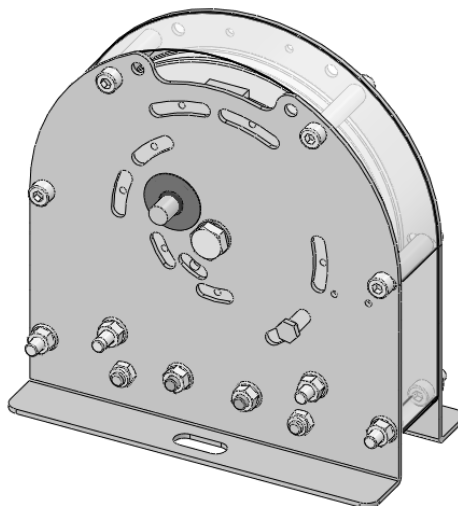


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 - 3.3 TRIPPING SWITCH
 - 3.4 ANTI-SLIDING PROTECTION
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 - 3.6 CONTACT OF THE TENSION PULLEY
4. ADJUSTMENT
5. MAINTENANCE AND USEFUL LIFE
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 - 5.2 OVERSPEED GOVERNOR TRIPPING
 - 5.3 SAFETY CONTACTS AND COILS
 - 5.4 USEFUL LIFE

INSTRUCTIONS

1.- GENERAL

1.1 NORMAL USE

The SLC LF20 CA / SLC LF30 CA overspeed governor is a safety component in compliance with annex III of the directive 2014/33/UE and it is certified according to the said directive.

The overspeed governor is aimed to be used solely as a safety component, in compliance with the directive 2014/33/UE. Any other use has not been assessed and is therefore not foreseen.

1.2 GUARANTEE

LUEZAR-ECO,S.L. guarantees, for the period established by the current legislation, the functioning of its product against any fault in the materials and assembly during its manufacturing.

This guarantee will not be valid in the following cases:

- *Inappropriate use of the overspeed governor.*
- *Faulty installation of the overspeed governor and its accessories.*
- *Superficial impacts.*
- *Faulty electrical connections.*
- *Inappropriate maintenance.*

And, in general, non-compliance with the instructions described in this handbook.

The features of the overspeed governor are regulated and sealed in factory. The original features of the overspeed governors cannot be manipulated or modified under any circumstances. Any action on them must be carried out by LUEZAR-ECO S.L.

LUEZAR-ECO S.L. reserves all rights to modify the content of this document without prior notice, thus cancelling the validity of previous revisions.

1.3 TRANSPORT AND STORAGE

The overspeed governor will be transported from the factory to its assembly in appropriate packaging, so that it is protected from bumps, humidity, dirtiness and poor weather conditions at all times.

At the reception of the overspeed governor and before assembling it, it must be checked that the packaging has not been damaged and that the features of the product received coincide with the order and with the characteristics of the installation.

Overspeed governors do not have a limited shelf life, but they will be returned to the factory in order to be checked by LUEZAR-ECO,S.L., after agreement, if any superficial damaged caused by bumps or any beginning of rusting is detected when the product is unpackaged.

INSTRUCTIONS

1.4 FUNCTIONING PRINCIPLE

The SLC LF20 CA / SLC LF30 CA overspeed governor detects when the lift surpasses its nominal speed by a certain value and brings it to a standstill, either by directly triggering the safety gear or by stopping the machine via an electrical switch.

The full device is composed of a tension pulley, a metallic cable and the overspeed governor. The cable goes along the grooves of the overspeed governor and the tension pulley and is fixed at its edges to the linkage of the safety gear, so that when the centrifugal overspeed governor trips, it brakes the cable by adherence and activates the safety gear.

1.5 GENERAL FEATURES

The general features of the SLC LF20 CA / SLC LF30 CA overspeed governor are as follows:

	LF 20 CA	LF 30 CA
• Permissible tripping speed:	0,43÷ 3,15 m/s	0,80÷ 2,05 m/s
• Permissible nominal speed:	≤ 2,74 m/s	≤ 1,78 m/s
• Driving rope:	Round strand rope made of steel wire	
• Diámetro cable:	6 - 6,5 mm	6 - 8 mm
• Diameter pulley:	200 mm	300 mm
• Arrangement:	Machine room / Shaft	
• Permissible application:	Progressive safety gear Instantaneous safety gear	
• Tripping direction:	Upwards-downwards Only downwards	
• Tension forces:		

LF 20 CA		
Tension at test (New cable and groove)	Tension	
	Downwards	Upwards
602	717	----
1203	1030	442

LF 30 CA		
Tension at test (New cable and groove)	Tension	
	Downwards	Upwards
667	1010	382

INSTRUCTIONS

The tripping speed of the overspeed governor and the activating speed of the overspeed switch are regulated by default at the factory, as shown on the following chart: These adjustment speeds may differ due to the specific needs of the installation, provided they comply with the requirements of section 5.6.2.2.1 of standard EN81-20.

