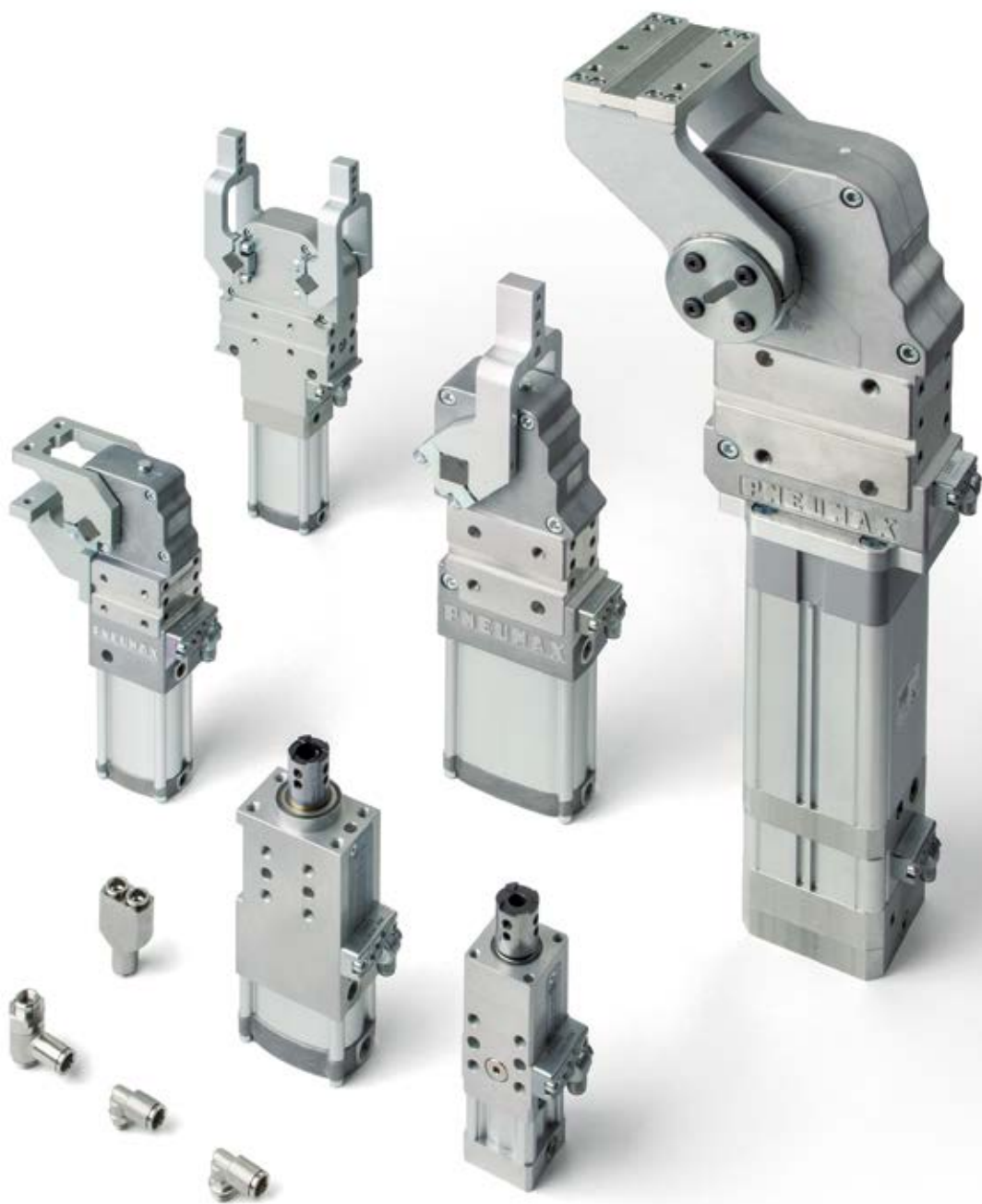




**PNEUMAX**



**AUTOMOTIVE**  
CATALOGUE



# Automotive Catalogue

The ultimate clamping technology

Innovation begins with Research and Development and extends to industrial processes and business activities, with the ultimate aim of total customer satisfaction.



# Pneumax

## Smart Technologies and Human Competence

Founded in 1976, **PNEUMAX S.p.A.** is today one of the leading, international manufacturers of components and systems for industrial automation. It is at the fore front of a group of 23 companies, with over 730 employees worldwide.

Ongoing investment in research and development has allowed **Pneumax** to continually expand its range of standard products and customised solutions, adding to the well-established pneumatic technology, a range of electric drive actuators and fluid control components.



**Pneumatic  
Technology**



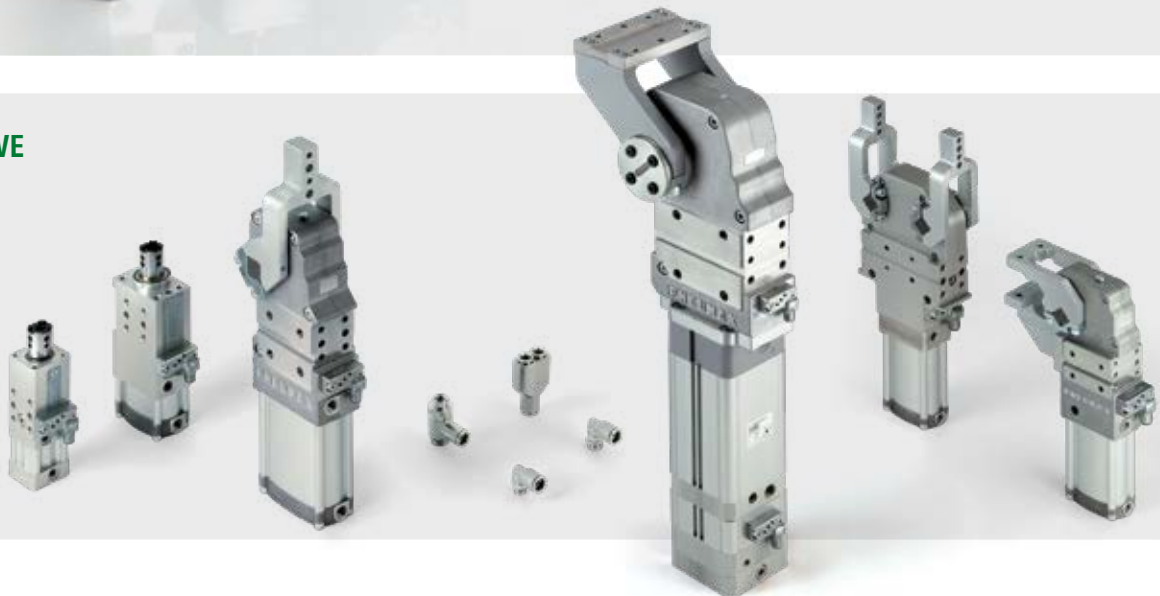
**Electric  
Actuation**



**Fluid  
Control**



**INDUSTRIAL AUTOMATION**

**PROCESS  
AUTOMATION****AUTOMOTIVE**

The ability to provide various technologies and solutions for our clients' applications is the main objective of our company, making us the ideal strategic partner.

What defines us is "**Pneumax Business Attitude**", born out of the capacity to combine industry sectors, technology and our application skills via client collaboration with our business sector and product sector specialists. This represents the main distinguishing factor of what Pneumax offers.



# The Automotive division

## Product development

The Automotive division of Pneumax **designs and manufactures a complete range of products dedicated to the production lines of the automotive field, focusing on Body in White applications.**



Pneumax offers a comprehensive range of clamping units, pivot units, pin packages as well as grippers and complete multi-axis positioning systems.

Developed by a team of specialized technicians, the product is designed to ensure maximum reliability, precision and repeatability in compliance with the latest international mounting standards.

Particular attention has been paid to energy efficiency which through patented designs provides the largest energy saving solutions available in this market.

Every stage of manufacturing and product testing is carried within our specially equipped departments at our headquarters in Lurano (BG).

The worldwide presence of Pneumax ensures optimized and coordinated project management: the highest level of service is provided to all of our international customers.

**Market requirement evaluation and product specs definition** by product management. The project team analyzes the technical feasibility and sets a general timeline.



### 1 CONCEPT



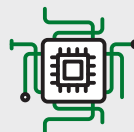
### 2 PROTOTYPING

After a **structural mechanics simulation analysis**, the R&D team prepares a CAD model which is used with a **3 axis printing-moulding machine** to manufacture the first prototypal batches.

Electronic components are developed and manufactured **in-house** by Pneumax to be integrated in any system or as interface to any protocol.

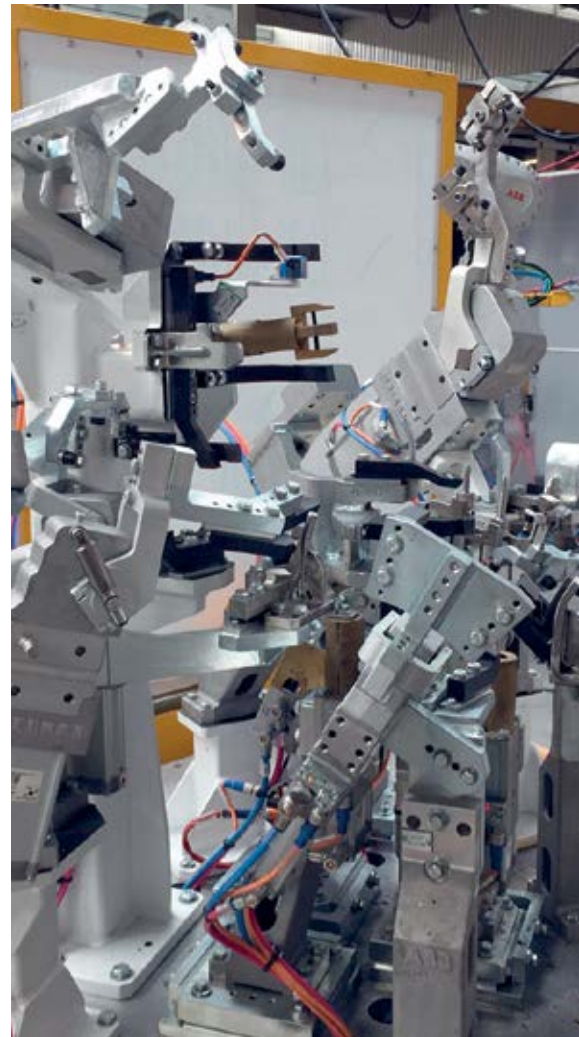


### 3 ELECTRONICS INTEGRATION



### 4 FMEA

The first close-to-series samples are machined, using the **latest generation machinery**. The first **FMEA** is prepared.



Life test and approval.  
The products are subjected to **functional, performance, temperature tests** for millions of cycles.



The industrialization team together with the technical department develop any **specific equipment and tool required**. Suppliers' evaluation is accomplished.



5

**EVALUATION AND INSPECTION**



6

**ENGINEERING**

The engineering department evaluates and adopts the most suitable manufacturing technology and assembly procedure to implement, using **3D simulation programs**.



7

**PRODUCT INDUSTRIALIZATION**

8

**PILOT SERIES RELEASE AND PRODUCT AUDIT**

**Verification and validation** that the product meets the requirements.

# Product range

## Automotive series

Our clamping series features the widest range in clamping moment & stepless adjustable opening in the industry.

**Extensive Product Range** covering **Clamping, Locating, Handling, Pivoting** functions, with all options required in the **BIW** production lines.

### Clamping



<b>C1P25</b> 	<b>C1P32</b> 	<b>C1P40</b> 	<b>C1P45</b> 	<b>C1P50</b> 	<b>C1P63</b> 	<b>C1P80</b> 	<b>CB40</b> 	<b>CB63</b> 	
<b>C1D25</b> 	<b>C5D32</b> 	<b>C1D40</b> 	<b>C1D50</b> 	<b>C1D63</b> 	<b>C1D80</b> 	<b>C1M50</b> 	<b>C1M63</b> 	<b>C5M32</b> 	<b>CL25</b> 
<b>HC1</b> 	<b>C2P50</b>  NAAMS	<b>C2P63</b>  NAAMS	<b>C2P80</b>  NAAMS	<b>C2D50</b>  NAAMS	<b>C2D63</b>  NAAMS	<b>C2D80</b>  NAAMS			
<b>HE1P0</b> 	<b>HE1P1</b> 	<b>HE1P2</b> 	<b>HE1P3</b> 	<b>HE1P4</b> 	<b>HE2P1</b>  NAAMS	<b>HE2P2</b>  NAAMS	<b>HE2P3</b>  NAAMS		
<b>C1X40E</b> 	<b>C1X50E</b> 	<b>C1X63E</b> 	<b>C2X50E</b>  NAAMS	<b>C2X63E</b>  NAAMS	<b>ADWI14</b> 	<b>ADWI18</b> 			

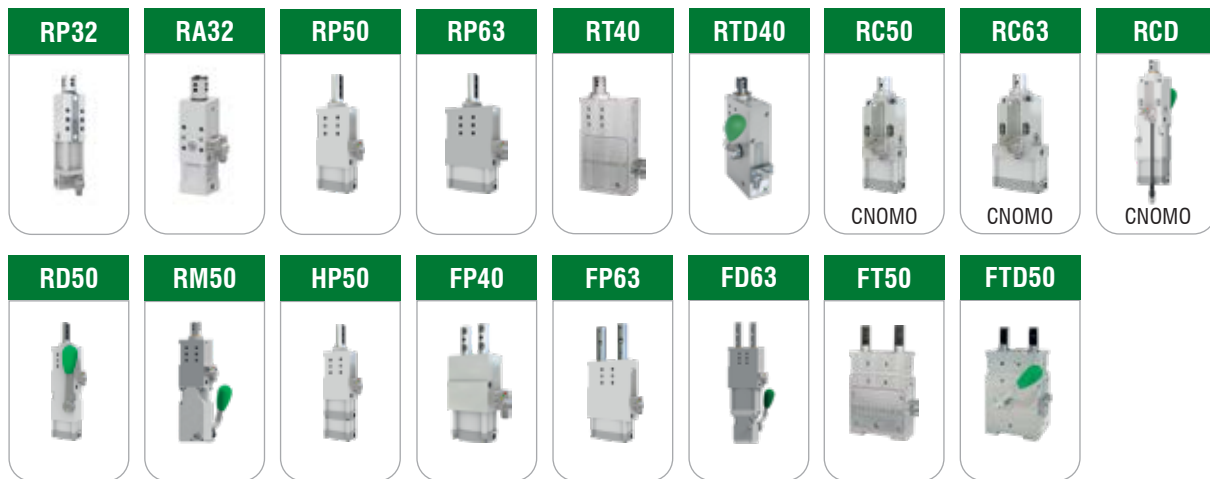
Special Clamping products:

**Sealed > Product Series+S**

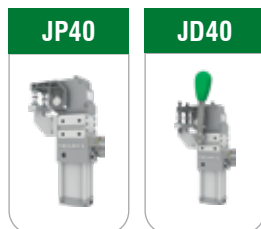
Example: C1S...,C2S...HE1S...,HE2S...



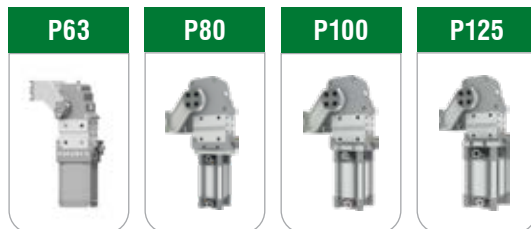
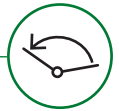
## Locating



## Handling



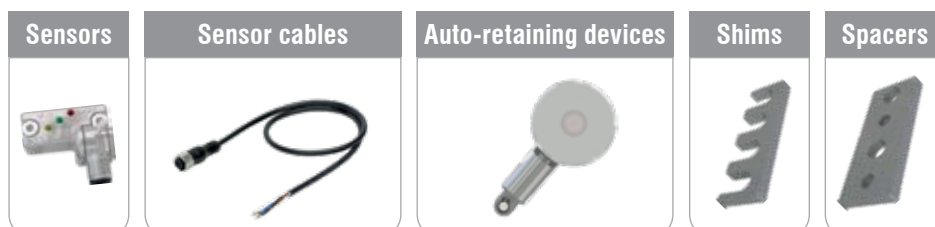
## Pivoting



## Complementary products



## Accessories





# Index

## Automotive series

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# Clamping

Stepless adjustment of the opening angle with the quickest set-up time in the market.



The lightest and most compact



Patented

## The lightest and most compact

An internal hard stop and a rigid linkage secure a **precise and backlash-free positioning thus enhancing the repeatability of the closed position.**

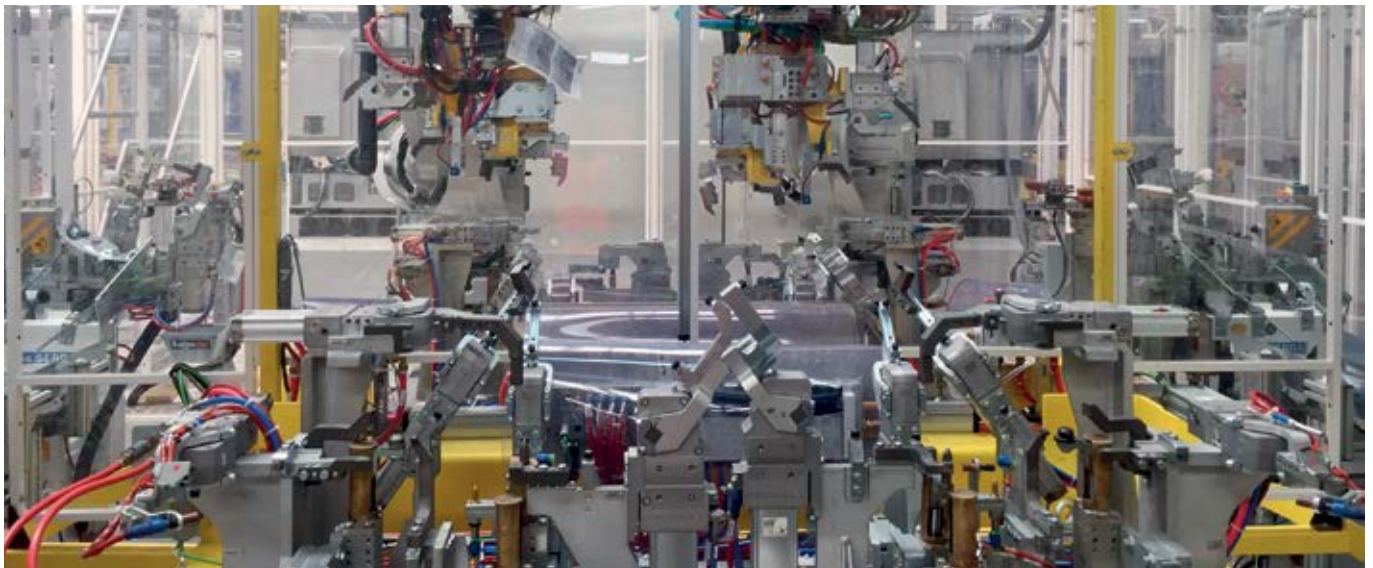
The toggle mechanism is fully encapsulated within the lightweight aluminum body construction.

Superior needle roller bearings with joints for high load capacity and protection. Protection against any contamination of weld spatter, welding debris and coolants enabling clamps to operate continuously in extreme environments.

3 MLN  
CYCLES

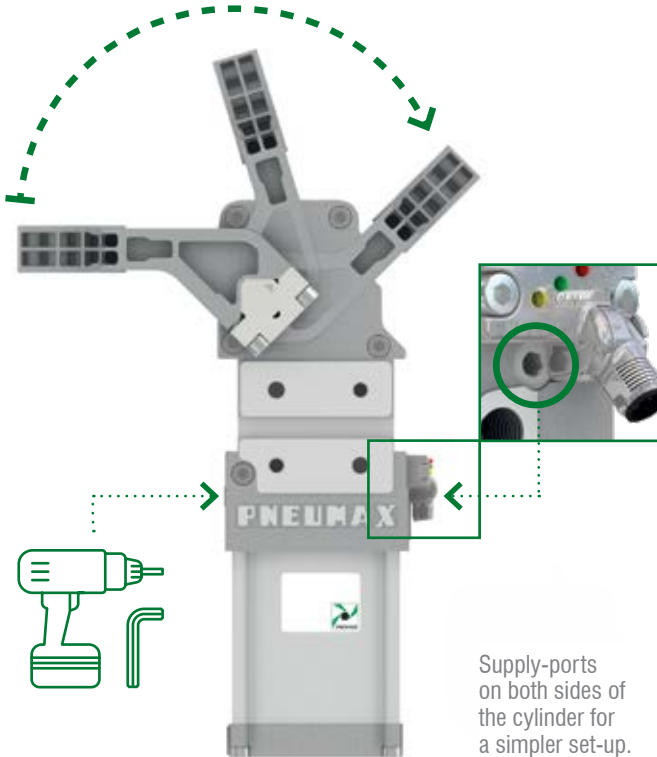
**Maximum structural resistance and fatigue strength.**

AR system to maintain the load in the open position without air supply.



## Stepless opening angle adjustment

Easily accessible and simple field adjustment from the rear or front side of the device, with an Allen wrench or a screw gun. A built-in, single-touch opening adjustment, with external access through a recessed detent: no disassembly is ever required.

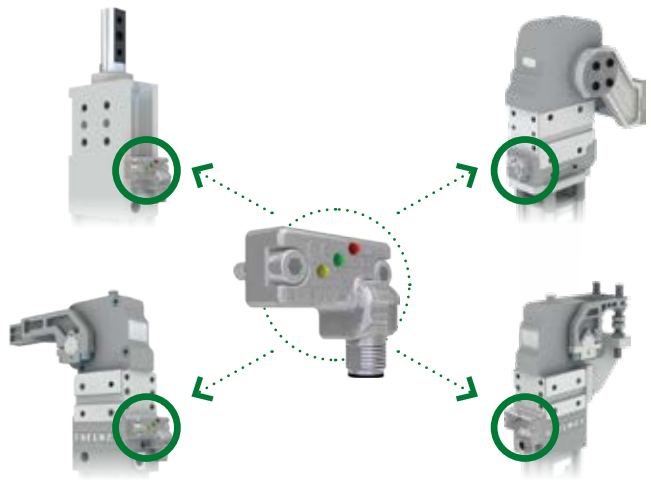


## Reliable opening adjustment

The opening position is repeatable thanks to an **anti-rotation device** integrated in the piston. The arm selection remains secure. A **retain mechanism** secures the adjustment tool in its seat and prevents the Allen wrench to fall down during the adjustment procedure.

## Electronic sensor

**One only sensor is used for all products, all sizes and series.** EMC compliance to EN 60947-5-2:2007+A1:2012. Swivel connector 0°-90°



## Efficient cushioning system

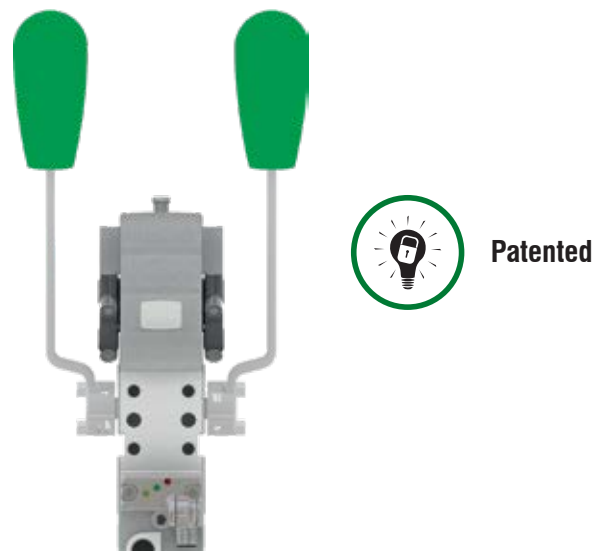
- Shorter cycle time
- Longer lifetime
- Less noise
- Less abrupt movements  
no slamming - no shocks
- Less impact forces generated  
by dynamic stress factor



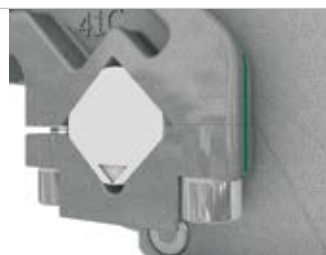
## Robust & versatile hand lever

### Dual shaft output

Sturdy & durable solution with extremely compact and flat dimensions. The integrated manual operation guarantees that the toggle joint is engaged and requires a very low force to reach the irreversible condition.



## Optimal clamping arm-shaft connection and arm structure



# C1-Series

## Pneumatic and manual power clamps International mount

INTERNATIONAL  
**MOUNT**



Pneumax clamps' series have all been developed with a modern and compact design which goes towards **enhancing the operational performances**, such as the cycle time, combined with a very limited total weight without compromising their **strength** and **resistance**.

Thanks to the material chosen for the housings and the clamping arms, a high quality aluminum alloy, as well as due to the compact design of the cylinder and the housings, to minimize any interfering contours, Pneumax devices are **the lightest and most compact power clamps in the market**.

CLAMPING

### Technical features

**Manual release button** to open the linkage when air pressure is removed during setup. **Pneumatic ports on both sides** of the cylinder.

#### Operating features

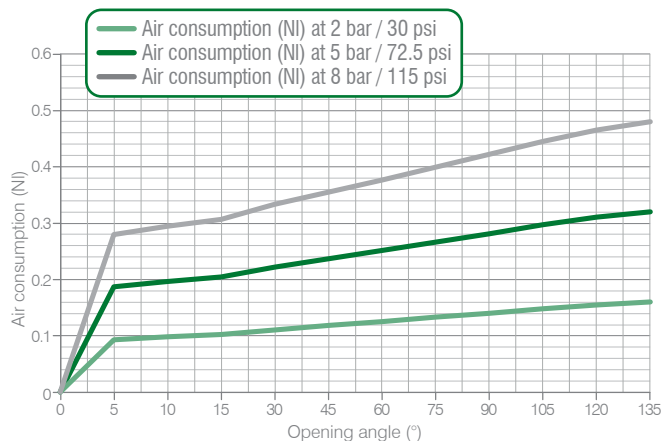
<b>Operating pressure</b>	from 2 to 8 bar / from 30 to 115 psi
<b>Lubrication</b>	all the devices are lubricated for life at the factory. Inline air lubrication isn't required

### Functional charts

#### Size 25 mm

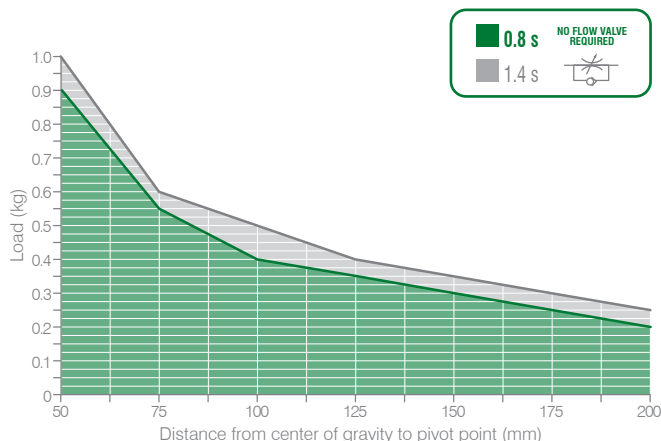
- Air consumption**

Air consumption for complete cycle (opening and closing)  
REV. 00 - 17/06/2015



- Tooling weight chart**

5 bar operating pressure – 135° opening angle  
REV. 00 - 18/11/2016



- Clamping moment (at 5 bar / 72.5 psi)**  
**50 N m / 36,87 lb·ft**

- Holding moment**  
**75 N m / 55,31 lb·ft**

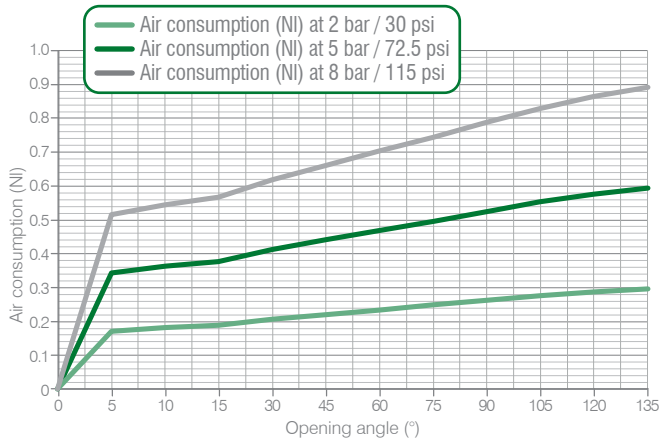
- Cycle time for max opening angle**  
**< 0.8 s**

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.

## Size 32 mm

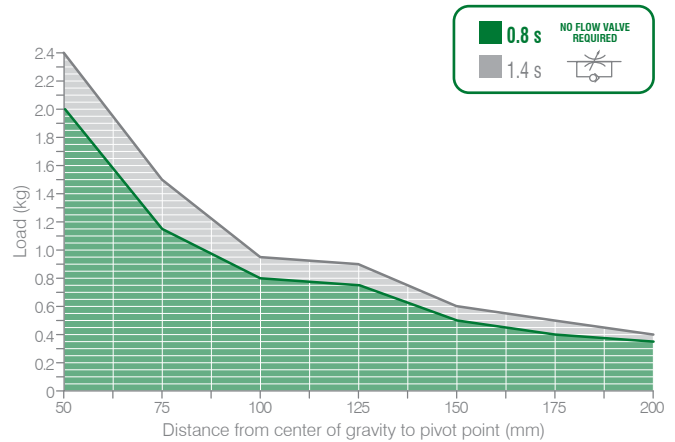
### Air consumption

Air consumption for complete cycle (opening and closing)  
REV. 00 - 17/06/2015



### Tooling weight chart

5 bar operating pressure – 135° opening angle  
REV. 00 - 18/11/2016



- Clamping moment (at 5 bar / 72.5 psi)  
**75 N m / 55,31 lb-ft**

- Holding moment  
**250 N m / 184,39 lb-ft**

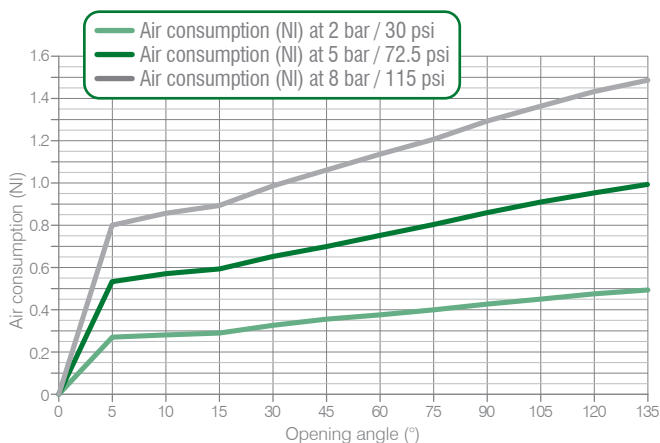
- Cycle time for max opening angle  
**< 0.8 s**

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.

## Size 40 mm

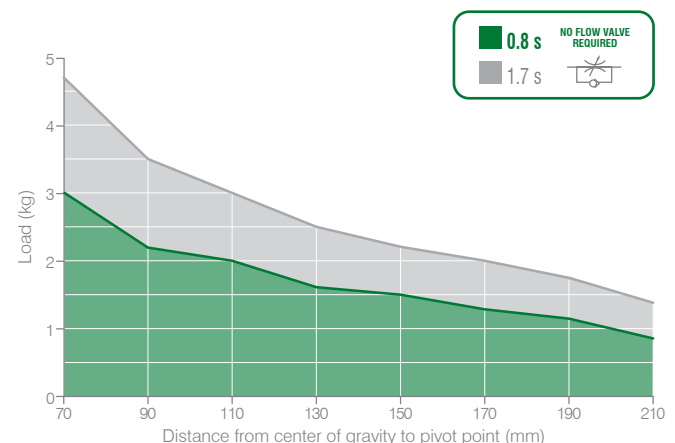
### Air consumption

Air consumption for complete cycle (opening and closing)  
REV. 00 - 17/06/2015



### Tooling weight chart

5 bar operating pressure – 135° opening angle  
REV. 00 - 17/06/2015



- Clamping moment (at 5 bar / 72.5 psi)  
**130 N m / 95,88 lb-ft**

- Holding moment  
**380 N m / 280,27 lb-ft**

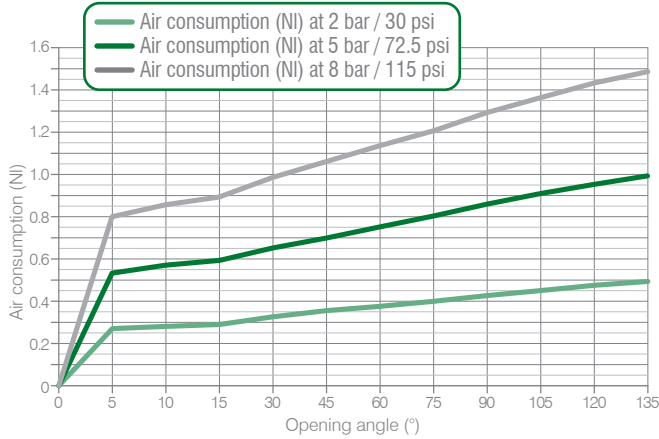
The above data are meant for correct working conditions of the clamp with the same performance level during its life time. For applications which exceed the above data, please contact our sales representatives.

**C1-Series / Functional charts (continued)**

**Series 45 - size 40 interchangeable to size 50 and 63 mm**

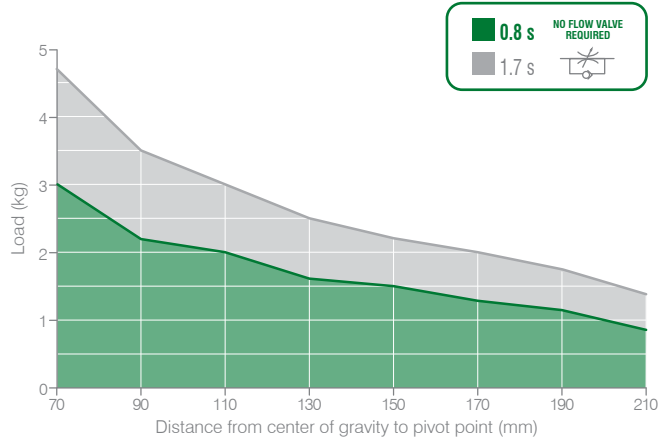
**• Air consumption**

Air consumption for complete cycle (opening and closing)  
REV. 00 - 16/06/2015



**• Tooling weight chart**

5 bar operating pressure – 135° opening angle  
REV. 00 - 16/06/2015



**• Clamping moment (at 5 bar / 72.5 psi)**

**130 N m / 95,88 lb-ft**

**• Holding moment**

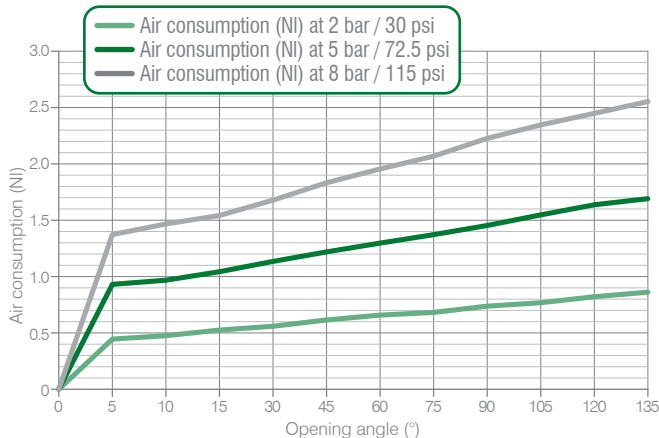
**380 N m / 280,25 lb-ft**

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.

**Size 50 mm**

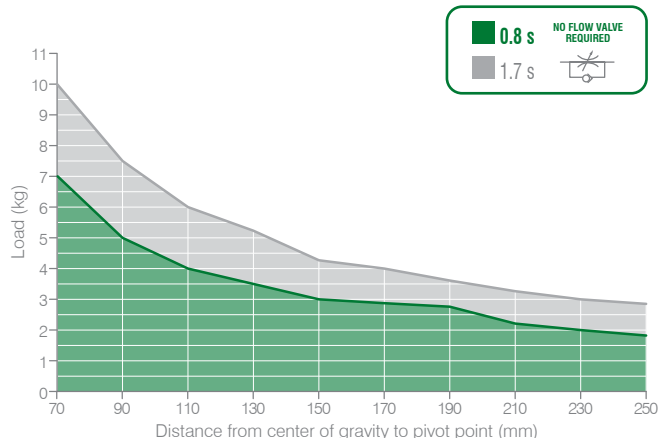
**• Air consumption**

Air consumption for complete cycle (opening and closing)  
REV. 00 - 16/06/2015



**• Tooling weight chart**

5 bar operating pressure – 135° opening angle  
REV. 00 - 16/06/2015



**• Clamping moment (at 5 bar / 72.5 psi)**

**185 N m / 136,44 lb-ft**

**• Holding moment**

**800 N m / 590,04 lb-ft**

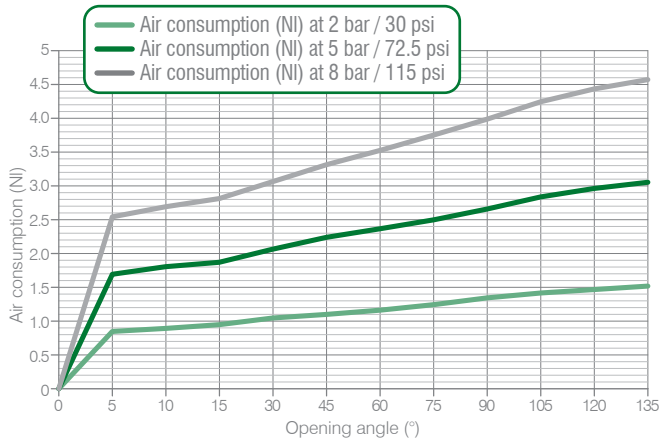
The above data are meant for correct working conditions of the clamp with the same performance level during its life time. For applications which exceed the above data, please contact our sales representatives.



## Size 63 mm

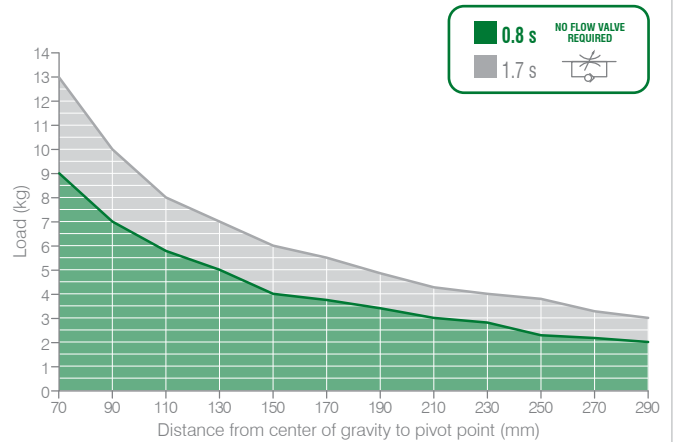
### Air consumption

Air consumption for complete cycle (opening and closing)  
REV. 00 - 17/06/2015



### Tooling weight chart

5 bar operating pressure – 135° opening angle  
REV. 00 - 17/06/2015



### Clamping moment (at 5 bar / 72.5 psi)

**390 N m / 287,64 lb-ft**

### Holding moment

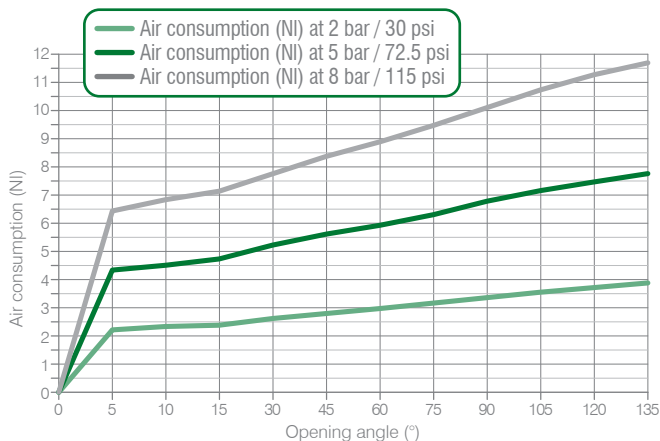
**1.500 N m / 1.106,34 lb-ft**

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.

## Size 80 mm

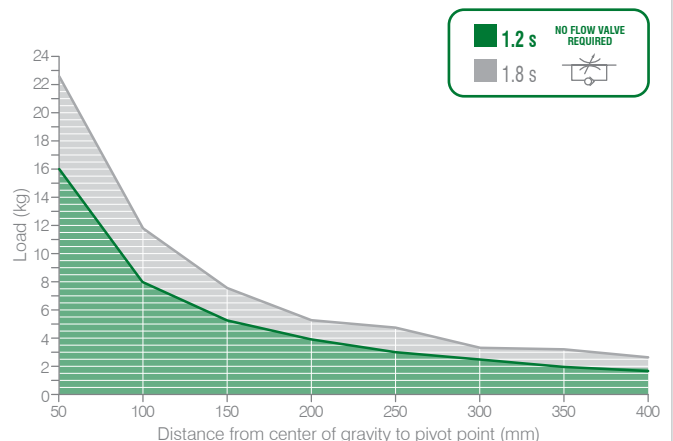
### Air consumption

Air consumption for complete cycle (opening and closing)  
REV. 00 - 29/05/2015



### Tooling weight chart

5 bar operating pressure – 135° opening angle  
REV. 00 - 29/05/2016



### Clamping moment (at 5 bar / 72.5 psi)

**850 N m / 626,92 lb-ft**

### Holding moment

**2.500 N m / 1.843,90 lb-ft**





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.

**C1-Series / Ordering string**

**Nano Power Clamps**





**C 1 P 25 E G 1 A 01**

CLAMPING

<b>C</b>	<b>VERSION</b>	<b>C</b> = clamp
<b>1</b>	<b>MOUNTING PATTERN</b>	<b>1</b> = international mount
<b>P</b>	<b>OPERATION</b>	<b>P</b> = pneumatic <b>D2</b> = pneumatic with manual operation (size 32 mm please see C5 Series) <b>D0</b> = output shaft for manual operation - no lever and no handle included (size 32 mm please see C5 Series)
<b>25</b>	<b>SIZE</b>	<b>25</b> = Ø 25 mm <b>32</b> = Ø 32 mm
<b>E</b>	<b>SENSOR</b>	<b>E</b> = electronic sensor with M12 swivel connector - PNP <b>A</b> = electronic sensor with M12 swivel connector - NPN <b>N</b> = no sensor <b>B</b> = electronic sensor with M8 swivel connector - PNP
<b>G</b>	<b>PORTS</b>	<b>G</b> = G thread – BSPP
<b>1</b>	<b>ARM MOUNT</b>	<b>1</b> =  <b>2</b> =  <b>3</b> =  <b>4</b> = 
<b>A</b>	<b>ARM MATERIAL</b>	<b>A</b> = aluminum
<b>01</b>	<b>CLAMP ARM TYPE</b>	<b>01</b> = wishbone, central, 0 mm offset <b>13</b> = H, 0 mm offset <b>04</b> = wishbone, central, 10 mm offset <b>14</b> = H, 10 mm offset

**C5-Series**

**C 5 D2 32 E 4 1 A 01**





<b>C</b>	<b>VERSION</b>	<b>C</b> = clamp
<b>5</b>	<b>MOUNTING PATTERN</b>	<b>5</b> = heavy duty style
<b>D2</b>	<b>OPERATION</b>	<b>M2</b> = manual Ø 32 <b>D2</b> = pneumatic with manual operation
<b>32</b>	<b>SIZE</b>	<b>32</b> = size 32 mm
<b>E</b>	<b>SENSOR</b>	<b>E</b> = electronic sensor with M12 swivel connector - PNP <b>A</b> = electronic sensor with M12 swivel connector - NPN <b>N</b> = no sensor <b>B</b> = electronic sensor with M8 swivel connector - PNP
<b>4</b>	<b>FIXED OPENING ANGLE</b>	<b>1</b> = 135° <b>2</b> = 120° <b>5</b> = 55° <b>7</b> = 20°
<b>1</b>	<b>ARM MOUNT</b>	<b>1</b> =  <b>2</b> =  <b>3</b> =  <b>4</b> = 
<b>A</b>	<b>ARM MATERIAL</b>	<b>A</b> = aluminum
<b>01</b>	<b>CLAMP ARM TYPE</b>	<b>01</b> = wishbone, central, 0 mm offset <b>04</b> = wishbone, central, 10 mm offset <b>13</b> = H, 0 mm offset <b>14</b> = H, 10 mm offset



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

## C1-Series

**C 1 P 40 E G 4 A 01**




<b>C</b>	<b>VERSION</b>	<b>C</b> = clamp
<b>1</b>	<b>MOUNTING PATTERN</b>	<b>1</b> = International mount
<b>P</b>	<b>OPERATION</b>	<b>P</b> = pneumatic <b>D</b> = pneumatic with manual operation <b>D0</b> = output shaft for manual operation - no lever and no handle included
<b>40</b>	<b>SIZE</b>	<b>40</b> = Ø 40 mm <b>63</b> = Ø 63 mm <b>50</b> = Ø 50 mm <b>80</b> = Ø 80 mm
<b>E</b>	<b>SENSOR</b>	<b>E</b> = electronic sensor with M12 swivel connector - PNP <b>A</b> = electronic sensor with M12 swivel connector - NPN <b>N</b> = no sensor <b>B</b> = electronic sensor with M8 swivel connector - PNP
<b>G</b>	<b>PORTS</b>	<b>G</b> = G thread – BSPP <b>N</b> = NPT
<b>4</b>	<b>ARM MOUNT</b>	<b>1</b> =  <b>2</b> =  <b>3</b> =  <b>4</b> = 
<b>A</b>	<b>ARM MATERIAL</b>	<b>A</b> = aluminum <b>S</b> = steel
<b>01</b>	<b>CLAMP ARM TYPE</b>	<b>01</b> = wishbone, central, 15 mm offset* <b>04</b> = wishbone, central, 45 mm offset <b>02</b> = wishbone, right, 15 mm offset* <b>05</b> = wishbone, right, 45 mm offset <b>03</b> = wishbone, left, 15 mm offset* <b>06</b> = wishbone, left, 45 mm offset

\* for size 80 mm = 20 mm offset

CLAMPING

## C1P45-Series





**C 1 P 45 E G 1 A 54**

<b>C</b>	<b>VERSION</b>	<b>C</b> = clamp
<b>1</b>	<b>MOUNTING PATTERN</b>	<b>1</b> = International mount
<b>P</b>	<b>OPERATION</b>	<b>P</b> = pneumatic
<b>45</b>	<b>SIZE</b>	<b>45</b> = Ø 40 mm Mounting pattern interchangeable to 50 and 63 mm bore clamps
<b>E</b>	<b>SENSOR</b>	<b>E</b> = electronic sensor with M12 swivel connector - PNP <b>A</b> = electronic sensor with M12 swivel connector - NPN <b>N</b> = no sensor <b>B</b> = electronic sensor with M8 swivel connector - PNP
<b>G</b>	<b>PORTS</b>	<b>G</b> = G thread – BSPP
<b>1</b>	<b>ARM MOUNT</b>	<b>1</b> =  <b>2</b> =  <b>4</b> = 
<b>A</b>	<b>ARM MATERIAL</b>	<b>A</b> = aluminum
<b>54</b>	<b>CLAMP ARM TYPE</b>	<b>54</b> = wishbone, central, 45 mm offset <b>55</b> = wishbone, right, 45 mm offset <b>56</b> = wishbone, left, 45 mm offset

## C1M-Series

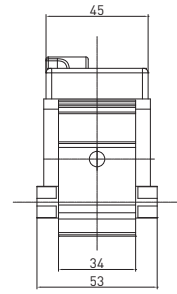
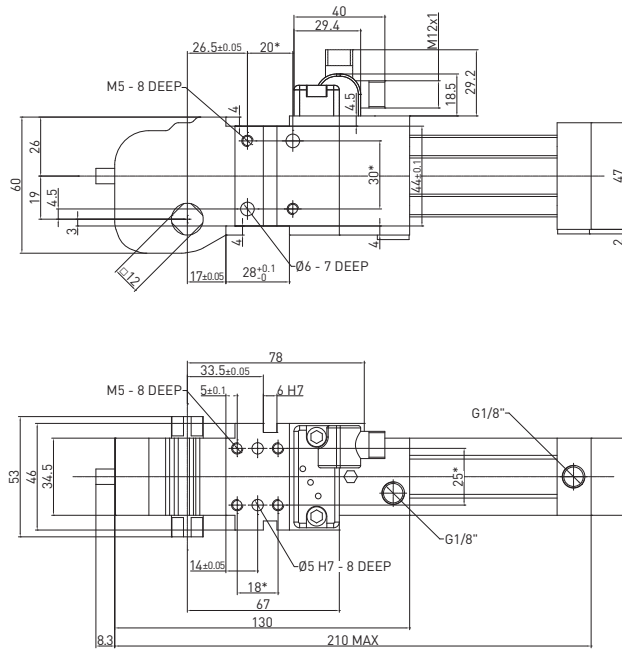
**C 1 M2 50 E 4 1 A 1**

CLAMPING

<b>C</b>	<b>VERSION</b>	<b>C</b> = clamp
<b>1</b>	<b>MOUNTING PATTERN</b>	<b>1</b> = international mount
<b>M2</b>	<b>OPERATION</b>	<b>M1</b> = manual with straight handle <b>M2</b> = manual with "D2" handle
<b>50</b>	<b>SIZE</b>	<b>50</b> = size 50 mm <b>63</b> = size 63 mm
<b>E</b>	<b>SENSOR</b>	<b>E</b> = electronic sensor with M12 swivel connector - PNP <b>A</b> = electronic sensor with M12 swivel connector - NPN <b>N</b> = no sensor <b>B</b> = electronic sensor with M8 swivel connector - PNP
<b>4</b>	<b>FIXED OPENING ANGLE</b>	<b>1</b> = 135° <b>2</b> = 120° <b>3</b> = 90° <b>4</b> = 60° <b>5</b> = 45° <b>6</b> = 55° <b>7</b> = 20°
<b>1</b>	<b>ARM MOUNT</b>	<b>1</b> =  <b>2</b> =  <b>3</b> =  <b>4</b> = 
<b>A</b>	<b>ARM MATERIAL</b>	<b>A</b> = aluminum
<b>1</b>	<b>CLAMP ARM TYPE</b>	<b>01</b> = wishbone, central, 15 mm offset <b>04</b> = wishbone, central, 45 mm offset For the other arm types, see ordering string of C1 series

### C1P25E / Nano Power clamp - International mount - 25 mm bore

WEIGHT 0.75 kg



\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES:  $\pm 0.02$

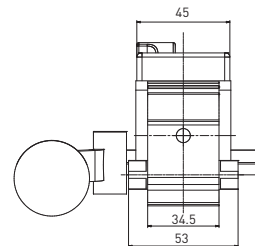
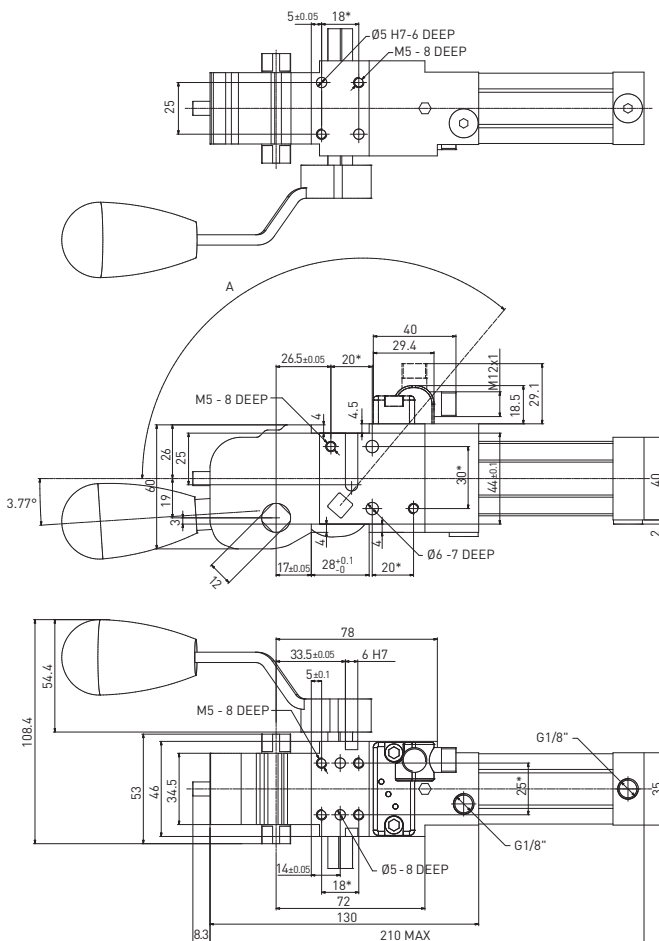
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES:  $\pm 0.1$

REV. 01 - 30/03/2021

CLAMPING

### C1D225E / Nano Power clamp - International mount - 25 mm bore with manual operation

WEIGHT 0.987 kg  
D2 handle included



#### Handle swivel angle

Arm opening angle	Handle swivel angle <sup>A</sup>
0°	-3,77°
15°	19°
30°	35°
45°	53°
60°	74°
75°	94°
90°	109,5°
105°	120°
120°	126°
135°	130°

Max Hand Force: 200 N

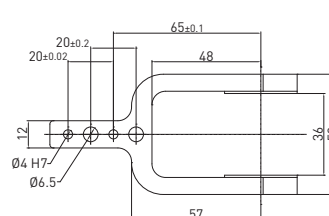
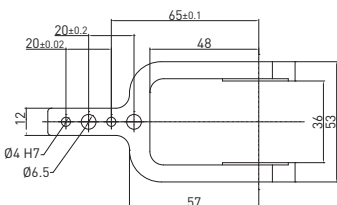
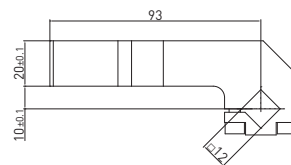
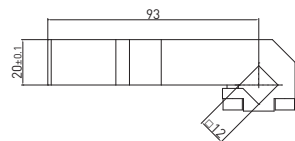
\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES:  $\pm 0.02$

DIMENSIONAL TOLERANCE  
FOR THREADED HOLES:  $\pm 0.1$

REV. 03 - 27/10/2021

## Clamping arms / 12 mm shaft for clamps' size 25 mm

REV. 02 - 07/10/2015



### 12 mm shaft – 0 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
<b>B12012</b>	<b>Aluminum</b>	<b>Central</b>	<b>0.127</b>	<b>135°</b>	<b>105°</b>	<b>135°</b>	<b>90°</b>

Screws: M5x14 Tightening torque: 5 N m / 3.68 lb ft

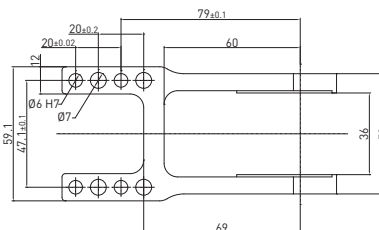
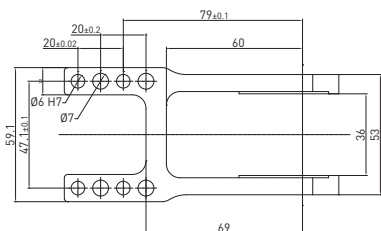
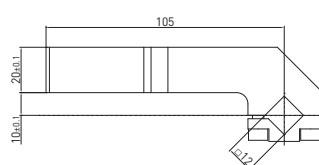
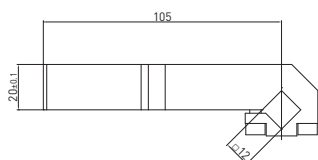
### 12 mm shaft – 10 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
<b>B12042</b>	<b>Aluminum</b>	<b>Central</b>	<b>0.135</b>	<b>135°</b>	<b>120°</b>	<b>N/A</b>	<b>45°</b>

Screws: M5x14 Tightening torque: 5 N m / 3.68 lb ft

## Clamping arms / 12 mm shaft for clamps' size 25 mm and size 32 mm mm - Left & right clamping surfaces

REV. 00 - 12/04/2017



### 12 mm shaft – 0 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
<b>B1213</b>	<b>Aluminum</b>	<b>H</b>	<b>0.163</b>	<b>135°</b>	<b>115°</b>	<b>N/A</b>	<b>45°</b>

Screws: M5x14 Tightening torque: 5 N m / 3.68 lb ft

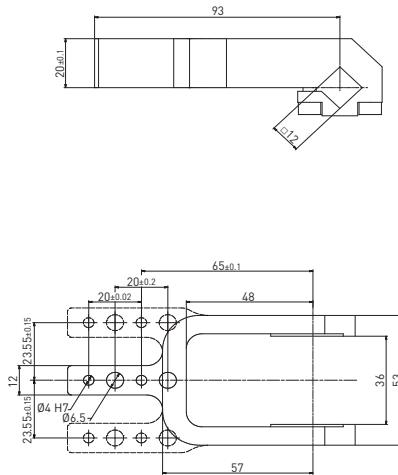
### 12 mm shaft – 10 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
<b>B1214</b>	<b>Aluminum</b>	<b>H</b>	<b>0.173</b>	<b>135°</b>	<b>115°</b>	<b>N/A</b>	<b>45°</b>

Screws: M5x14 Tightening torque: 5 N m / 3.68 lb ft

## Clamping arms / 12 mm shaft for clamps' size 25 mm

REV. 00 - 11/02/2022



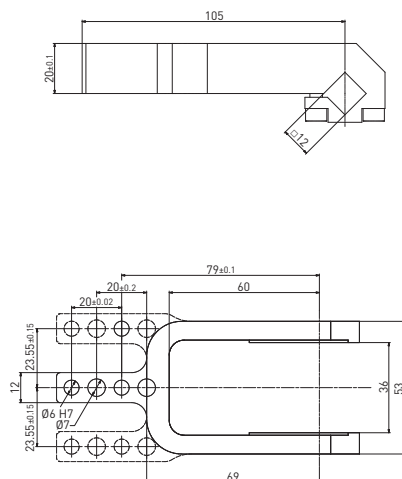
### 12 mm shaft – 0 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B12022	Aluminum	Right	0.127	135°	105°	135°	90°
B12032	Aluminum	Left	0.127	135°	105°	135°	90°

Screws: M5x14 Tightening torque: 5 N m / 3.68 lb ft

## Clamping arms / 12 mm shaft for clamps' size 32 mm

REV. 00 - 11/02/2022



### 12 mm shaft – 0 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B12023	Aluminum	Right	0.135	135°	112°	135°	90°
B12033	Aluminum	Left	0.135	135°	112°	135°	90°

Screws: M5x14 Tightening torque: 5 N m / 3.68 lb ft

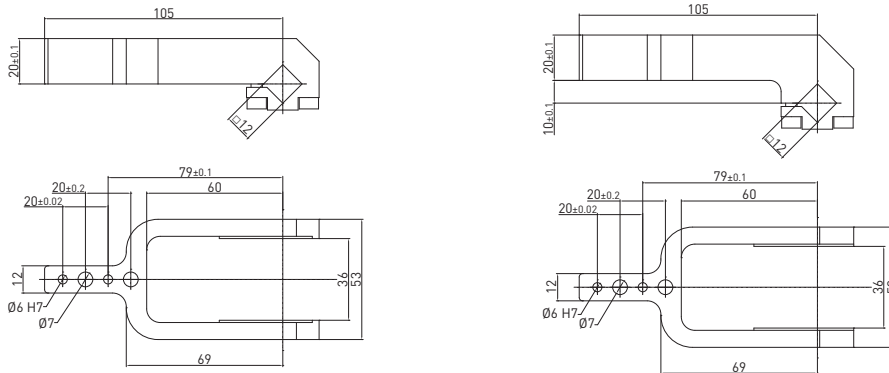






## Clamping arms / 12 mm shaft for clamps' size 32 mm

REV. 00 - 07/10/2015



### 12 mm shaft – 0 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
<b>B12013</b>	<b>Aluminum</b>	<b>Central</b>	<b>0.135</b>	<b>135°</b>	<b>112°</b>	<b>135°</b>	<b>90°</b>

Screws: M5x14 Tightening torque: 5 N m / 3.68 lb ft

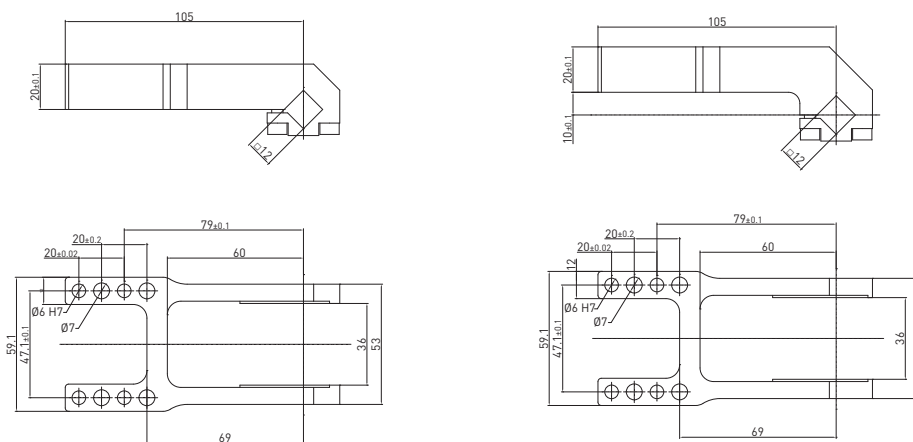
### 12 mm shaft – 10 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
<b>B12043</b>	<b>Aluminum</b>	<b>Central</b>	<b>0.144</b>	<b>135°</b>	<b>123°</b>	<b>N/A</b>	<b>45°</b>

Screws: M5x14 Tightening torque: 5 N m / 3.68 lb ft

## Clamping arms / 12 mm shaft for clamps' size 25 mm and size 32 mm mm - Left & right clamping surfaces

REV. 00 - 12/04/2017



### 12 mm shaft – 0 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
<b>B1213</b>	<b>Aluminum</b>	<b>H</b>	<b>0.163</b>	<b>135°</b>	<b>115°</b>	<b>N/A</b>	<b>45°</b>

Screws: M5x14 Tightening torque: 5 N m / 3.68 lb ft

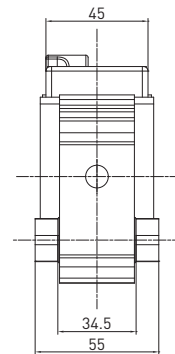
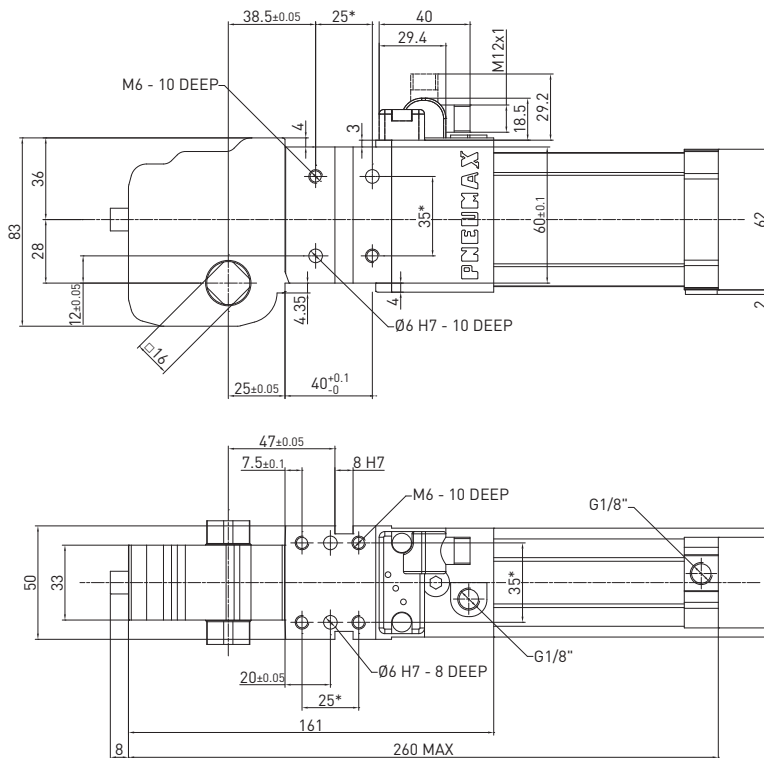
### 12 mm shaft – 10 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
<b>B1214</b>	<b>Aluminum</b>	<b>H</b>	<b>0.173</b>	<b>135°</b>	<b>115°</b>	<b>N/A</b>	<b>45°</b>

