



Montanari Group

GEARLESS & GEARBOX
TRACTION MACHINES

116,4



INSTALLATION, USE AND MAINTENANCE SAFETY GEARS





Pag.
Auf S.

43



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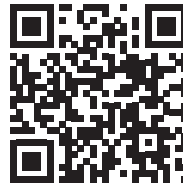
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	It indicates that safety measures must be taken to avoid electric shock.
	It indicates that safety measures must be taken to prevent personal injury.
	It indicates that safety measures must be taken to prevent damage to components.
	It indicates that safety measures must be taken to prevent burns due to contact with hot/ overheated surface.
	It indicates useful information before and during the installation step.
	It refers to specific parts of the manual.
	It refers to the disposal of packaging and end-of-life product

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1. GENERAL INFORMATION

1.1 Introduction

The Safety Gear Units by Montanari Giulio & C. are designed and tested to ensure proper operation. They can be used for lifts and goods hoists.

These operating instructions are an integral part of the safety gear unit and must always be kept within easy reach for consultation.

All persons involved in the installation, operation, maintenance and repair of the unit must read and understand the instructions.

No liability is accepted for damage, breakage or accident caused by failure to follow the instructions provided in this manual.



The safety gear units described herein have been designed and manufactured in accordance with the recognized safety standards and the state of the art technical development applied at the time of printing.

Characteristics of the progressive safety gear:

The brake force is factory-adjusted according to the loads declared by the customer and the surface conditions of the guides.

The safety gear units are prepared and lead-sealed at the factory.

To make technical improvements, Montanari reserves the right, if deemed necessary, to modify the units and accessories, preserving their essential characteristics and improving efficiency and safety.

1.2 Copyright

All rights to these operating instructions belong to Montanari Giulio & C. S.r.l.

The information in this manual may not be reproduced or used in an unauthorized manner or made available to third parties without prior permission.

If you have any questions, please contact:

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2. SAFETY

2.1 Intended use

The safety gear units are manufactured in accordance with the state of the art for safe and reliable use. It is forbidden to tamper with devices or functions designed to prevent accidental contact.

Important: The blocks can be used at any speed below the maximum speed at which they have been certified.



It is forbidden:

- Use the Safety Gear Units for purposes other than and/or in a manner different from that described in these instructions.
- To modify totally and/or partially the Safety Gear;
- To change the factory setting;
- To install two devices with different serial numbers and/or type/model at the same time;
- To damage the lead seal;
- To replace/combine parts from different devices;
- To perform improper maintenance and inaccurate checks;
- To use unsuitable and/or unofficial spare parts (use only Montanari Giulio & C. parts).

No liability is accepted for any malfunction due to installation not conforming to specifications, except in cases approved by Montanari Giulio & C.

The identification plate shows the serial number and the year of construction (see Fig.1).

The data for calibration are those provided in the order and the serial number is the reference for any detail.

Use is permitted only in accordance with the data provided and as specified in the type-examination.

2.2 Obligations of the user - installer

The responsibility for instructions lies with the company in charge of the work. The operator must ensure that all persons involved in installation, operation, maintenance and repair have read and understood the supplied operating instructions and have adapted to them in order to:

- Avoid damage to property or persons.
- Ensure safe and reliable operation of the unit.
- Avoid breakage and environmental damage due to misuse.

Immediate voidance of the guarantee in case of:

- Use of components other than those installed.
- Any kind of modification on the safety gear unit.

PERSONAL PROTECTIVE EQUIPMENT TO BE USED:

- Protection gloves against mechanical injuries
- Safety shoes



2.3 Before installation

Make sure that the serial number indicated on the plates (both must have the same serial number) and the one shown on the "Testing report" delivered by Montanari Giulio & C.

Check that the characteristics of the system, according to the "Testing Report", are respected and in compliance. In particular, check these characteristics:

- **total mass to be braked (P+Q): for progressive safety gears, the actual mass may differ by up to $\pm 7.5\%$**
- **nominal thickness of the guides**
- **type of guide surface (machined or drawn)**
- **lubrication of the guide surface (oiled or dry)**

These characteristics must be maintained and controlled throughout the life of the installed safety gear.

With particular reference to the "treatment of the guide surface", if lubrication is required, it must be kept efficient and if not, it must never be lubricated.

2.4 Disposal of packaging and end-of-life product

The product consists mainly of steel, cast iron, iron and other materials such as rubber, plastic, etc., which are not particularly hazardous.



For this reason, disposal does not require any special safety procedures other than the conventional ones adopted for this type of waste.

Dispose of the product in compliance with the Environmental and Hygiene Regulations in force in the country it is installed in.

Contact a specialised company for disposal.

Please note that the classification of the waste is responsibility of the waste producer himself; In the European Union, for disposal comply with the code 16.02.14 "Discarded equipment, other than those mentioned in 16.02.09 to 16.02.13".

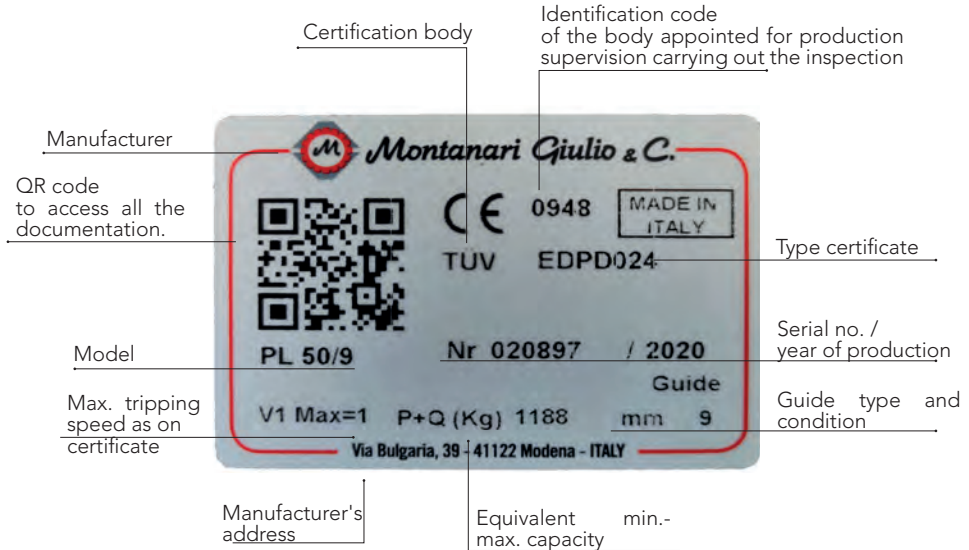
3. IDENTIFICATION AND DATA

3.1 Identification plate

It is located on the outside of the box of both devices; the data shown are indicated in FIG. 1- 2.

FIG. 1

Istantaneous Safety Gears



DESCR	TYPE	Catalogue ref	CODE ART.	Certificate
One-way instantaneous / downwards only	PD 50	TAB 280	AC00000480	EDPD 002
	PD50/B		AC00001564	EDPD 002/1
	PA 50	TAB 281	AC00000878	EDPD 022
			AC00000879	
			AC00000880	
			AC00000881	
	PB 50	TAB 282	AC00000882	EDPD 021
			AC00000883	
			AC00000884	
			AC00000886	
	PI50	TAB 282.1	AC00000887	EDPD 021
			AC00000887	
	PL50	TAB 282.2	AC00000874	EDPD 024
			AC00000875	
	PM50		AC00000876	EDPD 008
			AC00000888	



FIG. 2
Progressive Safety Gears



DESCR	TYPE	Catalogue ef	CODE ART.	V max tripp.	Certificate
One-way progressive	PP16	TAB 284	AC10001032	3,22	EDPD 025
			AC11001032		
			AC12001032		
			AC00001032		
			AC01001032		
	PP35	TAB 285	AC02001032	3,22	EDPD 025
			AC10001033		
	PP65	TAB 286	AC00001033	3,22	EDPD 029
			AC00001035		
KB40	TAB 287	AC00001502	2,88	EDPD 013	
		AC00001503			
	TAB 287.1	AC00001508			
		AC00001509			
Two-way progressive	PPR25BD	TAB 283.10	AC00001054	2,63	EDPD 020
		TAB 283.11	AC00001055		
	PPR40BD	TAB 283.12	AC00001056	2,63	EDPD 006
			AC00001089		
		TAB 283.13	AC00001090		
			AC00001091		

According to UNI EN 81-20, paragraph 5.6.2.2.1.1, here below the rules for over-speed governor used with progressive safety gears.

