



PNEUMAX



AUTOMOTIVE ELECTRIC DEVICES

E-Range CATALOGUE



E-Range

Electric devices fo BiW applications

A wide range of advanced electric components
for Body in White applications including
clamping, locating, handling and pivoting





PNEUMAX AUTOMOTIVE

Pneumax Automotive is a business unit of Pneumax Spa. The Italian company was founded in 1976 and today is at the head of Pneumax Group, one of the main players in the industrial and process automation industry worldwide. The Pneumax Automotive BU offers a complete range of products dedicated to the production lines of the industry, with a special focus on **Body in White applications**.

The Pneumax range includes **clamping units, pin packages, gripper units, power pivots** and complete multi axes positioning systems developed to guarantee maximum reliability and the highest accuracy and repeatability.

Each product series integrates extremely **innovative technical solutions**, without compromising on compliance with the various international mounting standards. Special attention was placed in energy efficiency, with devices that allow the highest savings offered on the market. Pneumax's extensive network across the globe allows optimal and coordinated management of projects with automotive companies internationally. Every stage of production and product testing is carried out in our specially equipped departments in the Italian headquarters located in Lurano (BG) to ensure maximum reliability and the highest quality standards.

Safety & green Automation

- Operator and equipment safety
- Flexibility and reduction of setup times
- Connectivity
- Energy savings
- Standardisation



Pneumax Group

- ▶ Headquarters
- Companies
- Distributors

PNEUMAX
Headquarters



INDUSTRIAL
AUTOMATION



PROCESS
AUTOMATION



AUTOMOTIVE

10
Production
units

26
Companies

850
Collaborators

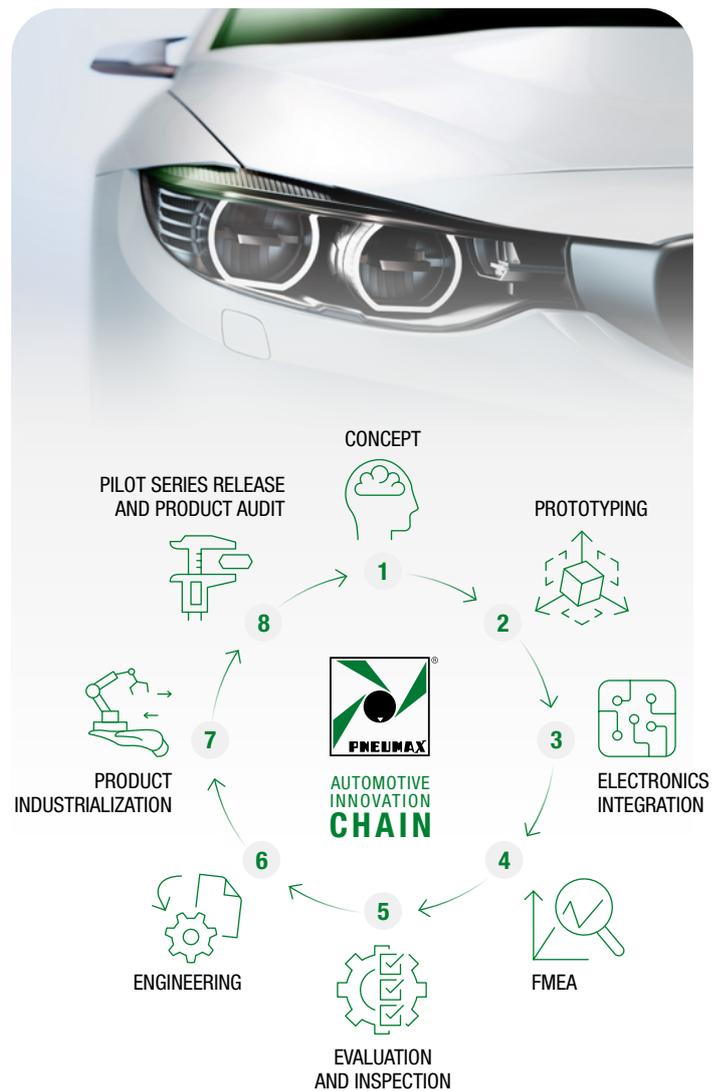


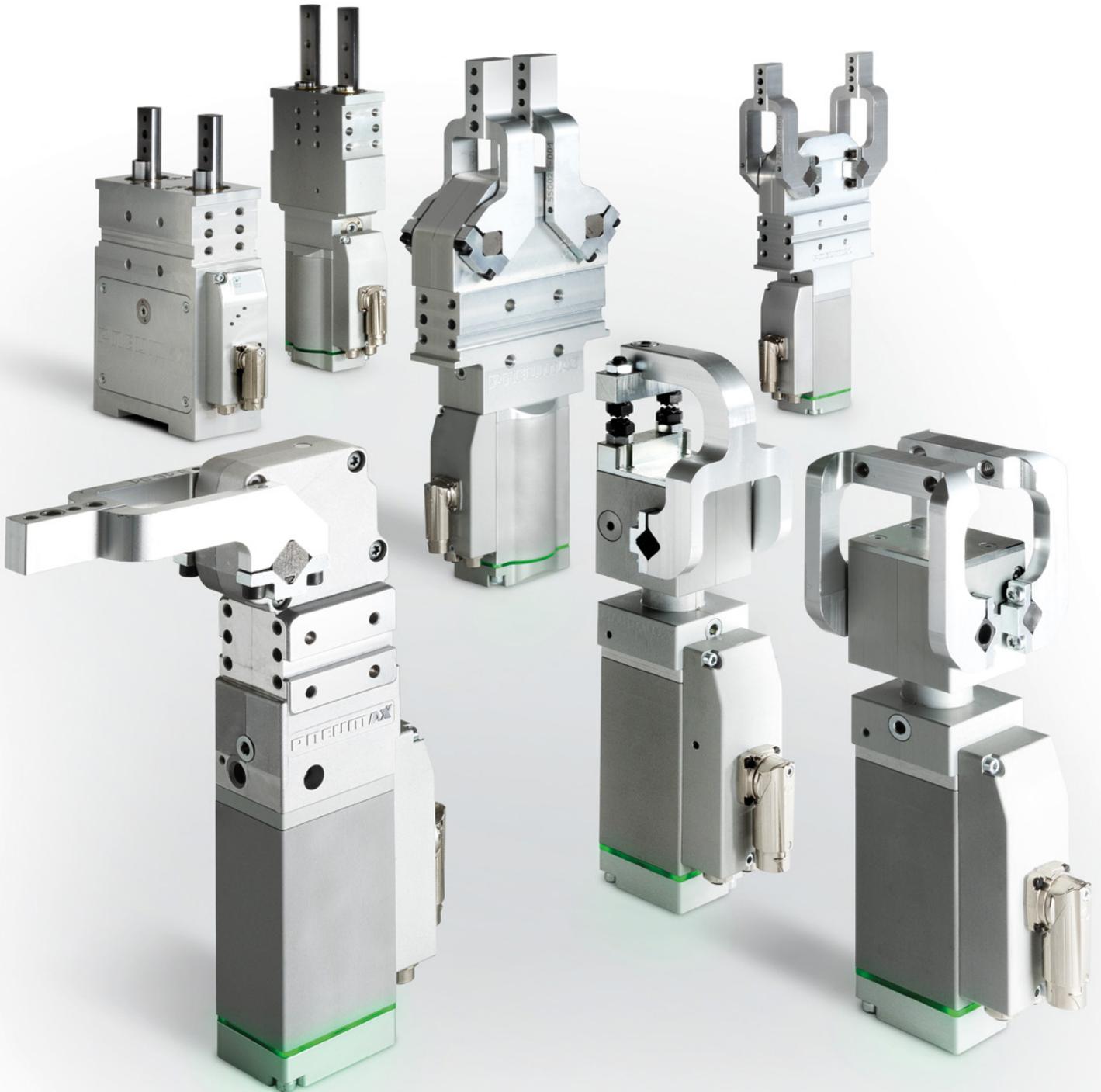
A WIDE RANGE OF SOLUTIONS

In order to face the current challenges in BIW production lines, **Pneumax's product range is constantly evolving, with a specific focus on sustainability, flexibility of the control systems and energy efficiency.**

Today, in addition to the consolidated range of pneumatic solutions, Pneumax further expands its offer by introducing E-Range, a new line of **electrical devices.**

Thanks to the experience gained in the industrial automation sector and a constant commitment to innovation, the company establishes itself as a reference point not only in pneumatics, but also in electrical integration, offering advanced and high-performance solutions to meet the needs of a constantly evolving market.







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E-Range

Product Overview

E48-Smart

48Vdc powered electric smart range

Clamping - E48-Smart



Locating - E48-Smart



Handling - E48-Smart

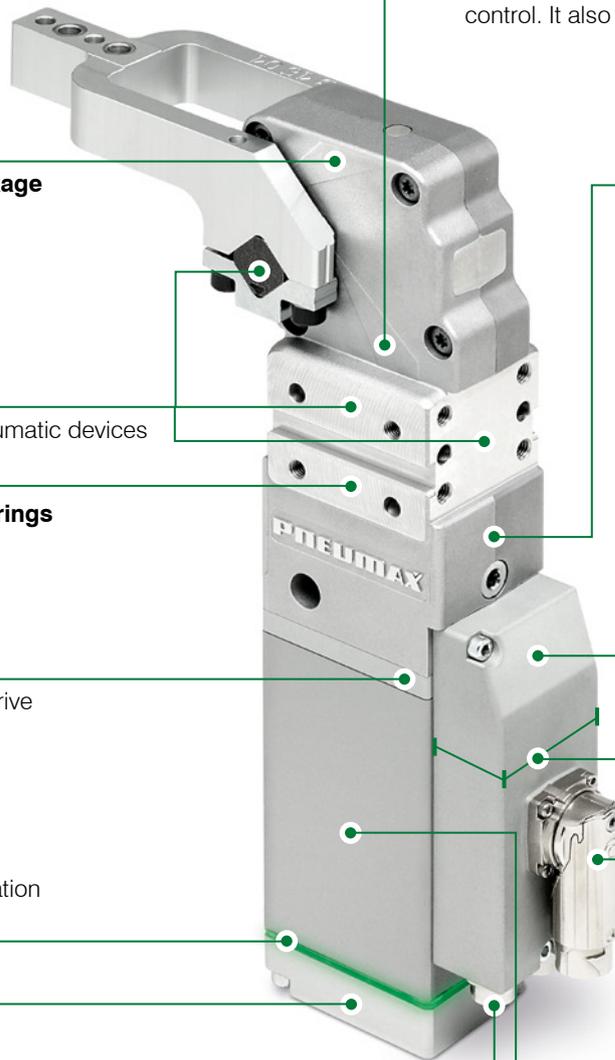


Clamping

E48-Smart Highlights



Patented



Backlash-free trapezoidal stainless steel screw with optimal compromise between cycle time and load capacity; the irreversibility of the screw allows for an integrated **auto-retain** of the open position and enhances the load control. It also allows for powering off the motor once the end stroke is reached.

Industry-proven toggle linkage

Optimally accessible **manual unlock** mechanism for emergency situations: with no power the clamp can be unlocked or moved manually with an Allen wrench.

Interchangeability with pneumatic devices

One only drive used among the whole product range; it allows for condition **monitoring such** as part presence, 2-partt detection and obstacle detection.

Thrust axial and radial bearings

Sealed housing and sealed drive

Extra compact drive

LED ring for optimal visualization of the clamp condition.

Rotatable **connector with** self-guiding mating

Absolute encoder

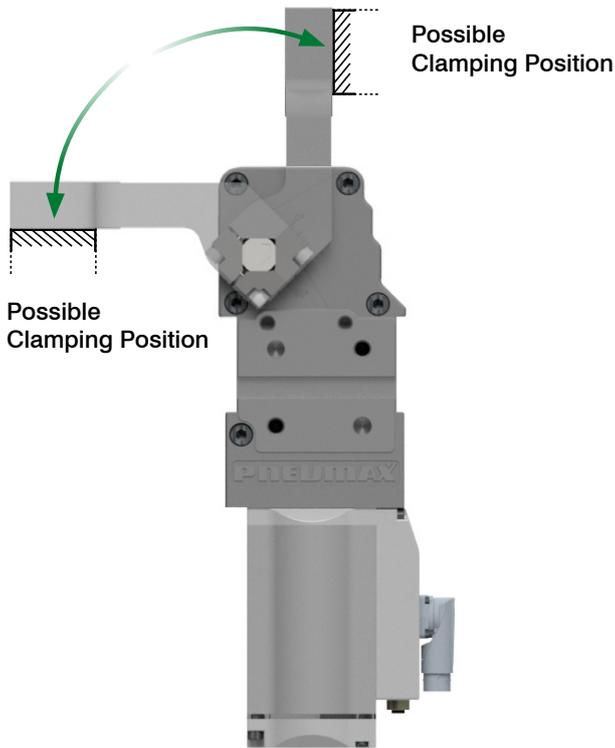
Brushless low voltage **48 V DC motor**. The hollow shaft allows the rotor and the nut screw to be coaxial with the stator, thus reducing friction and allowing the motor torque to be optimally used.

EtherCAT communication:

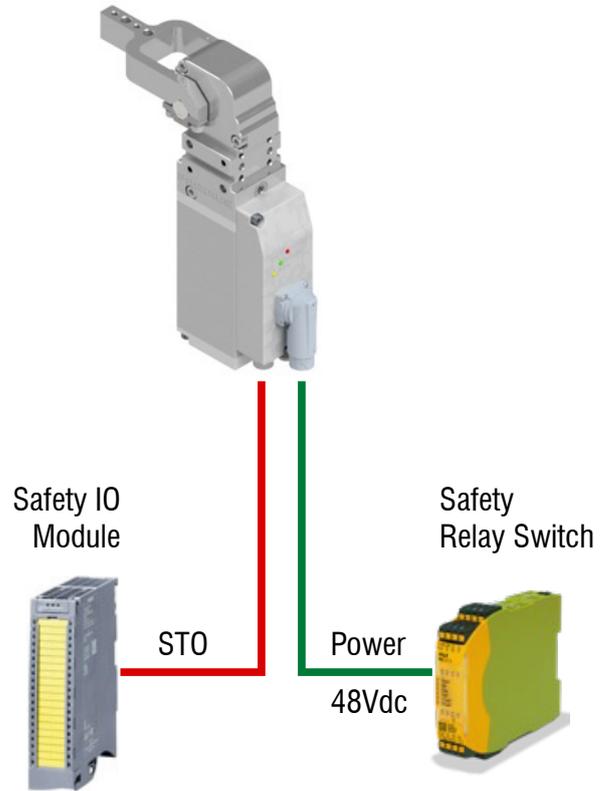
- quick and cable length saving installation through **daisy-chaining**
- Thanks to the CSP (Cyclic Synchronous Position) mode DC, the EtherCAT master is able to send desired positions to the clamp. In this mode, the trajectory generator is located in the master control device, not in the clamp. In acyclic synchronous manner, it provides a target position to the clamp device, which performs position control.