Screws: M5x14 Tightening torque: 5 N m / 3.68 lb ft

### C1P40E / Power clamp - International mount - 40 mm bore

WEIGHT 1.45 kg

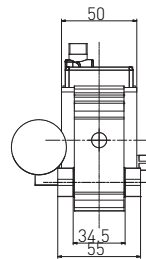
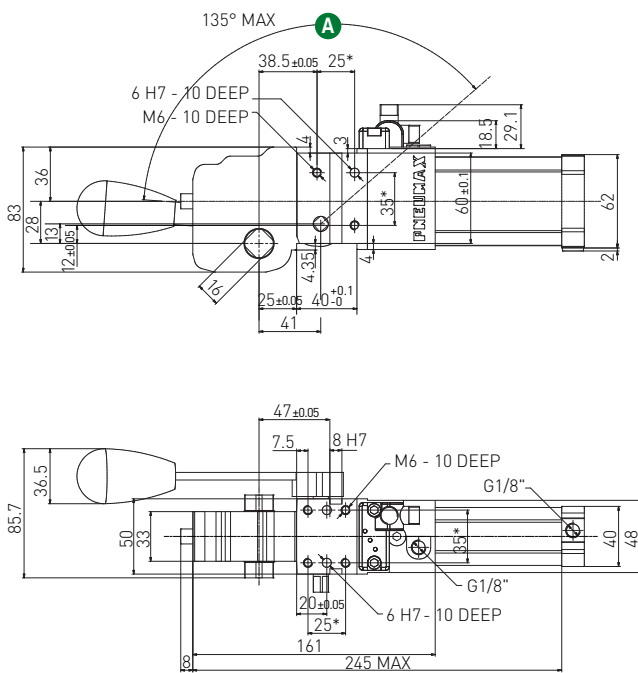


\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES: ±0.02  
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES: ±0.1

REV. 00 - 31/03/2015

### C1D\_40E / Power clamp - International mount - 40 mm bore with manual operation

WEIGHT 1.75 kg  
D2 handle included



#### Handle swivel angle

Arm opening angle	Handle swivel angle <b>A</b>
0°	4.12°
15°	22.65°
30°	38.2°
45°	58.4°
60°	83.6°
75°	107.6°
90°	123.6°
105°	132.75°
120°	137.7°
135°	140°

Max Hand Force: 200 N

D1 version

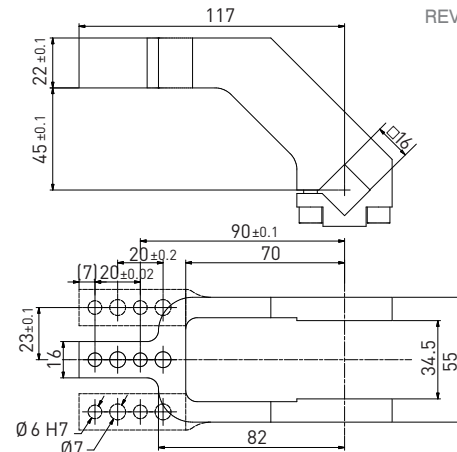
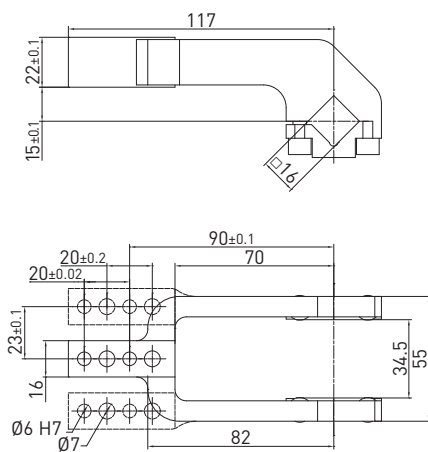
M5x16 screws  
Tightening torque: 5 Nm / 3.68 Lb ft

D2 version

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

REV. 01 - 03/05/2022

## Clamping arms / 16 mm shaft



REV. 00 - 31/03/2015

### 16 mm shaft – 15 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B1601	Aluminum	Central	0.24	135°	125°	N/A	45°
Q1601	Steel	Central	0.44	135°	125°	N/A	45°
B1602	Aluminum	Right	0.24	135°	125°	N/A	45°
Q1602	Steel	Right	0.46	135°	125°	N/A	45°
B1603	Aluminum	Left	0.24	135°	125°	N/A	45°
Q1603	Steel	Left	0.46	135°	125°	N/A	45°

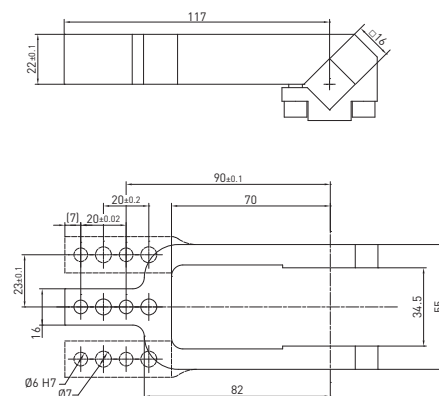
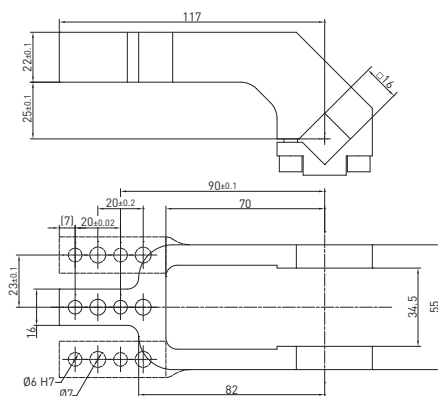
Screws: M6x20 Tightening torque: 10 N m / 7.37 lb ft

### 16 mm shaft – 45 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B1604	Aluminum	Central	0.3	135°	135°	N/A	45°
Q1604	Steel	Central	0.55	135°	135°	N/A	45°
B1605	Aluminum	Right	0.3	135°	135°	N/A	45°
Q1605	Steel	Right	0.57	135°	135°	N/A	45°
B1606	Aluminum	Left	0.3	135°	135°	N/A	45°
Q1606	Steel	Left	0.57	135°	135°	N/A	45°

Screws: M6x20 Tightening torque: 10 N m / 7.37 lb ft

## Clamping arms / 16 mm shaft



REV. 00 - 12/05/2017

### 16 mm shaft – 25 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B1621	Aluminum	Central	0.25	135°	135°	N/A	45°
B1622	Aluminum	Right	0.25	135°	135°	N/A	45°
B1623	Aluminum	Left	0.25	135°	135°	N/A	45°

Screws: M6x20 Tightening torque: 10 N m / 7.37 lb ft

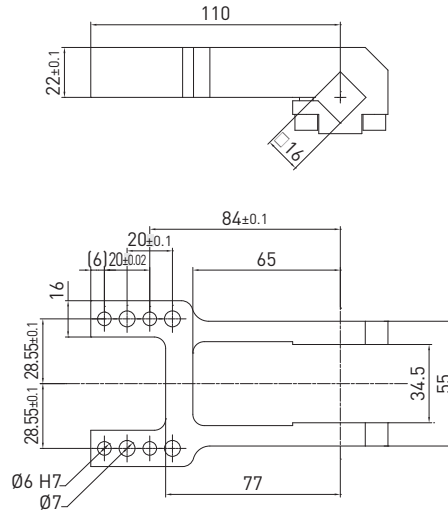
### 16 mm shaft – 0 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B1618	Aluminum	Central	0.25	135°	105°	135°	90°
B1619	Aluminum	Right	0.25	135°	105°	135°	90°
B1620	Aluminum	Left	0.25	135°	105°	135°	90°

Screws: M6x20 Tightening torque: 10 N m / 7.37 lb ft

## Clamping arms / 16 mm shaft - Left & right clamping surfaces

REV. 00 - 07/11/2019



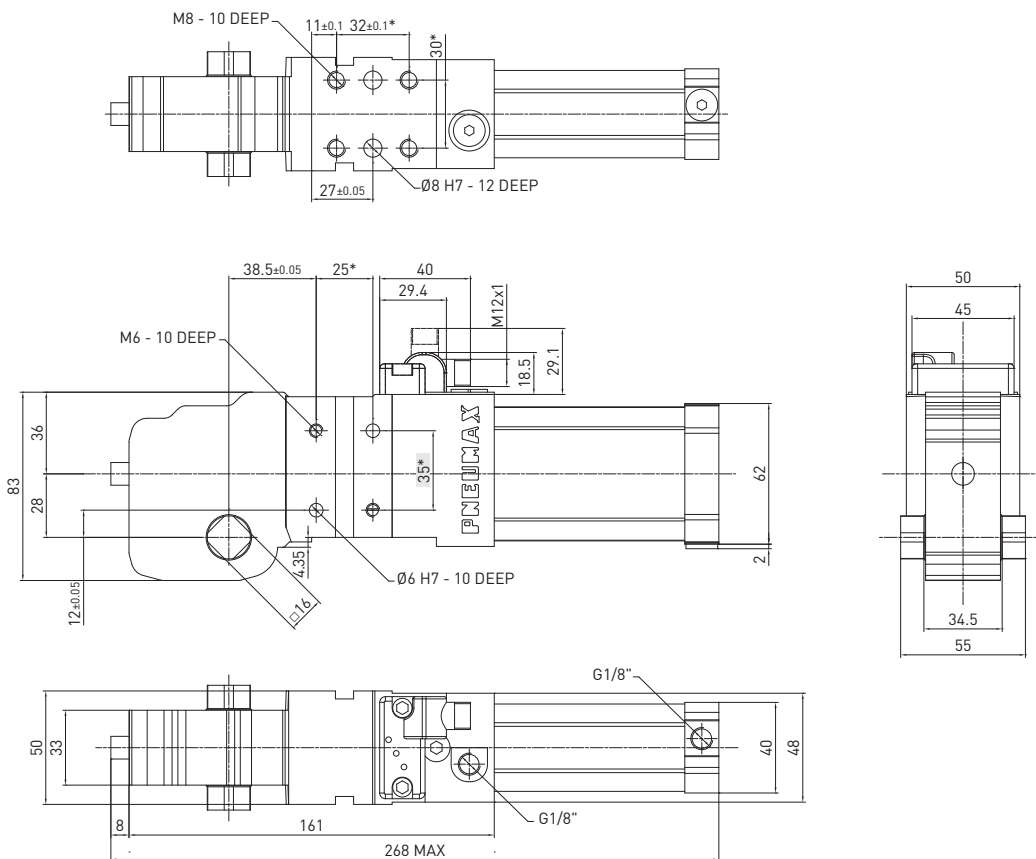
### 16 mm shaft – 0 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B1613	Aluminum	H	0.27	125°	45°	135°	35° MAX

Screws: M6x20 Tightening torque: 10 N m / 7.37 lb ft

## C1P45EG / Power clamp - 40 mm bore cylinder and mounting pattern interchangeable to 50 and 63 mm bore clamps

WEIGHT 1.45 kg



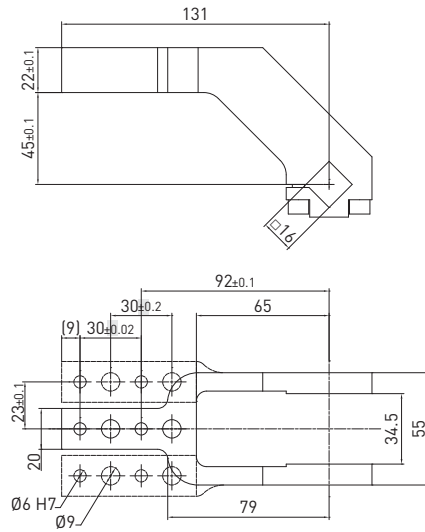
\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES: ±0.02  
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES: ±0.1

REV. 00 - 23/04/2019

## Clamping arms / 16 mm shaft

REV. 00 - 23/04/2019

CLAMPING



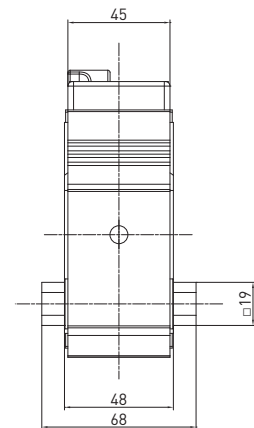
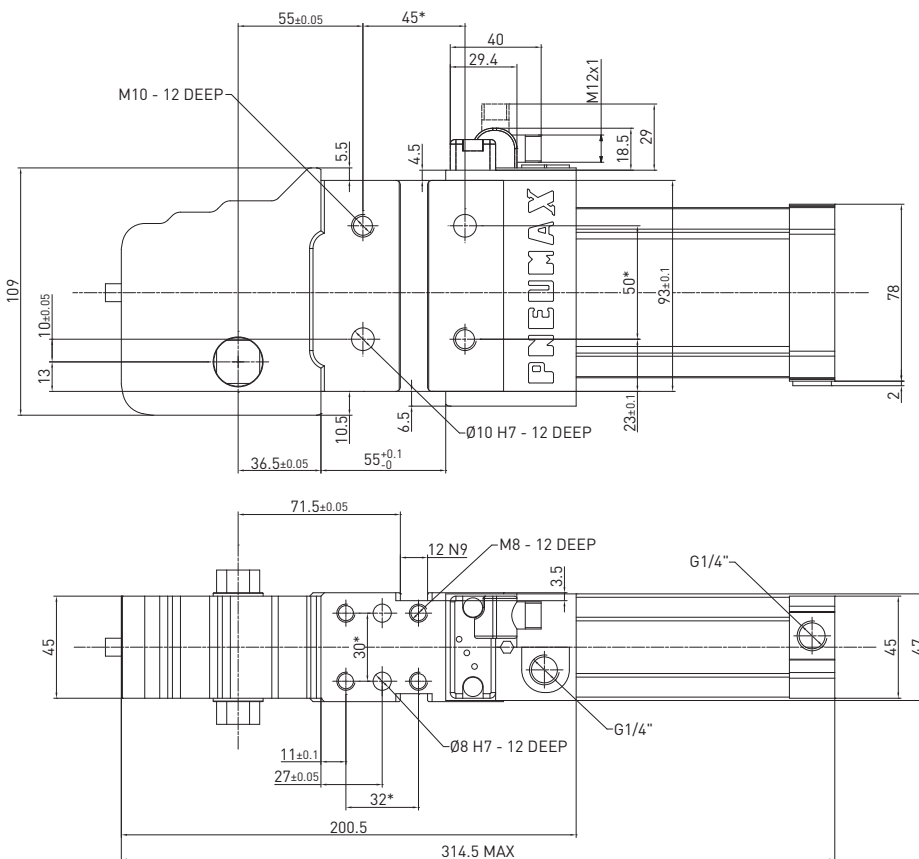
### 16 mm shaft – 45 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B1654	Aluminum	Central	0.3	135°	135°	N/A	45°
B1655	Aluminum	Right	0.3	135°	135°	N/A	45°
B1656	Aluminum	Left	0.3	135°	135°	N/A	45°

Screws: M6x20 Tightening torque: 10 N m / 7.37 lb ft

## C1P50E / Power clamp - International mount - 50 mm bore

WEIGHT 2.7 kg

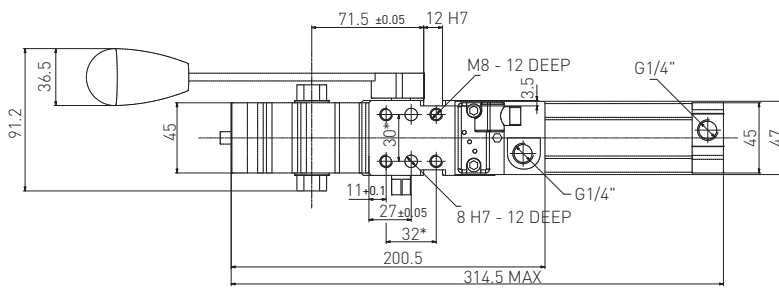
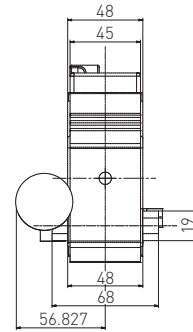
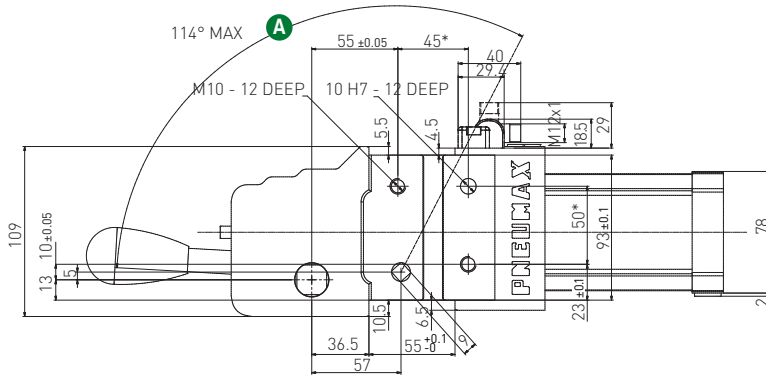


\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES: ±0.02  
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES: ±0.1

REV. 00 - 31/03/2015

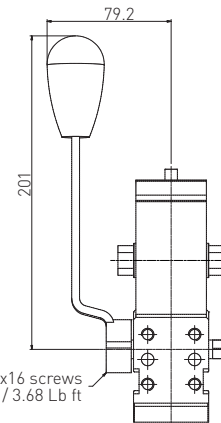
**C1D\_50E / Power clamp - International mount - 50 mm bore with manual operation**

**WEIGHT 3.1 kg**  
D2 handle included



D1 version

M5x16 screws  
Tightening torque: 5 Nm / 3.68 Lb ft



D2 version

**Handle swivel angle**

Arm opening angle	<b>A</b> Handle swivel angle
0°	3.25°
15°	27°
30°	43°
45°	59.3°
60°	75.4°
75°	89.75°
90°	101°
105°	109°
120°	114.25°
135°	117.2°

Max Hand Force: 200 N

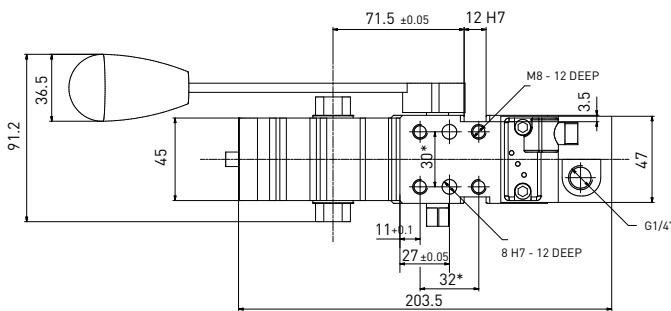
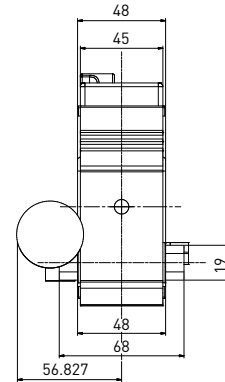
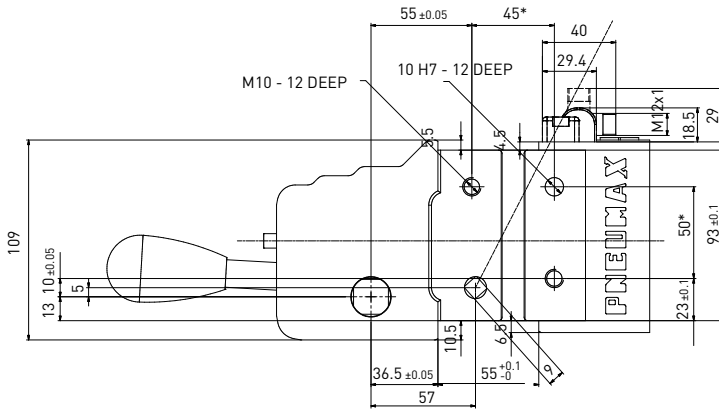
\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES: ±0.02  
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES: ±0.1

REV. 00 - 29/08/2017

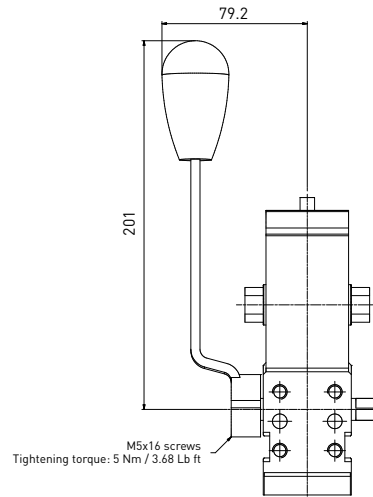
**C1M\_50E / Manual power clamp - International mount**

**WEIGHT 2.9 kg**  
D2 handle included

CLAMPING



D1 version



D2 version

**Handle swivel angle**

Arm opening angle	Handle swivel angle <b>A</b>
0°	3.25°
15°	27°
30°	43°
45°	59.3°
60°	75.4°
75°	89.75°
90°	101°
105°	109°
120°	114.25°
135°	117.2°

Max Hand Force: 200 N

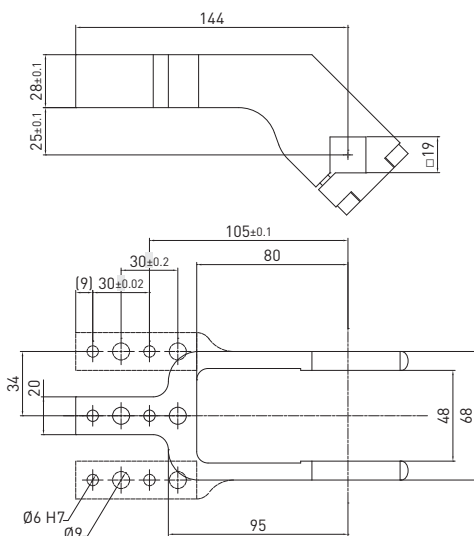
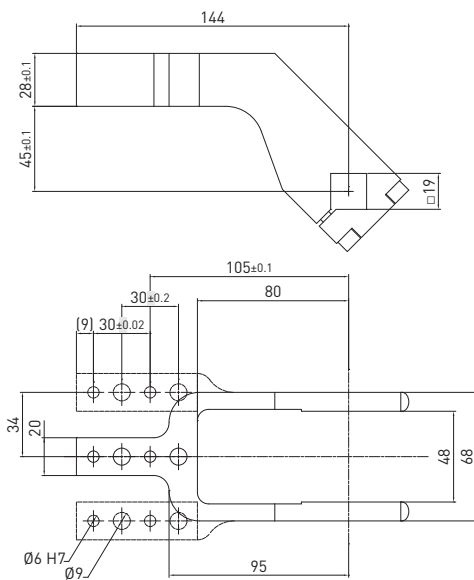
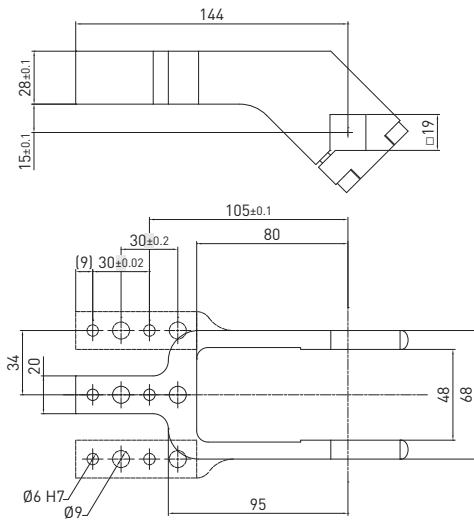
\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES: ±0.02  
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES: ±0.1

REV. 00 - 29/08/2017



## Clamping arms / 19 mm shaft

REV. 01 - 08/02/2019

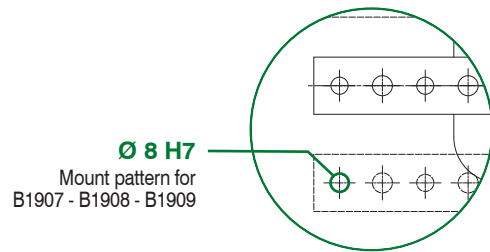


### 19 mm shaft – 15 mm offset



Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B1901	Aluminum	Central	0.41	135°	115°	135°	80°
Q1901	Steel	Central	0.71	135°	115°	135°	80°
B1902	Aluminum	Right	0.43	135°	115°	135°	80°
Q1902	Steel	Right	0.79	135°	115°	135°	80°
B1903	Aluminum	Left	0.43	135°	115°	135°	80°
Q1903	Steel	Left	0.79	135°	115°	135°	80°
B1907	Aluminum	Central	0.41	135°	115°	135°	80°
B1908	Aluminum	Right	0.43	135°	115°	135°	80°
B1909	Aluminum	Left	0.43	135°	115°	135°	80°

Screws: M6x25 Tightening torque: 10 N m / 7.37 lb ft



### 19 mm shaft – 45 mm offset



Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B1904	Aluminum	Central	0.45	135°	135°	135°	80°
Q1904	Steel	Central	0.77	135°	135°	135°	80°
B1905	Aluminum	Right	0.46	135°	135°	135°	80°
Q1905	Steel	Right	0.81	135°	135°	135°	80°
B1906	Aluminum	Left	0.46	135°	135°	135°	80°
Q1906	Steel	Left	0.81	135°	135°	135°	80°

Screws: M6x25 Tightening torque: 10 N m / 7.37 lb ft

### 19 mm shaft – 25 mm offset



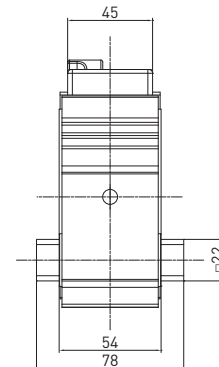
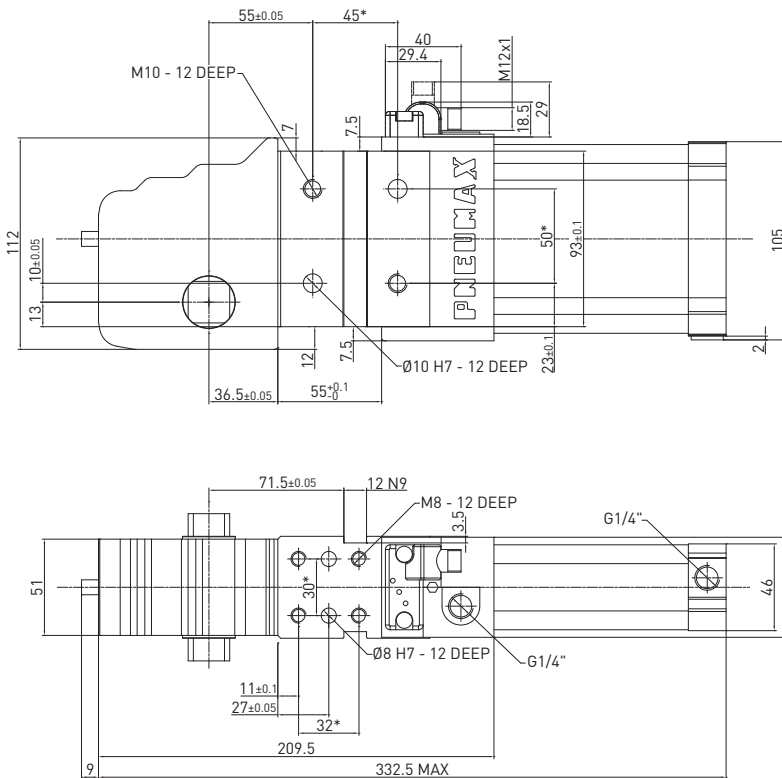
Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B1921	Aluminum	Central	0.43	135°	115°	135°	80°
B1922	Aluminum	Right	0.44	135°	115°	135°	80°
B1923	Aluminum	Left	0.44	135°	115°	135°	80°

Screws: M6x25 Tightening torque: 10 N m / 7.37 lb ft

**C1P63E / Power clamp - International mount - 63 mm bore**

**WEIGHT 3.5 kg**

CLAMPING



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

REV. 00 - 31/03/2015

**C1D\_63E / Power clamp - International mount - 63 mm bore with manual operation**

**WEIGHT 3.93 kg**

D2 handle included

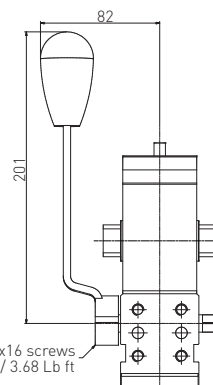
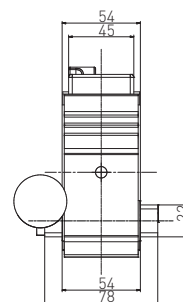
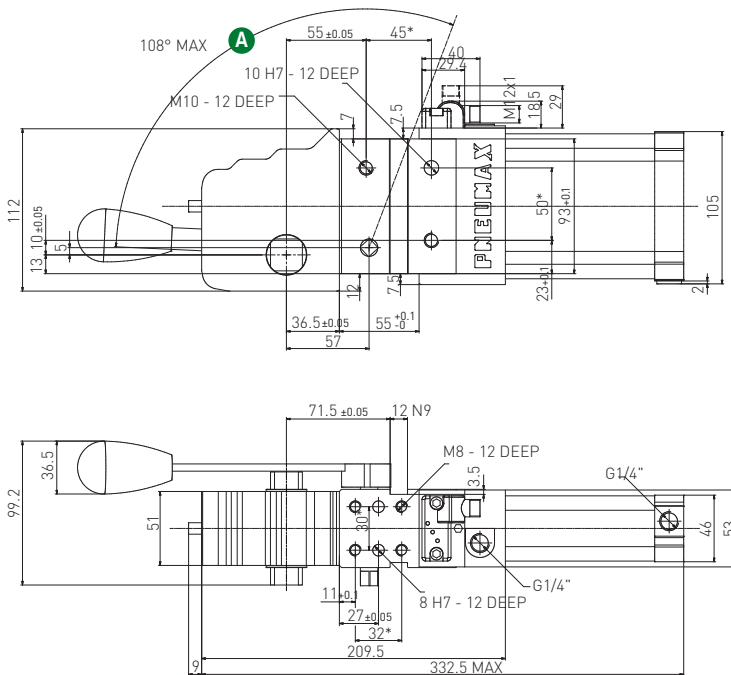
**Handle swivel angle**

Arm opening angle	<b>A</b> Handle swivel angle
0°	2.65°
15°	26.35°
30°	41.38°
45°	56°
60°	70.38°
75°	83.43°
90°	94°
105°	102°
120°	107°
135°	110.7°

Max Hand Force: 200 N

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

REV. 00 - 17/06/2015

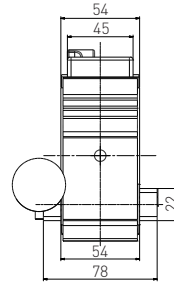
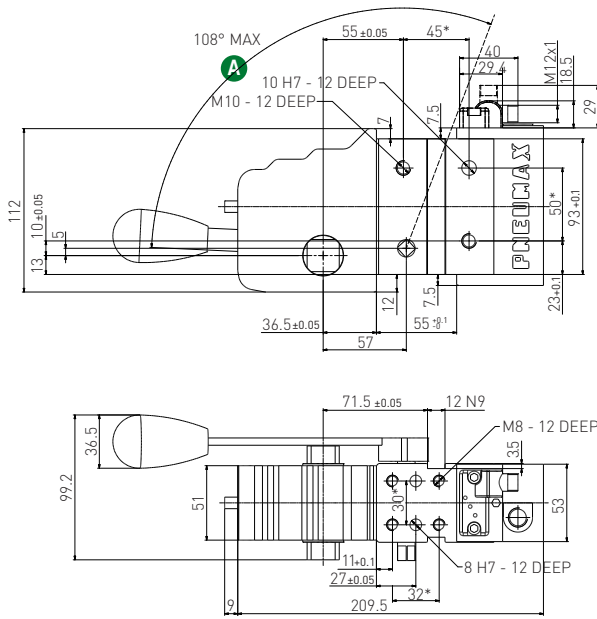


M5x16 screws  
Tightening torque: 5 Nm / 3.68 Lb ft

**D1 version**

**D2 version**

## C1M\_63E / Manual power clamp - International mount



**WEIGHT 3.3 kg**  
D2 handle included

### Handle swivel angle

Arm opening angle	Handle swivel angle <b>A</b>
0°	2.65°
15°	26.35°
30°	41.38°
45°	56°
60°	70.38°
75°	83.43°
90°	94°
105°	102°
120°	107°
135°	110.7°

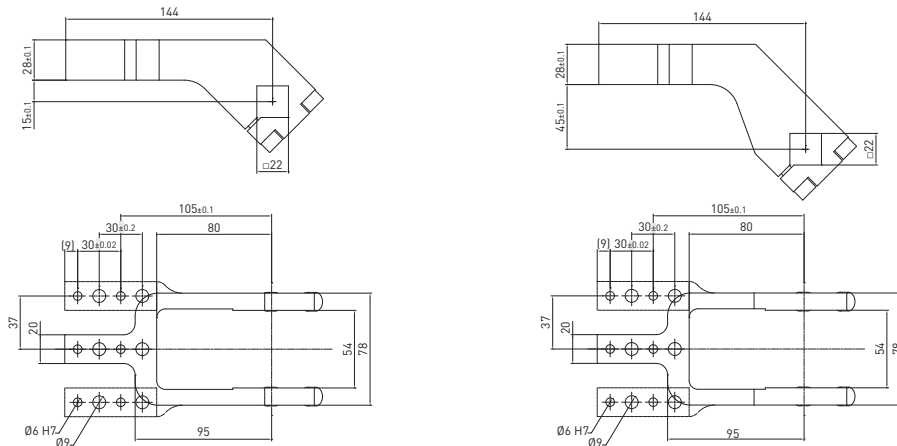
Max Hand Force: 200 N

\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES: ±0.02

DIMENSIONAL TOLERANCE  
FOR THREADED HOLES: ±0.1

REV. 00 - 19/01/2022

## Clamping arms / 22 mm shaft



REV. 01 - 08/02/2019

### 22 mm shaft – 15 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B2201	Aluminum	Central	0.52	135°	115°	135°	80°
Q2201	Steel	Central	0.9	135°	115°	135°	80°
B2202	Aluminum	Right	0.54	135°	115°	135°	80°
Q2202	Steel	Right	0.93	135°	115°	135°	80°
B2203	Aluminum	Left	0.54	135°	115°	135°	80°
Q2203	Steel	Left	0.93	135°	115°	135°	80°

Screws: M8x25 Tightening torque: 25 N m / 18.43 lb ft

### 22 mm shaft – 15 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B2215	Aluminum	H	0,63	135°	115°	135°	80°

Screws: M8x25 Tightening torque: 25 N m / 18.43 lb ft

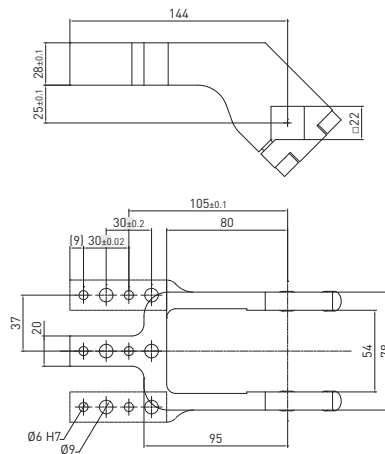
### 22 mm shaft – 45 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B2204	Aluminum	Central	0.57	135°	135°	135°	75°
Q2204	Steel	Central	0.98	135°	135°	135°	75°
B2205	Aluminum	Right	0.58	135°	135°	135°	75°
Q2205	Steel	Right	1.02	135°	135°	135°	75°
B2206	Aluminum	Left	0.58	135°	135°	135°	75°
Q2206	Steel	Left	1.02	135°	135°	135°	75°

Screws: M8x25 Tightening torque: 25 N m / 18.43 lb ft

## Clamping arms / 22 mm shaft

REV. 01 - 08/02/2019



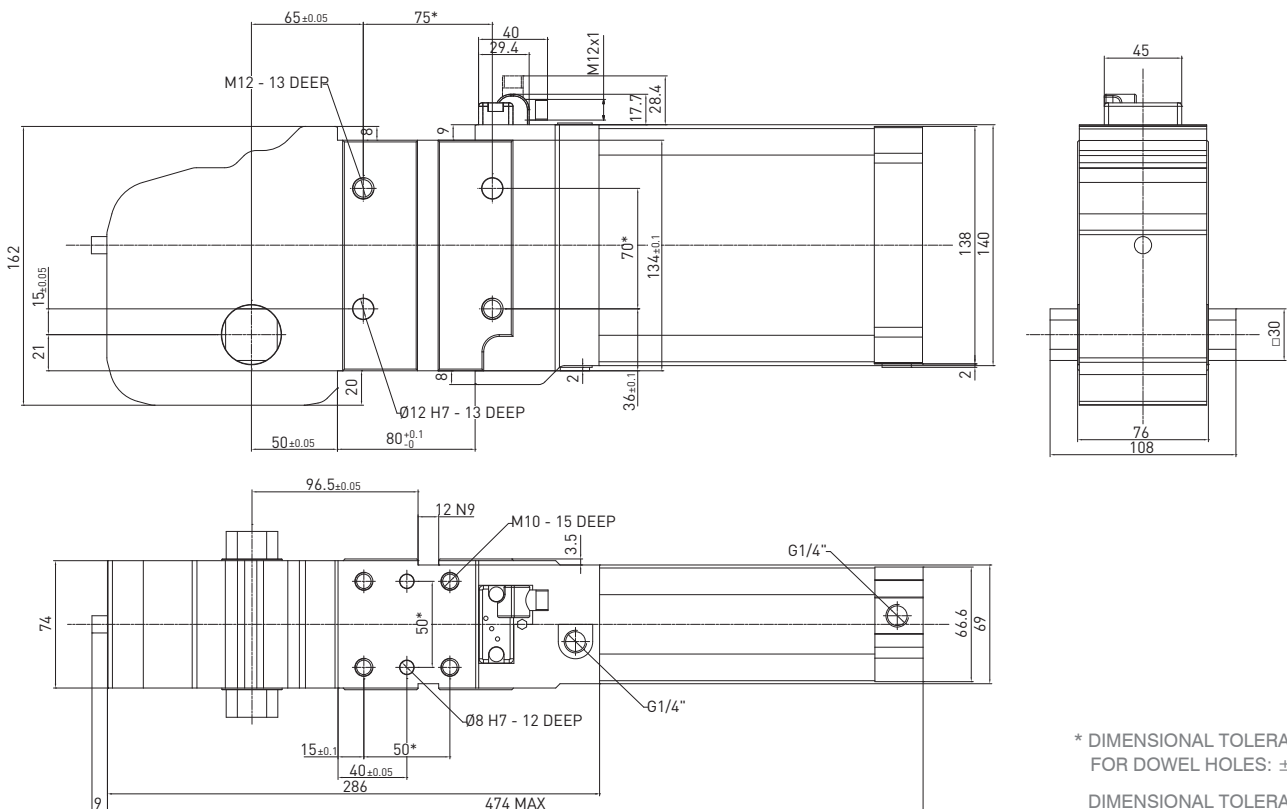
### 22 mm shaft – 25 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B2221	Aluminum	Central	0.55	135°	115°	135°	80°
B2222	Aluminum	Right	0.57	135°	115°	135°	80°
B2223	Aluminum	Left	0.57	135°	115°	135°	80°

Screws: M8x25 Tightening torque: 25 N m / 18.43 lb ft

## C1P80E / Power clamp - International mount - 80 mm bore

**WEIGHT 8.54 kg**



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

REV. 00 - 31/03/2015

## C1D280E / Power clamp - International mount - 80 mm bore with manual operation

WEIGHT 8.8 kg

### Handle swivel angle

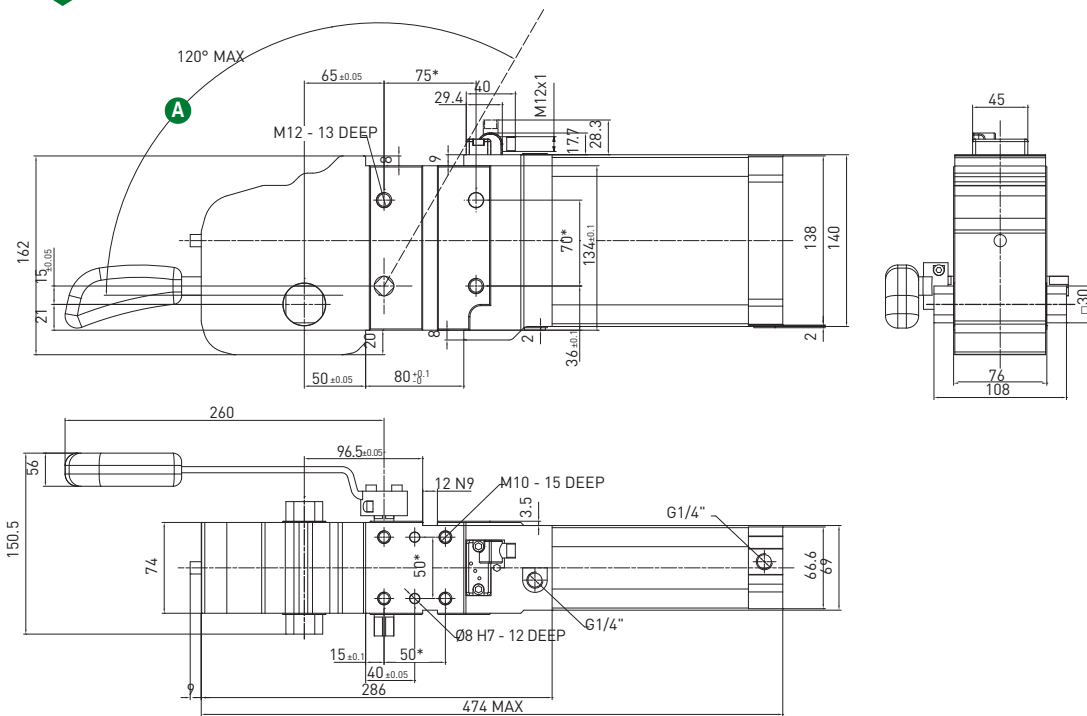
Arm opening angle	Handle swivel angle <b>A</b>
0°	3°
15°	22°
30°	36°
45°	51.3°
60°	68°
75°	84.2°
90°	98°
105°	108°
120°	115°
135°	119°

Max Hand Force: 200 N

\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

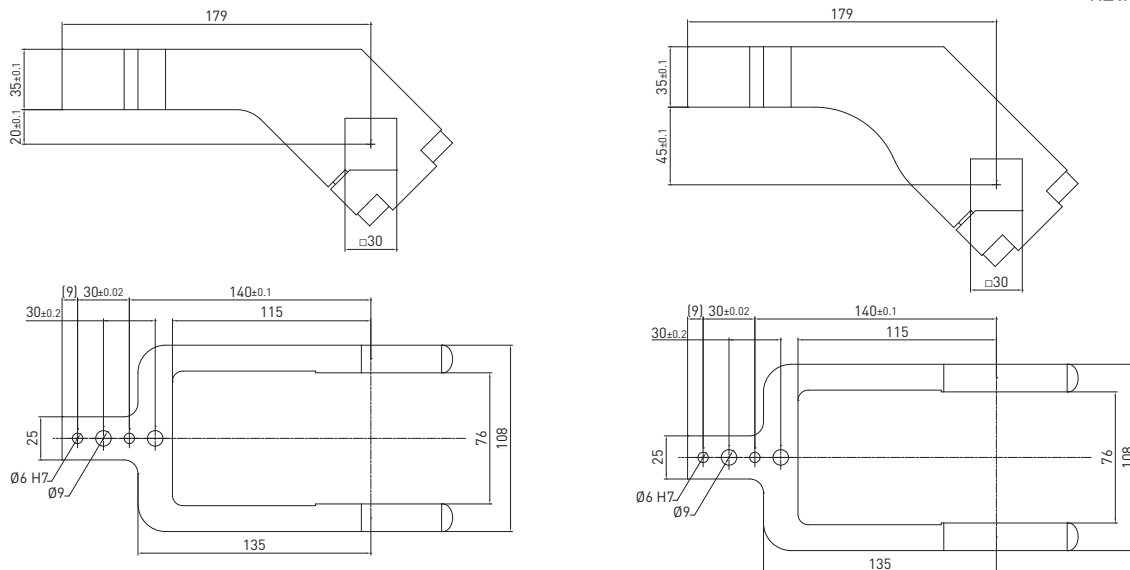
DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 00 - 03/03/2017



## Clamping arms / 30 mm shaft

REV. 01 - 08/02/2019



### 30 mm shaft – 20 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B3001	Aluminum	Central	1.1	135°	110°	135°	75°
B3002	Aluminum	Right	1.15	135°	110°	135°	75°
B3003	Aluminum	Left	1.15	135°	110°	135°	75°

Screws: M10x40 Tightening torque: 35 N m / 25.81 lb ft

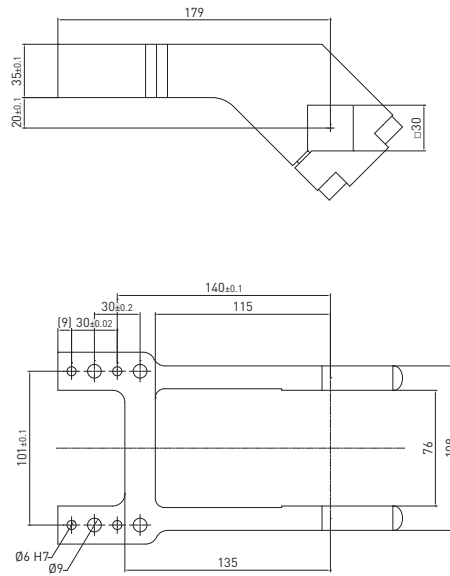
### 30 mm shaft – 45 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B3004	Aluminum	Central	1.18	135°	110°	135°	75°
B3005	Aluminum	Right	1.2	135°	110°	135°	75°
B3006	Aluminum	Left	1.2	135°	110°	135°	75°

Screws: M10x40 Tightening torque: 35 N m / 25.81 lb ft

## Clamping arms / 30 mm shaft

REV. 00 - 28/11/2019



### 30 mm shaft – 20 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
<b>B3016</b>	<b>Aluminum</b>	<b>H</b>	<b>1.4</b>	<b>135°</b>	<b>110°</b>	<b>135°</b>	<b>75°</b>

Screws: M10x40 Tightening torque: 35 N m / 25.81 lb ft



# C2-Series

## Pneumatic power clamps conforming to the NAAMS Standard



GLOBAL STANDARD COMPONENTS  
**NAAMS**

Pneumax clamps' series have all been developed with a modern and compact design which goes towards **enhancing the operational performances**, such as the cycle time, combined with a very limited total weight without compromising their **strength** and **resistance**.

CLAMPING

### Technical features

**Manual release button** to open the linkage when air pressure is removed during setup. **Pneumatic ports on both sides** of the cylinder.

#### Operating features

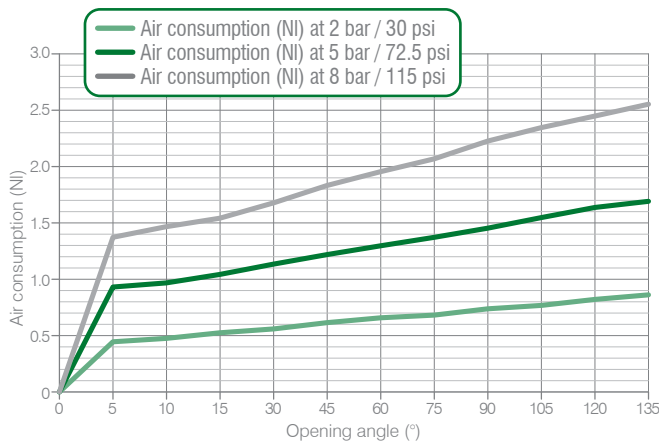
<b>Operating pressure</b>	from 2 to 8 bar / from 30 to 115 psi
<b>Lubrication</b>	all the devices are lubricated for life at the factory. Inline air lubrication isn't required

### Functional charts

#### Size 50 mm

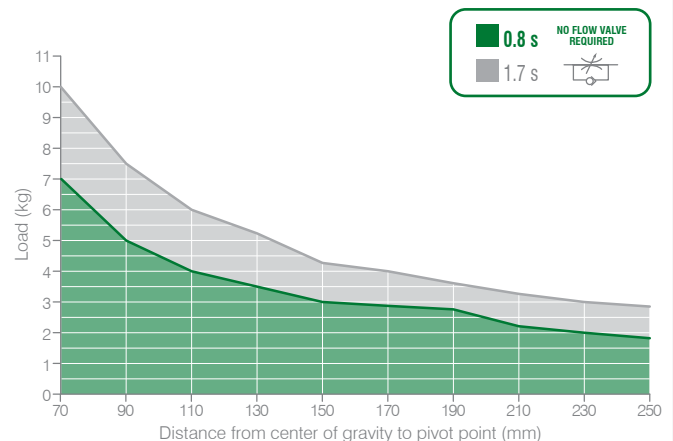
- Air consumption**

Air consumption for complete cycle (opening and closing)  
REV. 00 - 16/06/2015



- Tooling weight chart**

5 bar operating pressure – 135° opening angle  
REV. 00 - 16/06/2015



- Clamping moment (at 5 bar / 72.5 psi)**

**185 N m / 136,44 lb-ft**

- Holding moment**

**800 N m / 590,04 lb-ft**

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.

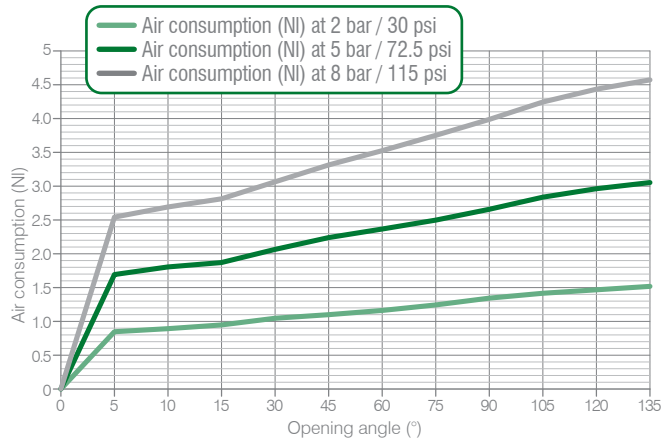
## Size 63 mm

CLAMPING

- Air consumption**

Air consumption for complete cycle (opening and closing)

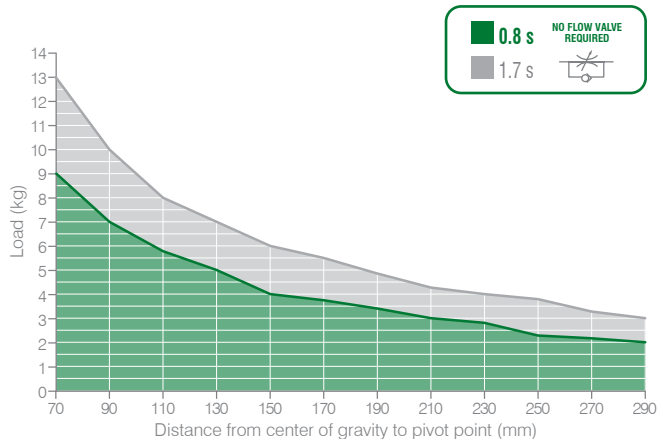
REV. 00 - 17/06/2015



- Tooling weight chart**

5 bar operating pressure – 135° opening angle

REV. 00 - 17/06/2015



- Clamping moment (at 5 bar / 72.5 psi)**

**390 N m / 287,64 lb-ft**

- Holding moment**

**1.500 N m / 1.106,34 lb-ft**

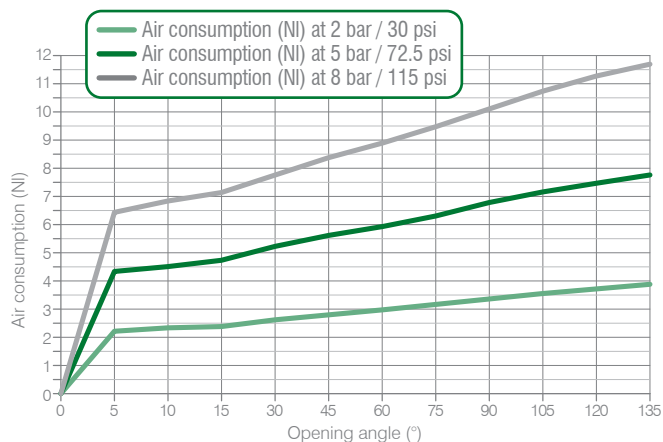
The above data are meant for correct working conditions of the clamp with the same performance level during its life time. For applications which exceed the above data, please contact our sales representatives.

## Size 80 mm

- Air consumption**

Air consumption for complete cycle (opening and closing)

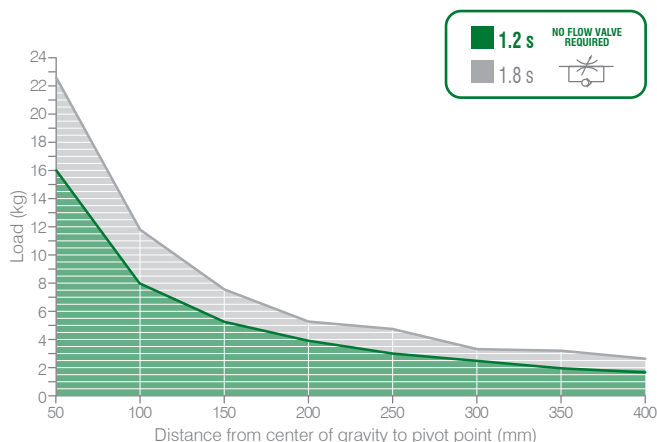
REV. 00 - 29/05/2015



- Tooling weight chart**

5 bar operating pressure – 135° opening angle

REV. 00 - 29/05/2016



- Clamping moment (at 5 bar / 72.5 psi)**

**850 N m / 626,92 lb-ft**

- Holding moment**

**2.500 N m / 1.843,90 lb-ft**

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.



C2-Series / Ordering string

C2-Series



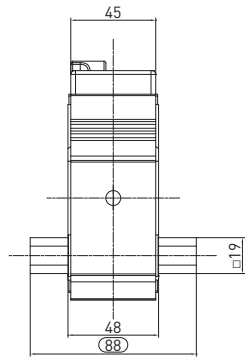
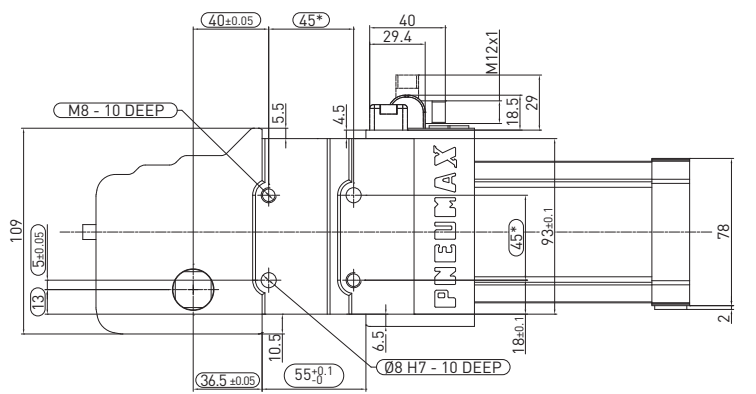
<b>C</b>	<b>VERSION</b>	<b>C</b> = clamp
<b>2</b>	<b>MOUNTING PATTERN</b>	<b>2</b> = NAAMS Standard
<b>P</b>	<b>OPERATION</b>	<b>P</b> = pneumatic <b>D</b> = pneumatic with manual operation <b>D0</b> = output shaft for manual operation - no lever and no handle included
<b>50</b>	<b>SIZE</b>	<b>50</b> = Ø 50 mm <b>63</b> = Ø 63 mm <b>80</b> = Ø 80 mm
<b>E</b>	<b>SENSOR</b>	<b>E</b> = electronic sensor with M12 swivel connector - PNP <b>A</b> = electronic sensor with M12 swivel connector - NPN <b>N</b> = no sensor <b>B</b> = electronic sensor with M8 swivel connector - PNP
<b>N</b>	<b>PORTS</b>	<b>G</b> = G thread – BSPP <b>N</b> = NPT
<b>L</b>	<b>SHAFT OUTPUT</b>	<b>L</b> = dual output <b>L̄</b> = single output - LEFT <b>R</b> = single output - RIGHT



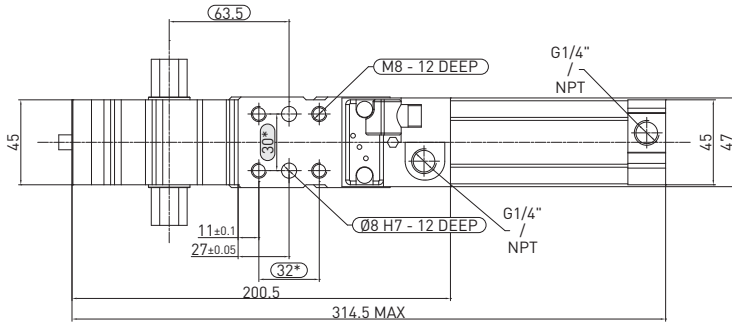
CLAMPING

NAAMS clamping arms to be ordered separately  
Please see the charts in the datasheets  
for arm position as well as for max. opening angle

**C2P50E** / Power clamp - NAAMS Std - 50 mm bore



**WEIGHT 2.7 kg**



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

REV. 01 - 15/05/2016

## C2D250E / Power clamp - NAAMS Std - 50 mm bore with manual operation

**WEIGHT 3.17 kg**  
D2 handle included

### Handle swivel angle

Arm opening angle	Handle swivel angle <b>A</b>
0°	3.25°
15°	27°
30°	43°
45°	59.3°
60°	75.4°
75°	89.75°
90°	101°
105°	109°
120°	114.25°
135°	117.2°

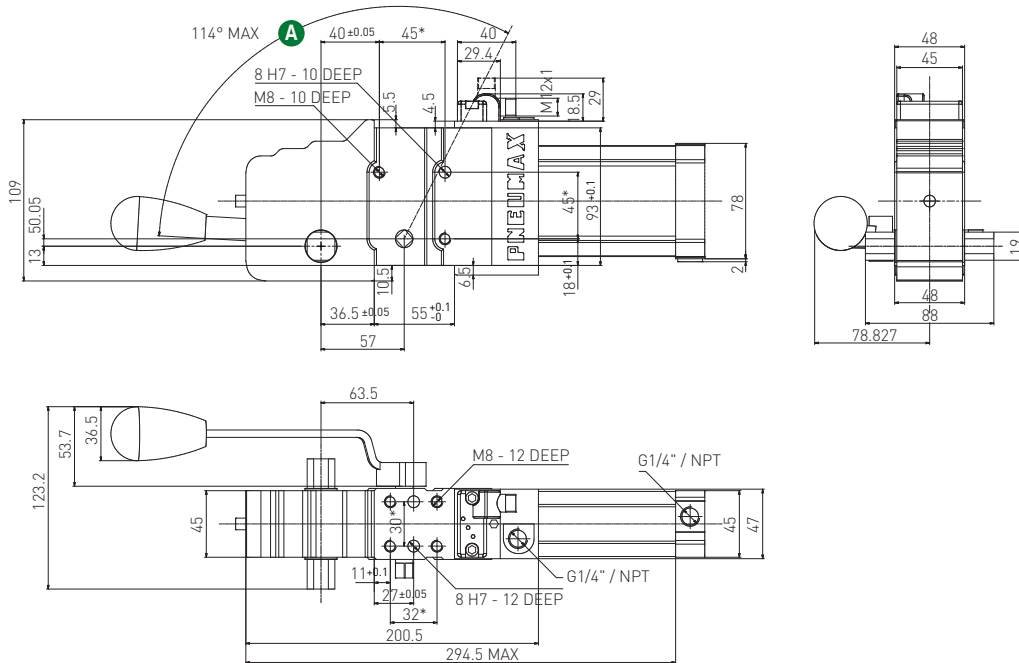
Max Hand Force: 200 N

\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES: ±0.02

DIMENSIONAL TOLERANCE  
FOR THREADED HOLES: ±0.1

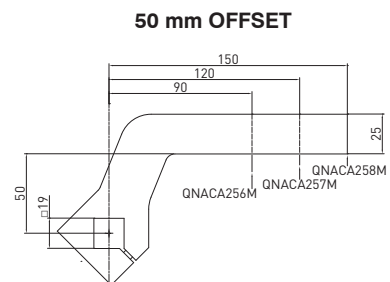
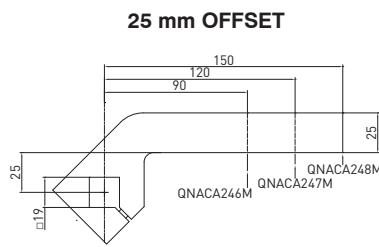
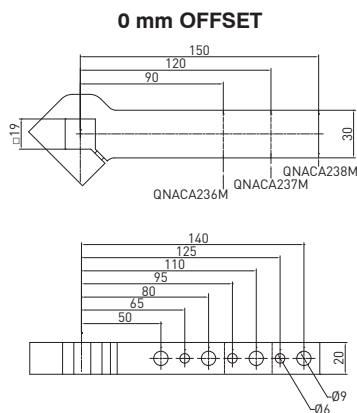
REV. 01 - 15/05/2016

CLAMPING



## Clamping arms / 19 mm shaft - NAAMS Std

REV 03 - 29/03/2019



### 19 mm shaft – 0 mm offset

Part no.	Material	Length (mm)	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
QNACA236M	Steel	90	0.4	135°	135°	135°	135°
QNACA237M	Steel	120	0.49	135°	135°	135°	135°
QNACA238M	Steel	150	0.58	135°	135°	135°	135°

Screws: M6x25 Tightening torque: 10 N m / 7.37 lb-ft

### 19 mm shaft – 25 mm offset

Part no.	Material	Length (mm)	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
QNACA246M	Steel	90	0.44	135°	135°	135°	135°
QNACA247M	Steel	120	0.52	135°	135°	135°	135°
QNACA248M	Steel	150	0.6	135°	135°	135°	135°

Screws: M6x25 Tightening torque: 10 N m / 7.37 lb-ft

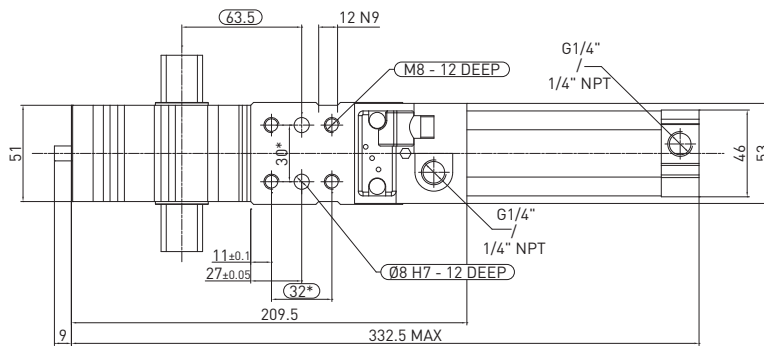
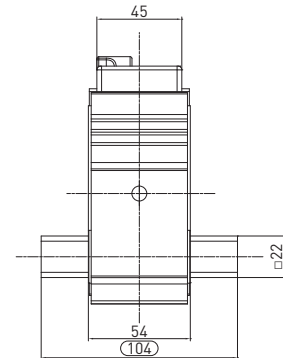
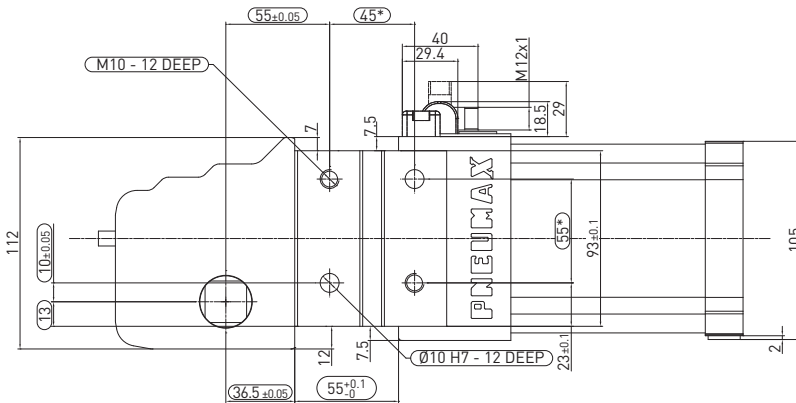
### 19 mm shaft – 50 mm offset

