OPERATING INSTRUCTION

WITTUR

OL35-NA

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Version	**J**
Date	**10.03.2021**

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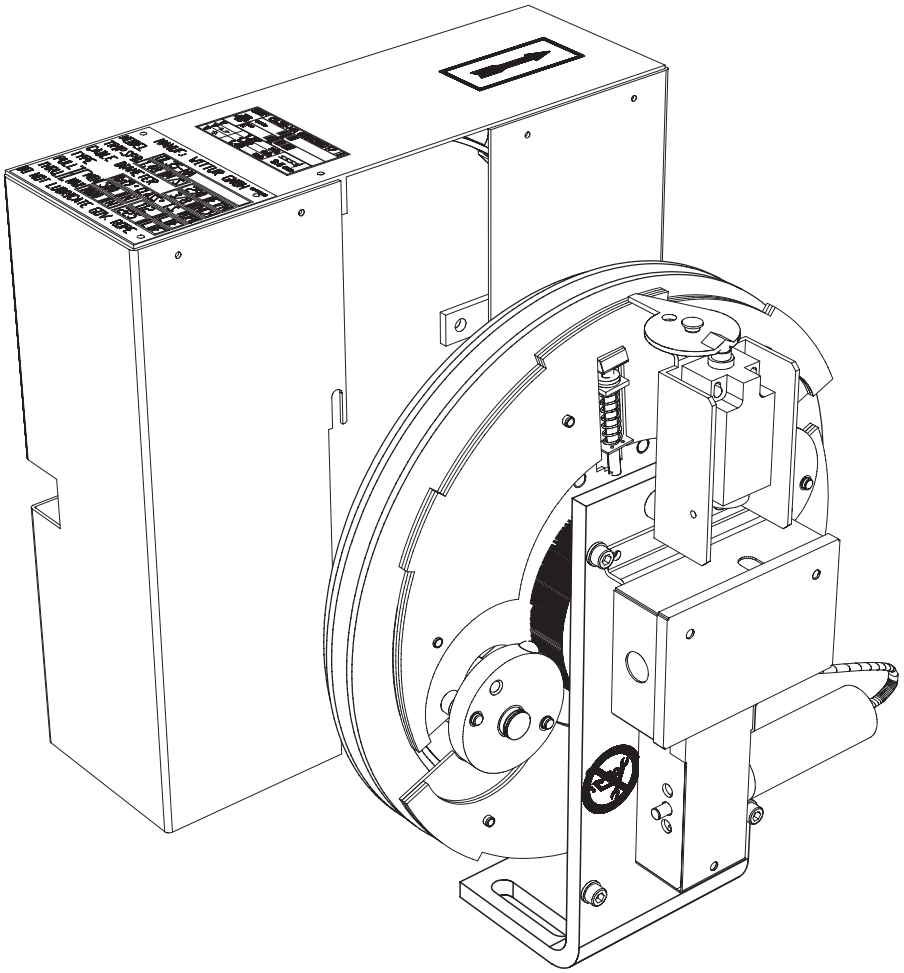
OVERSPEED GOVERNOR



Original Instruction

safety in motion™

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

Overspeed Governor OL35-NA

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1 General information prior to installation

1.1 Description and functions

	OL35-NA		
rope pulley diameter	12" (306mm)		8" (200/203mm)
rope diameter	0.236/0.374" (6/9,5mm)	0.374" (9,5mm)	0.236/0.256" (6/6.5mm)
hardened pulley groove	No	Yes	No
max. travel height	75m	107m	30m
rated speed	≤ 500fpm (2,5m/s)	≥ 500 & ≤ 700fpm	200fpm
min. brake force	112lbf (500N)	164lbf (730N)	135lbf (600N)
max. brake force	224lbf (1000N)	247lbf (1100N)	225lbf (1000N)
min. TW force	56lbf (250N)	134lbf (600N)	67lbf (300N)
max. TW force	134lbf (600N)	179lbf (800N)	79lbf (350N)
Encoder	optional magentical or friction type encder	CAR-side: Yes CWT-side: No	No
Remote tripping and reset	optional	Yes	Yes
Flyweight kit	optional	Not available	Not available

The overspeed governor is a safety device that comes into operation when the lift car exceeds its permitted speed.

If the lift car exceeds its rated speed upon descent, the overspeed governor trips when its tripping speed is reached and triggers the safety gear on the lift car via the governor rope.

The lift car is brought to a standstill and clamps onto the guide rails.

The basic functions of the governor are to detect overspeed mechanical and electrically:
- to activate the safety gear mechanical
- to stop the elevator drive electrically

A tension weight is needed to tighten the rope of the overspeed governor.

Travel downwards:
Because of the centrifugal force, two rotating spring loaded flyweights (1) are forced outwards. Thereby, the two eccentric wheels (3) connected with the flyweights move towards the trip wheel (6) in the centre.

If the nominal elevator speed is exceeded, the flyweight (1) will hit the contact plate (7), activating the overspeed contact (5) to switch off the safety circuit.

If the speed still increases, the eccentric wheels will grip into the non-rotating trip wheel (6), which will block the governor wheel and activate the safety gear.

The trip wheel has a friction coupler, which limit the force in the rope to the adjusted brake force. If the force in the rope exceeds the brake force, the trip wheel starts to rotate together with the governor wheel. This to protect rope and the safety gear system from damage.

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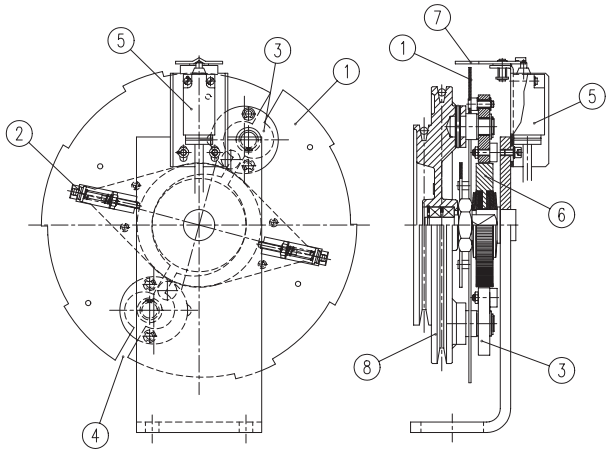
Travel upwards:
In upwards direction the safety circuit is switched off in the same way as for downwards direction.
The safety gear will not be activated in upward direction!

1. Flyweight
2. Spring
3. Eccentric wheel
5. Overspeed contact
6. Trip wheel
7. Contact plate
8. Rope pulley



1.2 Liability and guarantee

This instruction handbook is written for people who are familiar with elevator servicing and installation. Competent knowledge of elevators is essential.

WITTUR accepts 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. Always consider safety first and follow your companies safety and installation prodedures. Unless stated otherwise, the following are <u>not</u> permissible due to technical safety reasons:

- The use of components other than those installed
- Carrying out modifications, of any kind on the overspeed governor
- The installation of overspeed governors other than those described or the installation of unsuitable overspeed governors.
- Destruction of the lead seal
- Carrying out faulty or improper maintenance or inspection checks
- Using unsuitable accessories, spare parts or operating material which has not been released by the WITTUR Company nor consists of original WITTUR spare parts

1.3 Safety precautions

Machine installers and repair personnel 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 components requires well trained installation personnel. The responsibility of training lies with the company appointed to carry out the work.

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
- Elevator 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 construction and space conditions. Where (workshop or on site) and when which installation operations can or must be carried out. It is recommended, that you take into account all the given circumstances and plan the various operational sequences in advance rather than carrying them out prematurely and in a random manner.
On receipt of the delivery, the goods or components should be checked for correctness and completeness with the order sheet.

The following should also be checked:
- that the factory and order number correspond
- that the details on the name plate correspond to those on the order
- the elevator speed
- the elevator travel height
- the rope wheel diameter fits to the overspeed governor rope

1.5 Advice when working on safety components

Overspeed Goveners are classified as safety components. It is very important that you comply with the standards and guidelines in this section as well as the remainder of this 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 operation.

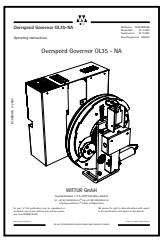
Safety devices that can only be adjusted after installation should be done so immediately after installation.

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.

1.6 Content of supply

After delivery, check the overspeed governor for damage and for full delivery of parts. The content of supply covers: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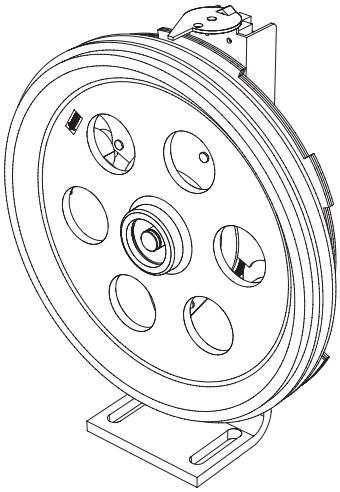
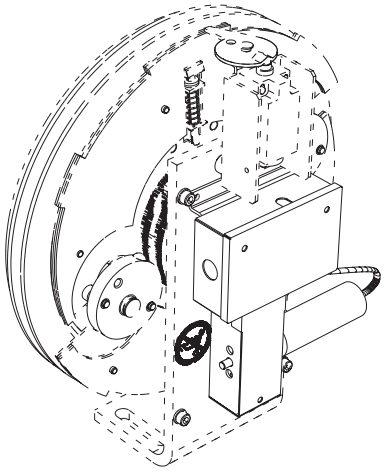
WITTUR GmbH

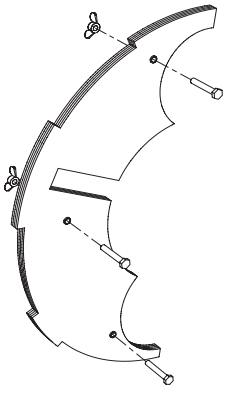
- Operating instructions manual



- Overspeed governor OL35-NA (pre-adjusted and calibrated at the factory) including overspeed contact



- Remote control (availability see table at 1.1)



- Additional flyweight kit (availability see table at 1.1)

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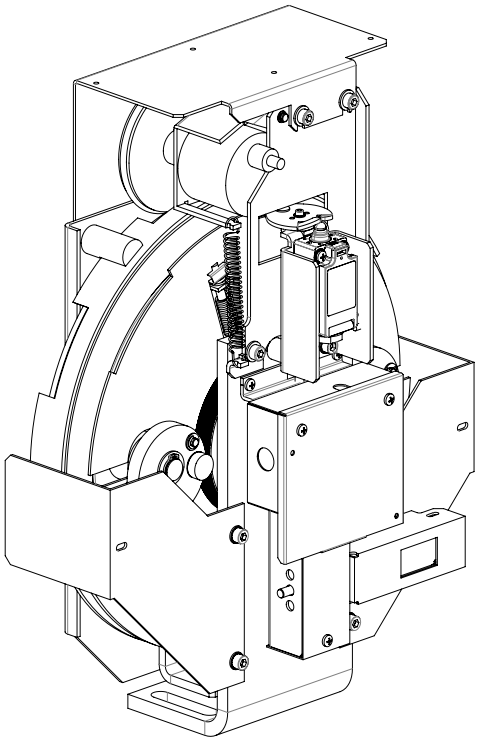
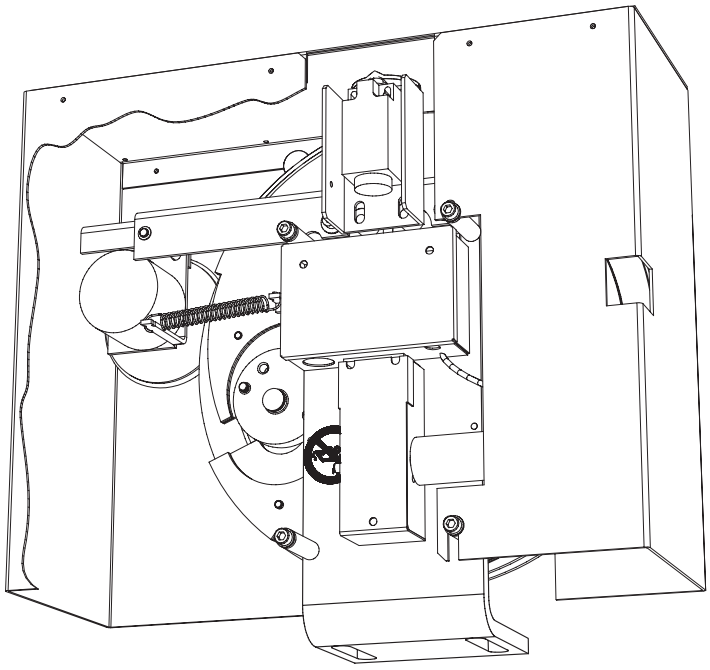
- Encoder (availability see table at 1.1)