- V_n = installation nominal speed
- V_1 = OSG tripping speed.

OSG Tripping speed (V_1) has to be $\geq 115\%$ of V_n and:

- IF NOMINAL SPEED IS $\leq 1\text{m/s}$: Tripping speed has to be $< 1,5\text{m/s}$
- IF NOMINAL SPEED IS $> 1\text{m/s}$: Tripping speed has to be $< [1,25 \cdot V_n + (0,25/V_n)]$



3.2 Standard references

N	Regulation	DESCRIPTION
1	UNI 10147	Maintenance: Terminology.
2	EN 81-20	Safety regulations regarding the construction and installation of lifts used for the carriage of persons and goods.
3	EN 81 -50	Safety regulations regarding the construction and installation of lifts: verifications and testing.
4	EN 81 - 21	Safety regulations regarding the construction and the installation of new lifts used for the carriage of persons and goods in existing buildings.

Tab. 1

4. TRANSPORT AND STORAGE

4.1 Handling

Different types of packaging can be used, depending on the size and means of transport. Unless otherwise specified, the packaging complies with the HPE guidelines.

It is recommended to verify also the condition of the goods upon receipt. In case of damages do not proceed with installation except for Montanari Giulio & C. authorization. Comply with the symbols on the packaging to prevent damage to property or personal injury. Here are the meanings of the symbols that may appear on the packaging.



Keep dry



Handle with care



Attachment point



Upper side



Do not use hooks



Keep away from heat sources



Fragile



Center of gravity

4.2 Storage



In particular, if the unit is stored outdoors, it should be carefully covered, taking care that no moisture or other foreign matter can accumulate on it.



Supplies for special environmental conditions during transport (e.g. by ship) and storage (climate, termites, etc.) must be contractually agreed.

5. DESCRIPTION & OPERATION

5.1 General description

The safety gear unit is a safety device that trips when the cab exceeds the rated speed.

The Montanari safety gear units can be one-way or two-way, progressive or instantaneous.

6. INSTALLATION & FIXING

6.1 Arrangements for mounting all safety gear units.

Observe the specified installation distances when planning and positioning (**see model specific indications**):

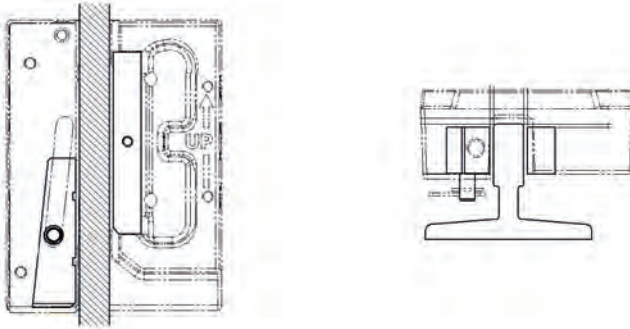


FIG. 3

While mounting, make sure that both devices are aligned with the guides (Fig. 3 - 4 - 5 - 6)

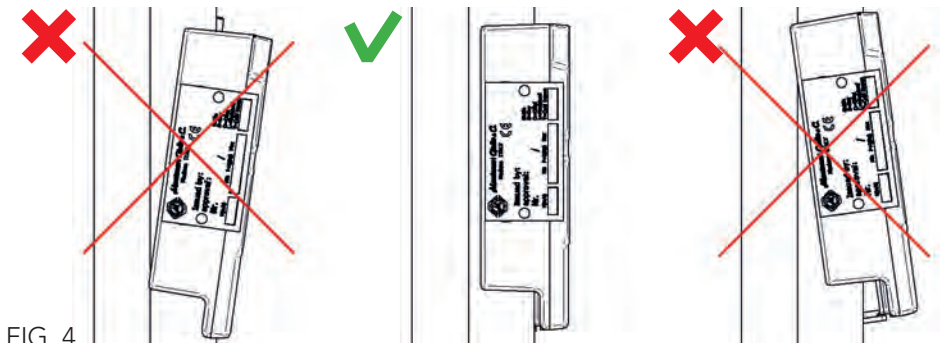


FIG. 4

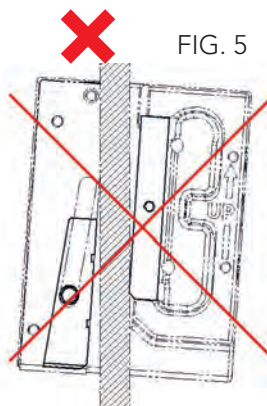
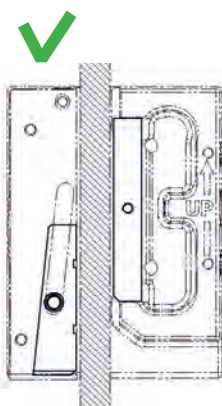
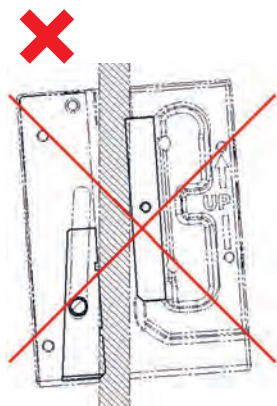


FIG. 5

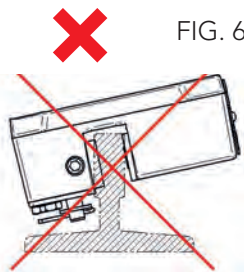
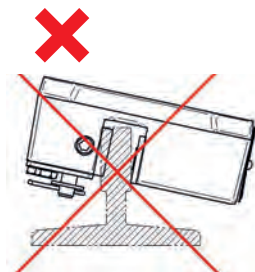


FIG. 6



Mount in pairs on the frame of the cab or of the counterweight at the bottom or top (as preferred). Engage your own lever systems to the roller drive lever.

IMPORTANT:

- Normally the safety gear units work in pairs; check that the grip is simultaneous for both blocks.
- In the idle position, the brake elements must not come into contact with the guides.

7. TROUBLESHOOTING, MAINTENANCE AND REPAIR

Periodically, and at least once a year, it is necessary to check the proper functioning.

In case of malfunctioning:

- Stop the system and prevent its use.
- Request instructions indicating the serial number.

7.1 VISUAL CHECKS

After each braking test, visually check the safety gear and check for:

- The absence of obstacles in the movement of the movable wedges and the control levers.
- The absence of deformation on the various parts of the safety gear unit.
- The alignment of the safety guard devices to the guides.
- The presence of metal chips due to test braking; if so, eliminate them.
- The tightening of the fixing screws (depending on the model).

If damage is detected, the safety guard must be replaced and the system must be prevented from functioning. Braking traces, which are usually minor, should preferably be removed by hand using sandpaper or special files without causing excessive marks on the guide.

For anything not specified in this booklet, follow the instructions in the harmonized standards as per the table of the regulatory references.



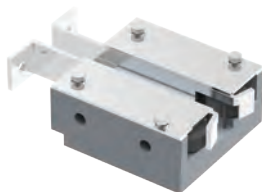
Tab. 2

	TYPE	RE. Product Catalogue	CODE ART.
One-way instantaneous / downwards only	PD50	TAB 280	AC00000480
	PD50/B		AC00001564
	PA50	TAB 281	AC00000878
			AC00000879
			AC00000880
			AC00000881
	PB50	TAB 282	AC00000882
			AC00000883
			AC00000884
			AC00000886
			AC00000887
	PI50	TAB 282.1	AC00000887
	PL50	TAB 282.2	AC00000874
			AC00000875
			AC00000876
	PM50		AC00000888
One-way progressive	PP16	TAB 284	AC10001032
			AC11001032
			AC12001032
			AC00001032
			AC01001032
			AC02001032
	PP35	TAB 285	AC10001033
			AC00001033
	PP65	TAB 286	AC00001035
	KB40	TAB 287	AC00001502
			AC00001503
		TAB 287.1	AC00001508
			AC00001509
Two-way progressive	PPR-25BD	TAB 283.10	AC00001054
			AC00001055
	PPR-40BD	TAB 283.11	AC00001056
		TAB 283.12	AC00001089
			AC00001090
		TAB 283.13	AC00001091

PD50 INSTANTANEOUS, WITH ROLLERS - DOWNWARDS ONLY

RE. Product Catalogue	Cab S m/s	Guide thickness H mm	CODE ART.
TAB 280	0,63	8-16	AC00000480

Tab. 3



For lifts and goods hoists with body thickness 50 mm;
Recess them in the structure; if this is not possible, set a stopping point.
Braking by means of two knurled rollers operating only downwards. Fix through the 4 threaded holes at the side.

