

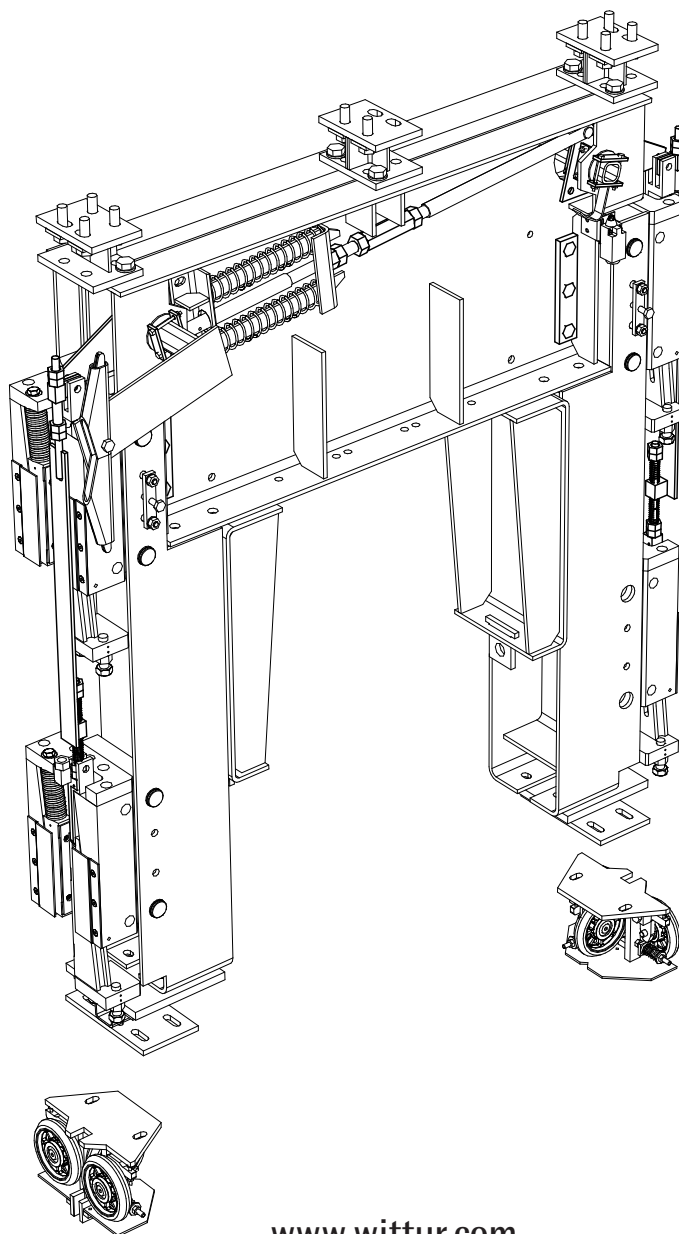
Counterweight Safety Gear WCWSG04/10 Duplex

Operating instructions

Blatt/sheet D7AOMGB.000
Datum/date 19.08.2003
Stand/version D-07.04.2016
Geprüft/approved WAT/MZE



Counterweight Progressive Type Safety Gear WCWSG04/10 Duplex



www.wittur.com

Product manufacturer reference can be found on the product type label.
For any support or further questions please contact your trading office.



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Änderungen vorbehalten!

Subject to change without notice!



Counterweight Safety Gear

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1 General information prior to installation

1.1 Description and functions

The counterweight safety gear WCWSG04/10 Duplex is equipped with progressive type safety gear WSGB04/10 which is a safety gear with integrated mechanical servo. This means, that the braking force is limited by a disc spring loaded counter wedge. If the braking force is going to high, the disc springs will be compressed and the counter wedge is decreasing the force. The safety gear is activated by a movable gripping wedge. The braking force is variable by means of an adjustment screw witch is limited the possible way of the gripping wedge.

The WCWSG series are designed for the use with WITTUR counterweight frames series WCW, but could also be used with other counterweight frame types as well.

The basic functions of the safety gear is, if the counterweight exceeds its rated speed upon descent, the overspeed governor cuts in when its tripping speed is reached and triggers the safety gear on the counterweight via the governor rope. The counterweight is brought to a standstill and clamps onto the guide rails.

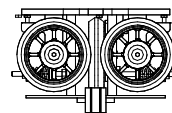
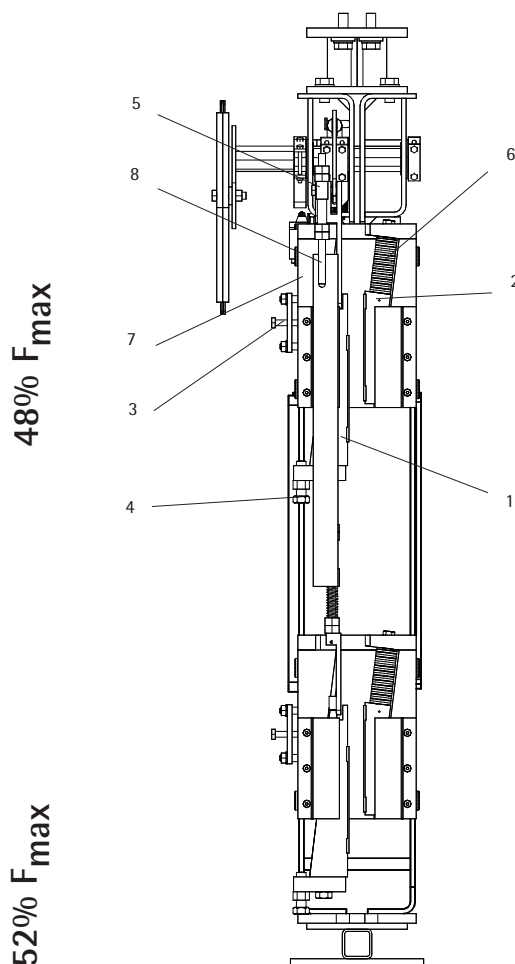
The setting is carried out in the factory (according to the load and rail conditions) and sealed. Later adjustments will not be necessary and are in any case prohibited for safety reasons.

The progressive safety gear is released by lifting the counterweight. This returns the clamped brake wedge to its initial positions.

The operating range is defined as follows:

- elevator speed

WCWSG04	2,0 - 6,0 m/s
WCWSG10	2,0 - 8,0 m/s
- width of guide rail head 19 mm
- max. mass to be gripped $F_{max} = 9500 \text{ kg}$



- Gripping wedge
- Counter wedge
- Set screw
(alignment of safety gear housing)
- Adjustment screw (gripping distance)
- Fixing for lifting lever
- Safety gear spring
- Resetting spring
- Lifting rod

- tripping force of the governor
 $2100N \pm 250N$

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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:

- The use of components other than those installed
- Carrying out modifications, of any kind on the safety gear
- Installing two different brake heads with different index numbers together
- Destruction of the lead seal
- Combining different component types
- Installing progressive safety gears intended for other employment than that stipulated
- Carrying out faulty or improper 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 emphasized 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).

The proper assembly and installation of WITTUR safety gears requires correspondingly well trained fitting engineers. The responsibility of training lies with the company appointed to carry out the work.

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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.

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

The following should be checked also:

- that the factory and order number correspond
- that the details on the name plate correspond to those on the order
- the elevator speed
- the width and type of guide rail used
- the total load (mass to be gripped)

1.5 Advice for when working on safety components

Safety gears are classified as safety components. It is most important that the standards and guidelines described in this section be complied with as well as those given in the rest of this operating manual.



