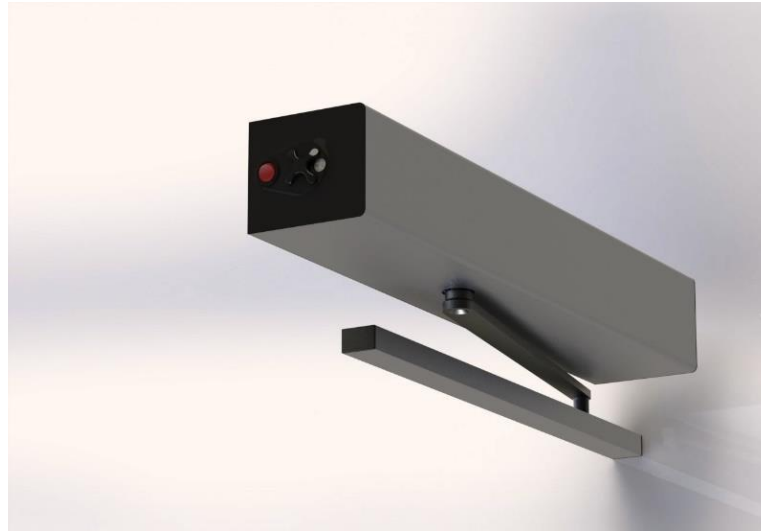


Vector Operator



1. Description

VECTOR is an advanced **electromechanical operator** used for the automation of any type of new or existing swing door.

It is a **highly efficient high-performance** operator, especially designed for intensive use, as it can automate both light and very heavy doors.

VECTOR is available with pull or push arms, and with single and bi-parting door versions.

Thanks to its specific operating modes, **VECTOR** is recommended for **hermetic doors for clean rooms**, and for environments with **strong winds**.

Other main features:

- **Compact** design, with minimum aesthetic impact.
- Formal and attractive design with pleasant lines.
- Available modes for Low Energy and Push&Go activation.
- Easy installation and monitoring thanks to its built-in double display.

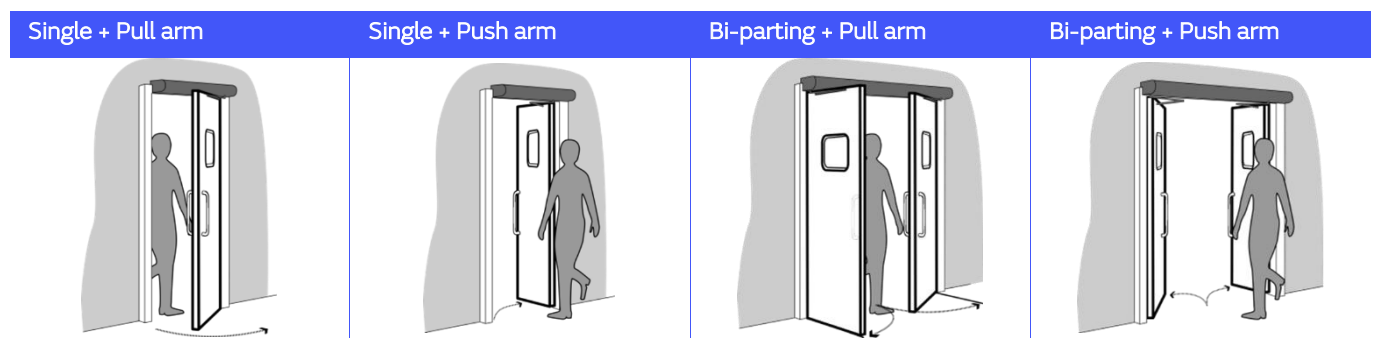
There are two models of **VECTOR** swing operator according to their operation:

Motor opening and spring closing (standard):

- Door closing by means of a motor-assisted spring in normal operation.
- Door closing by means of a spring in case of power supply failure.

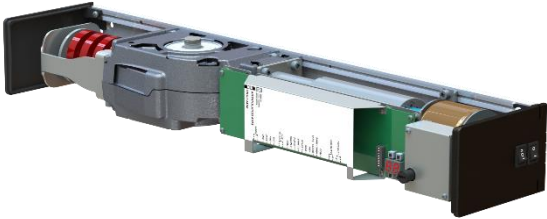

Spring opening and motor closing (reverse operation):

- Door opening by spring assisted by motor in normal operation.
- Door opening by spring in case of power failure.