DIMENSIONS

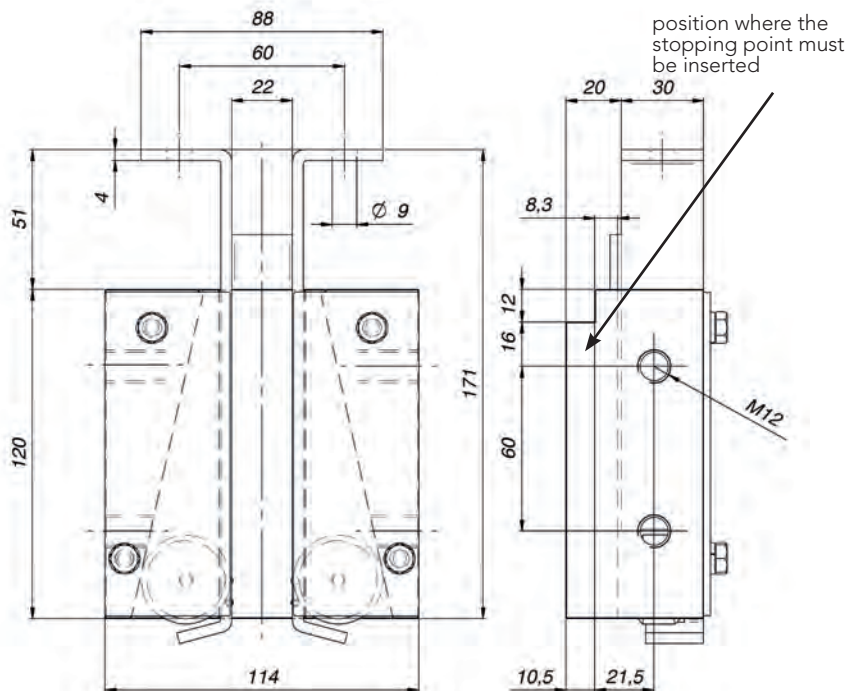
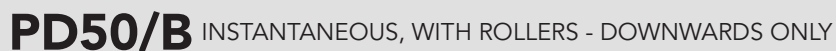
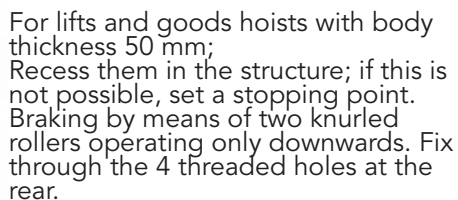


FIG. 7



Tab. 3.1



Technical drawing of a mechanical assembly, showing three views: front, side, and top.

Front View (Left):

- Overall width: 114
- Overall height: 120
- Top flange width: 88
- Top flange height: 35
- Central slot width: 20
- Bottom flange width: 114

Side View (Middle):

- Overall width: 45,5
- Overall height: 12,5
- Central slot width: 20
- Bottom flange width: 7

Top View (Right):

- Overall width: 155
- Overall height: 60
- Top flange width: 60
- Top flange height: 29,5
- Central slot width: 20
- Bottom flange width: 27
- Bottom flange height: 30,5
- Central slot width: 20
- Bottom flange width: 27
- Bottom flange height: 30,5
- Central slot width: 20
- Bottom flange width: 27
- Bottom flange height: 30,5

FIG. 8

INSTANTANEOUS WITH ONE ROLLER - DOWNWARDS ONLY **PA50**

Tab. 4

RE. Product Catalogue	Cab S m/s	Guide thickness H mm	CODE ART.
TAB 281	0,63	8	AC00000878
		9	AC00000879
		10	AC00000880
		16	AC00000881

For lifts and goods hoists with body thickness 50 mm; set a stopping point.
Braking by means of one knurled roller operating only downwards.
Fix through the 4 threaded holes at the rear.



DIMENSIONS

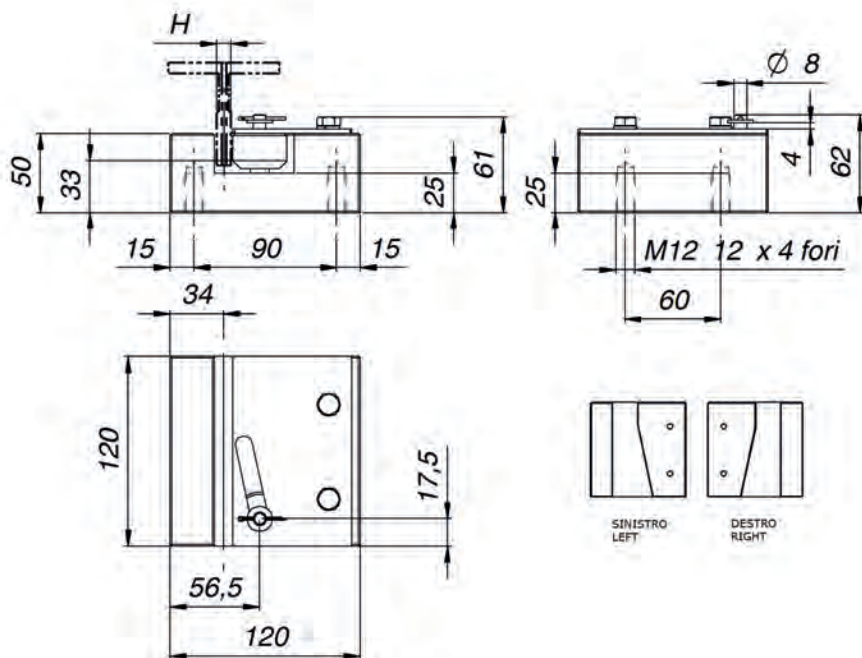


FIG. 9



PB50 INSTANTANEOUS WITH ONE ROLLER - DOWNWARDS ONLY

RE. Product Catalogue	Cab S m/s	Tripping S m/s	P + Q max kg	Guide thickness H mm	CODE ART.
TAB 282	0,63	1	1.885	8	AC00000882
			1.885	9	AC00000883
			1.813	10	AC00000884
			3.330	14	AC00000886
			4.020	16	AC00000886

Tab. 5



For lifts and goods hoists with body thickness 50 mm; set a stopping point.
Braking by means of one knurled roller operating only downwards.
Fix through the 4 threaded holes at the side.

