

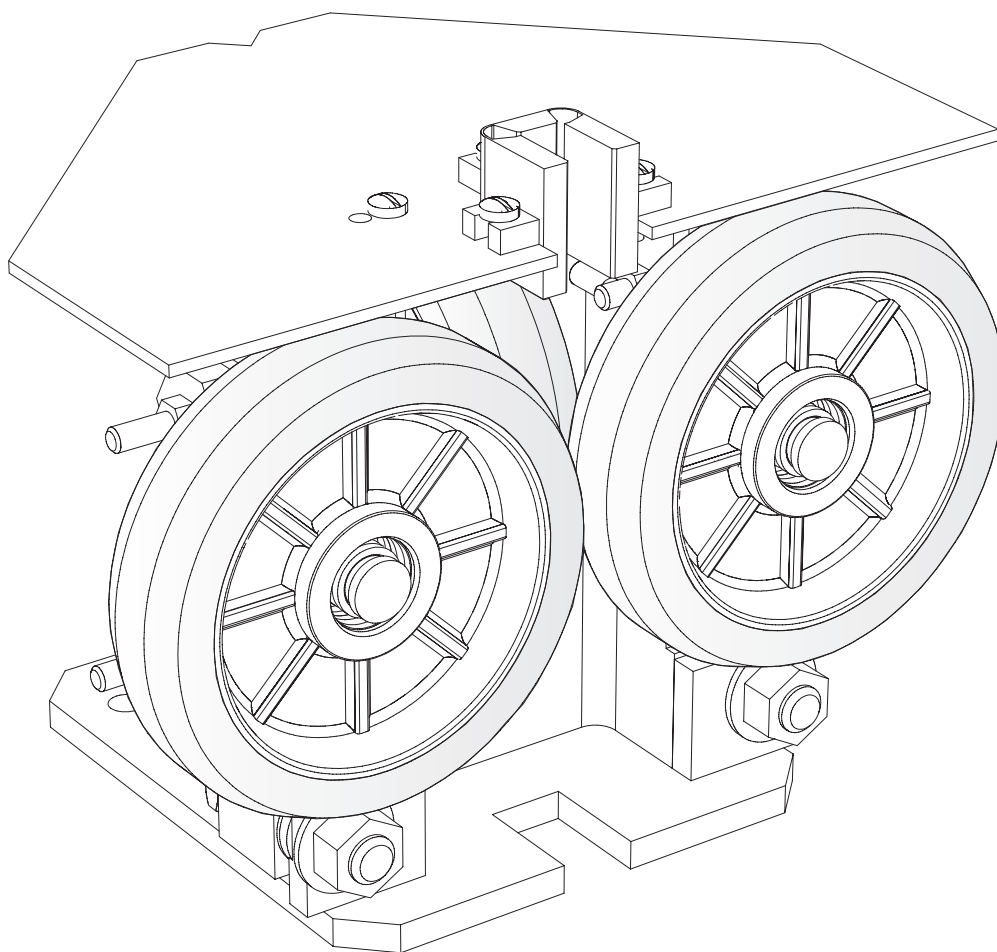
Isolated Roller Guides Shoes WRG150, WRG150HD

Operating instruction



Blatt/sheet D624MGB.000
Datum/date 09.08.2002
Stand/version C-09.04.2015
Geprüft/approved WAT/MZE

Isolated Roller Guide Shoes WRG150, WRG150HD



D624MGB 04.2015

Original instruction

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Isolated Roller Guides Shoes

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1 General information prior to installation

1.1 Description and functions

The types WRG150 and WRG150HD are used for guiding car frames and counterweight frames.

Generally:

- The isolated roller guide works as a spring element, so that the vibrations are limited to a minimum.
- It guides the car between the guide rails within the allowance determined by the safety gear device and the door coupler (in reality approx. $\pm 2\text{mm}$)

When such roller guides are used, the elevator must be both statically and dynamically balanced.

Isolated roller guide shoes are distinguished by its spring system which offers enormous advantages over non-springloaded guides. The rollers always contact the rail closely regardless of the type and direction of load.

The rollers have high quality and unusually long service life due to the spring system and the permanent contact to the guide-rail.

The roller guides are sealed and pre-adjusted at the factory, therefore it is not allowed to adjust the springs and movement limiters (removable clamps and sliders are used during installation and balancing).



Never use roller guide shoes with the roll formed HT type guide rails. Roller guide shoes effects noise on low quality HT rails.

