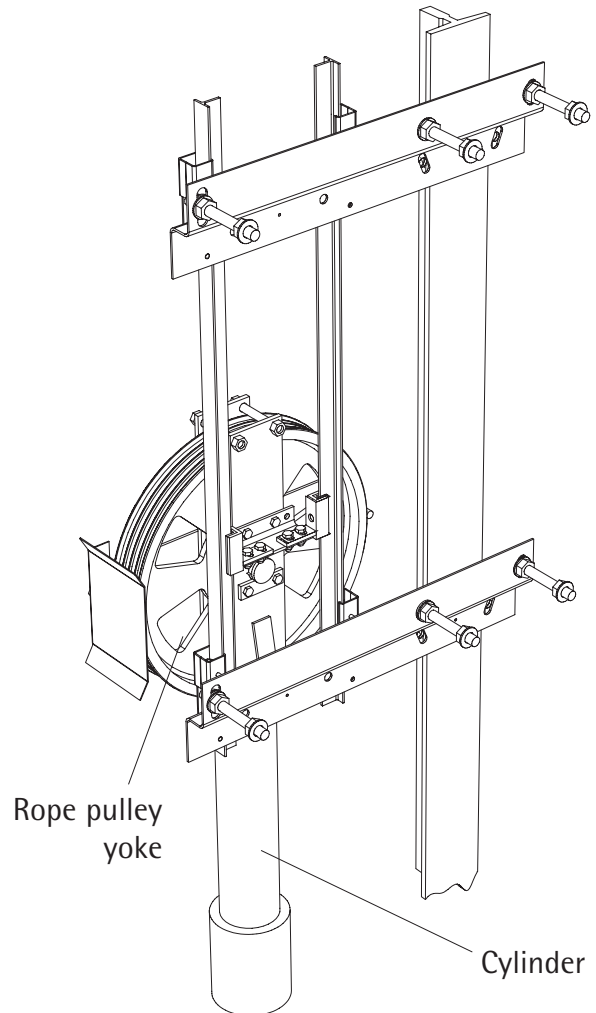
It is advantageous to have a lifting device in the shaft during installation.

The guide rail bracket with guide fixings for the rope pulley yoke (T45) is from same design than the guide rail bracket.

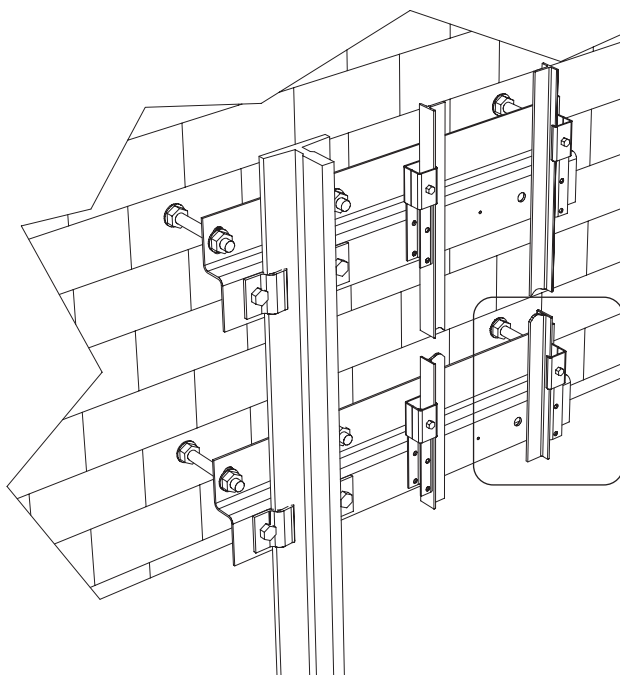
- Lift the yoke between the guides using hoist
- Lower it on top of the cylinder adapter piece
- Connect rope pulley yoke with piston rod and align it (guide shoes should be loose to ease the alignment)
- Tighten all fixing screws