Nominal speed NS (m/s)	Overspeed CS (m/s)	Tripping speed TS (m/s)
0,3	0,37	0,43
0,5	0,6	0,65
0,63	0,73	0,8
0,8	0,95	1,05
1	1,2	1,3
1,25	1,5	1,65
1,6	1,85	2
1,8	2,1	2,3
2	2,4	2,55
2,5	2,9	3,15

1.6 MARKING

In compliance with section 5.6.2.2.1.8 of standard EN81-20, the overspeed governor has an identifying label with the manufacturing number (F.Nr.), the date of manufacturing (F-Date), the nominal speed (rated) and the tripping speed of the overspeed governor (tripping), as well as the name of the manufacturer, exam of type certificate number and type of device.

 Schlosser, Luezar & CVR 	CENTRIFUGAL OSG Made by LUEZAR-ECO, S.L. Pol. Malpica, Grupo Quejido, 69 50016- Zaragoza- Spain	SLC-LF20CA	F.Nr.
			F-Date
		Vel.nominal/Nenn/rated m/s	
		Vel.disparo/Auslöse/Tripping m/s	
1027 EU-OG 233			

 Schlosser, Luezar & CVR 	CENTRIFUGAL OSG Made by LUEZAR-ECO, S.L. Pol. Malpica, Grupo Quejido, 69 50016- Zaragoza- Spain	SLC-LF30CA	F.Nr.
			F-Date
		Vel.nominal/Nenn/rated m/s	
		Vel.disparo/Auslöse/Tripping m/s	
1027 EU-OG 244			

INSTRUCTIONS

The tripping direction of the governor, bi-directional, to the left or to the right, is marked on a label on the blocking disk, with the following symbols:

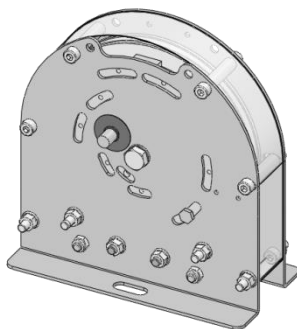
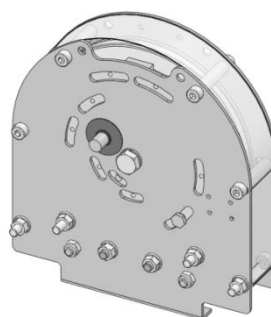


It is very important to check that the data reflected on the identifying label are in accordance with the characteristics of the installation and that once assembled, the tripping direction of the governor is correct.

