



Annex to the Service Manual for gears

Brake type gears

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Description:

The 2014/33/EU directive prescribes the need to stop the car in case of uncontrolled movements (UCM) and of too high speed even during lifting.

The EN81-20 harmonised standard fully transposes this concept and eliminates the risk by regulating the required devices.

The allowed devices must act:

- a) on the cab, or
- b) on the counterweight, or
- c) on the rope system, or
- d) on the friction sheave, or
- e) on the friction sheave shaft on condition that it is supported in two points only.

The concerned gearboxes comply with condition e).

These gears are called M73-B or M75-B, etc. (where B stands for brake), keep the capacity and speed specifications of the gear families they belong to, but they have a brake on the slow shaft.

This brake can stop the empty cab being lifted by developing the required torque to limit deceleration to 1 g ($1g = 9.81 \text{ m/sec}^2$).



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In case of UCM they must be considered as a part of the device and can be used along with a cab movement detector.

The braking gap in case of lift failure must fall within the limit prescribed by the standards and should be evaluated in each case.

The type-certificate gives information about brake performance, so that it can be applied to each individual case.

Types of brake for each gear:

Gear	Brake	Code	EU certificate
M68B - M76B	ROBA-stop-silence 500	5249022073	EU-BD 761
M65B - M73B	ERS VAR08 1050/1000	5249022057	EU-BD 590
	ROBA-stop-silence 500	5249022073	EU-BD 761
M75B - M83B	ERS VAR08 1050/1000	5249022057	EU-BD 590
PENTAB – PENTA830B	ERS VAR08 1050/1000	5249022057	EU-BD 590
M93B	ERS VAR10 2500/3000	5249015645	EU-BD 592
M98HB	ERS VAR10 5000/5000	5249015646	EU-BD 592

The brake alone cannot be considered as a safety protection device against overspeed of the lifting cab, rather it should be used with the speed detector, which cuts power to the brake in case of a too high speed.

Usually this device is the speed governor on condition that it has an electric contact operating during upward direction lifting and compliant with EN81-20 standard.

The braking moment and the relevant adjustment of the airgap are factory-set and do not require any further adjustment.

The airgap should not be changed for any reason, unless after express authorization.



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Specifications of the individual brakes:

Montanari code		5249022057	5249022073	5249015645	5249015646
Manufacturer		Warner Electric Europe	Chr. Mayr Gmbh + Co. KG	Warner Electric Europe	Warner Electric Europe
Warner Electric Code		112106909		112106582	112106602
Mayr Code			8177706		
Rated torque	Nm	1000	800	3020	5000
Max. speed	min ⁻¹	250	250	250	120
Rated airgap	mm	0.3±0.1	0.5±0.07	0.45 + 0.1 - 0.5	0.5±0.1
Max. airgap after wear	mm	0.6	0.9	0.7	0.8
Oversupply	VDC	207	207	207	207
Voltage in maintenance	VDC	103.5	104	103.5	103.5
Resistance	Ω	142	122	136	101
Power	W	302	351	315	428
Power in maintenance	W	76	88	79	107
ED duty factory	%	60	60	60	50
Weight	kg	34	30	60	124
Reference figure		1	4	2	3



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Operation description:

This type of device must be powered at the stated voltage and requires a temporary over supply during opening.

The speed governor (the detector) must cut power off in case of operation due to a too high speed during lifting or for uncontrolled movement with open doors. The brake closes under the effect of calibrated compressed springs.

(The electric contact of the speed governor cutting power off, can also be the same which cuts power off during lowering: it results in a more sudden braking).

Brakes cannot operate continuously; their max. intermittence should comply with the figures shown in the previous table. Have the brake close at each stop of the lift (unsupplied coil) to prevent any overheating.

During intermittent operation as above described, the brake should open simultaneously with the gear brake and, vice versa, it should close when the cab has reached the floor and the gear service brake is closed.

In case of gears with inverter, where deceleration and stop at the floor are electronically managed, the brake can close simultaneously with the service brake of the gear.