- | | |
|---------------------|--------------------|
| 1. Base | 2. Roller |
| 3. Arm | 4. Spring |
| 5. Movement limiter | 6. Removable clamp |
| 7. Removable slider | 8. Cover |
| 9. Centre marking | |

The operating range is defined as follows:

WRG150 (Weight of 4 pcs. 54kg)

- **used on counterweight frames:**

Max. nominal speed	7,0m/s
Max. counterweight mass	7000kg
Max. counterweight roller force	100N
- **used on car side:**

Max. nominal speed	3,5m/s
Max. roller force during run (empty car)	70N
Max. roller force during loading	3000N

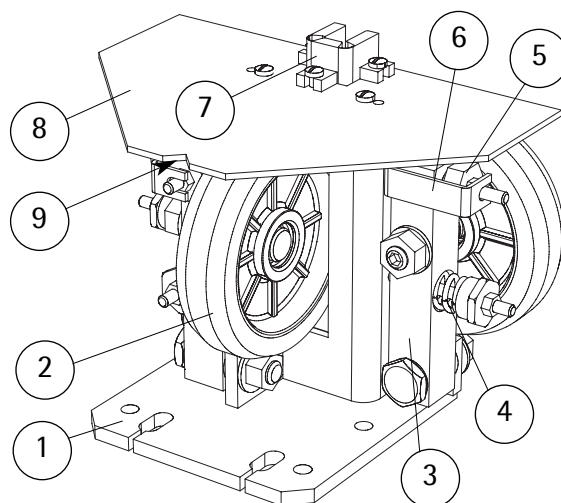
WRG150HD (Weight of 4 pcs. 54kg)

- **used on counterweight frames:**

Max. nominal speed	7,0m/s
Max. counterweight mass	7000kg
Max. counterweight roller force	1000N
- **used on car side:**

Max. nominal speed	3,5m/s
Max. roller force during run (empty car)	1000N
Max. roller force during loading	3000N

Max. retaining force (acc. EN81-77) $F_x = 10000\text{ N}$
 $F_y = 20000\text{ N}$



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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.

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

- use other means of fixation than prescribed
- install the sliding guide shoes in another way than described in this operating manual
- Carrying out modifications, of any kind
- Carrying out faulty or improper maintenance, maintenance or inspection checks
- using unsuitable accessories, spare parts or operating material which has neither been released by the WITTUR Company nor consists of original WITTUR spare parts

1.3 Safety precautions

WITTUR machine installation or repair engineers are chiefly responsible for the safe operation of machinery.

It is essential to comply with and keep abreast of all safety rules and legal obligations in order to avoid personal / 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 to the whole installation and must be kept in a safe place at all times (i.e. machine room).

The proper assembly and installation of WITTUR brake systems requires correspondingly well trained fitting engineers. The responsibility of training is incumbent on the company appointed to carry out the work.

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.

Note the safety regulations for working on elevators.

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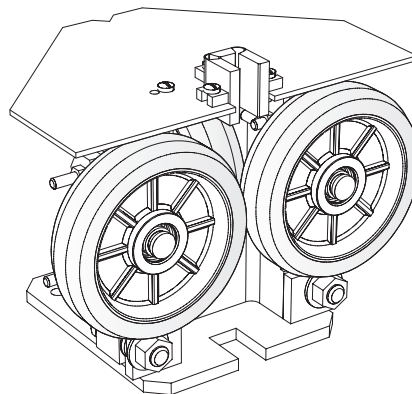
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1.5 Content of delivery

On receipt of the delivery, the goods or components should be checked for correctness and completeness with the order sheet.

Especially compare article number, quantity and type specification with the ordering data.

- Operating instructions manual
- One pair of roller guide shoe pre-adjusted and sealed at the factory



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2 Installation

2.1 Adjustment of the position of the roller guides

The installation could be done during counterweight frame or car frame assembling, or also afterwards if the elevator is to be modernised.

With counterweight:

Check from the layout drawing whether counterweight shift has been used. If used, check that the counterweight frame is correctly assembled.