Double clamping position

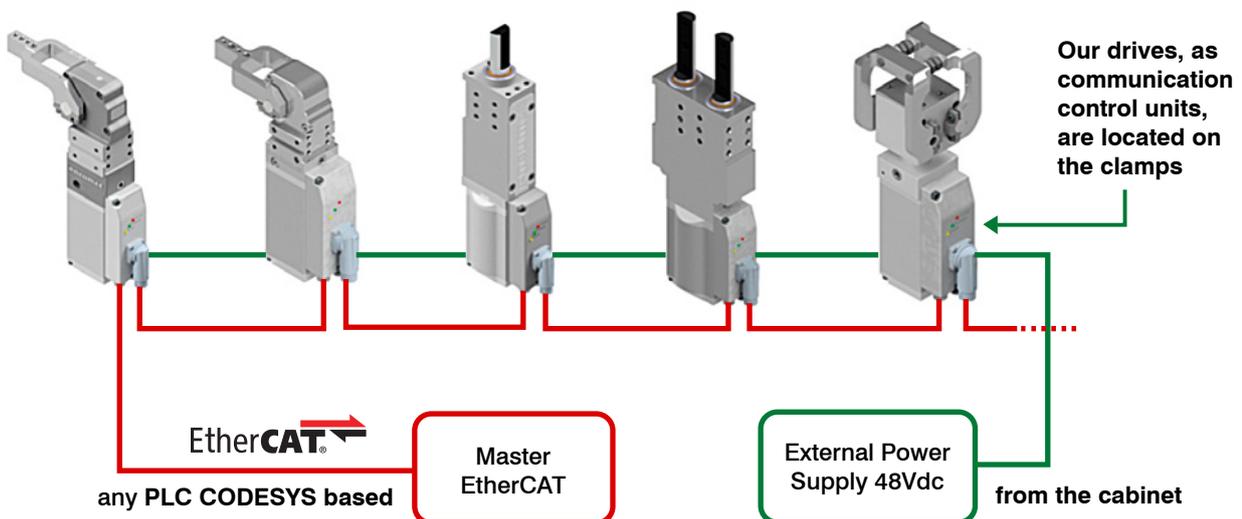
Thanks to the irreversibility of the screw, the open position can be managed as closed position. The clamping moment values in such a configuration are available upon request.



Safe signal handling STO

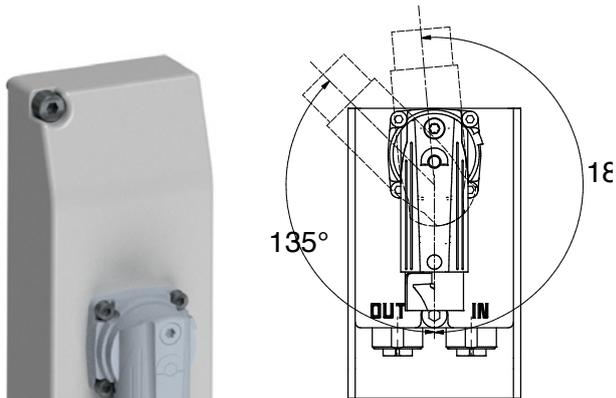


Installation concept for electrical clamping technology direct to the PLC

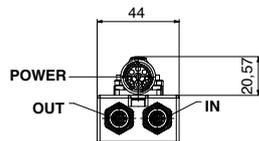
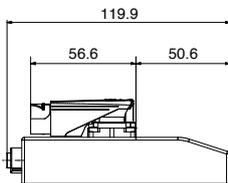


Connector types

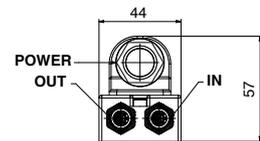
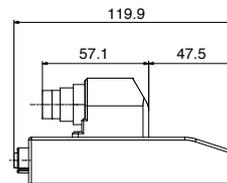
Connector with rotatable housing and fast locking system



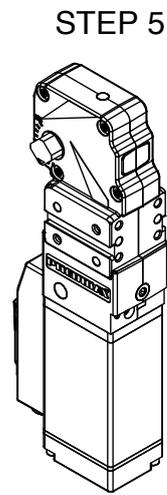
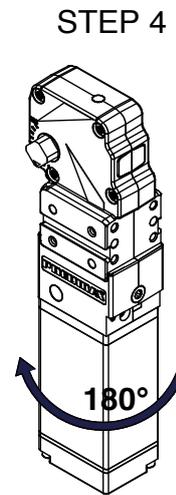
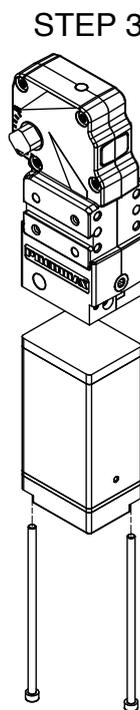
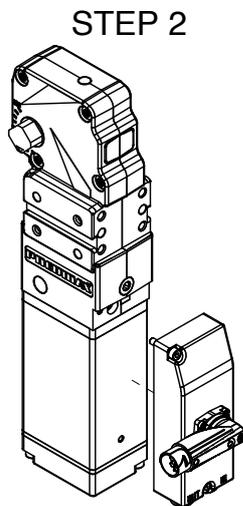
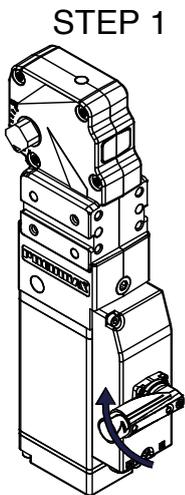
fast locking system through self-guiding mating: the connector can easily be mated by a simple push and unmated with an eight-turn.



Connector for Vario X Murr controller and power supply



How to change side position of the drive





C1E25-Series

Nano Electric power clamps

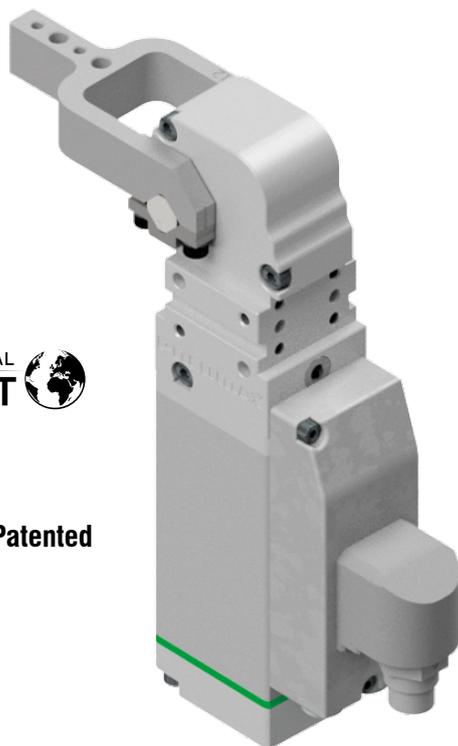
International mount

CLAMPING

INTERNATIONAL
MOUNT 



Patented



Industry-proven toggle linkage

- Same functional dimensions of pneumatic clamps
- Same clamping and holding moments as pneumatic devices
- Stepless adjustable opening angle
Optimally accessible manual unlock mechanism for emergency situations, which can also be used as manual operation
- Backlash-free trapezoidal screw with optimal compromise between cycle time and load; the irreversibility of the screw allows for an integrated auto-retain of the open position and enhances the load control
- Brushless low voltage motors with absolute encoder
- Extra-compact drive can be rotated by 180°
- Cable lengths can be reduced by daisy-chaining the drives

Condition monitoring

- Obstacle detection
- Part presence; Part missing
- Multiple part detection

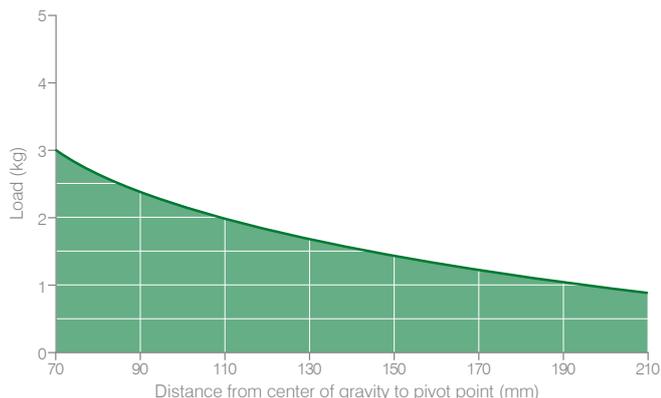
Operating features

Supply tension	48 VDC
Peak current	0.7 A
Noise level	< 20 dB

Functional charts

Size 25

• Tooling weight chart



• Clamping moment

50 N m / 36 lb-ft

• Holding moment

75 N m / 55 lb-ft

Ordering string

Nano Power Clamps

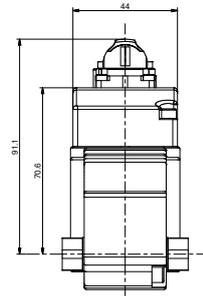
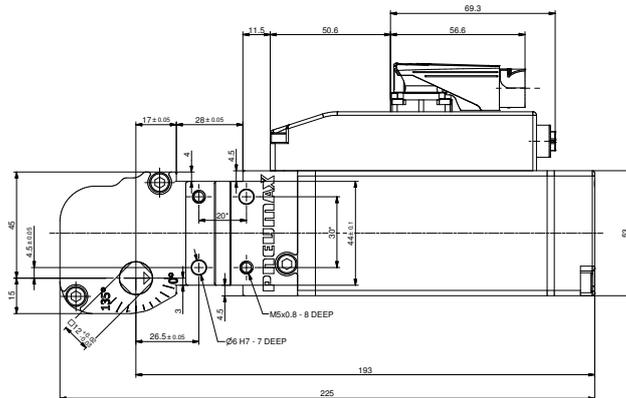
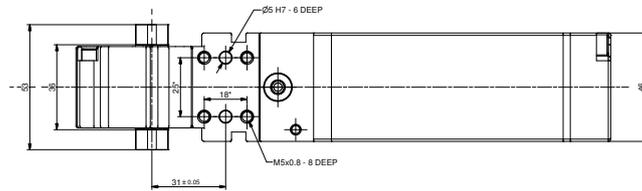
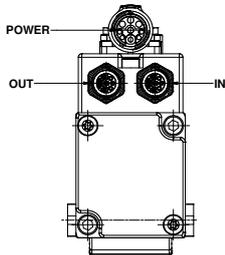
C **1** **E** **25** **1** **A** **01** **-**

C	VERSION	C = clamp with toggle linkage
1	MOUNTING PATTERN	1 = international mount
E	OPERATION	E = brushless motor, 48 VDC, with drive The clamp is supplied with the drive mounted on the rear side, it can easily be rotated to the front size by untightening the tie rods
25	SIZE	25 = equivalent to size 25 (pn)
1	ARM MOUNT	1 =  2 =  3 =  4 = 
A	ARM MATERIAL	A = aluminum
01	CLAMP ARM TYPE	01 = wishbone, central, 0 mm offset 13 = H, 0 mm offset 04 = wishbone, central, 10 mm offset 14 = H, 10 mm offset
-	CONNECTOR	- = connector with rotatable housing V = connector for vario-X control

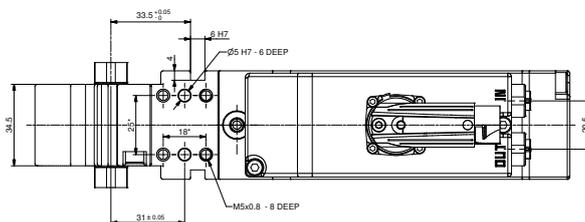
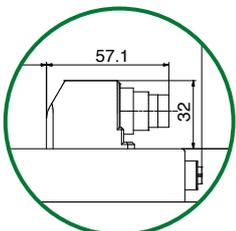
CLAMPING

C1E25 / Nano Electric power clamps - International mount

WEIGHT 1.98 kg



Dimensions of connector -V version



* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02
DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

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C_E-Series

Electric power clamps International mount

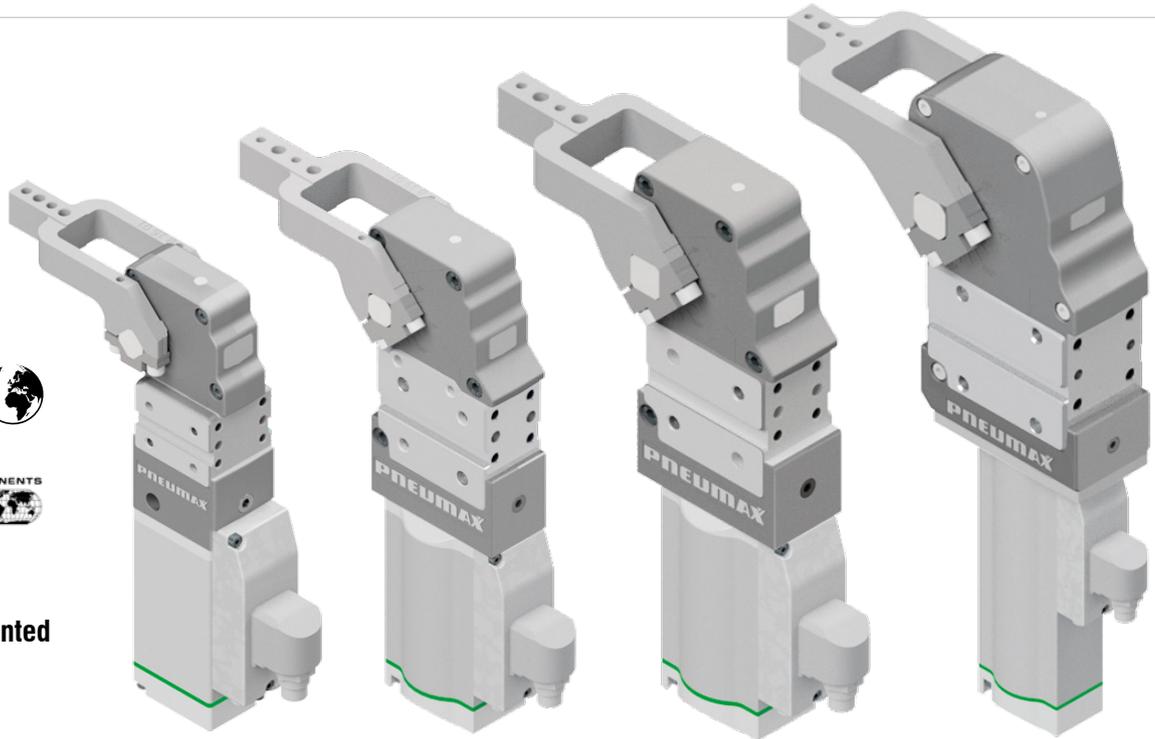
CLAMPING

INTERNATIONAL
MOUNT

GLOBAL STANDARD COMPONENTS
NAAMS



Patented



Industry-proven toggle linkage

- Same functional dimensions of pneumatic clamps for complete interchangeability
- Same clamping and holding moments as pneumatic devices
- Stepless adjustable opening angle
- Optimally accessible manual unlock mechanism for emergency situations, which can also be used as manual operation
- Backlash-free trapezoidal screw with optimal compromise between cycle time and load; the irreversibility of the screw allows for an integrated auto-retain of the open position and enhances the load control