The over supply can be obtained using devices available on the market or with our optional "booster" card. (For installation and use of the card, refer to the operator's manual concerned)

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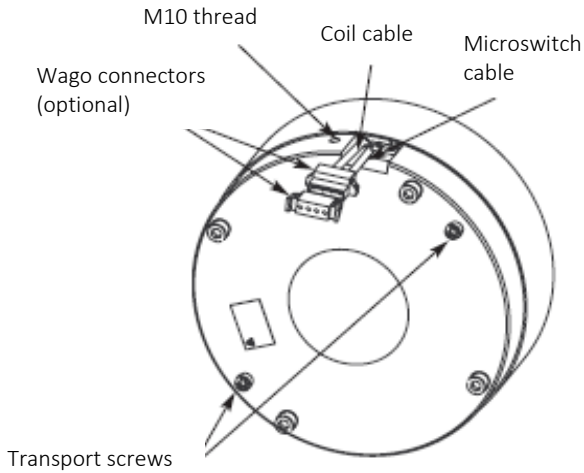
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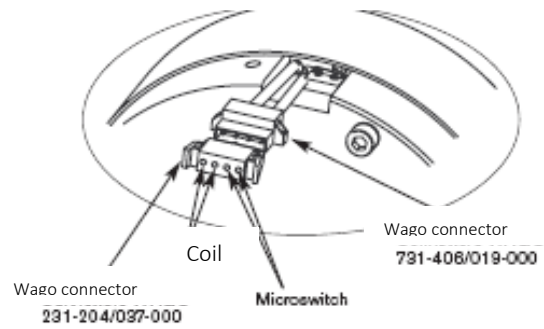


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Fig. 1 VAR 08 1000/1000 CODE 5249022057



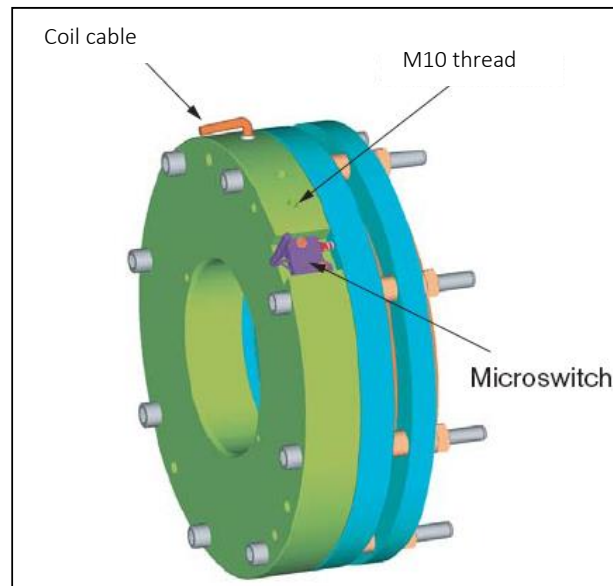
Detail of the connector





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Fig. 2 VAR 10 2500/2500 CODE 5249015645