Part no.	Material	Length (mm)	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
QNACA256M	Steel	90	0.52	135°	135°	135°	135°
QNACA257M	Steel	120	0.6	135°	135°	135°	135°
QNACA258M	Steel	150	0.68	135°	135°	135°	135°

Screws: M6x25 Tightening torque: 10 N m / 7.37 lb-ft

### C2P63E / Power clamp - NAAMS Std - 63 mm bore

WEIGHT 3.5 kg



\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES:  $\pm 0.02$

DIMENSIONAL TOLERANCE  
FOR THREADED HOLES:  $\pm 0.1$

REV. 00 - 31/03/2015

CLAMPING

### C2D263E / Power clamp - NAAMS Std - 63 mm bore with manual operation

WEIGHT 4 kg

D2 handle included

#### Handle swivel angle

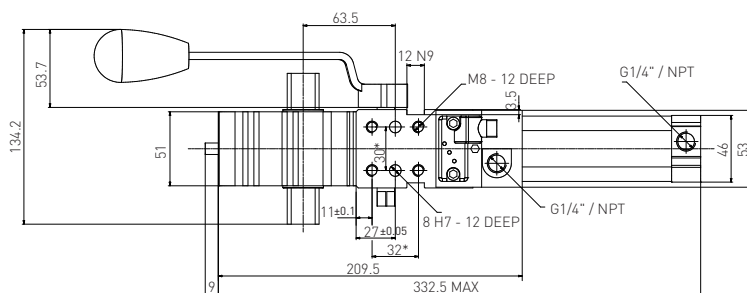
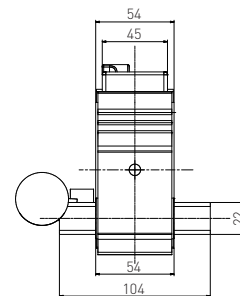
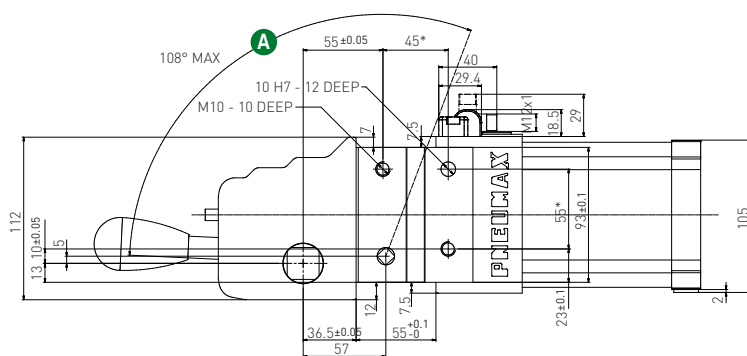
Arm opening angle	Handle swivel angle <b>A</b>
0°	2.65°
15°	26.35°
30°	41.38°
45°	56°
60°	70.38°
75°	83.43°
90°	94°
105°	102°
120°	107°
135°	110.7°

Max Hand Force: 200 N

\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES:  $\pm 0.02$

DIMENSIONAL TOLERANCE  
FOR THREADED HOLES:  $\pm 0.1$

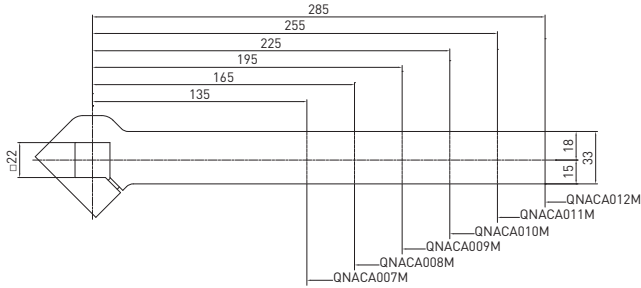
REV. 00 - 17/06/2015



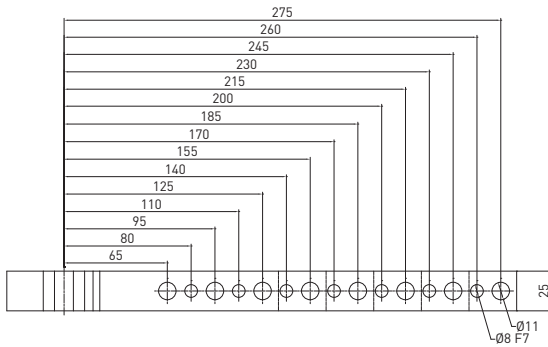
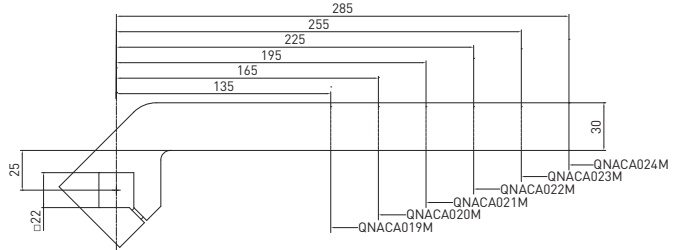
## Clamping arms / 22 mm shaft - NAAMS Std

REV 02 - 29/03/2019

### 0 mm OFFSET



### 25 mm OFFSET



### 22 mm shaft – 0 mm offset



Part no.	Material	Length (mm)	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
QNACA007M	Steel	135	0.72	135°	135°	135°	135°
QNACA008M	Steel	165	0.83	135°	135°	135°	135°
QNACA009M	Steel	195	0.94	135°	135°	135°	135°
QNACA010M	Steel	225	1.05	135°	135°	135°	135°
QNACA011M	Steel	255	1.16	135°	135°	135°	135°
QNACA012M	Steel	285	1.28	135°	135°	135°	135°

Screws: M8X25 Tightening torque: 25 N m / 18.43 lb ft

### 22 mm shaft – 25 mm offset

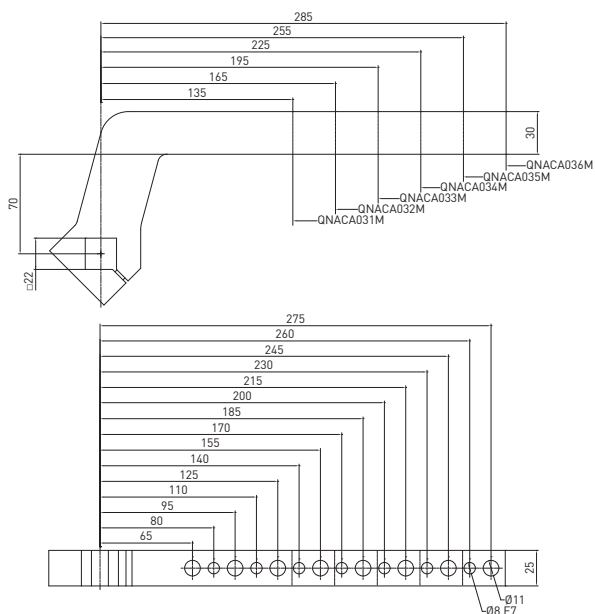


Part no.	Material	Length (mm)	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
QNACA019M	Steel	135	0.84	135°	135°	135°	135°
QNACA020M	Steel	165	0.95	135°	135°	135°	135°
QNACA021M	Steel	195	1.05	135°	135°	135°	135°
QNACA022M	Steel	225	1.16	135°	135°	135°	135°
QNACA023M	Steel	255	1.26	135°	135°	135°	135°
QNACA024M	Steel	285	1.37	135°	135°	135°	135°

Screws: M8X25 Tightening torque: 25 N m / 18.43 lb ft

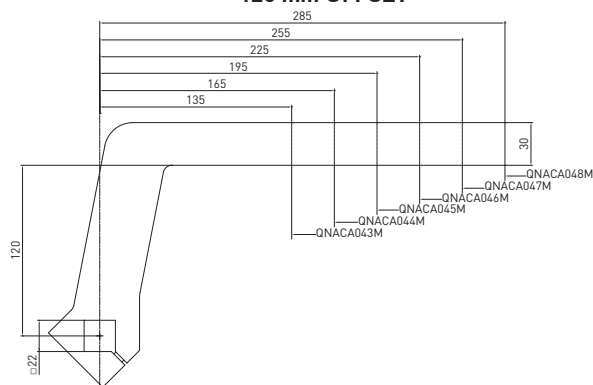
## Clamping arms / 22 mm shaft - NAAMS Std

70 mm OFFSET



120 mm OFFSET

REV 01 - 29/03/2019



22 mm shaft - 70 mm offset



Part no.	Material	Length (mm)	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
QNACA031M	Steel	135	1.05	135°	135°	135°	135°
QNACA032M	Steel	165	1.16	135°	135°	135°	135°
QNACA033M	Steel	195	1.27	135°	135°	135°	135°
QNACA034M	Steel	225	1.38	135°	135°	135°	135°
QNACA035M	Steel	255	1.49	135°	135°	135°	135°
QNACA036M	Steel	285	1.6	135°	135°	135°	135°

Screws: M8X25 Tightening torque: 25 N m / 18.43 lb ft ft

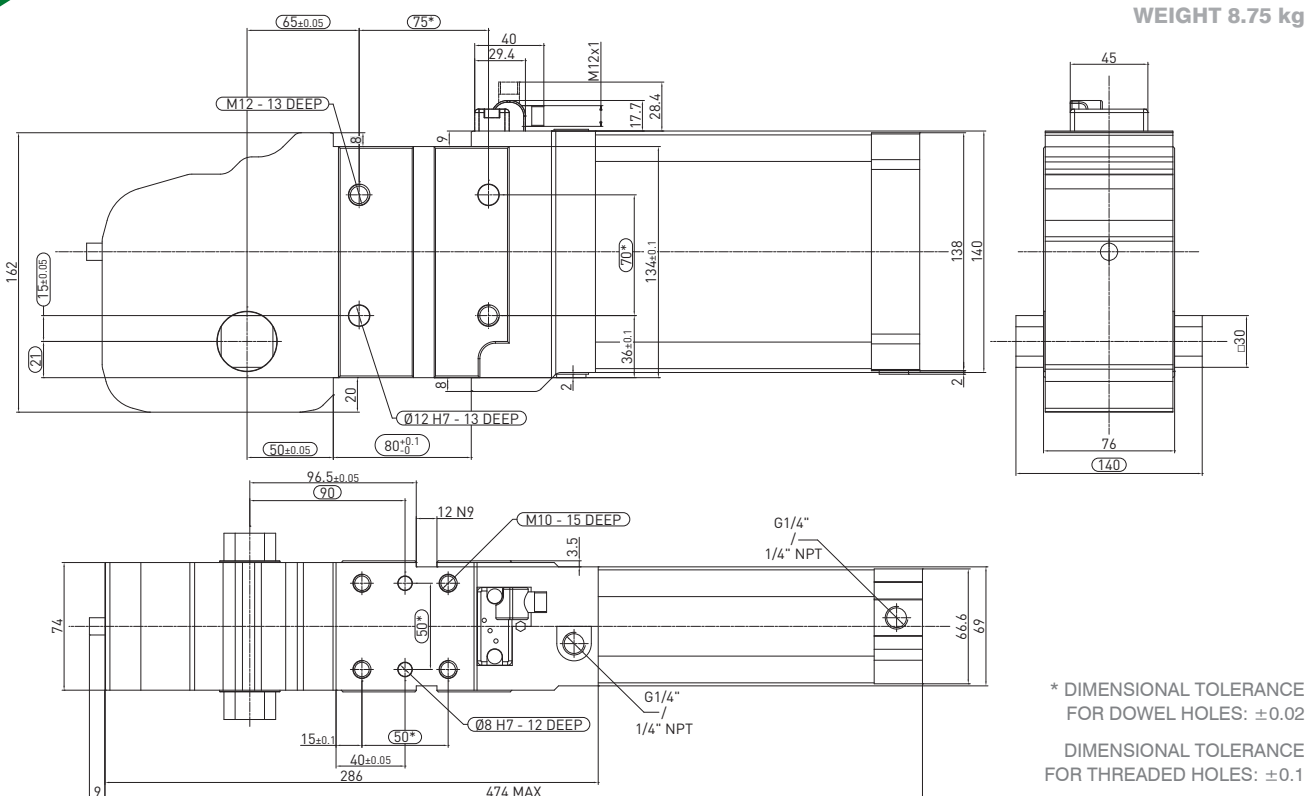
22 mm shaft - 120 mm offset



Part no.	Material	Length (mm)	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
QNACA043M	Steel	135	1.27	135°	135°	135°	135°
QNACA044M	Steel	165	1.37	135°	135°	135°	135°
QNACA045M	Steel	195	1.48	135°	135°	135°	135°
QNACA046M	Steel	225	1.58	135°	135°	135°	135°
QNACA047M	Steel	255	1.69	135°	135°	135°	135°
QNACA048M	Steel	285	1.8	135°	135°	135°	135°

Screws: M8X25 Tightening torque: 25 N m / 18.43 lb ft

## C2P80E / Power clamp - NAAMS Std - 80 mm bore



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

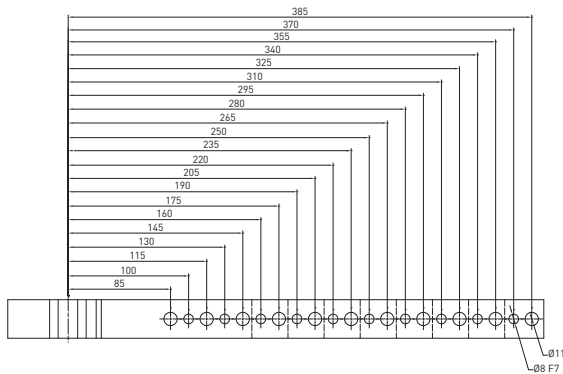
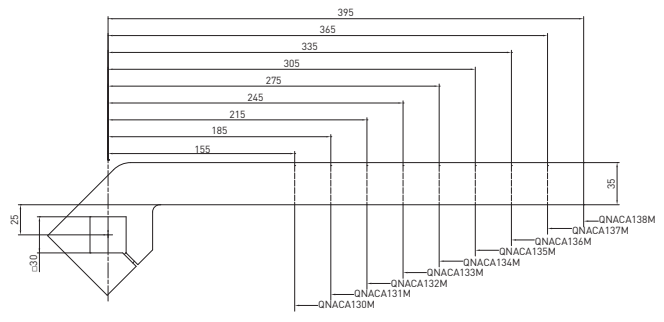
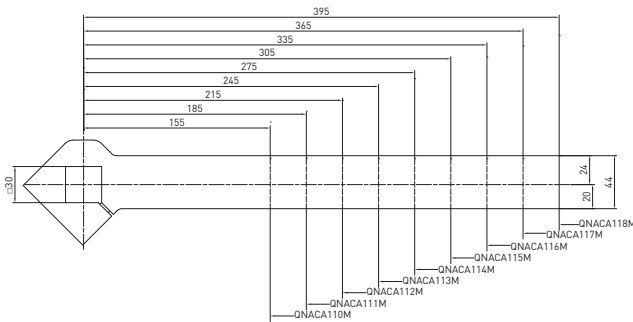
REV. 00 - 31/07/2015

## Clamping arms / 30 mm shaft - NAAMS Std

REV 01 - 29/03/2019

### 0 mm OFFSET

### 25 mm OFFSET



### 30 mm shaft – 0 mm offset

Part no.	Material	Length (mm)	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
QNACA110M	Steel	155	1.41	135°	135°	135°	135°
QNACA111M	Steel	185	1.58	135°	135°	135°	135°
QNACA112M	Steel	215	1.76	135°	135°	135°	135°
QNACA113M	Steel	245	1.93	135°	135°	135°	135°
QNACA114M	Steel	275	2.1	135°	135°	135°	135°
QNACA115M	Steel	305	2.27	135°	135°	135°	135°
QNACA116M	Steel	335	2.45	135°	135°	135°	135°
QNACA117M	Steel	365	2.62	135°	135°	135°	135°
QNACA118M	Steel	395	2.8	135°	135°	135°	135°

Screws: M10x40 Tightening torque: 35 N m / 25.81 lb ft

### 30 mm shaft – 25 mm offset

Part no.	Material	Length (mm)	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
QNACA130M	Steel	155	1.24	135°	135°	135°	135°
QNACA131M	Steel	185	1.39	135°	135°	135°	135°
QNACA132M	Steel	215	1.54	135°	135°	135°	135°
QNACA133M	Steel	245	1.69	135°	135°	135°	135°
QNACA134M	Steel	275	1.84	135°	135°	135°	135°
QNACA135M	Steel	305	2	135°	135°	135°	135°
QNACA136M	Steel	335	2.14	135°	135°	135°	135°
QNACA137M	Steel	365	2.29	135°	135°	135°	135°
QNACA138M	Steel	395	2.45	135°	135°	135°	135°

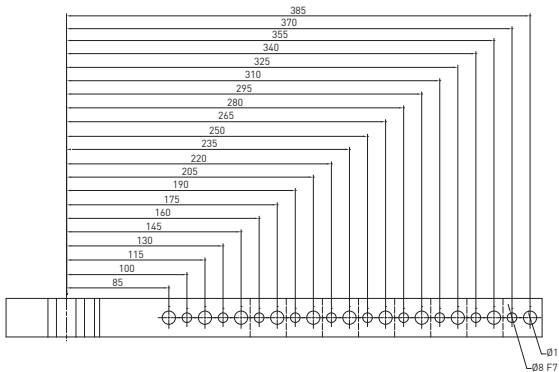
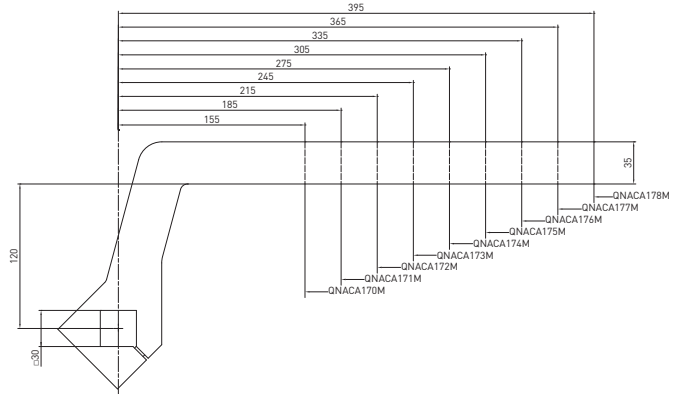
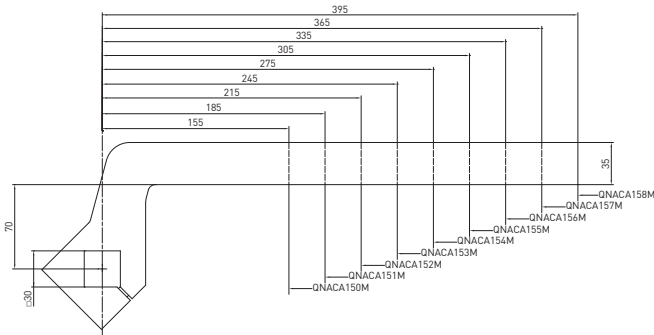
Screws: M10x40 Tightening torque: 35 N m / 25.81 lb ft

## Clamping arms / 30 mm shaft - NAAMS Std

REV 01 - 29/03/2019

### 70 mm OFFSET

### 120 mm OFFSET



CLAMPING

### 30 mm shaft – 70 mm offset

Part no.	Material	Length (mm)	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
QNACA150M	Steel	155	1.7	135°	135°	135°	135°
QNACA151M	Steel	185	1.85	135°	135°	135°	135°
QNACA152M	Steel	215	2	135°	135°	135°	135°
QNACA153M	Steel	245	2.15	135°	135°	135°	135°
QNACA154M	Steel	275	2.3	135°	135°	135°	135°
QNACA155M	Steel	305	2.45	135°	135°	135°	135°
QNACA156M	Steel	335	2.6	135°	135°	135°	135°
QNACA157M	Steel	365	2.76	135°	135°	135°	135°
QNACA158M	Steel	395	2.92	135°	135°	135°	135°

Screws: M10x40 Tightening torque: 35 N m / 25.81 lb ft

### 30 mm shaft – 120 mm offset

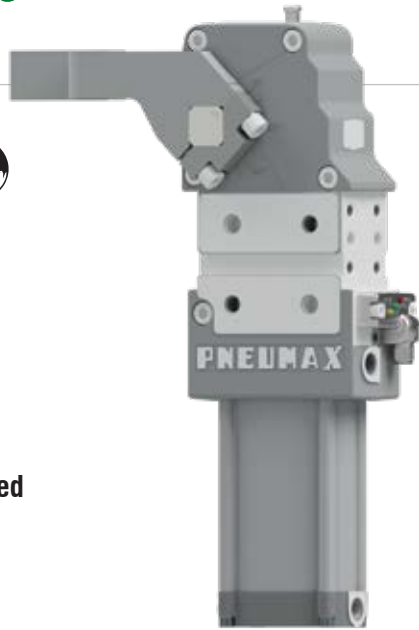
Part no.	Material	Length (mm)	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
QNACA170M	Steel	155	1.97	135°	135°	135°	135°
QNACA171M	Steel	185	2.12	135°	135°	135°	135°
QNACA172M	Steel	215	2.27	135°	135°	135°	135°
QNACA173M	Steel	245	2.42	135°	135°	135°	135°
QNACA174M	Steel	275	2.57	135°	135°	135°	135°
QNACA175M	Steel	305	2.72	135°	135°	135°	135°
QNACA176M	Steel	335	2.87	135°	135°	135°	135°
QNACA177M	Steel	365	3.02	135°	135°	135°	135°
QNACA178M	Steel	395	3.19	135°	135°	135°	135°

Screws: M10x40 Tightening torque: 35 N m / 25.81 lb ft

# HE1-Series

## High Efficiency power clamps International mount

INTERNATIONAL  
**MOUNT**



### Air consumption saving up to 41%

The perfect combination between **functionality** and **efficiency**: same clamping moment, same holding moment, same overall and functional dimensions, same load capacity of a standard clamp with International and NAAMS mounts available.



**Patented**

CLAMPING

### Technical features

**Manual release button** to open the linkage when air pressure is removed during setup. **Pneumatic ports on both sides** of the cylinder.

#### Operating features

**Operating pressure** from 2 to 8 bar / from 30 to 115 psi

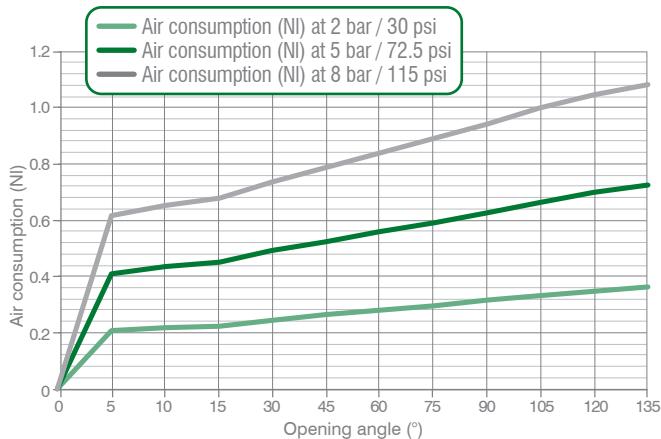
**Lubrication** all the devices are lubricated for life at the factory. Inline air lubrication isn't required

### Functional charts

## HE1P0E

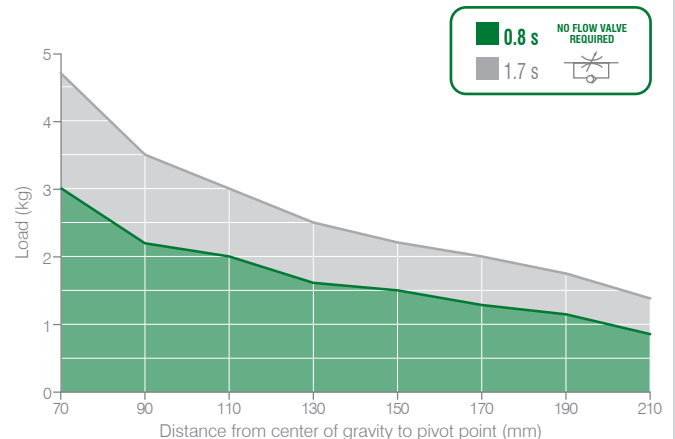
#### • Air consumption

Air consumption for complete cycle (opening and closing)  
REV. 00 - 21/01/2016



#### • Tooling weight chart

5 bar operating pressure – 135° opening angle  
REV. 00 - 17/06/2015



• **Clamping moment (at 5 bar / 72.5 psi)**  
**130 N m / 95,88 lb-ft**

• **Holding moment**  
**380 N m / 280,27 lb-ft**

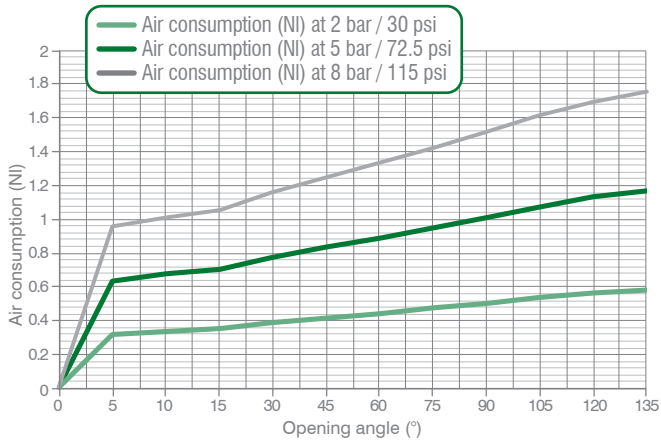
The above data are meant for correct working conditions of the clamp with the same performance level during its life time. For applications which exceed the above data, please contact our sales representatives.



## HE1P1E

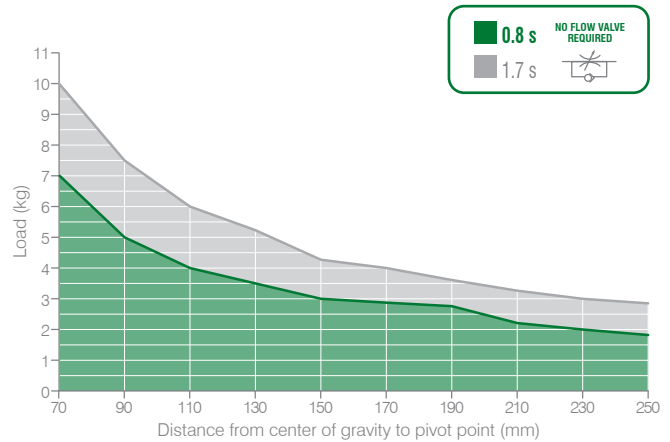
### Air consumption

Air consumption for complete cycle (opening and closing)  
REV. 00 - 31/03/2015



### Tooling weight chart

5 bar operating pressure – 135° opening angle  
REV. 00 - 17/06/2015



### Clamping moment (at 5 bar / 72.5 psi)

**185 N m / 136,44 lb-ft**

### Holding moment

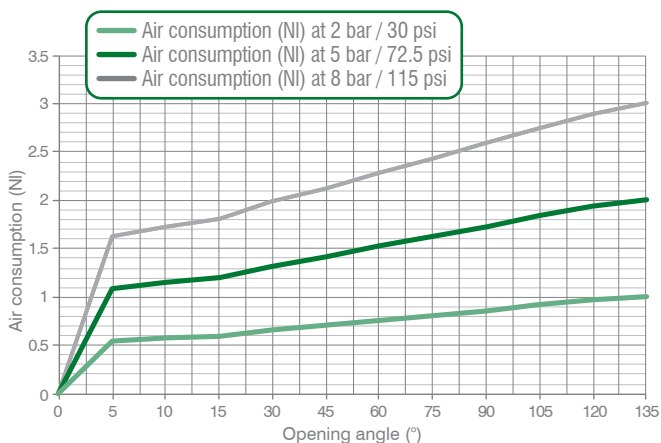
**800 N m / 590,04 lb-ft**

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.

## HE1P2E

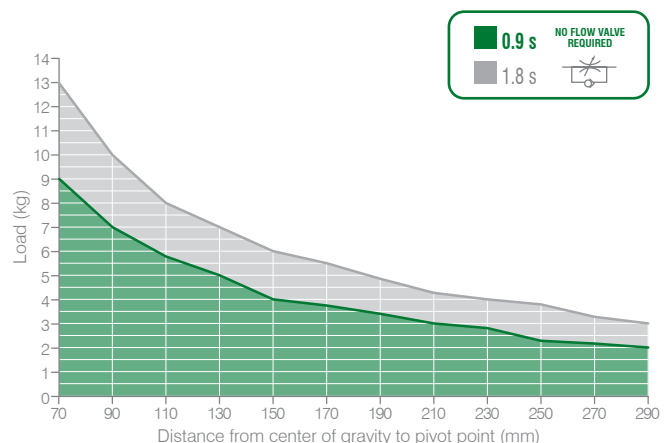
### Air consumption

Air consumption for complete cycle (opening and closing)  
REV. 00 - 31/03/2015



### Tooling weight chart

5 bar operating pressure – 135° opening angle  
REV. 00 - 17/06/2015



### Clamping moment (at 5 bar / 72.5 psi)

**390 N m / 287,64 lb-ft**

### Holding moment

**1500 N m / 1.106,34 lb-ft**

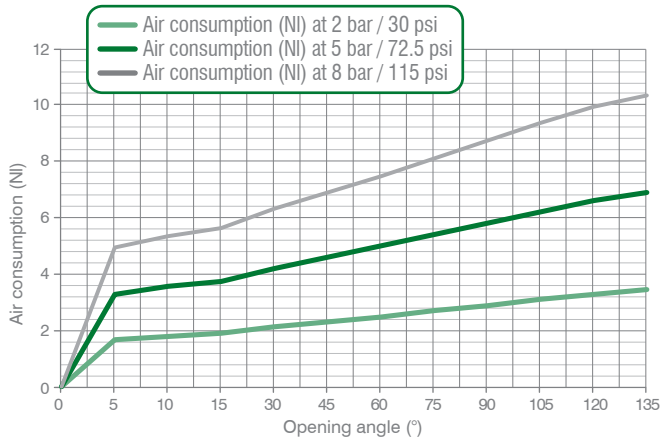
The above data are meant for correct working conditions of the clamp with the same performance level during its life time. For applications which exceed the above data, please contact our sales representatives.

**HE1-Series / Functional charts (continued)**

**HE1P3E**

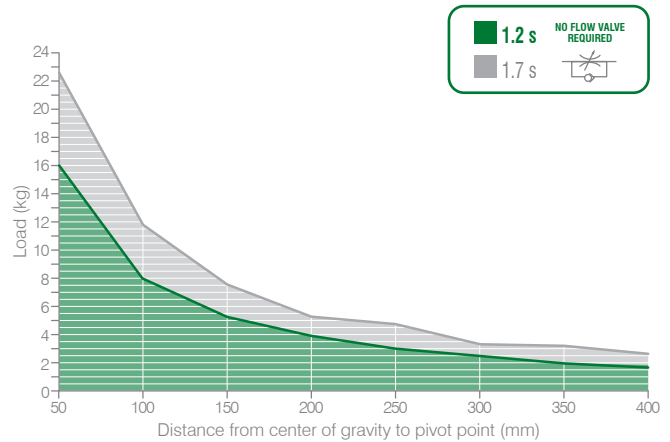
**• Air consumption**

Air consumption for complete cycle (opening and closing)  
REV. 00 - 21/01/2016



**• Tooling weight chart**

5 bar operating pressure – 135° opening angle  
REV. 00 - 17/06/2015



**• Clamping moment (at 5 bar / 72.5 psi)**  
**850 N m / 626,92 lb-ft**

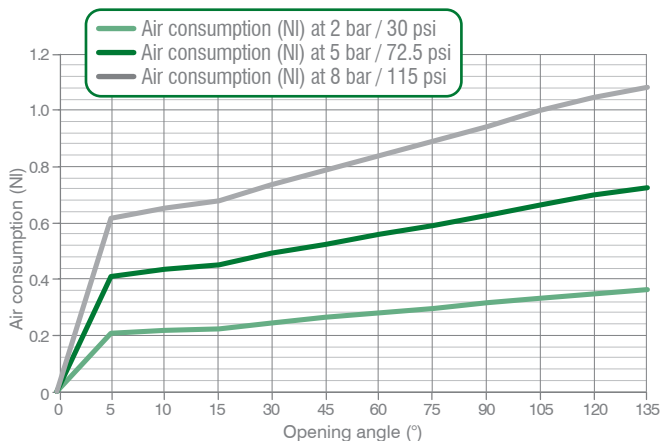
**• Holding moment**  
**2500 N m / 1843,90 lb-ft**

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.

**HE1P4E**

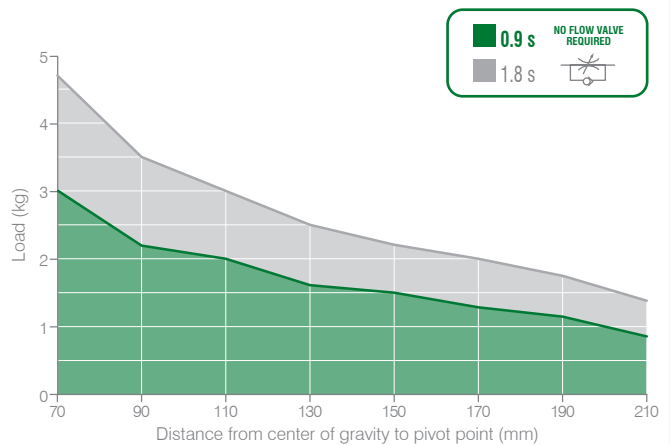
**• Air consumption**

Air consumption for complete cycle (opening and closing)  
REV. 00 - 21/01/2016



**• Tooling weight chart**

5 bar operating pressure – 135° opening angle  
REV. 00 - 17/06/2015



**• Clamping moment (at 5 bar / 72.5 psi)**  
**130 N m / 95,88 lb-ft**





**• Holding moment**  
**380 N m / 280,27 lb-ft**

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

## HE1-Series





HE 1 P 1 E G 1 A 01

HE	VERSION	HE = high efficiency clamp
1	MOUNTING PATTERN	1 = International mount
P	OPERATION	P = pneumatic
1	SIZE	0 = housing size 40 / cylinder Ø 32 mm    2 = housing size 63 / cylinder Ø 50 mm 1 = housing size 50 / cylinder Ø 40 mm    3 = housing size 80 / cylinder Ø 63 mm
E	SENSOR	E = electronic sensor with M12 swivel connector - PNP A = electronic sensor with M12 swivel connector - NPN N = no sensor B = electronic sensor with M8 swivel connector - PNP
G	PORTS	G = G thread – BSPP N = NPT
1	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

\* for size 80 mm > 20 mm offset

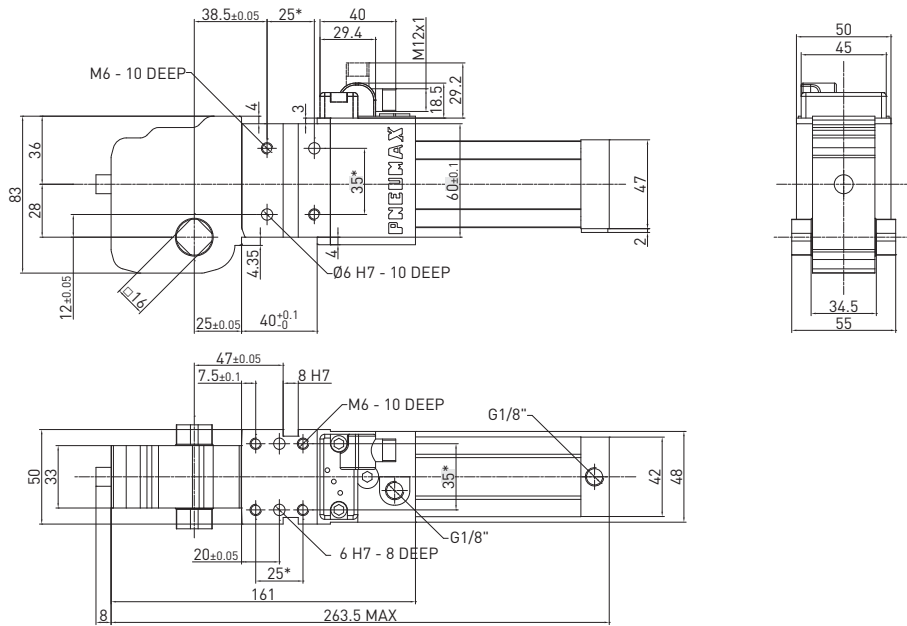
## HE1-Series

HE 1 P 4 E G 1 A 54

HE	VERSION	HE = high efficiency clamp
1	MOUNTING PATTERN	1 = International mount
P	OPERATION	P = pneumatic
4	SIZE	4 = housing size 40 / cylinder Ø 32 mm Mounting pattern interchangeable to 50 and 63 mm bore clamps
E	SENSOR	E = electronic sensor with M12 swivel connector - PNP A = electronic sensor with M12 swivel connector - NPN N = no sensor B = electronic sensor with M8 swivel connector - PNP
G	PORTS	G = G thread – BSPP N = NPT
1	ARM MOUNT	1 =  2 =  3 =  4 = 
A	ARM MATERIAL	A = aluminum
54	CLAMP ARM TYPE	54 = wishbone, central, 45 mm offset 55 = wishbone, right, 45 mm offset 56 = wishbone, left, 45 mm offset

**HE1P0E / High Efficiency clamp - International mount - Housing size 40 / cylinder Ø 32 mm**

**WEIGHT 1.36 kg**



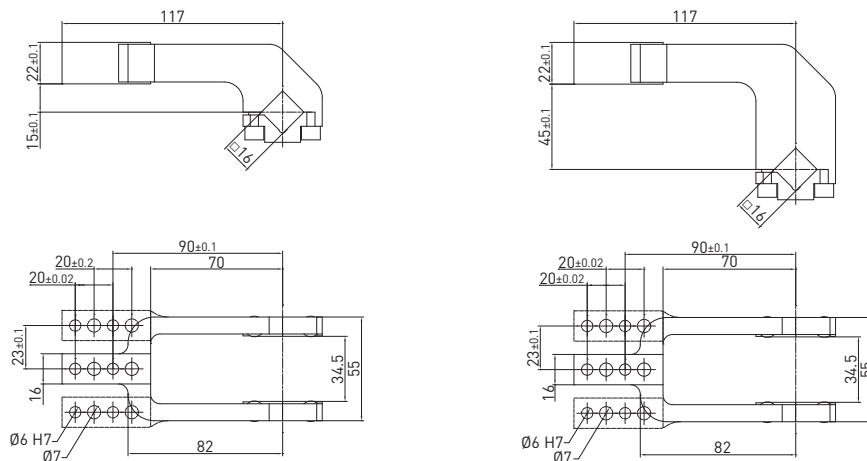
\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES: ±0.02

DIMENSIONAL TOLERANCE  
FOR THREADED HOLES: ±0.1

REV. 00 - 02/10/2015

**Clamping arms / 16 mm shaft for clamps' size 40 mm**

REV. 02 - 07/10/2015



**16 mm shaft – 15 mm offset**

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B1601	Aluminum	Central	0.24	135°	135°	N/A	45°
Q1601	Steel	Central	0.44	135°	135°	N/A	45°
B1602	Aluminum	Right	0.24	135°	135°	N/A	45°
Q1602	Steel	Right	0.46	135°	135°	N/A	45°
B1603	Aluminum	Left	0.24	135°	135°	N/A	45°
Q1603	Steel	Left	0.46	135°	135°	N/A	45°

Screws: M6x20 Tightening torque: 10 N m / 7.37 lb ft

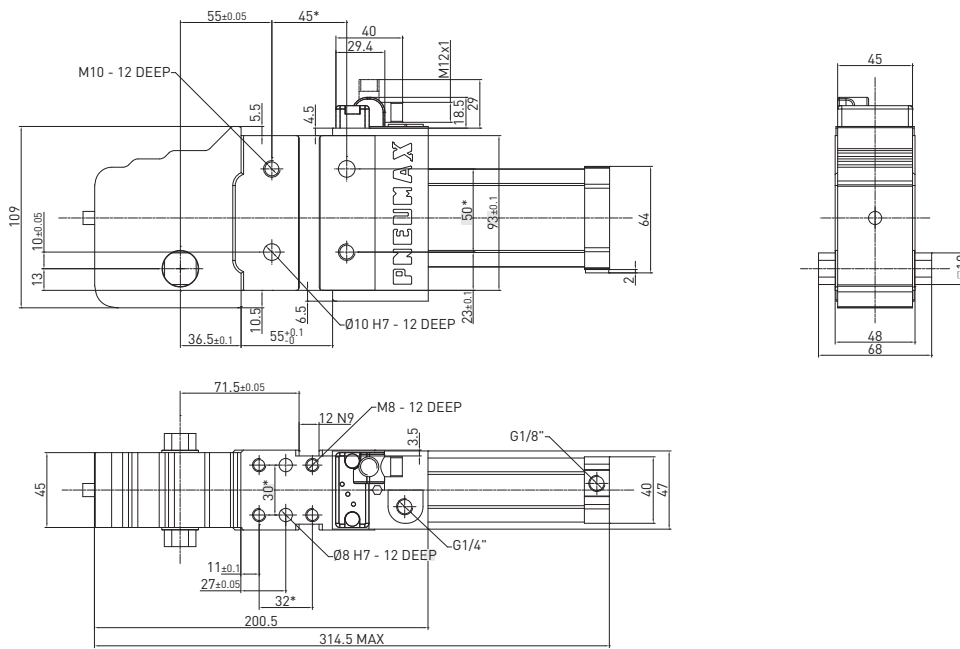
**16 mm shaft – 45 mm offset**

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B1604	Aluminum	Central	0.3	135°	135°	N/A	45°
Q1604	Steel	Central	0.55	135°	135°	N/A	45°
B1605	Aluminum	Right	0.3	135°	135°	N/A	45°
Q1605	Steel	Right	0.57	135°	135°	N/A	45°
B1606	Aluminum	Left	0.3	135°	135°	N/A	45°
Q1606	Steel	Left	0.57	135°	135°	N/A	45°

Screws: M6x20 Tightening torque: 10 N m / 7.37 lb ft

## HE1P1E / High Efficiency clamp - International mount - Housing size 50 / cylinder Ø 40 mm

WEIGHT 2.53 kg



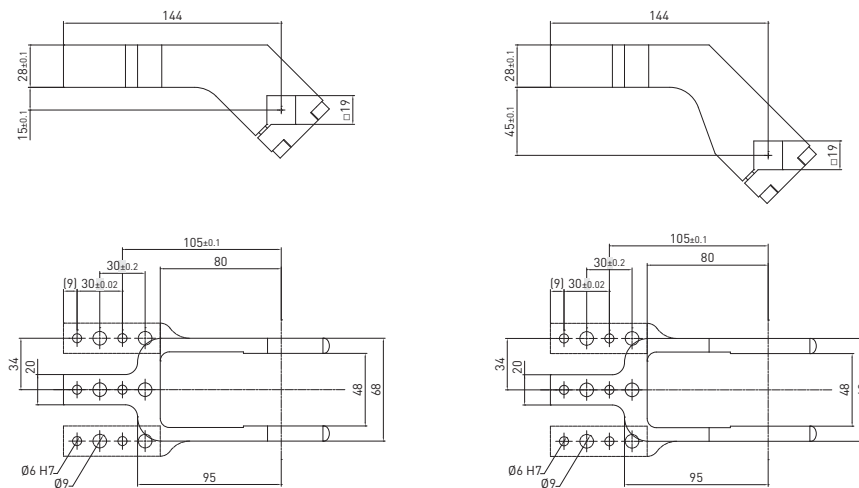
\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES: ±0.02

DIMENSIONAL TOLERANCE  
FOR THREADED HOLES: ±0.1

REV. 02 - 29/03/2019

## Clamping arms / 19 mm shaft for clamps' size 50 mm

REV. 01 - 08/02/2019



### 19 mm shaft – 15 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B1901	Aluminum	Central	0.41	135°	115°	135°	80°
Q1901	Steel	Central	0.71	135°	115°	135°	80°
B1902	Aluminum	Right	0.43	135°	115°	135°	80°
Q1902	Steel	Right	0.79	135°	115°	135°	80°
B1903	Aluminum	Left	0.43	135°	115°	135°	80°
Q1903	Steel	Left	0.79	135°	115°	135°	80°

Screws: M6x25 Tightening torque: 10 N m

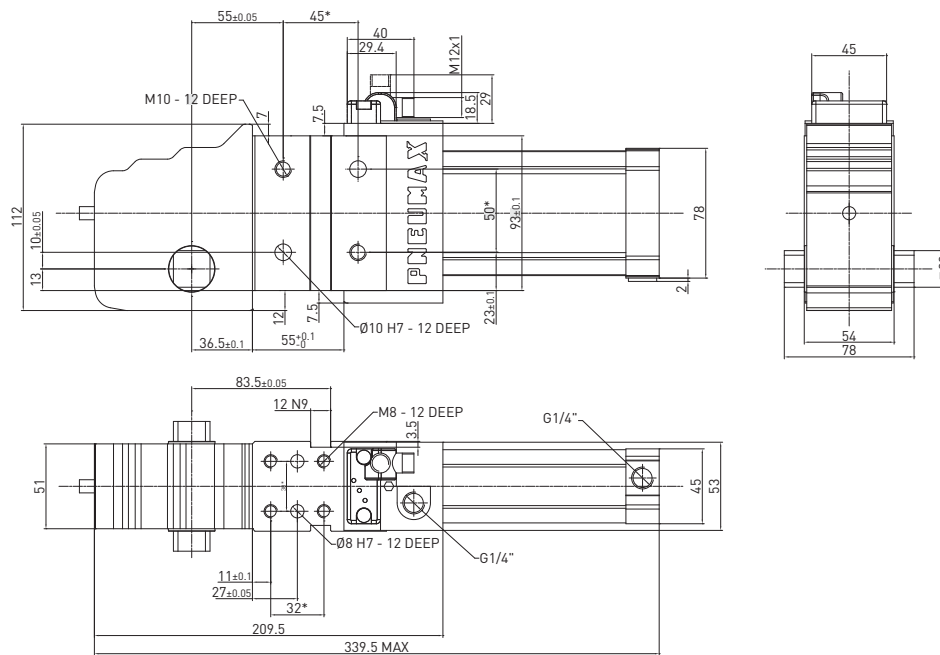
### 19 mm shaft – 45 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B1904	Aluminum	Central	0.45	135°	135°	135°	80°
Q1904	Steel	Central	0.77	135°	135°	135°	80°
B1905	Aluminum	Right	0.46	135°	135°	135°	80°
Q1905	Steel	Right	0.81	135°	135°	135°	80°
B1906	Aluminum	Left	0.46	135°	135°	135°	80°
Q1906	Steel	Left	0.81	135°	135°	135°	80°

Screws: M6x25 Tightening torque: 10 N m

## HE1P2E / High Efficiency clamp - International mount - Housing size 63 / cylinder Ø 50 mm

**WEIGHT 3.3 kg**

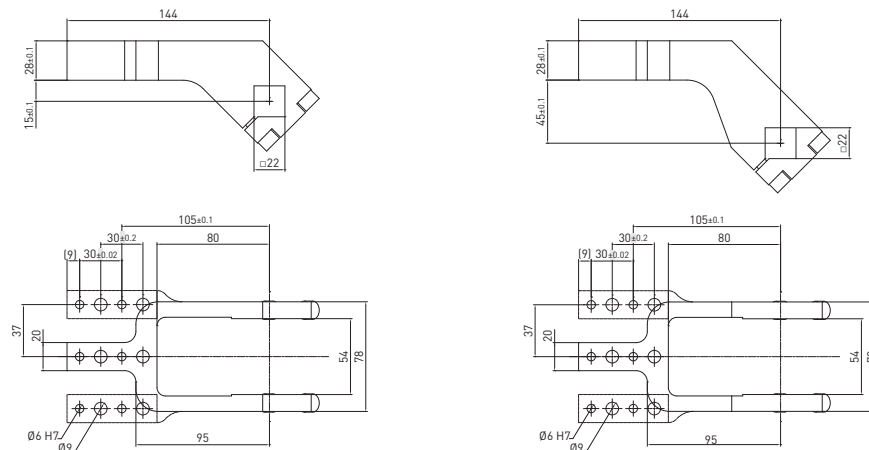


\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES: ±0.02  
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES: ±0.1

REV. 00 - 31/03/2015

## Clamping arms / 22 mm shaft

REV. 01 - 08/02/2019



### 22 mm shaft – 15 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B2201	Aluminum	Central	0.52	135°	115°	135°	80°
Q2201	Steel	Central	0.9	135°	115°	135°	80°
B2202	Aluminum	Right	0.54	135°	115°	135°	80°
Q2202	Steel	Right	0.93	135°	115°	135°	80°
B2203	Aluminum	Left	0.54	135°	115°	135°	80°
Q2203	Steel	Left	0.93	135°	115°	135°	80°

Screws: M8x25 Tightening torque: 25 N m

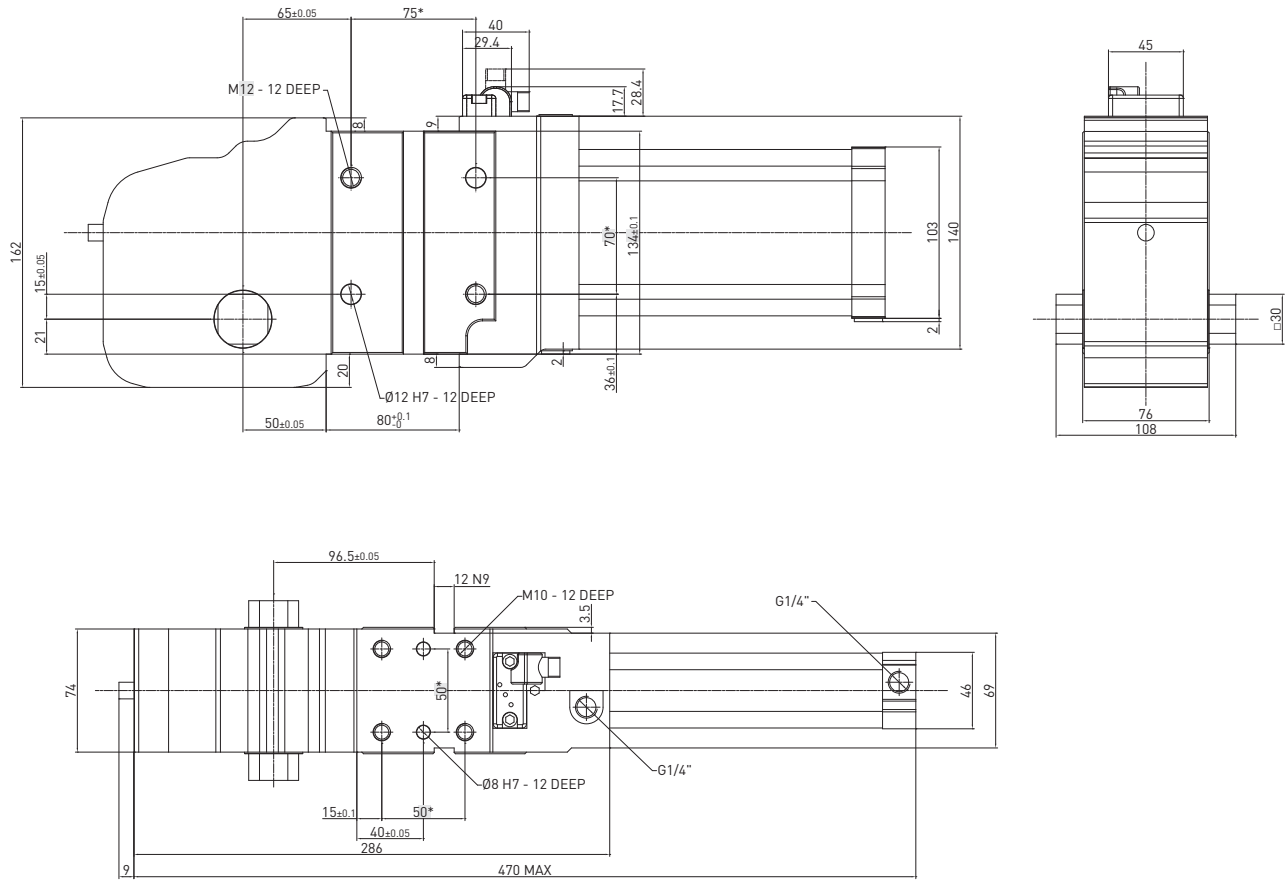
### 22 mm shaft – 45 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B2204	Aluminum	Central	0.57	135°	135°	135°	75°
Q2204	Steel	Central	0.98	135°	135°	135°	75°
B2205	Aluminum	Right	0.58	135°	135°	135°	75°
Q2205	Steel	Right	1.02	135°	135°	135°	75°
B2206	Aluminum	Left	0.58	135°	135°	135°	75°
Q2206	Steel	Left	1.02	135°	135°	135°	75°

Screws: M8x25 Tightening torque: 25 N m

**HE1P3E / High Efficiency clamp - International mount - Housing size 80 / cylinder Ø 63 mm**

WEIGHT 7.55 kg



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

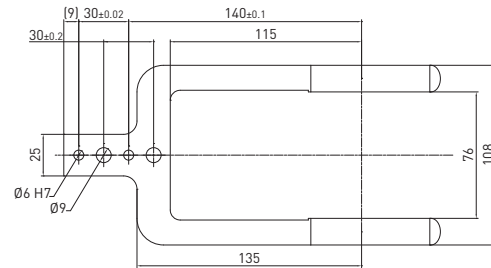
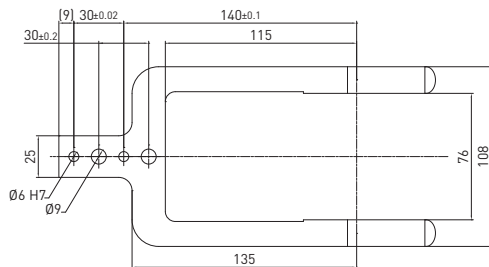
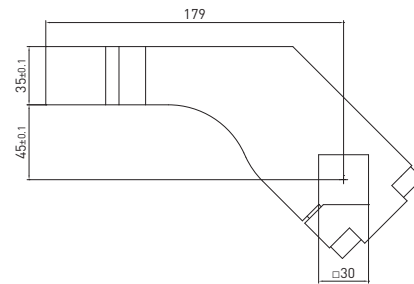
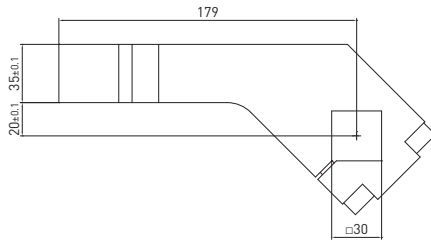
REV. 00 - 20/10/2015

CLAMPING

## Clamping arms / 30 mm shaft

REV. 01 - 08/02/2019

CLAMPING



### 30 mm shaft – 20 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B3001	Aluminum	Central	1.1	135°	110°	135°	75°
B3002	Aluminum	Right	1.15	135°	110°	135°	75°
B3003	Aluminum	Left	1.15	135°	110°	135°	75°

Screws: M10x40 Tightening torque: 35 N m / 25.81 lb ft

### 30 mm shaft – 45 mm offset

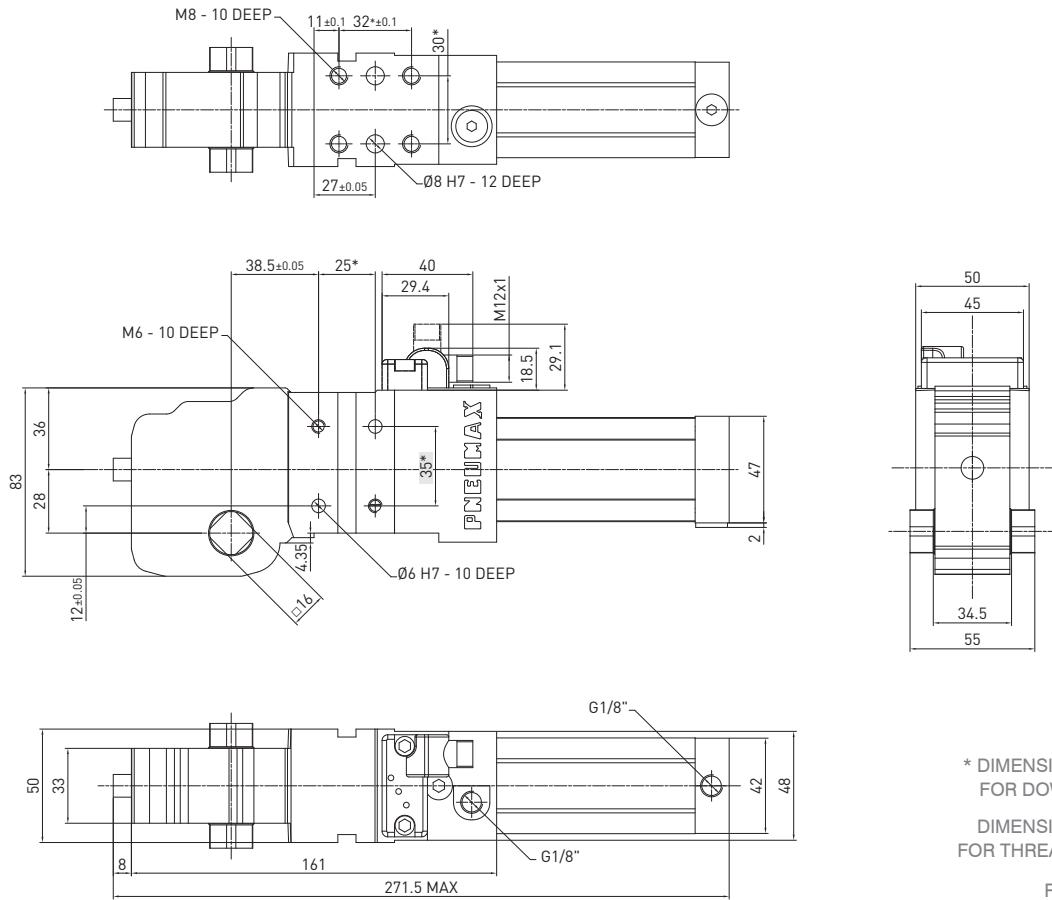
Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B3004	Aluminum	Central	1.18	135°	110°	135°	75°
B3005	Aluminum	Right	1.2	135°	110°	135°	75°
B3006	Aluminum	Left	1.2	135°	110°	135°	75°

Screws: M10x40 Tightening torque: 35 N m / 25.81 lb ft



## HE1P4EG / Power clamp - 32 mm bore cylinder and mounting pattern interchangeable to 50 and 63 mm bore clamps

WEIGHT 1.36 kg

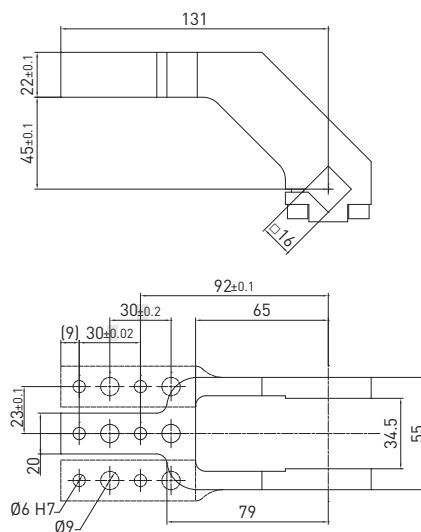


\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES:  $\pm 0.02$   
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES:  $\pm 0.1$

REV. 00 - 23/04/2019

## Clamping arms / 16 mm shaft

REV. 00 - 23/04/2019



### 16 mm shaft – 45 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
B1654	Aluminum	Central	0.3	135°	135°	N/A	45°
B1655	Aluminum	Right	0.3	135°	135°	N/A	45°
B1656	Aluminum	Left	0.3	135°	135°	N/A	45°

Screws: M6x20 Tightening torque: 10 N m / 7.37 lb ft

# HE2-Series

## High efficiency power clamps conforming to the NAAMS Standard

GLOBAL STANDARD COMPONENTS  
**NAAMS**



### Air consumption saving up to 41%

The perfect combination between **functionality** and **efficiency**: same clamping moment, same holding moment, same overall and functional dimensions, same load capacity of a standard clamp with International and NAAMS mounts available.



**Patented**

CLAMPING

### Technical features

**Manual release button** to open the linkage when air pressure is removed during setup. **Pneumatic ports on both sides** of the cylinder.

#### Operating features

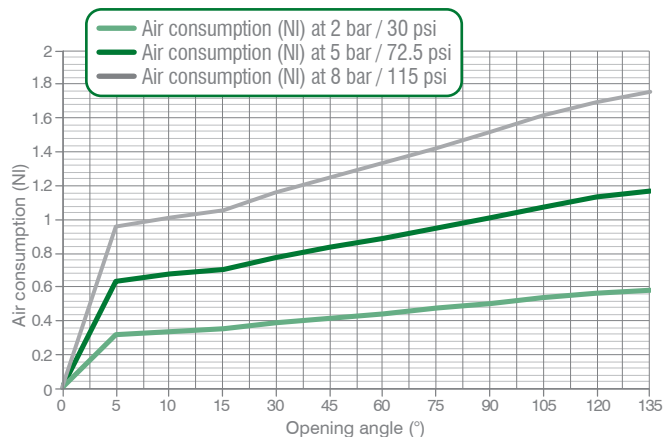
<b>Operating pressure</b>	from 2 to 8 bar / from 30 to 115 psi
<b>Lubrication</b>	all the devices are lubricated for life at the factory. Inline air lubrication isn't required

### Functional charts

## HE2P1E

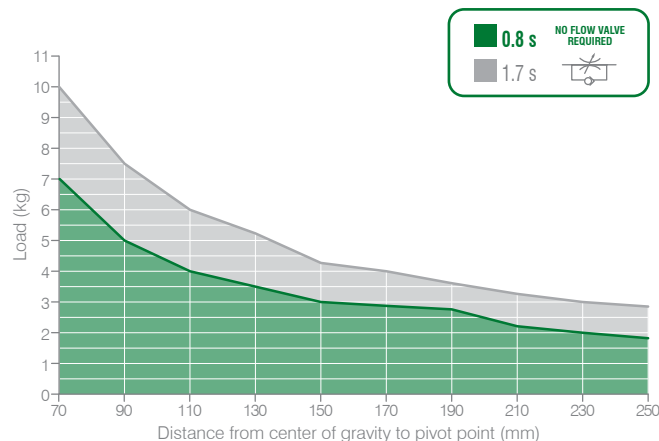
#### • Air consumption

Air consumption for complete cycle (opening and closing)  
REV. 00 - 31/03/2015



#### • Tooling weight chart

5 bar operating pressure – 135° opening angle  
REV. 00 - 17/06/2015



#### • Clamping moment (at 5 bar / 72.5 psi)

**185 N m / 136,44 lb-ft**

#### • Holding moment

**800 N m / 590,04 lb-ft**

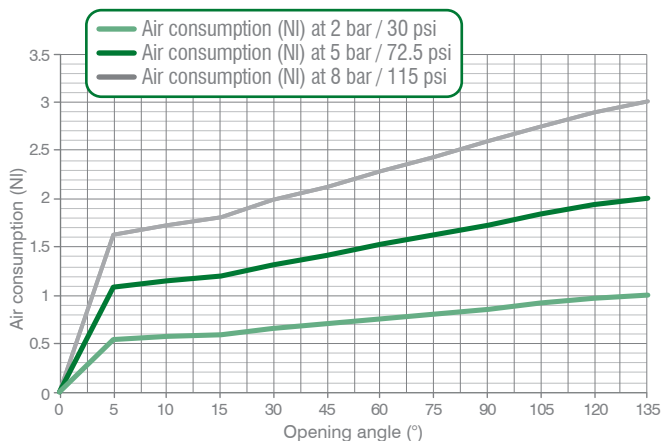
The above data are meant for correct working conditions of the clamp with the same performance level during its life time. For applications which exceed the above data, please contact our sales representatives.