- Brushless low voltage motors with absolute encoder and optimized cable cross-sections
- Extra-compact drive can be rotated by 180°; the smart drive automatically identifies the load and adapts the cycle time
- Cable lengths can be reduced by daisy-chaining the drives

Condition monitoring

- Obstacle detection
- Part presence; Part missing
- Multiple part detection

Operating features

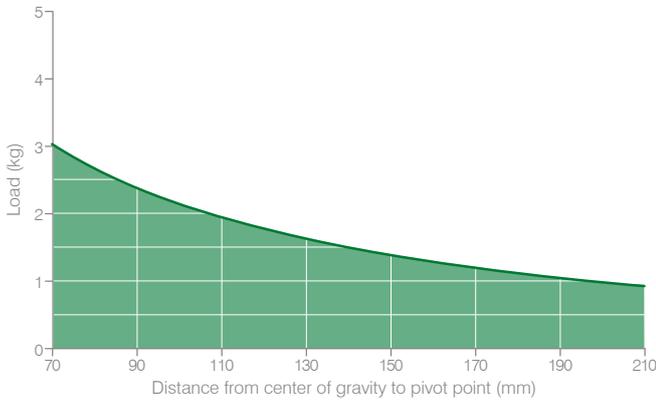
Supply tension	48 VDC	
Peak current	0.8 A size 40 0.7 A size 50	0.7 A size 63 1.4 A size 80
Noise level	< 20 dB	



Functional charts

Size 40

- Tooling weight chart

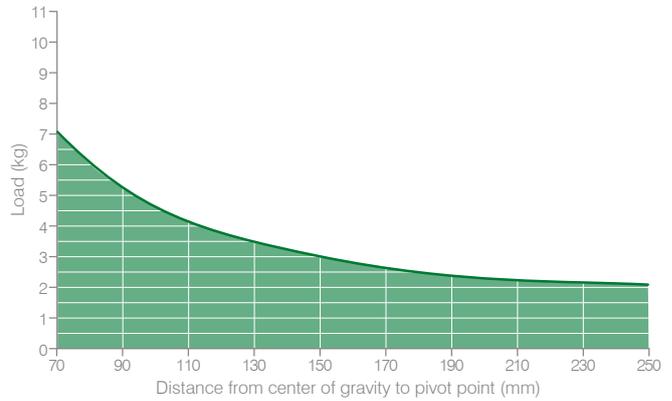


- Clamping moment
150 N m / 110 lb-ft

- Holding moment
380 N m / 2800 lb-ft

Size 50

- Tooling weight chart

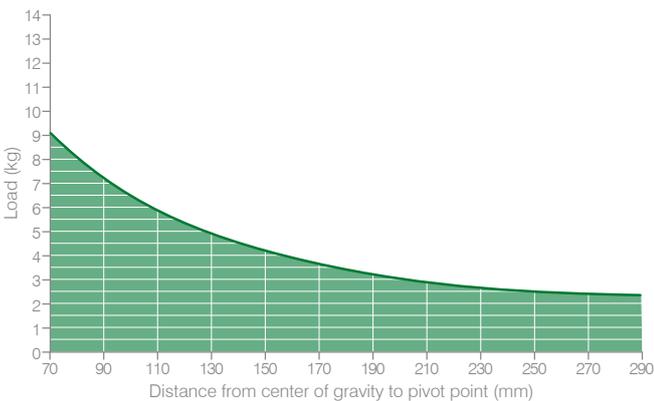


- Clamping moment
200 N m / 147 lb-ft

- Holding moment
800 N m / 590 lb-ft

Size 63

- Tooling weight chart

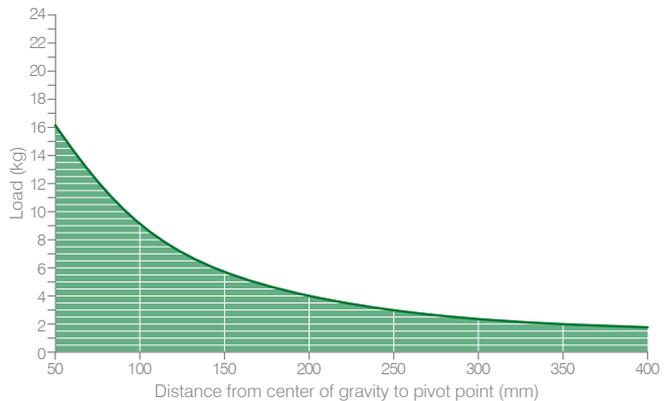


- Clamping moment
400 N m / 295 lb-ft

- Holding moment
1.500 N m / 1.100 lb-ft

Size 80

- Tooling weight chart



- Clamping moment
600 N m / 442 lb-ft

- Holding moment
2.500 N m / 1.840 lb-ft

Ordering string

Please see the charts in the datasheets for arm position as well as for max. opening angle

C1E-Series

C 1 E 40 4 A 01 -

C	VERSION	C = clamp with toggle linkage
1	MOUNTING PATTERN	1 = International mount
E	OPERATION	E = brushless motor, 48 VDC, with drive The clamp is supplied with the drive mounted on the rear side, it can easily be rotated to the front size by untightening the tie rods
40	SIZE	40 = equivalent to size 40 (pn) 63 = equivalent to size 63 (pn) 50 = equivalent to size 50 (pn) 80 = equivalent to size 80 (pn)
4	ARM MOUNT	1 =  2 =  3 =  4 = 
A	ARM MATERIAL	A = aluminum S = steel
01	CLAMP ARM TYPE	01 = wishbone, central, 15 mm offset* 04 = wishbone, central, 45 mm offset 02 = wishbone, right, 15 mm offset* 05 = wishbone, right, 45 mm offset 03 = wishbone, left, 15 mm offset* 06 = wishbone, left, 45 mm offset <small>* for size 80 mm = 20 mm offset only aluminium</small>
-	CONNECTOR	̄ = connector with rotatable housing ̅ = connector for vario-X control

C2E-Series

GLOBAL STANDARD COMPONENTS
NAAMS 

C 2 E 50 D -

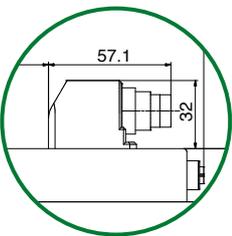
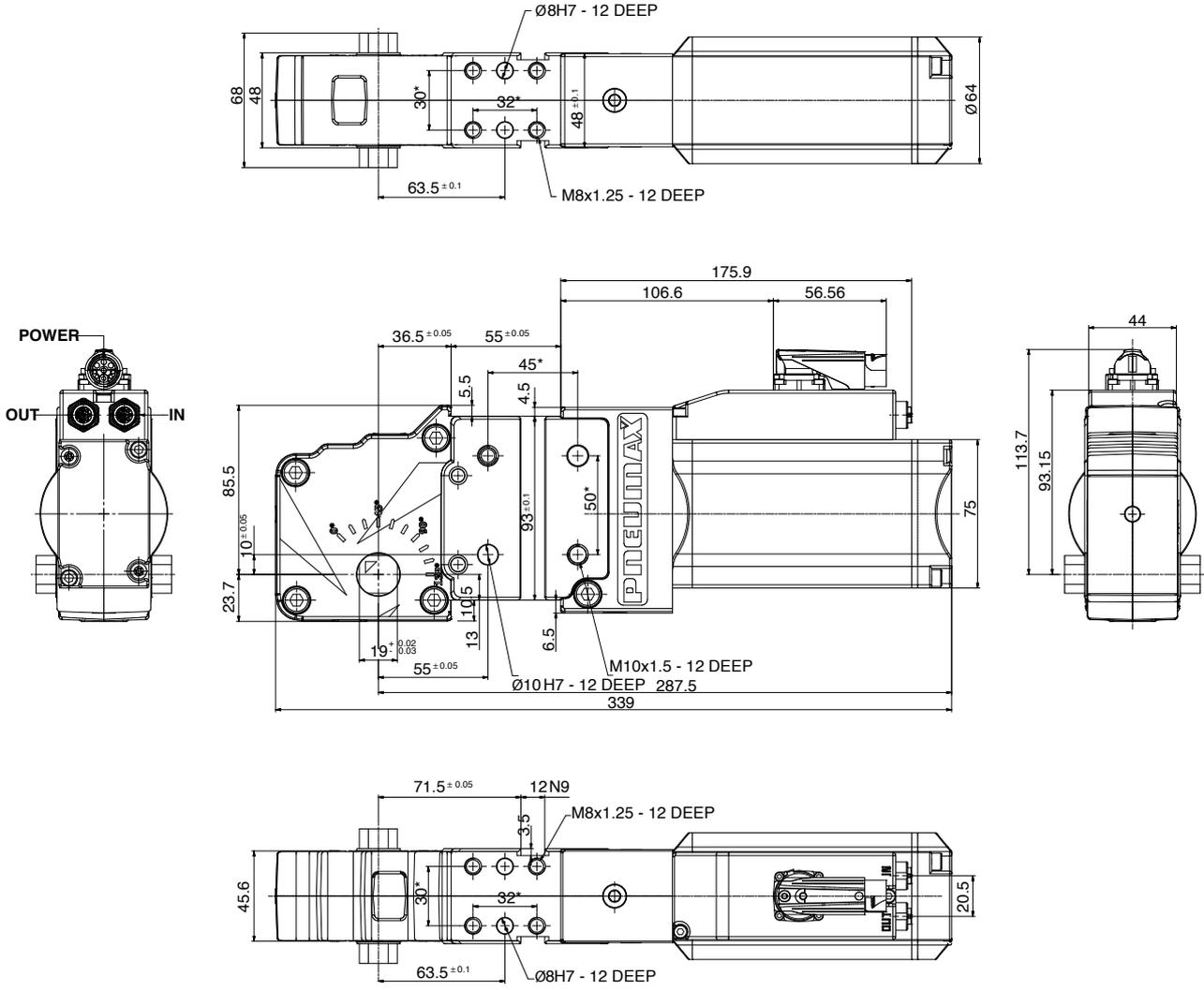
C	VERSION	C = clamp with toggle linkage
2	MOUNTING PATTERN	1 = Naams mount
E	OPERATION	E = brushless motor, 48 VDC, with drive The clamp is supplied with the drive mounted on the rear side, it can easily be rotated to the front size by untightening the tie rods
50	SIZE	50 = equivalent to size 50 (pn) 80 = equivalent to size 80 (pn) 63 = equivalent to size 63 (pn)
D	SHAFT OUTPUT	D = dual output L = single output_left R = single output_right
-	CONNECTOR	̄ = connector with rotatable housing ̅ = connector for vario-X control



C1E50 / Electric power clamps - International mount

WEIGHT 3.90 kg

CLAMPING



Dimensions of
connector -V version

* DIMENSIONAL TOLERANCE
FOR DOWEL HOLES: ±0.02

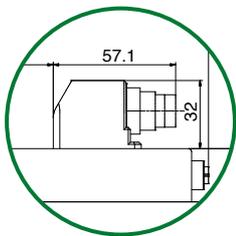
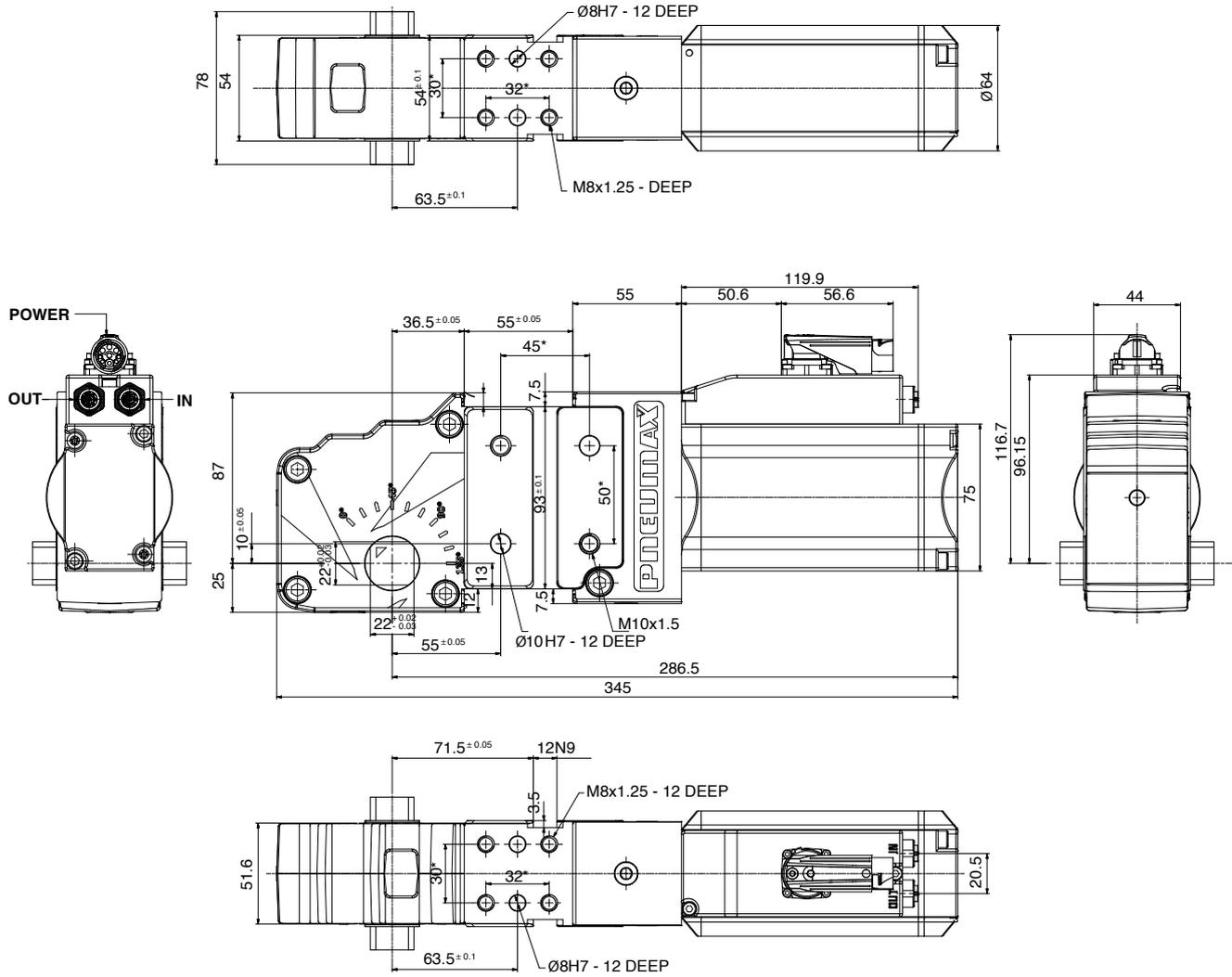
DIMENSIONAL TOLERANCE
FOR THREADED HOLES: ±0.1