These instructions, and especially the section on safety precautions, should be read and fully understood before work begins.

Safety devices require special attention. It is compulsory that they function perfectly to ensure danger free installation operation.

Safety devices that can only be adjusted after installation should be done so immediately after installation.

Operation of safety devices installed ex-works must be tested immediately.

If it is necessary to disassemble a safety device during servicing or repair, they should be reassembled and comply with the required tests, as soon as the work has been carried out.

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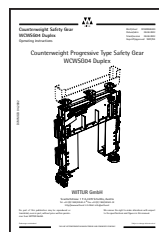
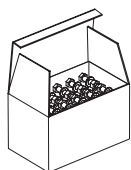
1.6 Content of supply

After delivery, check the counterweight safety gear for damage and for full delivery of parts. The content of supply covers:

- Operating instructions manual

- Counterweight safety gear body
(pre-adjusted and sealed at the factory) incl.:
 - progressive type safety gears (4 pcs.)
 - synchronization
 - governor rope fixing
 - adapters for counterweight frame
 - adapters for guide shoes
 - buffer plate (optional)
 - safety gear switch (optional)
 - compensation chain fix. (optional)

- Mounting- and fixing screw-packages



Adapter to counterweight frame

Synchronization

Governor rope fixing

Adapter to guide shoe

Safety gear type
WSGB04/10

Safety gear switch
(optional)

Buffer plate
(optional)

compensation chain
fixing (optional)

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2 Name plate, designation, identification

The safety gear identification indicators are located on the side of the safety gear body.

These consist of a name plate and a identification sticker which gives following data:

- Type term of safety gear
- Serial number
- Elevator number
- Tripping speed
- Mass to be gripped

SAFETY GEAR MODEL		WSGB04	
TYPE		B	
MAX. LOAD	F _{max}	3900	KG
TRIP. SPEED	V _{max}	6,3	M/S
ACTIV. FORCE		2100	N
MANUF.: WITTUR GMBH		604217H01	

Type label acc. to ASME A17.1
 Identification label is included in delivery

Type test designation acc. to EN81, GB7588, GOST R 53780 and CE-label

Type term

Serial number

Mass to be gripped
 F_{max} = (kg,lb)

Tripping speed
 v_{max} = (m/s,fpm)

WSGB04-900950G19 01		Traceability	
Serial - No.: 459112		QR Code	
Elevator - No.: K41543		QR Code	
F	1400... 5000 kg	F _{max}	3900 kg
F	3085 ... 11025 lb	F _{max}	8595 lb
V _{max}	1400... 5000 kd	V _{max}	3900 kd
V _{max}	6,3 m/s	V _{max}	6,0 m/s
V _{max}	1225 fpm	V _{max}	1167 fpm
V _{max}	6,3 m/r	V _{max}	6,0 m/r
k	± mm	k	16 mm
guide rail surface condition	1/B	Diagram	
X _w	9,6 mm		
X _f	mm		
Prod. Date: YYYY-MM-DD			

CE 0408
WSGB04
TÜV-A-AT-103/114 CEFV
2001-08-10
87953 HD1
WITTUR AUSTRIA GmbH
Sowitschstr. 1
3270 Scheibbs, Austria

Date of manufacture

Order number
 (refer to delivery or order sheet)

CTP label for GOST R 53780

WITTUR GmbH Austria	WITTUR
EAC	2D BARCODE

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3 Installation and adjustment

3.1 Placing the safety gear between the guide rails


Before installation of the counterweight frame, the counterweight safety gear has to be placed between the guide rails.

 The lowest guide rails should have been already properly set. The distance between the guide rails should be checked before installing the counterweight safety gear.

 Observe the position of the overspeed governor rope. The position of the lifting lever of the rope at the safety gear cannot be changed if the safety gear is built-in.

(1) Lower the counterweight safety gear between the guide rails from the top of the guide rails.

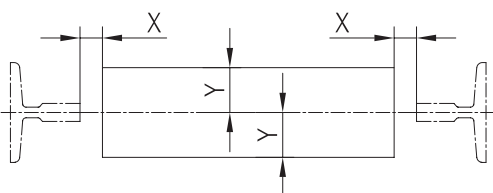
(2) Lower the safety gear on to installation supports or buffer extensions.

 Adjust the supports or platform so that the safety gear is horizontal.

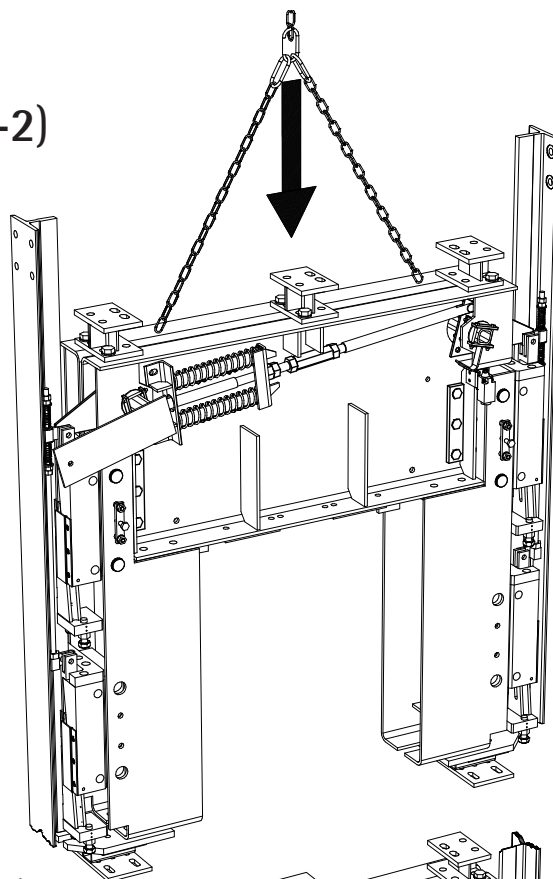
(3) Fix the guide shoes loosely to the safety gear using screws M12x50 (for setting refer to operating instruction manuals of guide shoes).

(4) Centre the safety gear between the guide rails (see X-dimension).

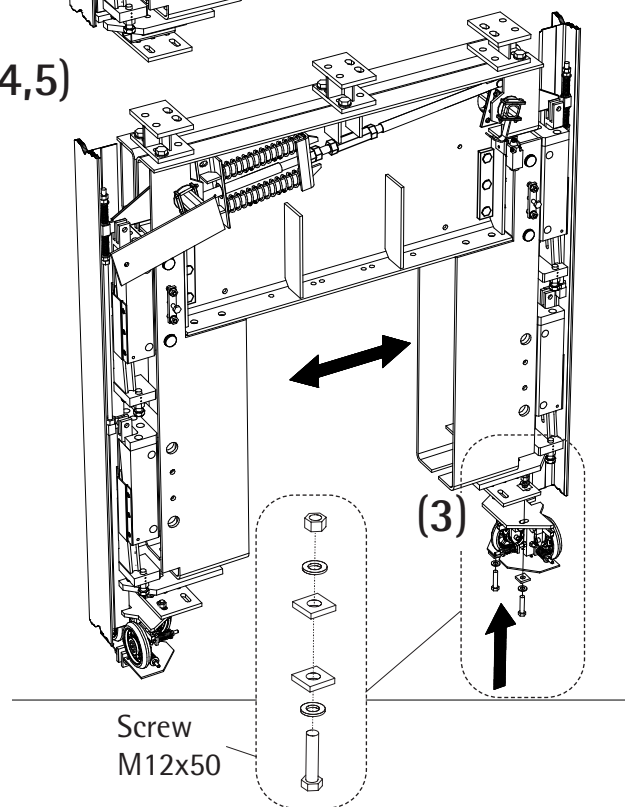
(5) Centre the safety gear in forwards direction (see Y-dimension) - tighten the guide shoe fixing screws.