DIMENSIONS

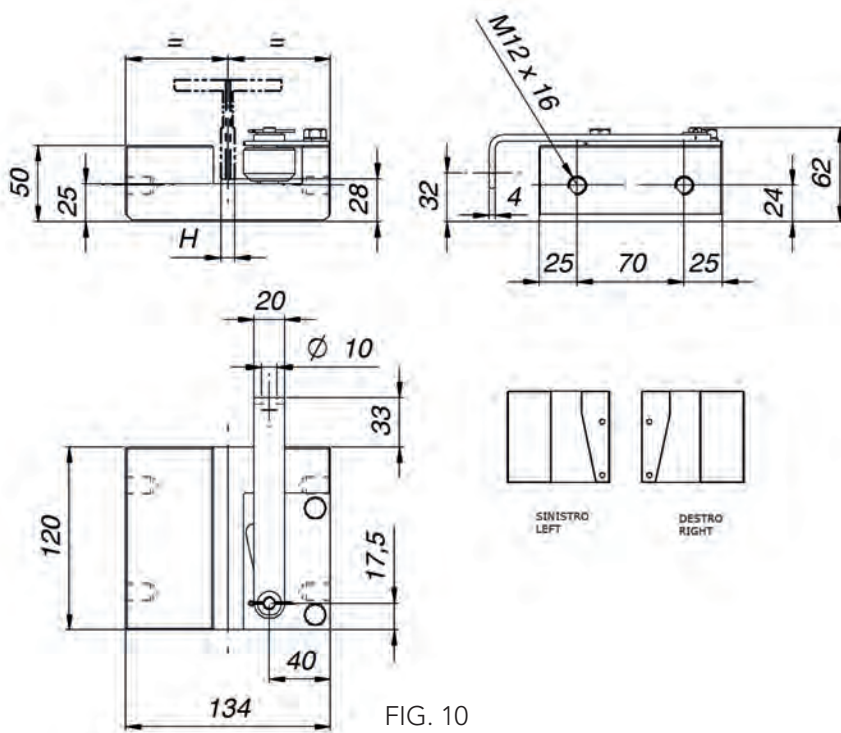


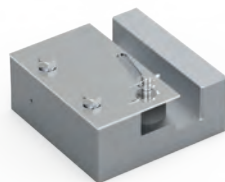
FIG. 10

INSTANTANEOUS WITH ONE ROLLER - DOWNWARDS ONLY **PI50**

RE. Product Catalogue	Cab S m/s	Tripping S m/s	P + Q max kg	Guide thickness H mm	CODE ART.
TAB 282.1	0,63	1	2057	16	AC00000877

Tab. 6

For lifts and goods hoists with body thickness 50 mm;
set a stopping point.
Braking by means of one knurled roller operating only
downwards.
Fix through the 4 threaded holes at the rear.



DIMENSIONS

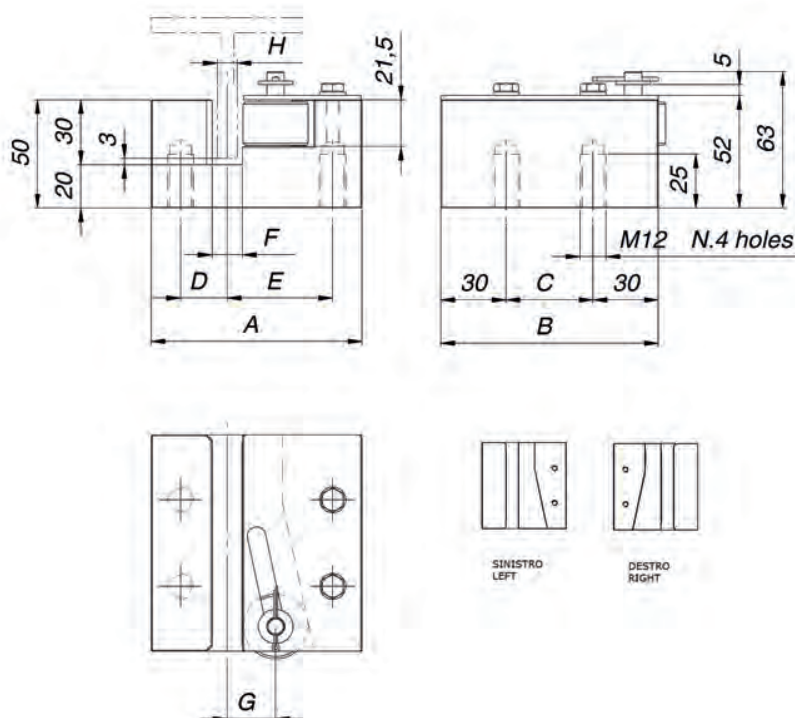


FIG. 11

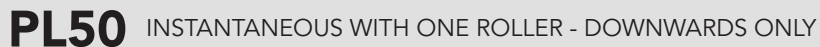
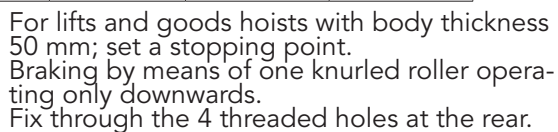
Tab. 7

FIG. 12

INSTANTANEOUS WITH ONE ROLLER - DOWNWARDS ONLY **PM50**

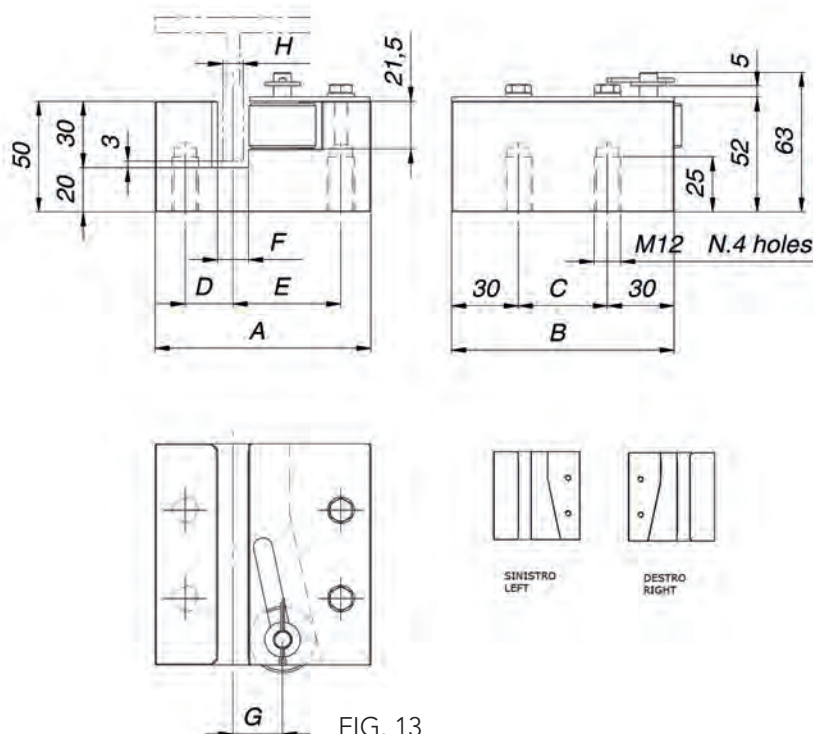
RE. Product Catalogue	Cab S m/s	Tripping S m/s	P + Q max kg	Guide thickness H mm	CODE ART.
TAB 282.2	0,63	1	1.680	16	AC00000888

Tab. 8

For lifts and goods hoists with body thickness 50 mm; set a stopping point.
Braking by means of one knurled roller operating only downwards.
Fix through the 4 threaded holes at the rear.



DIMENSIONS





PP16 ONE-WAY PROGRESSIVE - DOWNWARDS ONLY

RE. Product Catalogue	Cab S m/s	Tripping S m/s	P + Q max kg	Guide thickness H mm	L	CODE ART.
TAB 284	2,8	3,22	TOS 580-1480 LOS 680 - 1650	8-10	180	AC10001032
					200	AC11001032
					240	AC12001032

Tab. 9

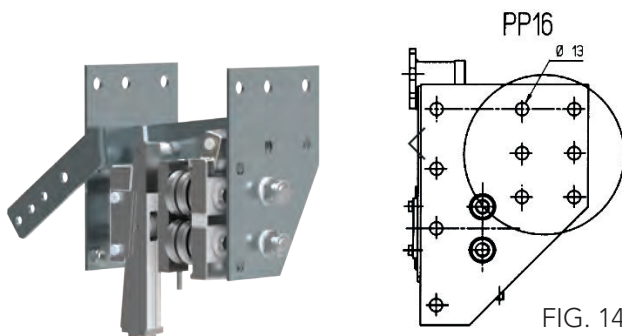
TOS: Dry and lubricated drawn guides

LOS: Dry and lubricated machined guides

For lifts and goods hoists.

Braking by means of wedge jaws operating only downwards. Fix through the side plates (standard) or directly with the two bearing pins.

If the side plates are used, the fixing holes are those indicated in Fig.14.



Connect the 2 safety guard units together using a steel torsion bar. The square section must have a 16 mm side.

Fix it with the special sleeves provided.

The length depends on the distance between the guides with the following relation:

$$Lb = DG - 280$$

- Lb = bar length in mm
- DG = distance between the head of the guides

A safety switch (not supplied) must be mounted on the frame to stop the machine at the latest when the safety gear grips. Each frame builder is free to adopt the most appropriate method.