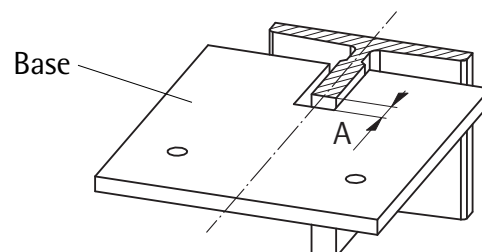
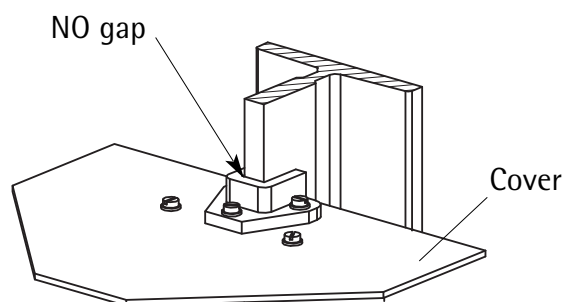
With car roller guides:

The first steps are balancing and safety gear adjustment – see chapter 3 "balancing of elevator cars provided with factory adjusted roller guides".

- **Check the position of the slider**
Make sure that the plastic slider firmly touches the guide rail if the car or counterweight is in the correct position.
- **Check the position of the guide rail**
The slot hole of the base should be central to the guide rail, and should have the required gap A (see table) between rail and bottom of the slot.



If these requirements are not achieved the roller guides are most probably not straight and must be aligned as described in chapter 2.2



Roller guide type	A
WRG150	5.0 mm
WRG150HD	5.0 mm

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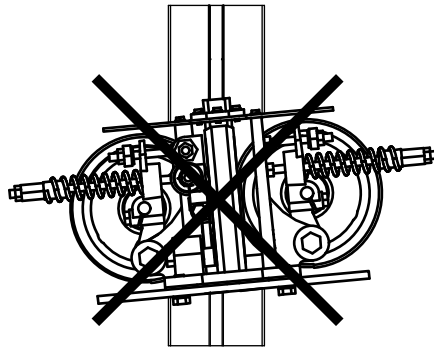
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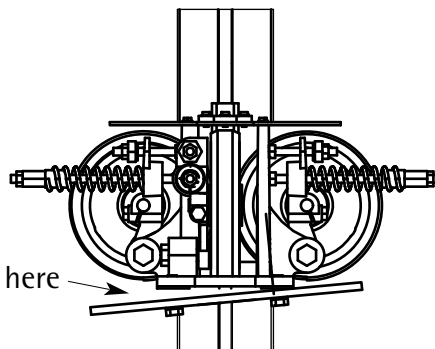
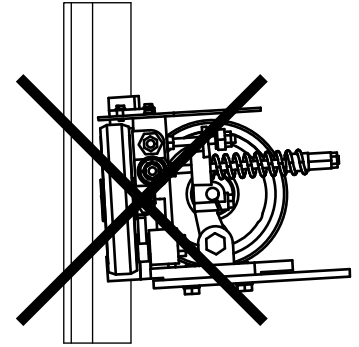
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2.2 Alignment of the roller guide

- Align the roller guides in relation to the guide rails so that the requirements shown in chapter 2.1 are achieved.
- Use shims between the base and the fixing plate (the required shimming accuracy is 0.5mm)