## HE2P2E

### Air consumption

Air consumption for complete cycle (opening and closing)

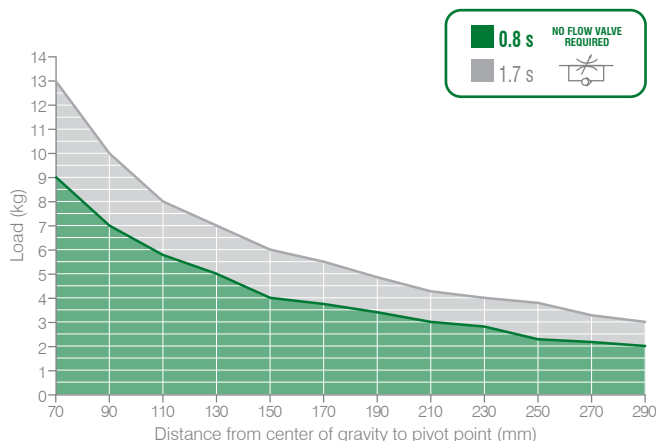
REV. 00 - 31/03/2015



### Tooling weight chart

5 bar operating pressure – 135° opening angle

REV. 00 - 17/06/2015



### Clamping moment (at 5 bar / 72.5 psi)

**390 N m / 287,64 lb-ft**

### Holding moment

**1500 N m / 1.106,34 lb-ft**

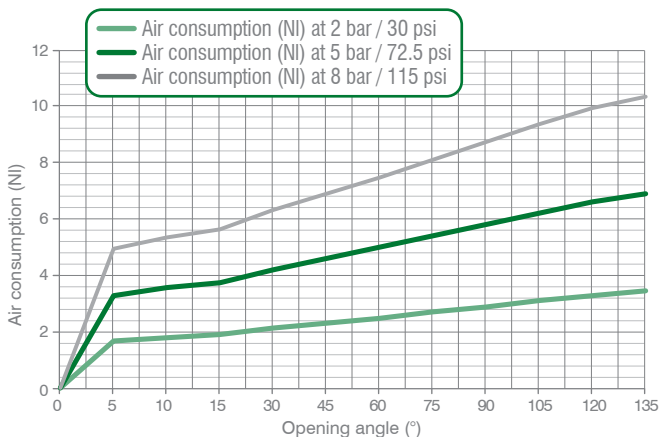
The above data are meant for correct working conditions of the clamp with the same performance level during its life time. For applications which exceed the above data, please contact our sales representatives.

## HE2P3E

### Air consumption

Air consumption for complete cycle (opening and closing)

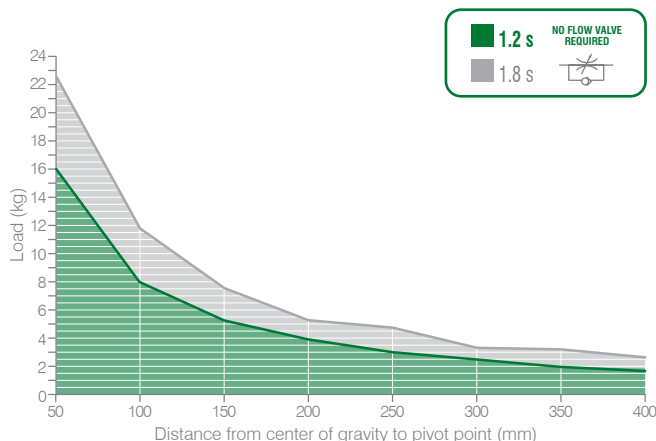
REV. 00 - 21/01/2016



### Tooling weight chart

5 bar operating pressure – 135° opening angle

REV. 00 - 17/06/2015



### Clamping moment (at 5 bar / 72.5 psi)

**850 N m / 626,92 lb-ft**

### Holding moment

**2500 N m / 1.843,90 lb-ft**

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.

CLAMPING

**HE2-Series / Ordering string**

**HE2-Series**

**HE 2 P 2 E G L**

CLAMPING

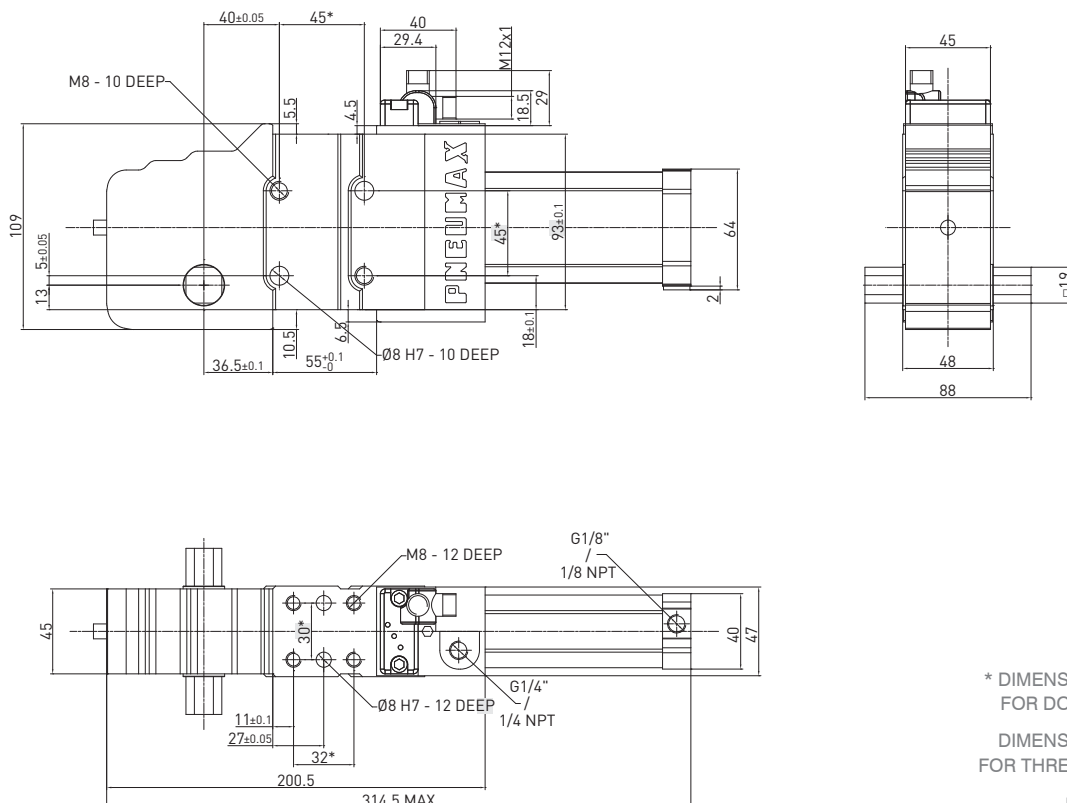
<b>HE</b>	<b>VERSION</b>	<b>HE</b> = high efficiency clamp
<b>2</b>	<b>MOUNTING PATTERN</b>	<b>2</b> = NAAMS Standard
<b>P</b>	<b>OPERATION</b>	<b>P</b> = pneumatic
<b>2</b>	<b>SIZE</b>	<b>1</b> = housing size 50 / cylinder Ø 40 mm <b>3</b> = housing size 80 / cylinder Ø 63 mm <b>2</b> = housing size 63 / cylinder Ø 50 mm
<b>E</b>	<b>SENSOR</b>	<b>E</b> = electronic sensor with M12 swivel connector - PNP <b>A</b> = electronic sensor with M12 swivel connector - NPN <b>N</b> = no sensor <b>B</b> = electronic sensor with M8 swivel connector - PNP
<b>G</b>	<b>PORTS</b>	<b>G</b> = G thread – BSPP <b>N</b> = NPT
<b>L</b>	<b>SHAFT OUTPUT</b>	<b>—</b> = dual output <b>L</b> = single output - LEFT <b>R</b> = single output - RIGHT



Please see the charts in the datasheets for arm position as well as for max. opening angle.  
NAAMS clamping arms to be ordered separately  
\*for size 3 > 20 mm offset

**HE2P1E / High Efficiency clamp - NAAMS Std - Housing size 50/cylinder Ø 40 mm**

**WEIGHT 2.5 kg**



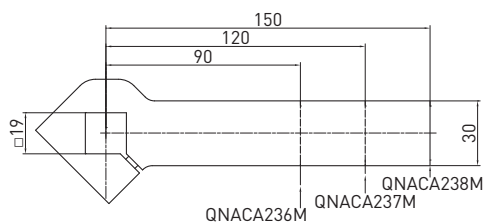
\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02  
DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 02 - 29/03/2019

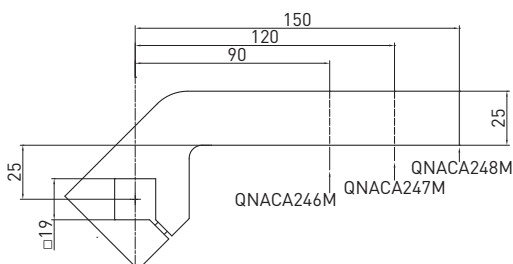
## Clamping arms / 19 mm shaft - NAAMS Std

REV 03 - 29/03/2019

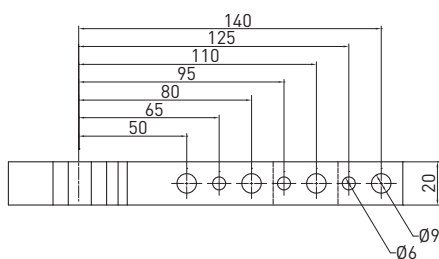
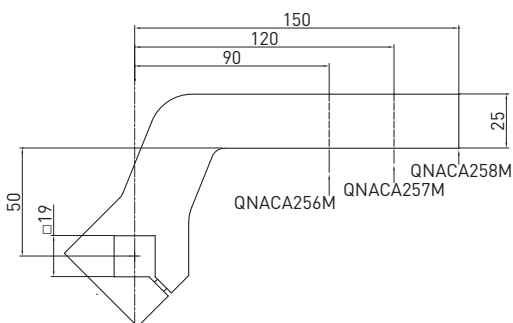
0 mm OFFSET



25 mm OFFSET



50 mm OFFSET



### 19 mm shaft – 0 mm offset

Part no.	Material	Length (mm)	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
QNACA236M	Steel	90	0.4	135°	135°	135°	135°
QNACA237M	Steel	120	0.49	135°	135°	135°	135°
QNACA238M	Steel	150	0.58	135°	135°	135°	135°

Screws: M6x25 Tightening torque: 10 N m / 7.37 lb-ft

### 19 mm shaft – 25 mm offset

Part no.	Material	Length (mm)	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
QNACA246M	Steel	90	0.44	135°	135°	135°	135°
QNACA247M	Steel	120	0.52	135°	135°	135°	135°
QNACA248M	Steel	150	0.6	135°	135°	135°	135°

Screws: M6x25 Tightening torque: 10 N m / 7.37 lb-ft

### 19 mm shaft – 50 mm offset

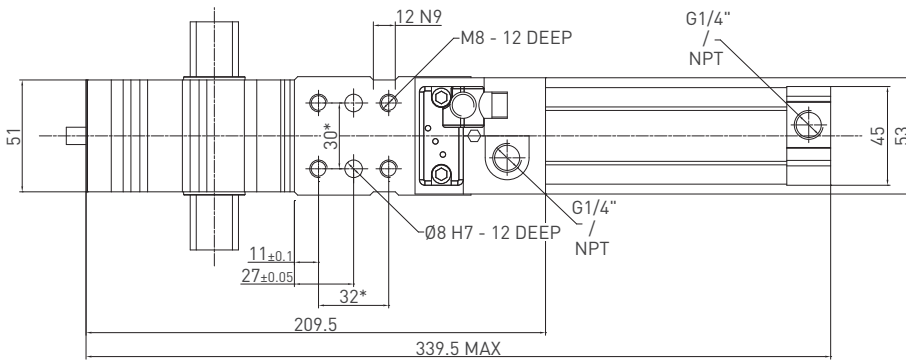
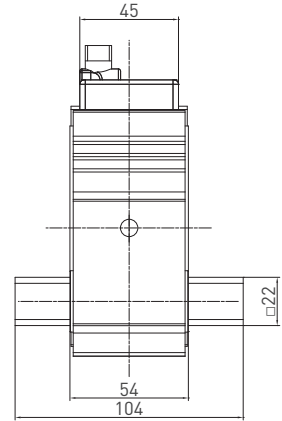
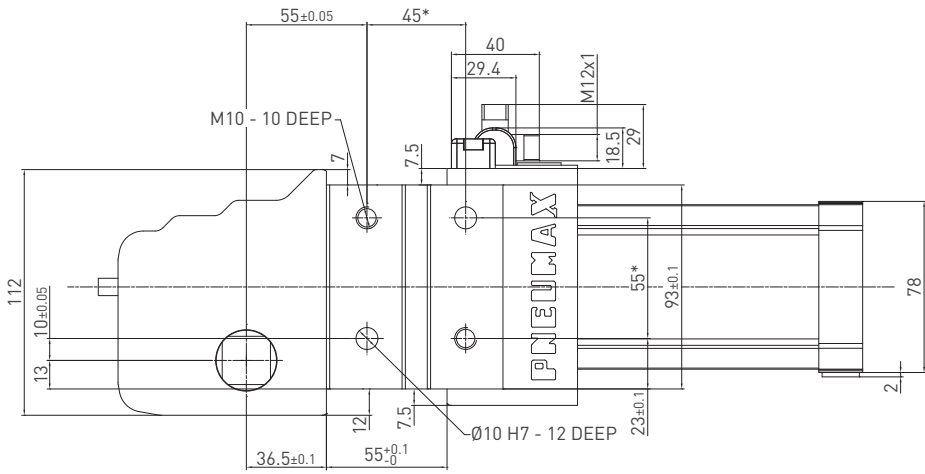
Part no.	Material	Length (mm)	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
QNACA256M	Steel	90	0.52	135°	135°	135°	135°
QNACA257M	Steel	120	0.6	135°	135°	135°	135°
QNACA258M	Steel	150	0.68	135°	135°	135°	135°

Screws: M6x25 Tightening torque: 10 N m / 7.37 lb-ft

**HE2P2E / High efficiency clamp - NAAMS Std - Housing size 63 / cylinder Ø 50 mm**

**WEIGHT 2.8 kg**

CLAMPING



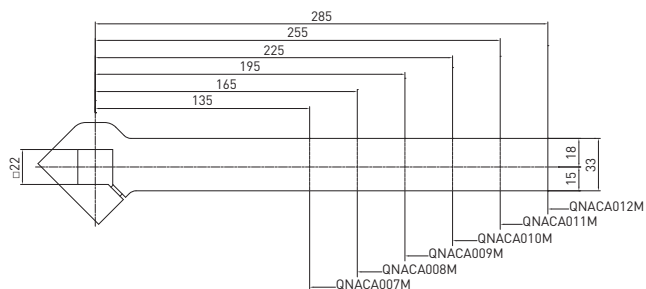
\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES:  $\pm 0.02$   
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES:  $\pm 0.1$

REV. 00 - 02/10/2015

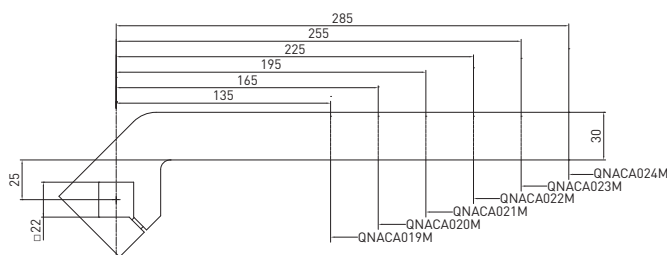
## Clamping arms / 22 mm shaft - NAAMS Std

REV 02 - 29/03/2019

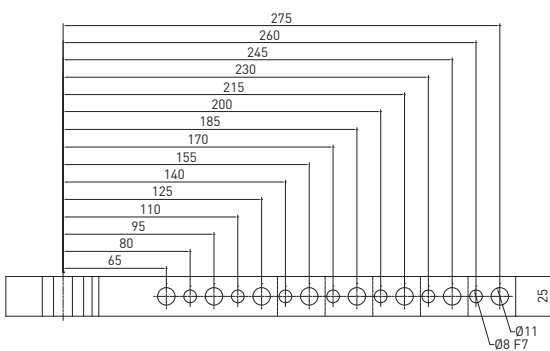
### 0 mm OFFSET



### 25 mm OFFSET



CLAMPING



### 22 mm shaft – 0 mm offset

Part no.	Material	Length (mm)	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
QNACA007M	Steel	135	0.72	135°	135°	135°	135°
QNACA008M	Steel	165	0.83	135°	135°	135°	135°
QNACA009M	Steel	195	0.94	135°	135°	135°	135°
QNACA010M	Steel	225	1.05	135°	135°	135°	135°
QNACA011M	Steel	255	1.16	135°	135°	135°	135°
QNACA012M	Steel	285	1.28	135°	135°	135°	135°

Screws: M8x25 Tightening torque: 25 N m / 18.43 lb ft

### 22 mm shaft – 25 mm offset

Part no.	Material	Length (mm)	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
QNACA019M	Steel	135	0.84	135°	135°	135°	135°
QNACA020M	Steel	165	0.95	135°	135°	135°	135°
QNACA021M	Steel	195	1.05	135°	135°	135°	135°
QNACA022M	Steel	225	1.16	135°	135°	135°	135°
QNACA023M	Steel	255	1.26	135°	135°	135°	135°
QNACA024M	Steel	285	1.37	135°	135°	135°	135°

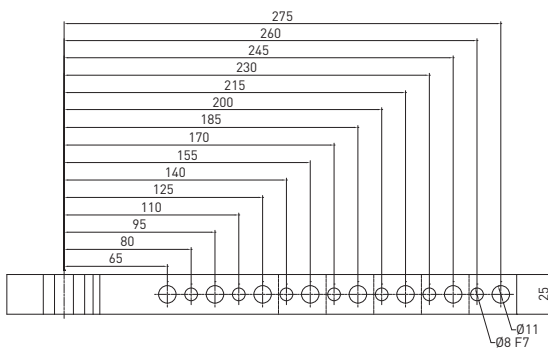
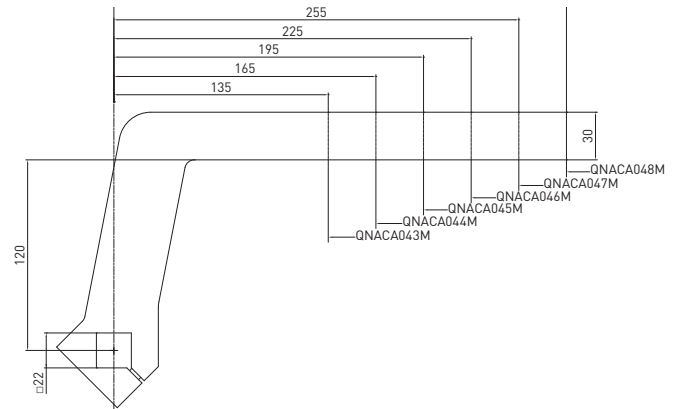
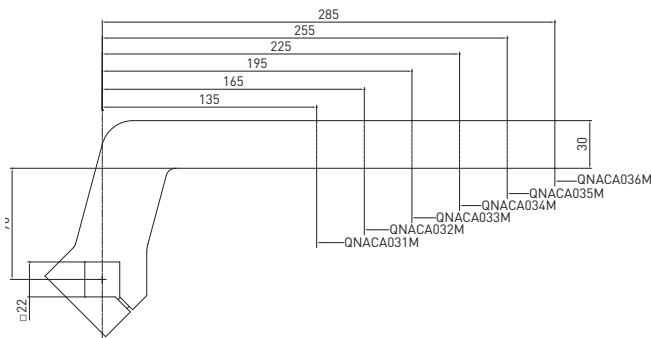
Screws: M8x25 Tightening torque: 25 N m / 18.43 lb ft

## Clamping arms / 22 mm shaft - NAAMS Std

REV. 01 - 31/07/2015

### 70 mm OFFSET

### 120 mm OFFSET



### 22 mm shaft – 70 mm offset

Part no.	Material	Length (mm)	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
QNACA031M	Steel	135	1.05	135°	135°	135°	135°
QNACA032M	Steel	165	1.16	135°	135°	135°	135°
QNACA033M	Steel	195	1.27	135°	135°	135°	135°
QNACA034M	Steel	225	1.38	135°	135°	135°	135°
QNACA035M	Steel	255	1.49	135°	135°	135°	135°
QNACA036M	Steel	285	1.6	135°	135°	135°	135°

Screws: M8X25 Tightening torque: 25 N m / 18.43 lb ft

### 22 mm shaft – 120 mm offset

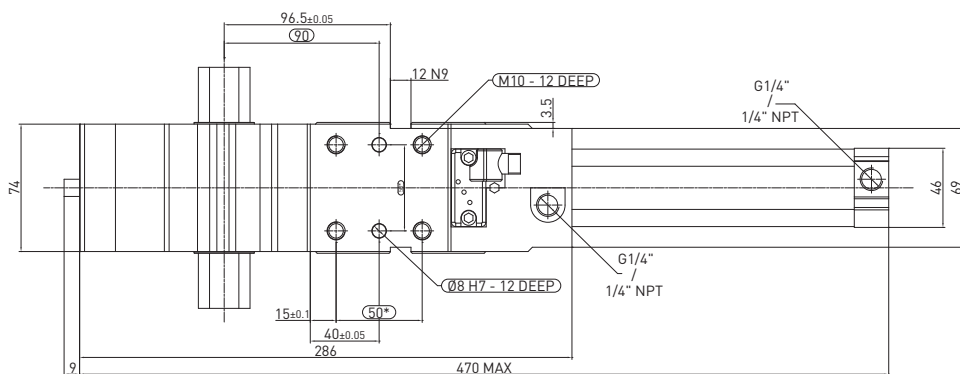
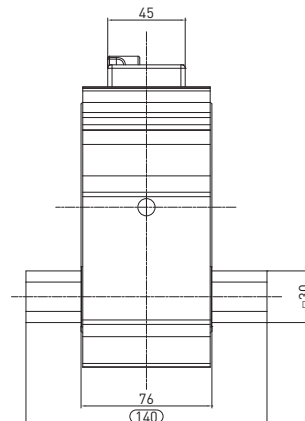
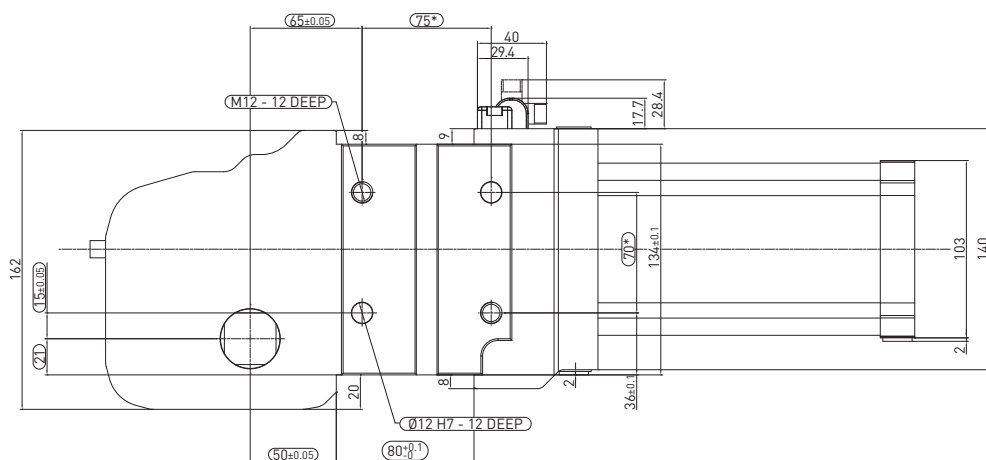
Part no.	Material	Length (mm)	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
QNACA043M	Steel	135	1.27	135°	135°	135°	135°
QNACA044M	Steel	165	1.37	135°	135°	135°	135°
QNACA045M	Steel	195	1.48	135°	135°	135°	135°
QNACA046M	Steel	225	1.58	135°	135°	135°	135°
QNACA047M	Steel	255	1.69	135°	135°	135°	135°
QNACA048M	Steel	285	1.8	135°	135°	135°	135°

Screws: M8X25 Tightening torque: 25 N m / 18.43 lb ft



**HE2P3E** / High Efficiency clamp - NAAMS Std - Housing size 80 / cylinder Ø 63 mm

WEIGHT 7.76 kg



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

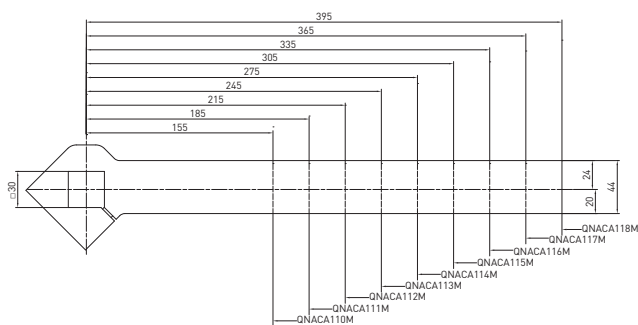
REV. 00 - 20/10/2015

## Clamping arms / 30 mm shaft - NAAMS Std

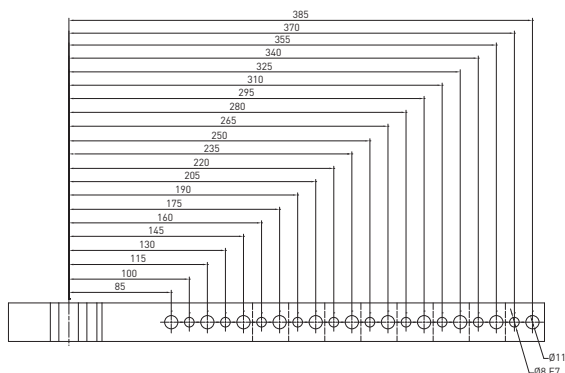
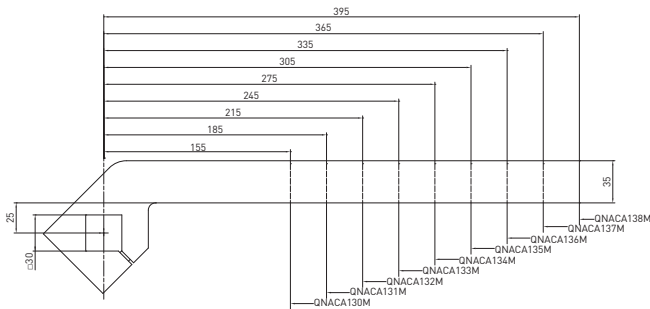
REV. 01 - 31/03/2015

CLAMPING

**0 mm OFFSET**



**25 mm OFFSET**



### 30 mm shaft – 0 mm offset

Part no.	Material	Length (mm)	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
QNACA110M	Steel	155	1.41	135°	135°	135°	135°
QNACA111M	Steel	185	1.58	135°	135°	135°	135°
QNACA112M	Steel	215	1.76	135°	135°	135°	135°
QNACA113M	Steel	245	1.93	135°	135°	135°	135°
QNACA114M	Steel	275	2.1	135°	135°	135°	135°
QNACA115M	Steel	305	2.27	135°	135°	135°	135°
QNACA116M	Steel	335	2.45	135°	135°	135°	135°
QNACA117M	Steel	365	2.62	135°	135°	135°	135°
QNACA118M	Steel	395	2.8	135°	135°	135°	135°

Screws: M10x40 Tightening torque: 35 N m / 25.81 lb ft

### 30 mm shaft – 25 mm offset

Part no.	Material	Length (mm)	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
QNACA130M	Steel	155	1.24	135°	135°	135°	135°
QNACA131M	Steel	185	1.39	135°	135°	135°	135°
QNACA132M	Steel	215	1.54	135°	135°	135°	135°
QNACA133M	Steel	245	1.69	135°	135°	135°	135°
QNACA134M	Steel	275	1.84	135°	135°	135°	135°
QNACA135M	Steel	305	2	135°	135°	135°	135°
QNACA136M	Steel	335	2.14	135°	135°	135°	135°
QNACA137M	Steel	365	2.29	135°	135°	135°	135°
QNACA138M	Steel	395	2.45	135°	135°	135°	135°

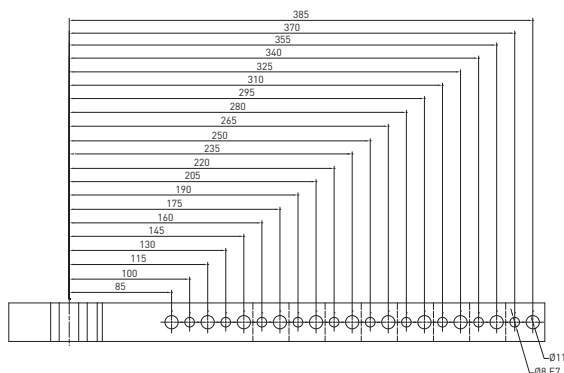
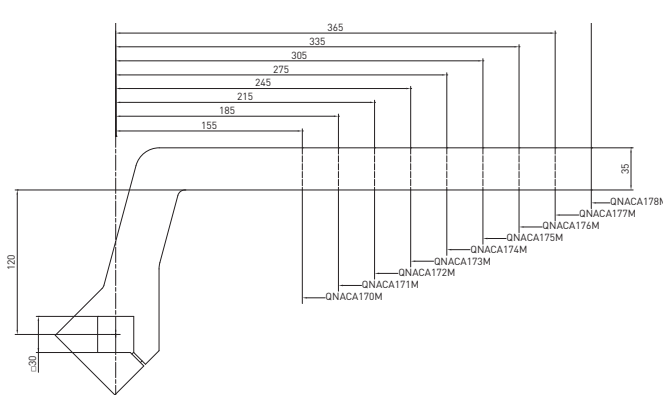
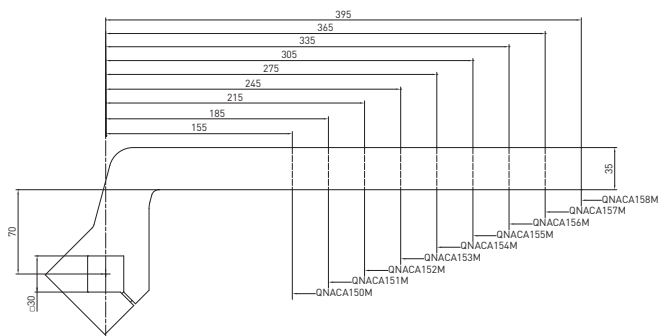
Screws: M10x40 Tightening torque: 35 N m / 25.81 lb ft

## Clamping arms / 30 mm shaft - NAAMS Std

REV. 01 - 31/03/2015

### 70 mm OFFSET

### 120 mm OFFSET



### 30 mm shaft – 70 mm offset

Part no.	Material	Length (mm)	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
QNACA150M	Steel	155	1.7	135°	135°	135°	135°
QNACA151M	Steel	185	1.85	135°	135°	135°	135°
QNACA152M	Steel	215	2	135°	135°	135°	135°
QNACA153M	Steel	245	2.15	135°	135°	135°	135°
QNACA154M	Steel	275	2.3	135°	135°	135°	135°
QNACA155M	Steel	305	2.45	135°	135°	135°	135°
QNACA156M	Steel	335	2.6	135°	135°	135°	135°
QNACA157M	Steel	365	2.76	135°	135°	135°	135°
QNACA158M	Steel	395	2.92	135°	135°	135°	135°

Screws: M10x40 Tightening torque: 35 N m / 25.81 lb ft

### 30 mm shaft – 120 mm offset

Part no.	Material	Length (mm)	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
QNACA170M	Steel	155	1.97	135°	135°	135°	135°
QNACA171M	Steel	185	2.12	135°	135°	135°	135°
QNACA172M	Steel	215	2.27	135°	135°	135°	135°
QNACA173M	Steel	245	2.42	135°	135°	135°	135°
QNACA174M	Steel	275	2.57	135°	135°	135°	135°
QNACA175M	Steel	305	2.72	135°	135°	135°	135°
QNACA176M	Steel	335	2.87	135°	135°	135°	135°
QNACA177M	Steel	365	3.02	135°	135°	135°	135°
QNACA178M	Steel	395	3.19	135°	135°	135°	135°

Screws: M10x40 Tightening torque: 35 N m / 25.81 lb ft

CLAMPING

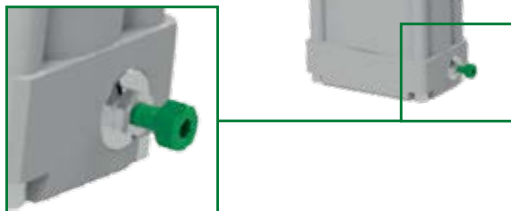
## CX-Series

INTERNATIONAL  
**MOUNT**

GLOBAL STANDARD COMPONENTS  
**NAAMS**



Patented



### Power clamps for double workpiece identification

International mount - Naams mount

For critical applications, where it is required to identify the unwilling presence of two metal sheets in the process and to avoid their clamping. This built-in device **allows a reliable double workpiece identification.**

The below end cap shows an **adjustment screw**: by loosening the screw, the inlet pressure is adjusted, i.e. reduced to the minimum required to guarantee the **clamping of a single workpiece**, not of two metal sheets. The toggle linkage is therefore prevented from engaging (no toggle lock) and consequently the sensor will not detect the closed position and will signal the anomaly. Once the clamp is properly adjusted from the below end cap screw, to be able to clamp a single workpiece, **it will be able to detect the false condition in case a second workpiece is inadvertently set on the tooling.**

### Instructions

The adjustment cannot be performed without air.

- 1 Install the clamp on the fixture by using all 4 screws and dowels. If mounted on the side, use the key slot.
- 2 Check the shimming and make sure that that with 5/ 5.5 bars the clamp is operating smoothly (0.3 or less shimming is optimal).
- 3 Place the workpiece and clamp it. Make sure you get the red led signal for closed position.
- 4 Open the clamp.
- 5 Use, further to the workpiece, a thickness gauge (a feeler or a shim) whose thickness is half the thickness of the workpiece.
- 6 Close the clamp and tighten the screw slightly. Operate the clamp and check if the closed position signal is lost. In this way, the pressure is reduced and the cylinder won't get enough push force to engage the toggle linkage.
- 7 Open and close a few times, then double check with two workpieces and no red led light will be on, in such a condition.
- 8 If ok, tighten the bolt behind the screw to avoid its loosening.



### Technical features

**Manual release button** to open the linkage when air pressure is removed during setup. **Pneumatic ports on both sides** of the cylinder.

#### Operating features

**Operating pressure** from 2 to 8 bar / from 30 to 115 psi

**Lubrication** all the devices are lubricated for life at the factory. Inline air lubrication isn't required

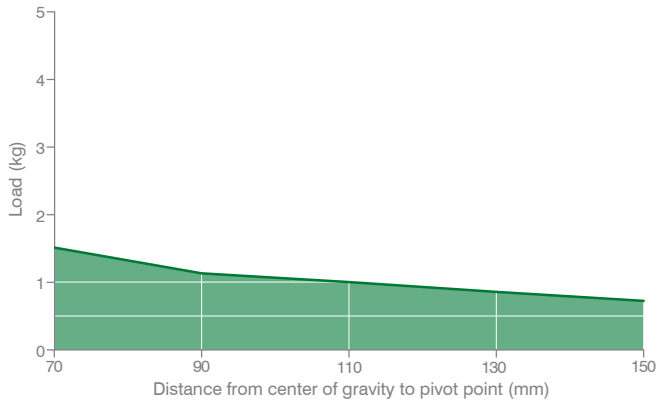


## Functional charts

### Size 40 mm

- Tooling weight chart**

5 bar operating pressure – 135° opening angle  
REV. 00 - 17/06/2015



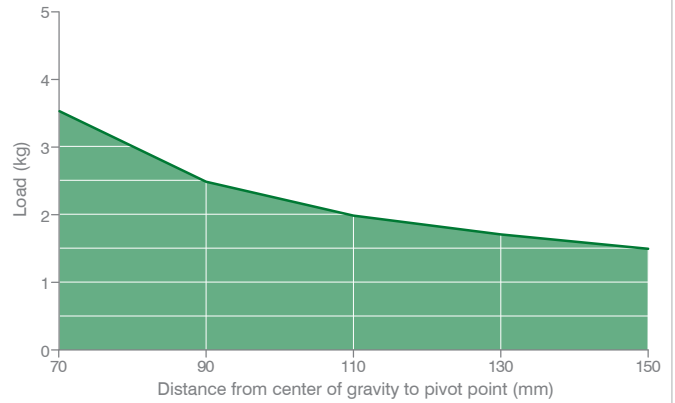
- Holding moment**

**380 N m / 280,27 lb-ft**

### Size 50 mm

- Tooling weight chart**

5 bar operating pressure – 135° opening angle  
REV. 00 - 17/06/2015



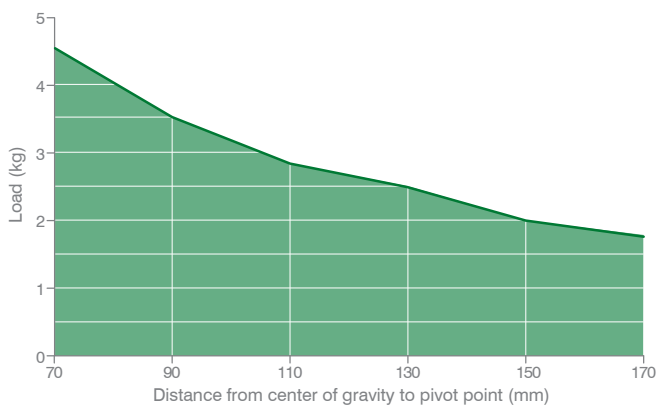
- Holding moment**

**800 N m / 590,04 lb-ft**

### Size 63 mm

- Tooling weight chart**

5 bar operating pressure – 135° opening angle  
REV. 00 - 17/06/2015



- Holding moment**

**1.500 N m / 1.106,34 lb-ft**

**CX-Series / Ordering string**

**CX-Series**

**C 1 X 40 E G 1 A 01**

CLAMPING

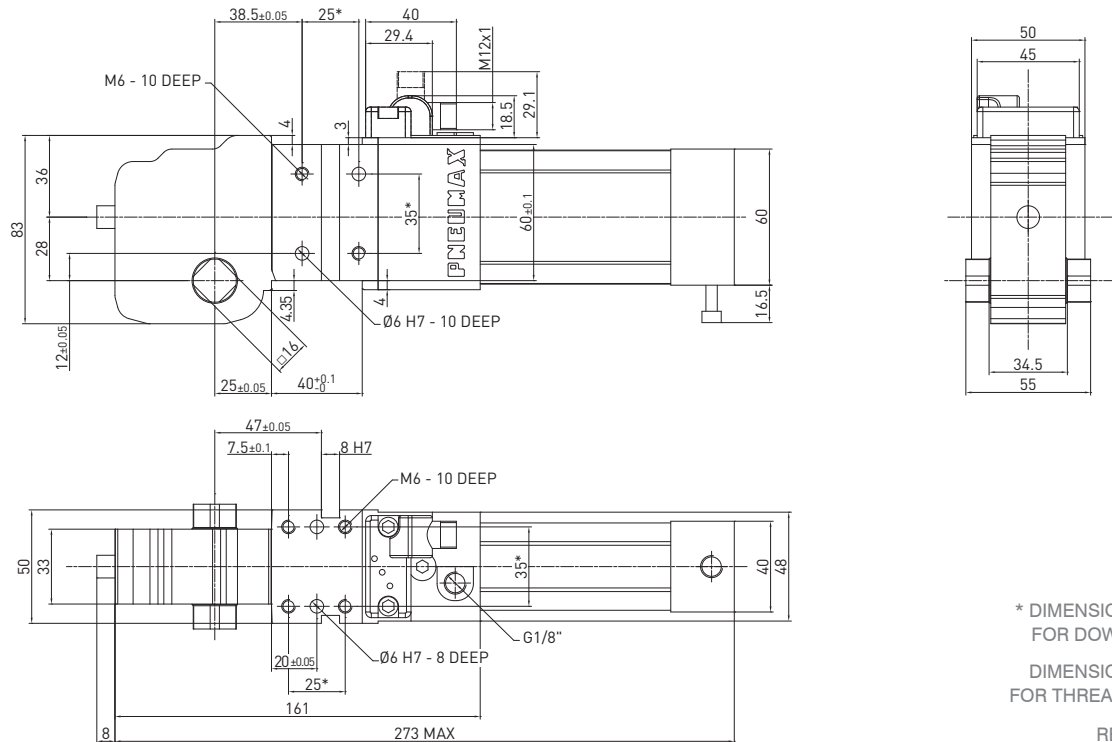
<b>C</b>	<b>VERSION</b>	<b>C</b> = clamp
<b>1</b>	<b>MOUNTING PATTERN</b>	<b>1</b> = International mount <b>2</b> = NAAMS Standard
<b>X</b>	<b>OPERATION</b>	<b>X</b> = double workpiece identification
<b>40</b>	<b>SIZE</b>	<b>40</b> = 40 mm <b>63</b> = Ø 63 mm <b>50</b> = Ø 50 mm
<b>E</b>	<b>SENSOR</b>	<b>E</b> = electronic sensor with M12 swivel connector - PNP <b>A</b> = electronic sensor with M12 swivel connector - NPN <b>N</b> = no sensor <b>B</b> = electronic sensor with M8 swivel connector - PNP
<b>G</b>	<b>PORTS</b>	<b>G</b> = G thread – BSPP <b>N</b> = NPT
<b>1</b>	<b>ARM MOUNT</b>	<b>1</b> = <b>2</b> = <b>3</b> = <b>4</b> =
<b>A</b>	<b>ARM MATERIAL</b>	<b>A</b> = aluminum <b>S</b> = steel
<b>01</b>	<b>CLAMP ARM TYPE</b>	<b>01</b> = wishbone, central, 15 mm offset <b>02</b> = wishbone, right, 15 mm offset <b>03</b> = wishbone, left, 15 mm offset <b>04</b> = wishbone, central, 45 mm offset <b>05</b> = wishbone, right, 45 mm offset <b>06</b> = wishbone, left, 45 mm offset



Please see the charts in the datasheets for arm position as well as for max. opening angle. NAAMS clamping arms to be ordered separately

**C1X40E / Clamp with double workpiece identification - International mount - 40 mm bore**

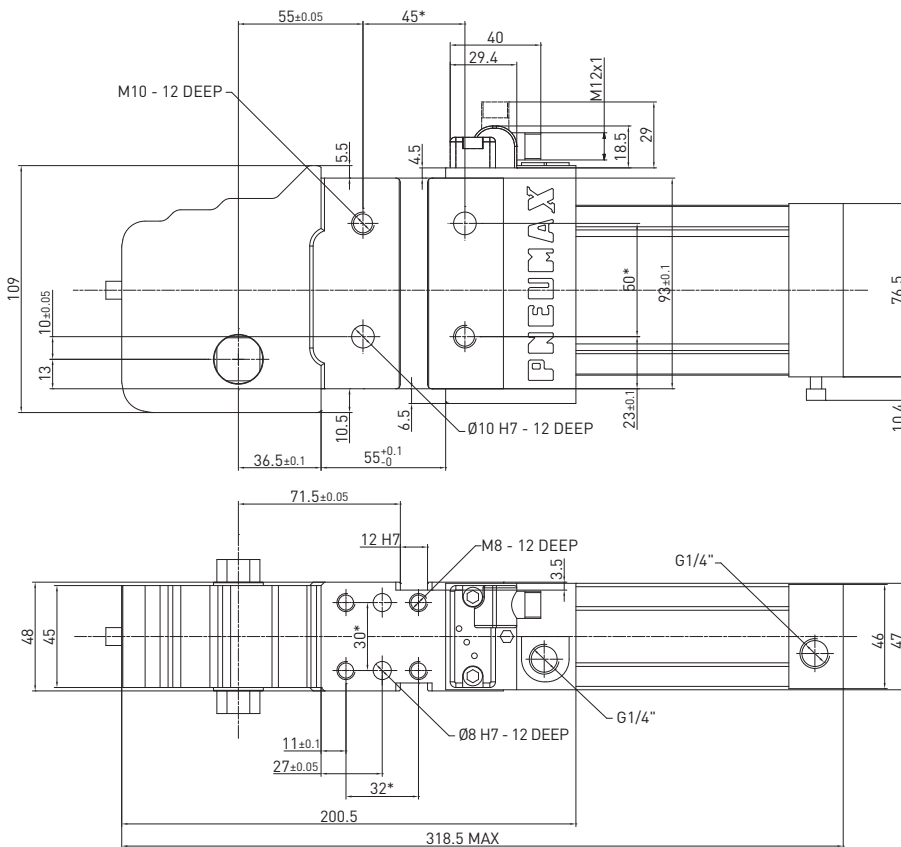
**WEIGHT 1.6 kg**



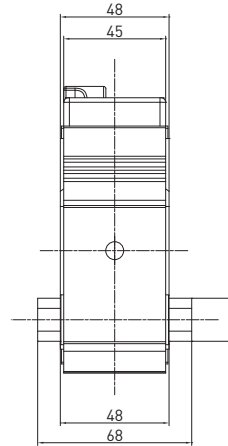
\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02  
DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 00 - 20/08/2018

**C1X50E / Clamp with double workpiece identification - International mount - 50 mm bore**



WEIGHT 2.9 kg



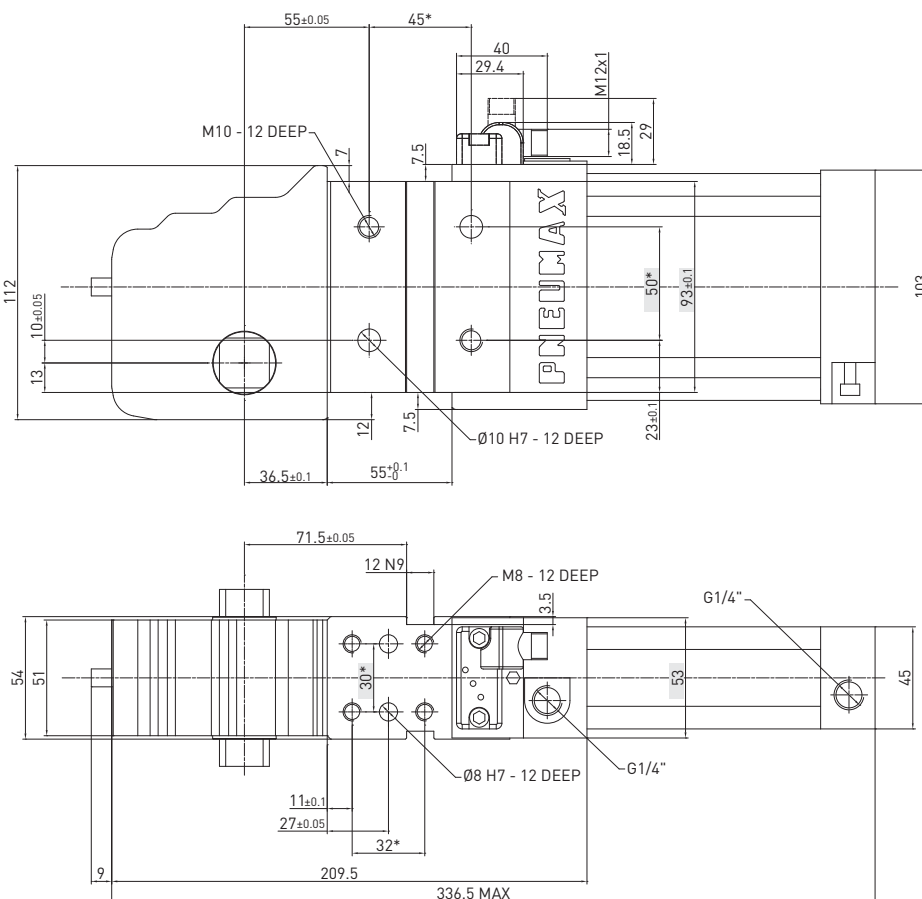
\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

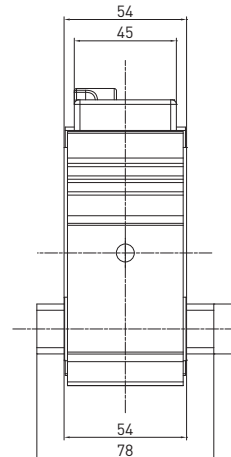
REV. 00 - 20/08/2018

CLAMPING

**C1X63E / Clamp with double workpiece identification - International mount - 63 mm bore**



WEIGHT 3.7 kg



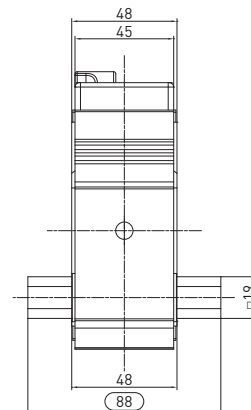
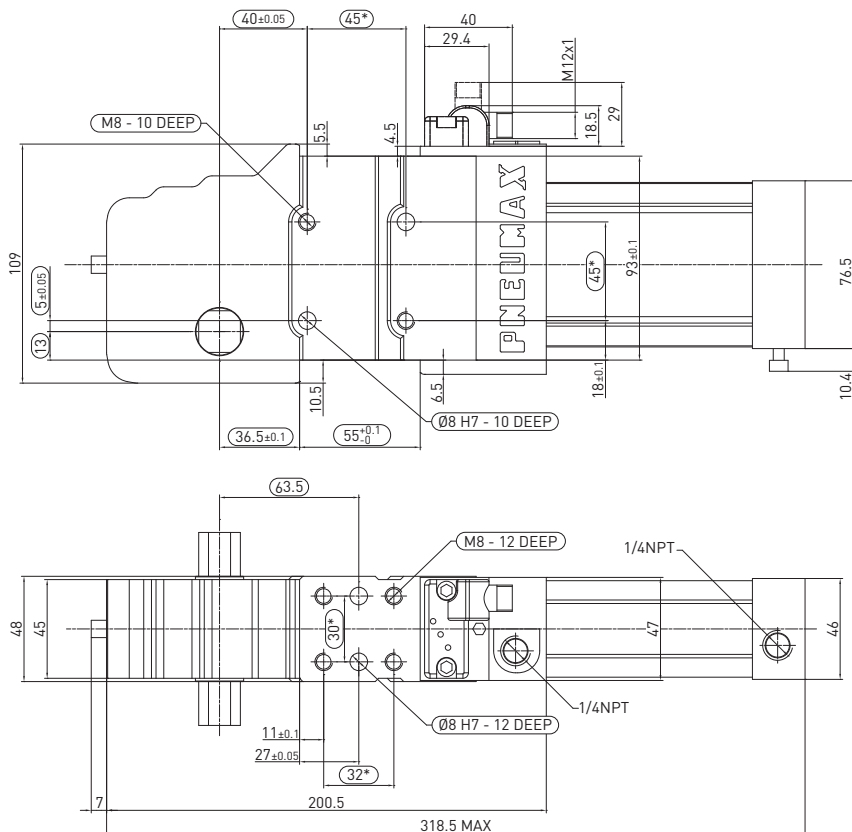
\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 00 - 20/09/2018

**C2X50E / Clamp with double workpiece identification - NAAMS Std - 50 mm bore**

**WEIGHT 2.95 kg**

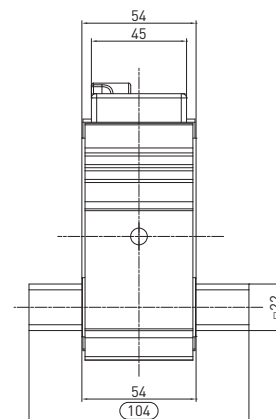
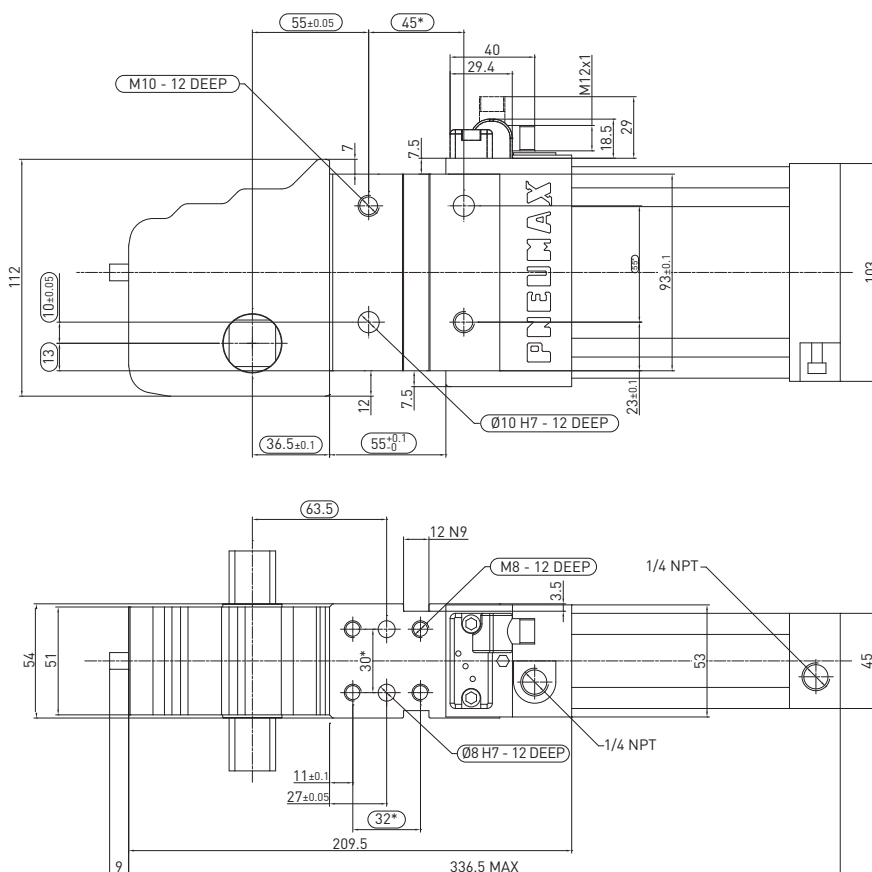


\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES: ±0.02  
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES: ±0.1

REV. 00 - 20/09/2018

**C2X63E / Clamp with double workpiece identification - NAAMS Std - 63 mm bore**

**WEIGHT 3.75 kg**



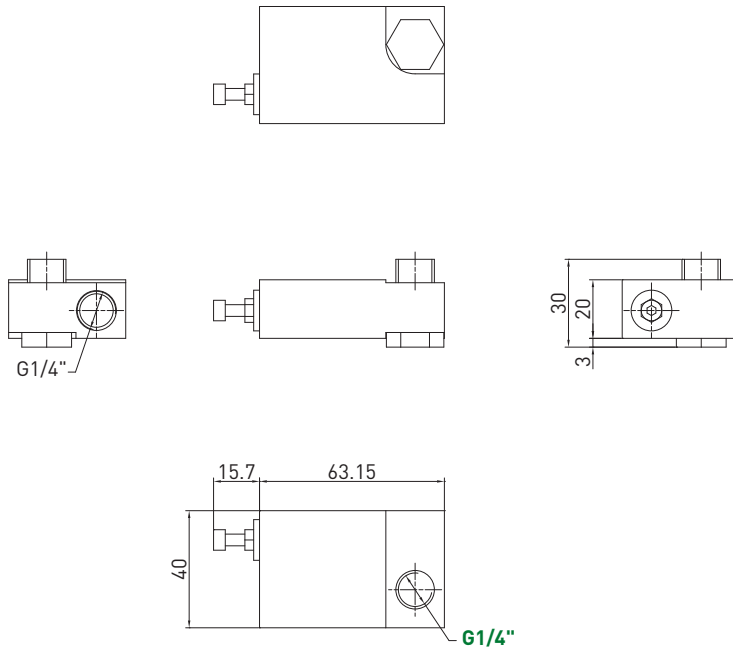
\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES: ±0.02  
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES: ±0.1

REV. 00 - 20/09/2018



**ADWI14: for clamps size 50 and 63 mm / Devices for double workpiece identification - G 1/4"**

WEIGHT 100 g

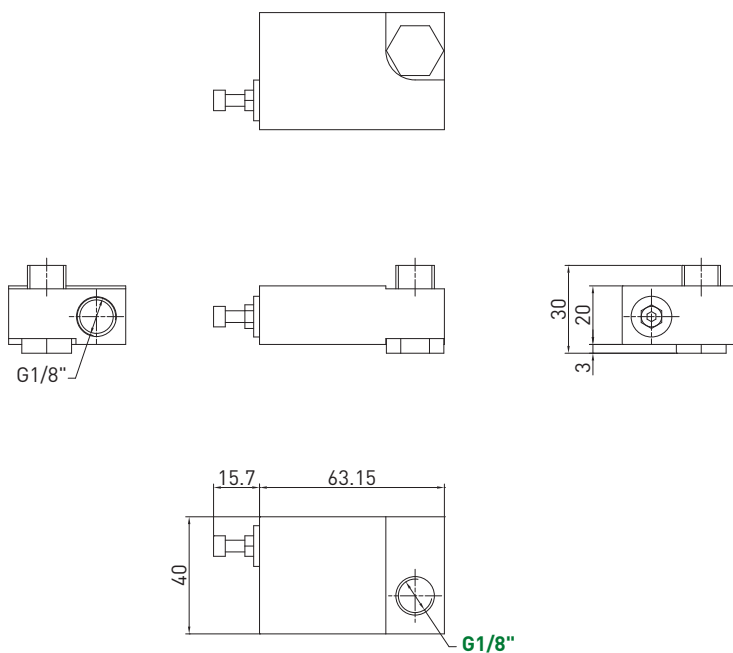


\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES:  $\pm 0.02$   
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES:  $\pm 0.1$

REV. 00 - 20/09/2018

**ADWI18: for clamps size 25,32 and 40 mm / Devices for double workpiece identification - G 1/8"**

WEIGHT 100 g



\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES:  $\pm 0.02$   
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES:  $\pm 0.1$

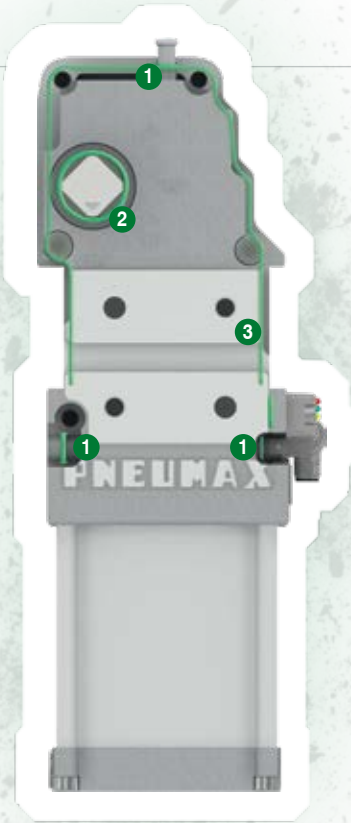
REV. 00 - 20/09/2018

# CS/HES-Series

## Sealed clamps

CLAMPING

INTERNATIONAL MOUNT  
GLOBAL STANDARD COMPONENTS  
**NAAMS**



- Weld-contamination proven
- Suitable for laser welding applications
- No dimensional change from conventional clamps

- 1 The manual unlock button and the adjustment access are sealed with an O-ring
- 2 The toggle mechanism is fully sealed
- 3 Acrylic-based Loctite® for full sealing



### Ordering string

### Sealed clamp

**CS 1 P 63 E G 4 S 01**

<b>CS</b>	<b>VERSION</b>	<b>C</b> = clamp <b>CS</b> = sealed clamp	<b>HE</b> = high efficiency clamp <b>HES</b> = high efficiency sealed clamp
<b>1</b>	<b>MOUNTING PATTERN</b>		
<b>P</b>	<b>OPERATION</b>		
<b>63</b>	<b>SIZE</b>		
<b>E</b>	<b>SENSOR</b>		
<b>G</b>	<b>PORTS</b>		
<b>4</b>	<b>ARM MOUNT</b>		
<b>S</b>	<b>ARM MATERIAL</b>		
<b>01</b>	<b>CLAMP ARM TYPE</b>		

**Follow the ordering string of standard clamps.**  
For technical specifications please refer to the charts of standard clamps.

# CB-Series



## Power clamp with double arm

- Stepless adjustable opening angle
- Toggle lock mechanism
- Unlock manual override > in case of air loss the clamp can be opened manually
- Pneumatic ports on both sides of the cylinder
- Extremely compact dimensions
- 4-sided mounting pattern

CLAMPING

### Technical features

**Manual release button** to open the linkage when air pressure is removed during setup. **Pneumatic ports on both sides** of the cylinder.

#### Operating features

**Operating pressure** from 2 to 8 bar / from 30 to 115 psi

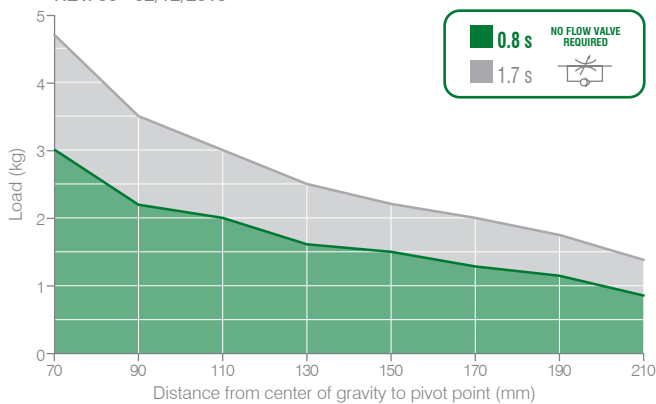
**Lubrication** all the devices are lubricated for life at the factory. Inline air lubrication isn't required

### Functional charts

#### Size 40 mm

##### • Tooling weight chart

5 bar operating pressure – 135° opening angle  
REV. 00 - 02/12/2019



##### • Clamping moment (at 5 bar / 72.5 psi)

**85 N m / 62,69 lb-ft**

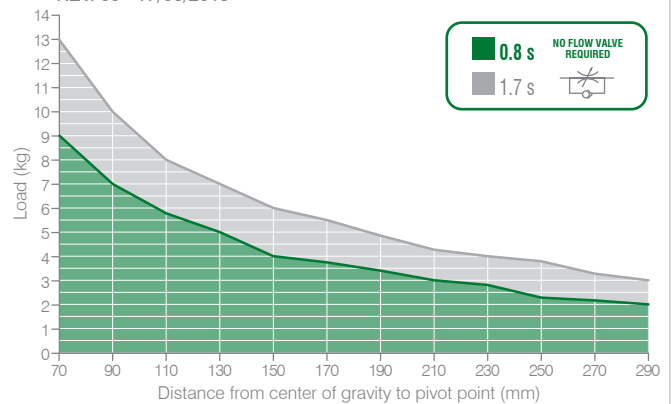
##### • Cycle time

**0.8 s at 90°**

#### Size 63 mm

##### • Tooling weight chart

5 bar operating pressure – 135° opening angle  
REV. 00 - 17/06/2015



##### • Clamping moment (at 5 bar / 72.5 psi)

**170 N m / 125,39 lb-ft**

##### • Cycle time

**0.8 s at 90°**

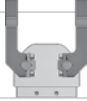

The above data are meant for correct working conditions of the clamp with the same performance level during its life time. For applications which exceed the above data, please contact our sales representatives.