The safety gear activation lever has several holes to which you can attach your connection device to the speed governor rope.

The force to be applied to the lever shall be between 140 and 900 N.

After installation, make sure that the locking wedges move at the same time when the lever is operated.

The guides must be aligned with the safety gear unit.

There must be a clearance of approx. 2 - 2,5 mm on both sides of the guide.

The safety gear unit must be centred with the guide.

DIMENSIONS

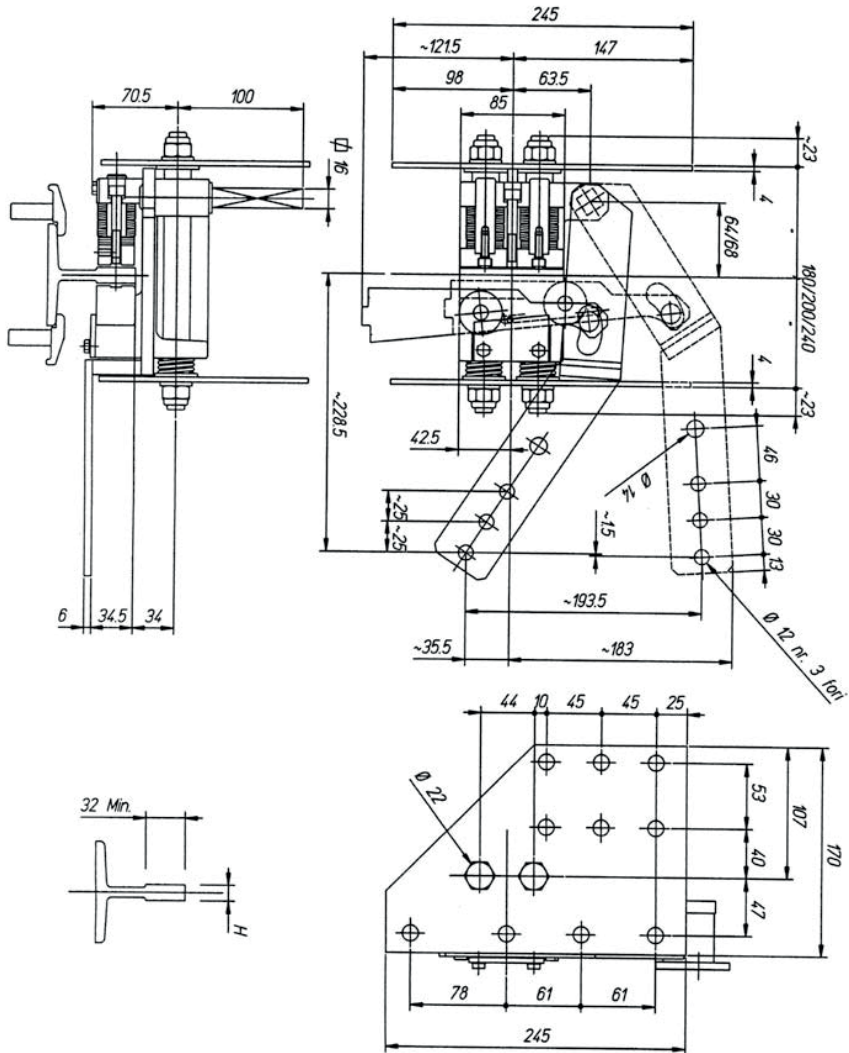


FIG. 15



PP35 ONE-WAY PROGRESSIVE - DOWNWARDS ONLY

RE. Product Catalogue	Cab S m/s	Tripping S m/s	P + Q max kg	L	Guide thickness H mm	CODE ART.
TAB 285	2,8	3,22	TOS 620-3290 LOS 670 - 3870	240	9-10	AC10001033
					12-16	AC00001033

Tab. 10

TOS: Dry and lubricated drawn guides

LOS: Dry and lubricated machined guides

For lifts and goods hoists.

Braking by means of wedge jaws operating only downwards. Fix through the side plates (standard) or directly with the two bearing pins.

If the side plates are used, the fixing holes are those indicated in Fig.16

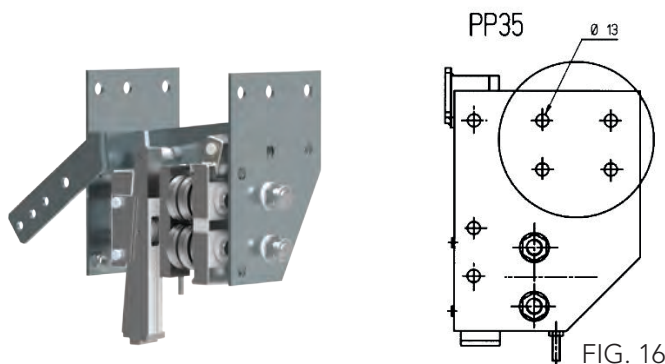


FIG. 16

Connect the 2 safety guard units together using a steel torsion bar. The square section must have a 16 mm side.

Fix it with the special sleeves provided.

The length depends on the distance between the guides with the following relation:

$$L_b = DG - 195$$

- L_b = bar length in mm
- DG = distance between the head of the guides

A safety switch (not supplied) must be mounted on the frame to stop the machine at the latest when the safety guard grips. Each frame builder is free to adopt the most appropriate method.

The safety gear activation lever has several holes to which you can attach your connection device to the speed governor rope.

The force to be applied to the lever shall be between 140 and 900 N.

After installation, make sure that the locking wedges move at the same time when the lever is operated.

The guides must be aligned with the safety gear unit.

There must be a clearance of approx. 2 - 2.5 mm on both sides of the guide.

The safety gear unit must be centred with the guide. Use the adjustment screw to move it.

DIMENSIONS



FIG. 17



PP65 ONE-WAY PROGRESSIVE - DOWNWARDS ONLY

RE. Product Catalogue	Cab S m/s	Tripping S m/s	P + Q max kg	Guide thickness H mm	L	CODE ART.
TAB 286	2,8	3,22	TOS 1620 - 6450	14 - 16	260	AC00001035
			LOS 2080 - 6370			

Tab. 11

LOS: Dry and lubricated machined guides

TOS: Dry and lubricated drawn guides

For lifts and goods hoists.

Braking by means of wedge jaws operating only downwards. Fix through the side plates (standard) or directly with the two bearing pins.

If the side plates are used, the fixing holes are those indicated in Fig. 18.

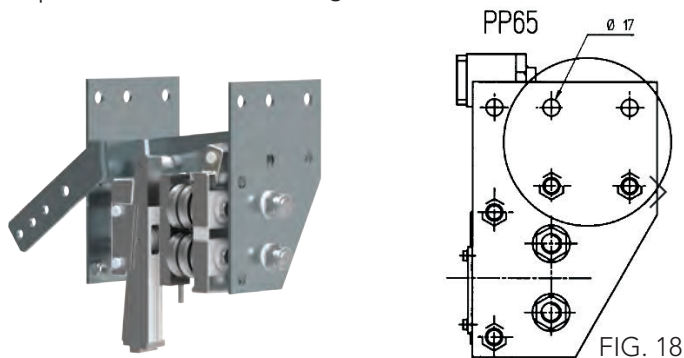


FIG. 18

Connect the 2 safety guard units together using a steel torsion bar. The square section must have a 16 mm side.

Fix it with the special sleeves provided.

The length depends on the distance between the guides with the following relation:

$$L_b = DG - 210$$

- L_b = bar length in mm

- DG = distance between the head of the guides

A safety switch (not supplied) must be mounted on the frame to stop the machine at the latest when the safety guard grips. Each frame builder is free to adopt the most appropriate method.

The safety gear activation lever has several holes to which you can attach your connection device to the speed governor rope.

The force to be applied to the lever shall be between 140 and 900 N.

After installation, make sure that the locking wedges move at the same time when the lever is operated.

The guides must be aligned with the safety gear unit.

There must be a clearance of approx. 2 - 2.5 mm. on both sides of the guide.

The safety gear unit must be centred with the guide. Use the adjustment screw to move it.