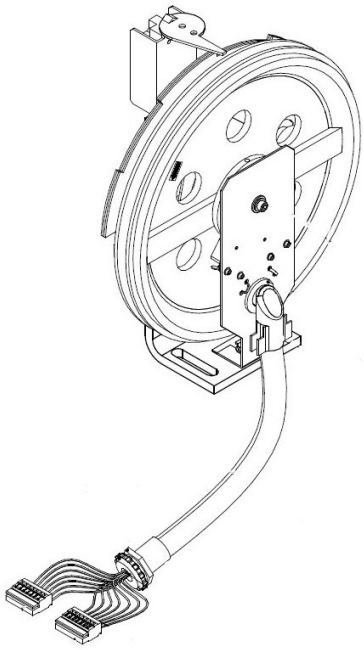
top-mounted friction-type encoder



side-mounted friction-type encoder



magnet ring encoder



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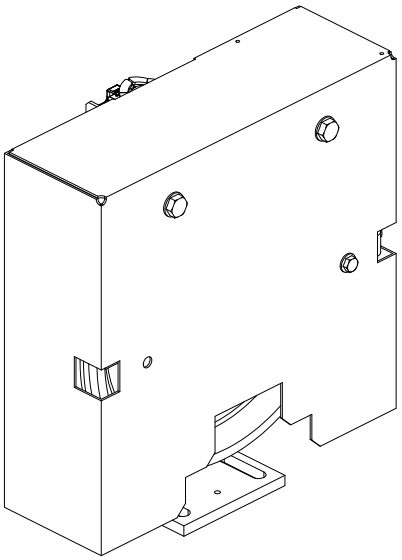
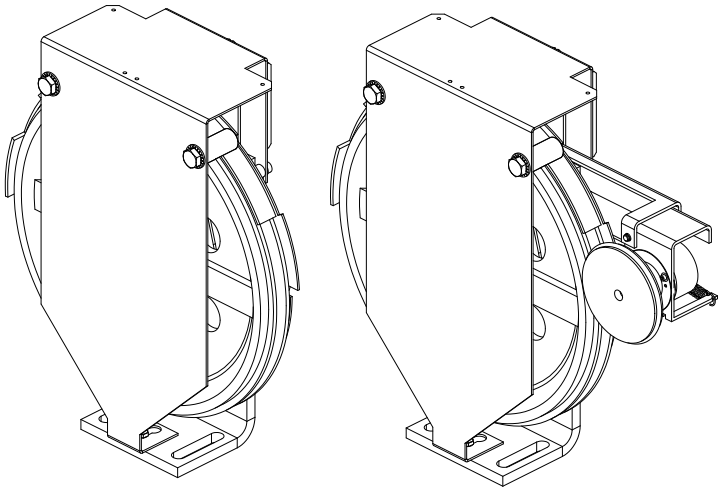
- Safety cover (mandatory, includes rope guard)

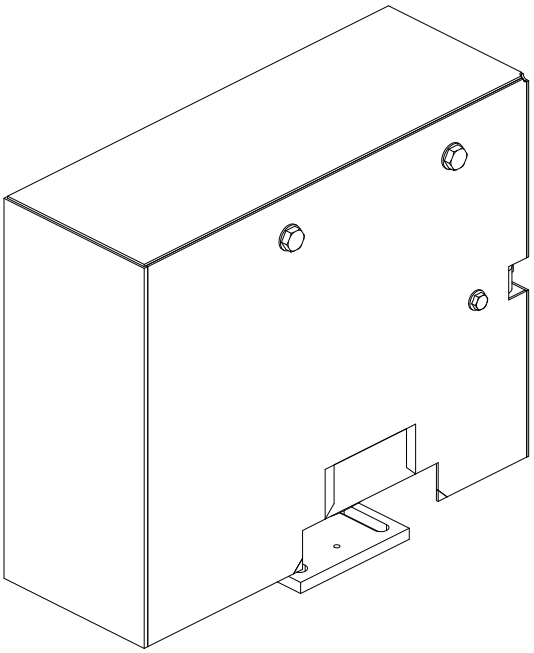
cover for no or magnetical encoder
(allowed to be removed)



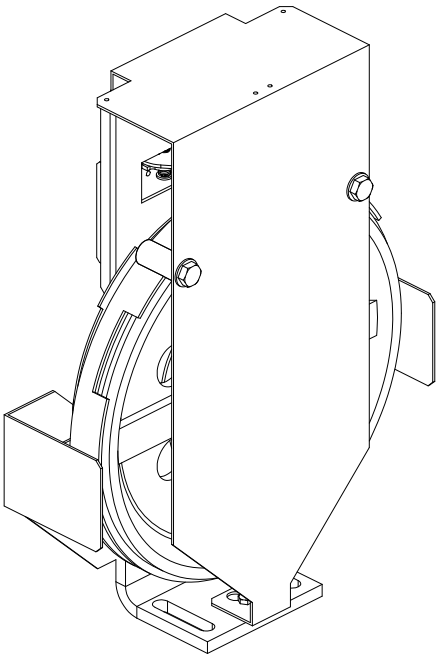
cover for no or side-mounted friction-type encoder
(**not allowed** to be removed)



cover for side-mounted friction-type encoder
(allowed to be removed)



cover for top-mounted friction-type encoder
and unhardened rope pulley
(**not allowed** to be removed)



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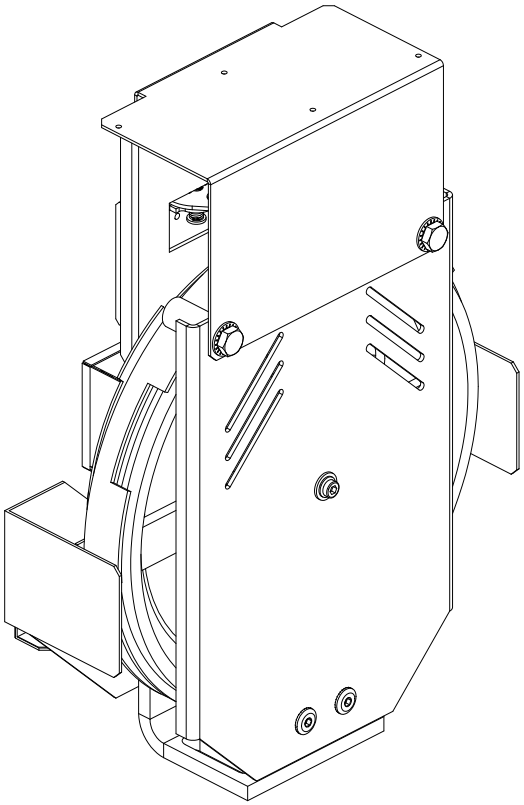
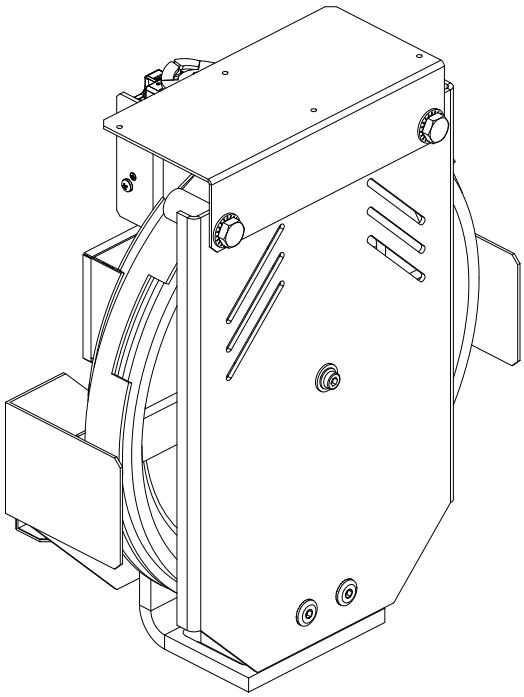
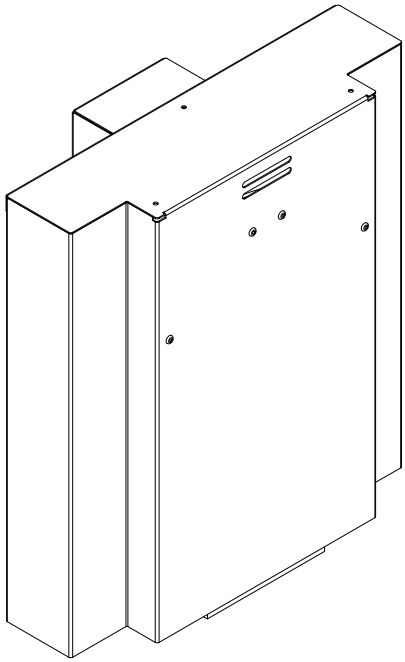
cover for top-mounted friction-type encoder,
supported pulley axle,
hardened rope pulley groove CAR-side
(**not allowed** to be removed)



cover for no encoder,
supported pulley axle,
hardened rope pulley groove CWT-side
(**not allowed** to be removed)



cover for 200/203mm rope pulley
(allowed to be removed)



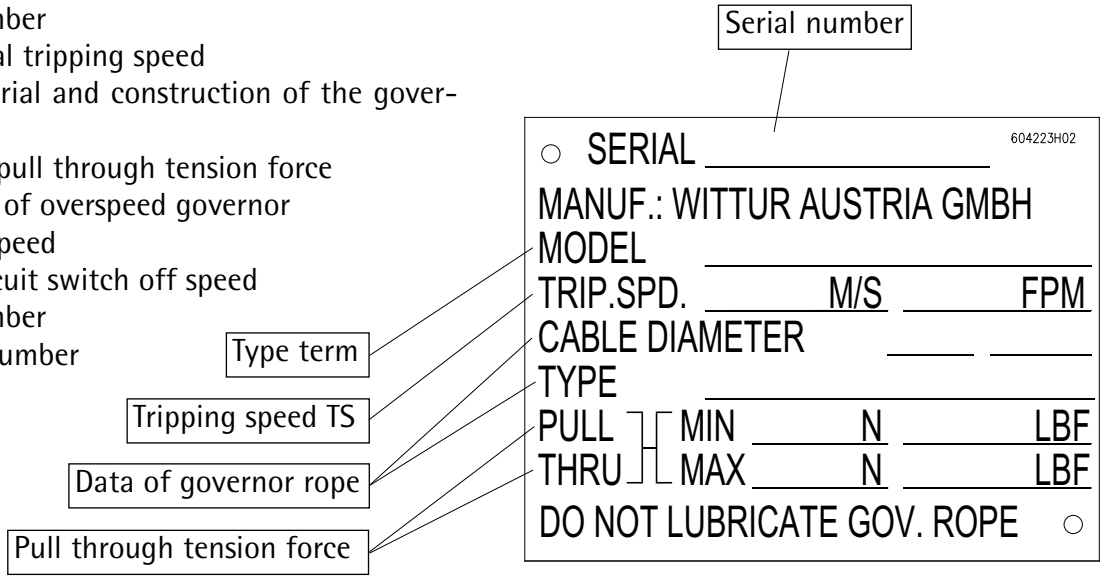
2 Name plate, designation, identification

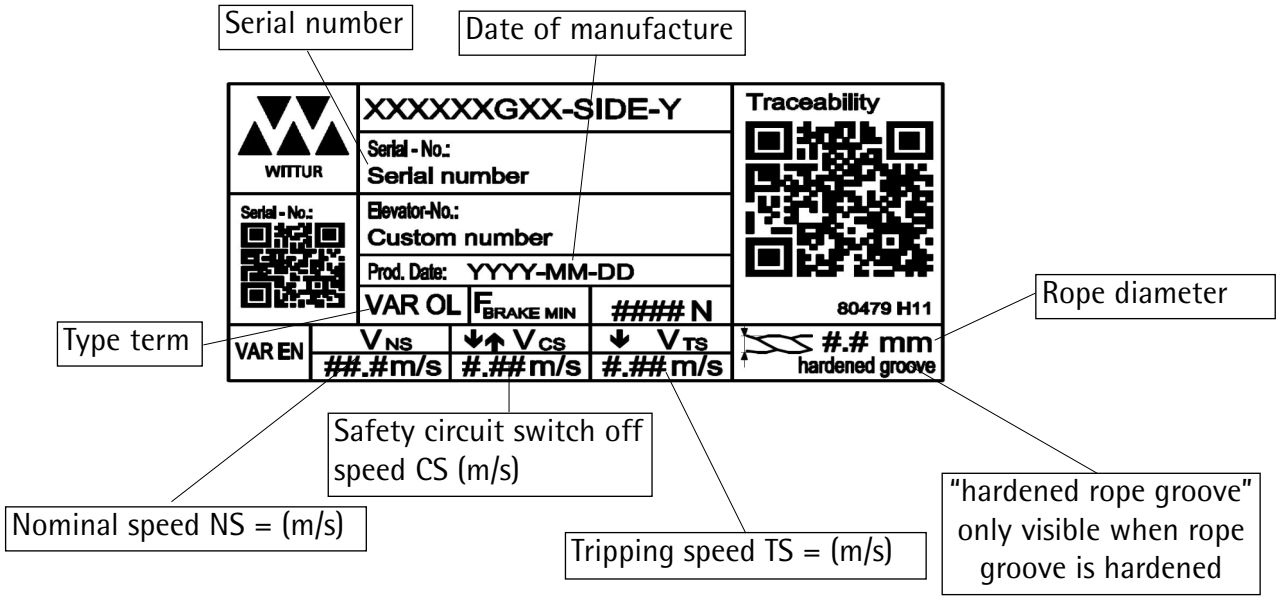
The overspeed governor OL35-NA identification indicators are located on the governor safety cover.