Detail of the connector

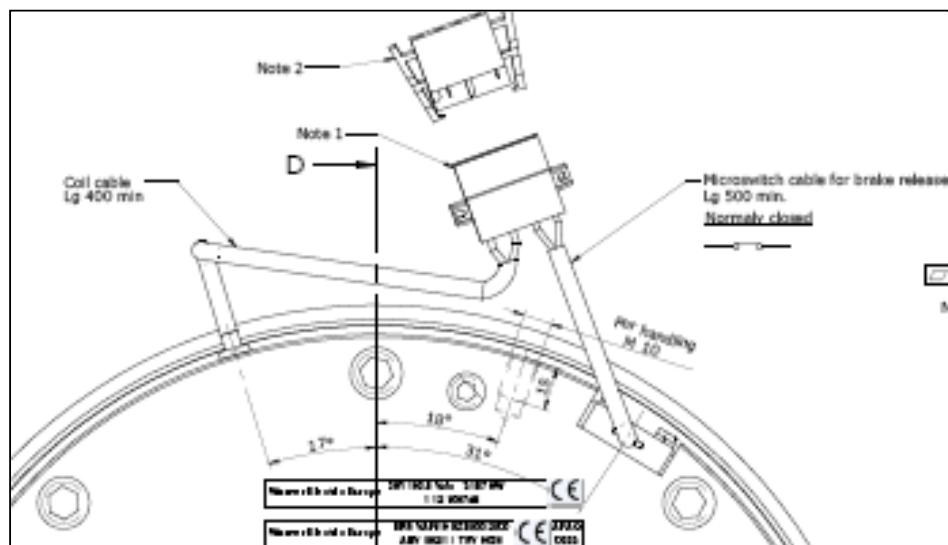
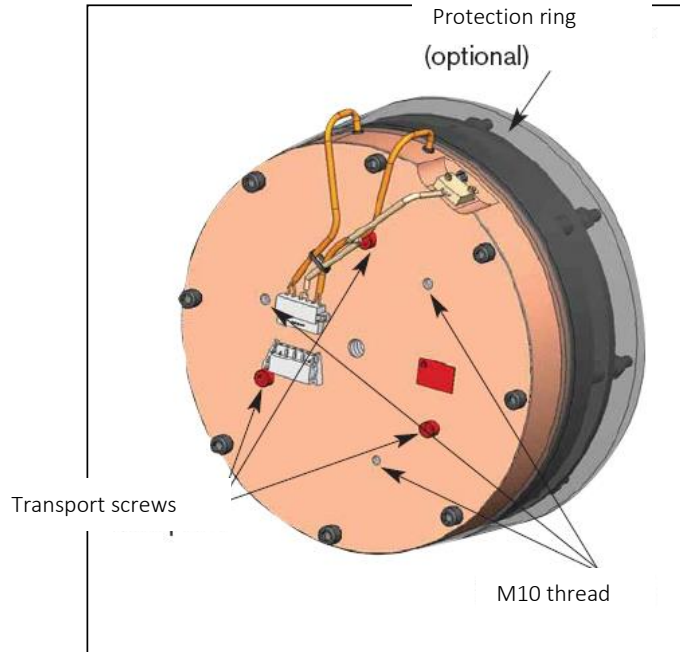