DIMENSIONS

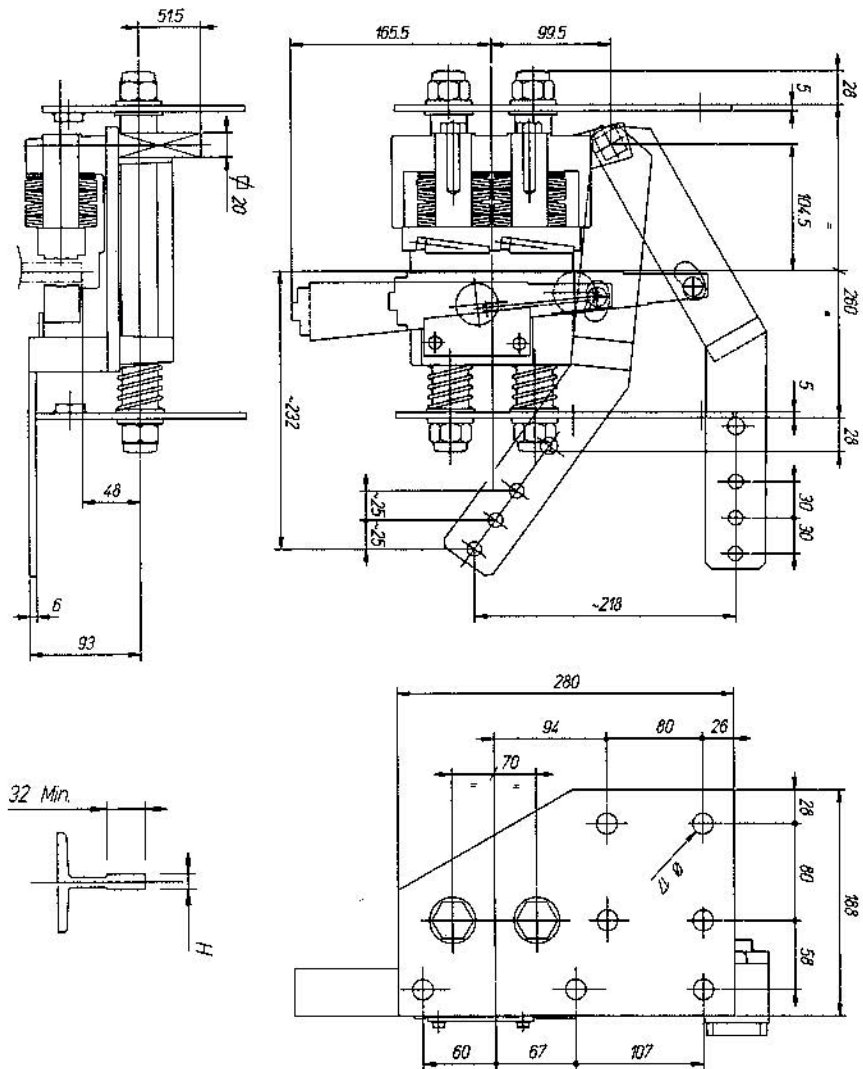


FIG. 19



KB40 ONE-WAY PROGRESSIVE - DOWNWARDS ONLY

Frame	RE. Product Catalogue	CODE ART.	Guide thickness H mm	Cab V m/s	Tripping V m/s	P + Q max kg	Force on drive pin N
Cantilever	TAB 287	AC00001502	11 - 16	2	2,88	LS 582 - 4300 LO 635 - 4190 TS 638 - 3469 TO 626 - 2813	Min: 150 Max: 900
		AC00001503	7 - 10				
Standard	TAB 287.1	AC00001508	11 - 16				
		AC00001509	7 - 10				

Tab. 13

LS: Dry drawn guides

LO: Lubricated drawn guides

TS: Dry drawn guides

TO: Lubricated drawn guides

It is used to stop the cab or the counterweight (only downwards) when exceeding the tripping speed set on the relative speed governor.

Each braking device consists of a movable wedge and a sliding shoe supported by disc springs that regulate the braking force.

The sliding of the movable wedges activates the safety gear tripping.

The brake force is factory-adjusted according to the loads declared by the customer and the surface conditions of the guides.

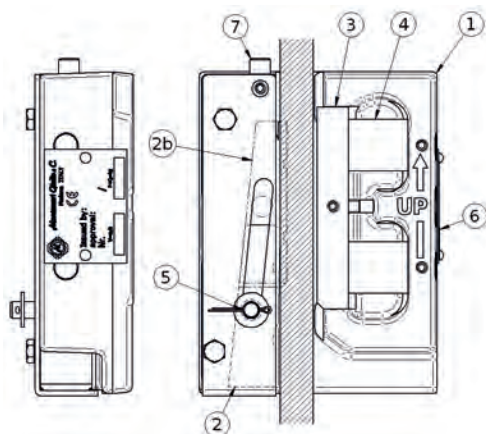


FIG. 20

Tab. 14

KB40		
N° ref.	Description	
1	Safety gear body	
2	Movable wedge	
	a	b
	Idle position	Stop position
3	Sliding shoe	
4	Calibrated springs	
5	Control pin	
6	Plate	
7	Adjusting screw	

IMPORTANT

Depending on the type of frame (chair or central) and the distance between the sliding shoes of the cab and the guide, check how and where the safety gear units are mounted.

In the event of activation, the movable wedge and the sliding shoe of the safety guard unit must be free to move.

The best mounting solution is the floating one because the two devices are free to move orthogonally to the axis of the guides, being fixed to a support that allows this movement and at the same time ensures the right mechanical resistance.

- Note: for the chair-type frames (guides on the side with respect to the cab) it is possible to mount the KB40 devices in a fixed way, observing the direction of assembly shown below and leaving the right distances between the cab sliding shoes and the guides.
- For the central frames (guides in the centre with respect to the cab) a fixed installation with respect to the frame is forbidden.

The KB40 safety gear devices can be mounted either at the top or bottom of the frame according to the diagrams in Fig.24-25.

The travel of the control levers at the actuation pin must be equal to or greater than 65 mm from the idle position.

With reference to the regulations in force, check the correct assembly, adjustment and solidity of the whole.

ASSEMBLY AND REGULATION

Observe the specified installation distances when planning and positioning (Fig. 21) and make sure that both devices are aligned with the guides.