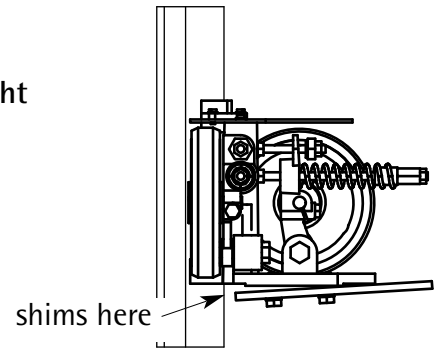


wrong



shims here →

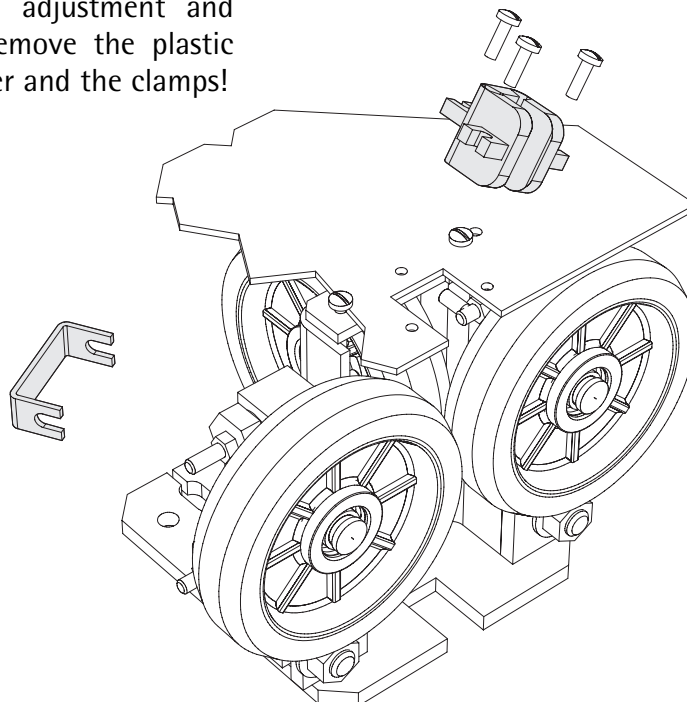
right



shims here →



After guide shoe final adjustment and before first test run, remove the plastic slider on top of the cover and the clamps!



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3 Balancing of elevator cars provided with factory adjusted roller guides

3.1 General

If the elevator car is not balanced, the sliding and roller guide shoes are subject to excessive load. This leads to rapid wear of the guide shoes and in case of roller guide shoes to quaky running, which can be felt in the car. Therefore all cars must be balanced independent of speed and travelling height.

Accurate balancing can be carried out first after the car is fully installed and suspended by the ropes.

The removable clamps and sliders are used to ease the balancing and installation.

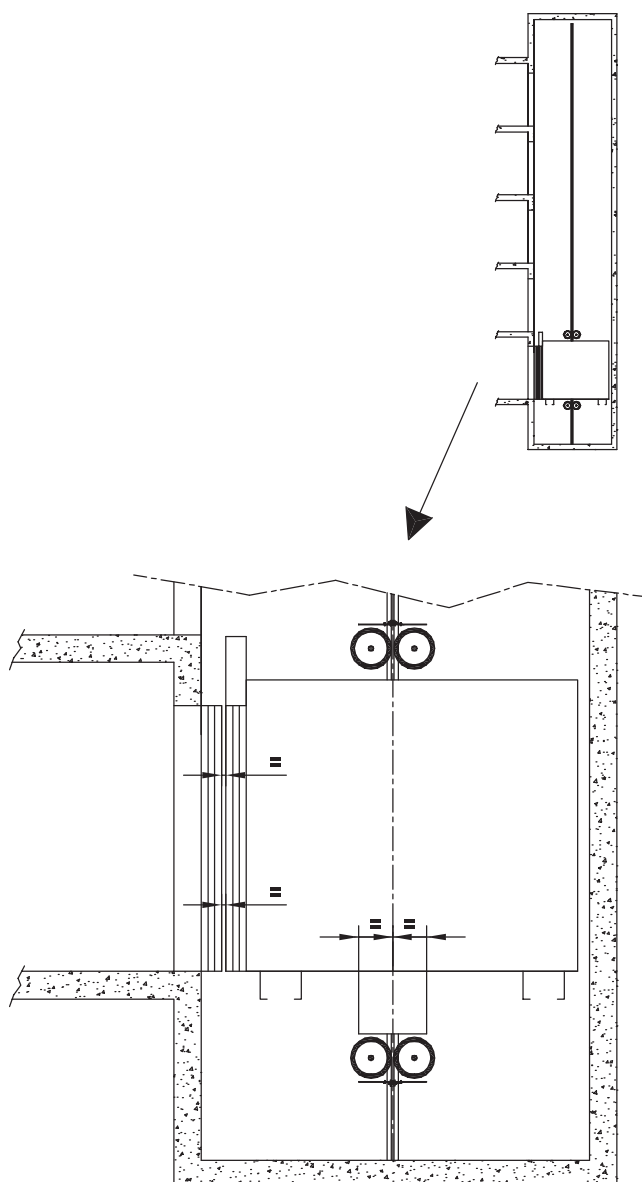
3.2 Balancing

Before the balancing is done the roller guides must be aligned using the door lines as reference line:

- Drive the car to a suitable working height near the lowest floor level
- Adjust the position of the roller guides so that the gap between the car door and the landing door is equal at top, bottom, left and right (refer to chapter 2.1 and 2.2).
 check also that the safety gear can still be adjusted side ways.



Do not try to untwist the car frame with the roller guides. If untwisting is required, then loosen the top fixing between car and the frame, force the frame to right position and tighten the fixings.