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C1E63 / Electric power clamps - International mount

WEIGHT 4.45 kg

CLAMPING



Dimensions of connector -V version

* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ± 0.02

DIMENSIONAL TOLERANCE FOR THREADED HOLES: ± 0.1

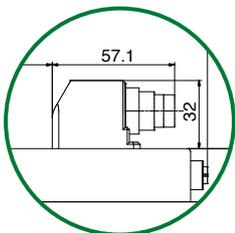
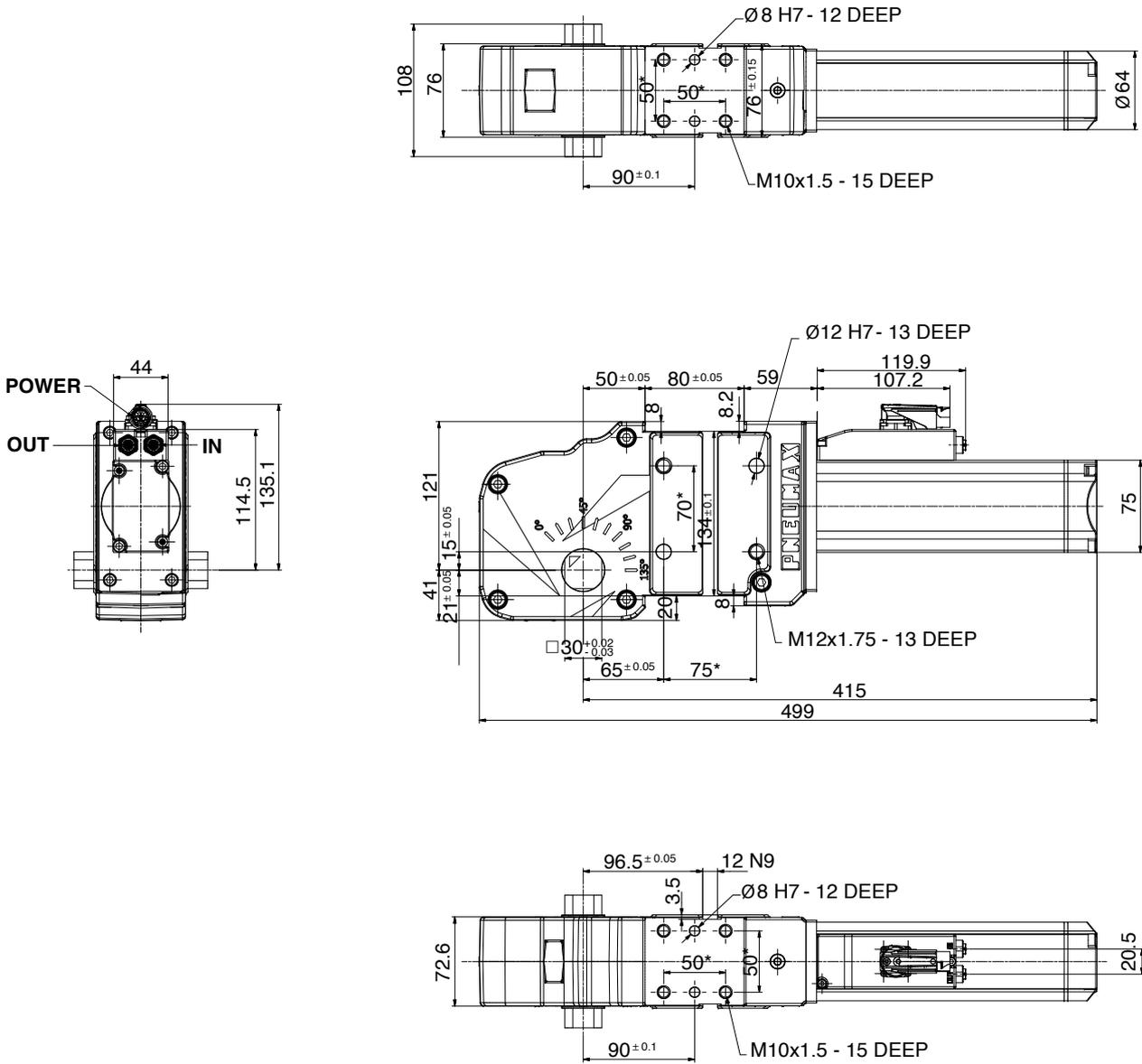
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C1E80 / Electric power clamps - International mount

WEIGHT 9 kg

CLAMPING



Dimensions of
connector -V version

* DIMENSIONAL TOLERANCE
FOR DOWEL HOLES: ± 0.02

DIMENSIONAL TOLERANCE
FOR THREADED HOLES: ± 0.1

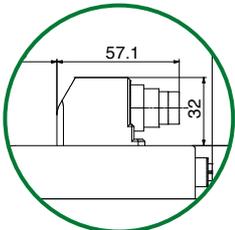
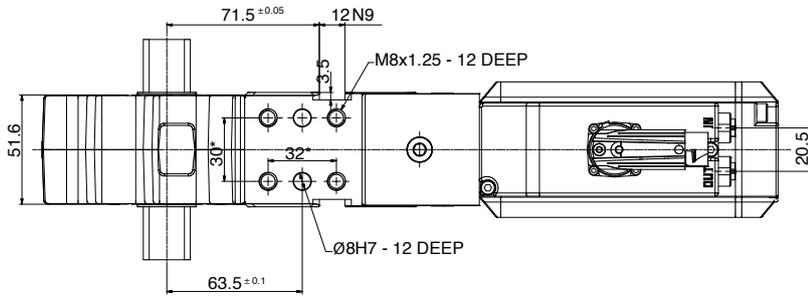
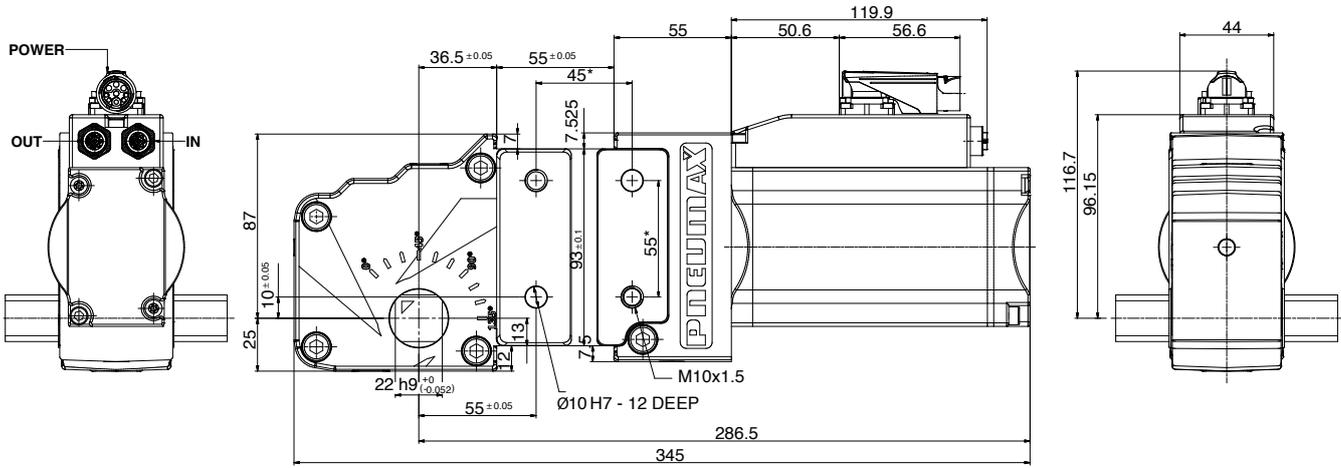
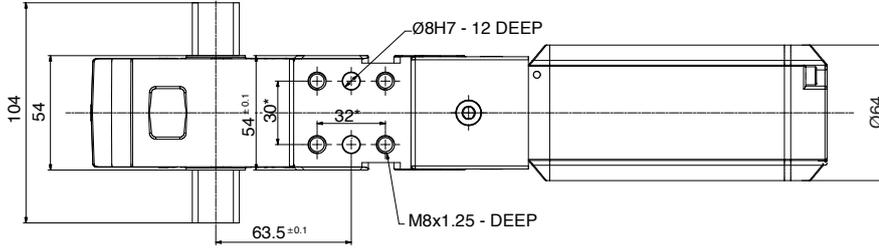
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C2E63 / Electric power clamps - NAAMS mount

WEIGHT 3.90 kg

CLAMPING



Dimensions of
connector -V version

* DIMENSIONAL TOLERANCE
FOR DOWEL HOLES: ±0.02

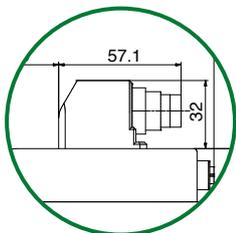
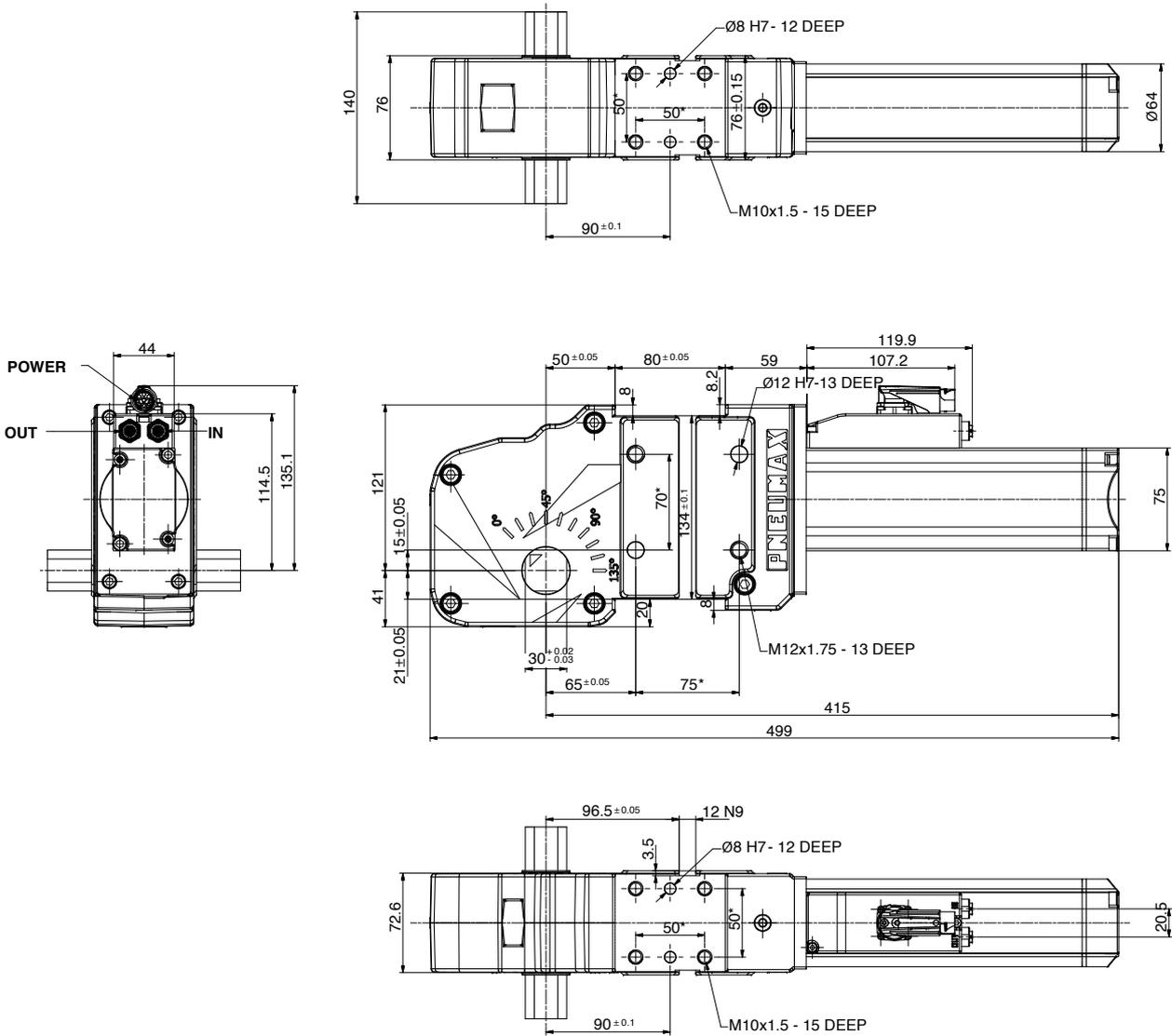
DIMENSIONAL TOLERANCE
FOR THREADED HOLES: ±0.1