These consist of a metal name plate and a identification sticker which gives following data (meeting ASME A17.1):

- Serial number
- Mechanical tripping speed
- Size, material and construction of the governor rope
- Governor pull through tension force
- Type term of overspeed governor
- Nominal speed
- Safety circuit switch off speed
- Serial number
- Elevator number

The overspeed governor is pre-adjusted and calibrated at the factory. No re-adjustment is allowed.





3 Installation

3.1 General

Check the direction of rotation: When the car / counterweight travels downwards the governor has to rotate in the arrow direction.

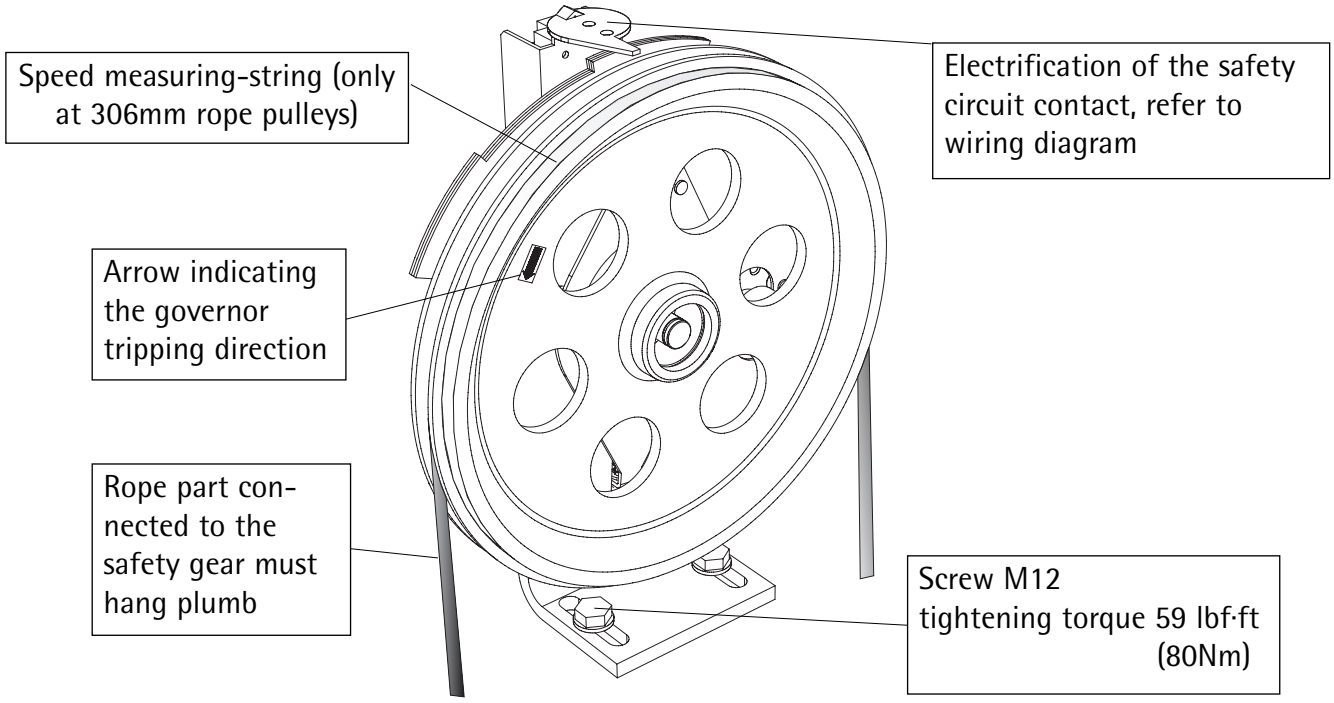
3.1.2 Handling of the OL35-NA

Don't carry the governor from sensitive mechanical parts (e.g. the safety circuit contact, encoder, flyweights, ...)!

Don´t use oil or grease as lubrication! This might reduce the governor breaking force!

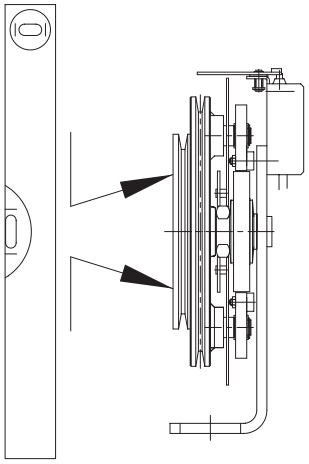
3.1.1 Admissive Fores

pulley groove type	unhardened			hardened
pulley diameter	8" (200/203mm)	12" (306mm)		
rope diameter	0.236/0.256" (6/6.5mm)	0.236" (6mm)	0.374" (9.5mm)	
max. weight force	35lbf (160N)	56lbf (250N)		
max. rope weight	30lbf (135N)	67lbf (300N)	146lbf (650N)	208lbf (925N)
max. brake force	224lbf (1000N)			247lbf (1100N)
min. tension weight max. tension weight	67lbf (300N) 79lbf (350N)	56lbf (250N) 135lbf (600N)		135lbf (600N) 180lbf (800N)
min. braking load of the rope (safety factor 8)	3710lbf (16500N)		4720lbf (21000N)	



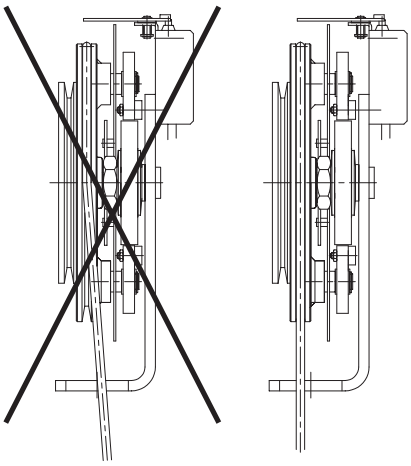
3.1.3 Installation tolerances

The overspeed governor must be installed vertically.



The overspeed governor must be installed in a way, that the governor rope runs parallel into the wheel groove!

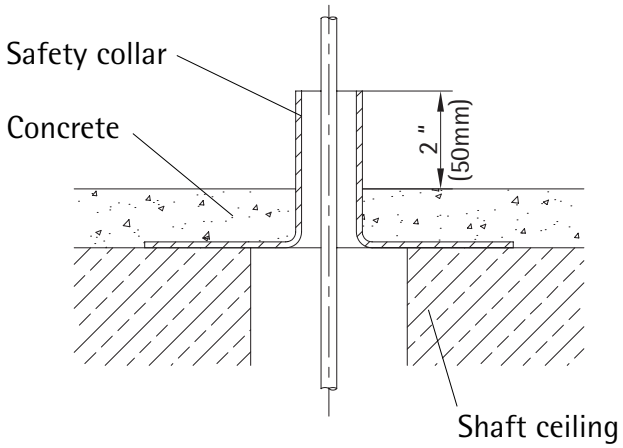
The maximum recommended declination (α) of the rope is => max. $\pm 1°$



3.2 Installing the overspeed governor

3.2.1 Installation in the machine room

Always pay attention to the overspeed governor rotational direction during each stage of installation.



Installation procedure

(1) If a supporting base is being used, it must be screwed to the overspeed governor
(2) Position the overspeed governor (with or without base) and align the plumb line over the centre of the safety gear
(3) Mark the drill holes and put the stud anchor in place (stud anchors are delivered with supporting base)
(4) Fasten down the overspeed governor (with or without supporting base)

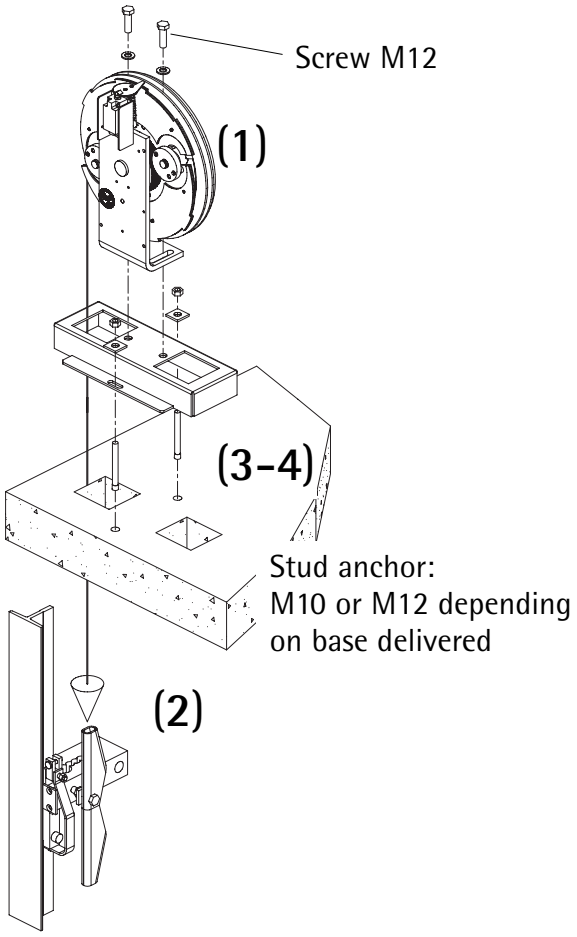
Take care of tightening torque
Screw M10: 34 lbf·ft (46Nm)
Screw M12: 59 lbf·ft (80Nm)

Preparation

The overspeed governor can either be installed directly on the machine room floor or on a support structure.

The rope aperture should be kept as small as possible and fitted with a 2" (50mm) high collar. A corresponding safety collar must be fastened to the floor before installation takes place.

If a cement floor is to be poured over the concrete after installation, bear this in mind when fitting the collar.



3.2.2 Shaft head installation

Observe the applicable safety measures when working with lift installations.

The overspeed governor must be equipped with remote tripping for shaft installation, or be easily externally accessible (i.e. via an inspection door).

Installation procedure

Always pay attention to the overspeed governor rotational direction during each stage of installation.