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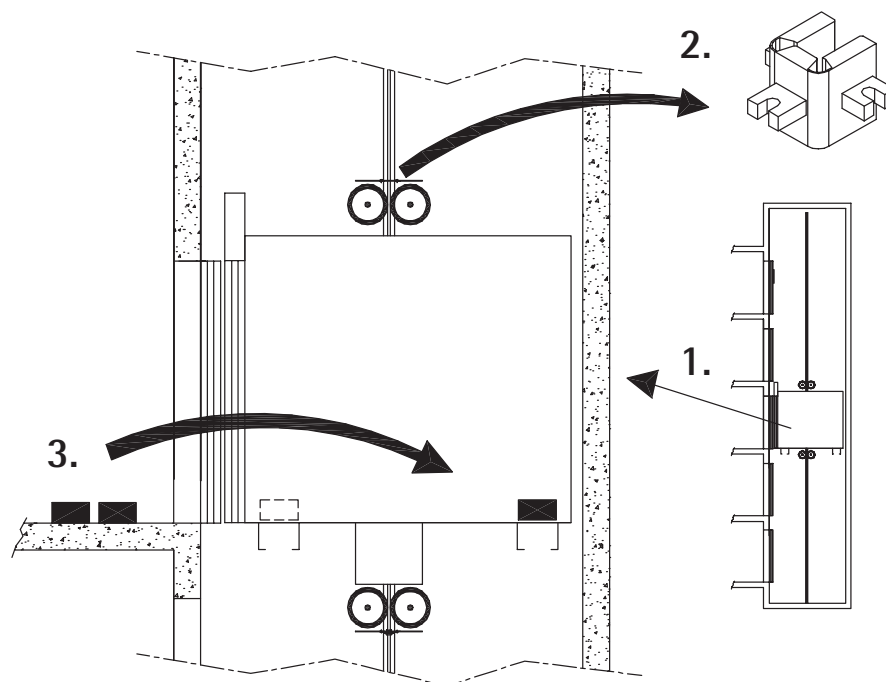
- Drive the car to the floor which is nearest to the mid-point of the shaft, take a suitable amount of balancing weights with you.
- Remove the plastic sliders of the top roller guides.
- Carefully balance the car by placing balance weights on car floor, directly above the fixing profile. The car is balanced, when there is equal gap between each top roller and the guide rail, or the rollers and the rail touch each other so that the car can be moved with "one finger".



The adjustment of balance must be done so that your own weight does not effect the balance. You can check the balance by standing at the hitch point or while standing on another car (in case of multiple cars in one shaft) etc.



Remember to use a safety rope if required!




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3.3 The final checking of the balance

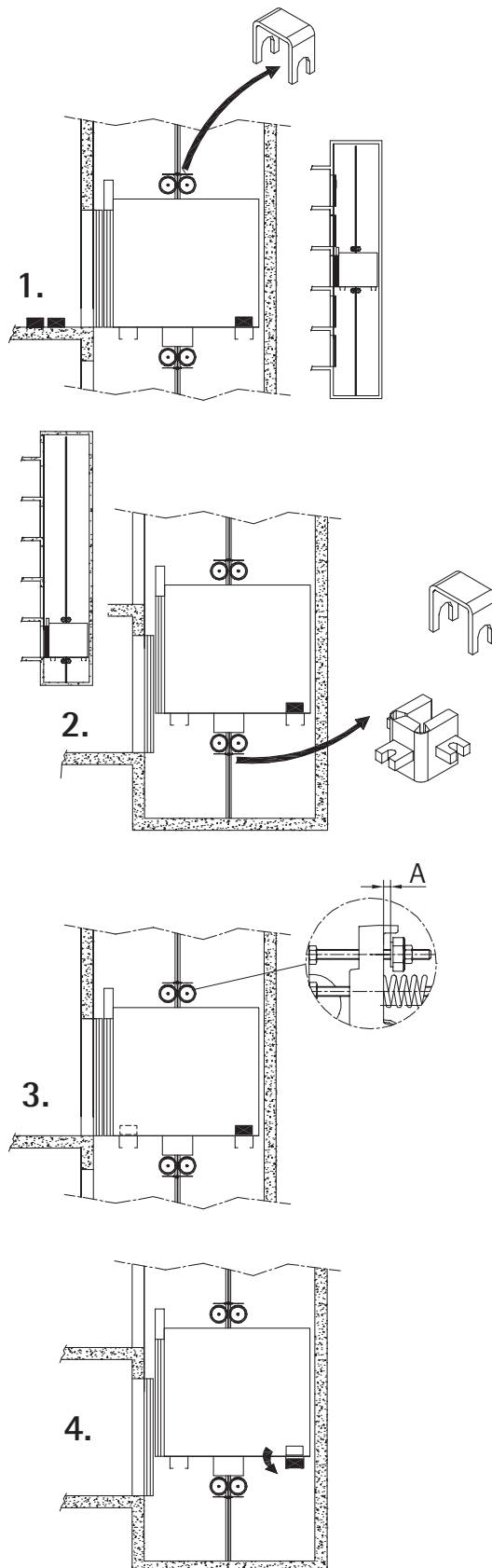
 Before balancing is completed all clamps and sliders of the bottom roller guides are removed, then the final checking is done.