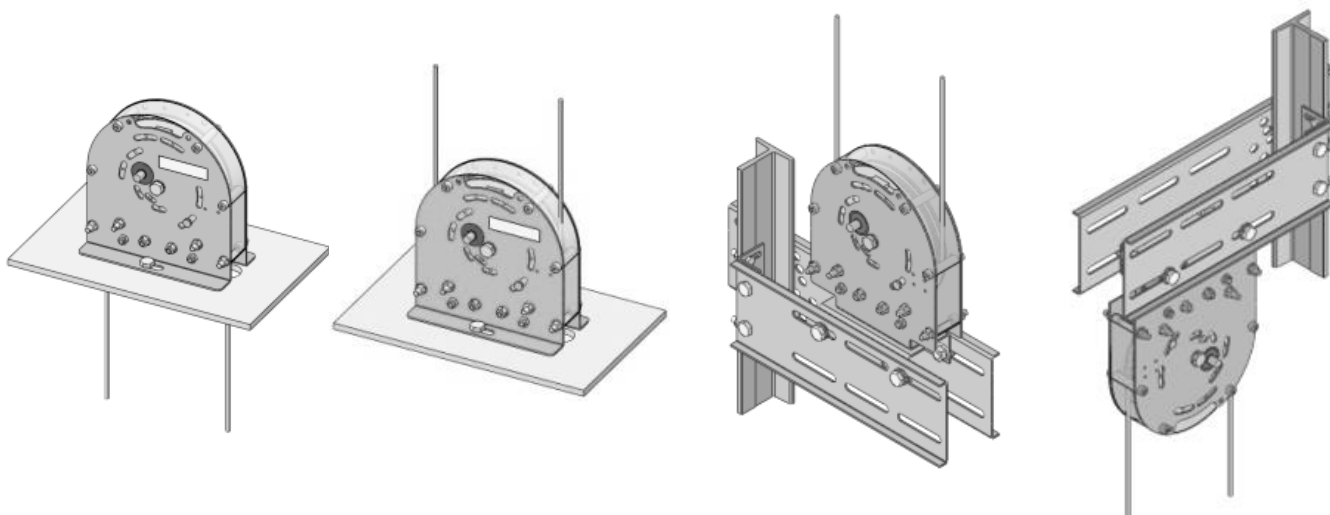
2.- ASSEMBLY

The instructions described below are for general assembly guidance. There are also specific assembly instructions based on the different devices of each customer.

Depending on the installation, the linkage system of the governor may be CAE or CAI

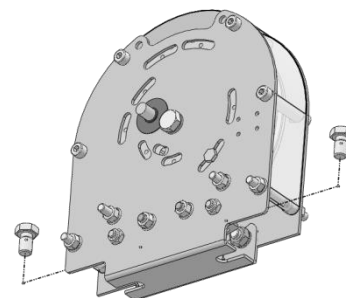
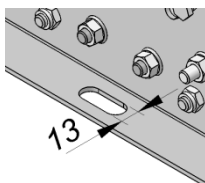
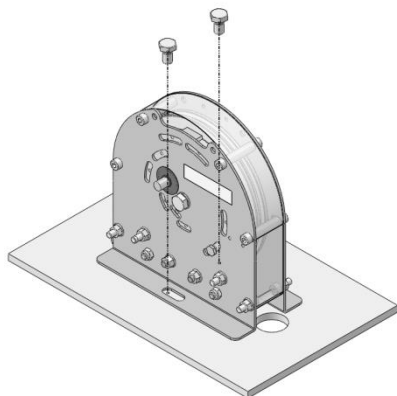
**CAE****CAI**

The governor can be assembled on the slab of the machine room or in the shaft, both at the upper and lower parts. It can also be assembled on the rail.

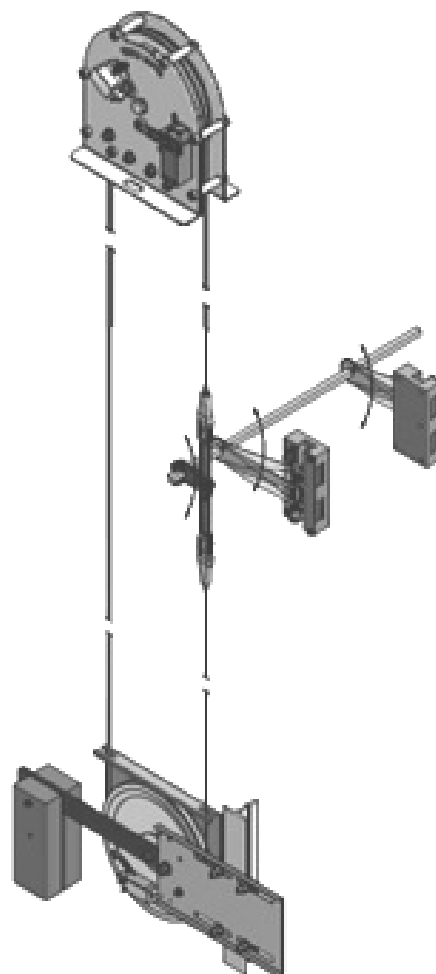
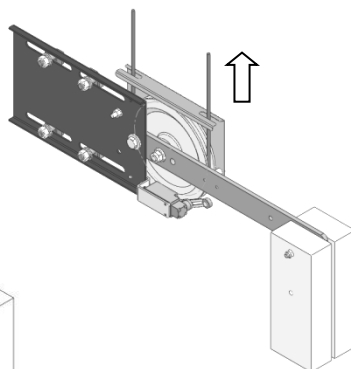
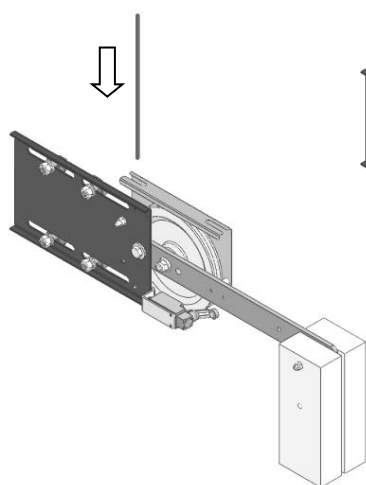
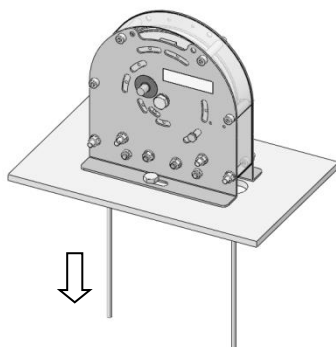
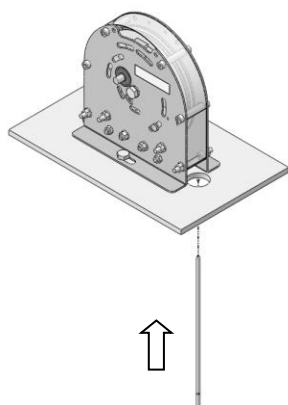