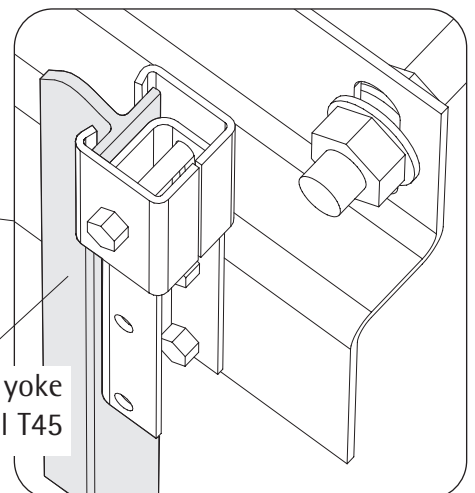
Take care of tightening torque
Screw M12: 80Nm



The amount of play in the distance between guides (DBG) shall be ca. 0.5 - 1 mm.



Rope pulley yoke
- guide rail T45



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3 Function testing

Operational reliability of the installation is assured, assuming that all guide lines were adhered to during proper installation.

The quality and function of individual components are subject to thorough inspection and is checked before dispatch from our works.

Once installation fitting is complete, the lift car frame system should undergo an operational test before commissioning or before possible inspection from a technical institute.

First test run after installation



Before the first test run:
Clean the guide rails!



Clear all people and objects from the lift shaft before commencing the test run
Risk of crushing injuries!

The entire lift travel path should be slowly travelled (in inspection mode) in the first test travel. Check for sufficient space.

- in area of guide rail brackets
- to the well wall (over the entire travel path)

There are the following testing positions:

- **Distance between the guide rails:**
Check distance between the guide rails along entire travel path (use DBG gauge; tolerance max. ± 1 mm).
- **Fixtures**
All the fixings need to be checked again individually. Pay particular attention to fixture of anchor inserts and the guide brackets themselves (clamping plates / rail clips).
- **Guide rail joints**
Check all joints for unevenness. Grind smooth if necessary.

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4 Maintenance, inspection and repair

4.1 Maintenance and inspection

The guide rails and their brackets generally require very little maintenance.

Due to structural weighing down and actuation of the safety gear the guide rails and their brackets may undergo some changes.

Depending on the frequency of use, function checks must be carried out at regular intervals (at least twice a year) and after actuation of the safety gear to guarantee safe operation of the installation.

Changes, damage or other irregularities should be reported and repaired if possible. Traces of safety operation must be ground down. Frequent servicing and control checks not only make operation of the installation safer, but also ensure a long and reliable service life.



The lift installation must be immediately taken out of use should any damage or irregularities to the lift arise which could possibly impair operational safety.



Please contact us at WITTUR if you have any problems or queries.



Maintenance work should be expertly carried out with utmost care in order to guarantee safe installation operation.

Maintenance and inspection check list

General:

- Check guide rails for traces of wear (brake traces etc.). If necessary, grind smooth guide rail pieces or exchange (see chapter "Repairs").
- Visual inspection for general irregularities (i.e. dirt build up, rust formation, corrosion, deformation, fracturing etc.).



Lightly lubricate guide rails if liable to rust.

- Check all the screw connections.
- Check rail brackets for possible deformations and make sure they are safe.
- Inspect oil collector and dispose of oil if necessary.

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4.2 Carrying out repairs



Eliminate major damage to the guide rails (deformations, fracturing etc.) which can no longer be ground down by replacing the damaged parts. Use the same rail type with the same finish to the rubbing surface and the same keyway shape only.



Repairs should be expertly carried out with utmost care in order to guarantee safe installation operation.



Danger of the safety gear not engaging.



Observe the applicable safety measures when doing repair work on lift installations. The following repairs should be carried out on site by qualified fitters / service personnel:

- Grind off rust (e.g. in the case of damage to the rail surface or for eliminating unevenness)
- Replacing guide rails
- Replacing the diverting pulleys
- Replacing guide brackets



Please contact WITTUR if for any reason something is unclear, or you encounter damage that cannot be repaired with the help of these instructions.