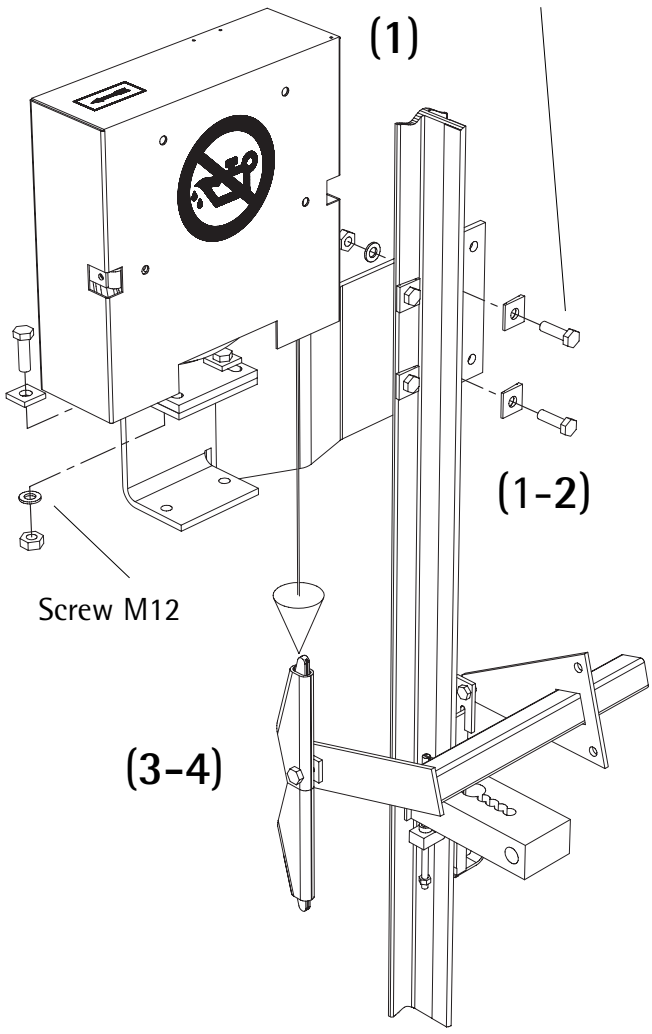
(1) Check the layout drawing to see whether the overspeed governor is to be fastened to the left or right hand guide rail
(2) Fix the support base to the rail at the desired height

The mounting bores are dependent upon the model and guide rail used

(3) Position the overspeed governor and align the plumb line over the center of the safety gear
(4) Fasten down the overspeed governor to the base

Take care of tightening torque
Screw M12: 59 lbf·ft (80Nm)
Screw M16: 144 lbf·ft (195Nm)

Guide rail fixing screws M12 or M16 included in support base delivery content



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3.3 Roping of the overspeed governor

The overspeed governor can only operate perfectly if the governor rope and the tension weight are installed correctly.

(1) Leave enough extra length on the governor rope and lay it over the overspeed governor wheel

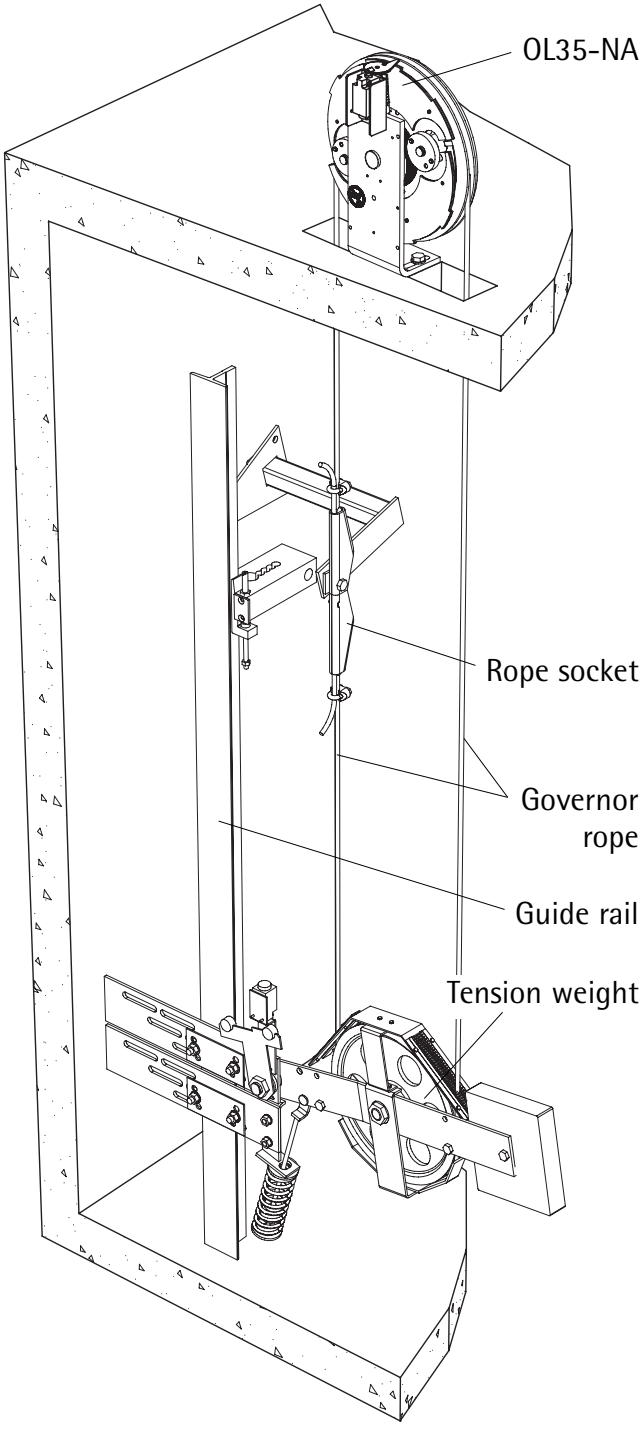
(2) Connect the first rope end to the rope socket and attach it to the safety gear

(3) Install the tension weight (refer to operating instructions of tension weight)

(4) Connect the second rope end to the rope socket of the safety gear linkage

3.3.1 Variations of OL35-NA overspeed governor arrangements

OL35-NA placed in shaft top



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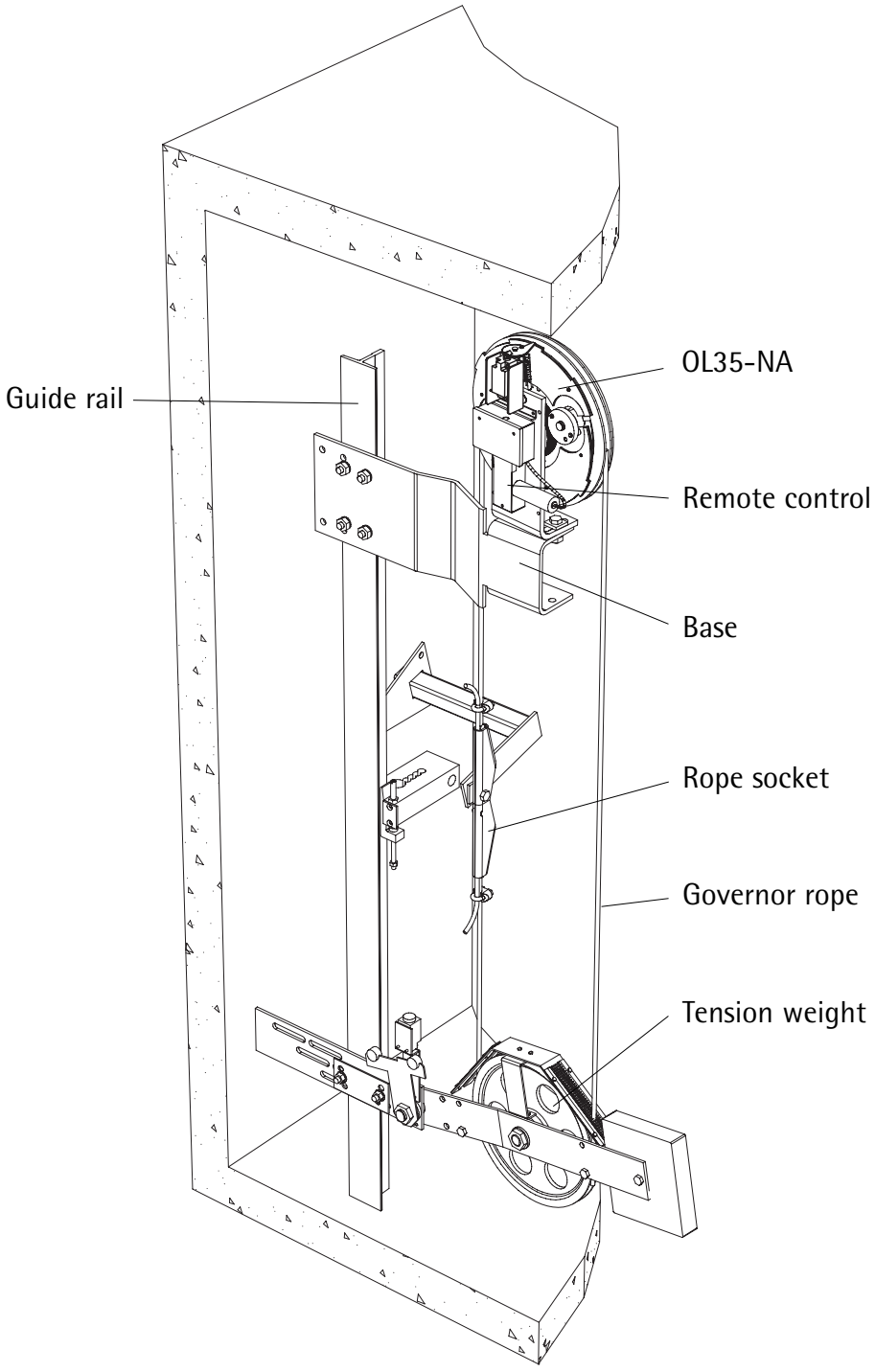
OL35 placed in shaft headroom



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3.4 Electrical installation of the overspeed contact

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

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

Take note of the following when laying the connection cable:

- the single polarity cables must have double insulation
- the use and laying of cables is governed by code

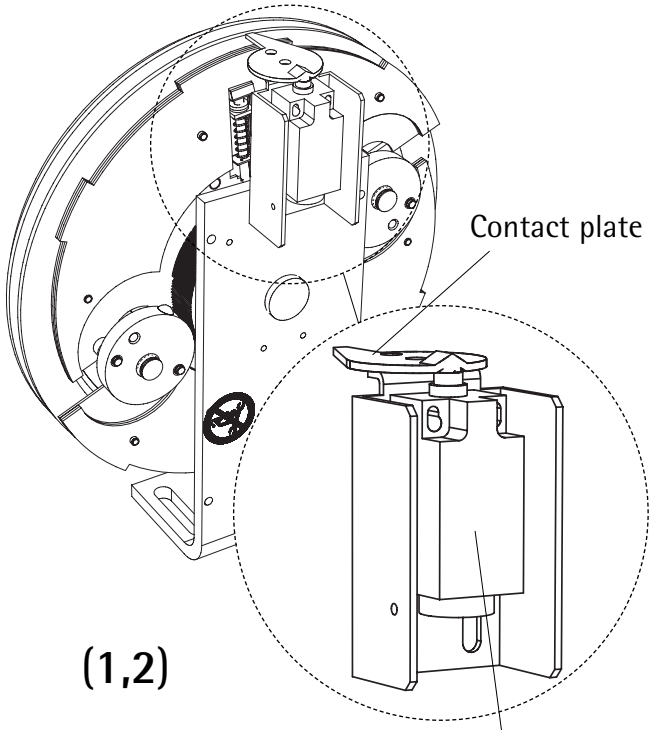
.

The contact is adjusted and sealed in the factory. It is not allowed to be adjusted on site.

(1) Connect the contact
(2) Test the contact function

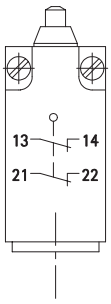
The overspeed contact opens the elevator installation's remotely controlled safety circuit

The contact plate and the detect pin must be put back to the initial position after being manually tested.



3.4.1 Overspeed contact

(1,2)

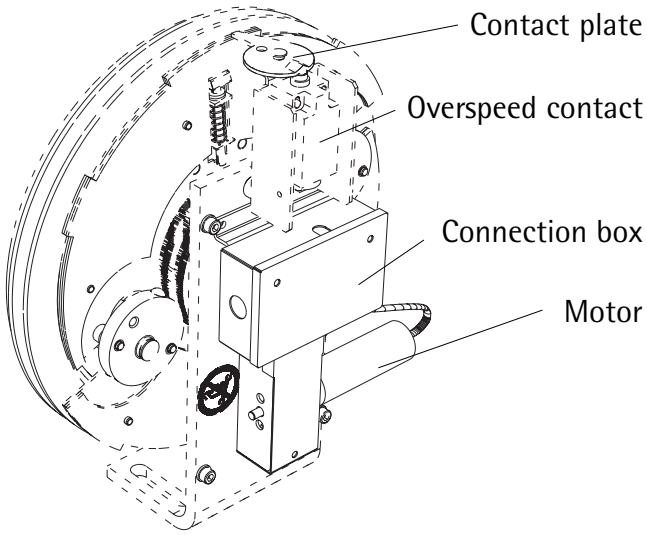


-	use category:	AC-15, U_e/I_e 240V (1,5A)
-	thermal current:	I_{the} = 5A
-	insulation voltage:	U_i = 250V AC
-	protection type:	IP 54
-	approved in accordance:	IEC/EN 60947-5-1 Annex K DIN VDE 0470 T1

3.5 Electrical installation of the remote control (optional)

The remote control allows to trigger the overspeed governor electrically in downward direction with rated or service speed.