- Remove the clamps of the top roller guides
- Drive the car down
- Remove the clamps and sliders of the bottom roller guides
- Drive the car back to the mid-point of the shaft
- Check the balance from the gap "A" of the top roller guides movement limiters (see chapter 4). If it is necessary, adjust the position of balancing weights.
- Before new checking, sway the car powerful back and forth in lateral and depth direction to overcome the friction between rollers and guide rail.
- Drive the car down and shift the weights to exactly the same place at the fixing profile.
- Fasten the weights to the fixing profile.

 The adjusting of balance must be done so that own weight is not affecting the balance. You can check the balance by standing at the hitch point or while standing on another car (in case of multiple cars in one shaft) etc.



Remember to use a safety rope if required!




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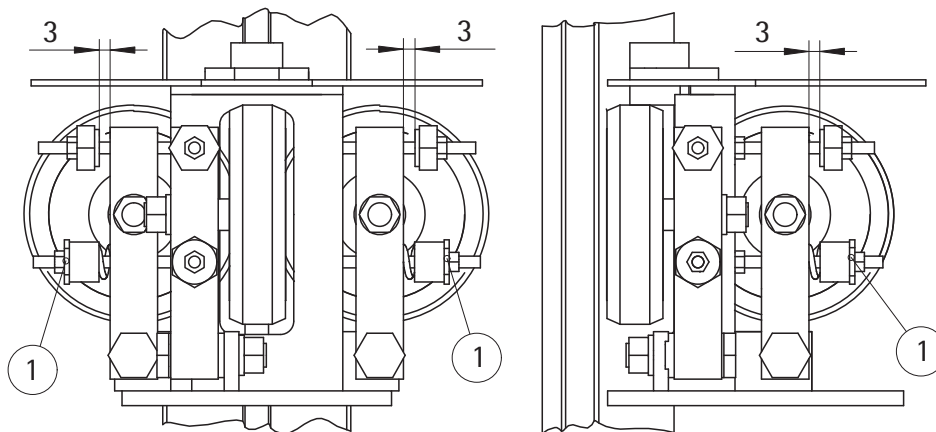
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4 Factory settings of the movement limiter and the spring tension

 The spring tension and the movement limiter gap are adjusted at the factory - it is not allowed to adjust it!

- The right spring tension equals $1 \frac{4}{6}$ (1.67) turns of the adjusting nut (1).
- The movement limiter gap is 3 mm.



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5 Function testing

Provided that the system has been properly installed in accordance with all guidelines, it can be assumed the proper functioning of the roller guide shoes is guaranteed.

The individual components are strictly checked for quality and function and are tested before leaving our factory.



Check that the guide shoes are tightly screwed to the car frame or counterweight before starting the function test.

Test run after installation:



Prior to 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) before the functions tests. Attention should be paid to the clearance of all fastened parts, especially with regards to the guide brackets/safety gear devices. Find and remove any protruding bolts or other dangerous restrictions well in advance.



The guide shoes must not stick and should move easily.



All roller guide shoes have to be used dry (not lubricated)!

5.1 Test run

- For balancing refer to chapter 3
- Drive up and down a few times with service speed and check the clearances of the landing door lock and other shaft equipment
- Sway the car powerful back and forth in lateral and depth direction. Check that the car adopts its correct position again and that the rollers (which have equal pressure) can be turned around by hand. If that is not the case, the car is not sufficient balanced.
- Drive several times up and down with nominal speed, stand in various places in the car and observe the elevator's performance



Always drive in up-direction for the first time with nominal speed (**danger of gripping**).