**Ordering string**

**CB-Series**

**CB 40 E G 5 A 01**

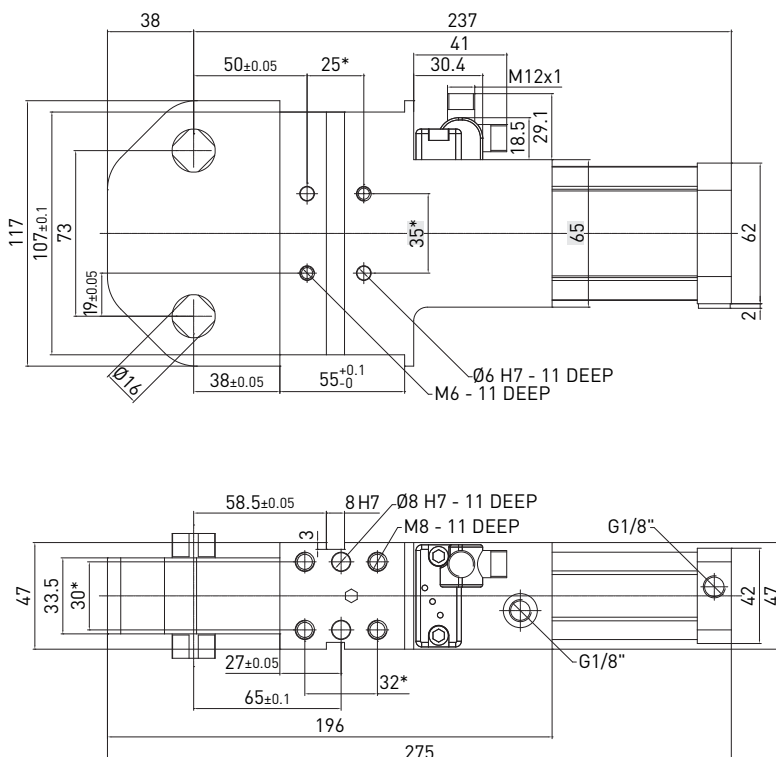
CLAMPING

<b>CB</b>	<b>VERSION</b>	<b>CB</b> = double arm clamp
<b>40</b>	<b>SIZE</b>	<b>40</b> = Ø 40 mm <b>63</b> = Ø 63 mm
<b>E</b>	<b>SENSOR</b>	<b>E</b> = electronic sensor with M12 swivel connector - PNP
<b>G</b>	<b>PORTS</b>	<b>G</b> = G thread – BSPP
<b>5</b>	<b>ARM MOUNT</b>	<b>5</b> =  <b>6</b> = 
<b>A</b>	<b>ARM MATERIAL</b>	<b>A</b> = aluminum
<b>01</b>	<b>CLAMP ARM TYPE</b>	<b>01</b> = wishbone, central, 15 mm offset <b>02</b> = wishbone, right, 15 mm offset <b>03</b> = wishbone, left, 15 mm offset <b>61</b> = wishbone, 10 mm offset specific for CB40 clamp

Stepless adjustment from 13° to 180° for size 40 mm  
Stepless adjustment from 8° to 180° for size 63 mm

**CB40EG / Power clamp with double arm - 40 mm bore**

**WEIGHT 2.5 kg**

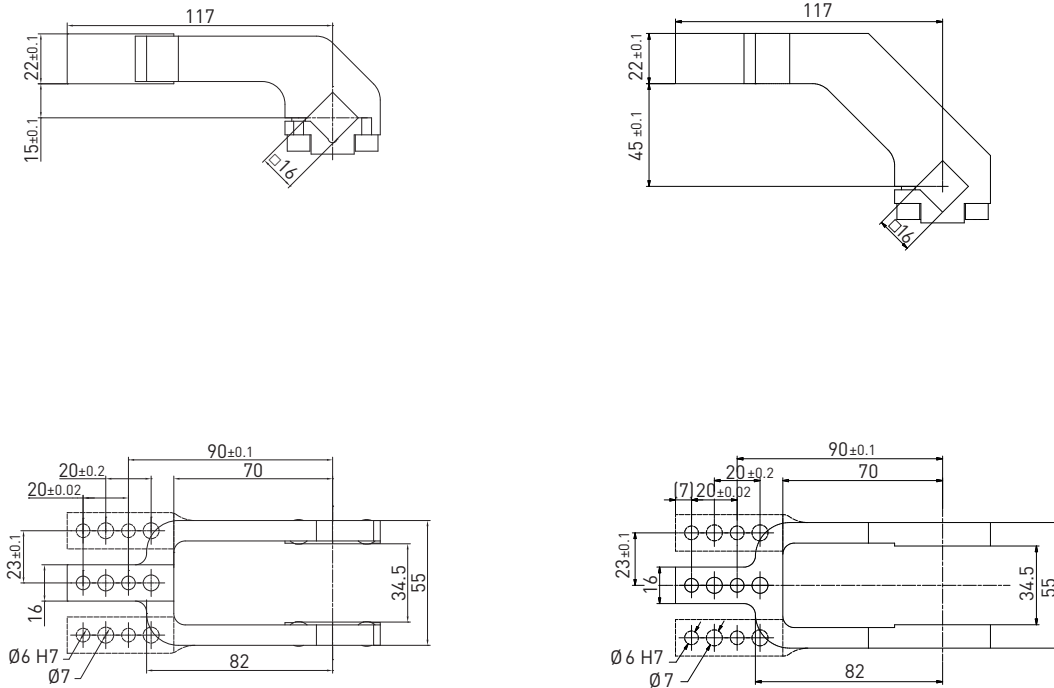


\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02  
DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 00 - 20/09/2018

## Clamping arms / 16 mm shaft

REV. 00 - 31/03/2015



CLAMPING

### 16 mm shaft – 15 mm offset



Part no.	Material	Version	Weight (kg)	Max op. angle pos. 5
B1601	Aluminum	Central	0.24	90°
Q1601	Steel	Central	0.44	90°
B1602	Aluminum	Right	0.24	90°
Q1602	Steel	Right	0.46	90°
B1603	Aluminum	Left	0.24	90°
Q1603	Steel	Left	0.46	90°

Screws: M6x20 Tightening torque: 10 N m / 7.37 lb ft

### 16 mm shaft – 45 mm offset

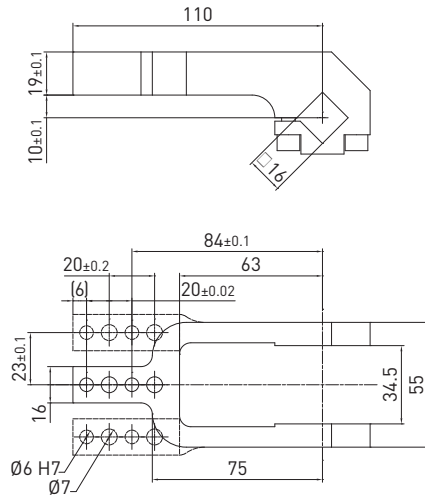


Part no.	Material	Version	Weight (kg)	Max op. angle pos. 5
B1604	Aluminum	Central	0.3	90°
Q1604	Steel	Central	0.55	90°
B1605	Aluminum	Right	0.3	90°
Q1605	Steel	Right	0.57	90°
B1606	Aluminum	Left	0.3	90°
Q1606	Steel	Left	0.57	90°

Screws: M6x20 Tightening torque: 10 N m / 7.37 lb ft

## Clamping arms / 16 mm shaft - 10 mm offset - Specific for CB40 clamps

REV. 00 - 24/09/2019



### 16 mm shaft - 10 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 5	Max op. angle pos. 6
<b>B1661</b>	<b>Aluminum</b>	<b>Central</b>	<b>0.24</b>	<b>90°</b>	<b>90°</b>

Screws: M6x25 Tightening torque: 10 N m / 7.37 lb-ft

### 16 mm shaft - 0 mm offset

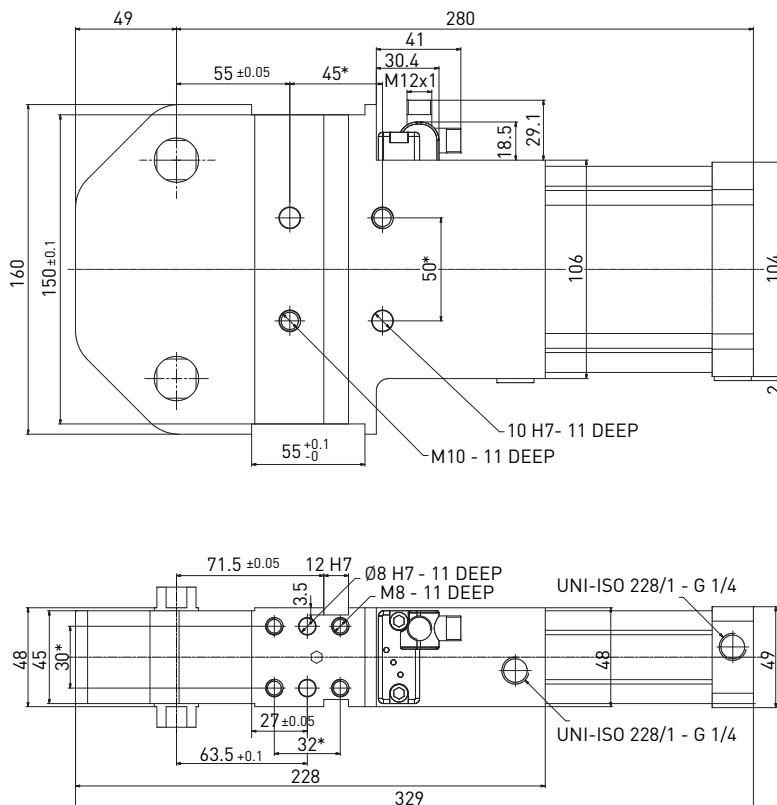
Part no.	Material	Version	Weight (kg)	Max op. angle pos. 5	Max op. angle pos. 6
<b>B1618</b>	<b>Aluminum</b>	<b>Central</b>	<b>0.22</b>	<b>90°</b>	<b>90°</b>

Screws: M6x25 Tightening torque: 10 N m / 7.37 lb-ft

**WEIGHT 2.5 kg**

## CB63EG / Power clamp with double arm - 63 mm bore

**WEIGHT 6 kg**

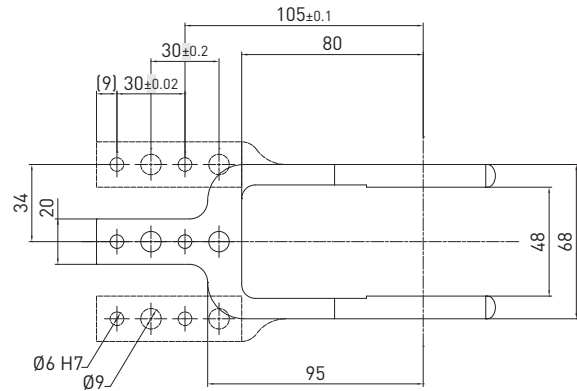
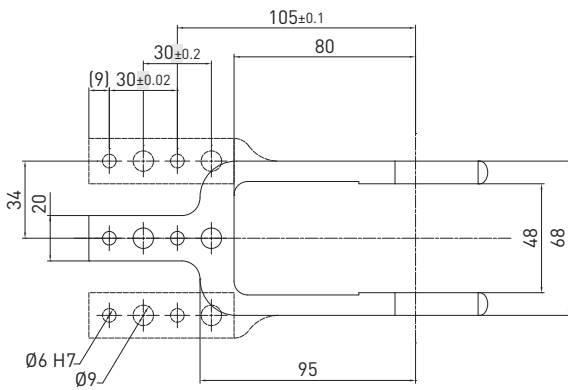
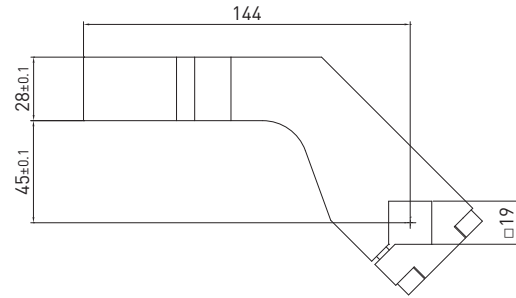
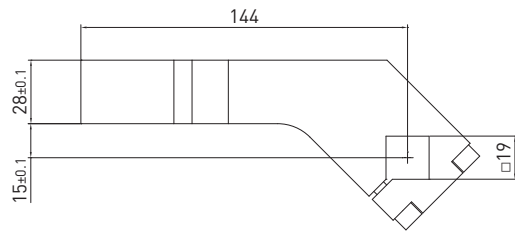


\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES:  $\pm 0.02$   
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES:  $\pm 0.1$

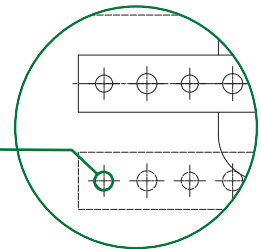
REV. 00 - 24/09/2019

## Clamping arms / 19 mm shaft

REV. 01 - 08/02/2019



**Ø 8 H7**  
Mount pattern for  
B1907 - B1908 - B1909



### 19 mm shaft – 15 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 5	Max op. angle pos. 6
B1901	Aluminum	Central	0.41	90°	90°
Q1901	Steel	Central	0.71	90°	90°
B1902	Aluminum	Right	0.43	90°	90°
Q1902	Steel	Right	0.79	90°	90°
B1903	Aluminum	Left	0.43	90°	90°
Q1903	Steel	Left	0.79	90°	90°
B1907	Aluminum	Central	0.41	90°	90°
B1908	Aluminum	Right	0.43	90°	90°
B1909	Aluminum	Left	0.43	90°	90°

Screws: M6x25 Tightening torque: 10 N m / 7.37 lb ft

### 19 mm shaft – 45 mm offset

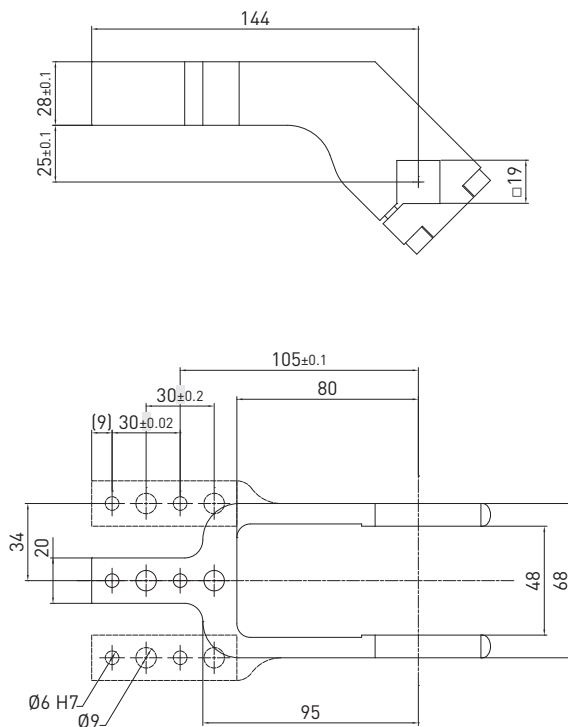
Part no.	Material	Version	Weight (kg)	Max op. angle pos. 5	Max op. angle pos. 6
B1904	Aluminum	Central	0.45	90°	90°
Q1904	Steel	Central	0.77	90°	90°
B1905	Aluminum	Right	0.46	90°	90°
Q1905	Steel	Right	0.81	90°	90°
B1906	Aluminum	Left	0.46	90°	90°
Q1906	Steel	Left	0.81	90°	90°

Screws: M6x25 Tightening torque: 10 N m / 7.37 lb ft

## Clamping arms / 19 mm shaft

REV. 01 - 08/02/2019

CLAMPING



### 19 mm shaft – 25 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 5	Max op. angle pos. 6
<b>B1921</b>	<b>Aluminum</b>	<b>Central</b>	<b>0.43</b>	<b>90°</b>	<b>90°</b>
<b>B1922</b>	<b>Aluminum</b>	<b>Central</b>	<b>0.44</b>	<b>90°</b>	<b>90°</b>
<b>B1923</b>	<b>Aluminum</b>	<b>Central</b>	<b>0.44</b>	<b>90°</b>	<b>90°</b>

Screws: M6x25 Tightening torque: 10 N m / 7.37 lb ft



# CL-Series

## Pneumatic clamp



**Extra-light products**



**550gr  
WEIGHT**

Miniature light-weight series, enclosed toggle-locking mechanism, compact and light-duty for testing applications, welding and fixture checking.

CLAMPING

### Technical features

**Manual release button** to open the linkage when air pressure is removed during setup.

#### Operating features

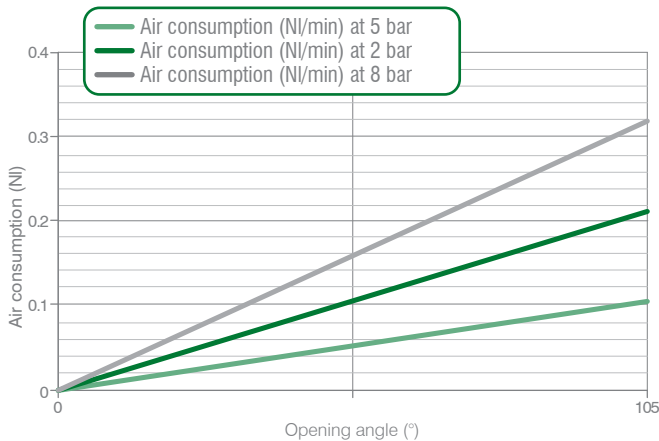
<b>Operating pressure</b>	from 2 to 8 bar / from 30 to 115 psi
<b>Lubrication</b>	all the devices are lubricated for life at the factory. Inline air lubrication isn't required

### Functional charts

#### Size 25 mm

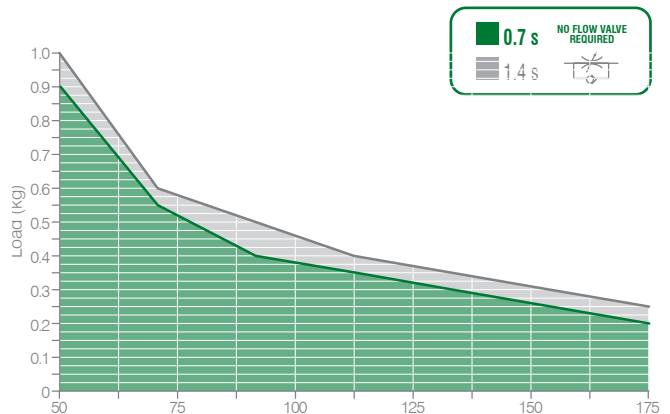
- Air consumption**

Air consumption for complete cycle (opening and closing)  
REV. 00 - 17/06/2015



- Tooling weight chart**

5 bar operating pressure – 105° opening angle  
REV. 00 - 18/11/2016



- Clamping moment (at 5 bar / 72.5 psi)**  
**25 N m / 18,43 lb-ft**

- Holding moment**  
**50 N m / 36,87 lb-ft**





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.

**CL-Series / Ordering string**

**CL-Series**

**C L 25 E G 1 A 01**

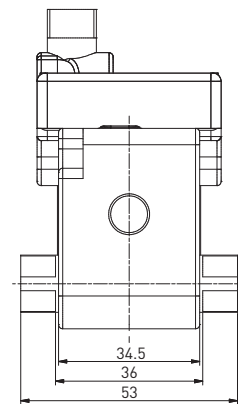
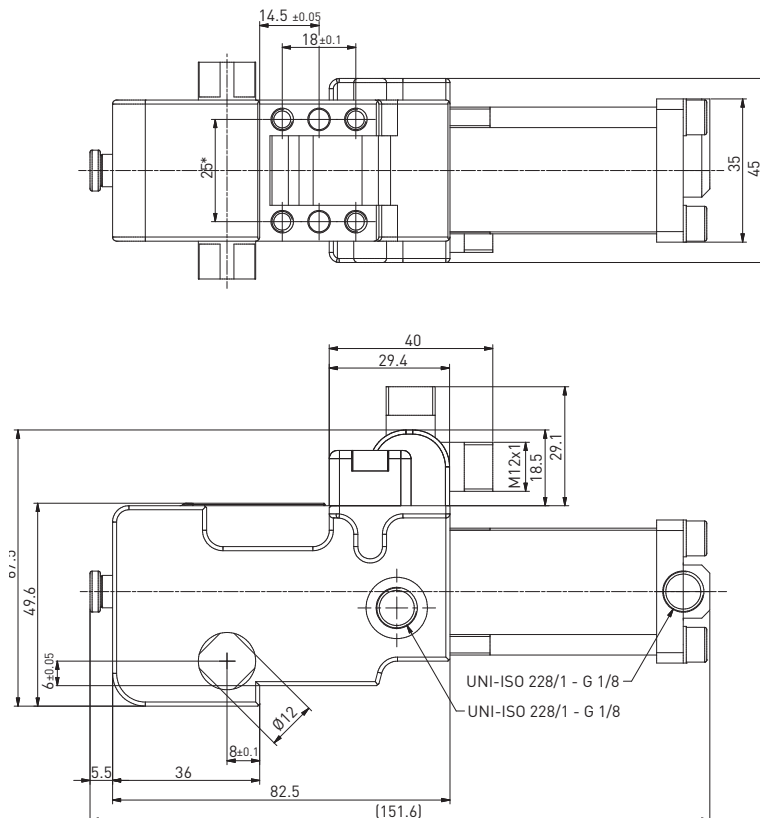
CLAMPING

<b>C</b>	<b>VERSION</b>	<b>C</b> = clamp
<b>L</b>	<b>SERIES</b>	<b>L</b> = light - Weight
<b>25</b>	<b>SIZE</b>	<b>25</b> = Ø 25 mm
<b>E</b>	<b>SENSOR</b>	<b>E</b> = electronic sensor with M12 swivel connector - PNP <b>A</b> = electronic sensor with M12 swivel connector - NPN <b>N</b> = no sensor <b>B</b> = electronic sensor with M8 swivel connector - PNP
<b>G</b>	<b>PORTS</b>	<b>G</b> = G thread – BSPP
<b>1</b>	<b>ARM MOUNT</b>	<b>1</b> =  <b>2</b> =  <b>3</b> =  <b>4</b> = 
<b>A</b>	<b>ARM MATERIAL</b>	<b>A</b> = aluminum
<b>01</b>	<b>CLAMP ARM TYPE</b>	<b>01</b> = wishbone, central, 0 mm offset <b>13</b> = H, 0 mm offset <b>04</b> = wishbone, central, 10 mm offset <b>14</b> = H, 10 mm offset

Please see the charts in the datasheets for arm position as well as for max. opening angle. NAAMS clamping arms to be ordered separately

**CL25EG / Light - weight - pneumatic clamp - size 25 mm**

**WEIGHT 550 gr**

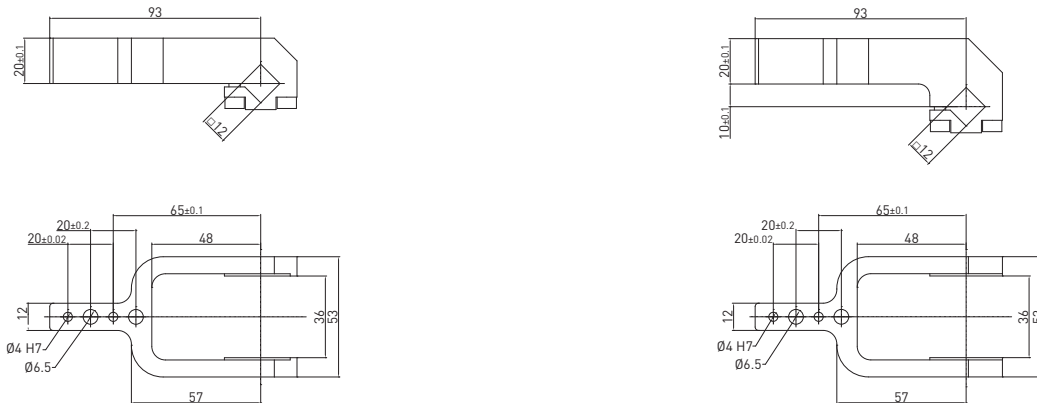


\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02  
DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 00 - 14/06/2021

## Clamping arms / 12 mm shaft for clamps' size 25 mm

REV. 02 - 07/10/2015



### 12 mm shaft – 0 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
<b>B12012</b>	<b>Aluminum</b>	<b>Central</b>	<b>0.127</b>	<b>135°</b>	<b>105°</b>	<b>135°</b>	<b>90°</b>

Screws: M5x14 Tightening torque: 5 N m / 3.68 lb ft

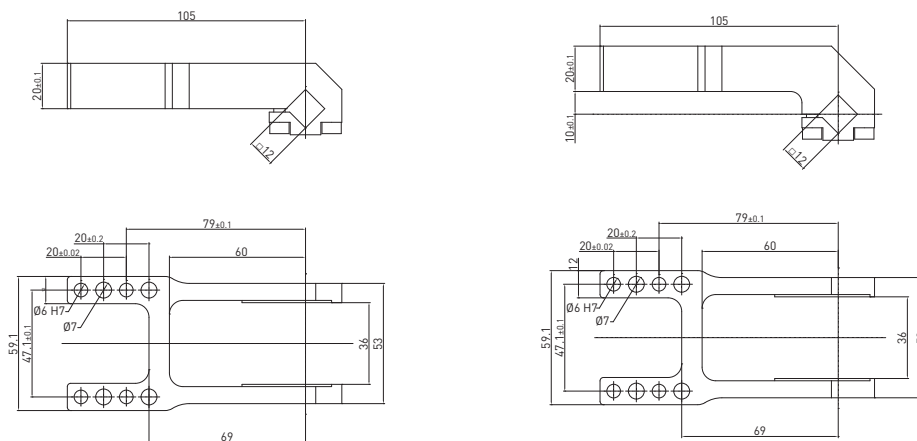
### 12 mm shaft – 10 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
<b>B12042</b>	<b>Aluminum</b>	<b>Central</b>	<b>0.135</b>	<b>135°</b>	<b>120°</b>	<b>N/A</b>	<b>45°</b>

Screws: M5x14 Tightening torque: 5 N m / 3.68 lb ft

## Clamping arms / 12 mm shaft for clamps' size 25 mm and size 32 mm mm - Left & right clamping surfaces

REV. 00 - 12/04/2017



### 12 mm shaft – 0 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
<b>B1213</b>	<b>Aluminum</b>	<b>H</b>	<b>0.163</b>	<b>135°</b>	<b>115°</b>	<b>N/A</b>	<b>45°</b>

Screws: M5x14 Tightening torque: 5 N m / 3.68 lb ft

### 12 mm shaft – 10 mm offset

Part no.	Material	Version	Weight (kg)	Max op. angle pos. 1	Max op. angle pos. 2	Max op. angle pos. 3	Max op. angle pos. 4
<b>B1214</b>	<b>Aluminum</b>	<b>H</b>	<b>0.173</b>	<b>135°</b>	<b>115°</b>	<b>N/A</b>	<b>45°</b>

Screws: M5x14 Tightening torque: 5 N m / 3.68 lb ft

## HC-Series



## Hydraulic clamps

Hydraulic power clamps with **fully-enclosed mechanism**. Maximum mechanical advantage and compact dimensions. Heavy-duty sealed clamps provide superior clamping forces in **harsh welding environments**. Efficient and consistent for repetitive production operations. Sturdy toggle-linkage mechanism and industry-proven position monitoring: the sensor detects the actual linkage condition. **High performance and maintenance-free bushings**.

### Technical features

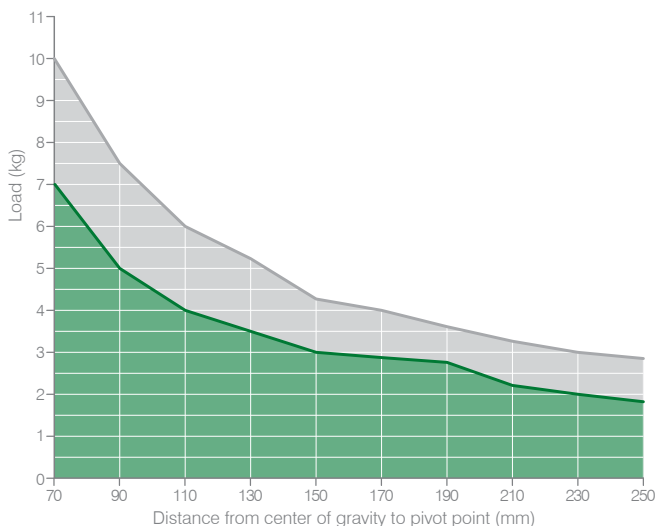
90° opening angle

Operating features

<b>Operating pressure</b>	Nominal pressure 75 bar; max pressure 150 bar
<b>Fluid temperature</b>	-20 °C ÷ + 80°C
<b>Fluid</b>	Hydraulic mineral oil
<b>Weight</b>	5,5 Kg

### Functional charts

#### • Tooling weight chart



#### • Clamping moment 580 N m at 75 bar





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.

Make sure that the opening movement is cushioned through flow adjusters.

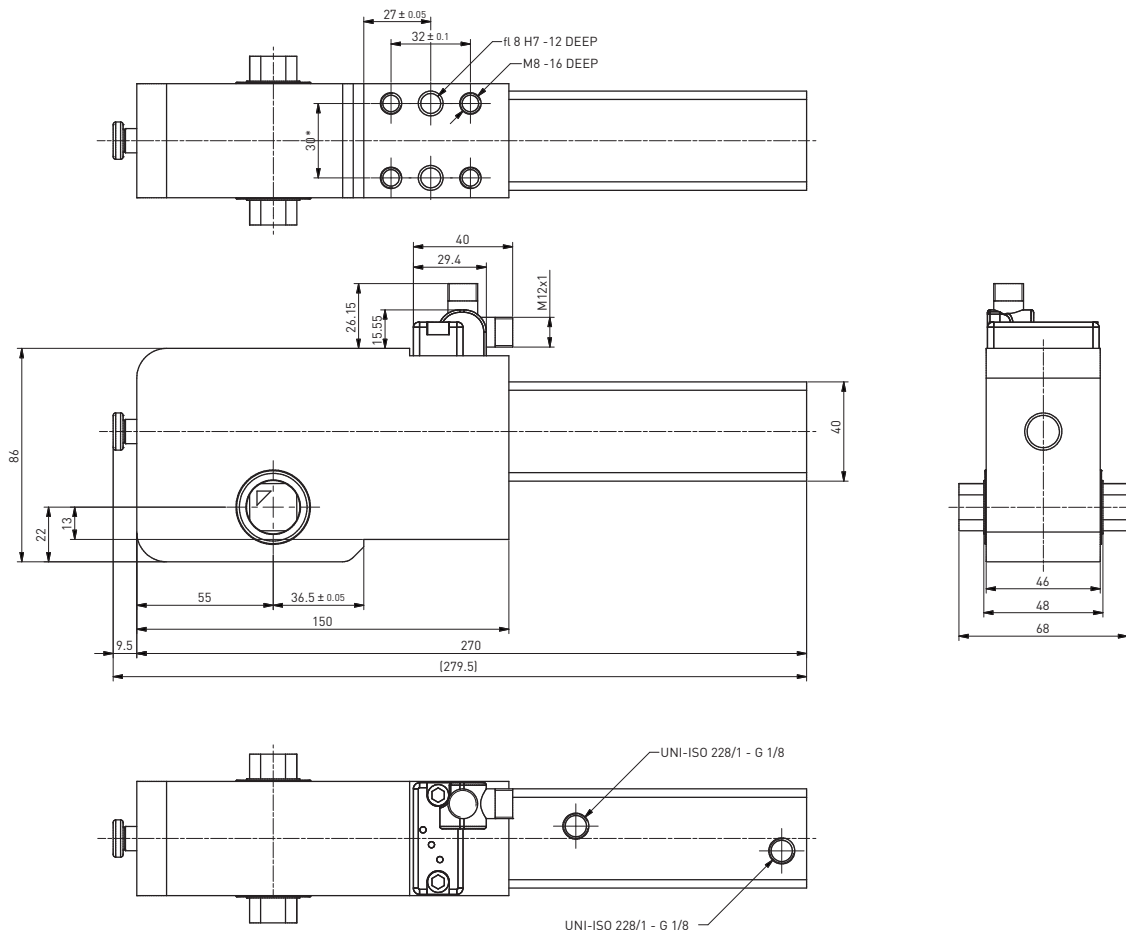
Ordering string

Hydraulic Power Clamps

**HC 1 A G 1 S 01**

<b>HC</b>	<b>VERSION</b>	<b>HC</b> = hydraulic clamp
<b>1</b>	<b>SIZE</b>	<b>1</b> = Ø25 mm bore; 19 mm arm shaft
<b>A</b>	<b>SENSOR</b>	<b>E</b> = electronic sensor with M12 swivel connector - PNP <b>A</b> = electronic sensor with M12 swivel connector - NPN <b>N</b> = no sensor <b>B</b> = electronic sensor with M8 swivel connector - PNP
<b>G</b>	<b>PORTS</b>	<b>G</b> = G thread – BSPP
<b>1</b>	<b>ARM MOUNT</b>	<b>1</b> =  <b>2</b> =  <b>3</b> =  <b>4</b> = 
<b>S</b>	<b>ARM MATERIAL</b>	<b>S</b> = steel
<b>01</b>	<b>CLAMP ARM TYPE</b>	<b>01</b> = wishbone, central, 15 mm offset <b>04</b> = wishbone, central, 45 mm offset <b>02</b> = wishbone, right, 15 mm offset <b>05</b> = wishbone, right, 45 mm offset <b>03</b> = wishbone, left, 15 mm offset <b>06</b> = wishbone, left, 45 mm offset

**HC1** / International mount - 25 mm bore



REV. 00 - 15/06/2021

# 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 and lock out pneumatic and electric supply lines before operating on or around clamps.

### Functional description

When operated, the pneumatic cylinder acts on an integrated toggle mechanism, which triggers the pivoting movement of the clamping arms.

## The clamp is warranted for 3 mln cycles in correct operating conditions

**No lubrication.**

**No preventive maintenance.**

External cleaning with non-corrosive detergents is required: cleaning interval depends on the ambient conditions as well as on the frequency of use.



## 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.

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

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



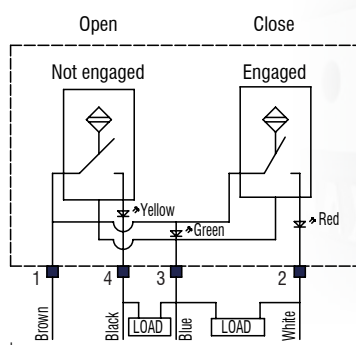
Pressure operating range: from 2 to 8 bar/ from 30 to 115 psi.  
Inline lubrication isn't required: if lubricated air is used, it is necessary to continue using lubricated air, as the oil in it may have removed the basic lubrication in the device.

## Electronic sensor

ES001 is used for all clamps' sizes and series. Adjustment of the connector: unscrew the tightening screw and set the connector in the required position, then secure the screw with 5 N m / 3.68 lb-ft.

### Technical features

Operating voltage	10-30 VDC
Voltage drop	≤ 2 V
Load current	≤ 100 mA
Current consumption	≤ 30 mA
Short-circuit protection	protected
Protection rating	IP68
Operating temperature	-0 °C +50 °C
Storage temperature	-25 °C +60 °C
Electromagnetic compatibility	EN 60947-5-2:2007 + A1:2012
Power supply indication	green LED
Open position indication	yellow LED
Closed position indication	red LED
Digital output type	PNP

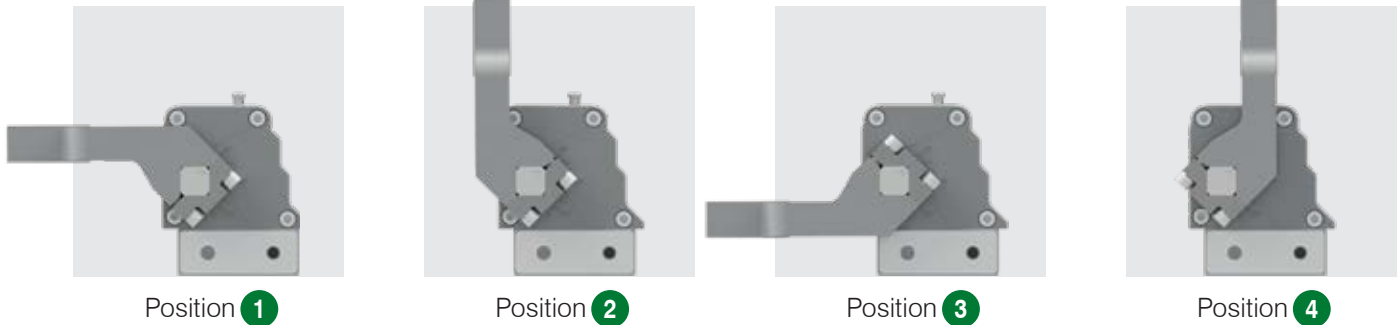


Simplified diagram (PNP)



To replace the sensor, remove the M5 screw and assemble a new one by tightening the same screw with 5 N m / 3.68 lb-ft.

## Arm mount options



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

**C1P/HE1P \_\_ 2A03 a right clamp arm is required, i.e. B/Q \_\_ 02**

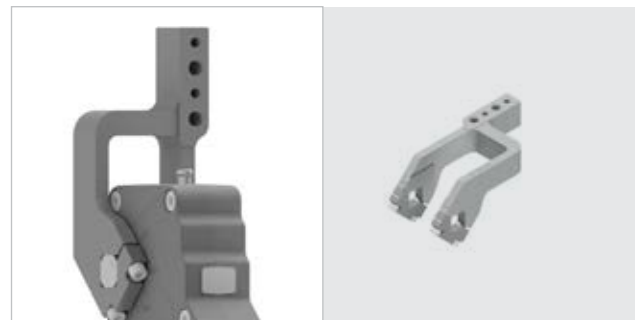
**C1P/HE1P \_\_ 2A02 a left clamp arm is required, i.e. B/Q \_\_ 03**

**C1P/HE1P \_\_ 2A05 a right clamp arm is required, i.e. B/Q \_\_ 06**

**C1P/HE1P \_\_ 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

## Clamping arm mount

The sides of the brackets have two different heights. Assemble the brackets to the side of the clamping arm, so that the surfaces, where the side mark has been machined on, will match. Secure, at first, the screw on the mark side **1** by setting the tightening torques indicated on the clamping arm datasheet, and leave no gap between the bracket and the arm. Then, secure the other screw **2**: in this case, due to the different length of the sides of the brackets, a gap between the same and the clamping arm will be noticed. Always use locking washers.



## Handles with knobs for manual levers

**RK7100/0015** Handle with green knob and bracket; D2 version for 25 and 32 mm bore clamps and manual pin packages RD250 and FD63

**RK7100/0005** Handle with green knob and bracket; D1 version for 40 mm bore clamps

**RK7100/0006** Handle with green knob and bracket; D2 version for 40 mm bore clamps

**RK7100/0003** Handle with green knob and bracket; D1 version for 50 and 63 mm bore clamps

**RK7100/0004** Handle with green knob and bracket; D2 version for 50 and 63 mm bore clamps

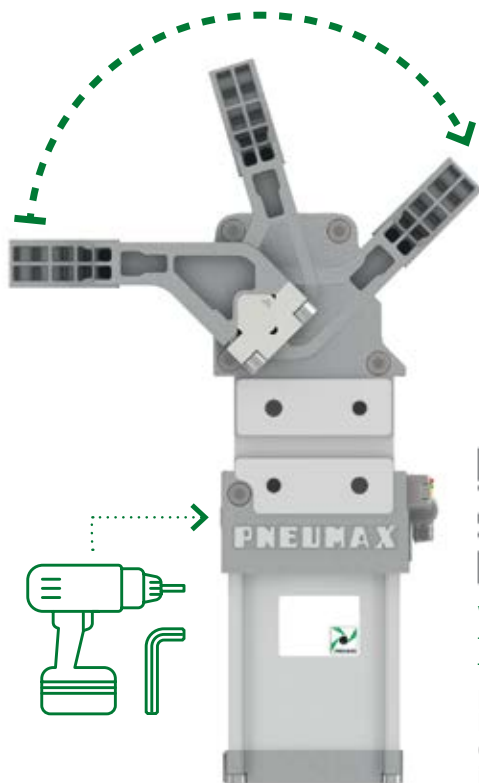
**RK7100/0007** Handle with green knob and bracket; D2 version for 80 mm bore clamps

The levers' kits include handle knob, bracket and M5 x 16 screws. Tightening torque: 5 N m/ 3.68 lb-ft.

The handles can be installed on the left or on the right side of the clamps- all manual clamps show a dual output shaft.

## Opening angle adjustment

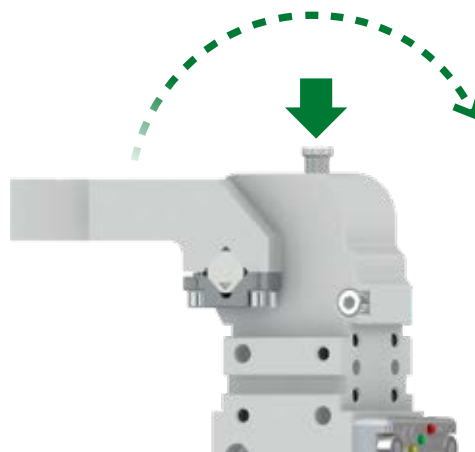
The clamping arm must be in the open position. Insert a 5 mm hexagonal flat Allen Wrench or a screw gun and adjust the opening position to the required opening angle.



Visit our website for a video of the adjustment procedure.  
**No adjustment of the sensor is required.**

## Manual release button

To manually unlock the mechanism, hit the bolt with a rubber mallet. The linkage will automatically release itself from the over-centre position. To close the clamps during set-up operations, without air, use a screw gun or a flat Allen wrench to engage the adjustment means and adjust the clamp till 0° opening angle: the linkage will be toggle-locked as the manual release button is completely outside.



## No need to disassemble the cylinder to rotate the ports' position

Supply-ports on both sides of the cylinder for a simpler set-up.

## Auto-retaining device

For mounting installations, where the load is subject to gravity force and could move from the clamp opening position, an auto-retaining device could be used. Please refer to our website for the respective documentation, under the accessories section. AR- series.



## Shims and spacers

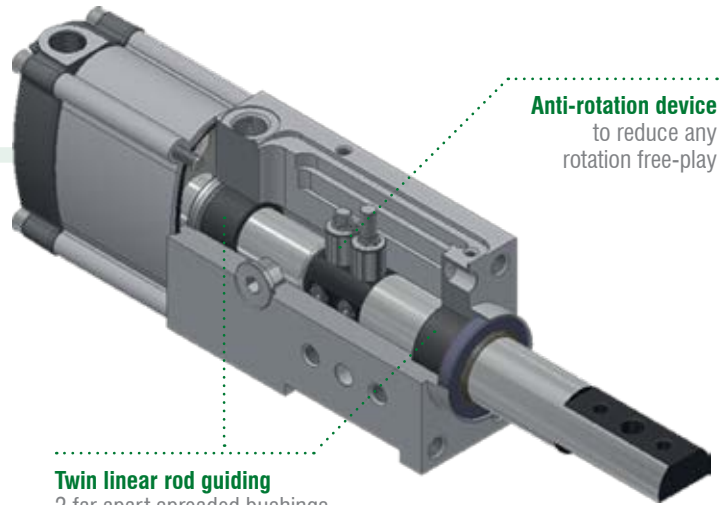
For an optimal setting of the clamping force, proceed as follows: place the NC blocks until contact is made with the workpiece, close the clamp and verify that the linkage is toggle-locked by checking that the release bolt is completely outside. Proceed by adding shims or spacers till the gap between the workpiece and the NC block is 0 mm, then add further shims so that the required clamping force is achieved. 0.3 mm shimming is the average interference recommended: please consider that the thickness of the shim to be chosen depends on the air pressure as well as on the clamping arm's length and clamp size. For any specific requirement, please contact our technical representatives at [automotive@pneumaxspa.com](mailto:automotive@pneumaxspa.com).





# Locating

High locating accuracy.  
High protection against welding debris and corrosion.



**Anti-rotation device**  
to reduce any rotation free-play

**Twin linear rod guiding**  
2 far apart spreaded bushings limit any deflection and improve the pin package accuracy over a long period of time.

LOCATING



**Extra-light products**



RP50 RP63 RM50 HP50 RD50 RT40 RTD40 RCD250 RC50 RC63 FP40 FP63 FT50 FTD50 RP32 RA32  
CNOMO

## High positioning accuracy level

Precise guiding through 2 far-apart spreaded bushings for an optimal support of the rods > twin piston rod guide

- Low deflection
- Efficient anti rotation mechanism

## Long life built-in components in rust prevention

- No weld covers or bellows required
- Steel and brass rod scraper to prevent welding debris from entering the pin package
- Chrome rod coating as a protection against adhering weld sparks

## High resistance to welding debris and corrosion

## Anti-rotation system to reduce any rotation free-play

## Locating products

LOCATING

### Dual rods

- Extra-light products
- Short body length
- Clear design with user-friendly surfaces and no dirt or welding deposit traps



### Nano pin packages



2-sided mounting option

Supply ports on 3 sides



Front  
mount

Rear  
mount



G ports  
on 3 sides

### High performance pin package

The heat generated from any welding process can cause a localized deformation in the workpiece when the metal cools, some parts could contract more than others, leaving residual stress.

To improve the process reliability, a higher level of pull force to disengage the pin can be required to overcome the tensions in the workpiece.

Pull force:  
**1960N**



### Cnomo

Pin packages according to Cnomo standard also available with manual operation.

**CNOMO**



### Retractable locating pin packages with toggle linkage

- Fully encapsulated toggle mechanism: in case of air loss, the working position remains secure
- Clear design with user-friendly surfaces



### Retractable locating pin packages with dual rods and toggle linkage

- Fully encapsulated toggle mechanism: in case of air loss, the working position remains secure
- Clear design with user-friendly surfaces and no dirt or welding deposit traps



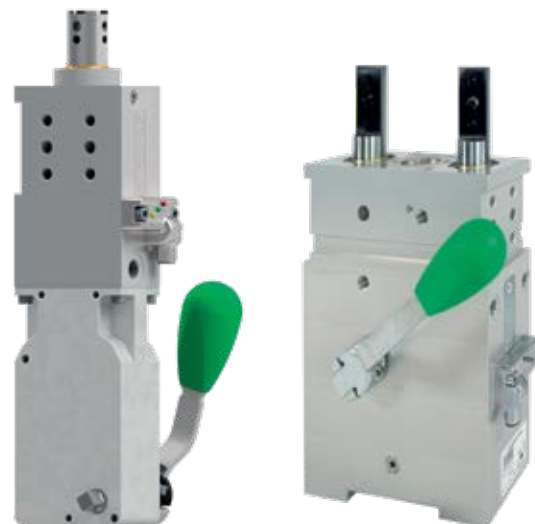
### Retractable locating pin packages with toggle linkage and manual operation

- Manual unlock mechanism to disengage the linkage in emergency situations



### Retractable locating pin packages with dual rods, toggle linkage and manual operation

- Manual unlock mechanism to disengage the linkage in emergency situations



# R-Series



## Retractable locating pin packages

### Technical features

Pneumatic ports on both sides of the cylinder.

#### Operating features

<b>Operating pressure</b>	from 2 to 8 bar / from 30 to 115 psi
<b>Lubrication</b>	all the devices are lubricated for life at the factory. Inline air lubrication isn't required

### Functional charts

#### Size 50 mm

##### • Max deflection

Stroke	Load (kg)	Load position <b>A</b> deviation (mm)	Load position <b>B</b> deviation (mm)	Load position <b>C</b> 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 (at 5 bar / 72.5 psi)

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

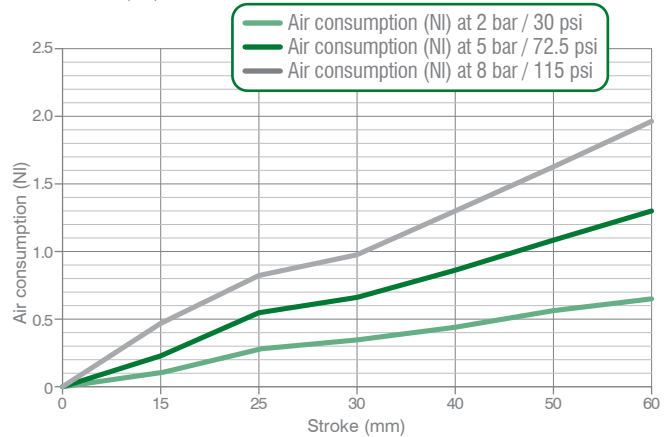
##### • Cycle time for max stroke

**< 0.8 s NO flow valve required**

##### • Air consumption

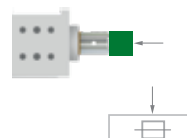
Air consumption for complete cycle

REV. 00 - 18/06/2015



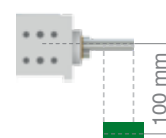
##### Load position **A**

Horizontal mounting position of the retractable locating pin/load centre on the rod



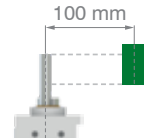
##### Load position **B**

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



## Size 63 mm

### • Max deflection

Stroke	Load (kg)	Load position <b>A</b> deviation (mm)	Load position <b>B</b> deviation (mm)	Load position <b>C</b> 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 (at 5 bar / 72.5 psi)

Thrust force	1,400 N
Pull force	1,555 N
Max bending moment	3 N m / 2.21 lb-ft
Max distance from the load centre to the rod	200 mm

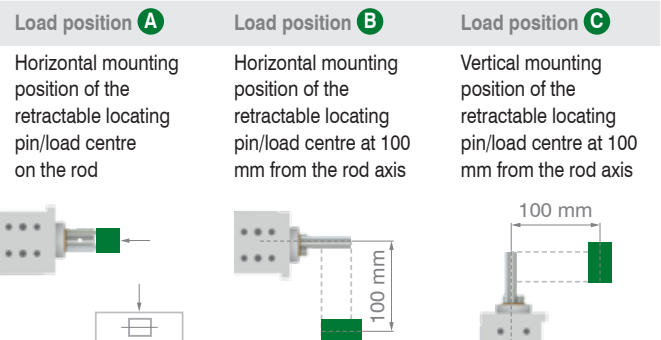
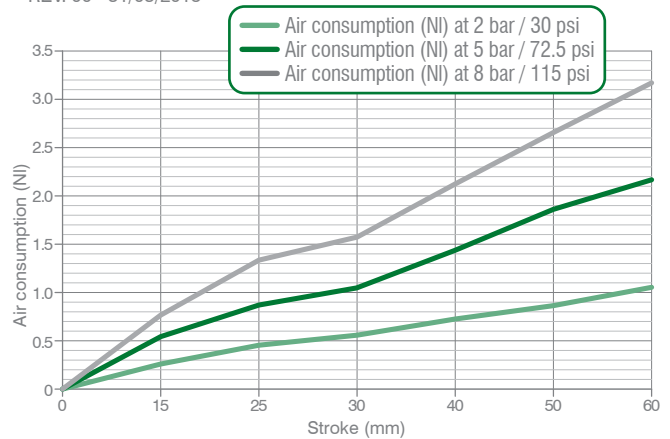
### • Cycle time for max stroke

< 0.8 s NO flow valve required

### • Air consumption

Air consumption for complete cycle

REV. 00 - 31/03/2015



Please get in touch with our technical representatives for any application which exceeds the above values, to find the appropriate solution for your application.

**R-Series / Ordering string**

**R\_32-series**

**R P 32 E 20 G 2**

LOCATING

<b>R</b>	<b>VERSION</b>	<b>R</b> = retractable locating pin package
<b>P</b>	<b>OPERATION</b>	<b>P</b> = pneumatic – sensor mounted on the end cap <b>A</b> = pneumatic – sensor mounted on the front side
<b>32</b>	<b>SIZE</b>	<b>32</b> = Ø 32 mm
<b>E</b>	<b>SENSOR</b>	<b>E</b> = electronic sensor with M12 swivel connector - PNP <b>A</b> = electronic sensor with M12 swivel connector - NPN <b>N</b> = no sensor <b>B</b> = electronic sensor with M8 swivel connector - PNP
<b>20</b>	<b>STROKE</b>	<b>20</b> = 20 mm <b>40</b> = 40 mm
<b>G</b>	<b>PORTS</b>	<b>G</b> = G thread – BSPP
<b>2</b>	<b>ROD TERMINATION</b>	<b>1</b> = iØ 16 mm cross-cut key rod termination <b>2</b> = iØ 10 mm cross-cut key rod termination



**Rod 1**

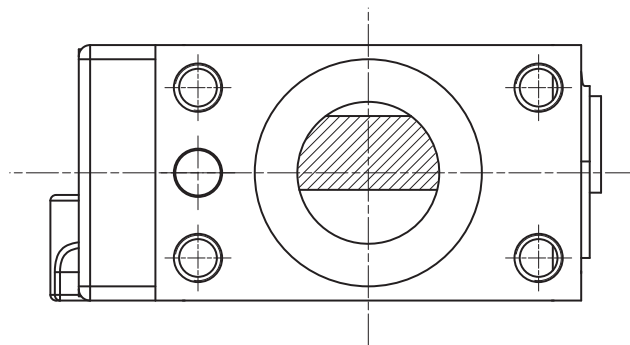
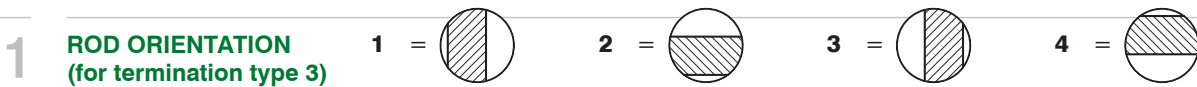


**Rod 2**

## R\_50/63-series

**R P 50 E 40 G 3 1**

<b>R</b>	<b>VERSION</b>	<b>R</b> = retractable locating pin package
<b>P</b>	<b>OPERATION</b>	<b>P</b> = pneumatic <b>D2</b> = pneumatic with manual operation (available in size 50)
<b>50</b>	<b>SIZE</b>	<b>50</b> = Ø 50 mm <b>63</b> = Ø 63 mm
<b>E</b>	<b>SENSOR</b>	<b>E</b> = electronic sensor with M12 swivel connector - PNP <b>A</b> = electronic sensor with M12 swivel connector - NPN <b>N</b> = no sensor <b>B</b> = electronic sensor with M8 swivel connector - PNP
<b>40</b>	<b>STROKE</b>	<b>15</b> = 15 mm <b>25</b> = 25 mm <b>40</b> = 40 mm <b>50</b> = 50 mm <b>60</b> = 60 mm
<b>G</b>	<b>PORTS</b>	<b>G</b> = G thread – BSPP
<b>3</b>	<b>ROD TERMINATION</b>	<b>1</b> = iØ 16 mm cross-cut key rod termination <b>2</b> = iØ 10 mm cross-cut key rod termination <b>3</b> = rod termination for offset pins <b>4</b> = rod termination with key <b>5</b> = rod with flat termination dia. 10 mm <b>6</b> = rod with flat termination dia. 12 mm <b>7</b> = iØ 12 mm CNOMO termination <b>8</b> = iØ 20 mm CNOMO termination



## RM250-series

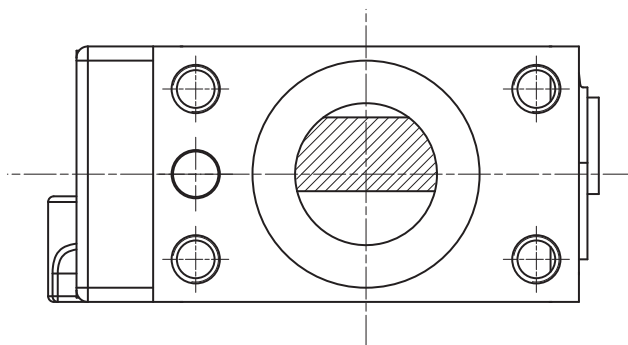
**R M2 50 E 15 3 1**

<b>R</b>	<b>VERSION</b>	<b>R</b> = retractable locating pin package
<b>M2</b>	<b>OPERATION</b>	<b>M2</b> = manual operation - handle included
<b>50</b>	<b>SIZE</b>	<b>50</b> = body corresponding to size 50
<b>E</b>	<b>SENSOR</b>	<b>E</b> = electronic sensor with M12 swivel connector - PNP <b>A</b> = electronic sensor with M12 swivel connector - NPN <b>N</b> = no sensor <b>B</b> = electronic sensor with M8 swivel connector - PNP
<b>15</b>	<b>STROKE</b>	<b>15</b> = 15 mm <b>25</b> = 25 mm <b>40</b> = 40 mm <b>50</b> = 50 mm <b>60</b> = 60 mm
<b>3</b>	<b>ROD TERMINATION</b>	<b>1</b> = iØ 16 mm cross-cut key rod termination <b>2</b> = iØ 10 mm cross-cut key rod termination <b>3</b> = rod termination for offset pins <b>4</b> = rod termination with key <b>5</b> = rod with flat termination dia. 10 mm <b>6</b> = rod with flat termination dia. 12 mm <b>7</b> = iØ 12 mm CNOMO termination <b>8</b> = iØ 20 mm CNOMO termination



**Rod 1    Rod 2    Rod 3    Rod 4    Rod 5    Rod 6    Rod 7    Rod 8**

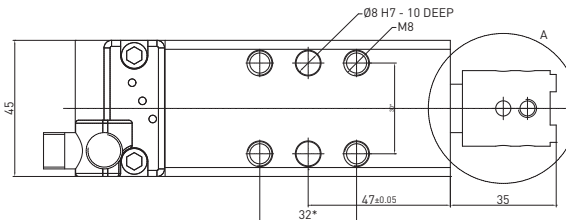
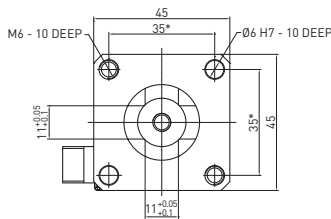
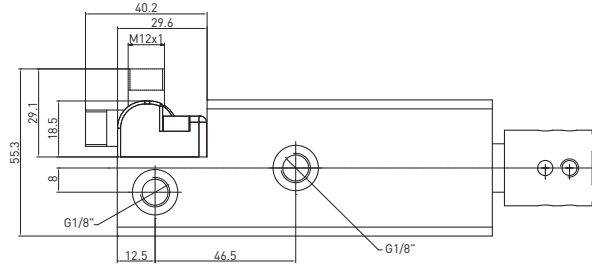
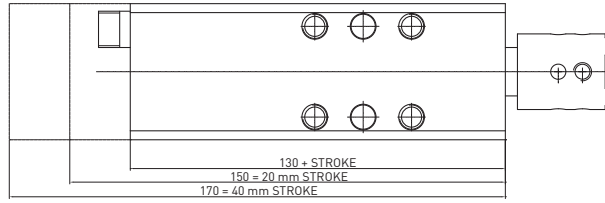
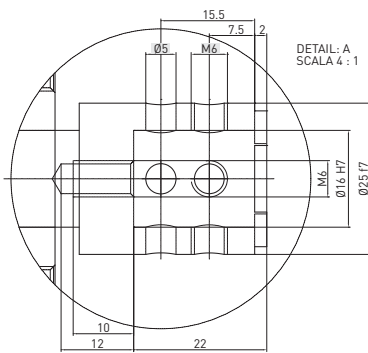
<b>1</b>	<b>ROD ORIENTATION (for termination type 3)</b>	<b>1</b> =	<b>2</b> =	<b>3</b> =	<b>4</b> =
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**RP32E \_1 / Retractable locating pin package - Size 32 mm - iØ 16 mm cross-cut key rod termination**

**WEIGHT 0.88 kg**  
min. stroke version

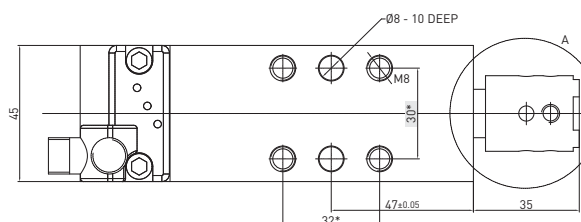
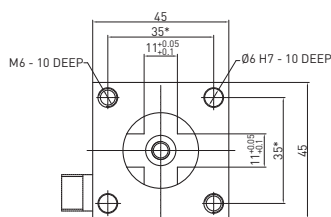
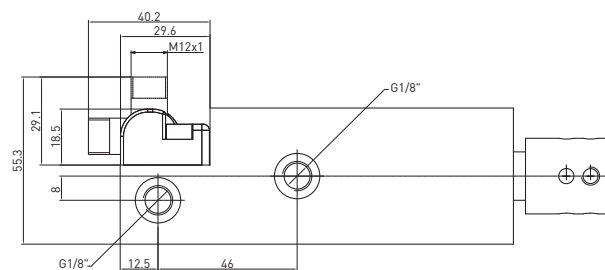
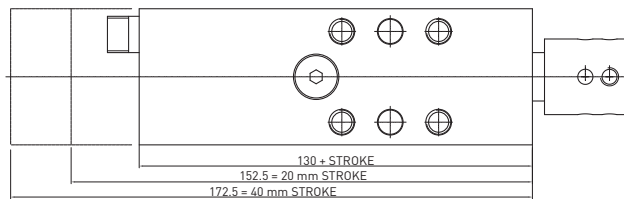
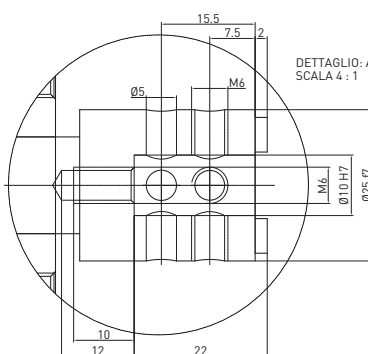


\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02  
DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 00 - 07/03/2017

**RP32E \_2 / Retractable locating pin package - Size 32 mm - iØ 10 mm cross-cut key rod termination**

**WEIGHT 0.88 kg**  
min. stroke version



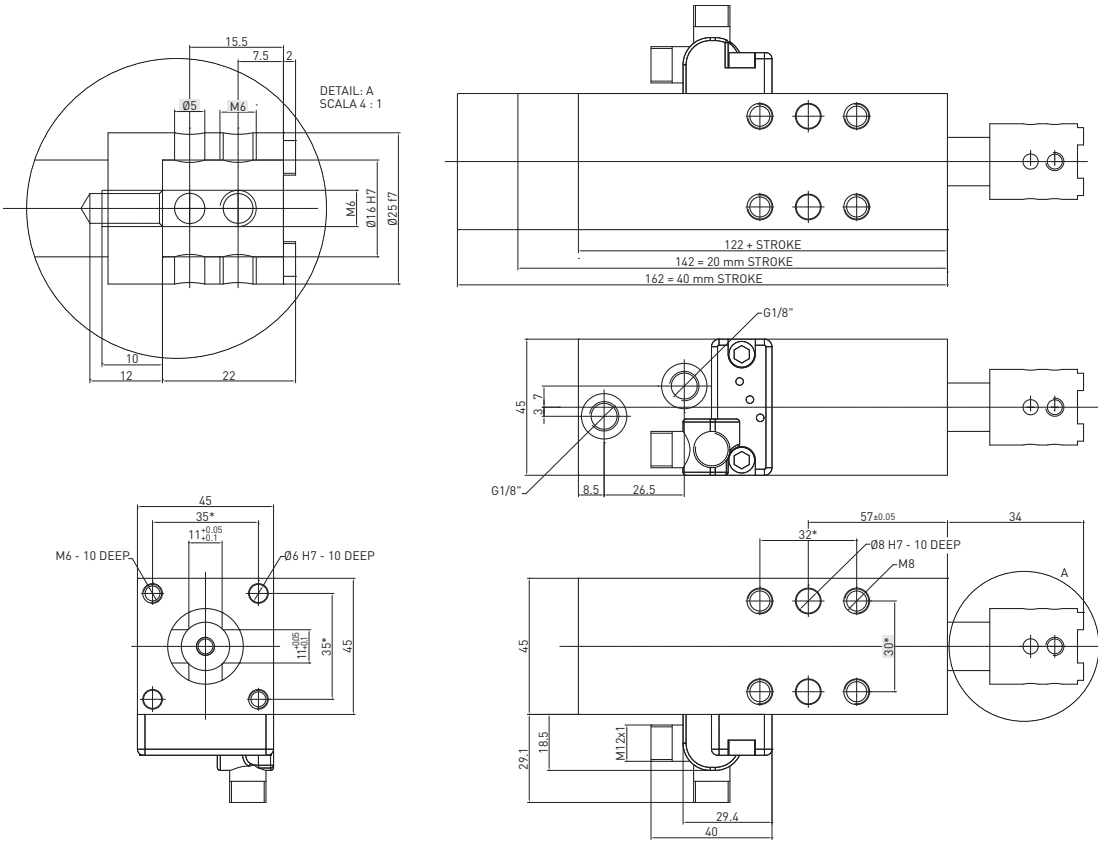
\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02  
DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 00 - 00/00/0000