(1-2)



(4,5)



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3.2 Securing the safety gear to the counterweight frame

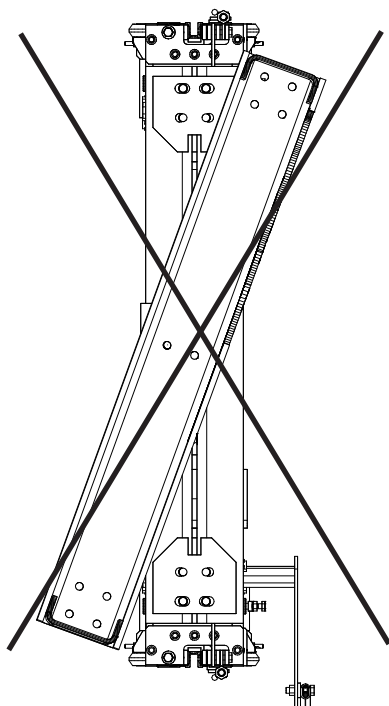
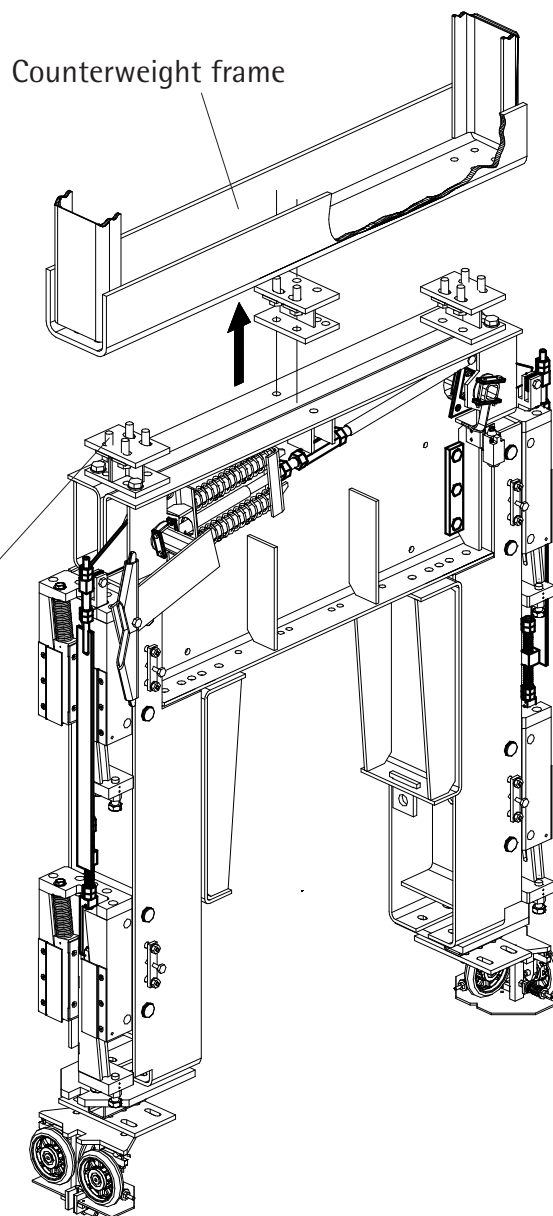
Lift the counterweight frame into the shaft (refer to operating instructions manual of counterweight).

- (1) Attach the safety gear to the counterweight frame.

 Always use adapters (safety gear without adapters can not be removed from the counterweight frame after filler weights are loaded)!

 Take care of tightening torque
Screw M16: 195Nm

Screw M16x30(45)



Counterweight Safety Gear


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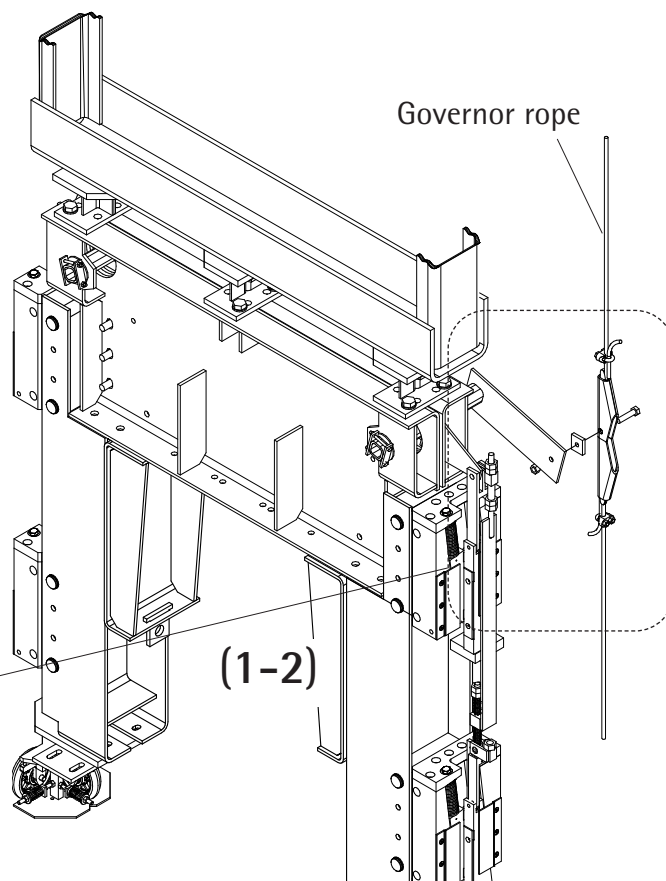
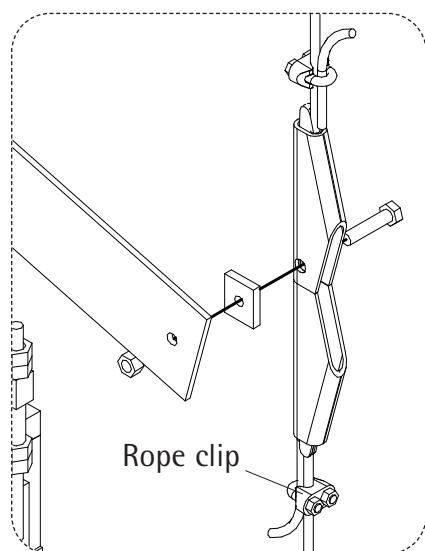
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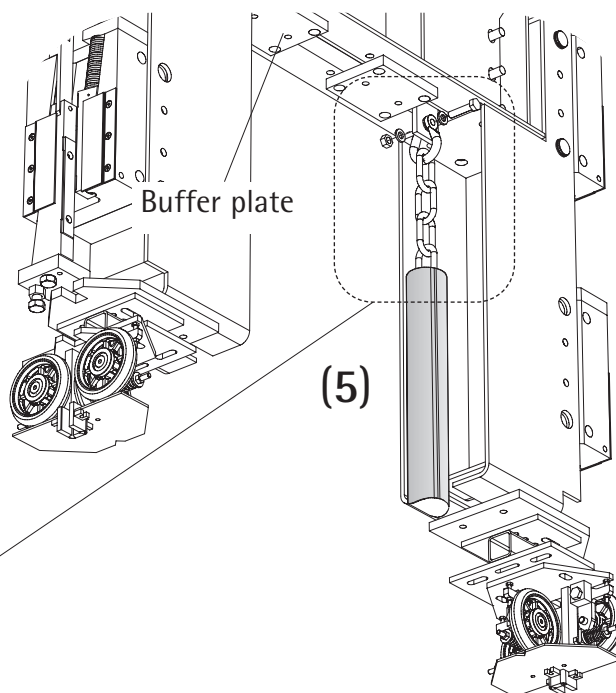
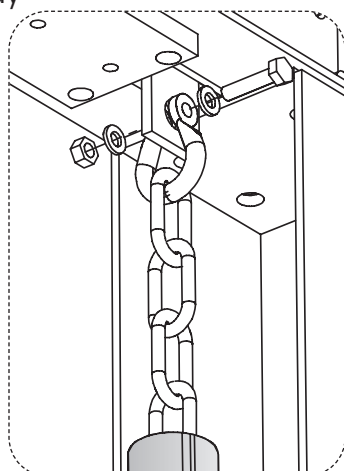
3.3 Final assembly