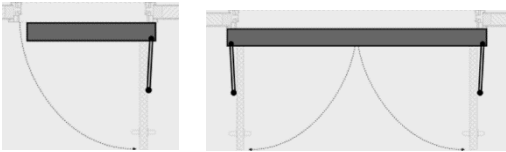
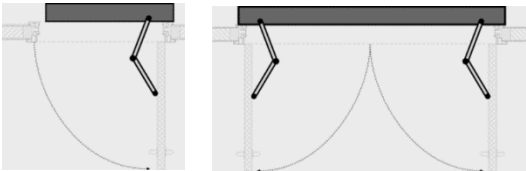
Vector Operator

2. System Components

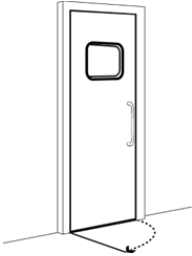

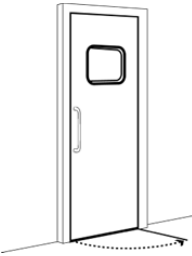
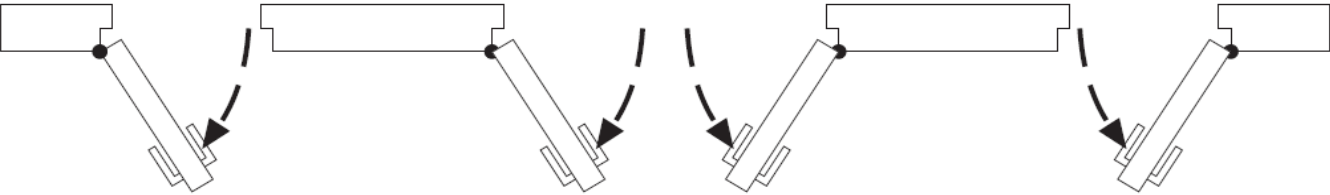
Operator	Arm
	

3. Versions

It is available in the following transmission arm configurations, in single and bi-parting door versions:

Pull arm	Push arm
<p>Attached to the wall on the same side as the hinges (see picture).</p>	<p>Attached to the wall on the opposite side to the hinges (see picture).</p>
	

Both the operator and the two arm versions (pull and push) are universal for any leaf typology: bi-parting, left and right opening.

Left Side Opening	Bi-parting	Right side opening
		
		

Vector Operator

4. Technical Specifications

Mechanical Specifications	
Dimensions (Height x Width x Length)	89x130x675mm (1 leaf) 89x130x up to 2800mm (maximum 2 leaves)
Maximum leaf weight	250 kg (see table 1)
Opening time	3s (70°/s) ÷ 6s (20°/s)
Closing time	4s (40°/s) ÷ 15s (10°/s)
Closing force (second in 1154)	EN4 ÷ EN6 (See table 2)
Maximum opening angle	110°
Width of door leaf	700 ÷ 1400mm
Anti-crushing	Automatically limits force when obstacles are detected
Weight	Approx. 11kg.
Protection grade	IP40