**RA32E \_1 / Retractable locating pin package - Size 32 mm - iØ 16 mm cross-cut key rod termination**

**WEIGHT 0.94 kg**  
min. stroke version

LOCATING



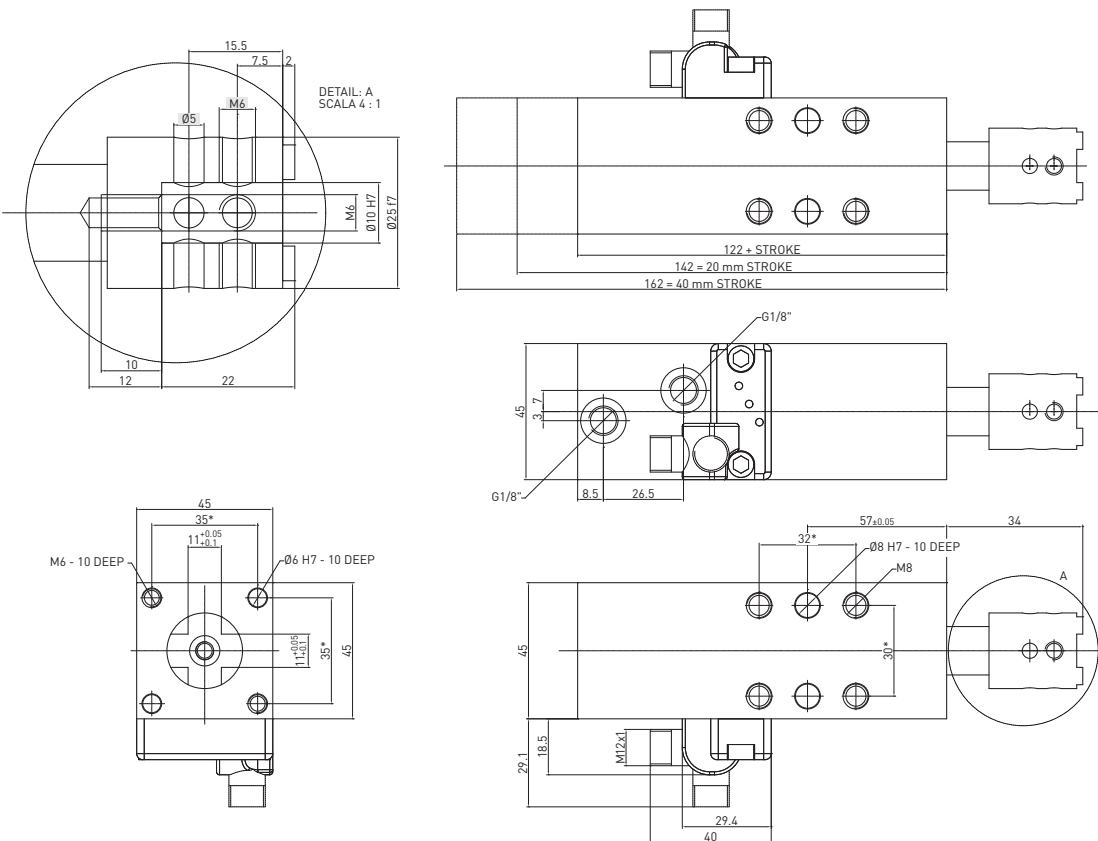
\* DIMENSIONAL  
TOLERANCE FOR  
DOWEL HOLES: ±0.02

DIMENSIONAL  
TOLERANCE FOR  
THREADED HOLES: ±0.1

REV. 02 - 12/01/2018

**RA32E \_2 / Retractable locating pin package - Size 32 mm - iØ 10 mm cross-cut key rod termination**

**WEIGHT 0.94 kg**  
min. stroke version

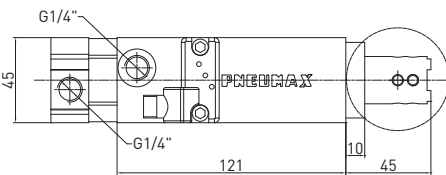
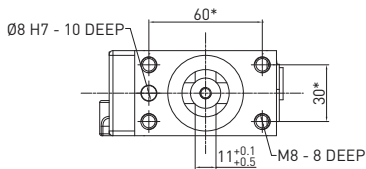
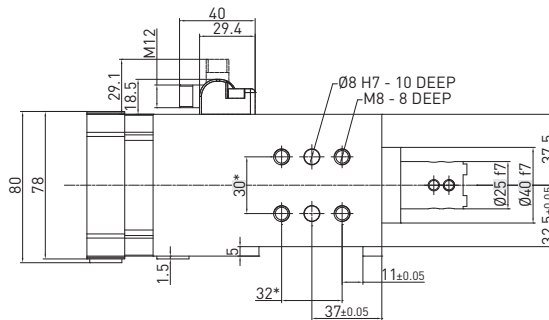
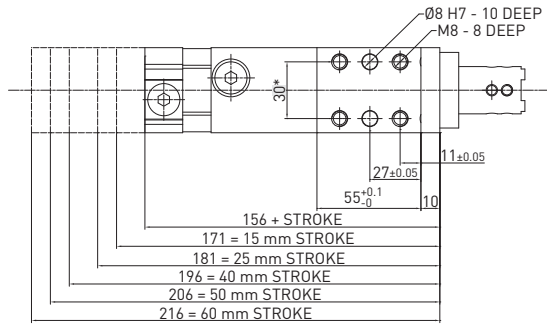
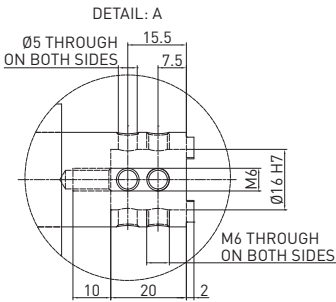


\* DIMENSIONAL  
TOLERANCE FOR  
DOWEL HOLES: ±0.02

DIMENSIONAL  
TOLERANCE FOR  
THREADED HOLES: ±0.1

REV. 02 - 12/01/2018

**RP50E \_1 / Retractable locating pin package - Size 50 mm - iØ 16 mm cross-cut key rod termination**



**WEIGHT 1.85 kg**  
min. stroke version

**WEIGHT 2.1 kg**  
max. stroke version

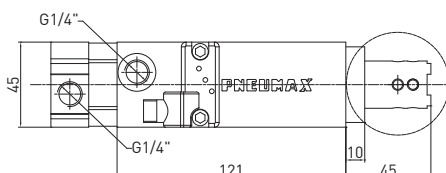
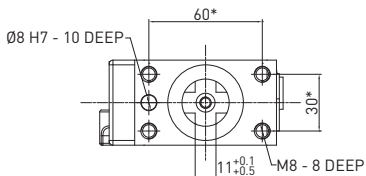
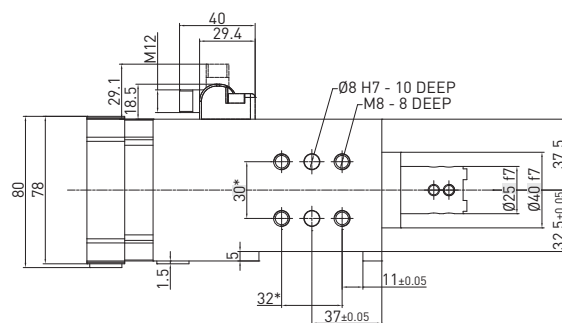
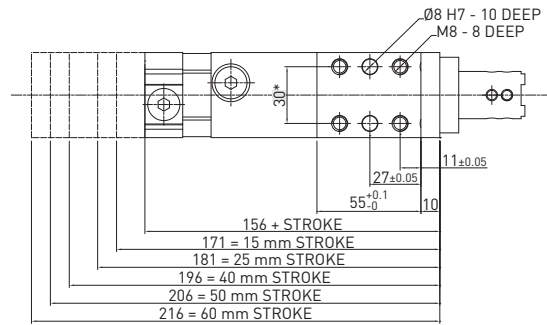
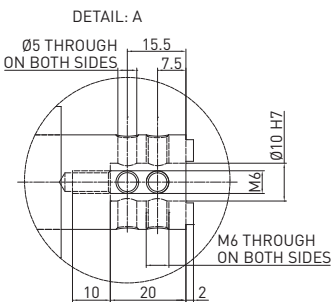
\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 01 - 26/02/2016

LOCATING

**RP50E \_2 / Retractable locating pin package - Size 50 mm - iØ 10 mm cross-cut key rod termination**



**WEIGHT 1.85 kg**  
min. stroke version

**WEIGHT 2.1 kg**  
max. stroke version

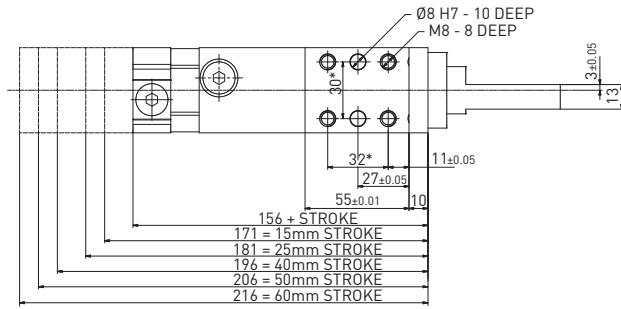
\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 01 - 26/02/2016

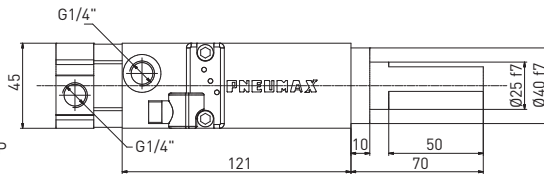
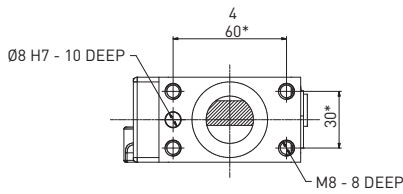
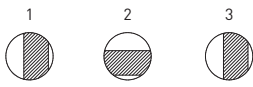
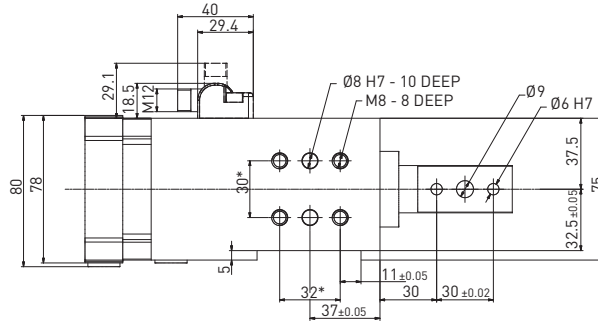
**RP50E\_3 / Retractable locating pin package - Size 50 mm - Rod termination for offset pins**

LOCATING



**WEIGHT 1.85 kg**  
min. stroke version

**WEIGHT 2.1 kg**  
max. stroke version

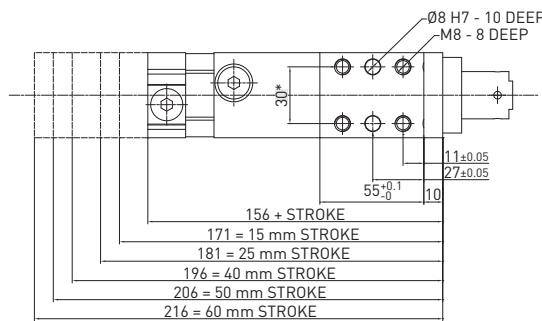
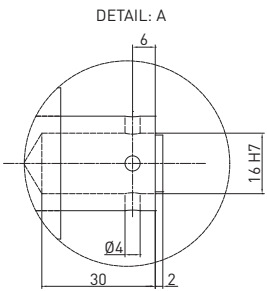


\* DIMENSIONAL  
TOLERANCE FOR  
DOWEL HOLES:  $\pm 0.02$

DIMENSIONAL  
TOLERANCE FOR  
THREADED HOLES:  $\pm 0.1$

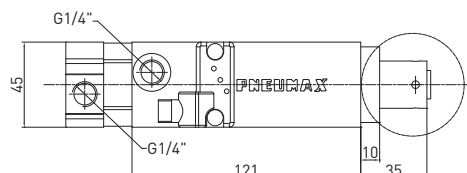
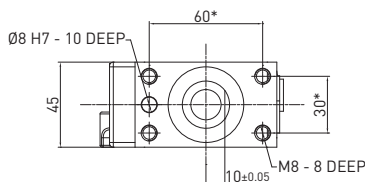
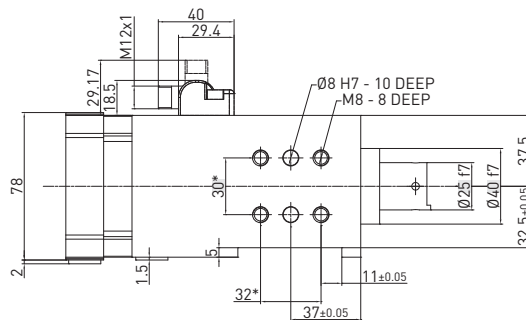
REV. 00 - 03/04/2015

**RP50E\_4 / Retractable locating pin package - Size 50 mm - Rod termination with key**



**WEIGHT 1.85 kg**  
min. stroke version

**WEIGHT 2.1 kg**  
max. stroke version



\* DIMENSIONAL  
TOLERANCE FOR  
DOWEL HOLES:  $\pm 0.02$

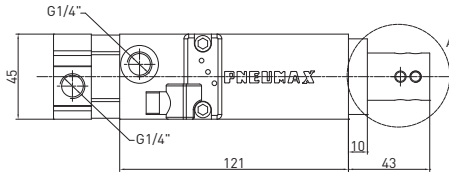
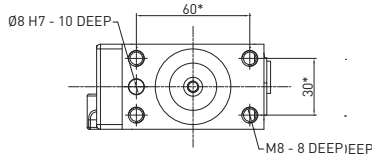
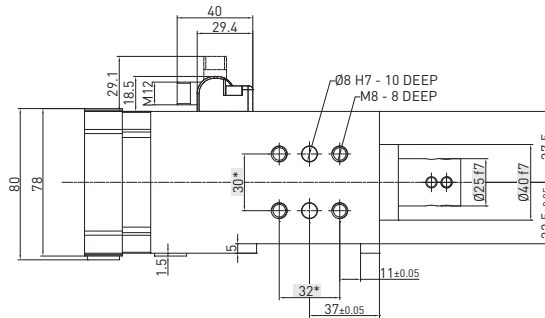
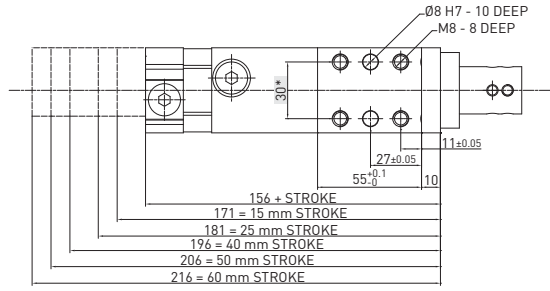
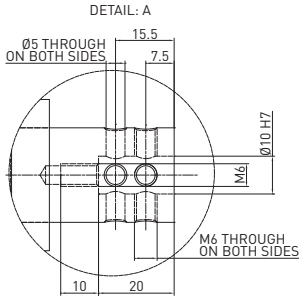
DIMENSIONAL  
TOLERANCE FOR  
THREADED HOLES:  $\pm 0.1$

REV. 02 - 31/03/2015

**RP50E\_5 / Retractable locating pin package - Size 50 mm - iØ 10 mm flat termination**

**WEIGHT 1.85 kg**  
min. stroke version

**WEIGHT 2.1 kg**  
max. stroke version



\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

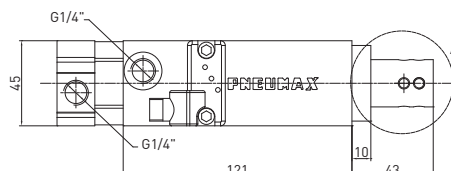
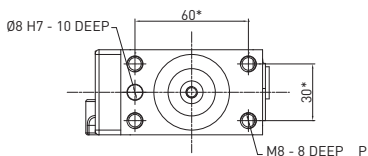
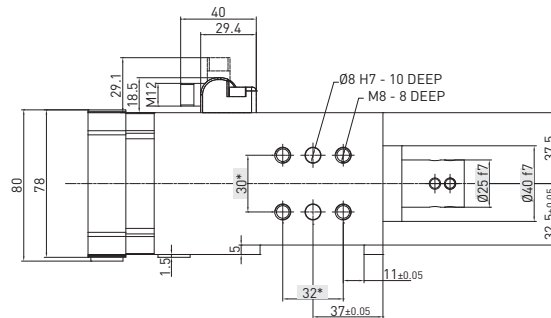
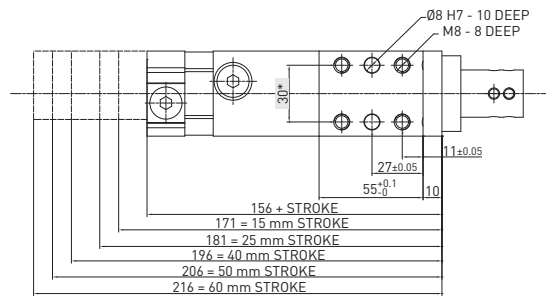
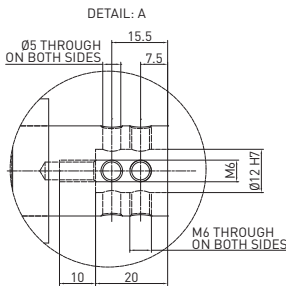
REV. 00 - 14/03/2016

LOCATING

**RP50E\_6 / Retractable locating pin package - Size 50 mm - iØ 12 mm flat termination**

**WEIGHT 1.85 kg**  
min. stroke version

**WEIGHT 2.1 kg**  
max. stroke version



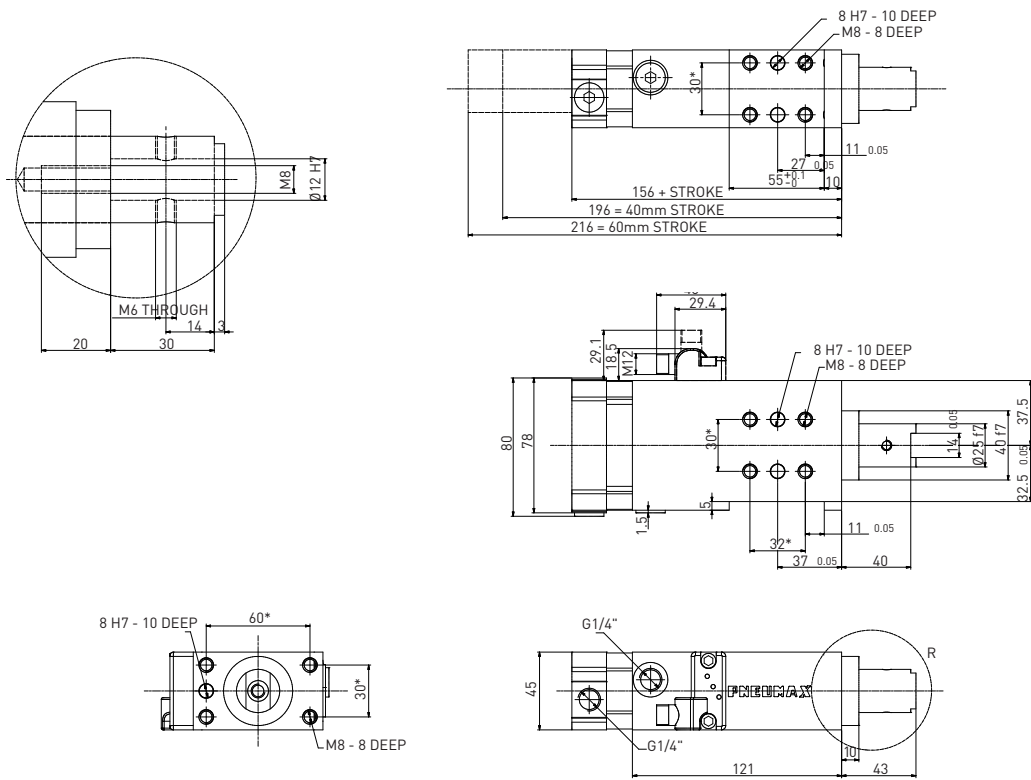
\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 01 - 26/02/2016

**RP50E\_7 / Retractable locating pin package - Size 50 mm - iØ 12 mm CNOMO termination**

LOCATING



**WEIGHT 1.85 kg**  
min. stroke version

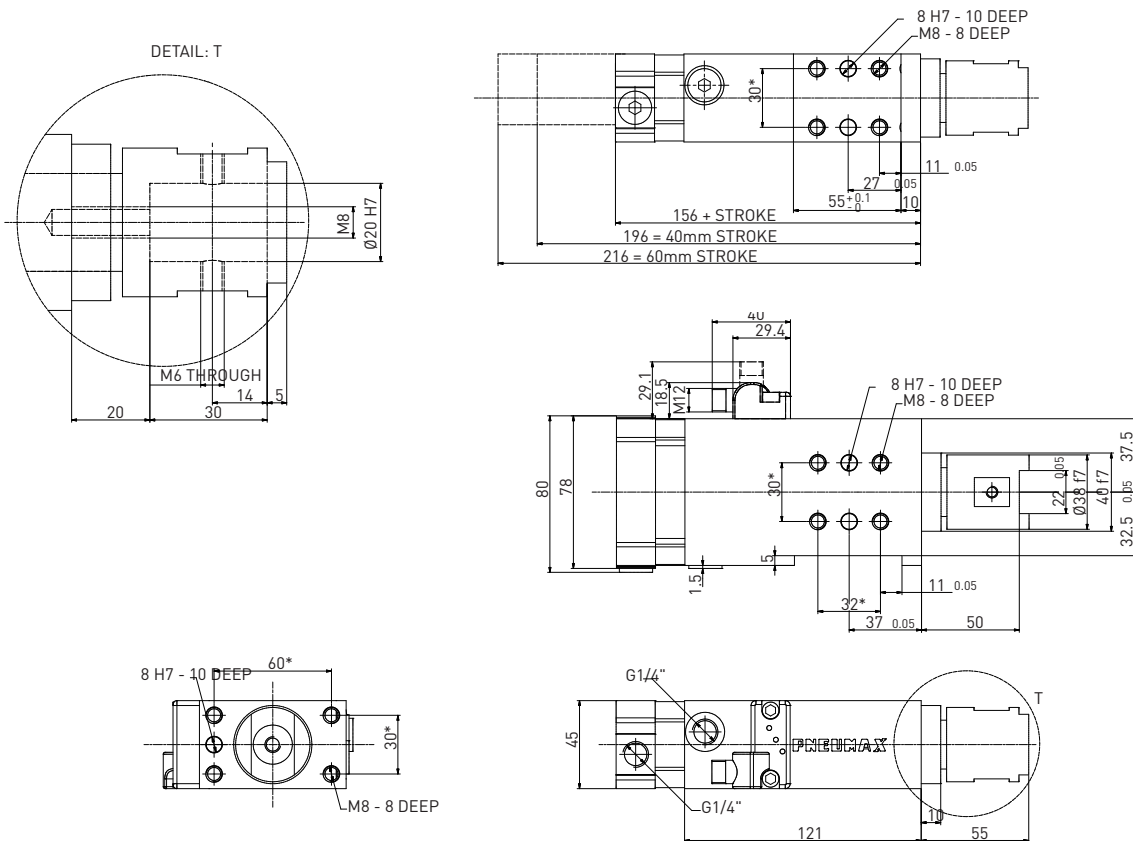
**WEIGHT 2.1 kg**  
max. stroke version

\* DIMENSIONAL  
TOLERANCE FOR  
DOWEL HOLES: ±0.02

DIMENSIONAL  
TOLERANCE FOR  
THREADED HOLES: ±0.1

REV. 00 - 26/09/2017

**RP50E\_8 / Retractable locating pin package - Size 50 mm - iØ 20 mm CNOMO termination**



**WEIGHT 1.85 kg**  
min. stroke version

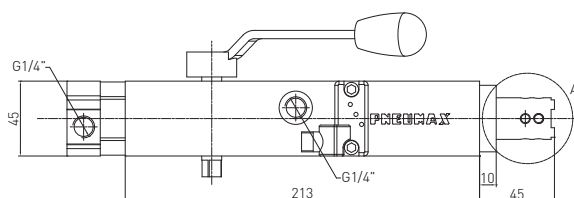
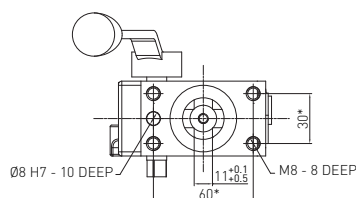
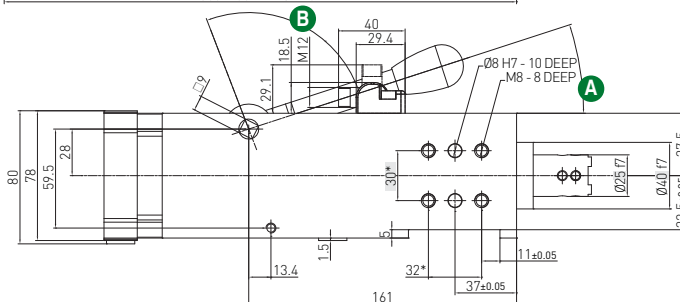
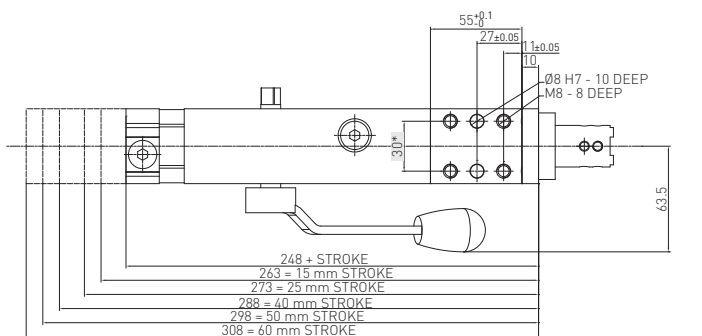
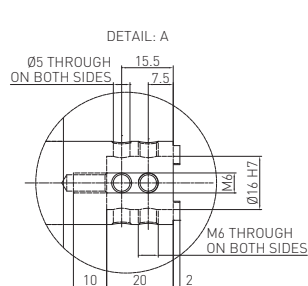
**WEIGHT 2.1 kg**  
max. stroke version

\* DIMENSIONAL  
TOLERANCE FOR  
DOWEL HOLES: ±0.02

DIMENSIONAL  
TOLERANCE FOR  
THREADED HOLES: ±0.1

REV. 00 - 26/09/2017

**RD250E\_1 / Retractable locating pin package - Size 50 mm - iØ 16 mm cross-cut key rod termination with manual operation**



**WEIGHT 1.85 kg**  
min. stroke version

**WEIGHT 3.1 kg**  
max. stroke version

**Handle swivel angle**

Stroke	A Handle swivel angle	B Handle swivel angle
15	90°	18°
25	70°	38°
40	42°	76°
50	25°	83°
60	15°	93°

Max Hand Force: 200 N

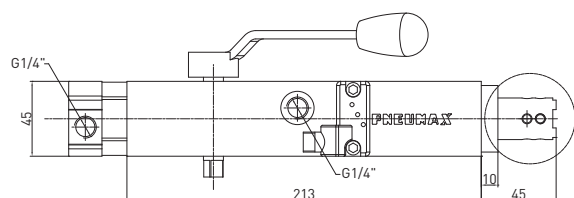
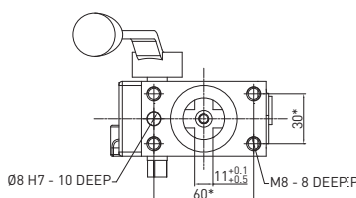
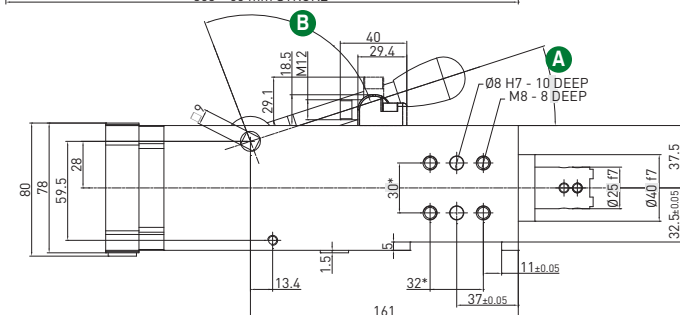
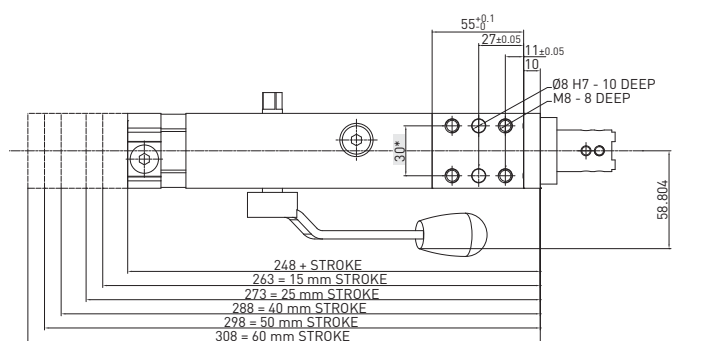
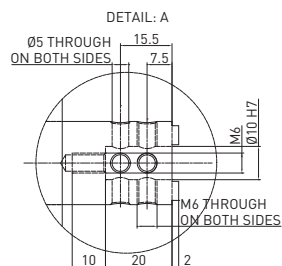
\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 00 - 05/03/2018

LOCATING

**RD250E\_2 / Retractable locating pin package - Size 50 mm - iØ 10 mm cross-cut key rod termination with manual operation**



**WEIGHT 1.85 kg**  
min. stroke version

**WEIGHT 3.1 kg**  
max. stroke version

**Handle swivel angle**

Stroke	A Handle swivel angle	B Handle swivel angle
15	90°	18°
25	70°	38°
40	42°	76°
50	25°	83°
60	15°	93°

Max Hand Force: 200 N

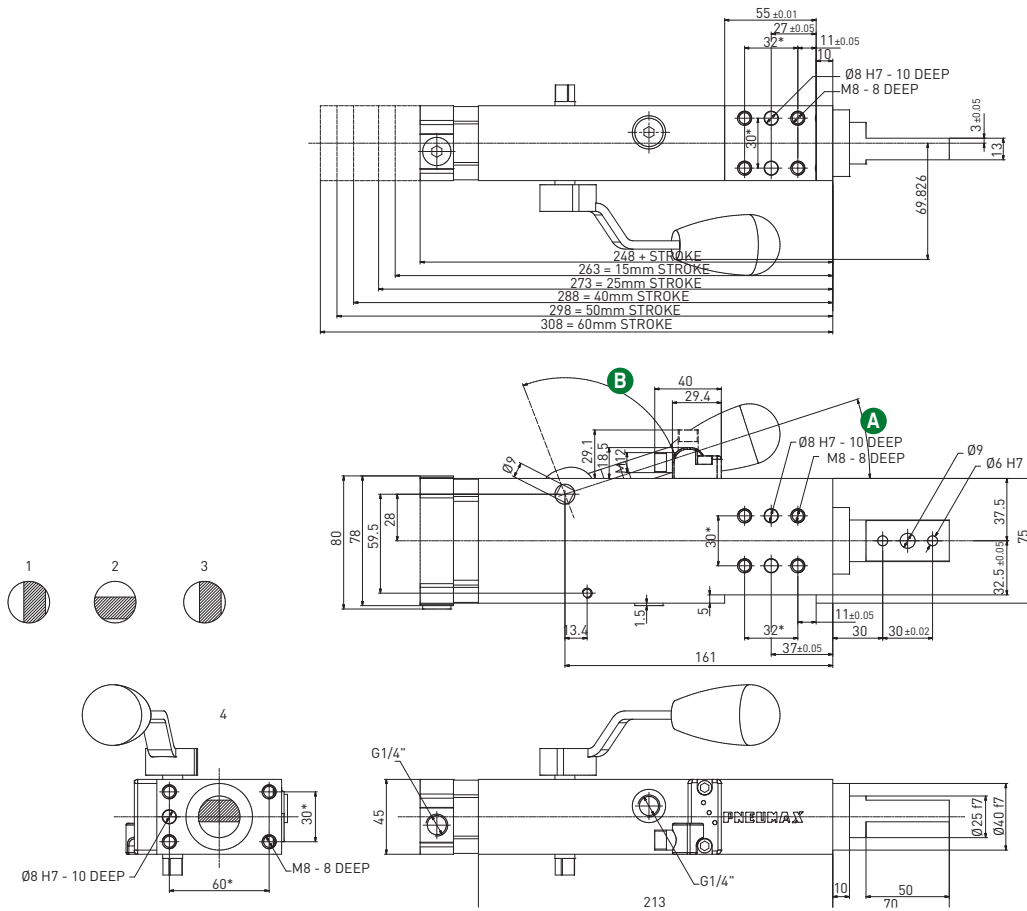
\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 01 - 26/02/2016

**RD250E\_3 / Retractable locating pin package - Size 50 mm - Rod termination for offset pins with manual operation**

LOCATING



**WEIGHT 1.85 kg**  
min. stroke version

**WEIGHT 3.1 kg**  
max. stroke version

**Handle swivel angle**

Stroke	<b>A</b> Handle swivel angle	<b>B</b> Handle swivel angle
15	90°	18°
25	70°	38°
40	42°	76°
50	25°	83°
60	15°	93°

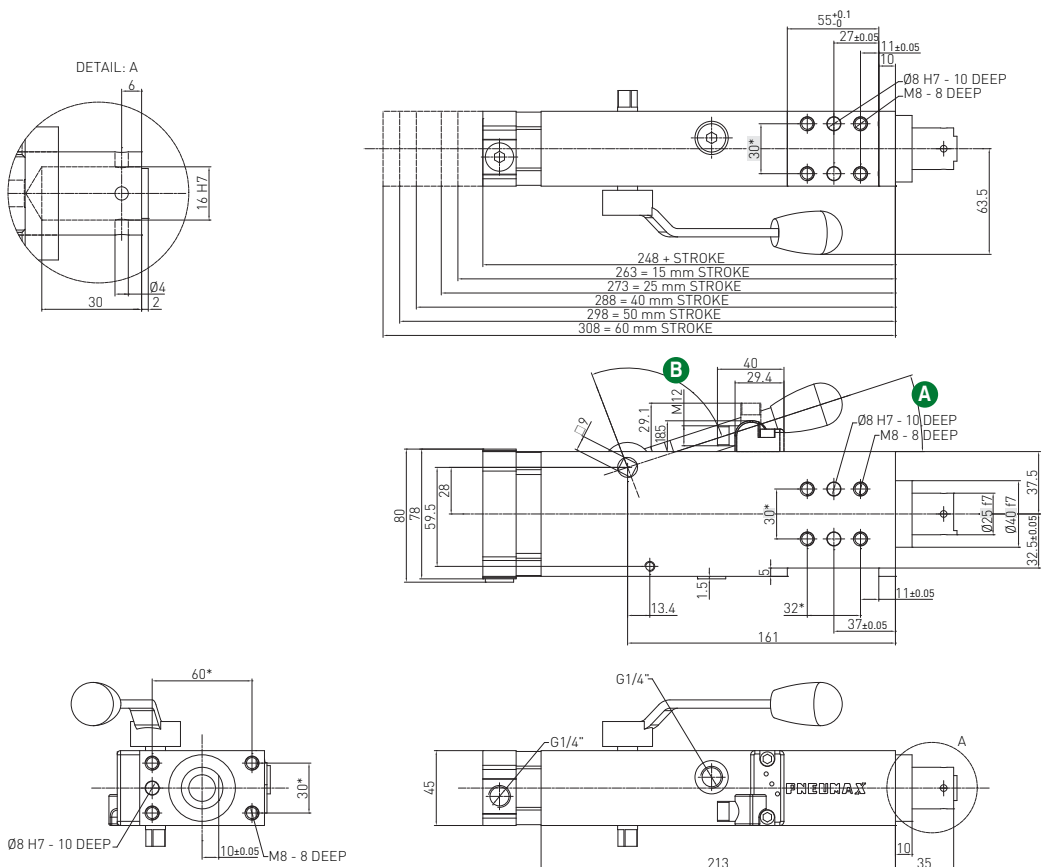
Max Hand Force: 200 N

\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 03 - 05/03/2018

**RD250E\_4 / Retractable locating pin package - Size 50 mm - Rod termination with key with manual operation**



**WEIGHT 2.85 kg**  
min. stroke version

**WEIGHT 3.1 kg**  
max. stroke version

**Handle swivel angle**

Stroke	<b>A</b> Handle swivel angle	<b>B</b> Handle swivel angle
15	90°	18°
25	70°	38°
40	42°	76°
50	25°	83°
60	15°	93°

Max Hand Force: 200 N

\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

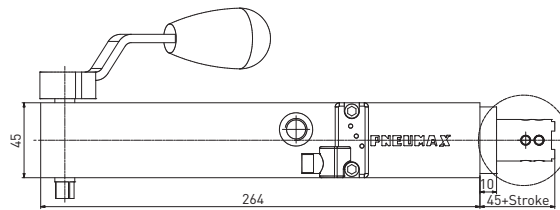
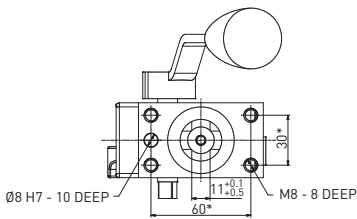
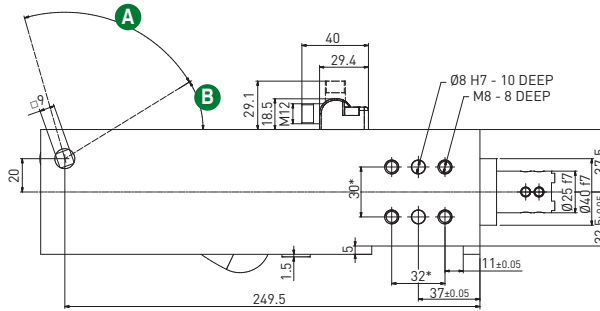
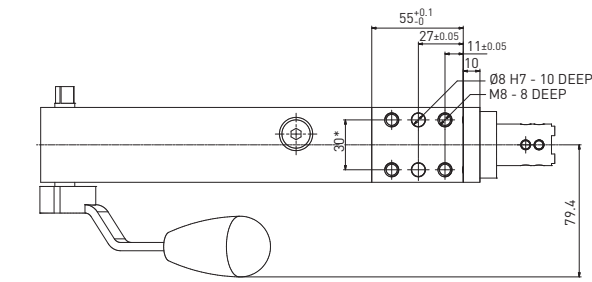
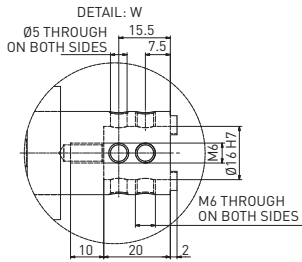
DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 04 - 05/03/2018



**RM250 \_1 / Manual retractable locating pin package - Size 50 mm - iØ 16 mm cross-cut key rod termination**

WEIGHT 3.2 kg



Max Hand Force: 200 N

\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

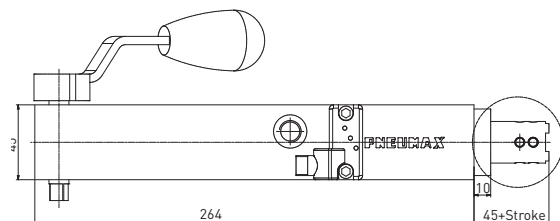
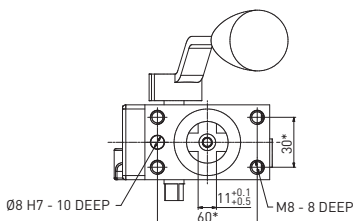
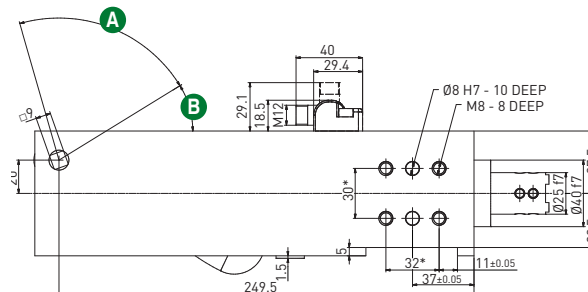
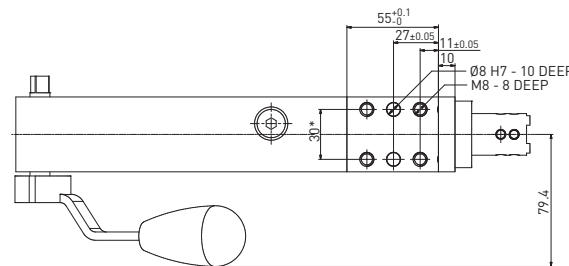
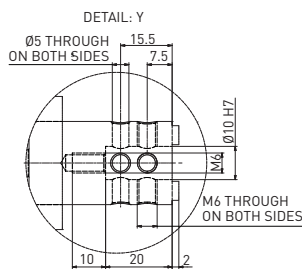
DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 00 - 27/01/2022

LOCATING

**RM250 \_2 / Manual retractable locating pin package - Size 50 mm - iØ 16 mm cross-cut key rod termination**

WEIGHT 3.2 kg



Max Hand Force: 200 N

\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

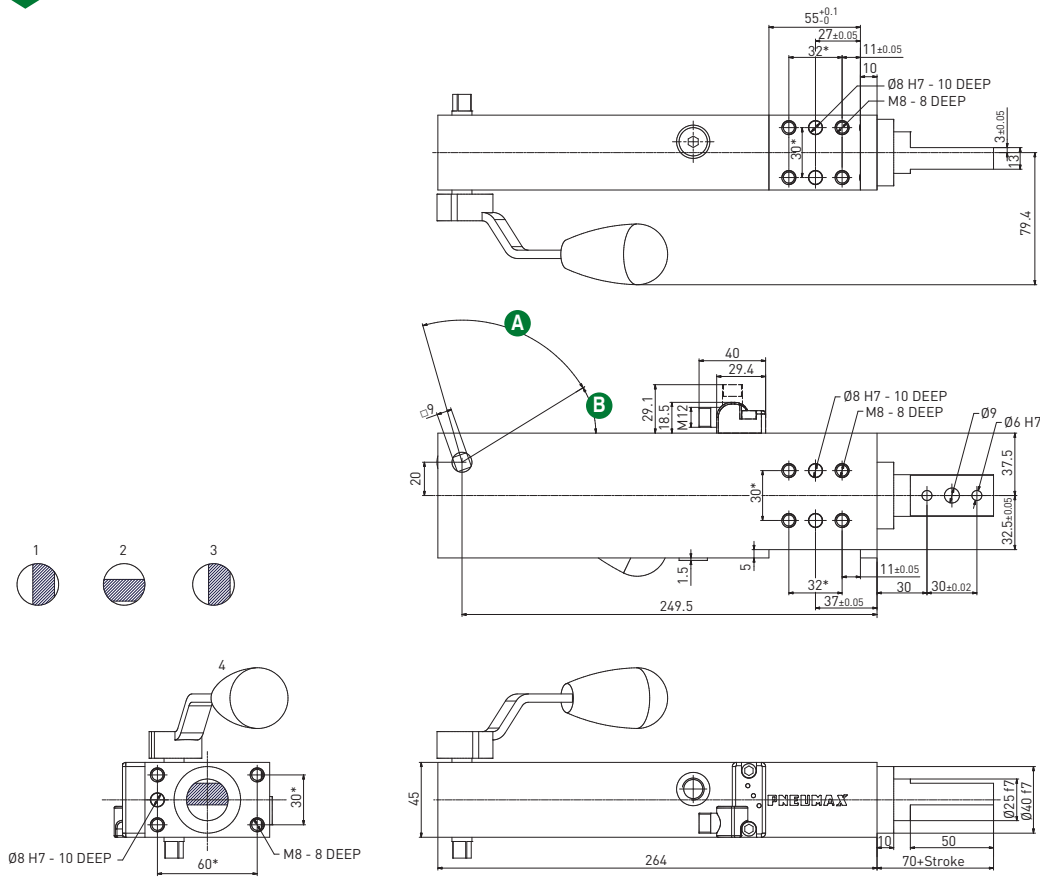
DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 00 - 27/01/2022

**RM250\_3 / Manual retractable locating pin package - Size 50 mm - iØ 16 mm cross-cut key rod termination**



**WEIGHT 3.2 kg**



Max Hand Force: 200 N

\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

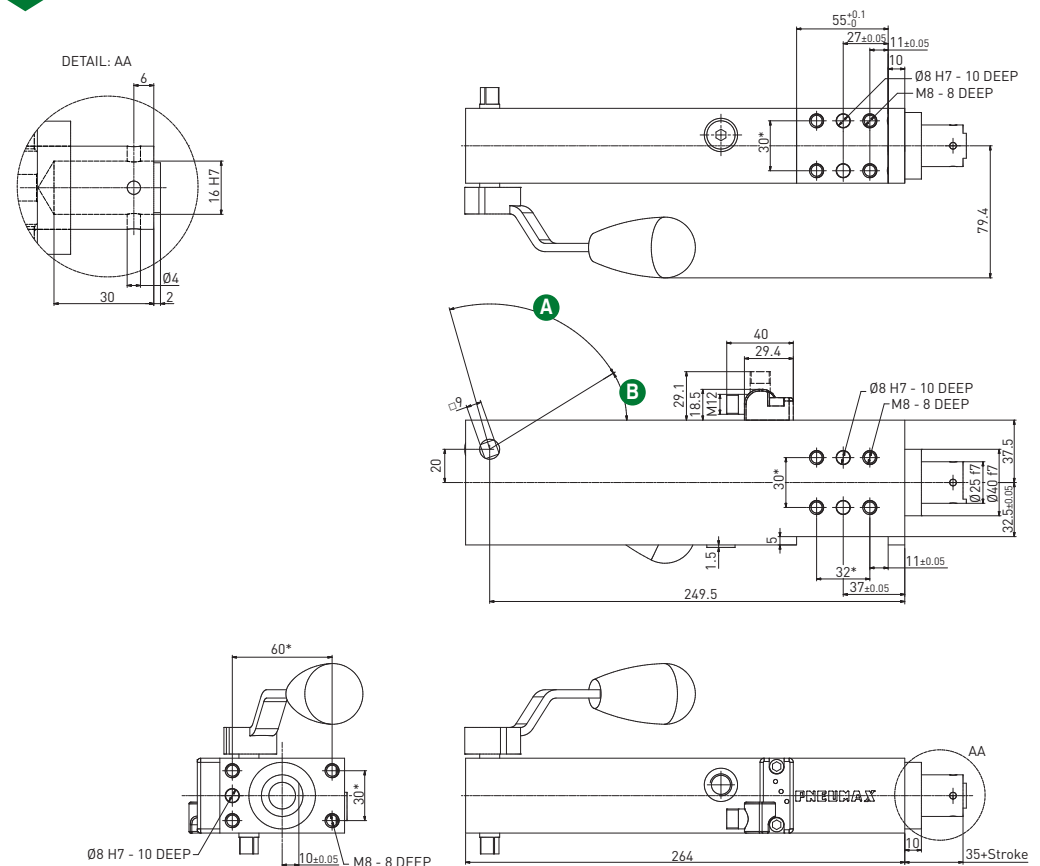
DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 00 - 27/01/2022

**RM250\_4 / Manual retractable locating pin package - Size 50 mm - iØ 16 mm cross-cut key rod termination**



**WEIGHT 3.2 kg**



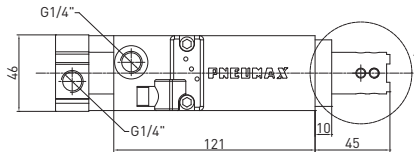
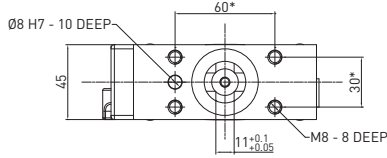
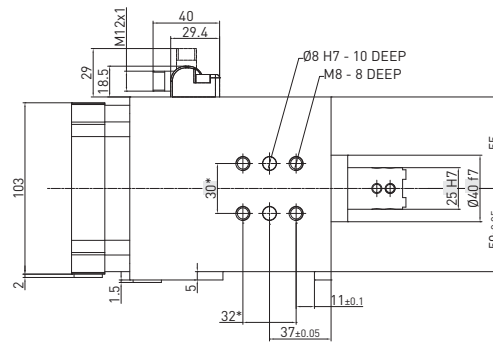
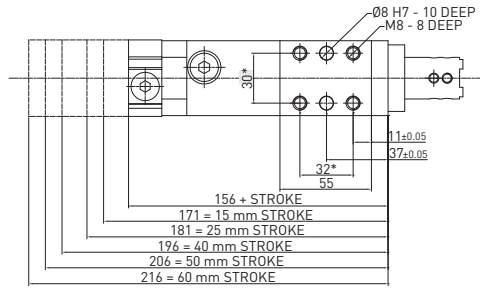
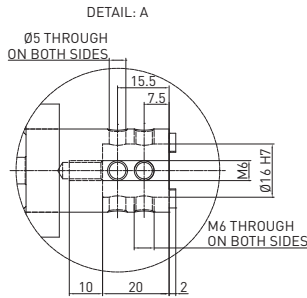
Max Hand Force: 200 N

\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 00 - 27/01/2022

**RP63E \_1 / Retractable locating pin package - Size 63 mm - iØ 16 mm cross-cut key rod termination**



**WEIGHT 2.45 kg**  
min. stroke version

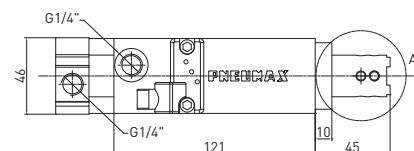
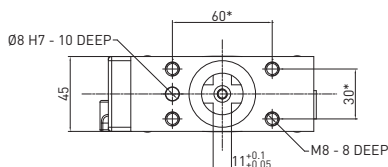
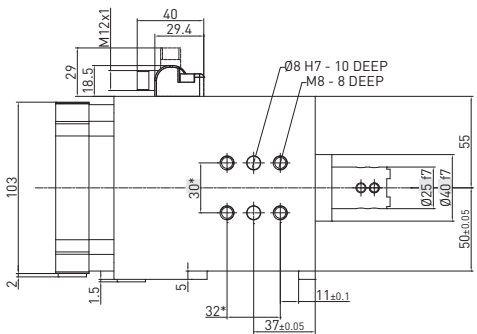
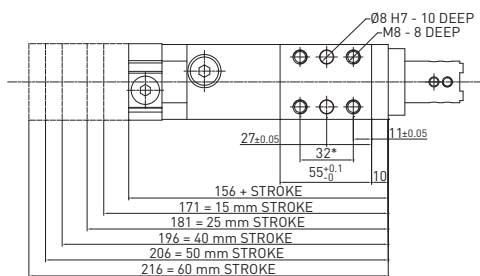
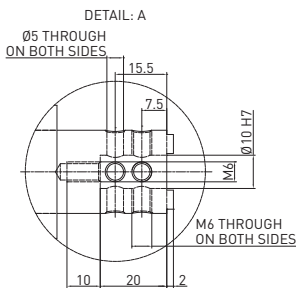
**WEIGHT 2.75 kg**  
max. stroke version

\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 01 - 29/02/2016

**RP63E \_2 / Retractable locating pin package - Size 63 mm - iØ 10 mm cross-cut key rod termination**



**WEIGHT 2.45 kg**  
min. stroke version

**WEIGHT 2.75 kg**  
max. stroke version

\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

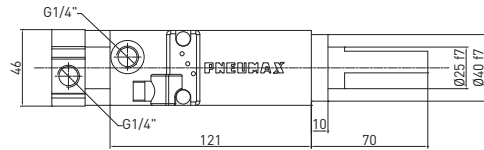
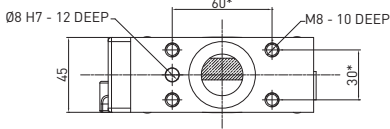
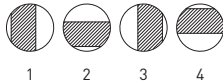
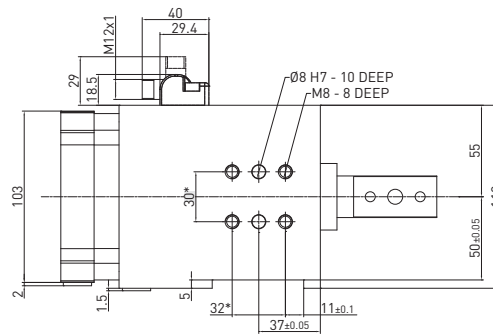
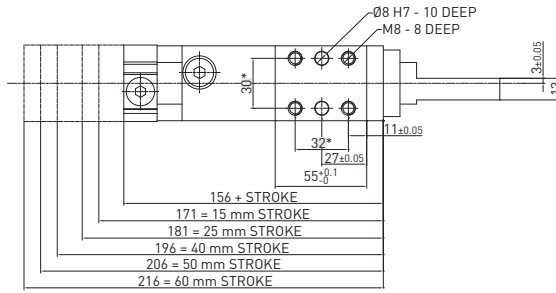
DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 01 - 29/02/2016

**RP63E\_3 / Retractable locating pin package - Size 63 mm - Rod termination for offset pins**

**WEIGHT 2.45 kg**  
min. stroke version

**WEIGHT 2.75 kg**  
max. stroke version



\* DIMENSIONAL  
TOLERANCE FOR  
DOWEL HOLES: ±0.02

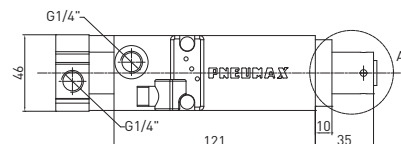
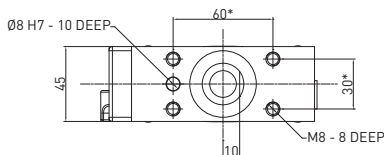
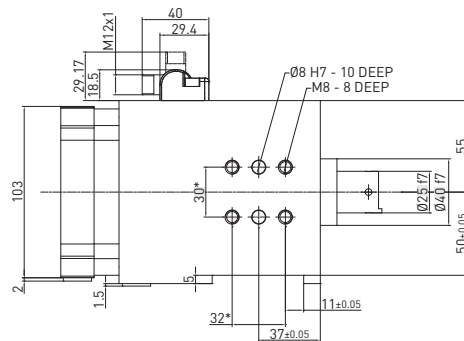
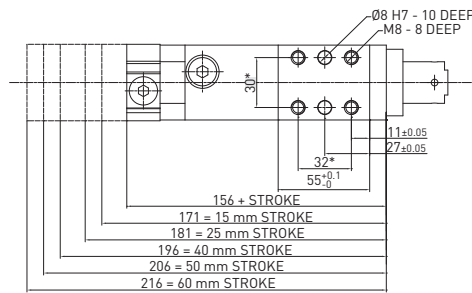
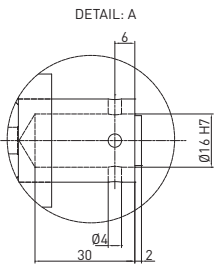
DIMENSIONAL  
TOLERANCE FOR  
THREADED HOLES: ±0.1

REV. 00 - 31/03/2015

**RP63E\_4 / Retractable locating pin package - Size 63 mm - Rod termination with key**

**WEIGHT 2.45 kg**  
min. stroke version

**WEIGHT 2.75 kg**  
max. stroke version



\* DIMENSIONAL  
TOLERANCE FOR  
DOWEL HOLES: ±0.02

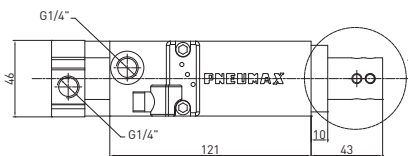
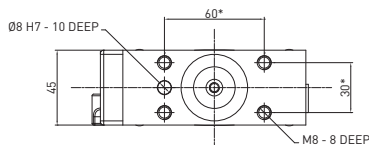
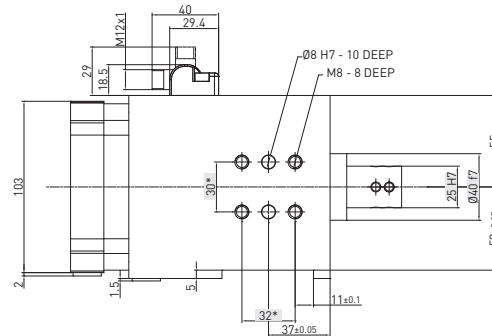
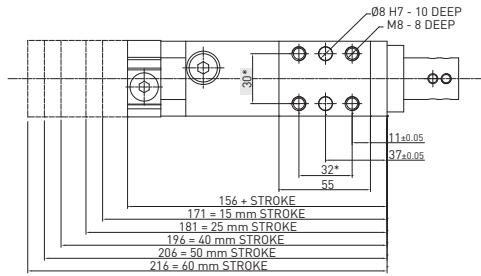
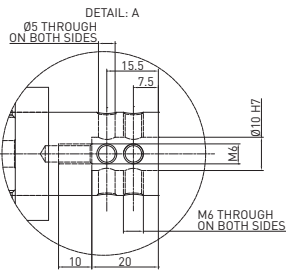
DIMENSIONAL  
TOLERANCE FOR  
THREADED HOLES: ±0.1

REV. 00 - 31/03/2015

**RP63E\_5 / Retractable locating pin package - Size 63 mm - iØ 10 mm flat termination**

**WEIGHT 2.45 kg**  
min. stroke version

**WEIGHT 2.75 kg**  
max. stroke version



\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

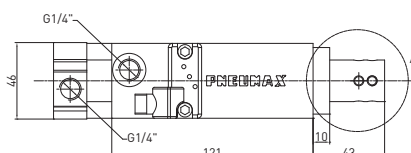
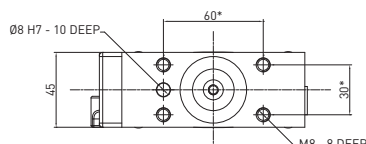
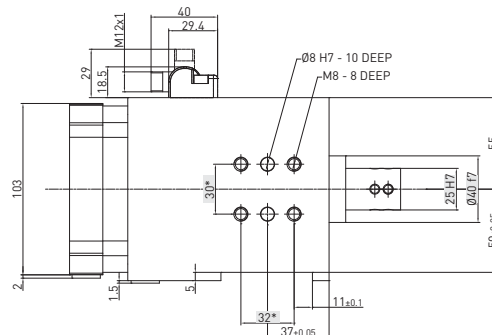
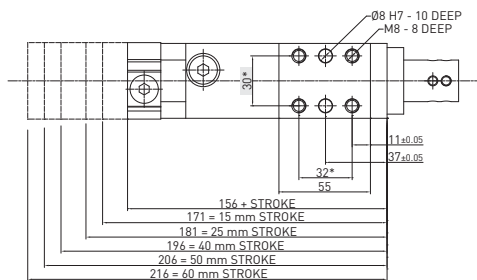
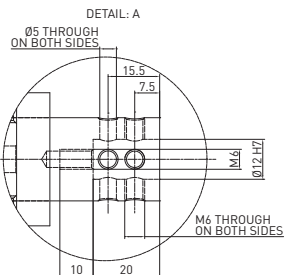
REV. 00 -15/03/2016

LOCATING

**RP63E\_6 / Retractable locating pin package - Size 63 mm - iØ 12 mm flat termination**

**WEIGHT 2.45 kg**  
min. stroke version

**WEIGHT 2.75 kg**  
max. stroke version



\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 00 -15/03/2016

# RT-Series



## Retractable locating pin packages with toggle linkage

- Fully encapsulated toggle mechanism: in case of air loss, the working position remains secure
- Manual unlock mechanism to disengage the linkage in emergency situations
- Position repeatability  $\pm 0.05$  mm
- Clear design with user-friendly surfaces and no dirt or welding deposit traps

LOCATING

### Technical features

Pneumatic ports on both sides of the cylinder.