Fig. 3 VAR 10 5000/5000 CODE 5249015646



Detail of the connector

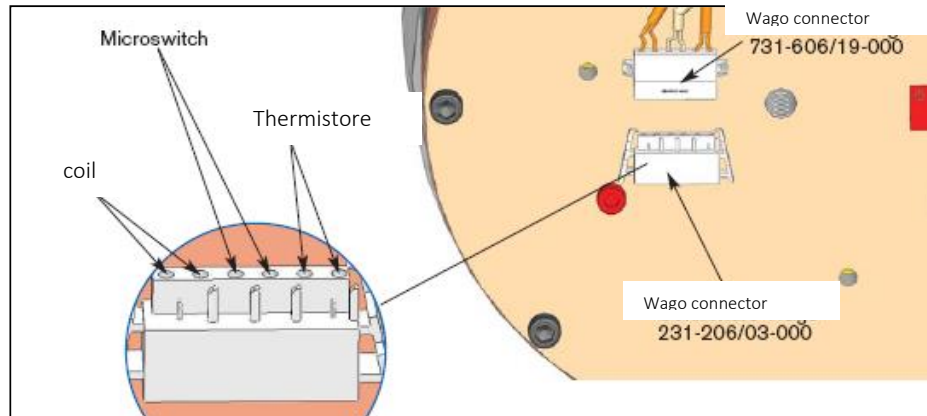
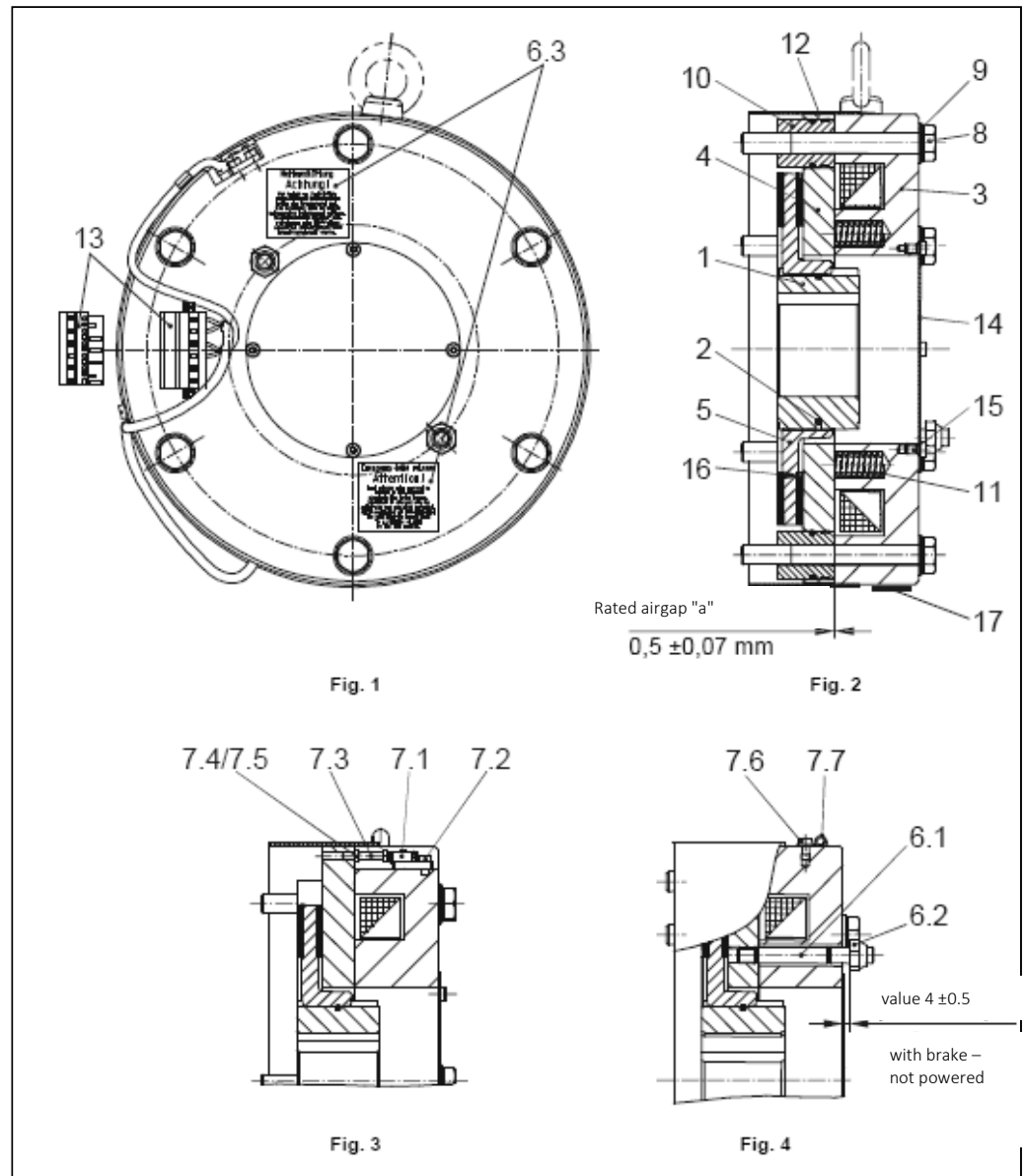