INSTRUCTIONS

Firstly, the overspeed governor must be fixed by means of M12 screws, as shown on the figure, depending on whether the model is CAE or CAI. Then, the tension pulley is assembled.



Next, the toothed belt must go through the pulley of the governor and the tension pulley. Finally, both edges of the cable are fixed to the linkage of the safety gear, by using the connecting rods.



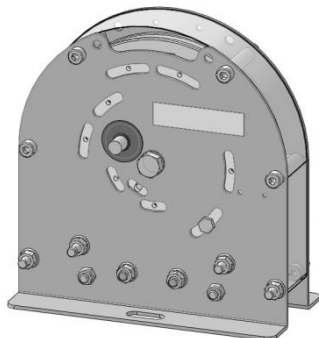
INSTRUCTIONS**3.- CONNECTION****3.1 REMOTE TRIPPING**

In compliance with section 5.6.2.2.1.4 c) 1) of section EN81-20, the governor has a remote tripping system, composed of an electromagnet that acts directly on the centrifugal masses and triggers the governor tripping.

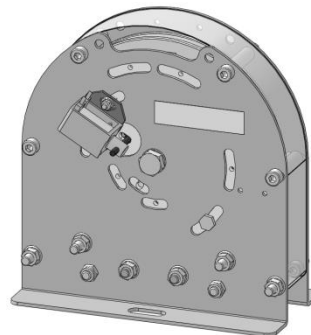
The model of electromagnet used is Nafsa ER30/C. It must be assembled as shown on the figure and its characteristics are as follows:

Duty-cycle	ED25%
Consumption	30W
Max. excitation time	30 s
Standardised tensions:	24Vdc; 48Vdc; 110Vdc; 190Vdc; 230Vac
Nominal intensities:	1.2A; 0.5A; 0.27A; 0.16A; 0.28A

Connect the electromagnet to the electrical installation, taking into account the values of voltage and intensity. The electromagnet is only supplied when manually activating the device that performs the tripping test and for a lapse of time no longer than the maximum excitation time.



MANUAL TRIPPING



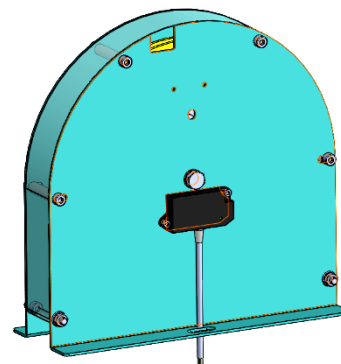
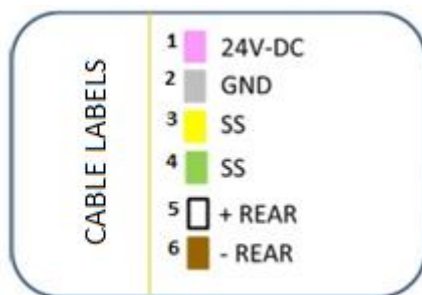
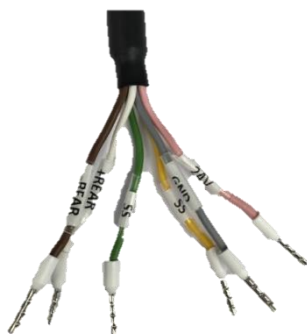
REMOTE TRIPPING

3.2 SEL-20 OVERSPEED SWITCH

In compliance with section 5.6.2.2.1.6 a) of standard EN81-20, the governor has an electrical safety switch that commands the stop of the machine before reaching the tripping speed. If the nominal speed of the lift is not higher than 1m/s, then this device is not necessary, since the safety switch of the safety gear linkage can carry out this function when reaching the tripping speed of the governor.