4.3 Replacing guide rails



Replacing guide rails may turn out to be a major operation, especially if the rail bodies are under static tension due to weighing down of the building.

- Unscrew threaded connections of the rail piece/fish plate
- Remove clamping plates/rail clips
- Take out rail piece



If you cannot take out the rail, loosen the threaded connections of above rail pieces. If this is not sufficient, dismantle these rail pieces starting at the top and working your way down.

Secure respective rail pieces against falling down.

- Insert new rail piece into the line of rails.
- Fasten rail piece.

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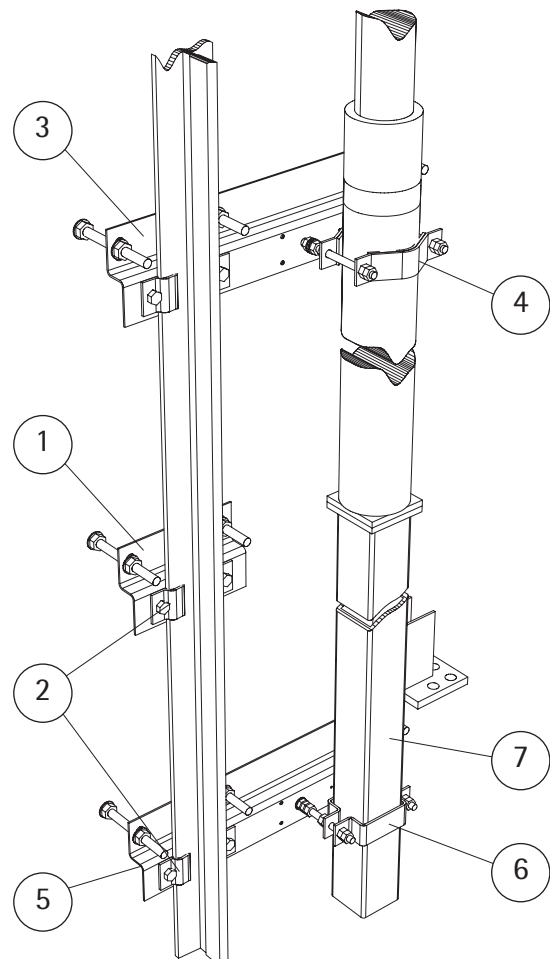
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4.4 Spare parts list

4.4.1 Guide rail-, Cylinder- and Pillar Brackets

Pos	Component	Spare part	Type	Number...	Art. No.
1	Guide rail bracket	Bracket ass'y	Note: state guide rail and WG dimension (wall to guide)	1	601758G..
2	Guide rail fixing	Rail clip	for M20 screw fixing	2	51739H01
3	Cylinder bracket	Bracket ass'y	1:1 (direct)	1	601759G..
		Note: state guide rail and WG dimension (wall to guide)	2:1 (indirect)	1	601761G..
4		Cylinder Fixing unit		1	357430G01
5	Pillar bracket	Bracket ass'y	1:1 (direct)	1	602052G..
		Note: state guide rail and WG dimension (wall to guide)	2:1 (indirect)	1	601760G..
6		Pillar Fixing unit		1	357429H01
7	Cylinder pillar	Pillar ass'y	1:1 (direct)	1	601675G02
		Note: state pillar length when ordering	2:1 (indirect)	1	601675G01

Note: Wall fixings are not included to the delivery



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4.4.2 Pulley yoke + Guide rail bracket

Pos	Component	Spare part	Type	Number...	Art. No.	
1	Diverting pulley	Pulley yoke ass'y	T125	1	63332G15	
			T127-2	1	63332G13	
			T140-1	1	63332G14	
2	Axle	D50h9x132 Fe50K		1	85233G01	
3	Pulley incl bearing	DR=530mm	NR=4xD13mm	1	86069G02	
4	Guide shoe	Body		2	85157G01	
		Sliding inlay T45 (5mm guide rail)		2	85158H01	
5	Rail bracket	Bracket	Note: state guide rail and WG dimension (wall to guide)		1	601762G..