#### Operating features

**Operating pressure** from 2 to 8 bar / from 30 to 115 psi

**Lubrication** all the devices are lubricated for life at the factory. Inline air lubrication isn't required

### Functional charts

#### Size 40 mm

##### • Max deflection

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

##### • Functional data (at 5 bar / 72.5 psi)

Thrust force at end stroke	2700 N
----------------------------	--------

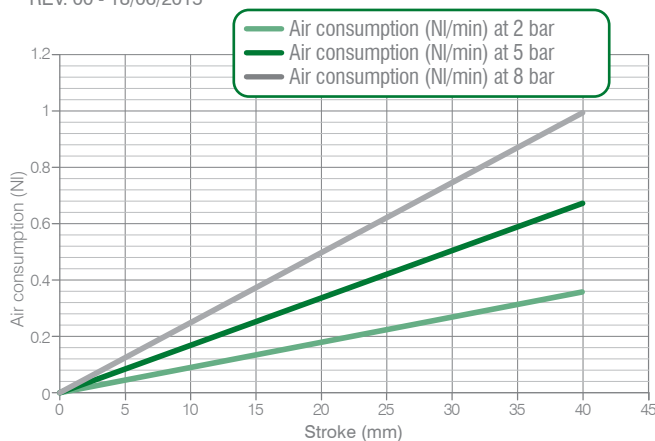
##### • Cycle time for max stroke

< 0.8 s **NO flow valve required**

##### • Air consumption

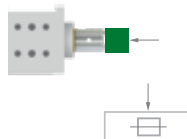
Air consumption for complete cycle

REV. 00 - 18/06/2015



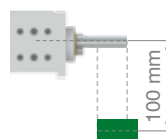
##### Load position A

Horizontal mounting position of the retractable locating pin/load centre on the rod



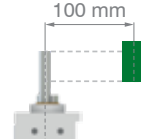
##### Load position B

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

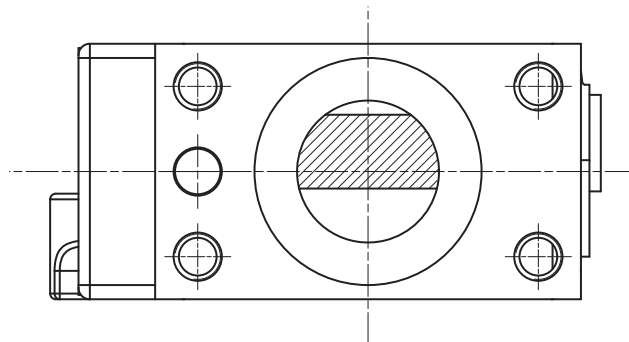


RT-Series / Ordering string

RT\_40-series

**R** **T** **40** **E** **40** **G** **3** **1**

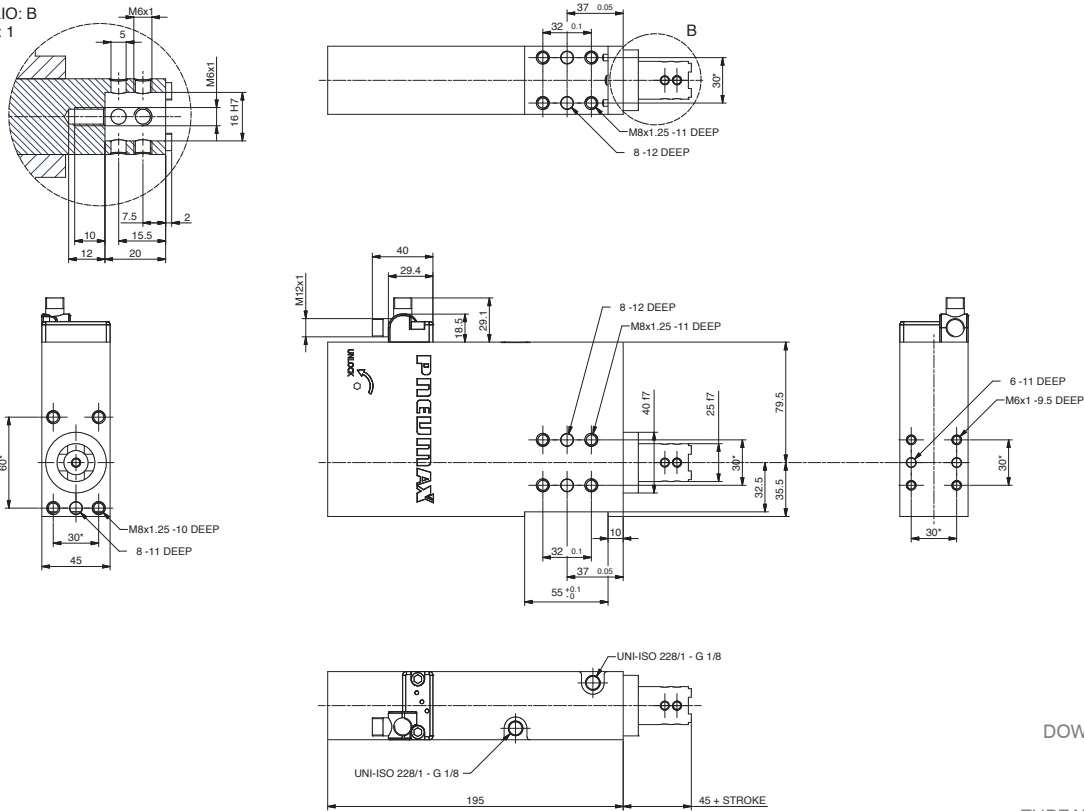
<b>R</b>	<b>VERSION</b>	<b>R</b> = retractable locating pin package with toggle lock
<b>T</b>	<b>OPERATION</b>	<b>T</b> = pneumatic with toggle lock <b>TD</b> = pneumatic with manual operation and toggle lock
<b>40</b>	<b>SIZE</b>	<b>40</b> = Ø 40 mm
<b>E</b>	<b>SENSOR</b>	<b>E</b> = electronic sensor with M12 swivel connector -PNP
<b>40</b>	<b>STROKE</b>	<b>40</b> = 40 mm
<b>G</b>	<b>PORTS</b>	<b>G</b> = G thread – BSPP
<b>3</b>	<b>ROD TERMINATION</b>	<b>1</b> = iØ 16 mm cross-cut key rod termination <b>3</b> = rod termination for offset pins
<b>1</b>	<b>ROD ORIENTATION (for termination type 3)</b>	<b>1</b> =  <b>2</b> =  <b>3</b> =  <b>4</b> = 



**RT40E40G1 / Retractable locating pin package with toggle lock - Size 40 mm - iØ 16 mm cross-cut key rod termination**

**WEIGHT 3,33 kg**

DETTAGLIO: B  
SCALA 1 : 1

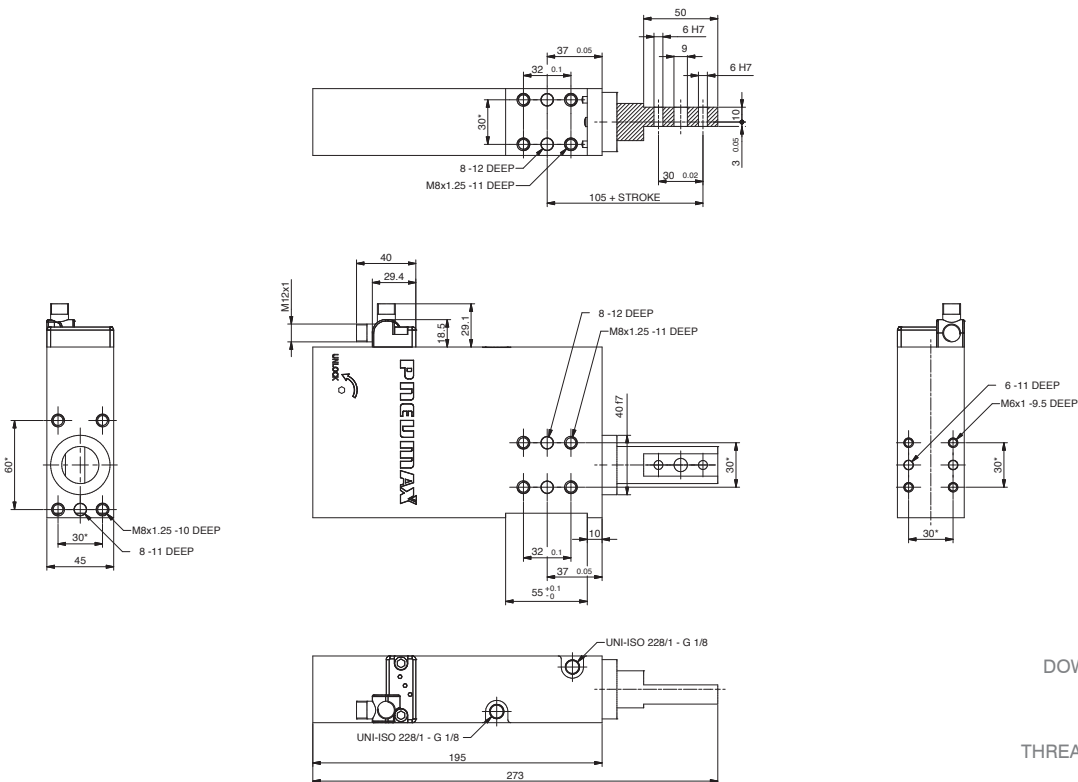


\* DIMENSIONAL  
TOLERANCE FOR  
DOWEL HOLES: ±0.02  
  
DIMENSIONAL  
TOLERANCE FOR  
THREADED HOLES: ±0.1

REV. 00 - 23/07/2021

**RT40E40G3\_ / Retractable locating pin package with toggle lock and manual operation - Size 40 mm rod termination for offset pins**

**WEIGHT 3,9 kg**



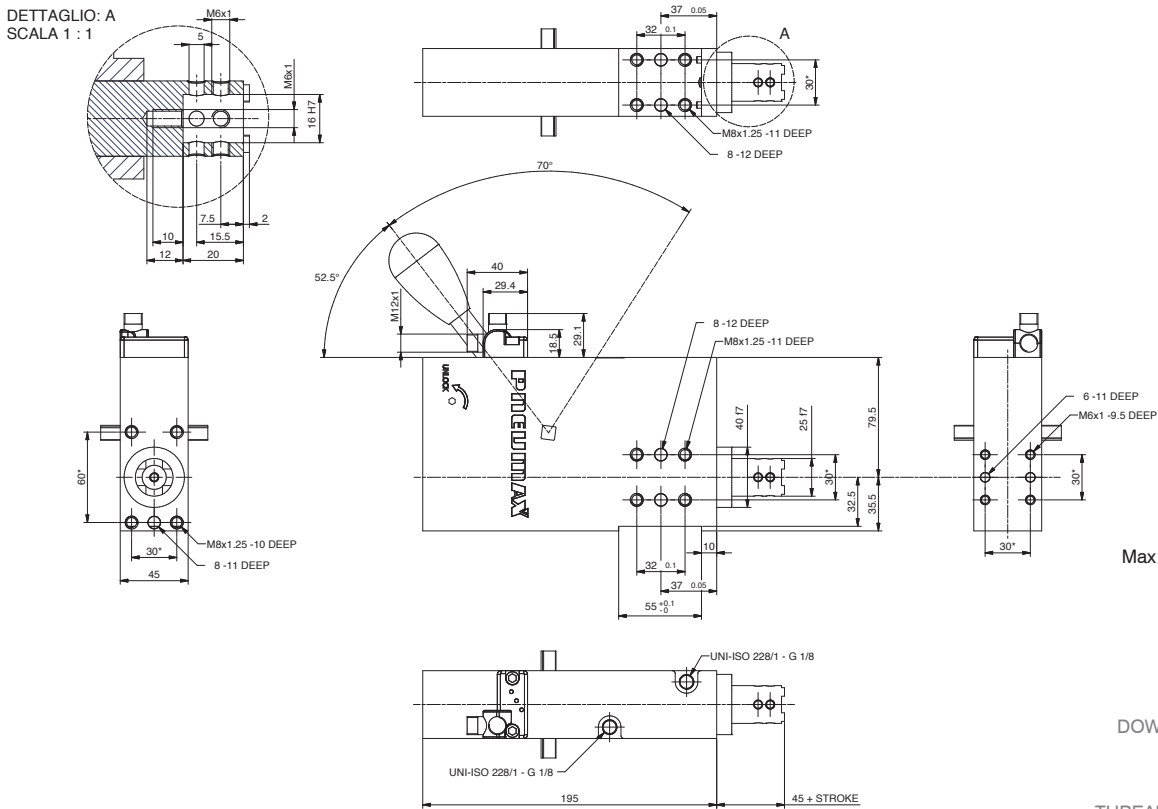
\* DIMENSIONAL  
TOLERANCE FOR  
DOWEL HOLES: ±0.02  
  
DIMENSIONAL  
TOLERANCE FOR  
THREADED HOLES: ±0.1

REV. 01 - 30/06/2022



**RTD40E40G1** / Retractable locating pin package with toggle lock and manual operation - Size 40 mm  
 ∅ 16 mm cross-cut key rod termination

**WEIGHT 3,58 kg**  
 Handle included



Max Hand Force: 200 N

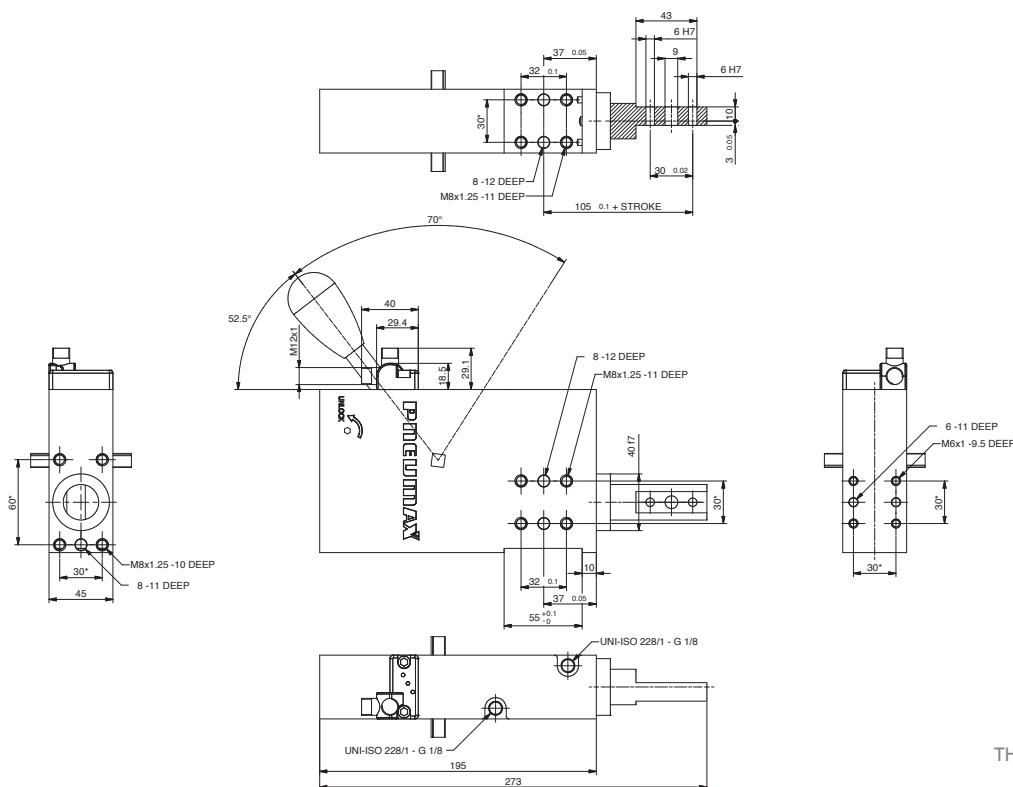
\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 00 - 23/07/2021

**RTD40E40G3** / Retractable locating pin package with toggle lock and manual operation - Size 40 mm  
 rod termination for offset pins

**WEIGHT 3,9 kg**  
 Handle included



Max Hand Force: 200 N

\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 01 - 30/06/2022

# RC-Series

## CNOMO



## Retractable locating pin packages with CNOMO mounting pattern

### Technical features

**Pneumatic ports on both sides** of the cylinder.

#### Operating features

<b>Operating pressure</b>	from 2 to 8 bar / from 30 to 115 psi
<b>Lubrication</b>	all the devices are lubricated for life at the factory. Inline air lubrication isn't required

### Functional charts

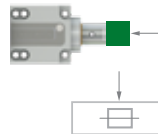
Ø 50 mm

#### • Max deflection

Stroke	Load (kg)	Load position A deviation (mm)	Load position B deviation (mm)	Load position C deviation (mm)	Load position D deviation (mm)
50 mm	0.5	0.006	0.009	0.007	0.03
	1	0.013	0.02	0.018	0.07
	1.5	0.021	0.032	0.028	0.1
	2	0.026	0.047	0.043	0.12
	2.5	0.032	0.66	0.057	-
	3	0.037	0.075	0.068	-
25 mm	0.5	0	0.005	0	0.01
	1	0.005	0.015	0.005	0.03
	1.5	0.007	0.032	0.007	0.06
	2	0.011	0.047	0.011	0.08
	2.5	0.012	0.66	0.012	-
	3	0.014	0.075	0.014	-

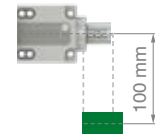
#### Load position A

Horizontal mounting position of the retractable locating pin/load centre on the rod



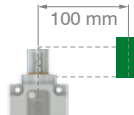
#### Load position B

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



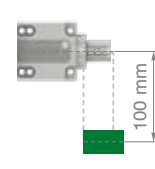
#### Load position C

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



#### Load position D

100 mm in z



#### • Functional data (at 5 bar / 72.5 psi)

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
Interchangeability of the mounting	± 0,05 mm
Interchangeability of the mounting to the rod termination	± 0,15 mm
Rod output repeatability	± 0,04 mm
Protection degree:	IP 56 for pin packages IP67 for sensor
Operating temperature	-0 °C + 50 °C
Storage temperature	-25 °C + 60 °C

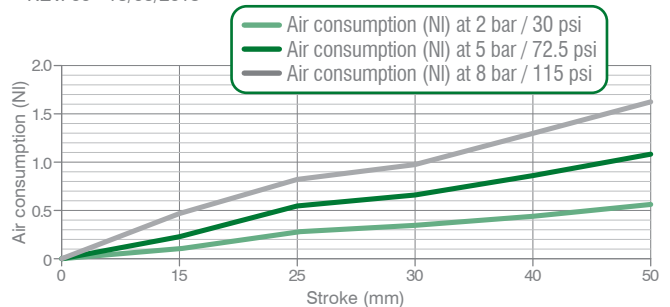
#### • Cycle time for max stroke

< 0.8 s **NO flow valve required**

#### • Air consumption

Air consumption for complete cycle

REV. 00 - 18/06/2015



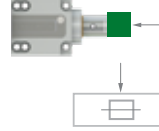
## Size 63 mm

### • Max deflection

Stroke	Load (kg)	Load position <b>A</b> deviation (mm)	Load position <b>B</b> deviation (mm)	Load position <b>C</b> deviation (mm)	Load position <b>D</b> deviation (mm)
50 mm	0.5	0.006	0.009	0.007	0.03
	1	0.013	0.02	0.018	0.07
	1.5	0.021	0.032	0.028	0.1
	2	0.026	0.047	0.043	0.12
	2.5	0.032	0.66	0.057	-
	3	0.037	0.075	0.068	-
25 mm	0.5	0	0.005	0	0.01
	1	0.005	0.015	0.005	0.03
	1.5	0.007	0.032	0.007	0.06
	2	0.011	0.047	0.011	0.08
	2.5	0.012	0.66	0.012	-
	3	0.014	0.075	0.014	-

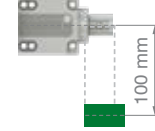
#### Load position **A**

Horizontal mounting position of the retractable locating pin/load centre on the rod



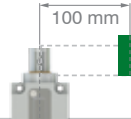
#### Load position **B**

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



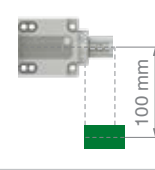
#### Load position **C**

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



#### Load position **D**

100 mm in z



### • Functional data (at 5 bar / 72.5 psi)

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
Interchangeability of the mounting	± 0,05 mm
Interchangeability of the mounting to the rod termination	± 0,15 mm
Rod output repeatability	± 0,04 mm
Protection degree:	IP 56 for pin packages IP67 for sensor
Operating temperature	-0 °C + 50 °C
Storage temperature	-25 °C + 60 °C

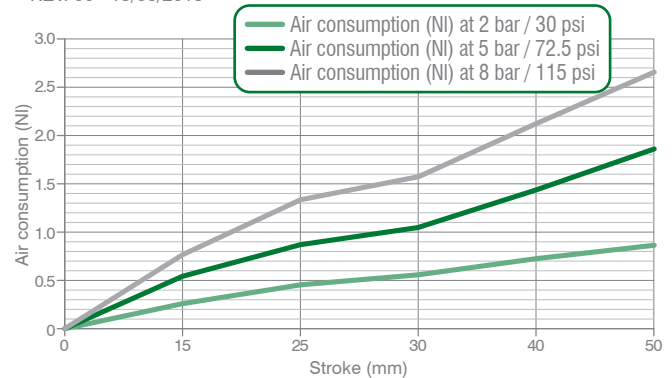
### • Cycle time for max stroke

< 0.8 s **NO flow valve required**

### • Air consumption

Air consumption for complete cycle

REV. 00 - 18/06/2015



Please get in touch with our technical representatives for any application which exceeds the above values, to find the appropriate solution for your application.

## Ordering string

## RC-Series

**RC** **50** **C** **25** **1** **G**

**RC**

### VERSION

**RC** = retractable locating pin package with CNOMO mounting pattern  
**RCD** = retractable locating pin package with CNOMO mounting pattern and manual operation

**50**

### SIZE

**50** = Ø 50 mm  
**63** = Ø 63 mm

**C**

### SENSOR

**C** = CNOMO sensor  
**N** = no sensor

**CNOMO**

**25**

### STROKE

**25** = 25 mm  
**50** = 50 mm

**1**

### ROD TERMINATION

**1** = iØ 12 mm rod termination  
**2** = iØ 20 mm rod termination

**G**

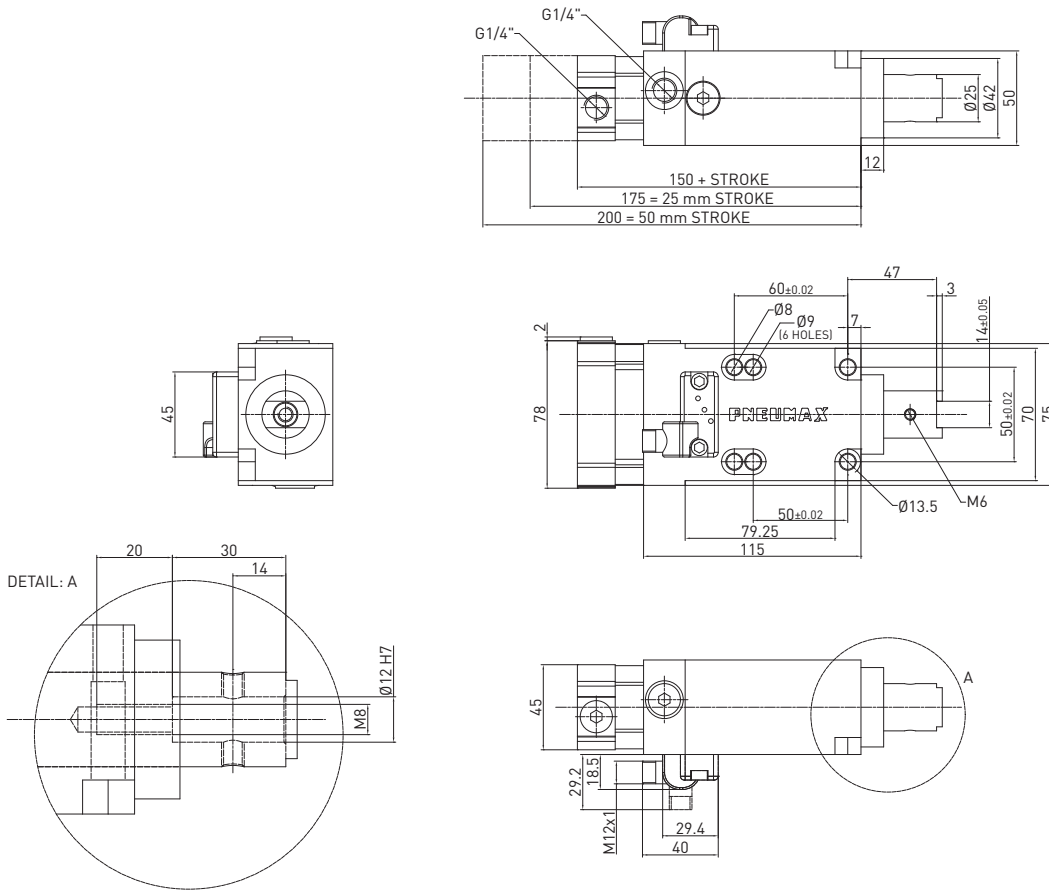
### PORTS

**G** = G thread – BSPP

**RC50\_\_1 / Retractable locating pin package with CNOMO mounting pattern - Size 50 mm - iØ 12 mm rod termination**

**WEIGHT 1.8 kg**  
min. stroke version

**WEIGHT 1.9 kg**  
max. stroke version

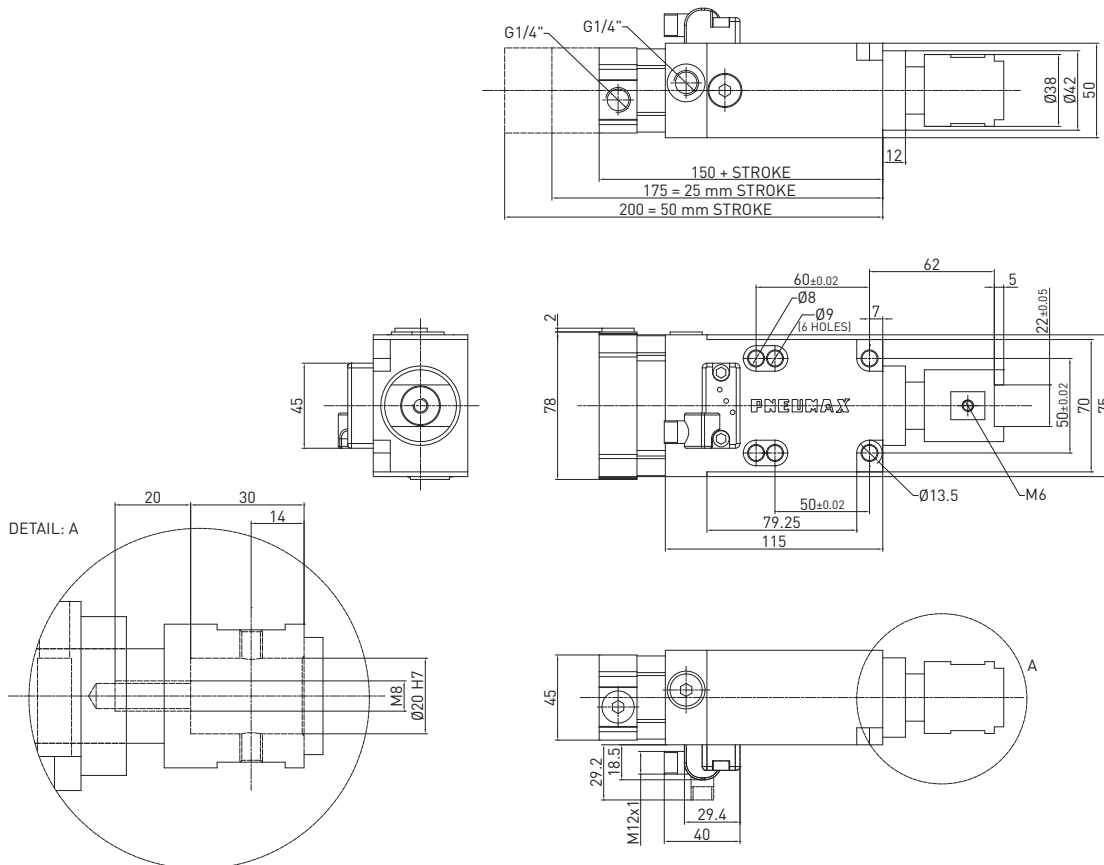


REV. 01 - 31/03/2015

**RC50\_\_2 / Retractable locating pin package with CNOMO mounting pattern - Size 50 mm - iØ 20 mm rod termination**

**WEIGHT 2 kg**  
min. stroke version

**WEIGHT 2.1 kg**  
max. stroke version

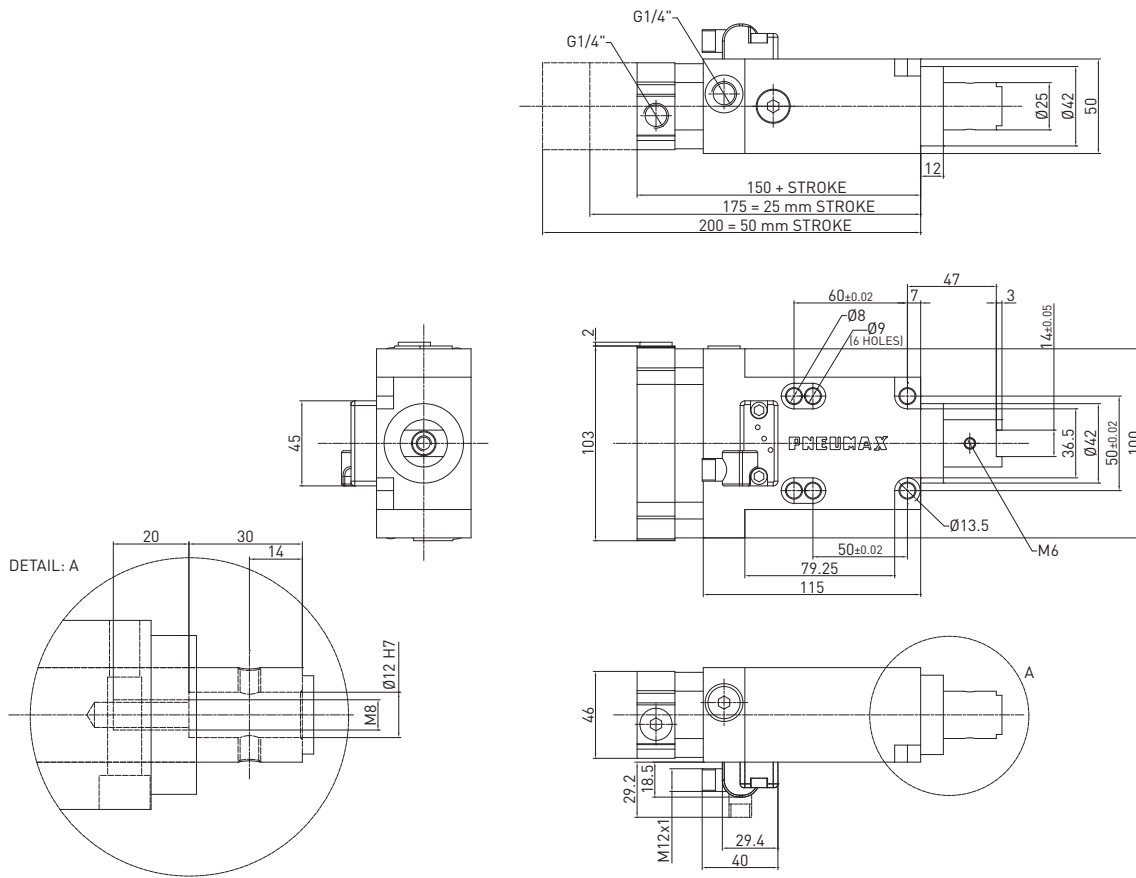


REV. 01 - 22/10/2015

**RC63\_\_1 / Retractable locating pin package with CNOMO mounting pattern - Size 63 mm - iØ 12 mm rod termination**

**WEIGHT 2 kg**  
min. stroke version

**WEIGHT 2.1 kg**  
max. stroke version



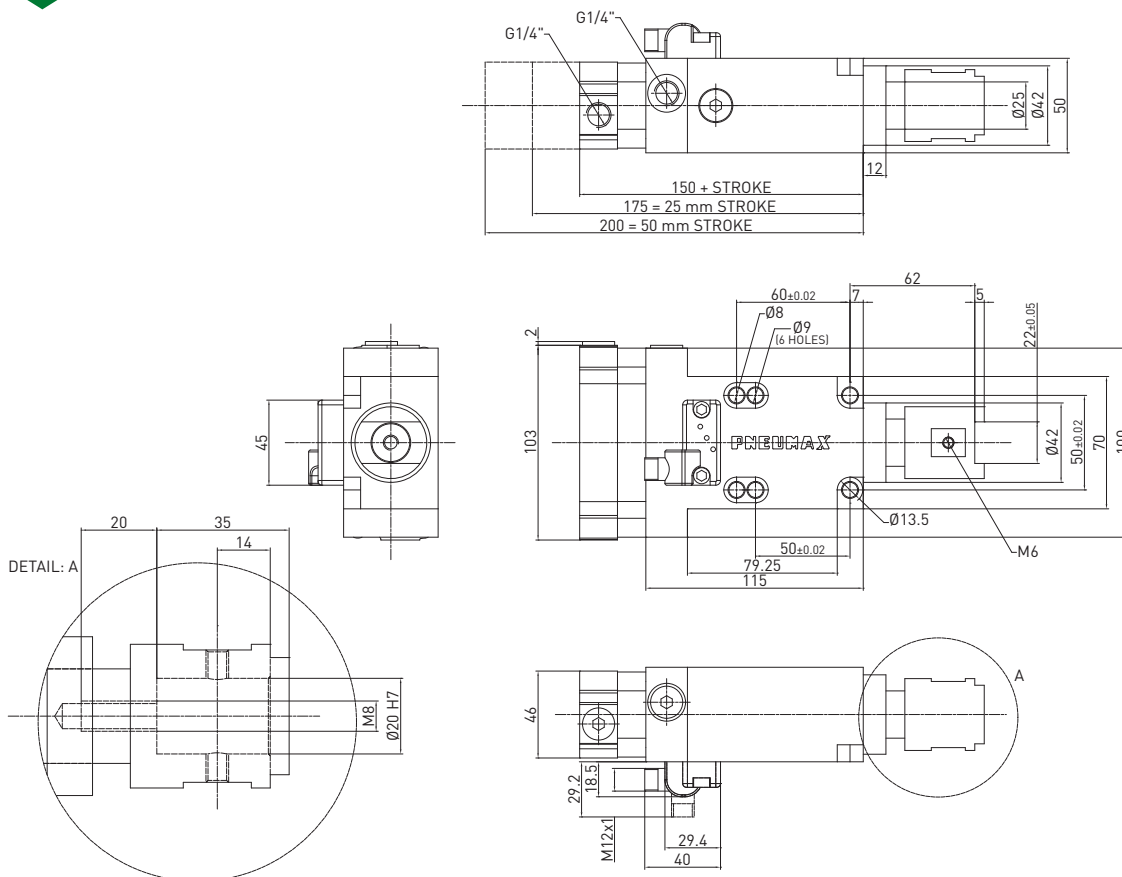
REV. 01 - 31/03/2015

LOCATING

**RC63\_\_2 / Retractable locating pin package with CNOMO mounting pattern - Size 63 mm - iØ 20 mm rod termination**

**WEIGHT 2.2 kg**  
min. stroke version

**WEIGHT 2.3 kg**  
max. stroke version



REV. 01 - 22/10/2015

**RCD50\_1 / Retractable locating pin package with CNOMO mounting pattern and manual operation**  
Size 50 mm - iØ 12 mm rod termination

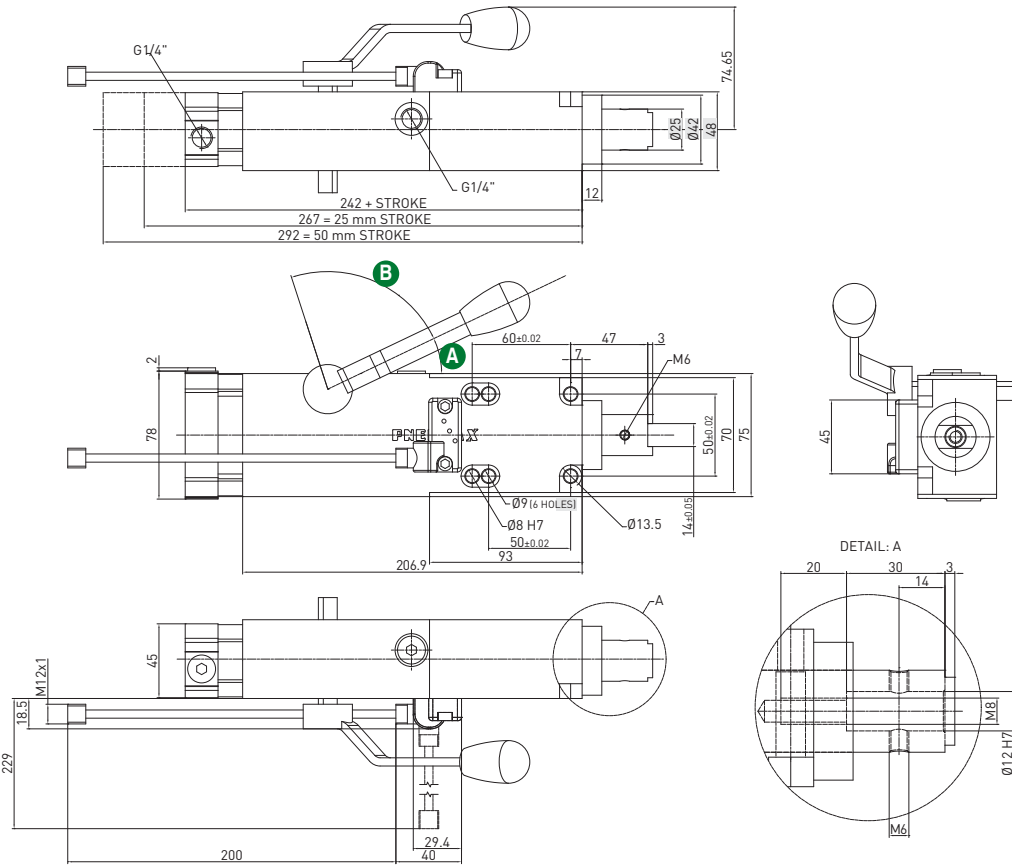
**WEIGHT 1.8 kg**  
min. stroke version

**WEIGHT 1.9 kg**  
max. stroke version

**Handle swivel angle**

Stroke	<b>A</b> Handle swivel angle	<b>B</b> Handle swivel angle
25	70°	38°
50	25°	83°

Max Hand Force: 200 N



REV. 00 - 31/07/2018

**RCD50\_2 / Retractable locating pin package with CNOMO mounting pattern and manual operation**  
Size 50 mm - iØ 20 mm rod termination

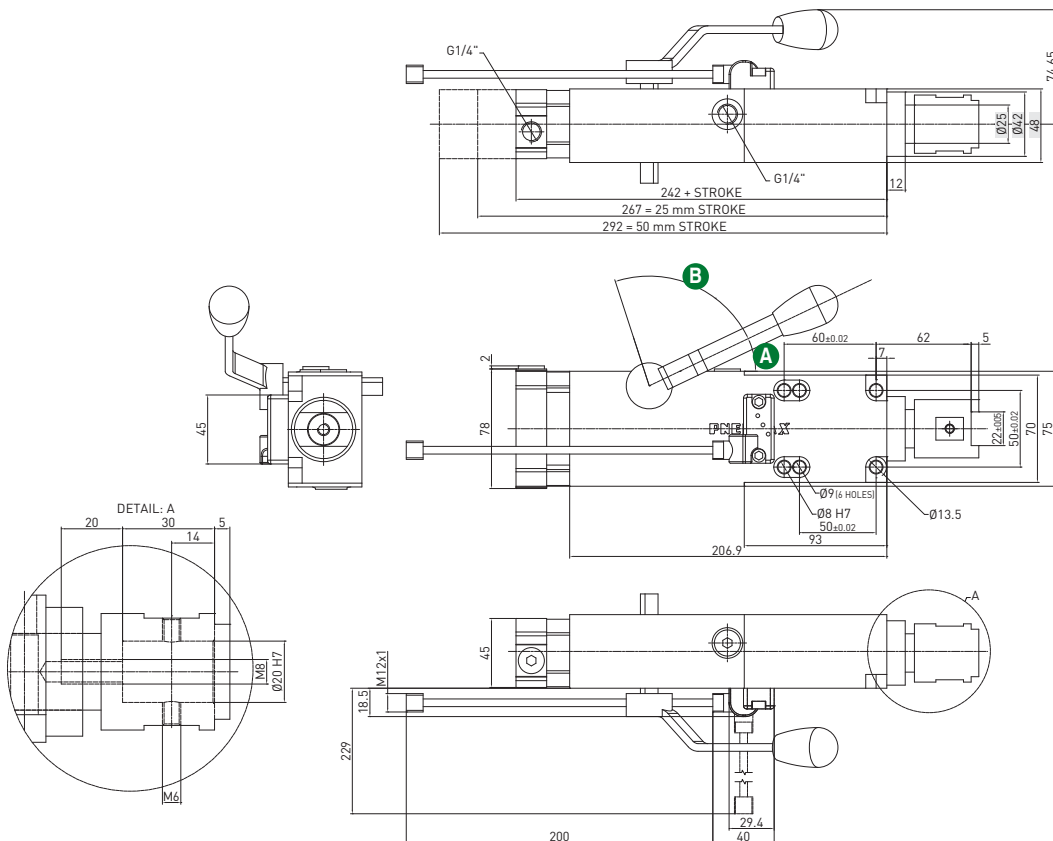
**WEIGHT 2 kg**  
min. stroke version

**WEIGHT 2.1 kg**  
max. stroke version

**Handle swivel angle**

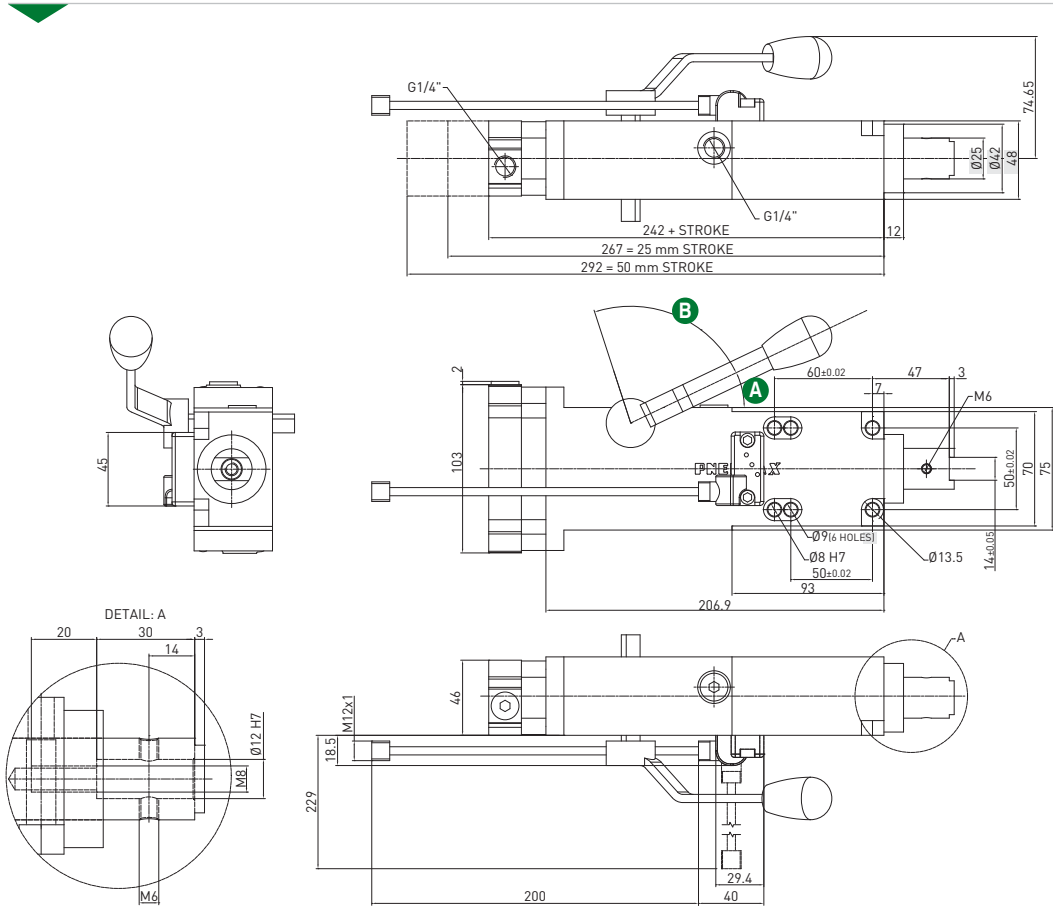
Stroke	<b>A</b> Handle swivel angle	<b>B</b> Handle swivel angle
25	70°	38°
50	25°	83°

Max Hand Force: 200 N



REV. 00 - 31/07/2018

**RCD63\_\_1 / Retractable locating pin package with CNOMO mounting pattern and manual operation**  
Size 63 mm - iØ 12 mm rod termination



**WEIGHT 2 kg**  
min. stroke version

**WEIGHT 2.1 kg**  
max. stroke version

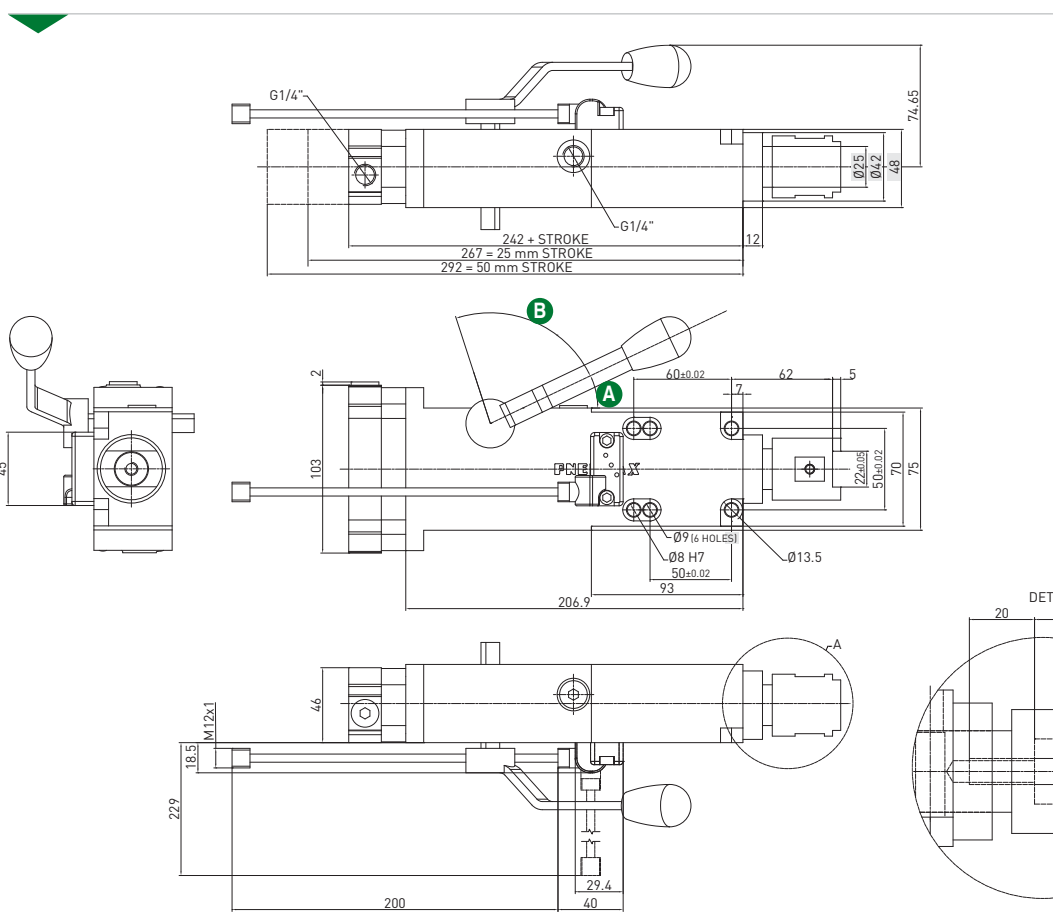
**Handle swivel angle**

Stroke	A Handle swivel angle	B Handle swivel angle
25	70°	38°
50	25°	83°

Max Hand Force: 200 N

REV. 00 - 31/07/2018

**RCD63\_\_2 / Retractable locating pin package with CNOMO mounting pattern and manual operation**  
Size 63 mm - iØ 20 mm rod termination



**WEIGHT 2.2 kg**  
min. stroke version

**WEIGHT 2.3 kg**  
max. stroke version

**Handle swivel angle**

Stroke	A Handle swivel angle	B Handle swivel angle
25	70°	38°
50	25°	83°

Max Hand Force: 200 N

REV. 00 - 31/07/2018

LOCATING

# HP-Series



## High Performance retractable locating pin package

### Technical features

Pneumatic ports on both sides of the cylinder.

#### Operating features

**Operating pressure** from 2 to 8 bar / from 30 to 115 psi

**Lubrication** all the devices are lubricated for life at the factory. Inline air lubrication isn't required

### Functional charts

#### Size 50 mm

##### • Max deflection

Stroke	Load (kg)	Load position <b>A</b> deviation (mm)	Load position <b>B</b> deviation (mm)	Load position <b>C</b> 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 (at 5 bar / 72.5 psi)

Thrust force	<b>825 N</b>
Pull force	<b>1.960 N</b>
Max bending moment	<b>3 N m / 2.21 lb-ft</b>
Max distance from the load centre to the rod	<b>200 mm</b>

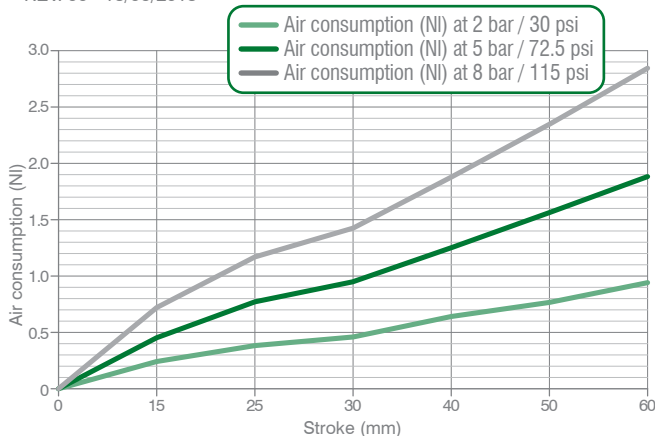
##### • Cycle time for max stroke

**< 0.8 s NO flow valve required**

##### • Air consumption

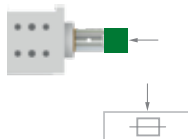
Air consumption for complete cycle

REV. 00 - 18/06/2015



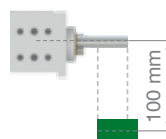
##### Load position **A**

Horizontal mounting position of the retractable locating pin/load centre on the rod



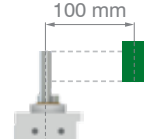
##### Load position **B**

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

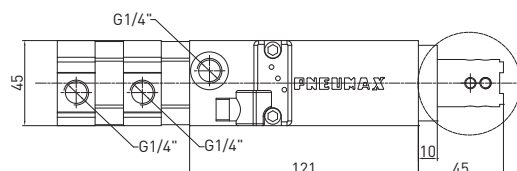
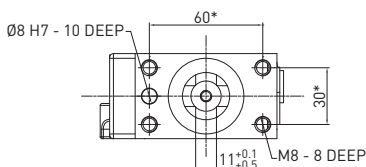
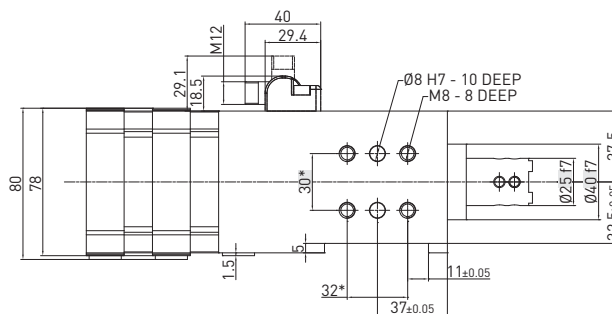
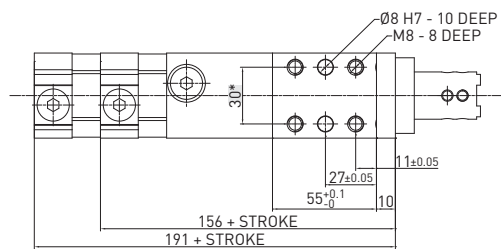
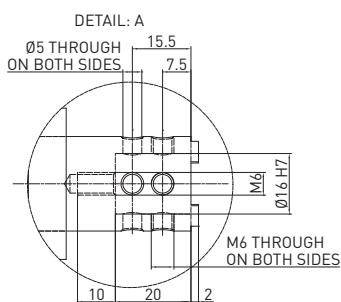
HP-Series

**HP 50 E 40 3 G 1**

<b>HP</b>	<b>VERSION</b>	<b>HP</b> = High Performance retractable locating pin package
<b>50</b>	<b>SIZE</b>	<b>50</b> = Ø 50 mm
<b>E</b>	<b>SENSOR</b>	<b>E</b> = electronic sensor with M12 swivel connector - PNP <b>A</b> = electronic sensor with M12 swivel connector - NPN <b>N</b> = no sensor <b>B</b> = electronic sensor with M8 swivel connector - PNP
<b>40</b>	<b>STROKE</b>	<b>15</b> = 15 mm <b>25</b> = 25 mm <b>40</b> = 40 mm <b>50</b> = 50 mm <b>60</b> = 60 mm
<b>3</b>	<b>ROD TERMINATION</b>	<b>1</b> = iØ 16 mm cross-cut key rod termination <b>2</b> = iØ 10 mm cross-cut key rod termination <b>3</b> = rod termination for offset pins <b>4</b> = rod termination with key <b>5</b> = iØ 10 mm flat termination <b>6</b> = iØ 12 mm flat termination
<b>G</b>	<b>PORTS</b>	<b>G</b> = G thread – BSPP
<b>1</b>	<b>ROD ORIENTATION (for termination type 3)</b>	

LOCATING

**HP50E\_1 / High Performance retractable locating pin package - Size 50 mm - iØ 16 mm cross-cut key rod termination**



**WEIGHT 2.2 kg**  
min. stroke version

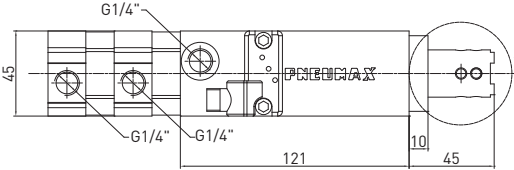
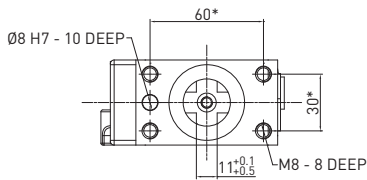
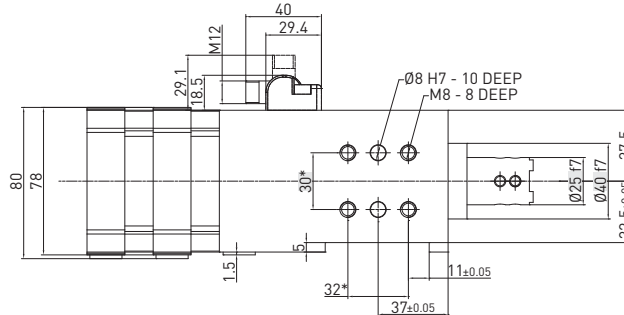
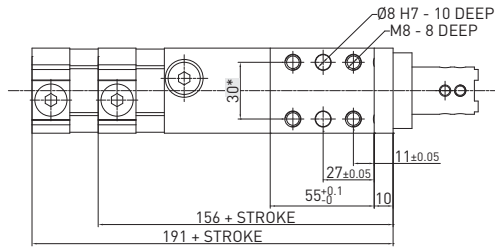
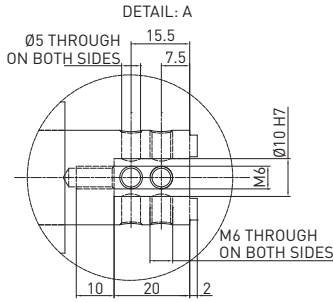
**WEIGHT 2.5 kg**  
max. stroke version

REV. 01 - 26/02/2016

**HP50E\_2 / High Performance retractable locating pin package - Size 50 mm - iØ 10 mm cross-cut key rod termination**

**WEIGHT 2.2 kg**  
min. stroke version

**WEIGHT 2.5 kg**  
max. stroke version

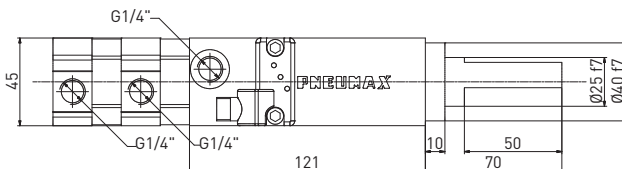
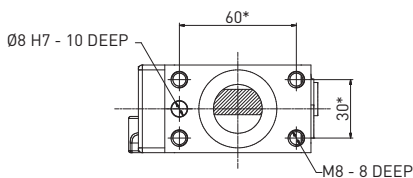
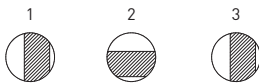
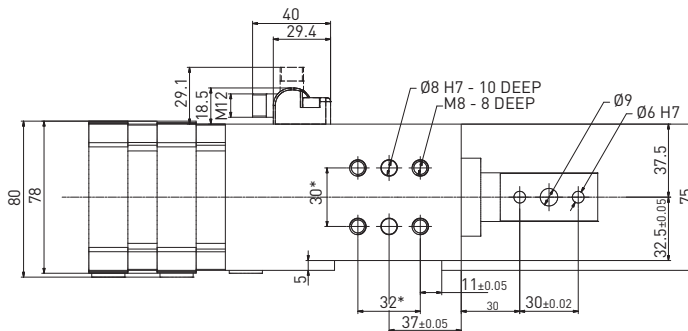
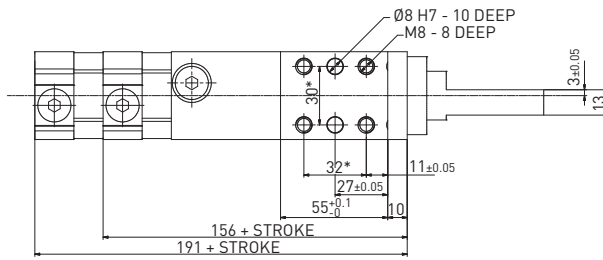


REV. 01 - 26/02/2016

**HP50E\_3 / High Performance retractable locating pin package - Size 50 mm - Rod termination for offset pins**

**WEIGHT 2.2 kg**  
min. stroke version

**WEIGHT 2.5 kg**  
max. stroke version

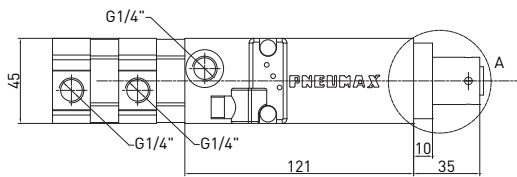
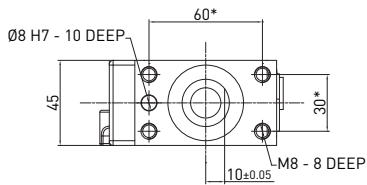
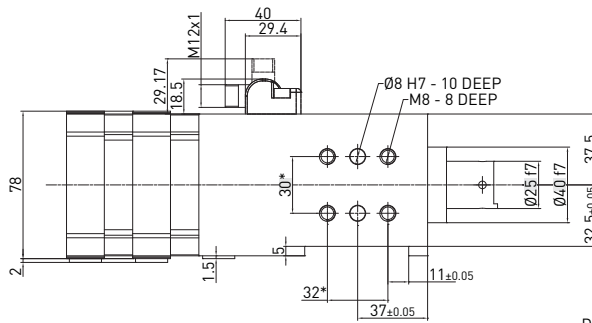
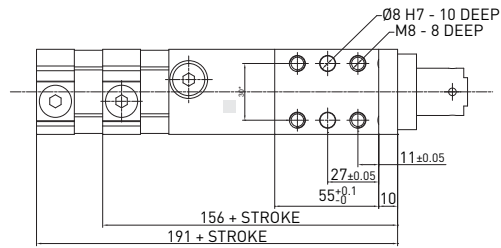


REV. 00 - 12/05/2015

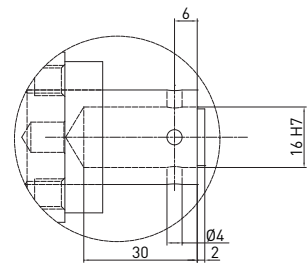
**HP50E\_4 / High Performance retractable locating pin package - Size 50 mm - Rod termination with key**

**WEIGHT 2.2 kg**  
min. stroke version

**WEIGHT 2.5 kg**  
max. stroke version



DETAIL: A



REV. 00 - 31/03/2015

# F-Series



## Retractable locating pin packages with dual rods

### Technical features

**Pneumatic ports on both sides of the cylinder.**

#### Operating features

**Operating pressure** from 2 to 8 bar / from 30 to 115 psi

**Lubrication** all the devices are lubricated for life at the factory. Inline air lubrication isn't required

### Functional charts

#### Size 40-41 mm

##### • Max deflection

Stroke	Load (kg)	Load position <b>A</b> deviation (mm)	Load position <b>B</b> deviation (mm)	Load position <b>C</b> deviation (mm)
40 mm	0.5	0.004	0.021	0.003
	1	0.01	0.05	0.01
	1.5	0.015	0.08	0.019
	2	0.022	0.122	0.028
	2.5	0.03	0.158	0.037
	3	0.035	0.195	0.046
20 mm	0.5	0.004	0.013	0.005
	1	0.009	0.035	0.008
	1.5	0.013	0.053	0.011
	2	0.017	0.083	0.017
	2.5	0.021	0.107	0.021
	3	0.026	0.13	0.025

##### • Functional data (at 5 bar / 72.5 psi)

Thrust force	430 N
Pull force	630 N
Max bending moment	3 N m / 2.21 lb-ft
Max distance from the load centre to the rod	200 mm

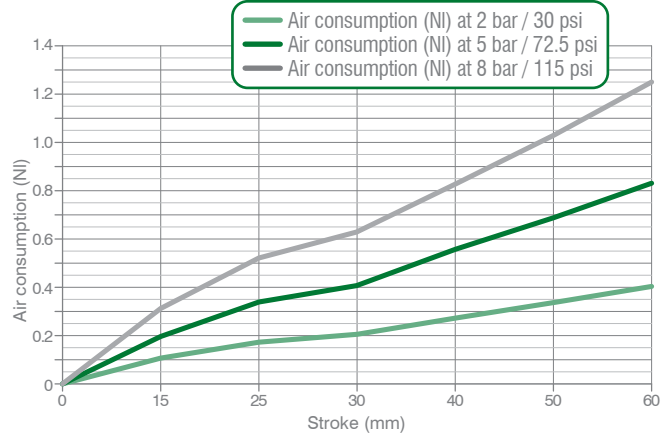
##### • Cycle time for max stroke

**< 0.8 s NO flow valve required**

##### • Air consumption

Air consumption for complete cycle

REV. 00 - 18/06/2015



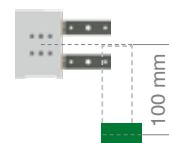
##### Load position **A**

Horizontal mounting position of the retractable locating pin/load centre on the rod



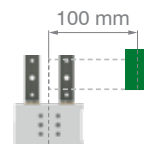
##### Load position **B**

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



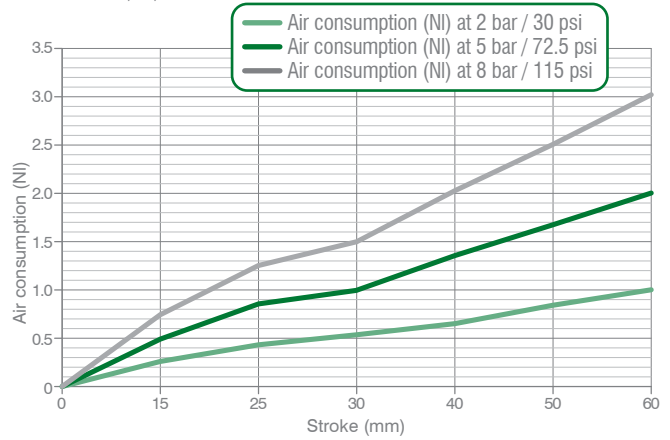
## Size 63 mm

### • Max deflection

Stroke	Load (kg)	Load position <b>A</b> deviation (mm)	Load position <b>B</b> deviation (mm)	Load position <b>C</b> 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

### • Air consumption

Air consumption for complete cycle  
REV. 00 - 18/06/2015



### • Functional data (at 5 bar / 72.5 psi)

Thrust force	430 N
Pull force	630 N
Max bending moment	3 N m / 2.21 lb-ft
Max distance from the load centre to the rod	200 mm

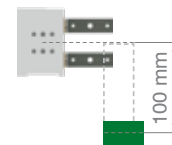
#### Load position **A**

Horizontal mounting position of the retractable locating pin/load centre on the rod



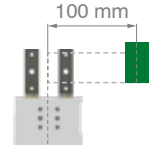
#### Load position **B**

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



### • Cycle time for max stroke

< 0.8 s NO flow valve required

## Ordering string

### F-Series 40-41

**F** **P** **40** **E** **20** **3** **G**

<b>F</b>	<b>VERSION</b>	<b>F</b> = Retractable locating pin package with dual rod
<b>P</b>	<b>OPERATION</b>	<b>P</b> = pneumatic
<b>40</b>	<b>SIZE</b>	<b>40</b> = Ø 40 mm mounting pattern 35x25 mm <b>41</b> = Ø 40 mm mounting pattern 30x25 mm
<b>E</b>	<b>SENSOR</b>	<b>E</b> = electronic sensor with M12 swivel connector - PNP <b>A</b> = electronic sensor with M12 swivel connector - NPN <b>N</b> = no sensor <b>B</b> = electronic sensor with M8 swivel connector - PNP
<b>20</b>	<b>STROKE</b>	<b>20</b> = 20 mm <b>40</b> = 40 mm
<b>3</b>	<b>ROD TERMINATION</b>	<b>1</b> = rod termination type 3 with improved radius <b>2</b> = rod termination type 7 with improved radius <b>3</b> = rod termination for offset pins <b>7</b> = rod termination for offset pins – with 2 dowel holes (see datasheet)
<b>G</b>	<b>PORTS</b>	<b>G</b> = G thread – BSPP



**Ordering string**

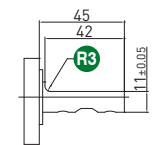
**F-Series 63**

**F P 63 E 60 3 G**

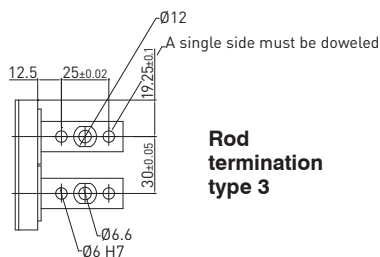
LOCATING

<b>F</b>	<b>VERSION</b>	<b>F</b> = Retractable locating pin package with dual rod
<b>P</b>	<b>OPERATION</b>	<b>P</b> = pneumatic <b>D2</b> = pneumatic with manual operation
<b>63</b>	<b>SIZE</b>	<b>63</b> = Ø 63 mm
<b>E</b>	<b>SENSOR</b>	<b>E</b> = electronic sensor with M12 swivel connector - PNP <b>A</b> = electronic sensor with M12 swivel connector - NPN <b>N</b> = no sensor <b>B</b> = electronic sensor with M8 swivel connector - PNP
<b>60</b>	<b>STROKE</b>	<b>15</b> = 15 mm <b>25</b> = 25 mm <b>40</b> = 40 mm <b>50</b> = 50 mm <b>60</b> = 60 mm
<b>3</b>	<b>ROD TERMINATION</b>	<b>1</b> = rod termination type 3 with improved radius <b>3</b> = rod termination for offset pins
<b>G</b>	<b>PORTS</b>	<b>G</b> = G thread – BSPP

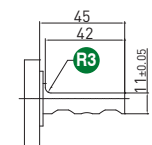
**FP40E\_\_1/2/3/7** / Retractable locating pin package with dual rod - Size 40 mm  
Mounting pattern 35x25 mm - Rod termination for offset pins