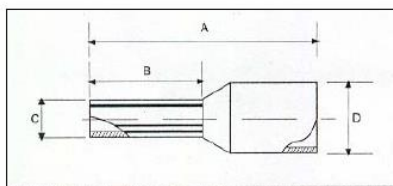
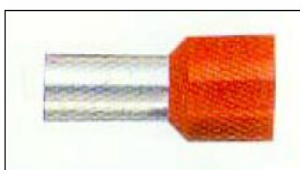
INSTRUCTIONS

SEL-20 device is fitted with 6 terminals and is supplied as shown in the following picture



Terminals of the device supplied are pin-shaped. The cable ends are marked according to the colour code described in the top right image.

Pin connectors dimensions are as follows:



DIN 46228/4

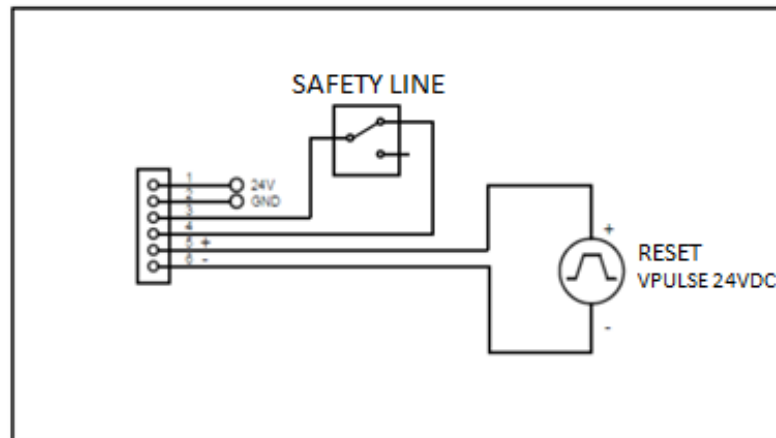
INSULATED PIN CONECTORS	SECTION mm ²	A	B	C	D	COLOUR System "T"
TE-0,50	0,50	14,0	8,0	1,0	2,6	White

The device can be supplied with connectors upon prior agreement with the client.

The following table contains electrical data on the connections of the device.

Colour	Terminal	Description
Pink	1	Device power supply 24 Vdc (+)
Grey	2	Device power supply 0 Vdc (-)
Yellow	3	Safety circuit contact
Green	4	Safety circuit contact
White	5	Device reset power supply 24Vdc (+)
Brown	6	Device reset power supply 0 Vdc (-)

INSTRUCTIONS



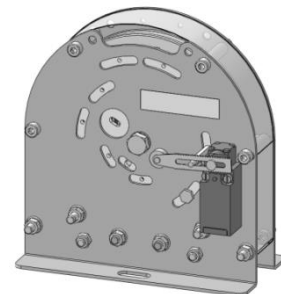
3.3 TRIPPING SWITCH

In compliance with section 5.6.2.2.1.6 b) of standard EN81-20, the overspeed governor has an electrical safety switch which prevents the lift from moving if the overspeed governor is not in its on position after triggering the safety gear.

The model of electrical safety switch is PIZZATO FR 655-S7 (1NC, 1NO) or similar. It must be connected to the series of safeties in the position of normally closed and its return can be manual or automatic.

Its features are as follows:

AC-15 6A/240Vac
 DC-13 0,4A/250Vdc
 IP67

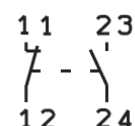


3.4 ANTI-SLIDING PROTECTION

As an option and in compliance with section 5.6.7 of the EN81-20 standard, the speed governor LF 30 CA can include the AD 20H device, and the speed governor LF 20 CA can include AD 10V and AD 20HR devices. These devices can be an integral part of unintended car movement protection measures.