- (1) Fix the overspeed governor rope fastener to the safety gear lever
- (2) Install the overspeed governor rope (use delivered rope clips)

 Check that the rope has not been twisted around any of the lift well components.



- (3) Load the filler weights into the counterweight frame
- (4) Do the counterweight frame roping
- (5) Fix the compensation chain (optional) below the safety gear body



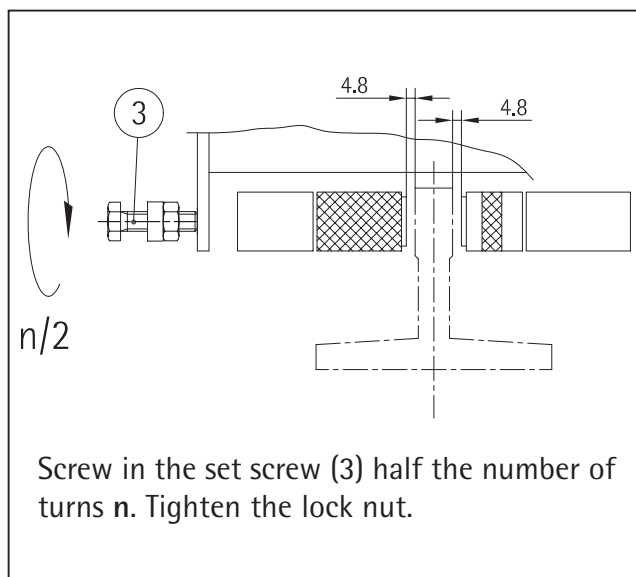
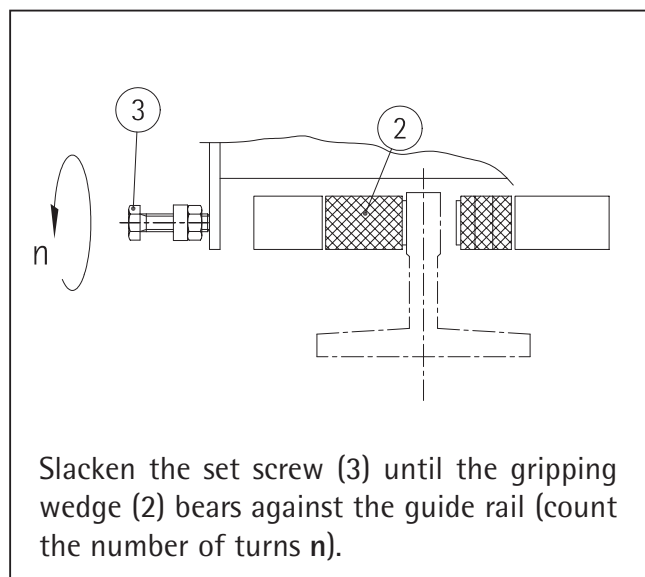
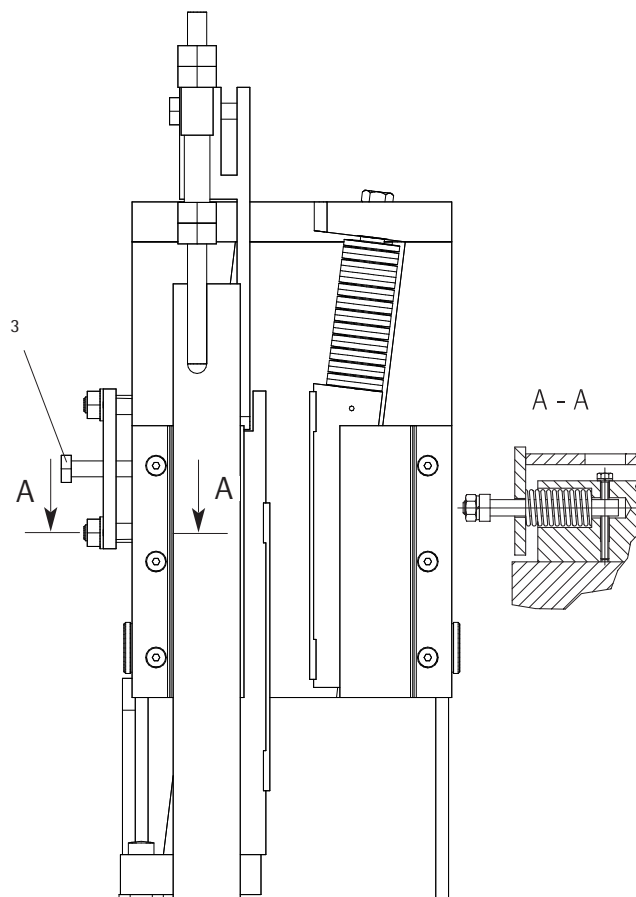
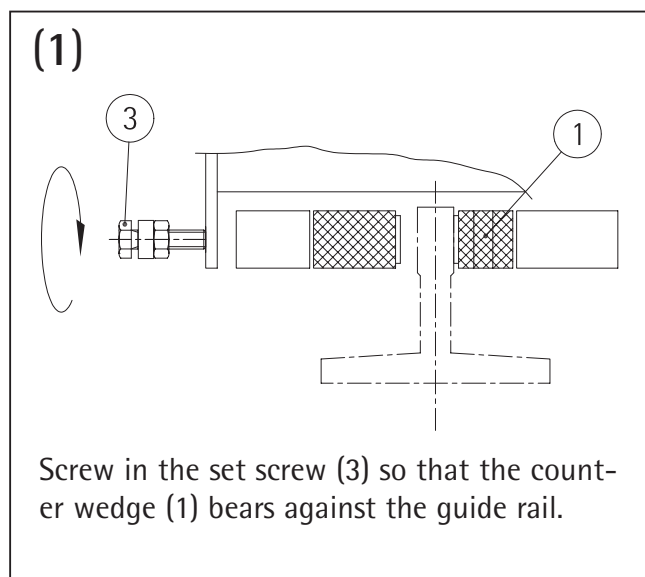
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3.4 Running clearance alignment

Adjust the correct running clearance (horizontal adjustment of the gripping wedge) according to below instructions.




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3.5 Gripping wedge synchronization and adjustment

 Generally, the counterweight safety gear is pre-adjusted in the factory.