REV.02 29/07/2024

C2E80 / Electric power clamps - NAAMS mount

WEIGHT 2.44 kg

CLAMPING



Dimensions of
connector -V version

* DIMENSIONAL TOLERANCE
FOR DOWEL HOLES: ± 0.02

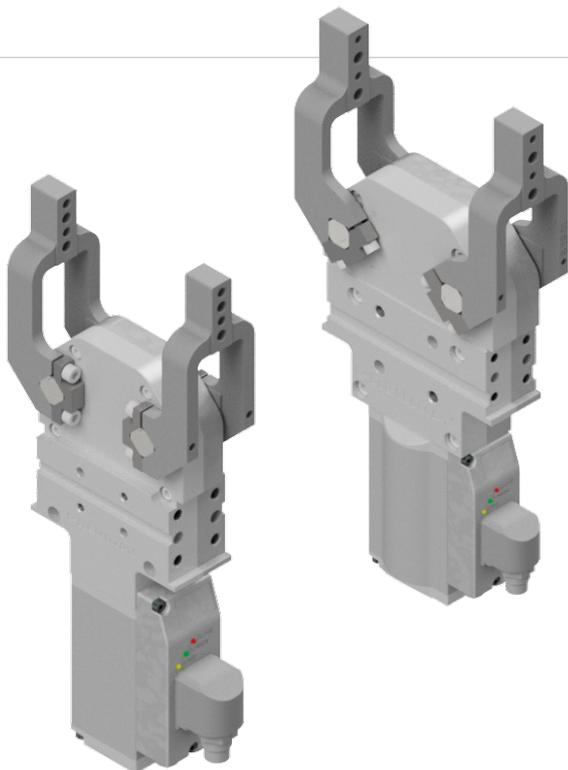
DIMENSIONAL TOLERANCE
FOR THREADED HOLES: ± 0.1

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CBE-Series

Power clamp with dual arm

CLAMPING



Industry-proven toggle linkage

- Same functional dimensions of pneumatic clamps
- Same clamping and holding moments as pneumatic devices
- Stepless adjustable opening angle
- Optimally accessible manual unlock mechanism for emergency situations, which can also be used as manual operation
- Backlash-free trapezoidal screw with optimal compromise between cycle time and load; the irreversibility of the screw allows for an integrated auto-retain of the open position and enhances the load control
- Brushless low voltage motors with absolute encoder and optimized cable cross-sections
- Extra-compact drive can be rotated by 180°
- Cable lengths can be reduced by daisy-chaining the drives

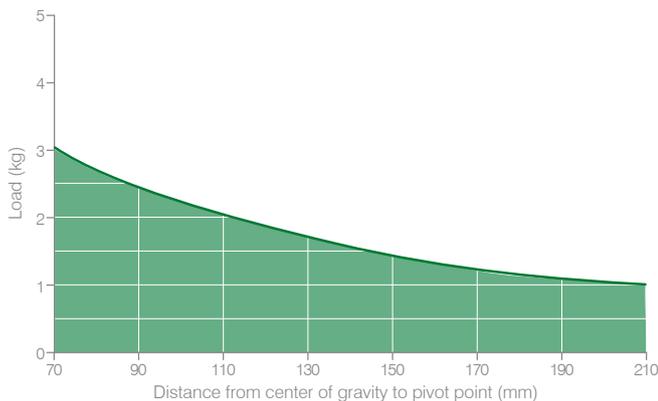
Conditioning monitoring

- Obstacle detection
- Part presence; Part missing
- Multiple part detection

Functional charts

Size 40

• Tooling weight chart

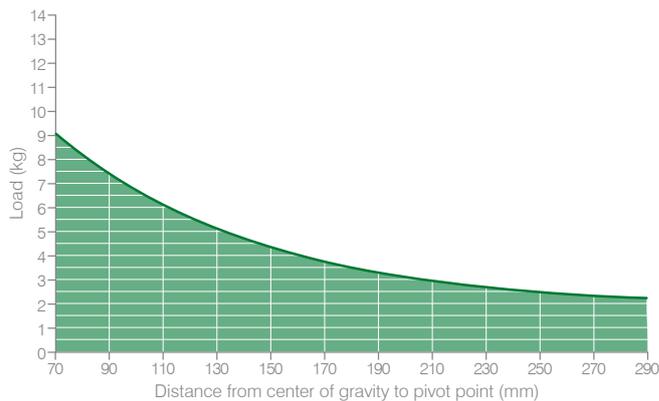


The max allowed load is to be divided on the 2 arms

- **Clamping moment**
85 N m / 62,69 lb·ft
- **Cycle time**
0.8 s at 90°
- **Holding moment**
110 N m

Size 63

• Tooling weight chart



The max allowed load is to be divided on the 2 arms

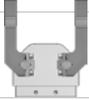
- **Clamping moment**
170 N m / 125,39 lb·ft
- **Cycle time**
0.8 s at 90°
- **Holding moment**
280 N m

The above data are meant for correct working conditions of the clamp with the same performance level during its life time. For applications which exceed the above data, please contact our sales representatives.

Ordering string

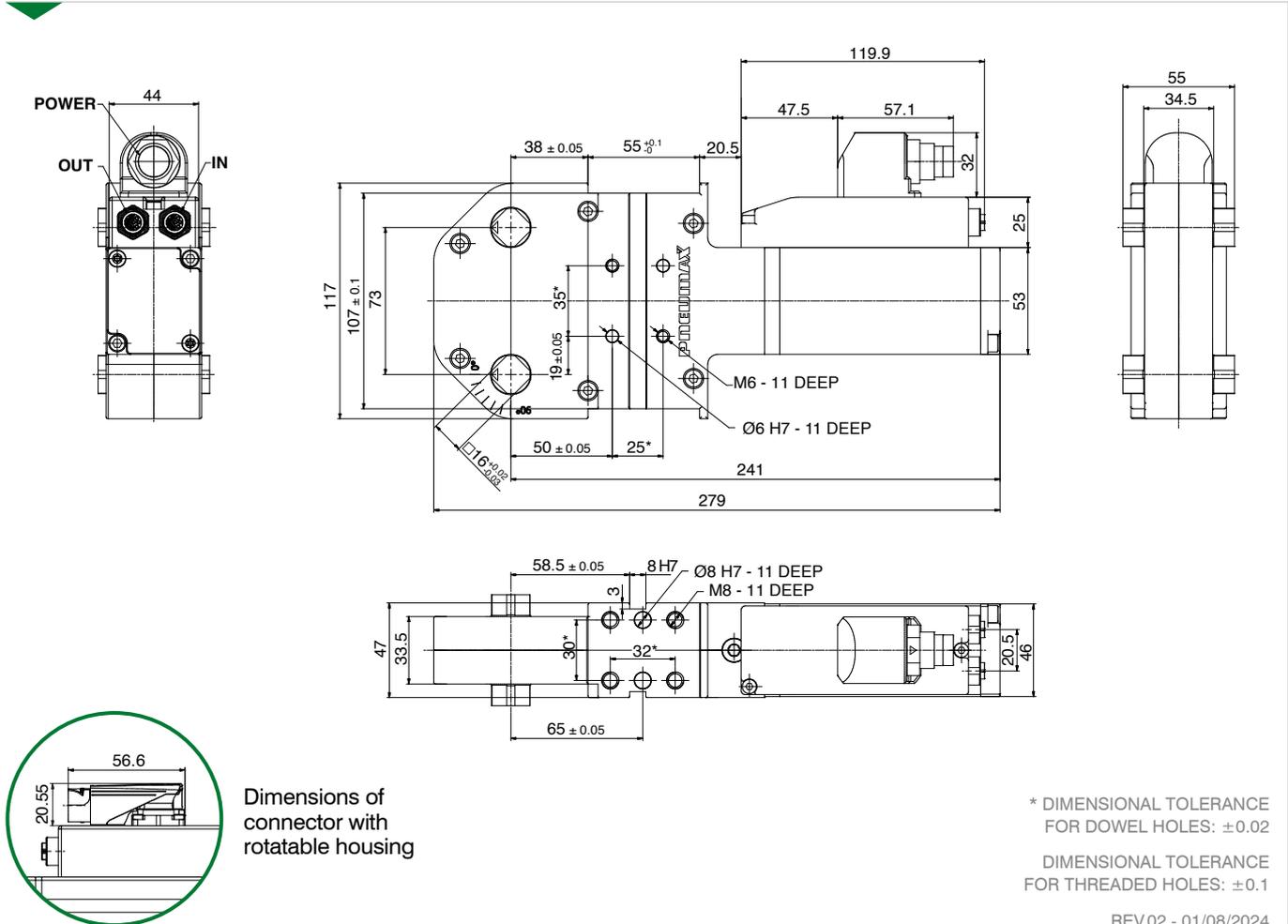
CBE-Series

CB **E** **40** **5** **A** **01** **-**

CB	VERSION	CB = double arm clamp
E	OPERATION	E = brushless motor, 48 VDC, with drive
40	SIZE	40 = Ø 40 mm 63 = Ø 63 mm
5	ARM MOUNT	5 =  6* = 
A	ARM MATERIAL	A = aluminum * only for size 63 mm
01	CLAMP ARM TYPE	01 = wishbone, central, 15 mm offset 02 = wishbone, right, 15 mm offset 03 = wishbone, left, 15 mm offset 61 = wishbone, 10 mm offset specific for CB40 clamp
-	CONNECTOR	- = connector with rotatable housing V = connector for vario-X control

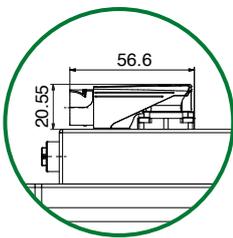
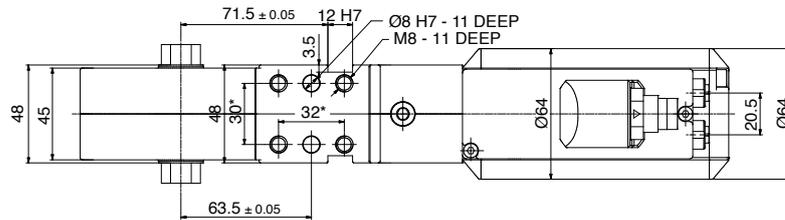
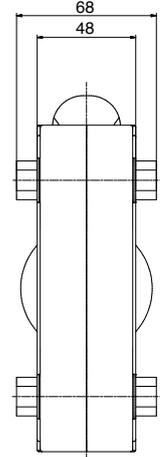
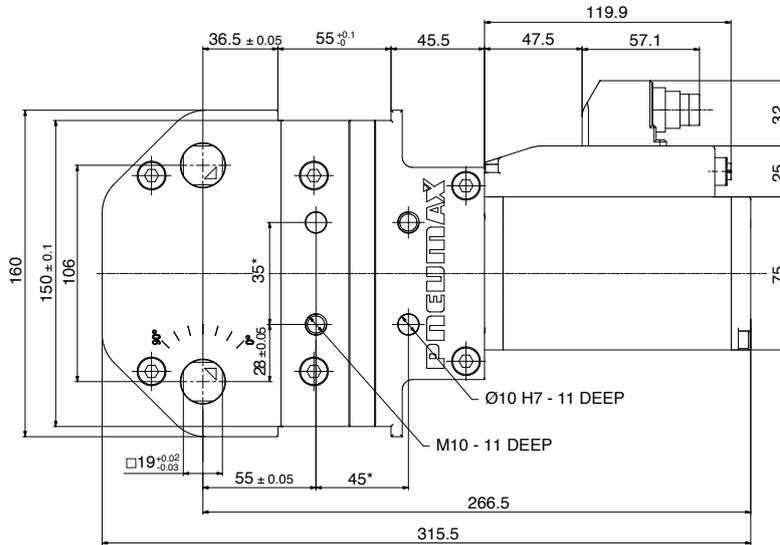
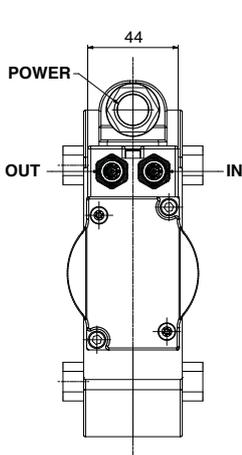
CLAMPING

CBE40 / Power clamp with double arm - 40 mm bore



CBE63 / Power clamp with double arm - 63 mm bore

CLAMPING



Dimensions of
connector with
rotatable housing

* DIMENSIONAL TOLERANCE
FOR DOWEL HOLES: ±0.02

DIMENSIONAL TOLERANCE
FOR THREADED HOLES: ±0.1

REV.02 - 01/08/2024

Clamping

Quick installation guide

Caution

Any maintenance operation may only be carried out by qualified and authorized personnel. For any reason, do not reach into the pivoting range of the clamping arms, when the clamps are in operation. Disconnect electric supply lines before operating on or around clamps.

A worksheet for the right sizing of the clamp is available upon request. Visit our website for technical documents

<http://automotive.pneumax.it/>



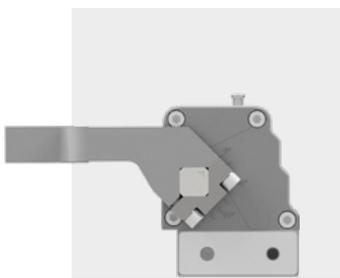
Clamp installation to the tool

The clamp can be installed by one of its four mounting surfaces, using dowels and screws according to its datasheet. The tightening torques to be set are:

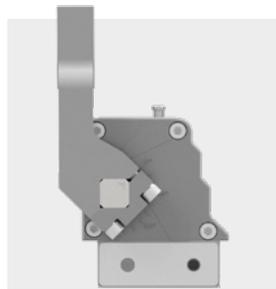
M5	5 N m / 3.68 lb·ft
M6	10 N m / 7.37 lb·ft
M8	25 N m / 18.43 lb·ft
M10	35 N m / 25.81 lb·ft
M12	50 N m / 36.87 lb·ft

Use the key support surfaces, where available. Always use all the bores on the mounting pattern.

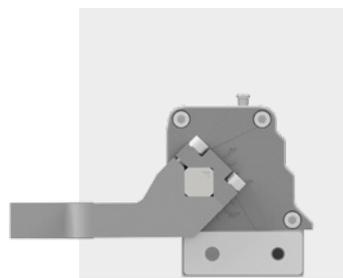
Arm mount options



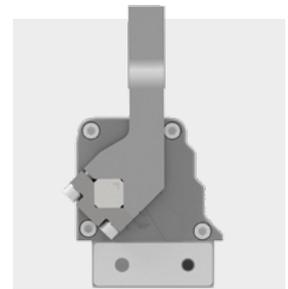
Position 1



Position 2



Position 3



Position 4

The above pictures show the closed position.