AD20H, AD10V and AD20HR systems comprise:

- Mechanical blocking system
- PIZZATO VF B602 (1NC, 1NO) safety electrical switch.
 - AC-15 6A/240Vac
 - IP20
- NAFSA ERC45-50/XX/C Electromagnet



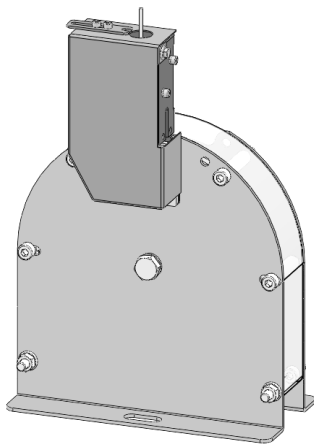
- Duty-cycle ED100%
- Consumption 12W
- Max. excitation time: α
- Standardised tensions: 24Vdc; 48Vdc; 190Vdc; 230Vac
- Nominal intensities 0.47A; 0.24A; 0.06A; 0.10A

INSTRUCTIONS

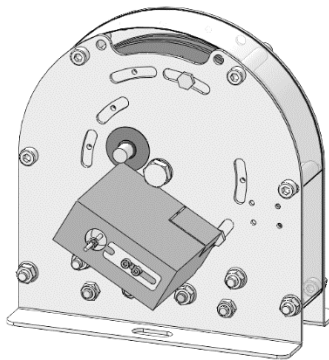
Connect the electromagnet to the electrical installation, taking into account the values of voltage and intensity, so that the electromagnet is permanently supplied during the normal movement of the lift.

Connect the series of safeties to the safety electrical switch in the position of normally closed when the electromagnet is supplied, so that in the absence of the electrical supply or when the electromagnet stops being supplied, the mechanical system triggers and the safety electrical switch is open. When the coil is supplied again, the system returns to its original position.

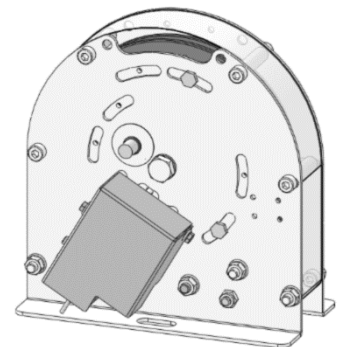
From the moment the electromagnet stops being supplied until the governor trips, the lift can travel between 29mm and 141mm with the LF 20 CA governor and between 42mm and 185mm with the LF 30 CA governor. The minimum travel avoids undesired tripping in load and unload operations.



AD20 H



AD10 V

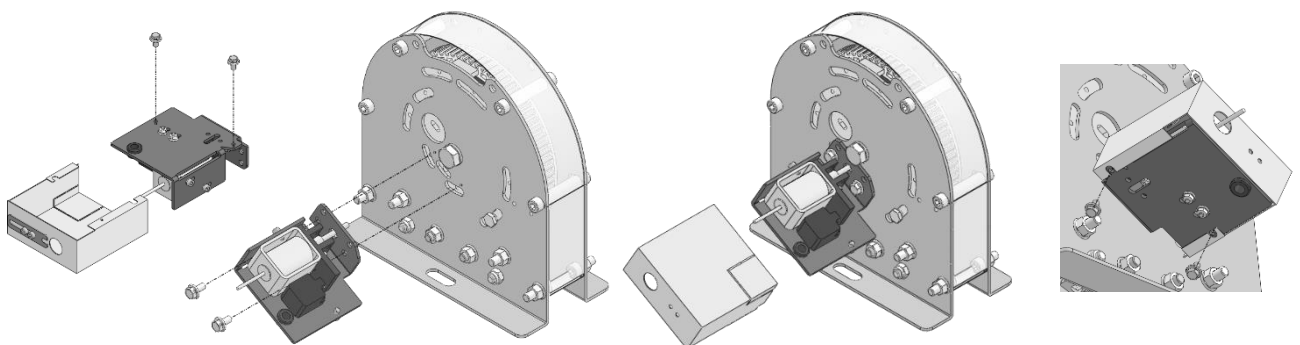


AD20 HR

3.5 NON-SLIP PROTECTION AD 10V ASSEMBLY

If the overspeed governor is equipped with AD10V anti-sliding protection, which due to packaging reasons is supplied disassembled, then the procedure is as follows:

- 1º) Remove the cover of the AD10V system, by removing the M5x8 DIN6921 screws.
- 2º) Assemble the AD10V system with two M6x12 DIN6921 screws, by placing its pivot in the slanted hole of the governor cover.
- 3º) Re-assemble the cover of the AD10V system.