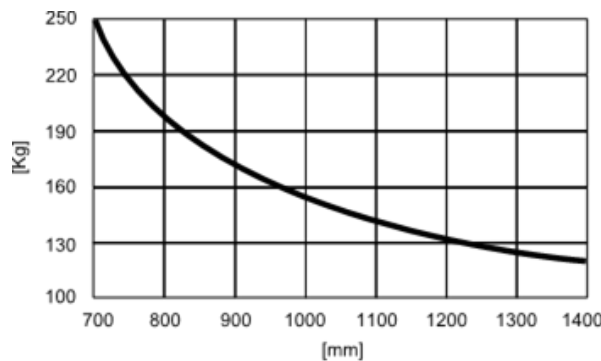


Table 1. Kg-mm Ratio

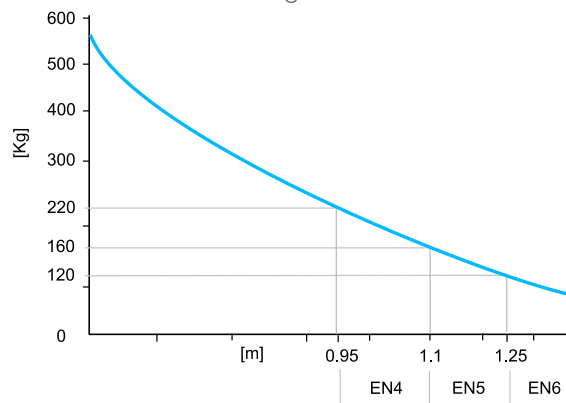
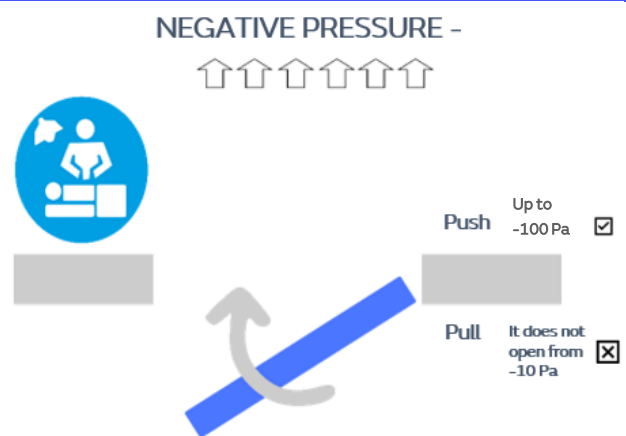
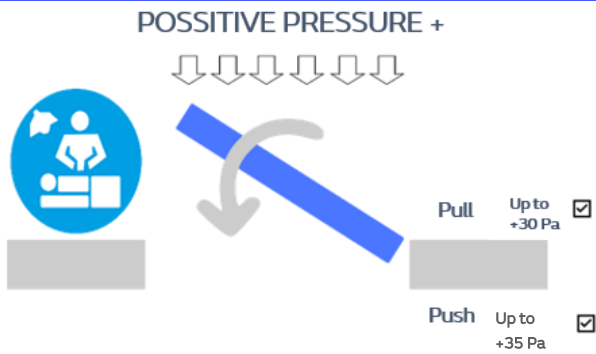


Table 2. Classification according to EN1154

Electrical Specifications	
Power supply	230V ±10% CA 50/60 Hz
Power supply on demand	115V ±10% CA 50/60 Hz
Nominal power	85 W
Shaft output max. torque	45 Nm
External devices power supply	12 VDC - 12W Máx.
Operating temperature	From -10°C to 50°C
Service	Continued

Vector Operator

Working Pressures



Fire Resistance Test EN-134-1

The use of Vector Operator is positively appraised for use on timber/mineral-based door assemblies. Of up to 120 minutes integrity and insulation with respect to **EN 1634-1**.

Should the recommendations given in this report be followed it can be concluded that single-acting timber/mineral-based door assemblies, which have previously been successfully fire tested by UKAS accredited laboratory (or assessed by Exova Warringtonfire, BM TRADA or Chiltern International Fire), to have achieved up to 120 minutes integrity and insulation performance in accordance with BS EN **1634-1**, as discussed in this report, may be fitted with Vector Operator, without detracting from the overall achieved performance of the doorset.

5. Safety Features

All manusa VECTOR operators include the following safety features as standard:

Closing force limitation:

- The motor torque is monitored to ensure pedestrian safety.

Detection of obstructions:

- When closing, the door reopens.
- When opening, the door stops.

Manual opening:

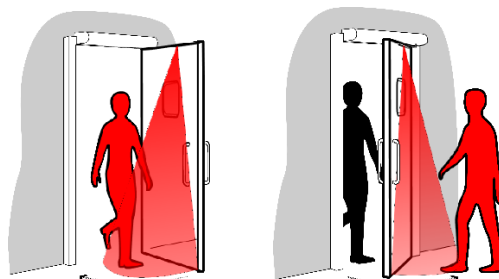
- In the event of power failure, the door may be activated manually, like a manual swing door.

Fire alarm connection:

- In the event of a fire and to allow evacuation, the door enters manual mode.

Optionally, the VECTOR operator may have protection sensors for the door's opening area. If the sensor detects the presence of a pedestrian in that area, the door will move safely.

Optionally, the VECTOR operator is for sale with a reverse mechanism, where the spring acts in favor of the door opening and not closing, especially designed for escape routes.



Vector Operator

6. Compatibilities

Swing doors with VECTOR operators support a wide range of accessories:

Detection	Wired Range	Wireless range	Control / Other
<ul style="list-style-type: none"> • Movement sensor • Reopening photocell • Standard presence sensor • Recessed presence sensor • Unsupervised movement and presence sensor • Supervised movement and presence sensor • Touchless switch • Security sensor L=350 • Security sensor L=700 	<ul style="list-style-type: none"> • Push button • Elbow push button • Key switch • Proximity reader • Keypad • Autonomous print reader 	<ul style="list-style-type: none"> • Push button • Elbow push button • Key switch • Keypad • Remote control • Hands-free access identifier 	<ul style="list-style-type: none"> • Emergency stop • Buzzer and/or warning light • Vector mode selector. • Vector key mode selector.