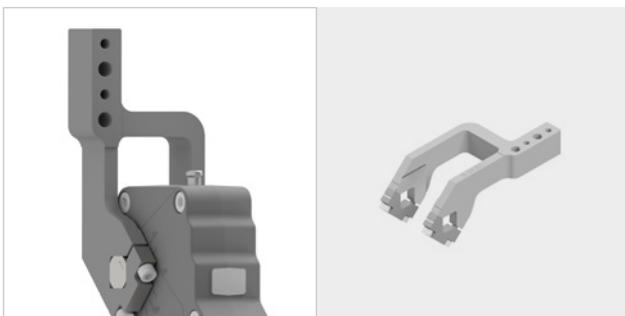
The max. opening angle according to the arm mount option is indicated on each clamp arm's datasheet. In order to achieve a right or left arm mount in configurations 2 or 3, the clamping arm should be rotated by 180°, therefore to achieve

C__ 2A03 a right clamp arm is required, i.e. B/Q __ 02

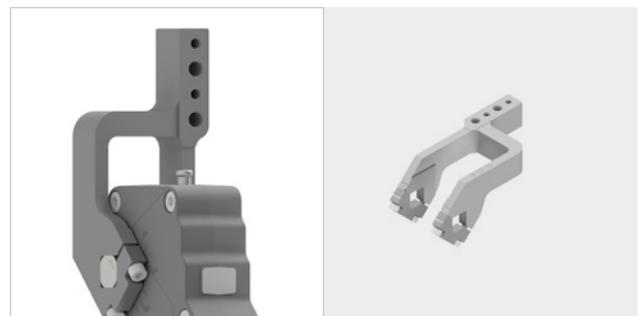
C__ 2A02 a left clamp arm is required, i.e. B/Q __ 03

C__ 2A05 a right clamp arm is required, i.e. B/Q __ 06

C__ 2A06 a left clamp arm is required, i.e. B/Q __ 05



C1__ 2A03 using a right __ 02 arm



C1__ 2A02 using a left __ 03 arm

Locating

E48-Smart Highlights



Patented

Chrome rod coating as a protection against adhering weld sparks

Interchangeability with pneumatic devices

Backlash-free trapezoidal stainless steel screw with optimal compromise between cycle time and load capacity; the irreversibility of the screw allows for an integrated auto-retain of the open position and enhances the load control. It also allows for powering off the motor once the end stroke is reached.

Optimally accessible **manual unlock** mechanism for emergency situations: with no power the pin package can be unlocked or moved manually with an Allen wrench

Sealed housing and sealed drive

LED ring for optimal visualization of the clamp condition.

EtherCAT communication:

- quick and cable length saving installation through **daisy-chaining**
- Thanks to the CSP (Cyclic Synchronous Position) mode DC, the EtherCAT master is able to send desired positions to the clamp. In this mode, the trajectory generator is located in the master control device, not in the clamp. In acyclic synchronous manner, it provides a target position to the clamp device, which performs position control.

Steel and brass rodscraper to prevent welding debris from entering the pin packages

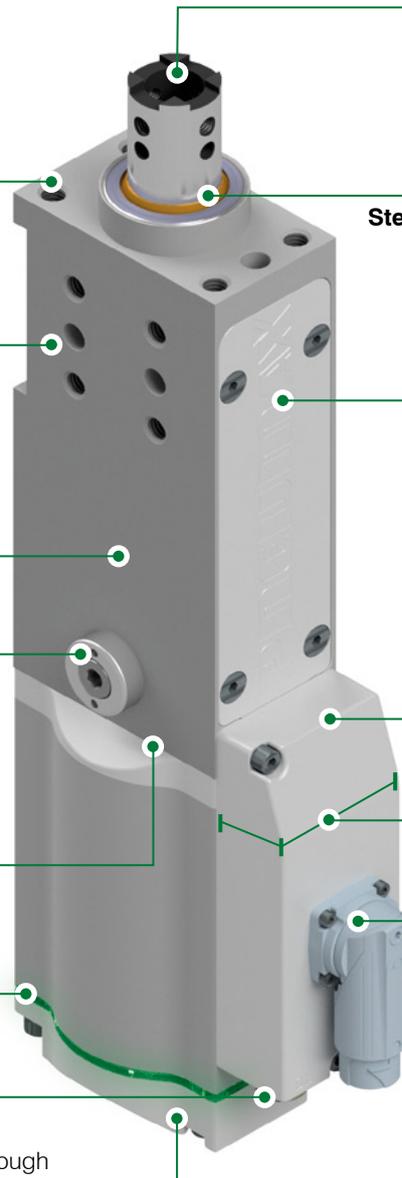
Crossed-rollers guide to prevent deflection

One only drive used among the whole product range; it allows for **condition monitoring** such obstacle detection

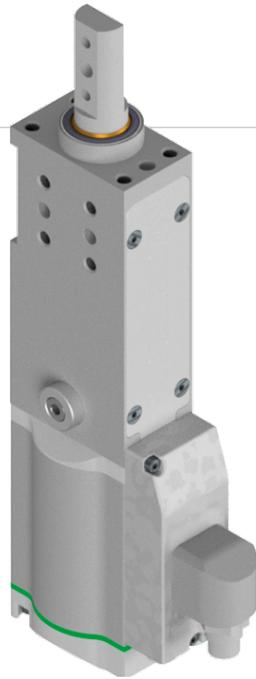
Extra compact drive

Rotatable connector with self-guiding mating

Absolute encoder



RE-Series



Electric retractable locating pin packages

Crossed-rollers guides prevent deflection of the rods

- Same functional dimensions of pneumatic pin packages
- Same thrust and pull forces as pneumatic devices
- Adjustable strokes up to 60 mm
- Brushless low voltage motors with absolute encoder and optimized cable cross-sections
- Extra-compact drive can be rotated by 180°
- Optimally accessible manual unlock mechanism for emergency situations, which can also be used as manual operation
- Cable lengths can be reduced by daisy-chaining the drives

Condition monitoring

- Obstacle detection

LOCATING

Operating features

Supply tension	48 VDC
Cycle time	1 s
Noise level	< 20 dB

Functional charts

Size 50

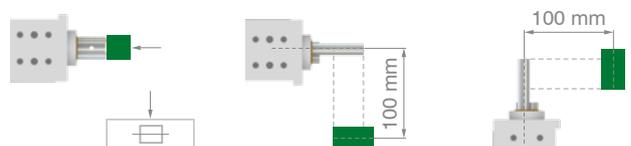
• Max deflection

Stroke	Load (kg)	Load position A deviation (mm)	Load position B deviation (mm)	Load position C deviation (mm)
60 mm	0.5	0.007	0.012	0.01
	1	0.013	0.025	0.023
	1.5	0.02	0.04	0.036
	2	0.03	0.053	0.049
	2.5	0.038	0.067	0.064
	3	0.045	0.082	0.075
50 mm	0.5	0.006	0.009	0.007
	1	0.013	0.02	0.018
	1.5	0.021	0.032	0.028
	2	0.026	0.047	0.043
	2.5	0.032	0.66	0.057
	3	0.037	0.075	0.068
40 mm	0.5	0.004	0.009	0.004
	1	0.009	0.02	0.009
	1.5	0.013	0.032	0.013
	2	0.018	0.047	0.018
	2.5	0.022	0.66	0.022
	3	0.026	0.075	0.026
25 mm	0.5	0	0.005	0
	1	0.005	0.015	0.005
	1.5	0.007	0.032	0.007
	2	0.011	0.047	0.011
	2.5	0.012	0.66	0.012
	3	0.014	0.075	0.014
15 mm	0.5	0	0.005	0
	1	0.002	0.018	0
	1.5	0.004	0.025	0.002
	2	0.007	0.033	0.006
	2.5	0.012	0.043	0.009
	3	0.014	0.052	0.013

• Functional data

Thrust force	825 N
Pull force	980 N
Max bending moment	3 N m / 2.21 lb-ft
Max distance from the load centre to the rod	200 mm

Load position A	Load position B	Load position C
Horizontal mounting position of the retractable locating pin/load centre on the rod	Horizontal mounting position of the retractable locating pin/load centre at 100 mm from the rod axis	Vertical mounting position of the retractable locating pin/load centre at 100 mm from the rod axis



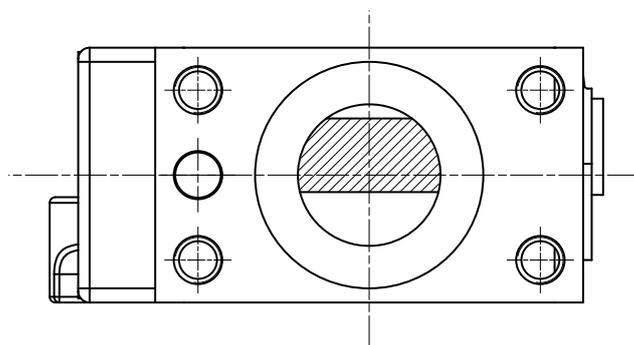
Ordering string

RE-Series

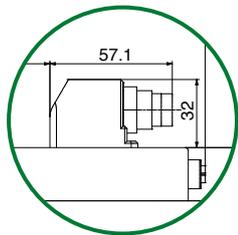
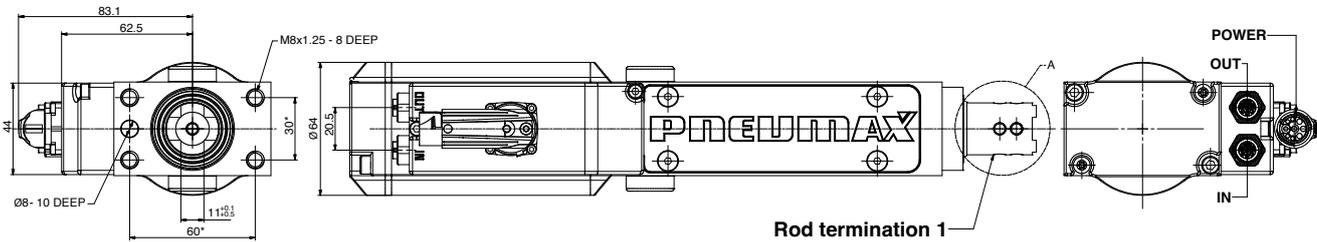
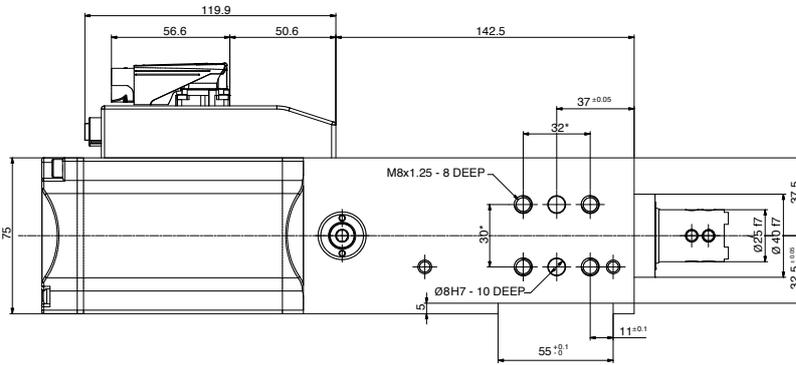
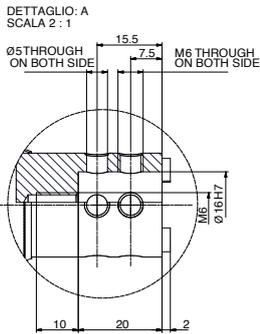
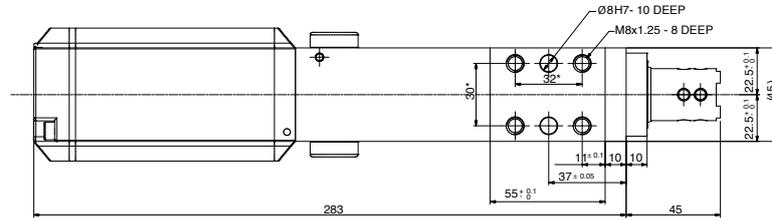
R E 50 3 1 -

LOCATING

R	VERSION	R = retractable locating pin package with adjustable stroke till 60mm
E	OPERATION	E = brushless motor, 48 VDC, with drive The pin package is supplied with the drive mounted on the rear side, it can easily be rotated to the front side by untightening the tie rod
50	SIZE	50 = equivalent to size 50
3	ROD TERMINATION	1 = \varnothing 16 mm cross-cut key rod termination 2 = \varnothing 10 mm cross-cut key rod termination 3 = rod termination for offset pins 4 = rod termination with key 5 = rod with flat termination dia. 10 mm 6 = rod with flat termination dia. 12 mm 7 = \varnothing 12 mm CNOMO termination 8 = \varnothing 20 mm CNOMO termination
		 <p>Rod 1 Rod 2 Rod 3 Rod 4 Rod 5 Rod 6 Rod 7 Rod 8</p>
1	ROD ORIENTATION (for termination type 3)	1 =  2 =  3 =  4 = 
-	CONNECTOR	$\bar{\text{V}}$ = connector with rotatable housing $\bar{\text{V}}$ = connector for vario-X control



RE50-3 / Electric retractable locating PIN PACKAGE - Rod termination 3



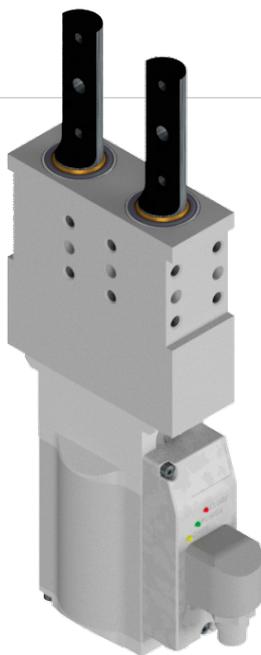
Dimensions of
connector -V version

* DIMENSIONAL TOLERANCE
FOR DOWEL HOLES: ± 0.02

DIMENSIONAL TOLERANCE
FOR THREADED HOLES: ± 0.1

REV.02 - 30/07/2024

FE-Series



Electric retractable locating pin packages with dual rods

- Same functional dimensions of pneumatic pin packages
- Same thrust and pull forces as pneumatic devices
- Adjustable strokes up to 60 mm
- Brushless low voltage motors with absolute encoder and optimized cable cross-sections
- Extra-compact drive can be rotated by 180°
- Optimally accessible manual unlock mechanism for emergency situations, which can also be used as manual operation
- Cable lengths can be reduced by daisy-chaining the drive