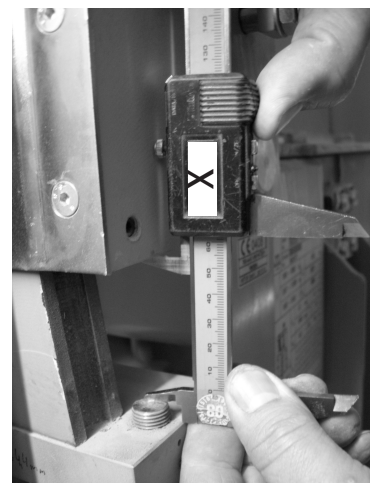
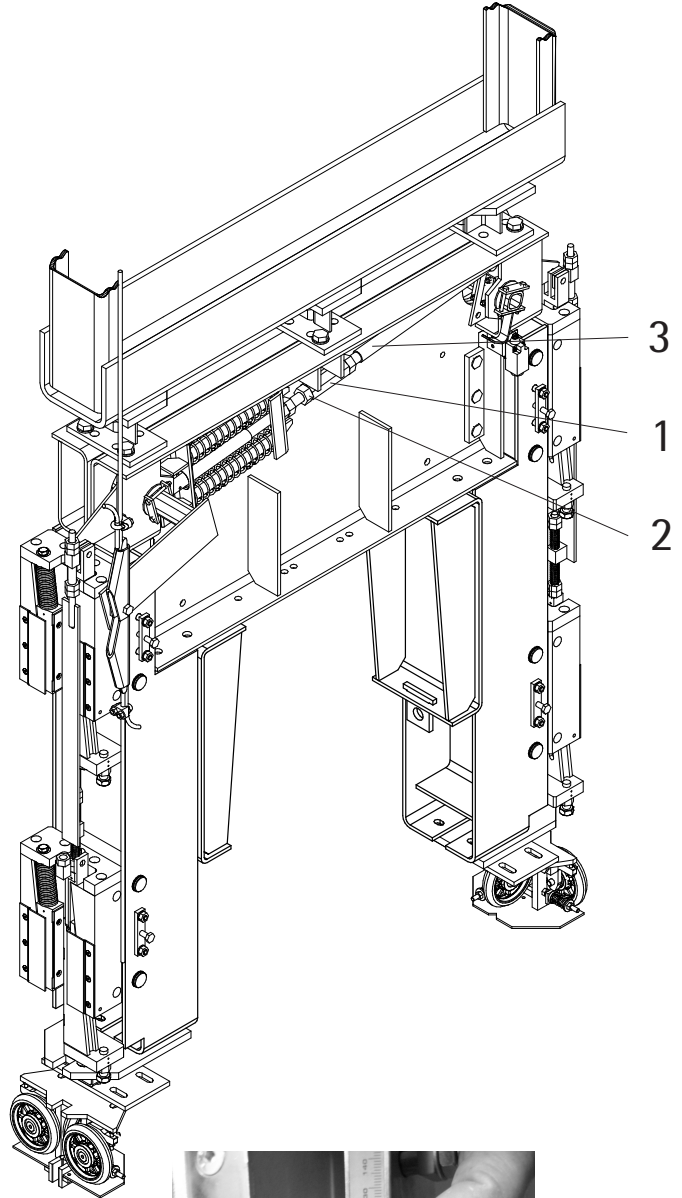
- (1) Raise the safety gear lever by hand and check that both safety gears begin gripping at the same time - If not, adjust the synchronization:

3.5.1 Adjustment of the synchronization:

- (1) Lift the braking wedges and fix it in a position. Both wedges still have to be slack!
- (2) Measure the distance between adjusting screw and the safety gear block. The measured dimension is on the Safety gear at Governor side X and have to be on the opposite Safety gear X +0/-1. This adjustment prevents one sided gripping.
- (3) Correct the different X dimensions by adjusting the length of the synchronization rod (3) by turning the adjustment nut (1) and lock with lock nuts (2).

 Changing the adjustment of the safety gear is forbidden!

- (4) Activate the synchronization by hand and check that both safety gears are activated at the same time.



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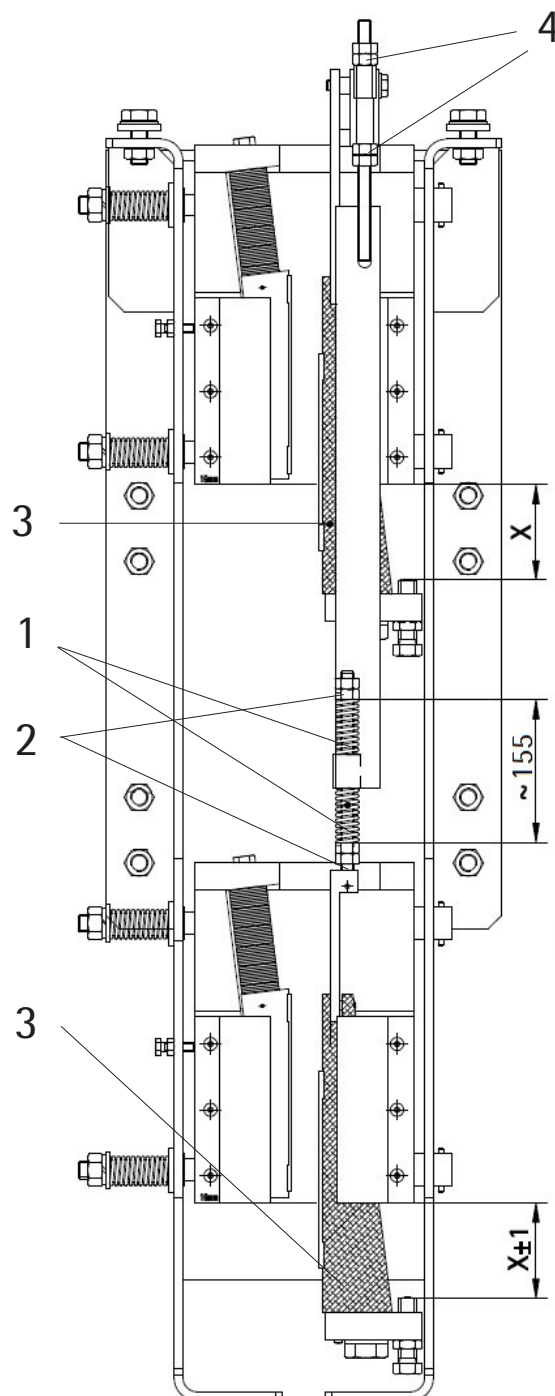
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3.5.2 Synchronization upper - lower safety gear

- (1) Adjust the upper pair of safety gears according 3.4.1!
 The distance between the adjusting screws and the safety gear block should be according 3.4.1 while the gripping wedges are lifted.
- (2) Adjust the springs (1) by turning the nuts (2) until the overall distance from one to the other spring is $\sim 155\text{mm}$.
 Tighten the Nuts!
- (3) Lift the braking wedges (3) over the synchronisation bar and fix it in a position. All wedges still have to be slack!
- (4) Slacken the nut (4), by turning you can lift or lower the bottom gripping wedge.
- (5) The distance between adjusting screw and safety gear block of the upper safety gear is X .
 The distance between adjusting screw and safety gear block of the lower safety gear have to be $X \pm 1$.
- (6) Tighten the lock nut (7).



Move the synchronization by hand and check if both safety gears are activated at the same time.