INSTRUCTIONS

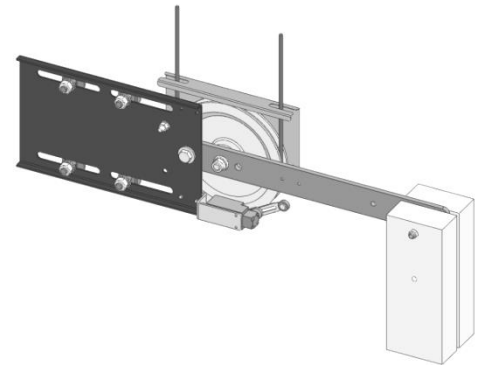
3.6 TENSION PULLEY SWITCH

As an equivalent measure to section 5.6.2.2.1.6 c) of standard EN81-20, the tension pulley has a safety electrical switch which brings the machine to a standstill if it is broken or too stretched.

The model of safety electrical switch is PIZZATO FR 638-S7 (1NC, 1NO) or similar and it will connect to the series of safeties in the position of normally closed.

Its features are as follows:

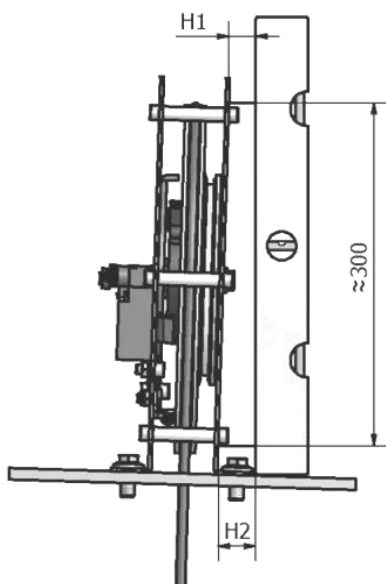
AC-15 6A/240Vac
DC-13 0,4A/250Vdc
IP67



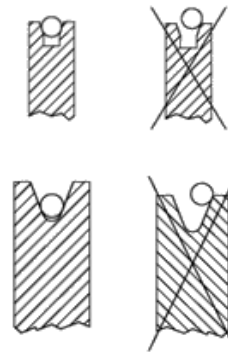
By acting manually on the safety electrical switches of the upper and lower tensioners, check that the lift cannot move.

4.- ADJUSTEMENT

Firstly, verify that the governor is level, by checking that the diversion is not higher than 2mm.



$$H1 - H2 < 2 \text{ mm}$$

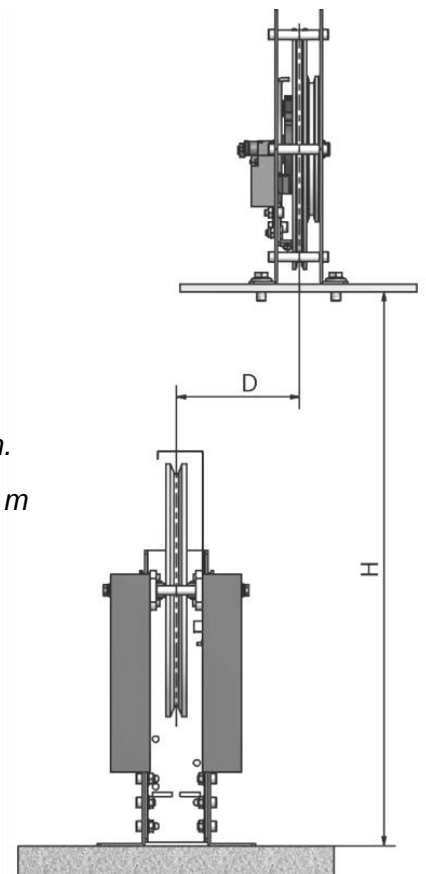


$$D \text{ max} = 10\text{mm} \quad H > 3\text{m.}$$

$$D \text{ max} = 30 \text{ mm} \quad H > 10 \text{ m}$$

After that, verify the verticality between the pulley of the governor and the tension pulley. The Dmax rule must be applicable.