Condition monitoring

- Obstacle detection

LOCATING

Operating features

Supply tension	48 VDC
Cycle time	1 s

Functional charts

Size 63

• Max deflection

Stroke	Load (kg)	Load position A deviation (mm)	Load position B deviation (mm)	Load position C deviation (mm)
60 mm	0.5	0.003	0.009	0
	1	0.007	0.026	0.001
	1.5	0.013	0.043	0.007
	2	0.017	0.063	0.009
	2.5	0.022	0.085	0.018
	3	0.026	0.109	0.023
	3.5	0.031	0.129	0.033
	4	0.036	0.148	0.042

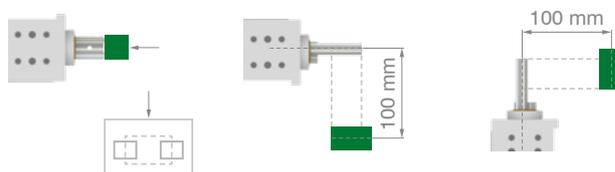
• Functional data

Thrust force	1,350 N
Pull force	1,550 N
Max bending moment	4 N m / 2.95 lb-ft
Max distance from the load centre to the rod	200 mm

• Cycle time for max stroke

< 1 s

Load position A	Load position B	Load position C
Horizontal mounting position of the retractable locating pin/load centre on the rod	Horizontal mounting position of the retractable locating pin/load centre at 100 mm from the rod axis	Vertical mounting position of the retractable locating pin/load centre at 100 mm from the rod axis



Ordering string

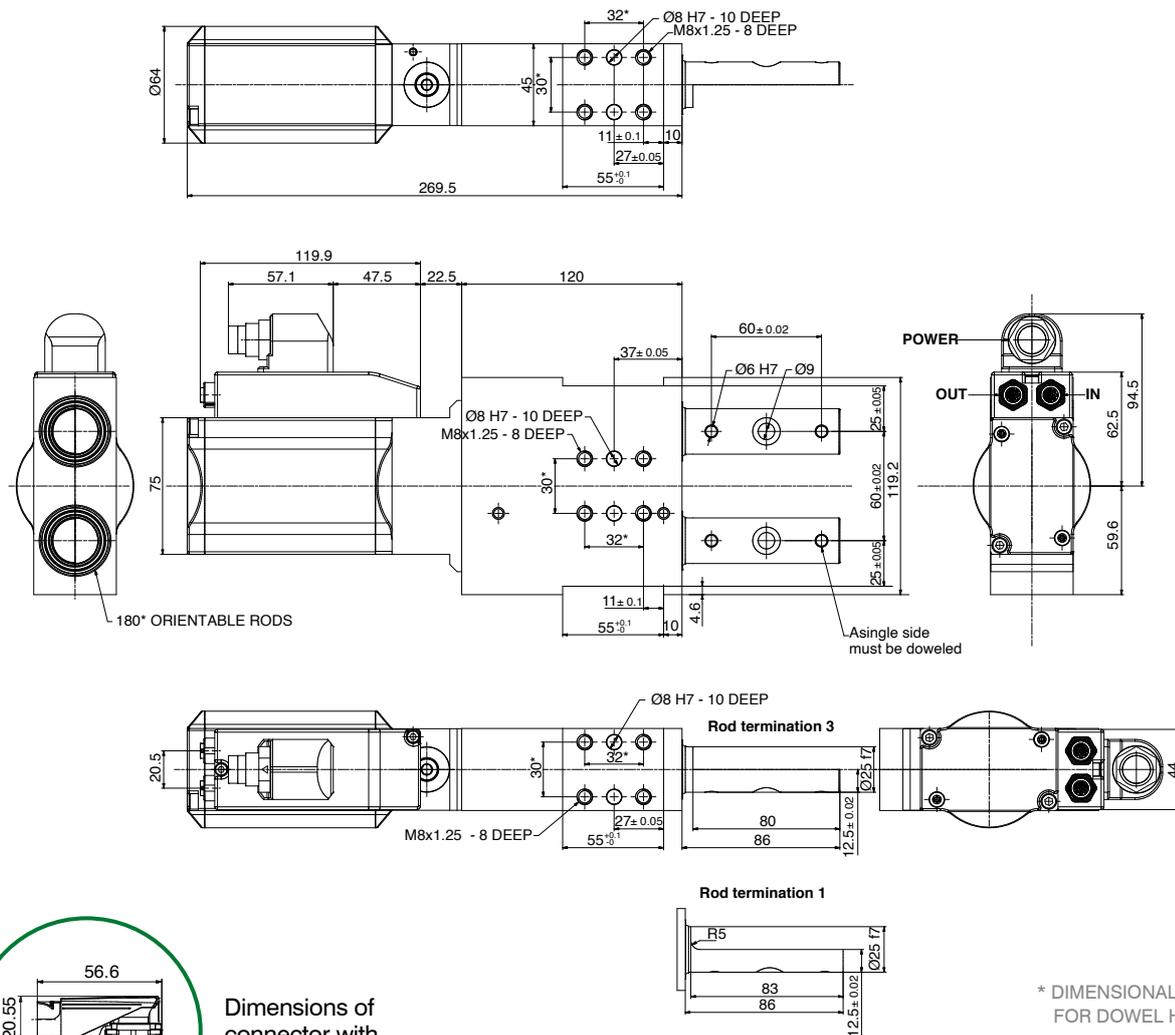
FE-Series 63

F **E** **63** **3** **-**

F	VERSION	F = Retractable locating pin package with dual rod
E	OPERATION	D = brushless motor, 48 VDC, with drive The pin package is supplied with the drive mounted on the rear side, it can easily be rotated to the front side by untightening the tie rod
63	SIZE	63 = equivalent to size 63 (pn)
3	ROD TERMINATION	3 = rod termination for offset pins
-	CONNECTOR	̄ = connector with rotatable housing ̅ = connector for vario-X control

LOCATING

FE63-3 / Electric retractable locating PIN PACKAGE - Rod termination 3

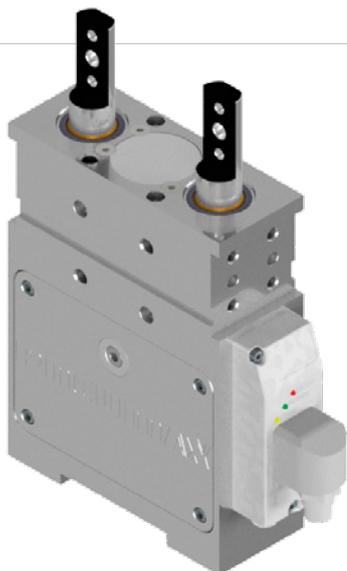


Dimensions of connector with rotatable housing

* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02
DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

FTE-Series

Electric retractable locating pin packages with toggle lock



- Same functional dimensions of pneumatic pin packages for complete interchangeability
- Same thrust and pull forces as pneumatic devices
- Brushless low voltage motors with absolute encoder and optimized cable cross-sections
- Extra-compact drive can be rotated by 180°
- Cable lengths can be reduced by daisy-chaining the drive

Condition monitoring

- Obstacle detection

LOCATING

Operating features

Supply tension	48 VDC
Cycle time	1 s

Functional charts

Size 50

• Max deflection

Stroke	Load (kg)	Load position B deviation (mm)	Load position C deviation (mm)
40 mm	0.5	0.001	0.002
	1	0.001	0.002
	1.5	0.001	0.002
	2	0.001	0.002
	2.5	0.001	0.004
	3	0.001	0.004
	3.5	0.002	0.004
	4	0.002	0.004

• Functional data

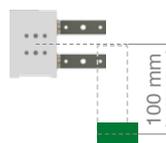
Thrust force	4900 N
Pull force	2000 N
Max distance from the load centre to the rod	200 mm

The thrust and pull forces (retraction) are only available with the last 2 mm stroke of working (extracting) position. In the other range of the stroke, the forces are 30% of the above values.

• Cycle time < 0.8 s

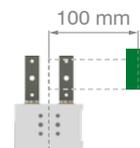
Load position **B**

Horizontal mounting position of the retractable locating pin/load centre at 100 mm from the rod axis



Load position **C**

Vertical mounting position of the retractable locating pin/load centre at 100 mm from the rod axis

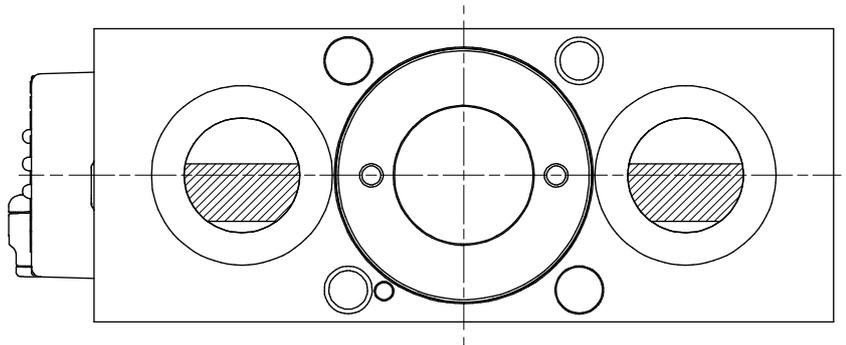


Ordering string

FTE_50-series

FT **E** **50** **5** **2** **-**

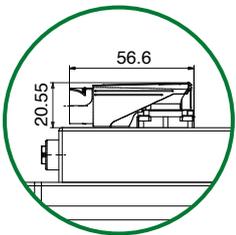
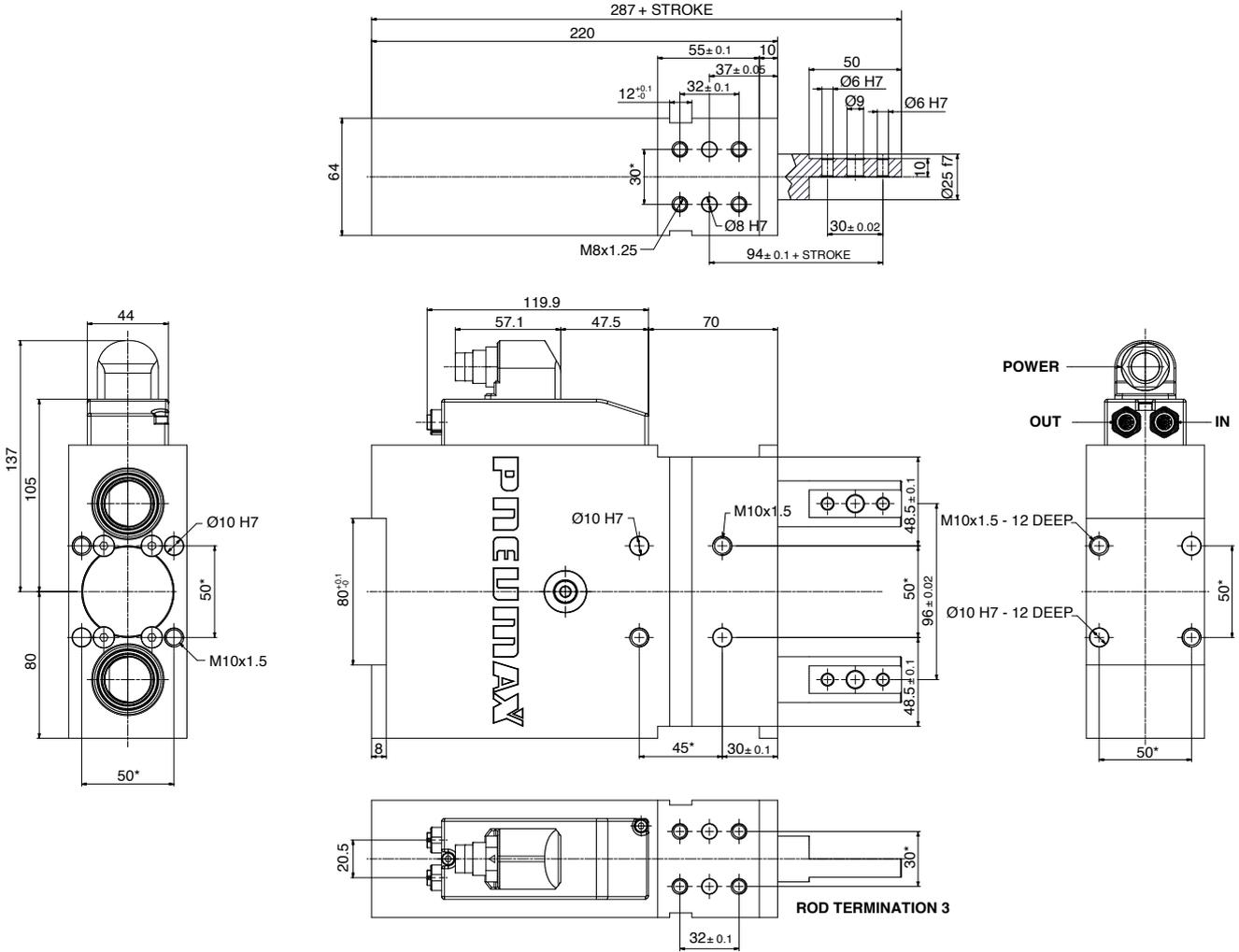
FT	VERSION	FT = Retractable locating pin packages with dual rods and toggle lock
E	OPERATION	E = brushless motor, 48 VDC, with drive The pin package is supplied with the drive mounted on the rear side, it can easily be rotated to the front side by untightening the tie rod
50	SIZE	50 = equivalent to size 50 (pn)
3	ROD TERMINATION	3 = Mounting surface on the rods corresponds to the pin package axis 5 = 2.5 mm out of the axis mounting surface
2	ROD ORIENTATION	2 =  4 = 
-	CONNECTOR	̄ = connector with rotatable housing ̅ = connector for vario-X control