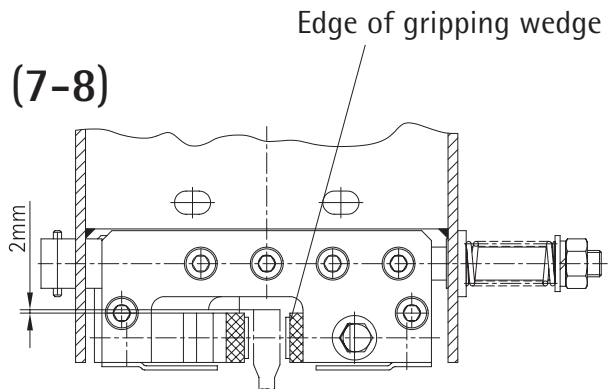
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- (7) Check the horizontal movement of the safety gear to be sure that the counter wedge is able to access the guide rail when the safety gear is activated.
- (8) Check the horizontal adjustment of the gripping wedge.



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3.6 Electrical installation of the safety gear contact



Work involving electrical equipment should only be carried out by an electrical fitter or qualified personnel.



Before carrying out work, switch off all voltage to installation equipment.



The safety gear could be equipped/ordered with or without safety gear switch (referring to the country regulations)



Take note of the following when laying the connection cable:

- that the single polarity cables have double insulation
- the use and laying of cables is governed by the EMC



The safety gear contact opens the lift installation's remotely controlled safety circuit.

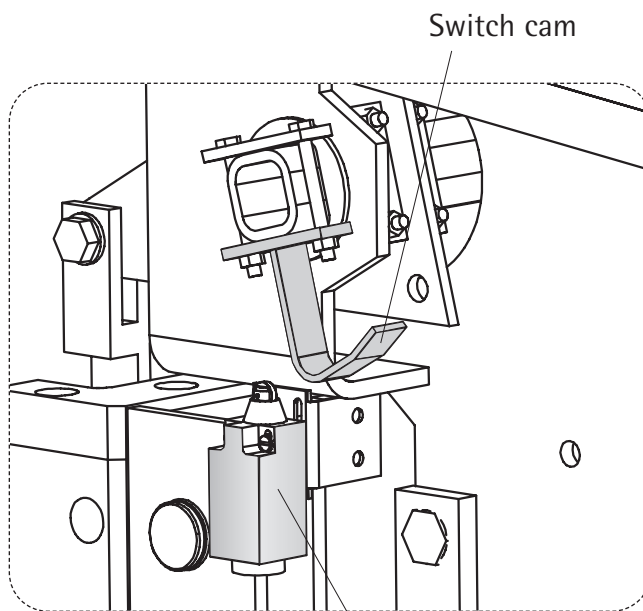
- (1) Connect the contact
- (2) Test the safety gear contact function - adjust if necessary
- (3) Adjust the switch vertically on its fixing bracket.



Adjusting dimension: 3-5 mm from the guard peak



The contact must brake just before safety gear gripping!

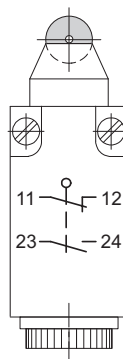


(1-3)

Safety gear contact

3.6.1 Safety gear contact

- use category: AC 15, A300, U_e/I_e 240V (3A)
- thermal current: $I_{the} = 10A$
- insulation voltage: $U_i = 250V$ AC (EN81)
300V AC (ASME)
- protection type: IP 43
- approved in accordance: VDE 0470
IEC/EN 60947-5-1



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4 Function testing

Operational reliability of the installation is assured. The quality and function of individual components are subject to thorough inspection and is checked before dispatch from our works. The safety gear 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:

The protective coating of grease is to be carefully removed from the guide rails! Clean the guide rails!



The cleaning of the guide rail must be done with a disc brake cleaner or a similar fluid. It is not allowed to do mechanical cleaning like filing, grinding. If the surface cannot be cleaned properly contact the manufacturer.



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.

Preparations before tests:



The guide rail may not be lubricated at all.

- Check the activating force of the safety gear synchronization (it should be between 400 and 500 N). This value can be higher if the travel is over 75m. Calculate the minimum required force F_1 as follows:

$$F_1 = \text{mass of overspeed governor rope} \times \text{downwards acceleration} \times \text{safety factor (2)}$$

e.g.: $F_{1 \min} = 200\text{kg} \times 1,5\text{m/s}^2 \times 2 = 600\text{N}$



This is the minimum force which should be measured on the safety gear synchronization to prevent unintended gripping. If the force is less than the retaining spring of the safety gear synchronization must be adjusted.

- Check the tripping force of the overspeed governor F_2 :

This force must be between 1600N and 2000N.



The maximum tripping force $F_{2 \max}$ of the overspeed governor is $2000 \pm 250\text{N}$.

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4.1 Static functions test

The function of the safety gear is to be checked with loaded car and at service speed before the real safety gear test is performed.

- Activate the safety gear actuating lever (or the overspeed governor rope as well by means of the tripping function if available) manually. At the same time, use the emergency control or inspection run control to gradually lower the counterweight.
- Check if both safety gears work at the same time. (Gripping marks on the guide rails must be on the same height). If the safety gears are not working simultaneously the safety gear synchronization must be readjusted.
- After a few centimeters, the counterweight should be caught on the left and right by the safety gear.
- The safety gear contact should respond
- Then release the safety gear by running up the counterweight. Check that the actuating mechanism and the safety gear contact have returned to their initial positions.



For rated speed lower 1,5 m/s the dynamic safety gear test can be done when the function test is shown to be ok.



If the rated speed is above 1.5 m/s, another safety gear test must be done with empty car and at a speed of 1,5 m/s. Measure the gripping distance as shown in section 4.3. From the tripping speed v and the gripping distance s the retardation R can be calculated according to the following formula.

$$R = v^2 / (2 \times s)$$

The retardation R should be within 6 m/s² and 8 m/s²



If the retardation is not correct the safety gear must be replaced (please contact WITTUR).



The real safety gear test can be performed when the above mentioned tests are ok.

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4.2 Dynamic functions test



Nobody should be in the lift car or on the car roof when carrying out test runs or functions tests!



It is recommended to do the test near a door, to unload the weights and make it easier to lift up the elevator after testing the safety gears.

4.2.1 Testing criteria

Two test possibilities for counterweight safetygear:

C1) car lift has to be empty

Charge the counterweight frame
 gripping speed = tripping speed of overspeed governor (v_t)

C2) car lift has to be empty (EN81)

Charge the counterweight frame
 gripping speed = nominal speed of the counterweight frame (v_n)

Each gripping test has to be documented and a copy of the test report should remain in the elevator book.

In order to ease the releasing of the counterweight from the safety gear do the following:



Lock the car side safety gear before testing the counterweight safety gear to prevent unintended tripping of car safety gear due to jumping of the car.



Remove the locking after the safety gear test has been performed!



After each test or activation of the safety gear check that there are no defects that can impair the normal run of the elevator.



Change the safety gear if there is a damage on it. A visual check is sufficient.

4.2.2 Procedure of dynamic functions test

- Drive the counterweight frame to the level near the mid point of the shaft or higher.
- Drive the counterweight frame to the have shaft height or higher.
- Drive the counterweight frame about 2 m to up direction from the level, use service drive.
- In geared elevators accelerate the elevator with the motor. In gearless the acceleration can be done just by opening the motor brake.