Additionally the remote control can be used to reset the contact plate electrically.



3.5.1 Wiring of the remote control

The overspeed contact and the motor are pre-wired and adjusted and sealed in the factory.

Power supply of the motor:

Voltage	24VDC +10/-15%
Current	0.9 - 1.5A
switch-on time	min. 2 sec
	max.30 sec

The control panel should be able to operate the motor in both directions for the specified time.

Motor protection:
The motor protection (PTC) is included in the connection box of the remote control.

- response time for the motor protection: typical 5 sec. max. 30 sec.
- recovery time for the motor protection: min. 120 sec.

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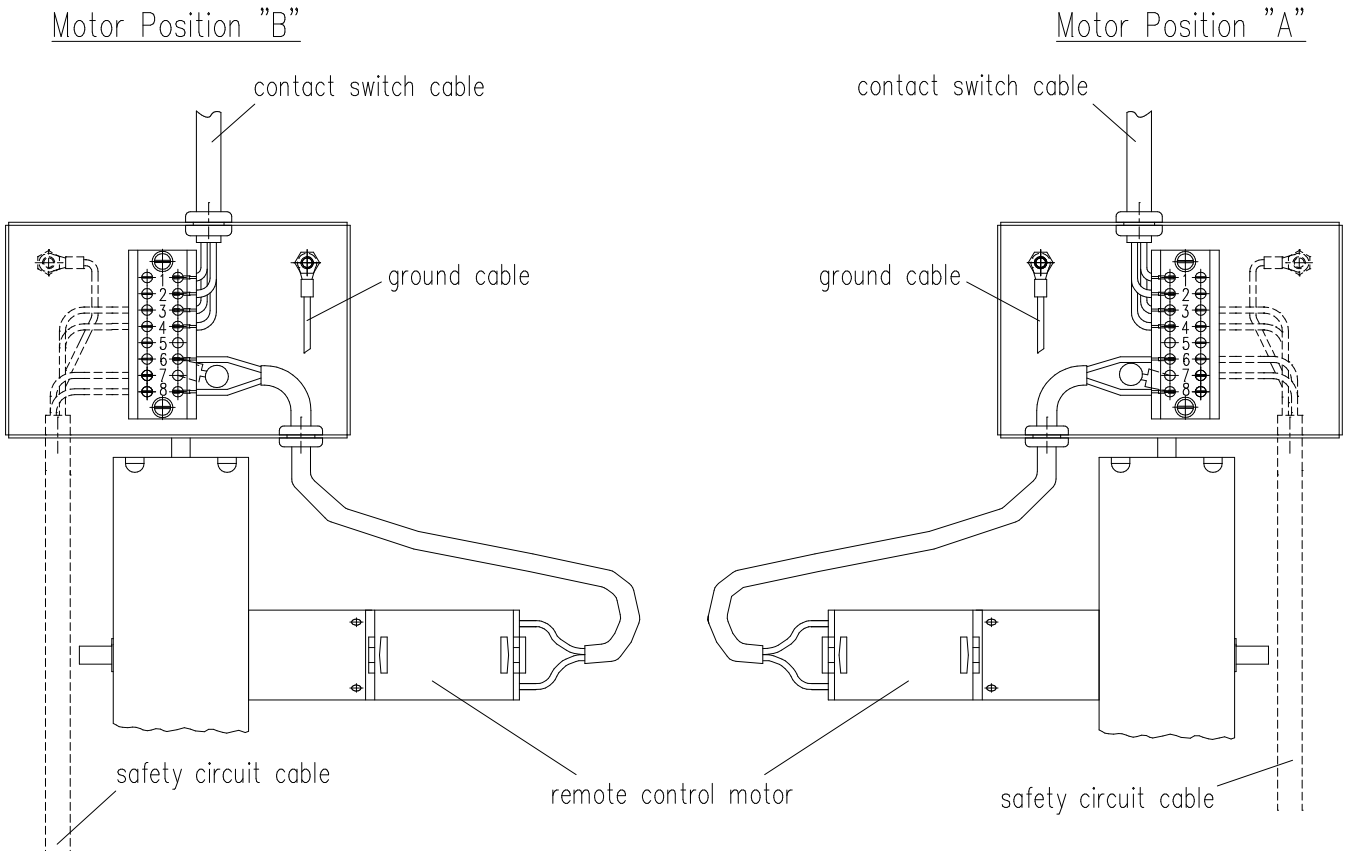
Geprüft/*approved* WAT/KKr

Operating instructions



	Motor Position "B" - left	
Terminal	Tripping	Reset
7	+24 VDC	GND
8	GND	+24 VDC

	Motor Position "A" - right	
Terminal	Tripping	Reset
6	+24 VDC	GND
7	GND	+24 VDC

3.6 Electrical installation of the encoder types (optional)

3.6.1 friction-type encoder

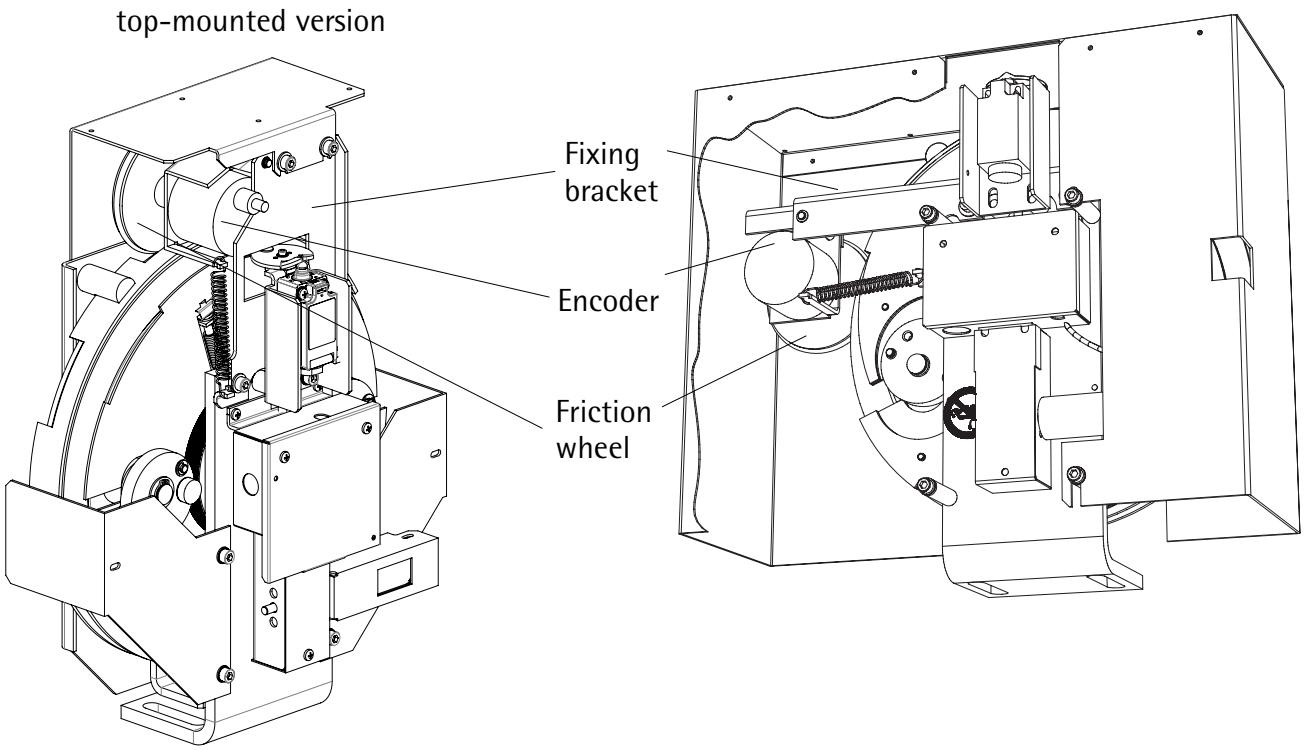
The friction wheel actuated encoder is used for measuring the accurate car position.

☞ The signal may be **used only as reference** to another available source.

☞ The encoder is delivered with 43 ft (13m) cable (without plug).

top-mounted version

side-mounted version



3.6.1.1 Specification of the encoder

type	power supply	axle forces (applied)	accuracy
Kuebler A3192	10 .. 30 VDC	axial: 50 N radial: 100 N	0.8377 pulses/mm 805 pulses/revolution (250 pulses/rev. on encoder wheel)

3.6.1.2 Wiring assignment

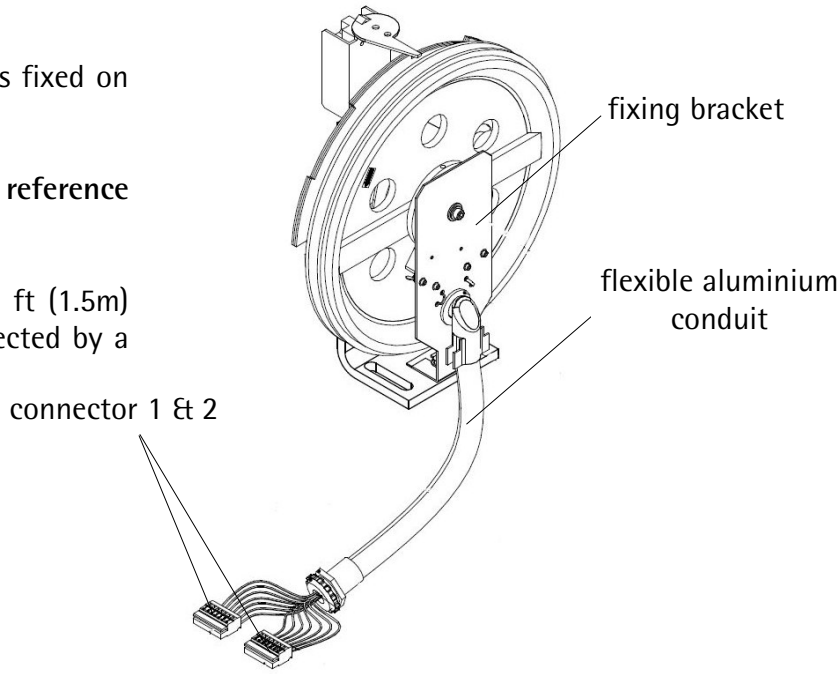
red	yellow /red	white	white /brown	green	green /brown	yellow	yellow /brown	black	yellow /black
10...30 VDC	Sense Vcc	channel A	channel inverse A	channel B	channel inverse B	channel N	channel inverse N	GND	Alarm

3.6.2 magnetical encoder

The impulses of a magnet ring, which is fixed on the rope pulley, are measured.

☞ The signal may be **used only as reference** to another available source.

☞ The encoder is delivered with 5 ft (1.5m) cable (with plug), which is protected by a flexible conduit.

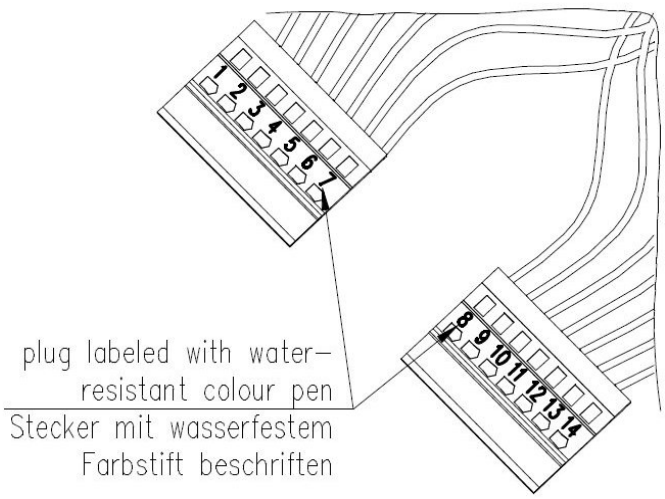


3.6.2.1 Specification of the magnet sensor

Typ type	Versorgung *power supply*	Ausgang output	Genauigkeit *accuracy*
Phoenix P9500	7,5 .. 13 VDC	20mA / 5VDC	800 pulses/rev.