7. Applied Standards

Low Voltage	35/2014/CE
Electromagnetic Compatibility	30/2014/CE
Construction Materials	305/2011/CE
Machine Safety	42/2006/CE
Automatic Door Use Safety	EN 16005

8. Finishes

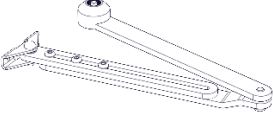
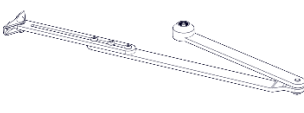
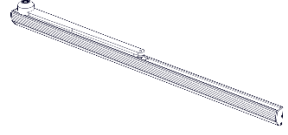

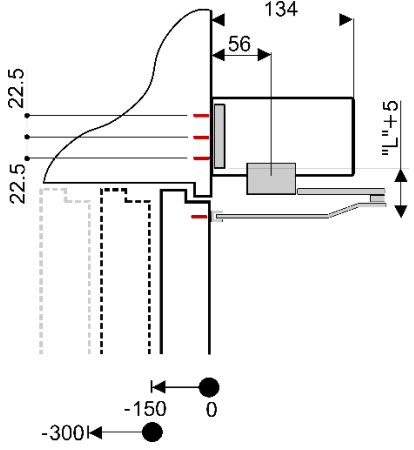
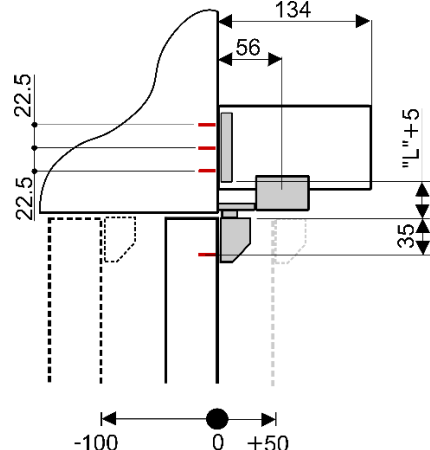
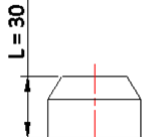
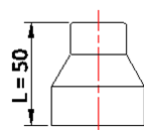
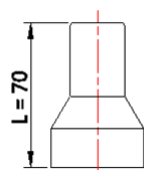
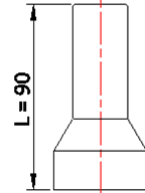
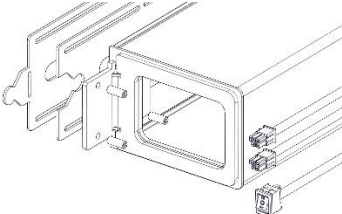
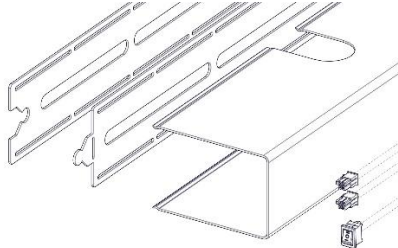
The cover is manufactured in aluminium, allowing all of the finishes available for this material:

Anodised: protective surface layer generated from an electrolytic process. The minimum anodised thickness is 15 microns.

Lacquered: protective coating of oven-polymerised plastic paint. The minimum lacquer thickness is 60 microns. The entire RAL range is available.

Vector Operator

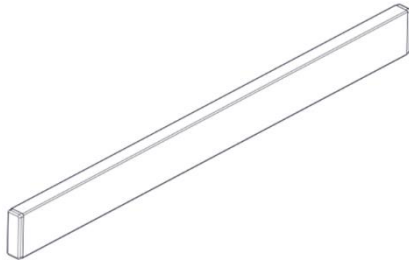
9. Accessories

Arms			
Push arm		Pull arm	
Short Push arm	Long Push arm	Basic	SLIM
			
$0 \leq X \leq 150$	$150 \leq X \leq 300$		
Measurements Push Arm Mechanism		Measurements Trailing Arm Mechanism	
			
Axis Extensions			
30 mm axis extension	50 mm axis extension	70 mm axis extension	90 mm axis extension
			
Double Vector			
Intermediate Cover Kit		Custom cover (on demand)	
			

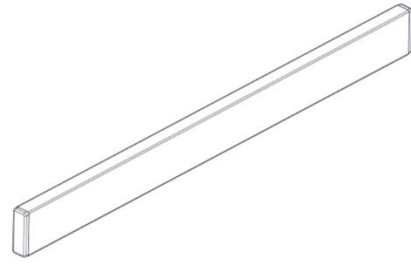
Vector Operator

Frame Packs (for P50 swing door + pull Vector operator)

Single Leaf pack (L= 675mm)



Double leaf pack (L=2800 mm)



*The characteristics indicated in this manual are purely informative and are in no way binding.
The manufacturer reserves the right to make modifications without prior notice.*



Technical service and contact of the manufacturer:
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