LOCATING

FTE50-3 / Electric retractable locating PIN PACKAGE - Rod termination 3

LOCATING



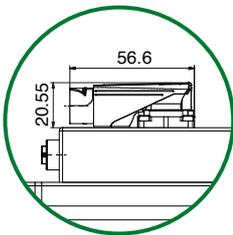
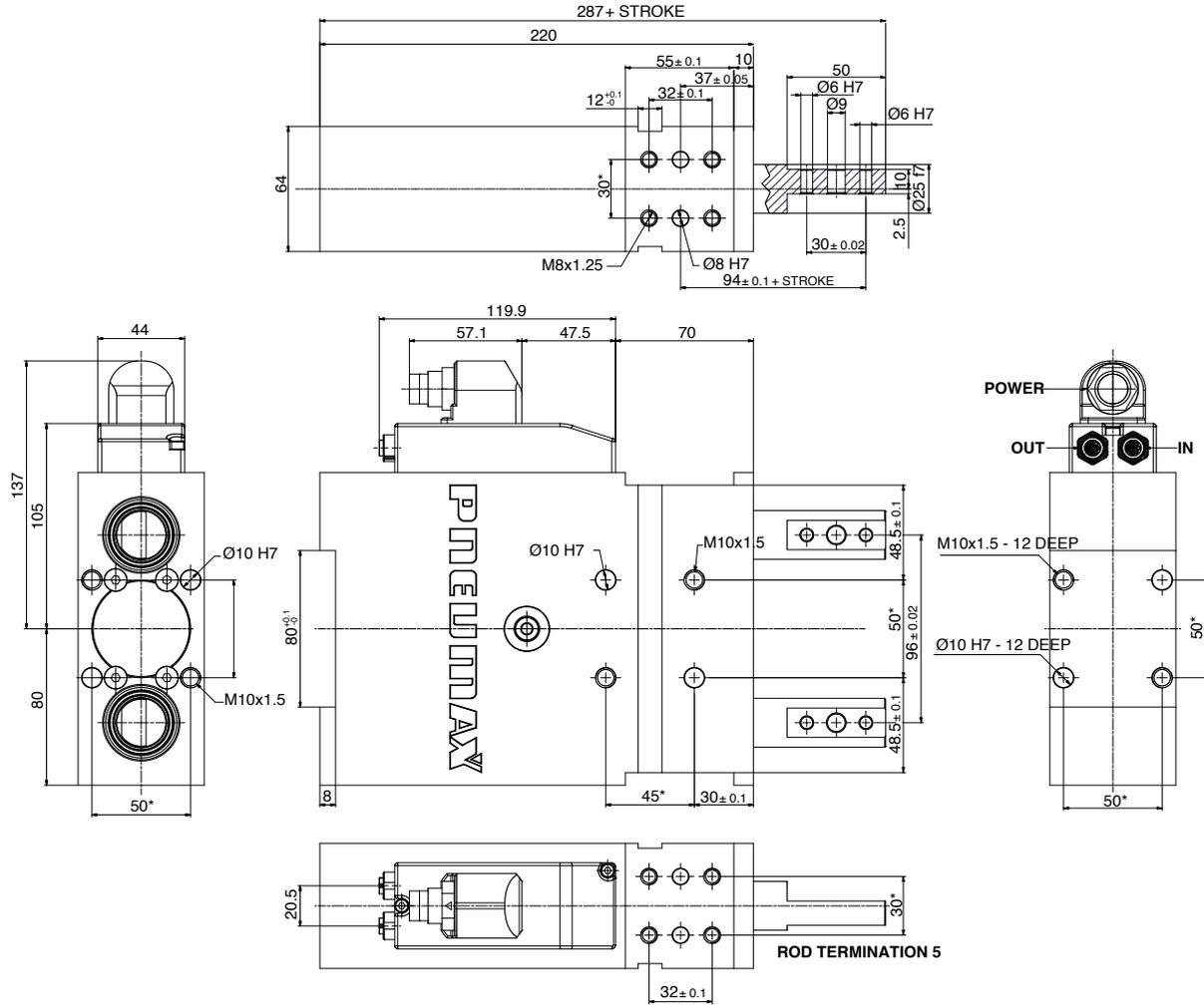
Dimensions of
connector with
rotatable housing

* DIMENSIONAL TOLERANCE
FOR DOWEL HOLES: ± 0.02

DIMENSIONAL TOLERANCE
FOR THREADED HOLES: ± 0.1

REV.02 - 01/08/2024

FTE50-5 / Electric retractable locating PIN PACKAGE - Rod termination 5



Dimensions of connector with rotatable housing

* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ± 0.02

DIMENSIONAL TOLERANCE FOR THREADED HOLES: ± 0.1

REV.02 - 01/08/2024

Handling

E48-Smart Highlights



Patented

Industry-proven
toggle linkage

Sealed housing and sealed drive

Brushless low voltage **48 V DC motor**. The hollow shaft allows the rotor and the nut screw to be coaxial with the stator, thus reducing friction and allowing the motor torque to be optimally used.

LED ring for optimal visualization of the clamp condition.

Absolute encoder

EtherCAT communication:

- quick and cable length saving installation through **daisy-chaining**
- Thanks to the CSP (Cyclic Synchronous) Positionmode DC, the EtherCAT master is able to send desired positions to the clamp. In this mode, the trajectory generator is located in the master control device, not in the clamp. In acyclic synchronous manner, it provides a target position to the clamp device, which performs position control.

Double movement,
2 tips

Single movement,
2 tips

Backlash-free trapezoidal stainless steel screw with optimal compromise between cycle time and load capacity; the irreversibility of the screw allows for an integrated **auto-retain** of the open position and enhances the load control. It also allows for powering off the motor once the end stroke is reached.

Optimally accessible **manual unlock** mechanism for emergency situations: with no power the clamp can be unlocked or moved manually with an Allen wrench.

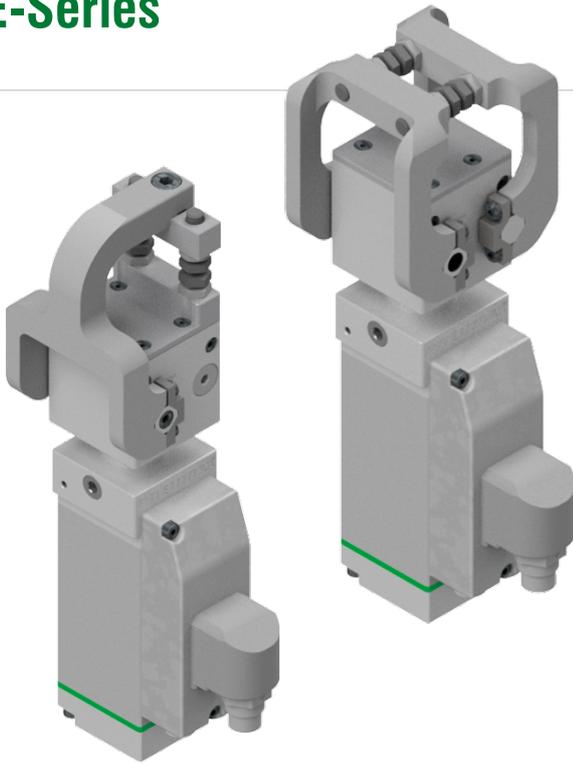
One only drive used among the whole product range; it allows for condition **monitoring such** as part presence, 2-part detection and obstacle detection.

Extra compact drive



GE-Series

Electric gripper clamps



- Stepless adjustable opening angle
- The drive can be installed on all 4 sides
- Completely enclosed design
- Optimally accessible manual unlock mechanism for emergency situations, which can also be used as manual operation
- Backlash-free trapezoidal screw with optimal compromise between cycle time and load; the irreversibility of the screw allows for an integrated auto-retain of the open position and enhances the load control
- Brushless low voltage motors with absolute encoder and optimized cable cross-sections
- Cable lengths can be reduced by daisy-chaining the drive

HANDLING

Functional charts

Size 40

• Cycle time for max opening angle
< 0.8 s

• Holding moment
75 N m / 55 lb-ft

• Clamping moment
50 N m / 36 lb-ft

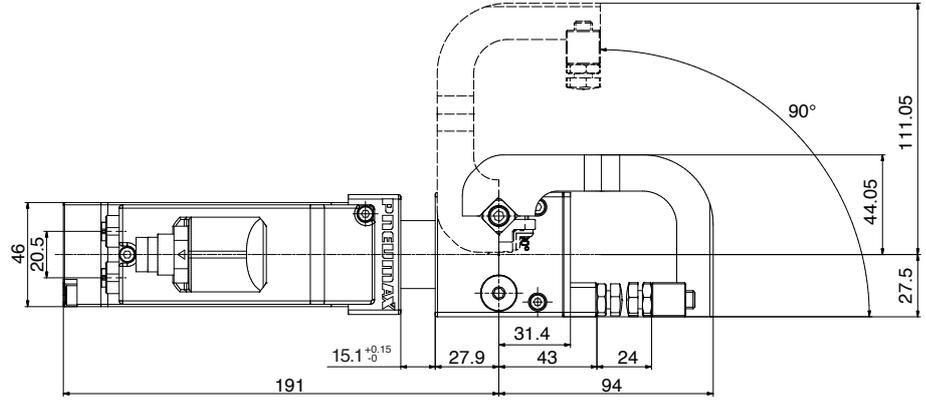
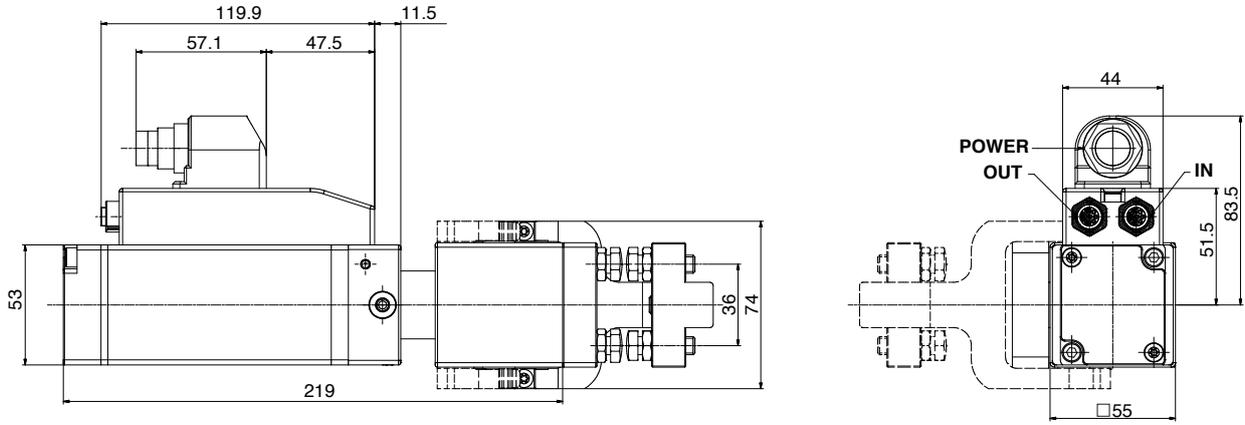
Ordering string

GE-Series

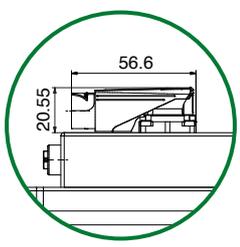
G E 40 1 A -

G	VERSION	G = gripper clamp
E	OPERATION	E = brushless motor, 48 VDC, with drive
40	SIZE	40 = equivalent to size 40 (pn)
1	ARM MOVEMENT	1 = single jaw moving 2 = two jaws moving
A	CLAMP ARM TYPE	A = adjustable mount B = base mount
-	CONNECTOR	V = connector with rotatable housing V̄ = connector for vario-X control

GE401 / Electric gripper clamp



HANDLING



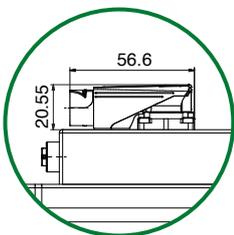
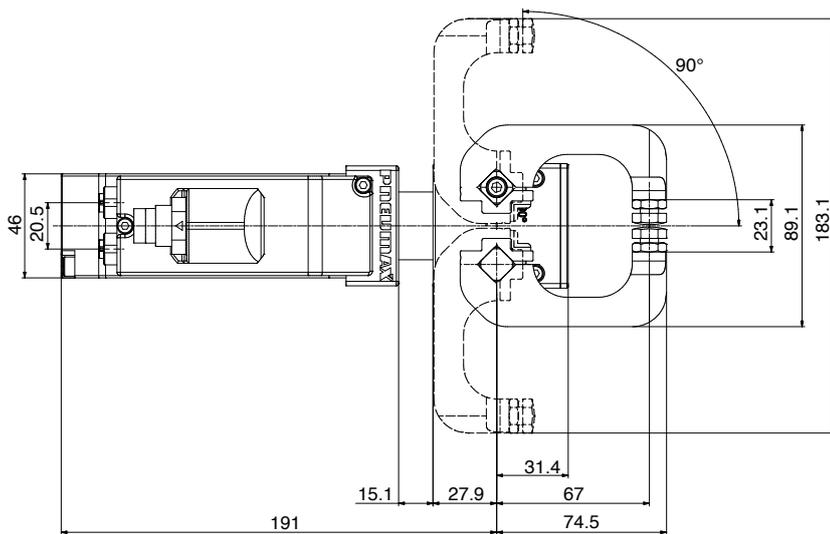
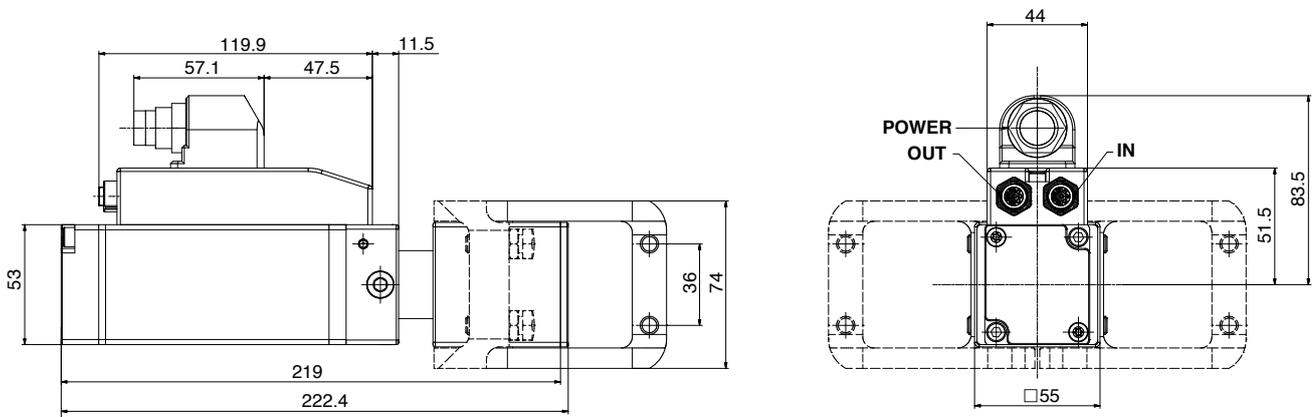
Dimensions of connector with rotatable housing

* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ± 0.02

DIMENSIONAL TOLERANCE FOR THREADED HOLES: ± 0.1

REV.02 - 26/07/2024

GE402 / Electric gripper clamp



Dimensions of connector with rotatable housing

* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ± 0.02

DIMENSIONAL TOLERANCE FOR THREADED HOLES: ± 0.1

REV.02 - 26/07/2024



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