3.6.2.2 Wiring assignment

	Location	Color Code	Designation
Connector 1	PIN 01	RED	VCC
	PIN 02	BLACK	GROUND
	PIN 03	ORANGE	CHANNEL –B
	PIN 04	GREEN	CHANNEL B
	PIN 05	BROWN	CHANNEL –A
	PIN 06	YELLOW	CHANNEL A
	PIN 07	BARE	SHIELD
Connector 2	PIN 08	RED	VCC
	PIN 09	BLACK	GROUND
	PIN 10	ORANGE	CHANNEL –B
	PIN 11	GREEN	CHANNEL B
	PIN 12	BROWN	CHANNEL –A
	PIN 13	YELLOW	CHANNEL A
	PIN 14	BARE	SHIELD



3.7 Additional flyweight kit (optional)

The flyweight kit is used only during installation phase to reduce tripping speed of the overspeed governor.

☞ For periodic checks the flyweight kit must not be used, these checks will be done with remote control or manual tripping device.

(1) Check the table below for the required number of additional fly weights

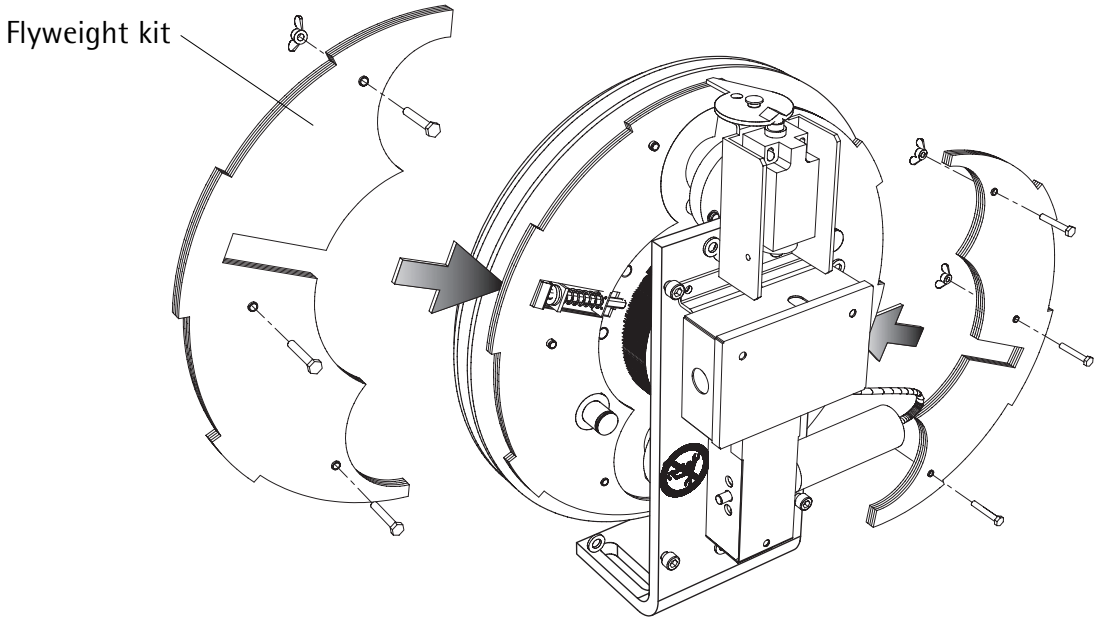
(2) Mount the additional flyweights to the overspeed governor before starting shaft installation

☞ Mount the same number of additional flyweights on each flyweight wing of the overspeed governor.

(3) Start installing the shaft equipment

(4) Remove the additional flyweights before starting elevator first drive

(1-4)



nominal speed NS [ft/min]	number of additional flyweight packages to be put on <u>each</u> flyweight wing	availability
150 ... 249	1	only for governors with 306mm unhardened rope pulley
250 ... 500	2	
>500	-	not available

3.8 Attaching the safety cover

Every governor is equipped with a rope guard.

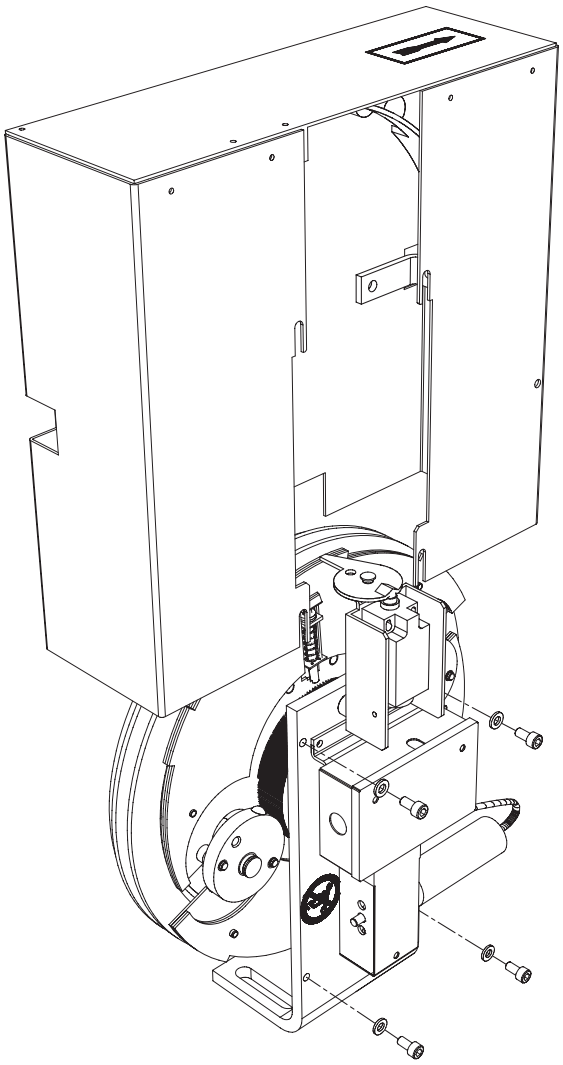
Allowance of removing safety covers see at chapter 1.6 "safety covers".

It is essential to have a safety cover for OL35-NA.

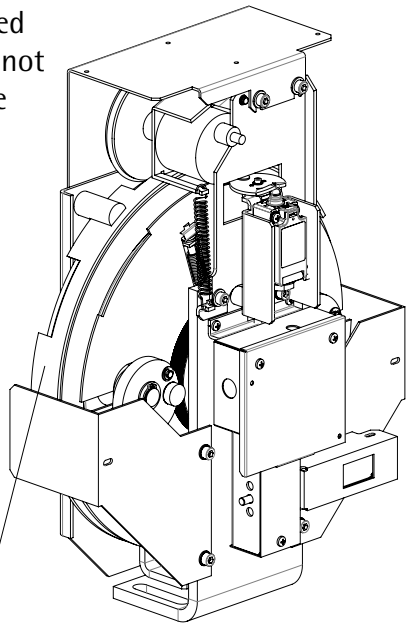
For the overspeed governor wheel, rope guard is generally prescribed.

3.8.1 Removable cover for 12" (306mm) pulley

Remove cover off the overspeed governor as shown:

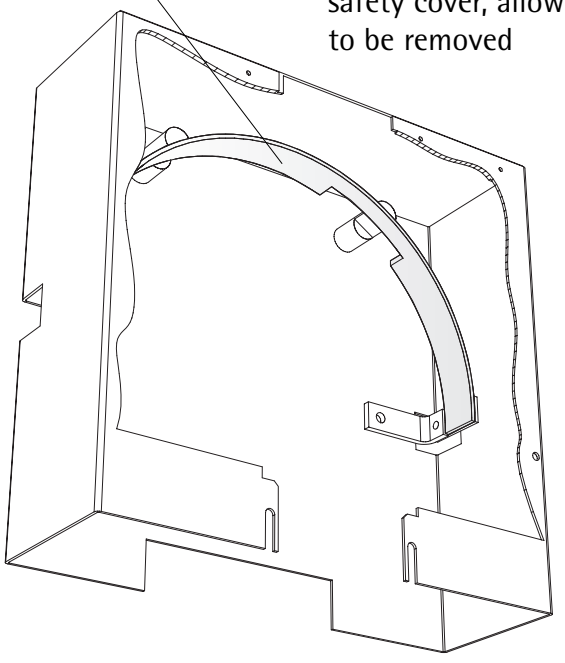


Partly enclosed safety cover, not allowed to be removed



Seismic Rope guard

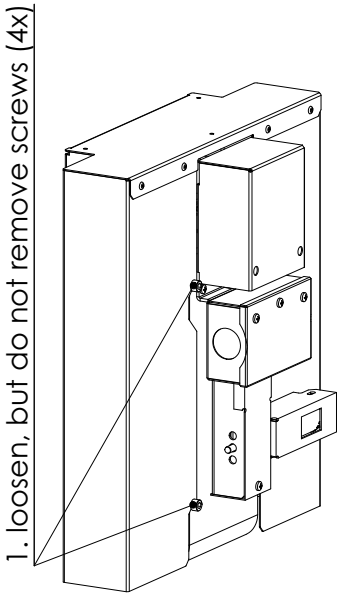
Completely enclosed safety cover, allowed to be removed

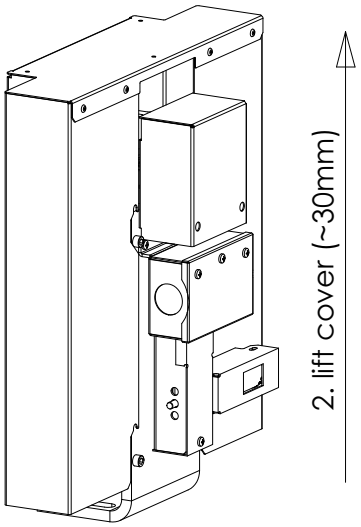


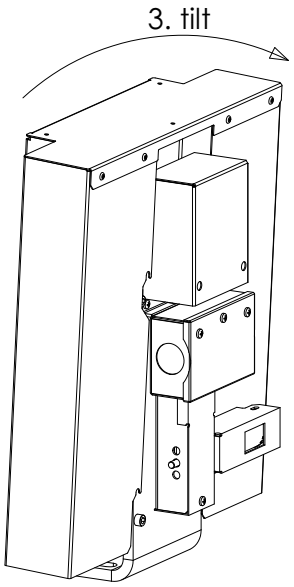
3.8.2 Removable cover for 8" (200/203mm) pulley

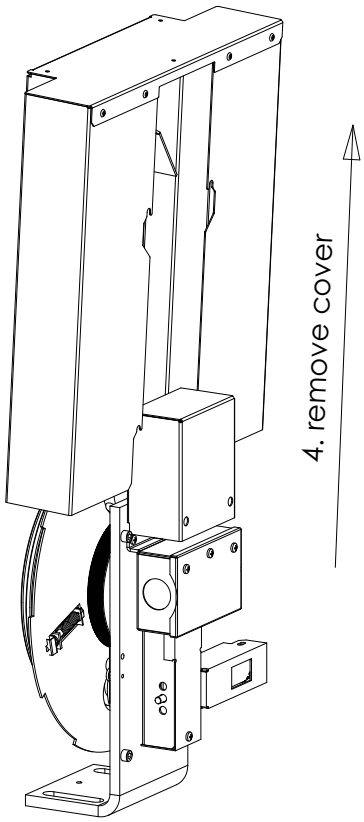
Remove cover off the overspeed governor as shown:

Screws don't have to be removed completely, it is sufficient enough to losen them, so they can not fall off.









4 Function testing

Granting that the installation will be done under strict observance of all standards the operational reliability of the system is assured. The quality and function of individual components are subject to thorough inspection and is checked before dispatch from our works.

The overspeed governor 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 elevator shaft before commencing the test run -> Risk of crushing injuries!

The entire elevator 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 salient bolts or other dangerous restrictions well in advance.
A **static functions test** should be carried out afterwards.

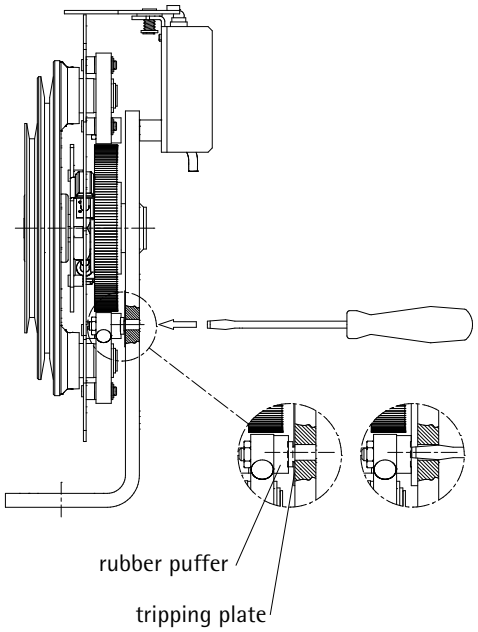
Static functions test:

Overspeed governor **with manual tripping**:
- Trigger the overspeed governor manually by pushing a screwdriver trough the hole on the back of the governor stand
- Let the lift car slowly descend

Overspeed governor **with remote control**:
- Operate the remote tripping function
- Let the lift car slowly descend

The overspeed governor must actuate the safety gear. The overspeed contact must interrupt the safety circuit by activating the overspeed contact.