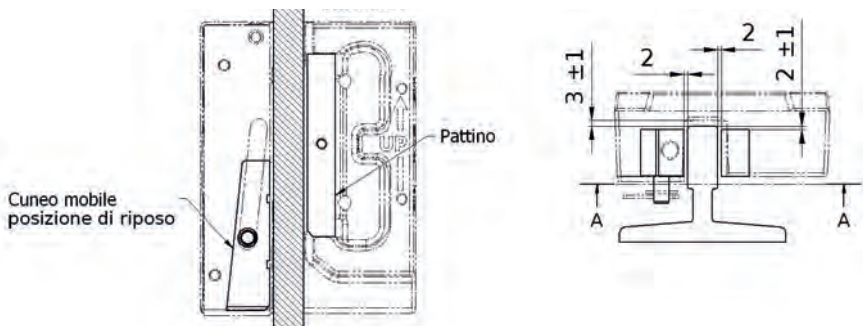


FIG. 21



DIMENSIONS

TAB.287

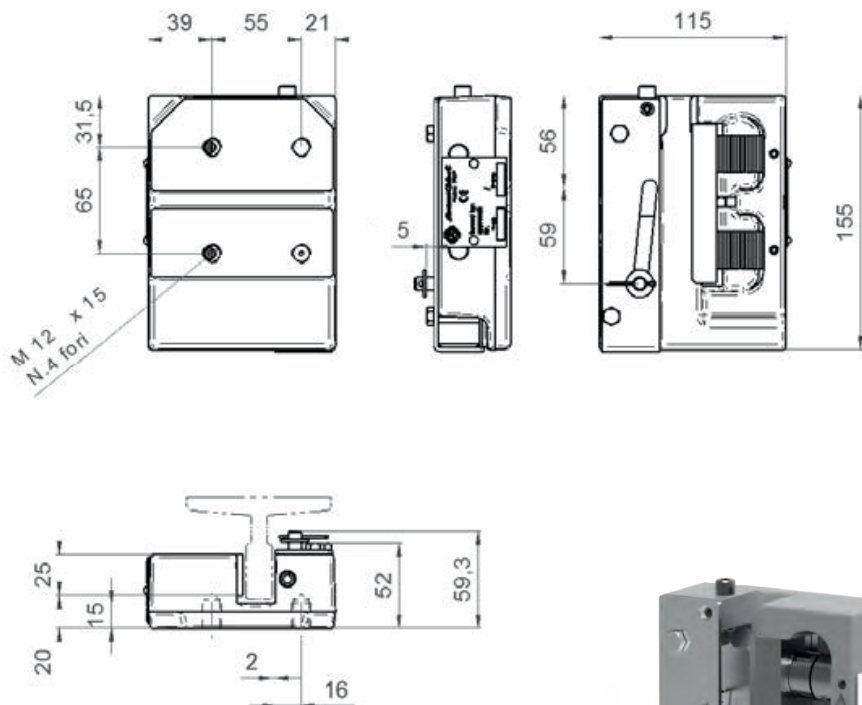


FIG. 22



Chair-type frame

DIMENSIONS

TAB.287.1

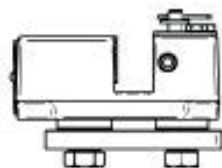
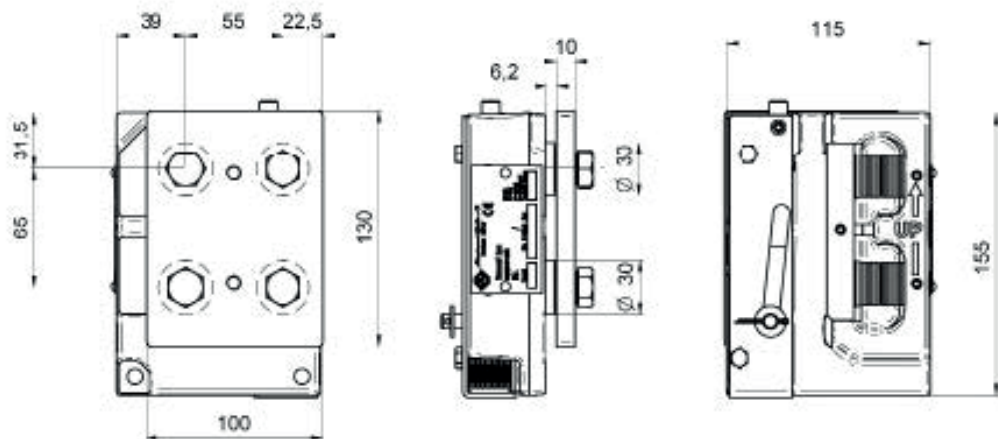


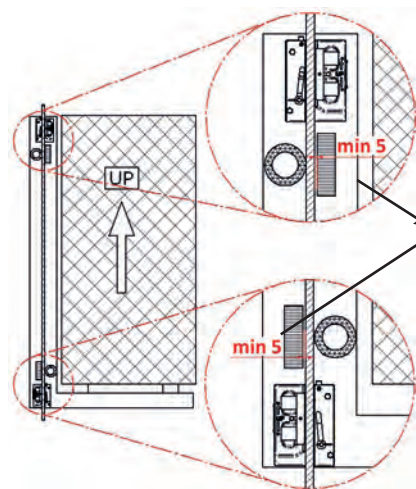
FIG. 23



Standard frame



Mounting diagrams: Chair-type frame



Devices mounted at the top:

The spring assembly faces the cab.

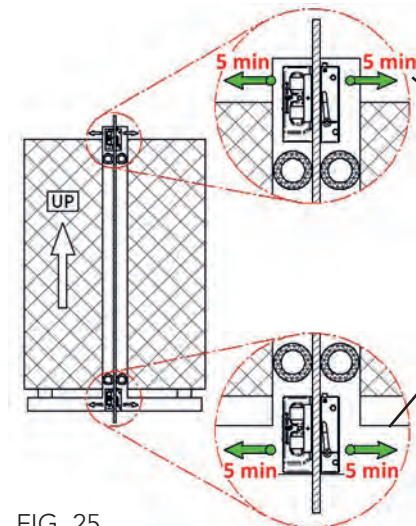
The cab sliding shoe facing the spring side of the device must have a minimum clearance of 5 mm with respect to the guide.

Devices mounted at the bottom:

The movable wedge faces the cab.

FIG. 24

Mounting diagrams: Central frame



Regardless of whether the safety gear devices are mounted at the top or at the bottom, they must be able to float at least 5 mm to the right and 5 mm to the left.

FIG. 25

Synchronization and adjustment of the control lever

All the adjustments described (unless otherwise indicated) must be carried out with the movable wedge in the idle position. (Fig. 26)

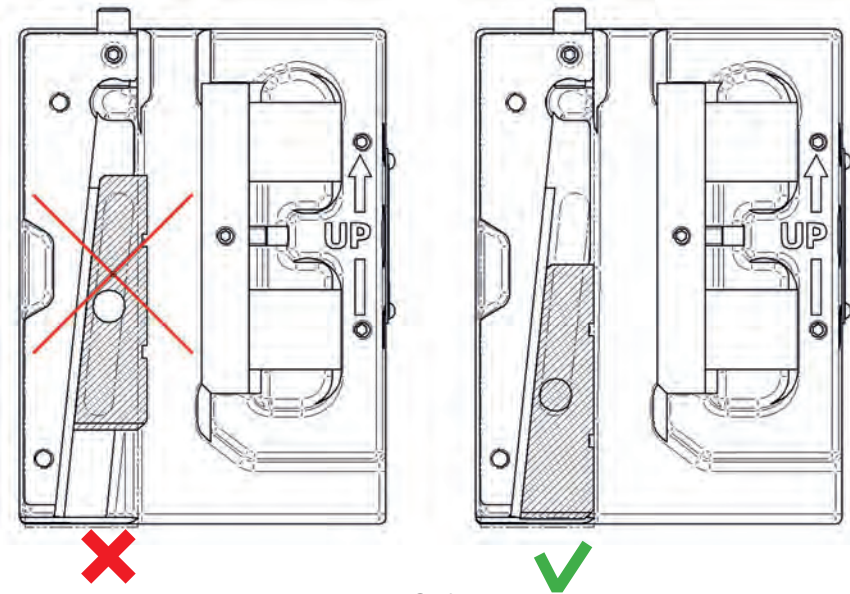


FIG. 26

After the installation of the KB40 safety guard devices and of the control levers, it is mandatory to check that:

- When the control levers are in the "standard operation" position the movable wedges are in the idle position; otherwise, the levers must be adjusted.
- the levers must be adjusted by operating the control levers until the movable wedges and the sliding shoes come into contact with the guide. The strokes of the movable wedges must be the same, otherwise the levers must be adjusted.



PPR25/40BD TWO-WAY PROGRESSIVE - UPWARDS/DOWNWARDS

TYPE	Frame	RE. Product Catalogue	L	CODE ART.	P + Q max kg	Cab V m/s	Tripping V m/s	Guide thickness H mm
PPR-25BD	Cantilevered	TAB283.10	180	AC00001054	TO 568 - 3002	2,29	2,63	8- 16
			240	AC00001055	TS 605 - 2864			
	Standard	TAB283.11	90/120	AC00001056	LO 716 - 2561			
PPR-40BD	Cantilevered	TAB 283.12	180	AC00001089	LS 601 - 2919			
			240	AC00001090	TO 3002 - 3997			
	Standard	TAB 283.13	-	AC00001091	TS 2865 - 4009			
					LO 2562 - 4662			
					LS 2920 - 4638			

Tab. 15

LS: Machined and non - lubricated guides

LO:Machined and lubricated guides

TS: Drawn and non lubricated drawn guides

TO: Drawn and lubricated guides

For lifts and goods hoists.

Braking by means of knurled roller and insert operating downwards and upwards.
Fix through the side plates (standard) or directly with the two bearing pins. If the rear support (e.g. hydraulic frame) is not necessary, just use the rear fixing holes.

Connect the 2 safety guard units together using a steel torsion bar.

The square section must have a 20 mm side.

Fix it with the special sleeves provided.