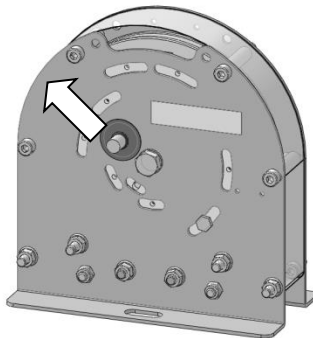
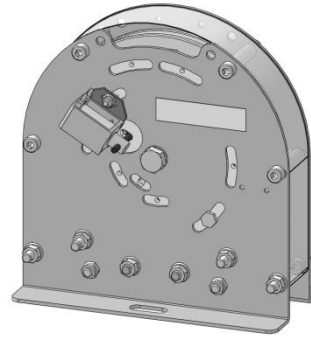
If the governor is not level or the pulley of the governor and the tension pulley are not vertical, then premature wear can occur in both pulleys and the belt could be damaged.



INSTRUCTIONS

In order to check the adjustment, travel the lift several times, paying special attention to the correct entry and exit of the belt in the pulleys, as well as to possible noises and vibrations. In most cases, failures in the final functioning are produced by an incorrect plumbing of the toothed belt or the overspeed governor.

Finally, when carrying out the tests described in section 6.3 "Inspections and tests before implementation" and specifically section 6.3.4 "Shaft safety gear" of standard EN81-20, activate the overspeed governor, either manually or remotely, and check the correct functioning of the overspeed governor-safety gear unit.

**MANUAL TRIPPING****REMOTE TRIPPING****5.- MAINTENANCE**

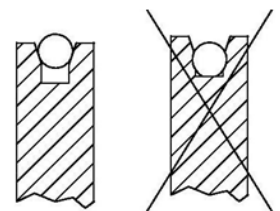
In order to guarantee the correct functioning of the overspeed governor all along its useful life, the following maintenance tasks must be performed with the suggested frequency.

In addition, visual inspections shall be performed annually so as to detect possible superficial damage of components and specifically of the cable.

5.1 CABLE Y GOVERNOR'S PULLEY CABLE AND GROOVE

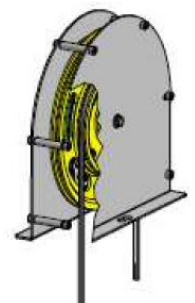
The superficial state of the overspeed governor belt and the state of the groove of its pulley must be checked every three months.

Check that the belt does not touch the bottom of the groove and that there is no dirtiness or oil in the groove of the governor's pulley.

**5.2 OVERSPEED GOVERNOR'S TRIPPING**

This maintenance task is aimed at checking that the governor works properly at the tripping speed that appears on the plate of characteristics. The task shall be performed once every five years.

If the overspeed governor has a test groove, then make the belt go from the pulley of the governor to the pulley of the test groove, travel the lift at nominal speed and check that the overspeed governor works and that it activates the safety gear and brings the lift to a standstill.



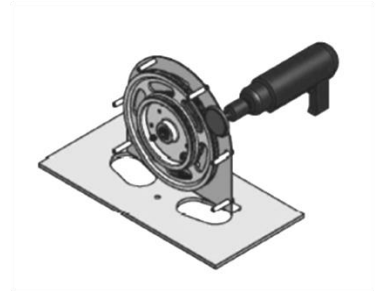
INSTRUCTIONS

If there is no test groove or if we want to check the exact tripping speed of the overspeed governor and the overspeed switch, the following tools will be needed:

- A drill/motor with a toothed pulley.
- A tachometer

The procedure is as follows:

- 1) Remove the belt of the overspeed governor, allowing it to turn freely.
- 2) Fit a rubber pulley to the drill.
- 3) Place the drill pulley on the pulley of the overspeed governor.
- 4) Turn slowly the drill and progressively increase the spins.
- 5) Place the wheel of the tachometer also on the pulley of the overspeed governor and write down the tripping speed of the governor.
- 6) Check that the tripping speed does not differ more than 5% from the speed displayed on the plate of characteristics.
- 7) If the governor includes an overspeed switch, check that it actuates before the mechanical tripping of the governor.

**5.3 SAFETY SWITCHES AND COILS**

We shall annually check that the safety switches of the tension pulley, the SEL-20 overspeed switch, safety switch and coil of the anti-sliding system, the tripping switch and the remote tripping coil work correctly.

5.4 USEFUL LIFE

The useful life of the overspeed governor cannot be defined with regards to a specific period of time; the overspeed governor can work provided the results of the maintenance tests above are satisfactory.

Otherwise, only LUEZAR-ECO,S.L can repair the said overspeed governor or supply a new one, based on the manufacturing number (F.Nr.) displayed on the characteristics plate.

The useful life of the coil is 3,000,000 manoeuvres.

The number of hours of minimum functioning (system in motion) of the toothed belt is 25,000h.