- A jerky ride is a sign of wrong roller guide adjustment, unbalance of the car, or wrongly aligned guide rails.
- Carry out test drive with half load located in both front and rear parts of the car. Drive first with service speed and check the clearance between the door coupler and the lock rollers.

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6 Maintenance, inspection and repair

6.1.2 Maintenance and inspection

Inspection checks must be carried out at regular intervals (minimum twice a year with each service) to guarantee safe operation. The inspection interval for partially enclosed lift wells must be correspondingly adapted.

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

It is recommended that control checks and servicing to be carried out before legally prescribed functional tests (e.g. before TÜV tests).



The lift installation must be immediately taken out of use if any damage or irregularities (e.g. noticeable noise development) arises 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 plan

General:

- Visual control on general condition for irregularities (e.g. contamination, corrosion, deformation, splitting).
- Clean the roller guide shoes with a clean towel if dirty.
- Check of screw connections of guide shoes.
- Check bearing condition (see 6.2.1)
- Check spring condition and tension.



The adjustment is right if the roller can be turned easily by hand.

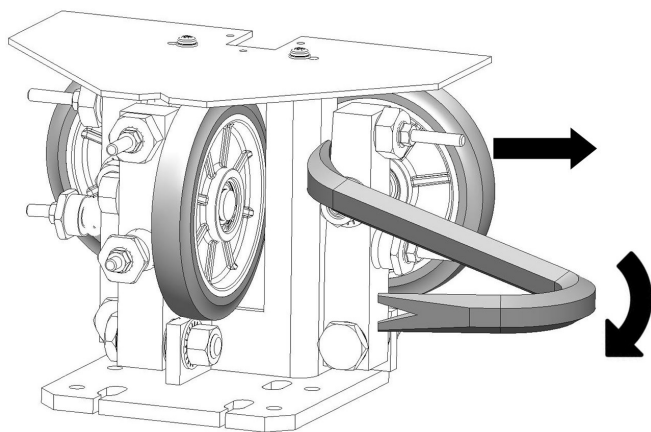
- Check the locking of the lock nuts.
- Check the roller; change it if it has worn out remarkably.
- Check that the roller surface is smooth.
- Measure the movement limiter dimensions.

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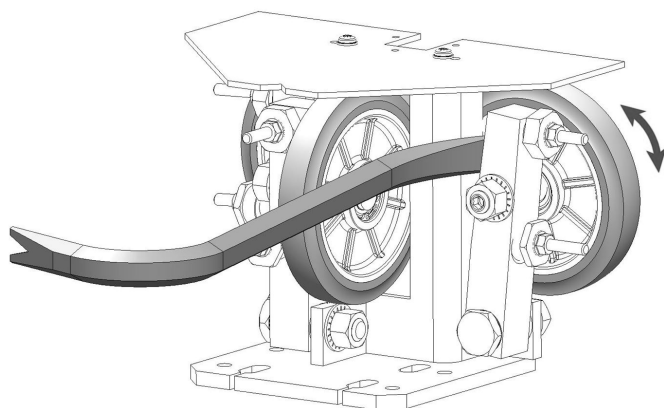
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6.1.2 Roller inspection



Push the lever with a suitable tool till the limit stop to release the roller. Keep the roller at this position to unload the roller.

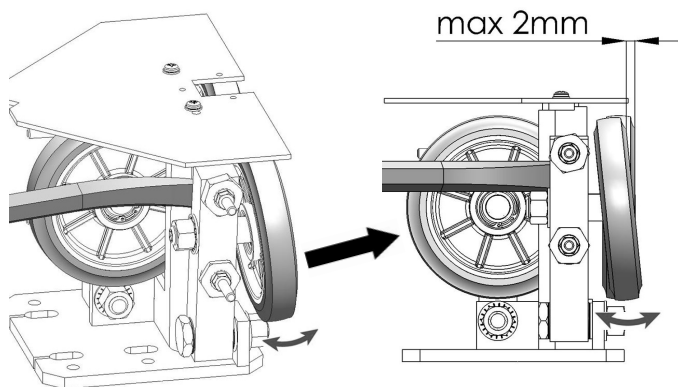
If the lever is already at the limit stop the cabine must be balanced again (see chapter 3).



Spin the wheel in both directions to check the smooth running of the rollers.