The length depends on the distance between the guides with the following relation:

$$L_b = DG - 210$$

- L_b = bar length in mm
- DG = distance between the head of the guides

Other systems can also be used to connect the two safety guard units as long as the two rollers are instantaneously activated.

A safety switch (**not supplied**) must be mounted on the frame to stop the machine at the latest when the safety guard grips.

The block activation lever is located at a distance of 130 mm from the axis of the guide.

The force to be applied to the lever shall be between 140 and 900 N.

After installation, make sure that the locking rollers move at the same time when the lever is operated.

The guides must be aligned with the safety gear unit.

There must be a clearance of approx. 2 mm on either side of the guide.

The safety gear unit must be centred with the guide. Use the adjustment screw to move it. The tripping speed of the governor operating the safety guard must not be greater than 2.6 m/s

DIMENSIONS

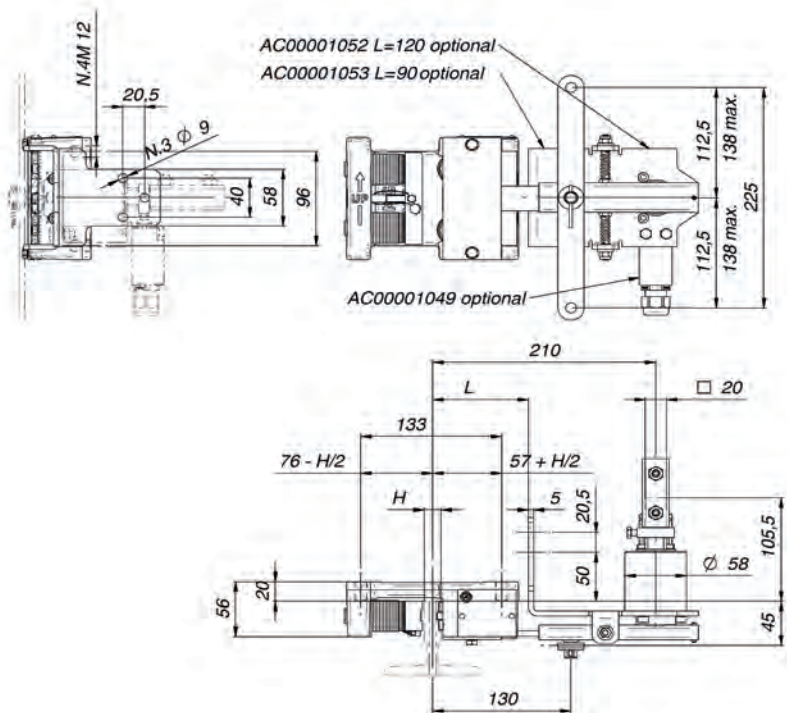
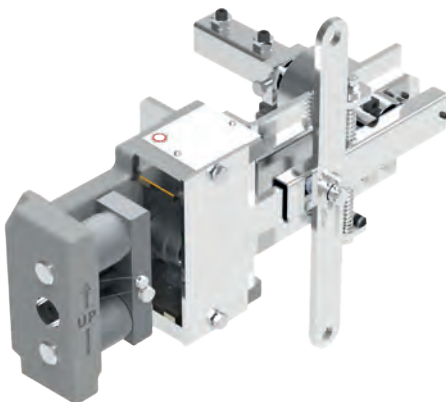


FIG. 27





DIMENSIONS

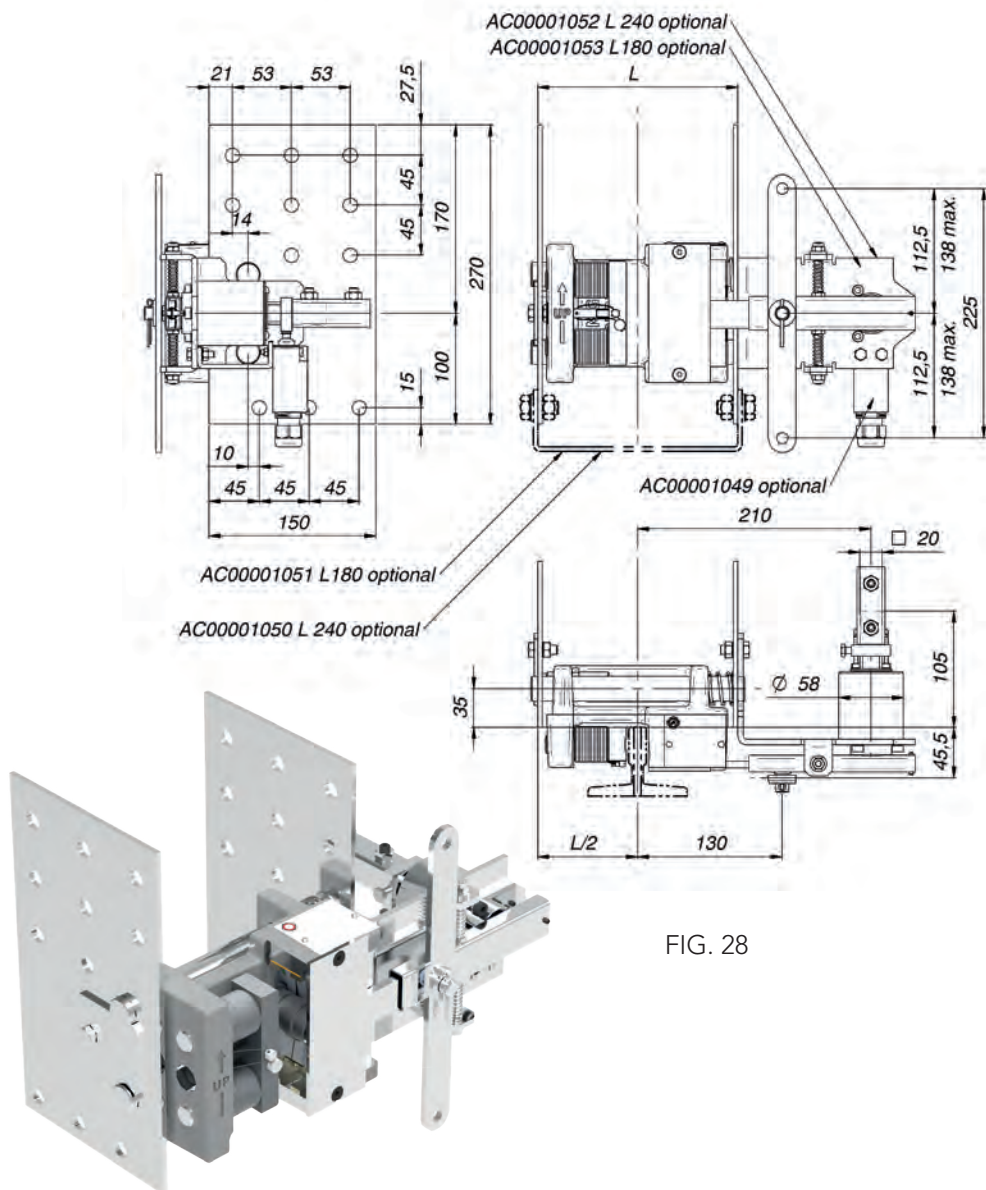


FIG. 28

IMPORTANT

Depending on the type of frame (chair or central) and the distance between the sliding shoes of the cab and the guide, check how and where the safety gear units are mounted.

In the event of activation, the movable wedge and the sliding shoe of the safety guard unit must be free to move.

The best mounting solution is the floating one because the two devices are free to move orthogonally to the axis of the guides, being fixed to a support that allows this movement and at the same time ensures the right mechanical resistance.

- Note: for the chair-type frames (guides on the side with respect to the cab) it is possible to mount the PPR25/40BD devices in a fixed way, observing the direction of assembly shown below and leaving the right distances between the cab sliding shoes and the guides.
- For the central frames (guides in the centre with respect to the cab) a fixed installation with respect to the frame is forbidden.

The PPR25/40BD safety gear devices can be mounted either at the top or bottom of the frame according to the diagrams in Fig. 24 - 25.

The travel of the control levers at the actuation pin must be equal to or greater than $\pm 32,5$ mm from the idle position.

With reference to the regulations in force, check the correct assembly, adjustment and solidity of the whole.



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