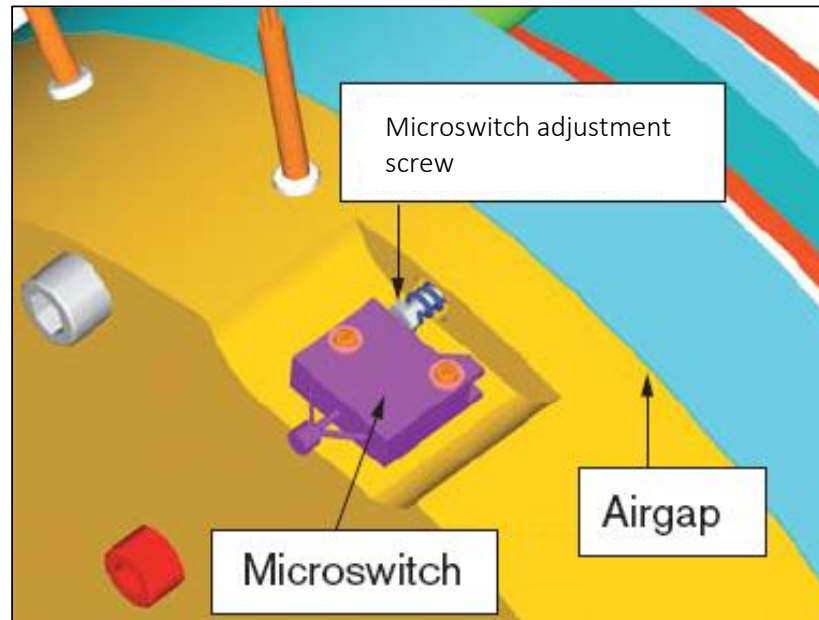


Fig. 4 MAYR ROBASTOP 896.133.31 CODE 5249022073



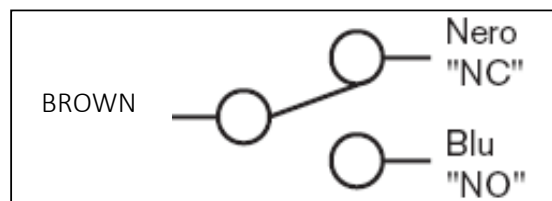


Detail of the microswitch valid for all types:



Operation of the microswitch:

Current range: 10 mA – 100 mA at 10 – 24 VDC



When there is no current to the coil (braked shaft) the contacts of the microswitch are in NC position.



Installation:

WARNER brakes:

The gears are supplied with open brake (released) through transport screws (see figures for each brake).

After installing the gear, remove those screws and place them in a safe and visible area, for their easier location inside the machine room.

These screws are required to open the brake in case of maintenance but especially in case of emergency manoeuvres on the gear.

MAYR brakes:

The brakes have an emergency manual release system.

To open the brake, tighten the two H.H. nuts (6.2) evenly towards the coil-holder (3) until the mobile disc (4) touches the coil-holder (3) against the pressure of the springs.

When the lift is put in operation again, the gap between the two nuts should compulsory correspond to 4 ± 0.5 mm vs the coil-holder.

The emergency instructions must be drawn up by the installation technician, in compliance with the requirements and the type of system; they should include the above information for screw tightening/releasing.

The microswitch reports when the brake is open or closed and hence if the safety conditions to restart the system are satisfied

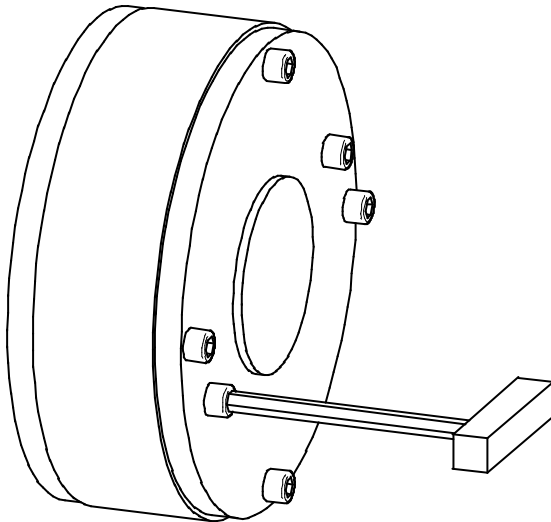
The removal or fitting of the brake transport or release screws require a wrench:

Brake code	Release screws	Required wrench
5249014195	no. 2 M8 screws	6 mm Allen screws
5249015645	no. 3 M8 screws	6 mm Allen screws
5249015656	no. 3 M10 screws	8 mm Allen screws
5249022073	no. 2 M10 screws	H.H. 17

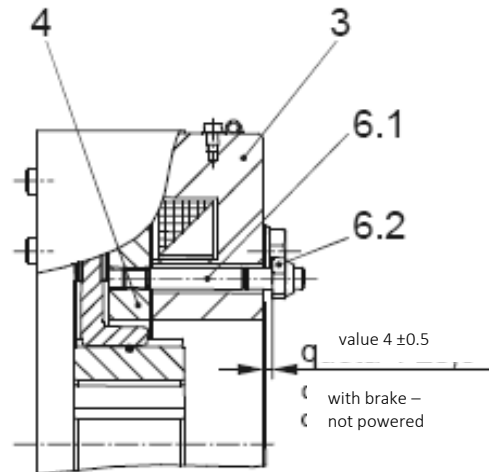


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WARNER



MAYR



Maintenance:

The brakes must be used for static applications as safety brakes. Dynamic braking movements are limited to emergency braking and test braking movements.

The correct use does not involve a remarkable wear of the friction material.

Should the airgap need adjustment for whatever purpose, ask for specific instructions stating the machine serial number.