Counterweight Safety Gear

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- Shut down the power supply; keep the brake manually open.
 The elevator should accelerate to the tripping speed of the Overspeed governor. When the tripping speed is reached the Overspeed governor must activate the safety gear and the safety gear must stop the elevator.



If this does not work correct (the elevator does not stop after 2 - 3 m) release immediately the motor brake so the elevator is stopped by it.

- Drive the elevator car in down direction in order to release the safety gear.
 Force to lift the counterweight after gripping:

$$F = 1,2 \times F_{\max} \quad (\text{without rope})$$

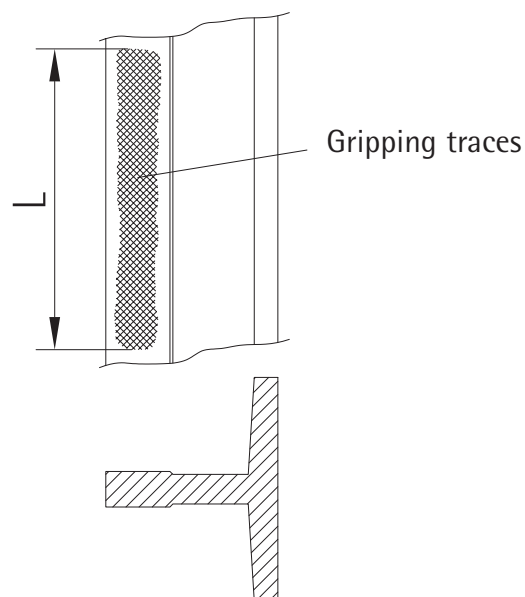
$$F = 0,6 \times F_{\max} \quad (\text{roped})$$

- Do the checks described in the following chapters.

4.3 Gripping distance

4.3.1 Measuring of the gripping distance "s"

Measure and calculate the gripping distance "s" as described in the following instruction:

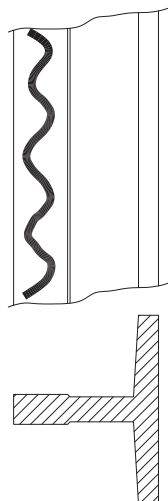


After gripping the wedges leave a slight but definite polished marking length L on the guide rail.

The actual gripping distance s is calculated as follows:

$$s = L - Y - 18 \text{ (cm)}$$

Y ... Distance between safety gears (see figure on page D7AIMGB.010)



Before doing a gripping test, it is recommended to mark the guide rail with a non-greasy pencil in the area where the gripping should happen. This marks the measurement of the gripping distance easier.

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4.3.2 Check of gripping distance "s" against the diagram 1

Read from the diagram 1 within which area the gripping distance "s" is plotted.

- If the gripping distance "s" is within the shaded area, the safety gear is set correctly!
- If the gripping distance "s" is out of shaded area, the safety gear must be replaced (please contact WITTUR)

If gripping is out of the shaded area check if:

- the guide rail and the friction pad are cleaned and fat free
- the mass of the lift car match with the order
- the synchronisation is adjusted correctly

If one of these named points applied, repeat the gripping attempt after the repair of deficiencies.

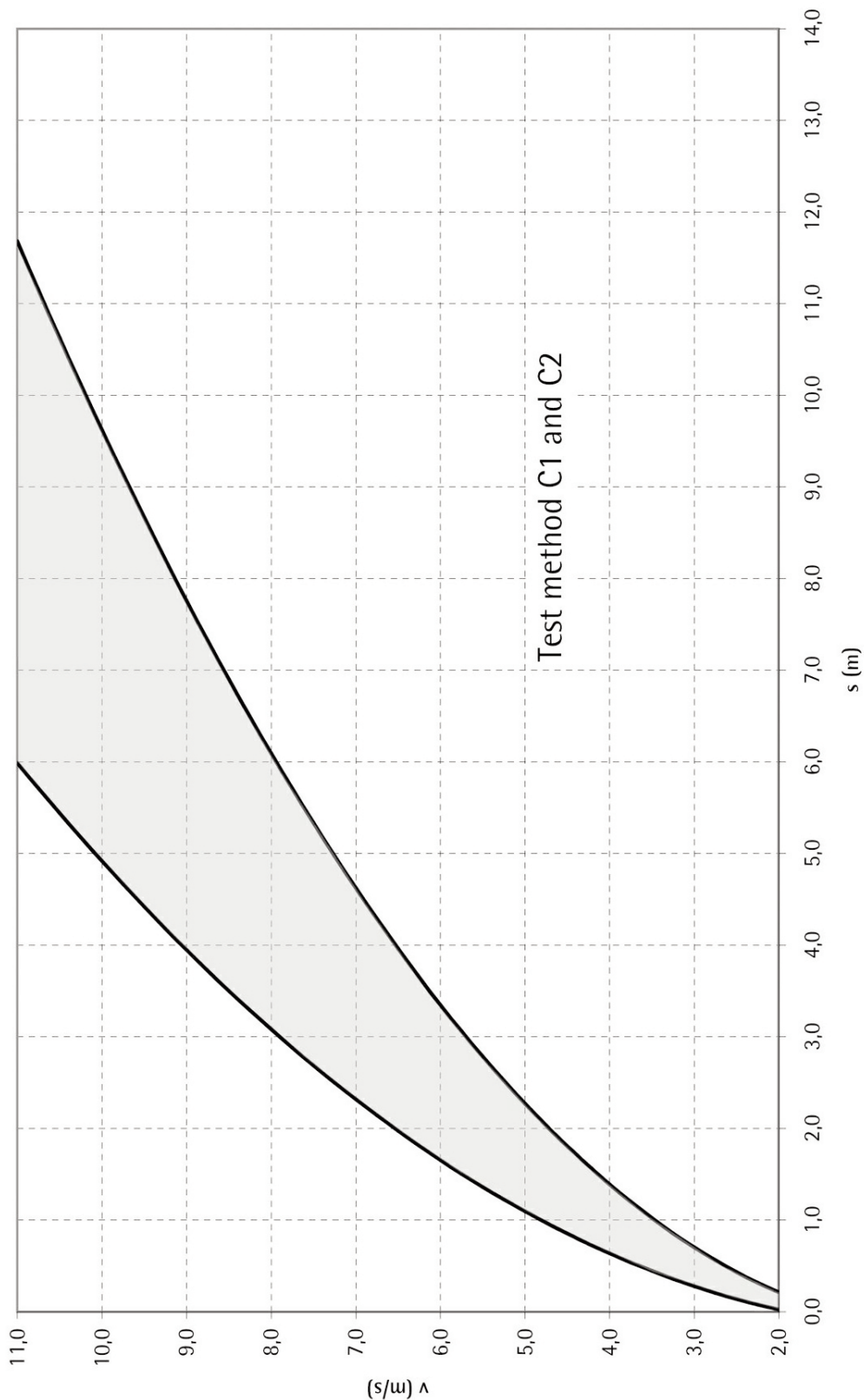
Counterweight Safety Gear

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Operating instructions

Blatt/sheet	D7A0MGB.020
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Diagramm 1: Test Methode C1 & C2 (v_t and $v_n = 2.0 - 11.0$ m/s)



Counterweight Safety Gear

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Operating instructions

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4.3.3 Visual checks after a safety gear test

- Inclination of the counterweight frame:



During gripping the counterweight may not incline more than 5% towards the normal position.



If there is any defect the safety gear must be replaced!