Reset the overspeed governor, the safety gear and the overspeed contact!



Overspeed Governor OL35-NA

Blatt/*sheet* D7AKMGB.26
Datum/*date* 07.11.2002
Stand/version D-25.11.2009
Geprüft/*approved* WAT/MZE

Operating instructions

Testing all functions

Refer to **"Section 8.10 Acceptance inspections and tests" of the ASME A17.1**.

In the following the check of electrical tripping, the release of the safety gear as well as the verification of the tripping speed is described.

The operation of the electrical tripping (CS) must be checked in both directions of movement.

Check of tripping speed (CS / TS):

- Hoist the governor rope off from the wheel.
- Rotate the governor manually in tripping direction - Simultaneously measure the speed from the pulley groove with a speedometer.
- Accelerate the rotation speed - as slow as possible - until the speed governor triggers electrical and mechanical.
- Compare the measured value with the values given in the chapter 4.1.
- Reinstall the governor rope after successful testing!

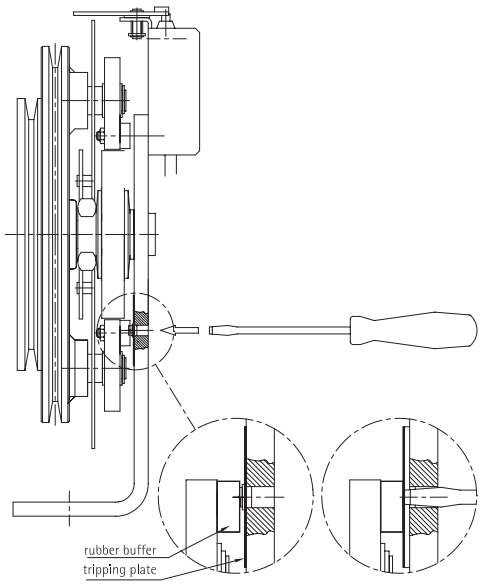
The electrical tripping must be checked in up direction too - the governor triggers **only** electrically in up direction.

The resulted figures may not be exactly (up to a few percent) the same as on the type label, when they are it is still correct.

Reason:

a) Figure in label is the nominal as ordered (for tolerances see 4.1).
b) The un-defined acceleration via hand possibly cause different measuring results. The acceleration should be as less as possible (~0.10m/s²)

The governor must be replaced if the measured tripping speeds don't correspond roughly with the values in chapter 4.1. **Adjustments on site are not allowed!**



Trigger testing is a **dynamic functions test** that can be carried out with or without the car rated load.

No one should be in the car when carrying out test runs or functions tests!

After each test, the contact plate must be reset by hand or by the use of the remote control.

Check of the electrical tripping (CS):

- Let the car ascent at rated speed
- Trigger the speed governor manually (by pushing a screwdriver trough the hole on the back of the governor stand) or by the use of the remote control

The overspeed governor must stop the elevator electrically by interrupting the safety circuit.

Check of the mechanical tripping (TS):

- Let the car descend at rated speed
- Trigger the speed governor manually (by pushing a screwdriver trough the hole on the back of the governor stand) or by the use of the remote control

The overspeed governor must stop the elevator mechanical by actuating the safety gear.

4.1 Tripping speed adjustment

The overspeed governor of the car and counterweight (CWT) are adjusted at the factory to the following values.

	Overspeed governors with 306mm rope pulleys											
	Application CAR						Application CWT					
Nominal speed NS ft/min (m/s)	Contact speed CS_{DOWN} ft/min (m/s)		Contact speed CS_{UP} ft/min (m/s)		Tripping speed TS ft/min (m/s)		Contact speed CS_{DOWN} ft/min (m/s)		Contact speed CS_{UP} ft/min (m/s)		Tripping speed TS ft/min (m/s)	
	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
100 *(0,51)*	110,5 *(0,561)*	130,0 *(0,660)*	Values from column „CS_{DOWN} min." for CAR	Values from column „TS max." for CAR	133,0 *(0,676)*	140,0 *(0,711)*	121,6 *(0,617)*	143,0 *(0,726)*	Values from column „CS_{DOWN} min." for CWT	Values from column „TS max." for CWT	146,3 *(0,743)*	154,0 *(0,782)*
150 *(0,76)*	165,8 *(0,842)*	195,0 *(0,991)*			199,5 *(1,013)*	210,0 *(1,067)*	182,3 *(0,926)*	214,5 *(1,090)*			219,5 *(1,115)*	231,0 *(1,173)*
200 *(1,02)*	217,9 *(1,107)*	229,4 *(1,165)*			242,3 *(1,231*	255,0 *(1,295)*	239,7 *(1,218)*	252,3 *(1,282)*			266,5 *(1,354)*	280,5 *(1,425)*
300 *(1,52)*	320,6 *(1,629)*	337,5 *(1,714)*			356,3 *(1,810)*	375,0 *(1,905)*	352,7 *(1,792)*	371,3 *(1,886)*			391,9 *(1,991)*	412,5 *(2,095)*
350 *(1,78)*	374,1 *(1,900)*	393,8 *(2,000)*			415,6 *(2,111)*	437,5 *(2,222)*	411,5 *(2,090)*	433,1 *(2,200)*			457,2 *(2,323)*	481,3 *(2,445)*
500 *(2,54)*	525,8 *(2,671)*	553,5 *(2,812)*			584,3 *(2,968)*	615,0 *(3,124)*	578,4 *(2,938)*	608,9 *(3,093)*			642,7 *(3,265)*	676,5 *(3,437)*
600 *(3,05)*	627,0 *(3,185)*	660,0 *(3,353)*			702,7 *(3,570)*	732,0 *(3,719)*	661,5 *(3,360)*	696,3 *(3,537)*			741,4 *(3,766)*	772,3 *(3,923)*
700 *(3,56)*	728,2 *(3,699)*	766,5 *(3,894)*			809,8 *(4,114)*	843,5 *(4,285)*	768,2 *(3,903)*	808,7 *(4,108)*			854,3 *(4,340)*	889,9 *(4,521)*

	Overspeed governors with 200/203mm rope pulleys						
	Application CAR						Application CWT
200 *(1,02)*	237,5 *(1,21)*	250 *(1,27)*	see table above	see table above	266 *(1,351)*	280 *(1,422)*	not available

Adjustment tolerances (valid for 306mm rope pulleys)		
NS	Contact speed CS (CAR)	TS
≤ 150fpm, (≤ 0,8 m/s)	CS_{DOWN} -15%/+0%	TS -5%/+0%
> 150fpm & ≤ 500fpm (> 0,8 m/s & ≤ 2,54 m/s)	CS_{DOWN} -5%/+0%	TS -5%/+0%
>500fpm (> 2,54 m/s)	CS_{DOWN} -5%/+0%	TS -4%/+0%

Contact speed **CS:**
(for car side valid only)
$CS_{DOWN} \leq 1{,}0 \times TS$ for NS ≤ 0,762 m/s
$CS_{DOWN} \leq 0{,}9 \times TS$ for NS > 0,762 m/s

5 Maintenance, inspection and repair

5.1 Maintenance and inspection

Refer to **"Section 8.11 Periodic inspections and tests" of the ASME A17.1**.

The overspeed governor is maintenance free. The whole installation is designed so that no large maintenance operations need to be carried out during damage free operation of the installation. The frequency of periodic inspections and tests shall be established by the authority having jurisdiction (recommended intervals 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. It is recommended that control checks and servicing be carried out before legally prescribed functional tests.

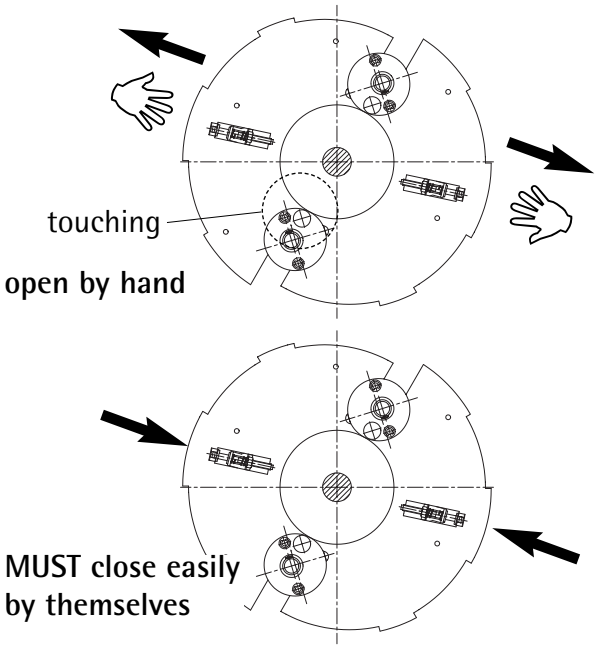
The elevator installation must be immediately taken out of use should any damage or irregularities arise which could possibly impair operational safety.

Please contact WITTUR if you have any problems or queries.

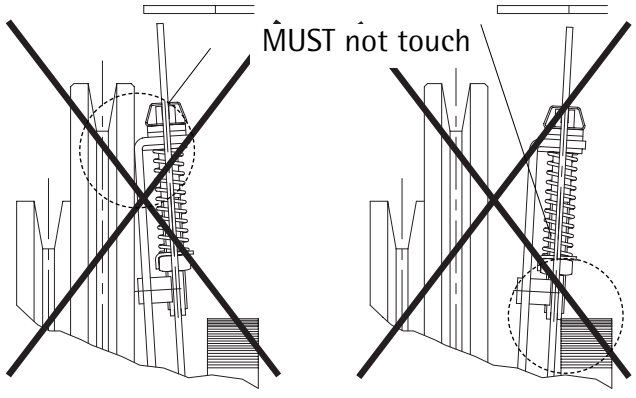
Maintenance work should be carried out with utmost care in order to guarantee safe installation operation.

5.1.1 Maintenance and inspection check list

- Test the governor twice a year to see that it is in working order
- Check the overspeed governor and accompanying components for damage and deformation
- Check the attachment of the overspeed gov.
- Check the operation of the overspeed contact
- Check the elongation and condition of the governor rope (refer to the Chapter "Carrying out repairs")
- Check the flyweights (performance of the springs, proper operation/movement)



- Check the axial movement of the flyweights

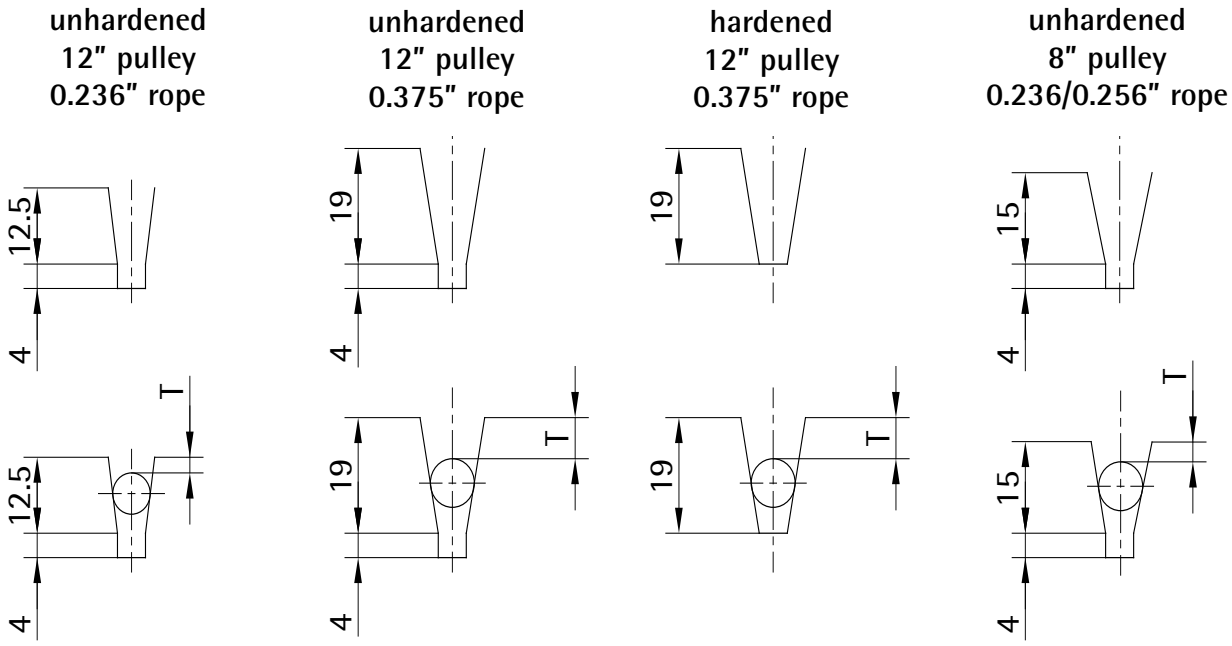


Do not adjust the flyweight-springs or any other settings! If the adjustment of the overspeed governor is faulty, please contact WITTUR.