The roller must be replaced in case of any noise.



Test the axial play of the roller per hand. The play on the outer wheel diameter must not be more than 2mm.



The roller must be replaced if the bearing clearance is more than 2mm.

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6.2 Carrying out repairs



Damaged parts of the guide shoe cannot be repaired. The damaged parts must be replaced. Only use WITTUR spare parts.



Follow all the local safety instructions during the maintenance work.



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

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

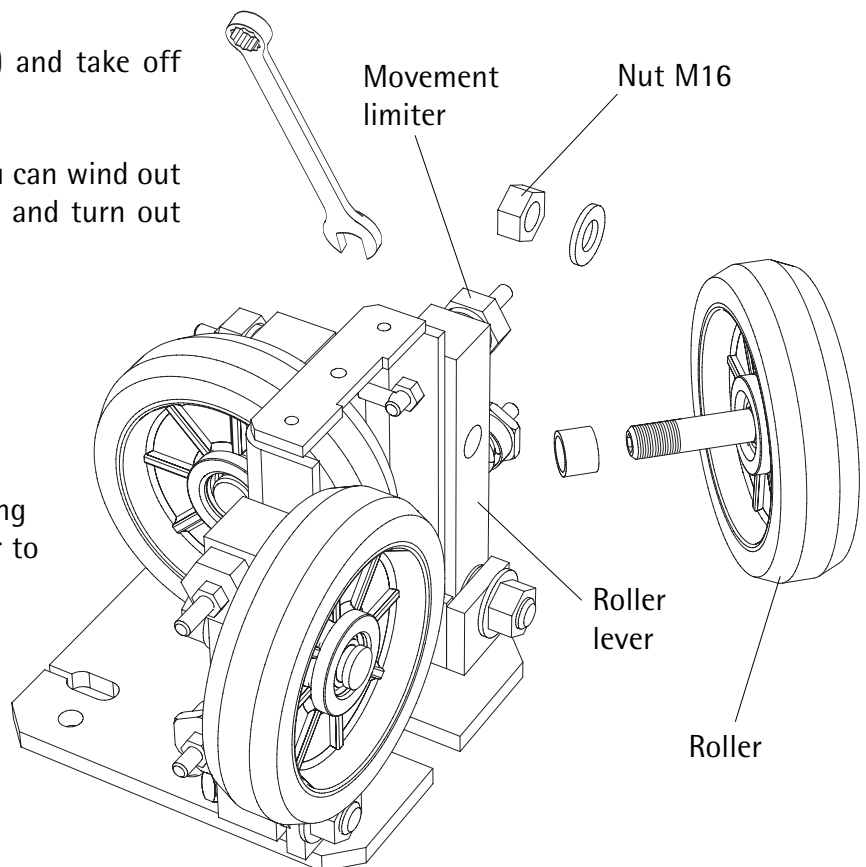
6.2.1 Changing of rollers

Remove the roller fixing (nut M16) and take off the whole roller (incl axle).



To ease the replacement, you can wind out the movement limiter screw and turn out the roller lever.

Note: For readjustment of the spring tension and limiter gap refer to chapter 4.



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6.3 Spare parts list

Pos.	Component	used for				Number...	Art. No.
1	Roller guide assy 1pcs (incl. frame, rollers, ...)	WRG150	Guide rail	16mm (T89)		1	581271G16S
			Guide rail	16mm (T125, T127)		1	581271G16L
			Guide rail	19mm		1	581271G19
		WRG150HD	Guide rail	16mm (T89)		1	600653G16S
			Guide rail	16mm (T125, T127)		1	600653G16L
			Guide rail	19mm		1	600653G19
2	Roller 1pcs (incl. bearing*, axle, bushing and fixing nut)	WRG150	Guide rail	16mm (T89)	mounting-position I	1	581274G03
		WRG150	Guide rail	16mm (T89)	mounting-position II or III	1	581275G03
		WRG150	Guide rail	16mm (T125, T127) 19mm	mounting-position I, II or III mounting-position I, II or III	1	581274G03
		WRG150HD	Guide rail	16mm (T89)	mounting-position I	1	600655G03
		WRG150HD	Guide rail	16mm (T89)	mounting-position II or III	1	600656G03
		WRG150HD	Guide rail	16mm (T125, T127) 19mm	mounting-position I, II or III mounting-position I, II or III	1	600655G03

*) Bearing type 6003-2RS1