- Safety gear:
Drive the counterweight to the lowest floor and check from the pit following items:
 - existence of brake lining
 - visual defects of safety gear parts
 - friction marks
 - defects on the safety gear housing body



After the safety gear test the burrs must be removed from the guide rails.

5 Maintenance, inspection and repair

5.1 Maintenance and inspection

The progressive type safety gear WSGB04/10 is basically maintenance free. The whole installation is designed so that no large maintenance operations have to be carried out during damage free operation of the installation.



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.

Inspection checks must be carried out at regular intervals (minimum twice a year with each service) to guarantee safe operation. 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 be carried out before legally prescribed functional tests (e.g. before TÜV tests).



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

Counterweight Safety Gear

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Operating instructions

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5.1.1 General



The guide rail may not be lubricated at all. They have to be dry.

5.1.2 Maintenance and inspection check list

- Check that all fixings are tighten and aligned
- Check that the guide shoes are correctly aligned and adjusted
- Check brake shoe/guide rail for free running, and adjust if necessary
- Check brass brake lining for damage or high degree of wear.
- Check state of safety gear and neighboring components for damage, deformation or heavy oxidation (rust).
- Check that the gripping wedge can move freely.
- Check axial play and turning capacity of the safety gear shaft.
- Check even running of left and right safety gear (synchronization).
- Check actuating mechanism and rail/connection for free movement/proper functioning. Check synchronization.
- Check safety gear contact for function/clearance and adjust if necessary (see chapter 3.4).
- Clean system if dirt has built up.

5.1.3 Cleaning of guide rails

Any dust or dirt on the guide rails can have influence to the friction between the guide rail and the safety gear. This means that the guide rails must be cleaned carefully whenever the dirt becomes visible on the guide rails or in minimum once per year.



As cleaning fluid a disc brake cleaner or a similar fluid should be used.



Mechanical cleaning like filing, grinding is not permitted.

5.2 Returning tests

The standard levels of returning tests should not be higher than the standards of the tests before installation.

These returning tests are not allowed to cause wear or stresses that impair the operation reliability of the elevator. The tests must be done with empty car and reduced speed.



The reset of the safety gear must be done by an expert person.

Each gripping test has to be documented and a copy of the test report should remain in the elevator book.

For details about testing procedures refer to chapter 4. Functions testing.

Counterweight Safety Gear

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5.3 Operational life time of the safety gears



You have to change the complete safety gear after the defined number of grip-pings in the table.



Operation of the system without the safety gear, even for short periods of time, is forbidden.

Test Method	Speed [m/s]	≤ 5000 kg	> 5000 kg
C1	≤ 2,5	50	50
	≤ 5,0	47	23
	≤ 7,5	21	10
	≤ 11,0	11	6
C2	≤ 2,0	50	50
	≤ 4,0		30
	≤ 6,0	26	13
	≤ 8,0	15	7

5.4 Carrying out repairs



As a rule, the safety gear should neither be taken apart or altered in any other way (sealants, sealing wax). This also applies to repairs. An exception to this is the synchronization (e.g. due to reconstruction work etc). Condition for this, is that the process is carried out properly and functioning is in no way compromised.



It is forbidden to replace faulty or worn parts of the safety gear yourself.

The reasons are:

- conditions of liability and technical safety
- only original replacement parts may be installed (these are available from manufacturer only).
- repairs are carried out only in pairs and are checked before return.

Permitted repair work:

Repairs to the safety gear system which do not directly affect the safety gear (e.g. synchronization, safety gear contact, etc.) must be carried out locally. In other words, all procedures involved in initial installation are also included in the repairs and maintenance schedule.

Such repair work in the safety system must, of course, be carried out correctly and with utmost care, in order to guarantee long-term safe operation of the system.



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

Counterweight Safety Gear

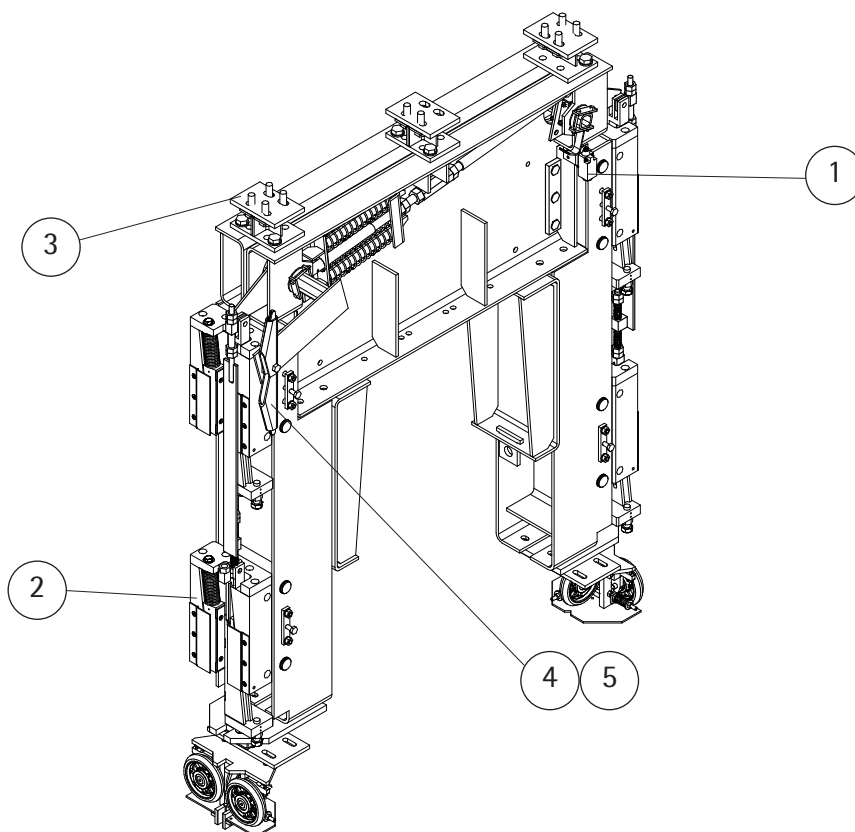
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Operating instructions

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5.5 Spare parts list

Pos.	Component	Spare part	... used	Number...	Art. No.
1	Safety gear contact	Bernstein	I88-U1Z Riwk	1	258453
2	Progressive type safety gear	WSGB04 up (a pair of)	guide rail size: 19mm	1	901523G16S
		WSGB04 down (a pair of)	guide rail size: 19mm	1	901523G19D
		WSGB10 up (a pair of)	guide rail size: 19mm	1	901524G16S
		WSGB10 down(a pair of)	guide rail size: 19mm	1	901524G19D
3	Adapter (für CWT)	80 mm heigt		1	602185G01
4	Rope housing (incl. rope clips - 2pcs. and fixing screw M12)		rope diam. 8-9 mm	1	392772G08L
			rope diam. 10 mm	1	392772G10
			rope diam. 13 mm	1	392772G13
5	Rope clip	S8 DIN1142	rope diam. 8-9 mm	1	256349
		S10 DIN1142	rope diam. 10 mm	1	252042
		S13 DIN1142	rope diam. 13 mm	1	252459





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6 Revision table

Issue	date	description of change	CR
C	30.08.2011	views, spare parts list and function testing updated	CRW-3022
	08.04.2013	GB7588 and revision table added	CRW-3391
	08.04.2013	GOST R 53780 added	CRW-4136
	26.04.2013	testing criteria, check of gripping distance changed; diagrams removed/updated	CRW-3391
D	07.04.2016	title page and type label, add last page	CRW-6014



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