Overspeed Governor OL35-NA

Operating instructions

- Check the condition (wearing) of the wheel rope grove



After getting the maximum allowed wear (=Tmax), **the governor must be re-placed!**

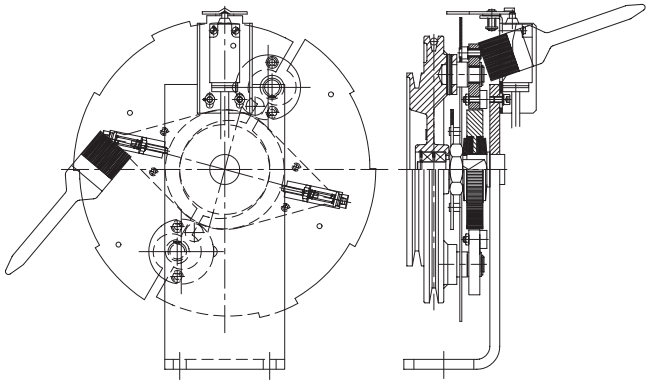
check for wear:

pulley groove type	unhardened				hardened
pulley diameter	8" (200/203mm)		12" (306mm)		
rope diameter	0.236" (6mm)	0.256" (6.5mm)	0.236" (6mm)	0.374" (9.5mm)	
max. allowed wear T_{max}	0.335" (8.5mm)	0.275" (7mm)	0.315" (8mm)	0.236" (6mm)	0.138" (3,5mm)

Overspeed Governor OL35-NA

Blatt/*sheet* D7AKMGB.30
Datum/*date* 07.11.2002
Stand/*version* 10.03.2021
Geprüft/*approved* WAT/KKr

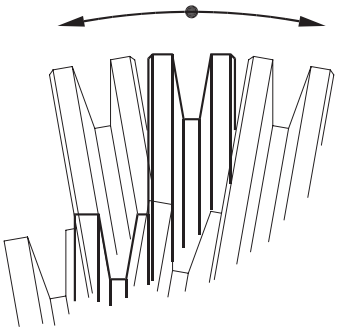
Operating instructions



Keep the governor clean, especially the fly-weight springs, because they are chiefly responsible for proper operation and correct tripping speed!

- Check the condition of the wheel bearing by listening to the running noise

the pulley MUST NOT move in axial direction!



Check of tripping speed (CS / TS):

- Hoist the governor rope off from the wheel.
- Rotate the governor manually in tripping direction - Simultaneously measure the speed from the pulley groove with a speedometer.
- Accelerate the rotation speed - as slow as possible - until the speed governor triggers electrical and mechanical.
- Compare the measured value with the values given in the chapter 4.1.
- Reinstall the governor rope after successful testing!

The electrical tripping must be checked in up direction too - the governor triggers **only** electrically in up direction.

The resulted figures may not be exactly (up to a few percent) the same as on the type label, when they are it is still correct.

Reason:

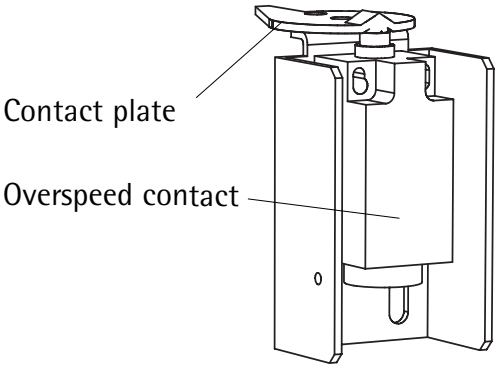
a) Figure in label is the nominal as ordered (for tolerances see 4.1).
b) The un-defined acceleration via hand possibly cause different measuring results. The acceleration should be as less as possible (~0.10m/s²)

The governor must be replaced if the measured tripping speeds don't correspond roughly with the values in chapter 4.1. **Adjustments on site are not allowed!**

Overspeed Governor OL35-NA

Operating instructions

- Check the function of the Overspeed contact at every service visit, at least once a year.
  Turn contact plate by hand so that contact cam on Overspeed contact is pushed. If controller is in normal mode you should not be able to drive the elevator.



Lubrication will reduce the braking force of the overspeed governor and therefore it is **strictly prohibited to lubricate any part of the governor or the governor rope!**

5.1.2 Brake force of the OL35-NA governor

Setting of brake force (pull through force):
The brake force of the overspeed governor is adjusted in the factory to the nominal values (see table).
The maximum allowed tolerances even during its lifetime is

- 168 lbf ± 56 lbf (750N±250N)
- or 180 lbf ± 45 lbf (800N±200N)
- or 205 lbf ± 42 lbf (915N±185N)

This means that according to ASME A17.1 the **maximum required lifting force to operate the safety gear is 67lbf/81lbf/99lbf (300N/360N/438N)**, (60% of the pull-through tension developed by the governor).
Influences that will reduce the brake force:
a) Lubrication inside the brake
b) Wear of the brakelining (see lifetime of the brake)
c) Damaged or broken plate spring

pulley groove	unhardened		hardened
pulley diameter	8" (200/203mm)	12" (306mm)	
nominal (adjustment) value	180lbf (800N)	168lbf (750N)	205lbf (915N)
min. brake force	135lbf (600N)	112lbf (500N)	164lbf (730N)
max. brake force	224lbf (1000N)	224lbf (1000N)	247lbf (1100N)
max. safety gear lifting force	81lbf (360N)	67lbf (300N)	99lbf (438N)

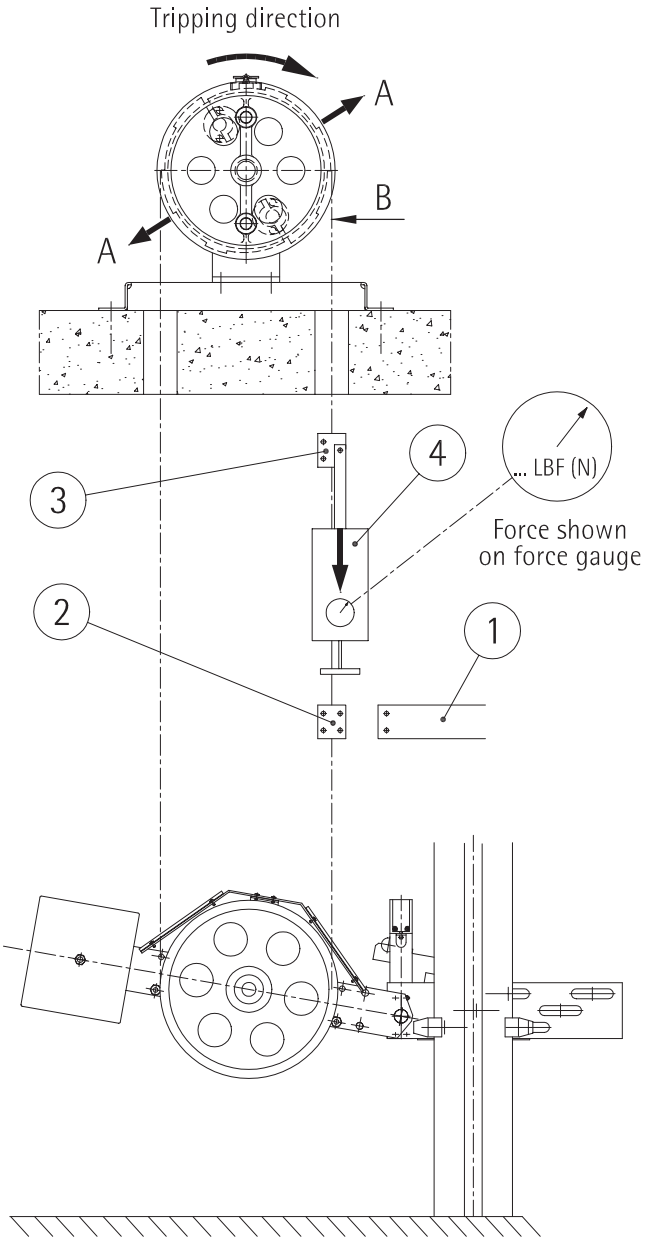
Lifetime of the brake:
a) Maximum 250 turns with maximum 15 turns per test
b) If more than 10 turns per test, the brake of the governor must cool off for a minimum of 30 minutes.

Overspeed Governor OL35-NA

Operating instructions

Measuring the brake (pull through) force:

a) Detach the safety gear lever (1) from the rope anchorage (2)
b) Fasten a clamp (3) with a force gauge (4) to the governor rope
c) Open the flyweight by hand (see mark A) as long as they are going in contact with the trip wheel shown at mark B.
d) Pull down the force gauge in the tripping direction as long as the governor pulley or/and the governor rope starts to move.
e) The shown value must be higher then the specified minimum brake force (see table at 5.1.2).



If the brake force is smaller than the specified minimum brake force, the overspeed governor must be replaced!

5.1.3 Sliding force of the rope

If in the process of measuring the brake force, the governor rope moves while the pulley does not move, then the sliding force of the rope inside the V-groove is already smaller than the adjusted brake force. This situation is acceptable as long as the brake force is larger than the minimum speciefied brake force (see table at 5.1.2).

Normally, with unworn V-groove, the sliding force of the rope is higher than the maximum brake forces (see table at 5.1.2).

Conclusion: Sliding force of the rope min. 112 lbf (500N) for 306mm unhardened rope pulley, 135lbf (600N) for 200/203mm unhardened rope pulley or min. 167lbf (730N) for 306 mm hardened rope pulley.

5.2 Carrying out repairs

As a rule, the overspeed governor should neither be taken apart or altered in any other way (sealants, sealing wax). This also applies to repairs. Damage or deformation of the tension weight or mounting supports (i.e. as result of bending or heating) cannot be repaired or straightened.

It is forbidden to replace faulty or worn parts.

The reasons are:
- Liability and safety engineering reasons
- Only official spare parts are to be used

Elevator installation operation without a overspeed governor, even for short periods of time, is forbidden.

The following repairs should be carried out on site by qualified service personnel:

- Tensioning the governor rope

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

5.2.1 Tensioning the governor rope

Slight additional tensioning of the governor rope may be required after the commissioning of the elevator installation or after longer usage.

Pay attention to a proper operation sphere of the tension weight (sufficient movement).

- Move the tension weight on the guide rails
- Adjust the governor rope tension on the rope socket

5.3 Disposal of waste

Observe the country-specific laws, directives, standards and guidelines for the disposal.

5.4 Spare Parts

There are no standard spare parts defined / available for the overspeed governor.

6 Revision table

Issue	Date	Description of change	CR
J	10.03.2021	adapted to new variants	CRW-11413

WITTUR manufacturing locations

Product manufacturer reference can be found on the product type label.

ARGENTINIA

WITTUR S.A.
Av. Belgrano 2445
Sarandi - Pcia. de Buenos Aires, Argentinia

AUSTRIA

WITTUR Austria GmbH
Sowitschstrasse 1
3270 Scheibbs, Austria

BRAZIL

WITTUR LTDA
Rodovia Celso garcia Cid
1406 Cambé Parana, Brazil

CHINA

WITTUR Elevator Components (Suzhou) Co. Ltd.
18 Shexing Road, FOHO Economic Development Zone, Wujiang City, Jiangsu Province,
P.R. China 215214

GERMANY

WITTUR ELECTRIC DRIVES GMBH
Offenburger Str. 3
01189 Dresden, Germany

ITALY

WITTUR S.P.A.
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43052 Colorno, Italy

INDIA

WITTUR Elevator Components India Pvt. Ltd.
Survey nos 45/1B , 3 & 4 , Pondur Village
Sriperumbudur – 602 105
Tamil Nadu, India

SLOVAKIA

WITTUR S.R.O.
Priemyselná ulica 2747/7
963 01 Krupina, Slovakia

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Polig. Ind. Malpica, Calle E - Parcela 8
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