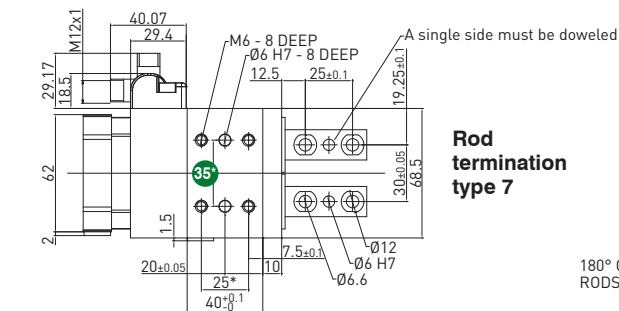
**Rod termination type 1**



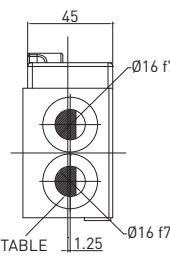
**Rod termination type 3**



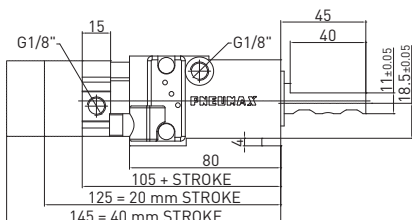
**Rod termination type 2**



**Rod termination type 7**



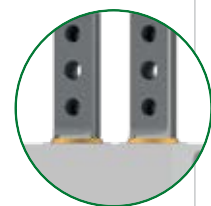
180° ORIENTABLE  
RODS



**WEIGHT 1.1 kg**  
min. stroke version

**WEIGHT 1.25 kg**  
max. stroke version

With improved  
radius for  
demanding  
applications



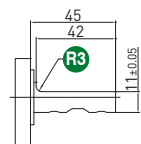
LOCATING

\* DIMENSIONAL  
TOLERANCE FOR  
DOWEL HOLES: ±0.02

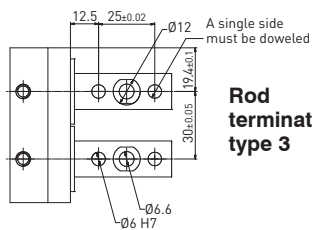
DIMENSIONAL  
TOLERANCE FOR THREADED  
HOLES: ±0.1

REV. 02 - 28/06/2018

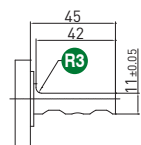
**FP41E\_\_1/2/3/7** / Retractable locating pin package with dual rod - Size 41 mm  
Mounting pattern 30x32 mm - Rod termination for offset pins



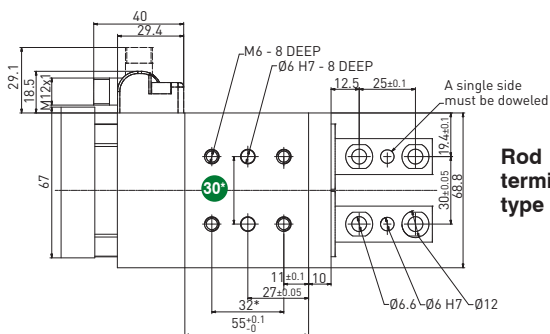
**Rod termination type 1**



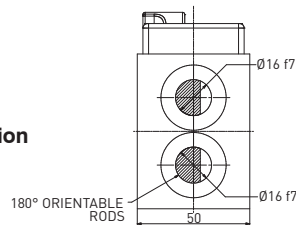
**Rod termination type 3**



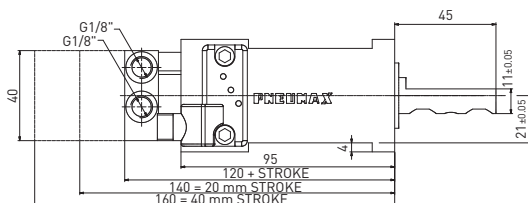
**Rod termination type 2**



**Rod termination type 7**



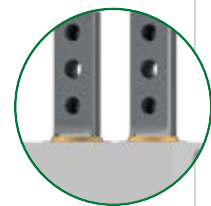
180° ORIENTABLE  
RODS



**WEIGHT 1.1 kg**  
min. stroke version

**WEIGHT 1.25 kg**  
max. stroke version

With improved  
radius for  
demanding  
applications



\* DIMENSIONAL  
TOLERANCE FOR  
DOWEL HOLES: ±0.02

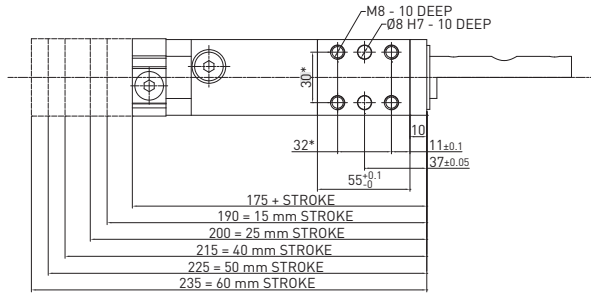
DIMENSIONAL  
TOLERANCE FOR THREADED  
HOLES: ±0.1

REV. 02 20/11/2020

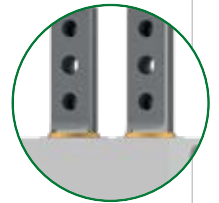
**FP63E\_\_1/3 / Retractable locating pin package with dual rod - Size 63 mm - Rod termination for offset pins**

**WEIGHT 3.35 kg**  
min. stroke version

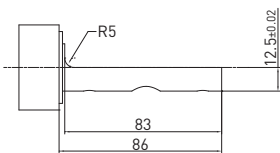
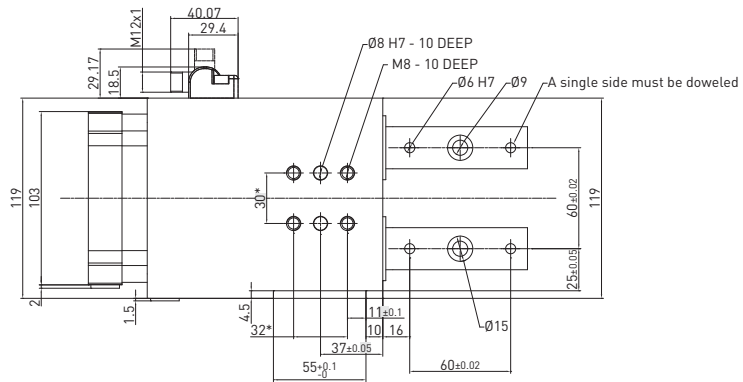
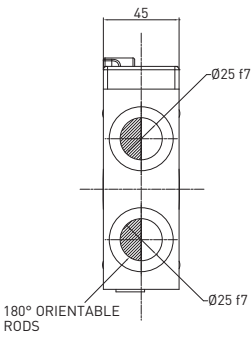
**WEIGHT 3.65 kg**  
max. stroke version



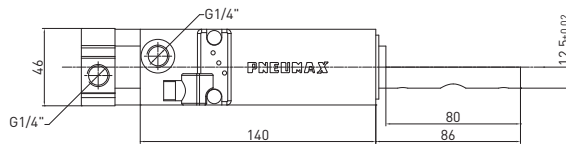
With improved  
radius for  
demanding  
applications



LOCATING



**Rod termination 1**



**Rod termination 3**

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

REV. 01 - 10/04/2017





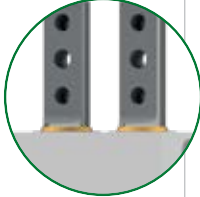
**FD263E\_ \_ 1/3** / Retractable locating pin package with dual rod - Size 63 mm - Rod termination for offset pins

**WEIGHT 1.1 kg**  
min. stroke version

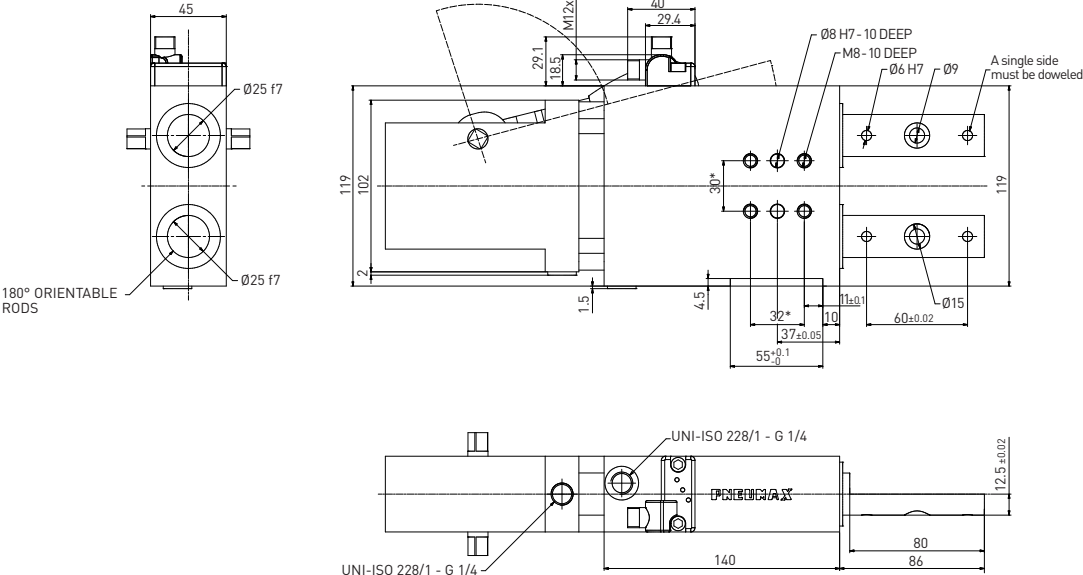
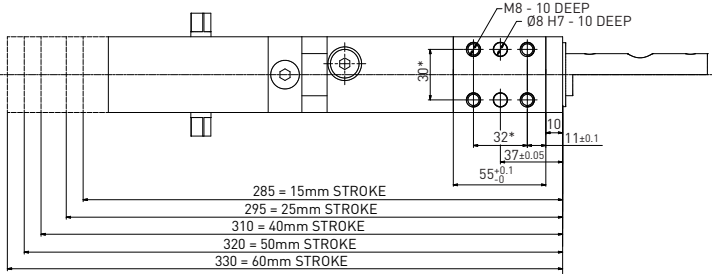
**WEIGHT 1.25 kg**  
max. stroke version

Max Hand Force: 200 N

With improved  
radius for  
demanding  
applications



LOCATING



\* DIMENSIONAL  
TOLERANCE FOR  
DOWEL HOLES: ±0.02

DIMENSIONAL  
TOLERANCE FOR THREADED  
HOLES: ±0.1

REV. 00 - 02/04/2020

# FT-Series



## Retractable locating pin packages with dual rods and toggle linkage

- Fully encapsulated toggle mechanism: in case of air loss, the working position remains secure
- Manual unlock mechanism to disengage the linkage in emergency situations
- Position repeatability  $\pm 0.05$  mm
- Clear design with user-friendly surfaces and no dirt or welding deposit traps

LOCATING

### Technical features

Pneumatic ports on both sides of the cylinder.

#### Operating features

**Operating pressure** from 2 to 8 bar / from 30 to 115 psi

**Lubrication** all the devices are lubricated for life at the factory. Inline air lubrication isn't required

### Functional charts

#### Size 50 mm

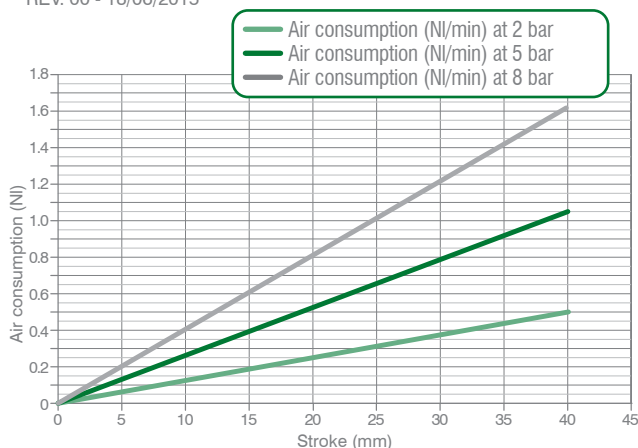
##### • Max deflection

Stroke	Load (kg)	Load position <b>B</b> deviation (mm)	Load position <b>C</b> 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

- **Cycle time for max stroke**  
**< 0.8 s NO flow valve required**

##### • Air consumption

Air consumption for complete cycle  
REV. 00 - 18/06/2015

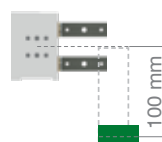


##### • Functional data (at 5 bar / 72.5 psi)

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

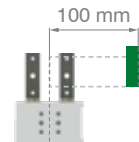
#### Load position **B**

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

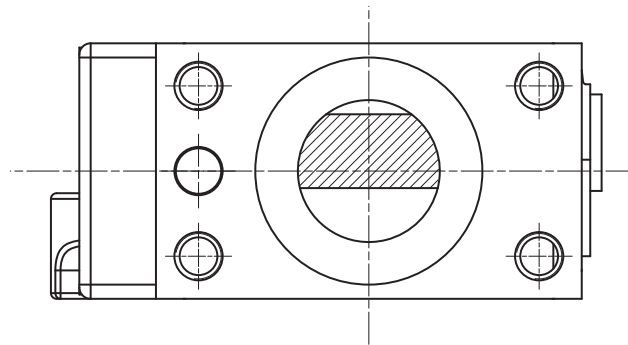


FT-Series / Ordering string

FT\_50-series

**F** **T** **50** **E** **40** **G** **5** **2**

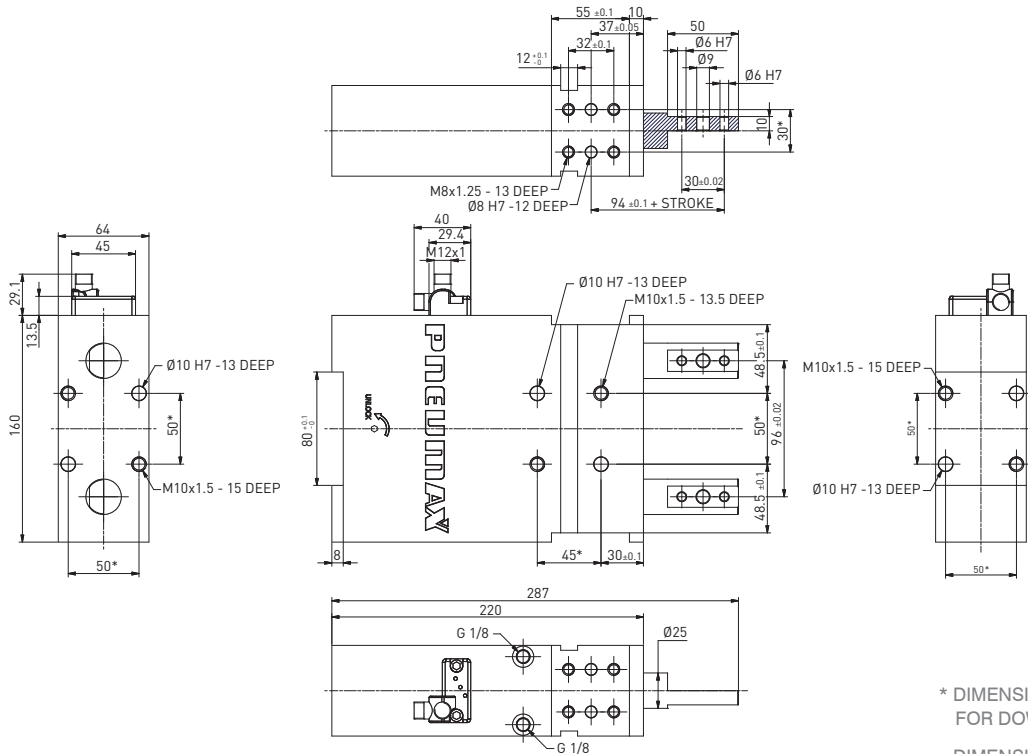
<b>F</b>	<b>VERSION</b>	<b>F</b> = Retractable locating pin packages with dual rods
<b>T</b>	<b>OPERATION</b>	<b>T</b> = pneumatic with toggle lock <b>TD</b> = pneumatic with manual operation and toggle lock
<b>50</b>	<b>SIZE</b>	<b>50</b> = Ø 50 mm
<b>E</b>	<b>SENSOR</b>	<b>E</b> = electronic sensor with M12 swivel connector - PNP
<b>40</b>	<b>STROKE</b>	<b>40</b> = 40 mm
<b>G</b>	<b>PORTS</b>	<b>G</b> = G thread – BSPP
<b>3</b>	<b>ROD TERMINATION</b>	<b>3</b> = Mounting surface on the rods corresponds to the pin package axis <b>5</b> = 2.5 mm out of the axis mounting surface
<b>2</b>	<b>ROD ORIENTATION</b>	<b>2</b> =  <b>4</b> = 



LOCATING

**FT50E40G3\_ / Retractable locating pin package with dual rods and toggle linkage - Size 50 mm**  
Rod termination 3 – in line to the pin package axis

**WEIGHT 7 kg**

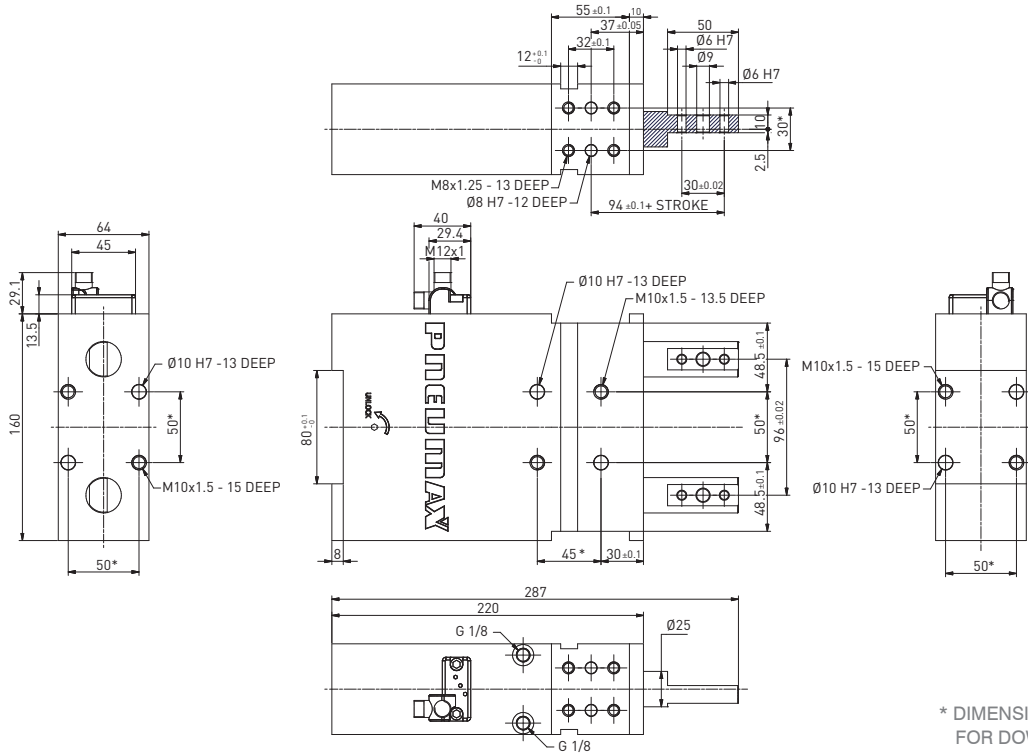


\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02  
DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 01 - 27/04/2021

**FT50E40G5\_ / Retractable locating pin package with dual rods and toggle linkage - Size 50 mm**  
Rod termination 5 – 2.5 mm out of axis mounting surface

**WEIGHT 7 kg**



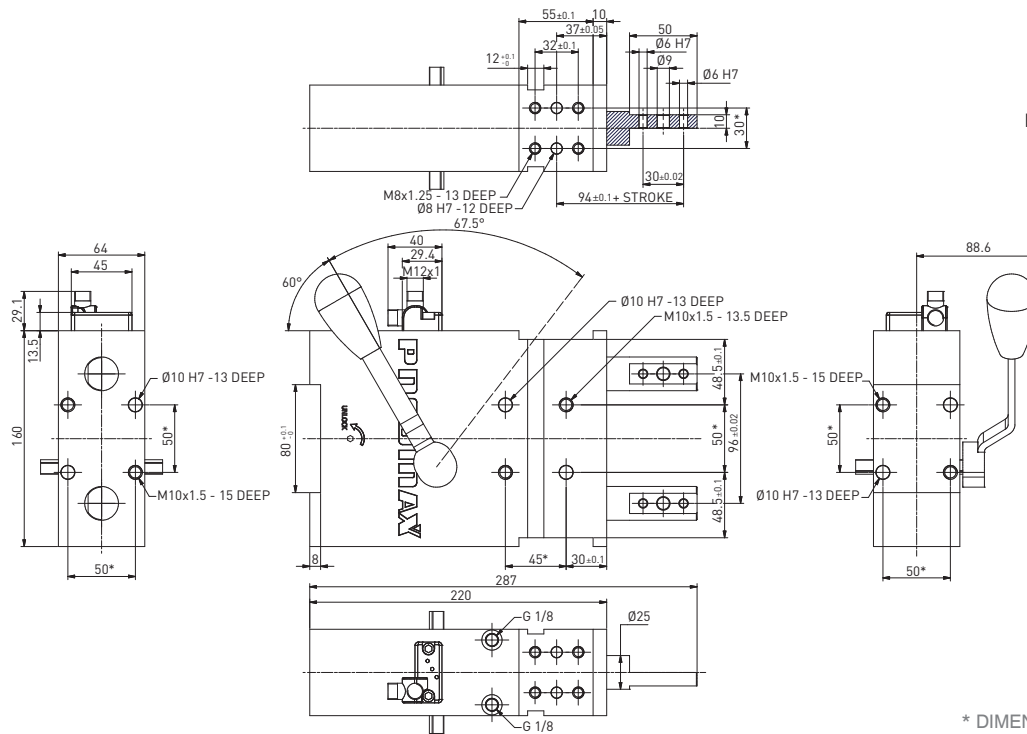
\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02  
DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 01 - 27/04/2021

**FTD50E40G3** / Retractable locating pin package with dual rods and toggle linkage and manual operation - Size 50 mm  
Rod termination 3 – in line to the pin package axis

**WEIGHT 7,5 KG**  
Handle included

Max Hand Force: 200 N



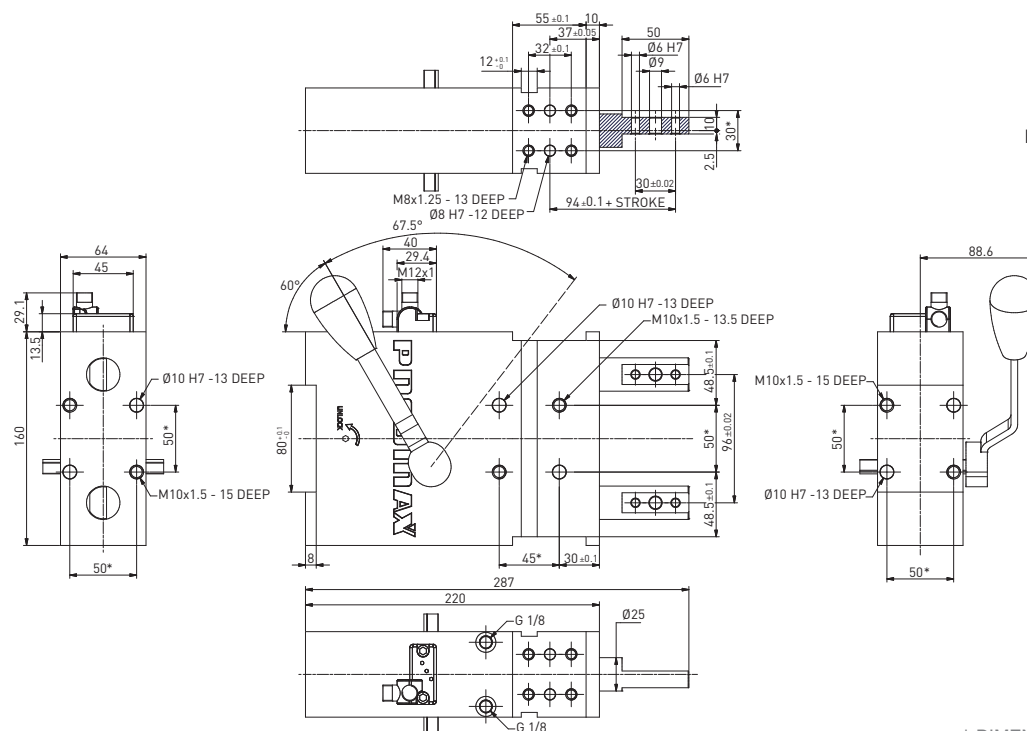
\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES:  $\pm 0.02$   
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES:  $\pm 0.1$

REV. 01 - 27/04/2021

**FTD50E40G5** / Retractable locating pin package with dual rods and toggle linkage and manual operation - Size 50 mm  
Rod termination 5 – 2.5 mm out of axis mounting surface

**WEIGHT 7,5 KG**  
Handle included

Max Hand Force: 200 N



\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES:  $\pm 0.02$   
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES:  $\pm 0.1$

REV. 01 - 27/04/2021

# Locating

## Quick installation guide

LOCATING

### 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 and lock out pneumatic and electric supply lines before operating on or around clamps.

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

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



Pressure operating range: from 2 to 8 bar/ from 30 to 115 psi.  
Inline lubrication isn't required: if lubricated air is used, it is necessary to continue using lubricated air, as the oil in it may have removed the basic lubrication in the device.

### Functional description

#### Retractable locating pin packages

When operated, the cylinder **extends and retracts the rod**.

**Anti-rotation** mechanism. A dual piston rod guiding grants positional **accuracy and repeatability**.



#### Retractable locating pin packages with CNOMO mounting pattern

When operated, the cylinder **extends and retracts the rod**.

**Anti-rotation** mechanism.

A dual piston rod guiding grants positional **accuracy and repeatability**. Please refer to the catalogue for the deviation values for different strokes and load.



#### High Performance retractable locating pin packages

Pneumatic tandem pin package with **large output force**. Pressure is applied to both pistons resulting in an approximately doubled piston output force of a corresponding piston diameter. Appreciable **saving in bulk** and weight due to the all-aluminium housing, which comprises the head cap. **Anti-rotation** mechanism. A dual piston rod guiding grants positional **accuracy and repeatability**.



#### Retractable locating pin packages with dual rods

When operated, the cylinder **extends and retracts the rods**,

which could be **rotated by 180°**, thus achieving a **symmetrical rod orientation**.

A dual piston rod guiding grants positional **accuracy and repeatability**. Make sure that the rods are doweled only on a single side to avoid any misalignment. Please refer to the catalogue for the deviation values for different strokes and load.



## The clamp is warranted for 3 mln cycles in correct operating conditions

### No lubrication.

### No preventive maintenance.

The pin packages do not require any specific adjustment.

The rod alignment as well as the anti-rotation are set in the manufacturing department and do not require any adjustment on-site.

External cleaning with non-corrosive detergents is required: cleaning interval depends on the ambient conditions as well as on the frequency of use.



## Pin package installation to the tool

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

**M6** 10 N m / 7.37 lb-ft

**M8** 25 N m / 18.43 lb-ft

Use the key support surfaces, where available.

Always use all the bores on the mounting pattern.

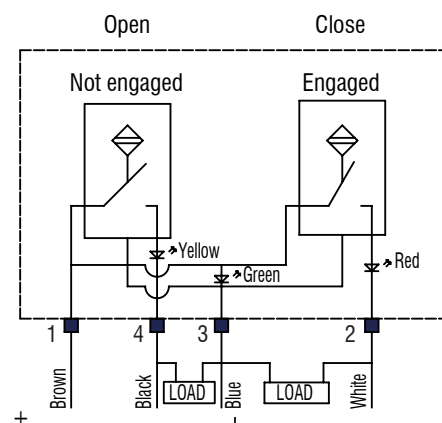
## Electronic sensor

ES001 is used for all pin packages' sizes and series. Stepless adjustment of the connector: unscrew the tightening screw and set the connector in the required position, then secure the screw with 5 N m / 3.68 lb-ft.

To replace the sensor, remove the M5 screw and assemble a new one by tightening the same screw with 5 N m / 3.68 lb-ft.



Technical features	
Operating voltage	10-30 VDC
Voltage drop	≤ 2 V
Load current	≤ 100 mA
Current consumption	≤ 25 mA
Short-circuit protection	protected
Protection rating	IP68
Operating temperature	-0 °C +50 °C
Storage temperature	-25 °C +60 °C
Electromagnetic compatibility	EN 60947-5-2:2007 + A1:2012
Power supply indication	green LED
Open position indication	yellow LED
Closed position indication	red LED



Simplified diagram (PNP)

# Handling

Pneumatic gripper clamps  
with fully adjustment  
opening angle



Quick set-up



No flow valve  
required

HANDLING

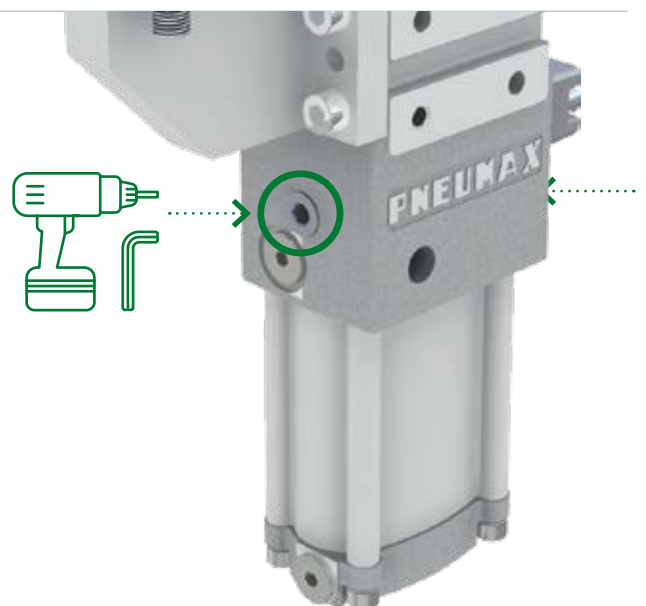
## Toggle-joint mechanism

Compact gripper clamps with toggle-joint mechanism, to secure the workpiece clamping in case of air loss: the jaws remain locked in closed position.

Mainly used to **hold the workpiece on edges or through holes – from above or below – and to transfer parts.**

## The shortest set-up time in the market

**Easy field adjustment of the opening angle**, from the rear or front side of the gripper clamp with the shortest set-up time in the market.





## Handling products

### J-Series

Complete reliability of the angle adjustment over time integrated mechanism secures the adjusted position and prevents any sliding or opening angle displacement. A **retain mechanism** secures the **adjustment tool in its seat** and prevents the Allen wrench to fall down during the adjustment procedure.

Even without air, the clamp can be toggle-locked through the adjustment means.



### Sealed roller bearings

Lightweight design, which does not compromise the stiffness and strength of the housings.

Equipped with sealed roller bearings, to ensure a high protection degree against contaminants > **fully encapsulated housing**.

### No flow valve required

No slamming towards the opening position due to an optimal integrated cushioning system.



# J-Series



## Pneumatic gripper clamps

### Technical features

**Manual release button** to open the linkage when air pressure is removed during setup. **Pneumatic ports on both sides** of the cylinder.

#### Operating features

**Operating pressure** from 2 to 8 bar / from 30 to 115 psi

**Lubrication** all the devices are lubricated for life at the factory. Inline air lubrication isn't required

### Functional charts

#### Size 40 mm

• **Cycle time for max opening angle**  
**< 0.8 s NO flow valve required**

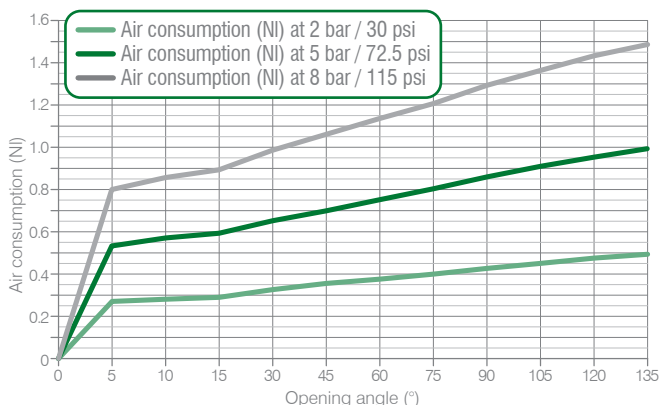
• **Clamping moment (at 5 bar / 72.5 psi)**  
**50 N m / 36,87 lb-ft**

• **Holding moment**  
**75 N m / 55,31 lb-ft**

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.

• **Air consumption / Complete cycle (opening and closing)**

REV. 00 - 17/06/2015

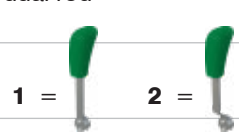


### Ordering string

#### J-Series

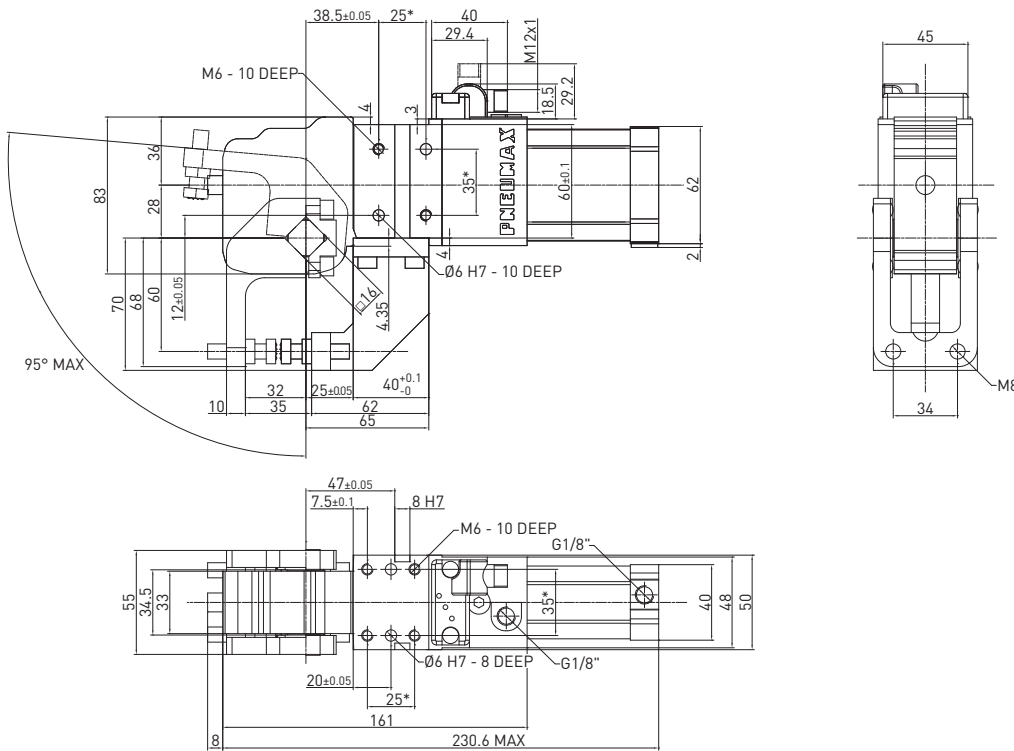
**J P 40 E G 1 2 A**

<b>J</b>	<b>VERSION</b>	<b>J</b> = Retractable locating pin package with dual rod
<b>P</b>	<b>OPERATION</b>	<b>P</b> = pneumatic <b>D</b> = pneumatic with manual operation
<b>40</b>	<b>SIZE</b>	<b>40</b> = Ø 40 mm
<b>E</b>	<b>SENSOR</b>	<b>E</b> = electronic sensor with M12 swivel connector - PNP <b>A</b> = electronic sensor with M12 swivel connector - NPN <b>N</b> = no sensor <b>B</b> = electronic sensor with M8 swivel connector - PNP
<b>G</b>	<b>PORTS</b>	<b>G</b> = G thread – BSPP
<b>1</b>	<b>ARM MOVEMENT</b>	<b>1</b> = upper jaw
<b>2</b>	<b>CLAMP ARM TYPE</b>	<b>2</b> = 2 pairs of knurled tips (not included in the scope of the supply)
<b>A</b>	<b>ARM MATERIAL</b>	<b>A</b> = aluminum <b>S</b> = steel



### JP40E / Gripper clamp - Size 40 mm

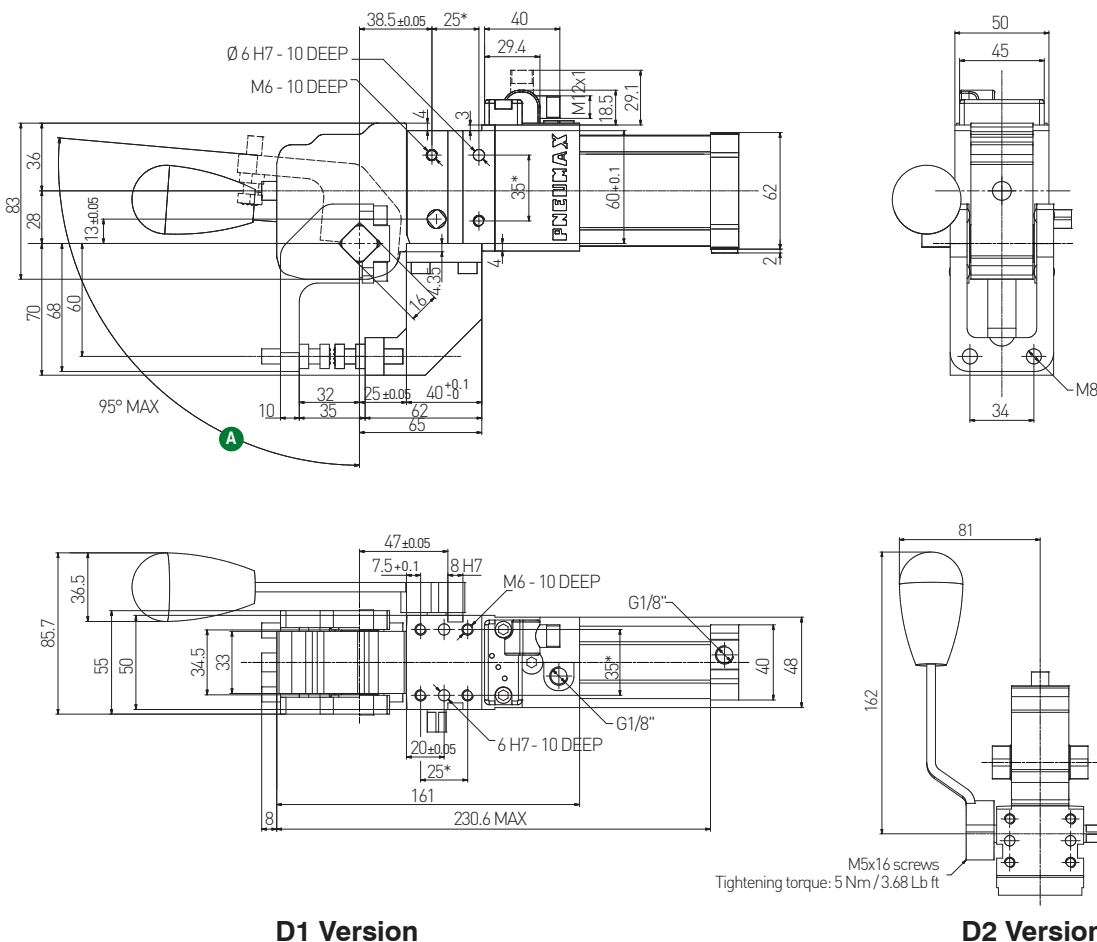
WEIGHT 1.9 kg



\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02  
DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1  
REV. 00 31/03/2015

### JD\_40E / Gripper clamp - Size 40 mm - Manual operation

WEIGHT 2.2 kg  
D1 handle included



#### Handle swivel angle

Arm opening angle	Handle swivel angle <b>A</b>
0°	4.12°
15°	22.65°
30°	38.2°
45°	58.4°
60°	83.6°
75°	107.6°
90°	123.6°
105°	132.75°
120°	137.7°
135°	140°

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

REV. 00 - 17/06/2015

D1 Version

D2 Version

# Handling

## 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 and lock out pneumatic and 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/>



Pressure operating range: from 2 to 8 bar/ from 30 to 115 psi.  
Inline lubrication isn't required: if lubricated air is used, it is necessary to continue using lubricated air, as the oil in it may have removed the basic lubrication in the device.

HANDLING

### The clamp is warranted for 3 mln cycles in correct operating conditions

**No lubrication.**

**No preventive maintenance.**

External cleaning with non-corrosive detergents is required: cleaning interval depends on the ambient conditions as well as on the frequency of use.



### Clamp installation to the tool

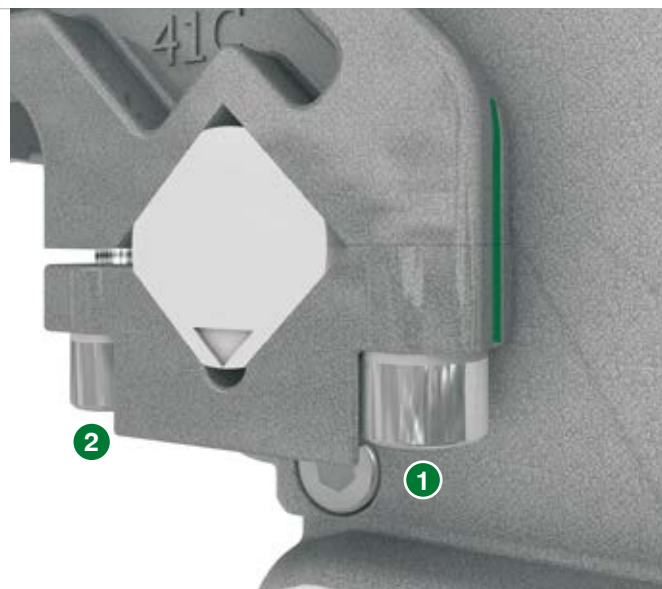
The gripper clamp can be installed by one of its four mounting surfaces, using dowels and screws according to its datasheet. The tightening torques to be set are:

**M6** 10 N m / 7.37 lb-ft

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

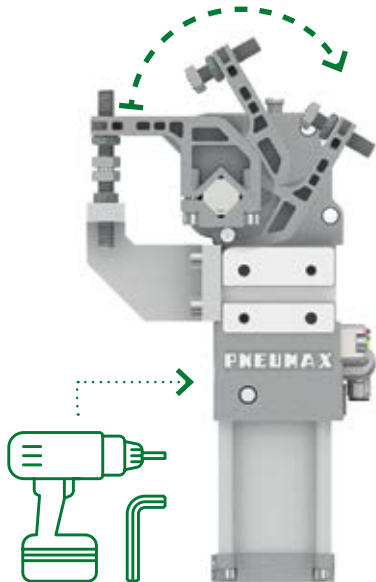
### Clamping jaws mount

The sides of the brackets have two different heights. Assemble the brackets to the side of the clamping arm, so that the surfaces, where the side mark has been machined on, will match. Secure, at first, the screw on the mark side **1** by setting the tightening torques to 22 N m /16.22 lb-ft and leave no gap between the bracket and the jaws. Then, secure the other screw **2**: in this case, due to the different length of the sides of the brackets, a gap between the same and the clamping arm will be noticed. Always use locking washers. Please refer to the clamping arms' datasheet for possible clamping arm position and the respective max opening angle.



## Opening angle adjustment

The jaws must be in the open position. Insert a 5 mm hexagonal flat Allen Wrench or a screw gun and adjust the opening position to the required opening angle.

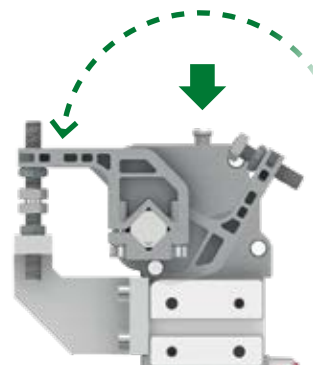


Visit our website for a video of the adjustment procedure. **No adjustment of the sensor is required.**

One access point to opening angle adjustment on each side

## Manual release button

To manually unlock the mechanism, hit the bolt with a rubber mallet. The linkage will automatically release itself from the over-centre position. To close the clamps during set-up operations, without air, use a screw gun or a flat Allen wrench to engage the adjustment means and adjust the clamp till 0° opening angle: the linkage will be toggle-locked as the manual release button is completely outside. The J40D and the JK40D series are equipped with a handlever, with whom the clamp can be closed and opened.



## Adjustment Of the tips

Adjust the lower tips at a predetermined position and place the metal sheet to be held. For an optimal holding of the workpiece, adjust the tips on the mobile arm until contact with the workpiece is reached. Open and close the clamp. After a proper adjustment to get the required clamping force has been accomplished, secure the tip screws by tightening the bolts. Tips with different holding surfaces are available upon request.

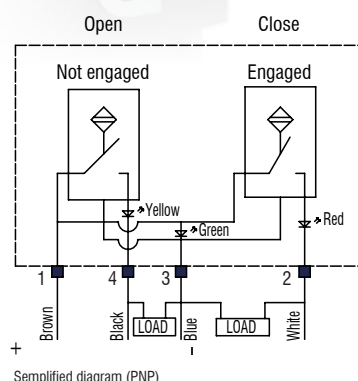
## Electronic sensor

ES001 is used for all clamps' sizes and series. Stepless adjustment of the connector: unscrew the tightening screw and set the connector in the required position, then secure the screw with 5 N m / 3.68 lb-ft.

To replace the sensor, remove the M5 screw and assemble a new one by tightening the same screw with 5 N m / 3.68 lb-ft.



Technical features	
Operating voltage	10-30 VDC
Voltage drop	≤ 2 V
Load current	≤ 100 mA
Current consumption	≤ 30 mA
Short-circuit protection	protected
Protection rating	IP68
Operating temperature	-0 °C +50 °C
Storage temperature	-25 °C +60 °C
Electromagnetic compatibility	EN 60947-5-2:2007 + A1:2012
Power supply indication	green LED
Open position indication	yellow LED
Closed position indication	red LED
Digital output type	PNP



# Pivoting

Robust and reliable pivot units to accurately position and/or rotate tooling or parts to work condition



Quick set-up



Robust conical roller bearings

PIVOTING

## Easy set-up and quick installation time

The orientation of the ports can be easily achieved by untightening the tie rods.

## No external limit stop required

**Pneumatic cushioning of both end positions:** fixed orifices and integrated cushioning provide for smooth operation in the closing and opening cycles.

## Robust conical roller bearings

Drive shaft connections are all equipped with robust conical roller bearings for a **high load capacity and side load acceptance**.

## All enclosed mechanism

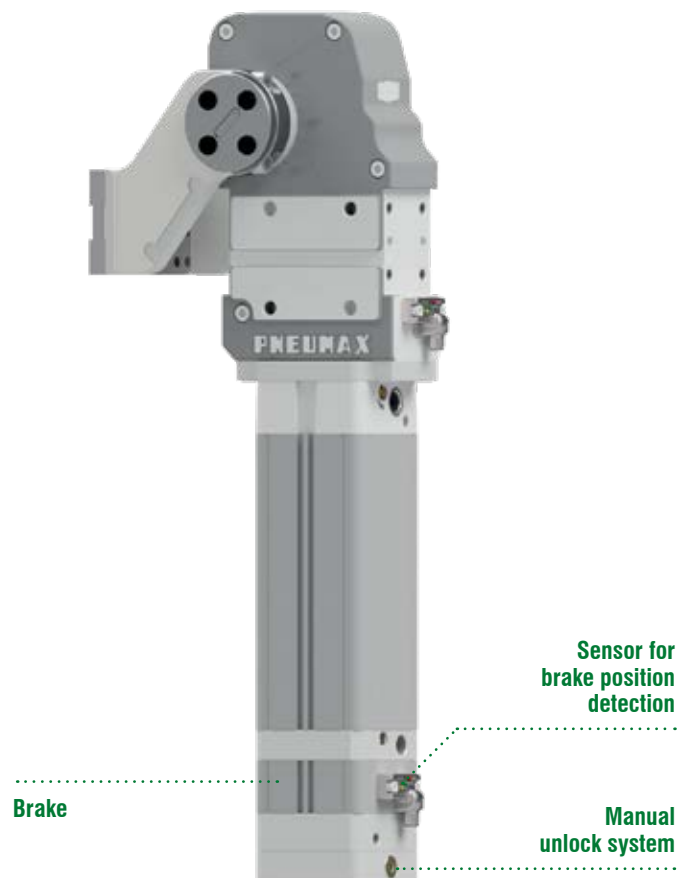
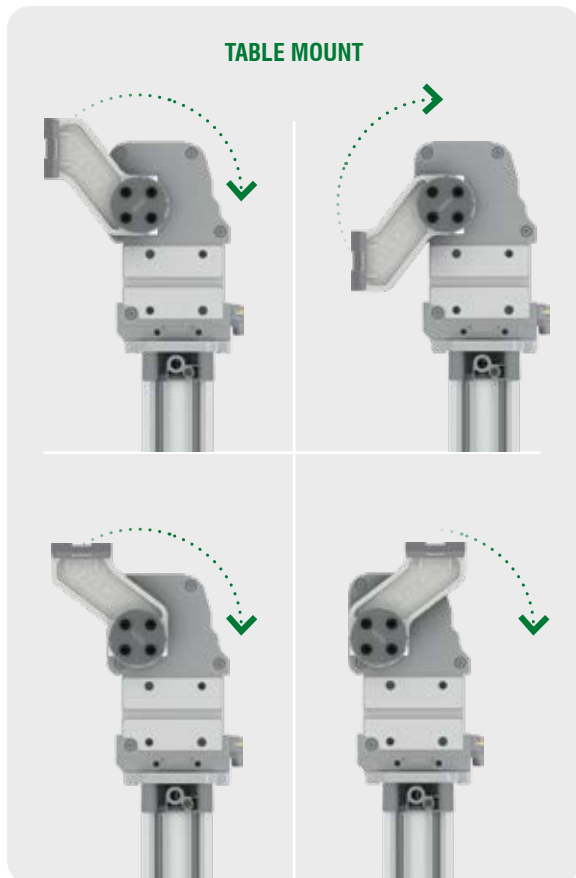
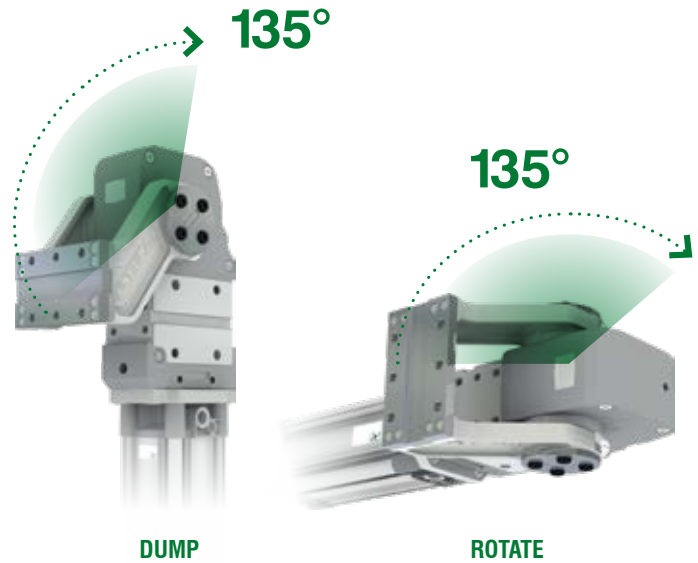
to ensure a high protection degree against contaminants and years of service life **without maintenance** to minimize downtime associated with contamination.

# Power pivots

## P-Series

The P series can be mounted by its rear or front mount and can be used as a **DUMP** device. By mounting the pivot units by their lateral mounts, they can be used to **ROTATE** parts, tooling and clamps' assemblies.

- Remains locked even after loss of air pressure
- Front, rear and side mounting surfaces
- Four table mounting positions available
- 1 sensor for all sizes and opening angle with stepless adjustable connector
- Extra light products



PIVOTING

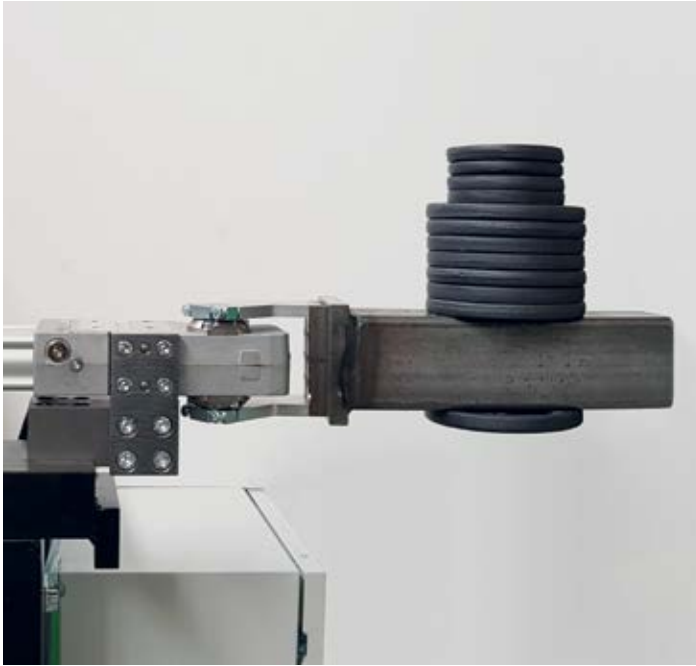
## P63-Series

Pneumax guarantees high reliability of all products though a 100% testing procedure made by the Automotive division Quality Department.

Conforming to standard

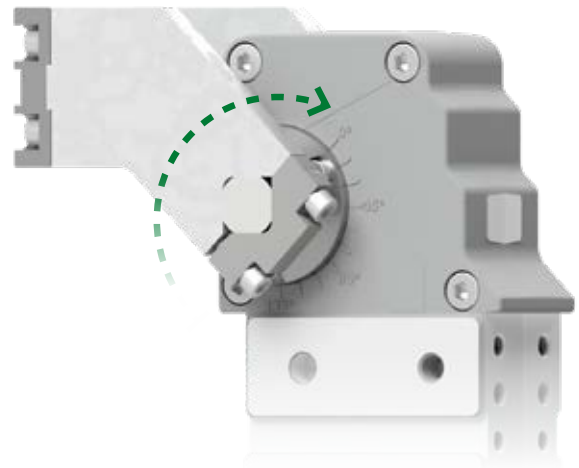
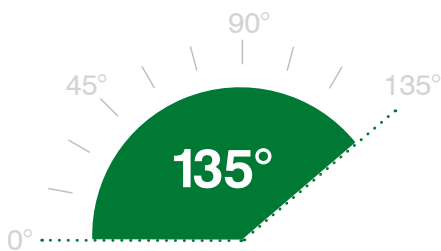


PIVOTING



## Max swivel angle: 135°

The only fully adjustable opening angle from 0° to 135° in the market.







# P-Series



INTERNATIONAL  
**MOUNT**



GLOBAL STANDARD COMPONENTS  
**NAAMS**



## Pivot units

### Technical features

**Manual release button** to open the linkage when air pressure is removed during setup.

#### Operating features

**Operating pressure** from 2 to 8 bar / from 30 to 115 psi

**Lubrication** all the devices are lubricated for life at the factory. Inline air lubrication isn't required

### Functional charts

- **Max opening angle for table positions**

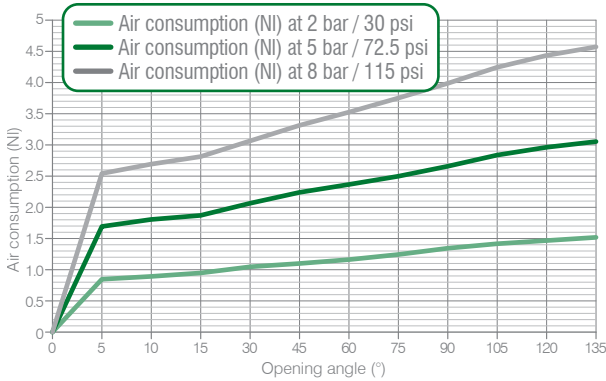
	Pos. 1	Pos. 2	Pos. 3	Pos. 4
135°	✓	✗	✓	✗
120°	✓	✗	✓	✗
115°	✓	✓	✓	✗
90°	✓	✓	✓	✗
60°	✓	✓	✓	✓
45°	✓	✓	✓	✓

Any intermediate opening angle is available upon request

### Size 63 mm

- **Admissible load moment**  
16 N m / 10,32 lb-ft
- **Holding moment**  
1.500 N m / 1.106,34 lb-ft

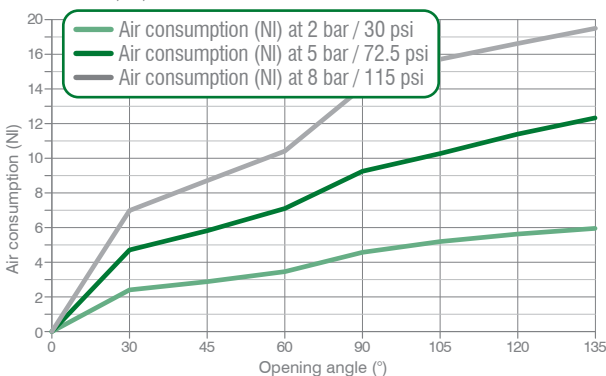
- **Air consumption / Complete cycle (opening and closing)**  
REV. 00 - 17/06/2015



### Size 100 mm

- **Admissible load moment**  
130 N m / 95,88 lb-ft
- **Holding moment**  
2.500 N m / 1.843,90 lb-ft

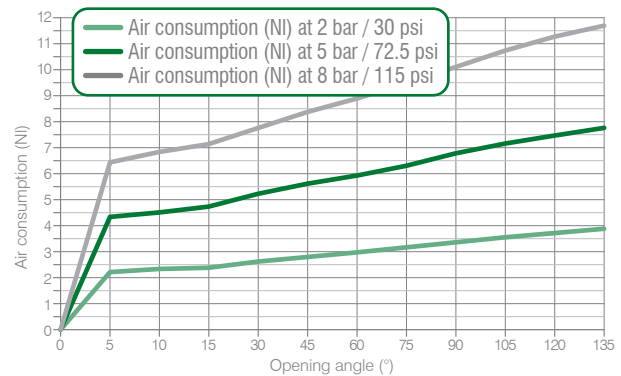
- **Air consumption / Complete cycle (opening and closing)**  
REV. 00 - 15/05/2015



### Size 80 mm

- **Admissible load moment**  
70 N m / 51,62 lb-ft
- **Holding moment**  
2.500 N m / 1.843,90 lb-ft

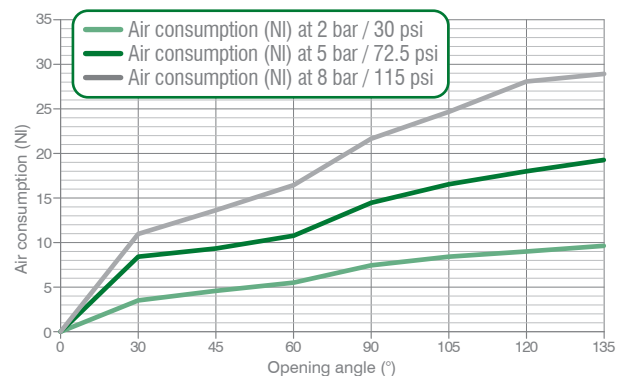
- **Air consumption / Complete cycle (opening and closing)**  
REV. 00 - 15/05/2015









### Size 125 mm

- **Admissible load moment**  
180 N m / 132,76 lb-ft
- **Holding moment**  
2.500 N m / 1.843,90 lb-ft





- **Air consumption / Complete cycle (opening and closing)**  
REV. 00 - 15/05/2015



**Ordering string**
**Size 63**
**P 63 E G 1 1 N ADJ**

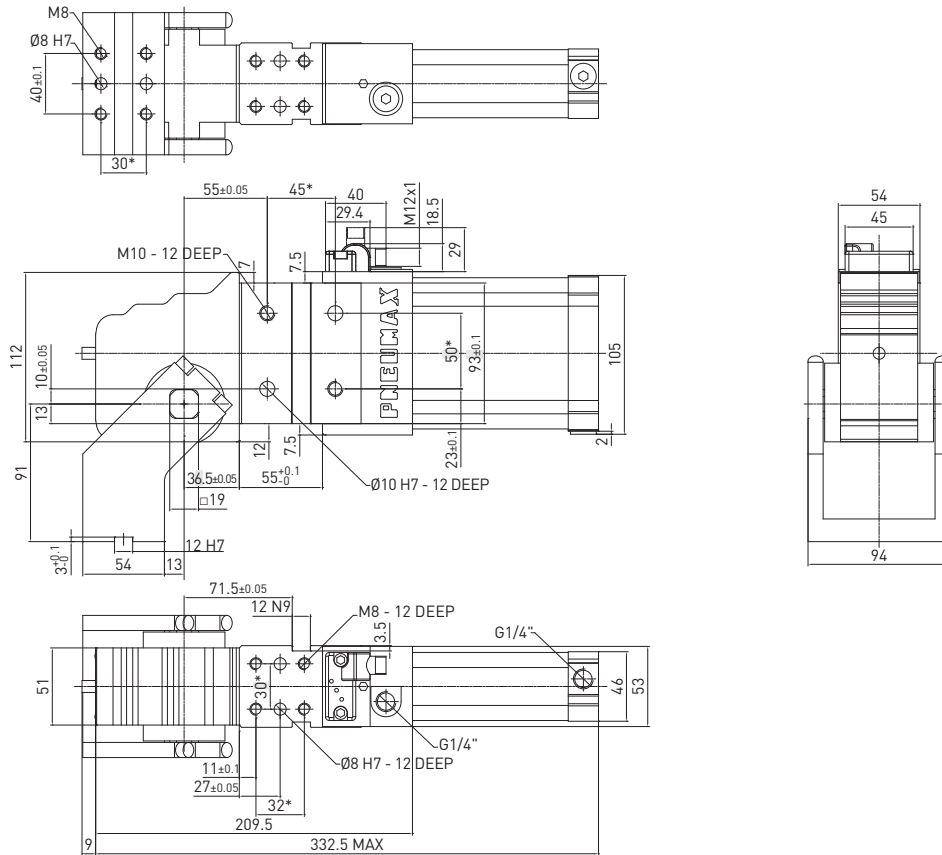
<b>P</b>	<b>VERSION</b>	<b>P</b> = Pivot unit
<b>63</b>	<b>SIZE</b>	<b>63</b> = Ø 63 mm
<b>E</b>	<b>SENSOR</b>	<b>E</b> = electronic sensor with M12 swivel connector - PNP <b>A</b> = electronic sensor with M12 swivel connector - NPN <b>N</b> = no sensor <b>B</b> = electronic sensor with M8 swivel connector - PNP
<b>G</b>	<b>PORTS</b>	<b>G</b> = G thread – BSPP
<b>1</b>	<b>MOUNTING PATTERN</b>	<b>1</b> = International mount  <b>INTERNATIONAL MOUNT</b> <b>2</b> = NAAMS Standard  <b>GLOBAL STANDARD COMPONENTS NAAMS</b>
<b>1</b>	<b>TABLE MOUNT</b>	<b>1</b> =  <b>2</b> =  <b>3</b> =  <b>4</b> = 
<b>N</b>	<b>BRAKE SYSTEM</b>	<b>N</b> = no brake
<b>ADJ</b>	<b>OPENING ANGLE</b>	<b>ADJ</b> = stepless opening angle from 0° to 135°

**Size 80, 100, 125**
**P 80 E 1 G 1 N 45 U**

<b>P</b>	<b>VERSION</b>	<b>P</b> = Pivot unit
<b>80</b>	<b>SIZE</b>	<b>80</b> = Ø 80 mm <b>100</b> = Ø 100 mm <b>125</b> = Ø 125 mm
<b>E</b>	<b>SENSOR</b>	<b>E</b> = electronic sensor with M12 swivel connector - PNP <b>A</b> = electronic sensor with M12 swivel connector - NPN <b>N</b> = no sensor <b>B</b> = electronic sensor with M8 swivel connector - PNP
<b>1</b>	<b>SUPPLY PORTS POSITION</b>	<b>1</b> = on the left side from the sensor <b>2</b> = on the front side <b>3</b> = on the right side from the sensor <b>4</b> = on the sensor's side The supply ports position of the brake is the same as the cylinder's
<b>G</b>	<b>PORTS</b>	<b>G</b> = G thread – BSPP
<b>1</b>	<b>TABLE MOUNT</b>	<b>1</b> =  <b>2</b> =  <b>3</b> =  <b>4</b> = 
<b>N</b>	<b>BRAKE SYSTEM</b>	<b>B</b> = brake <b>N</b> = no brake <b>S</b> = sensor on the brake
<b>45</b>	<b>OPENING ANGLE</b>	<b>45°</b> <b>60°</b> <b>90°</b> <b>120°</b> <b>135°</b> Any intermediate opening angle is available upon request - Please see the charts for table position as well as for max. opening angle
<b>U</b>	<b>UNLOCK MECHANISM FOR THE BRAKE</b>	<b>U</b> = unlock mechanism (only for brake system: B,S)

**P63EG1 / Pivot unit - International mount - Size 63 mm**

WEIGHT 6.5 kg

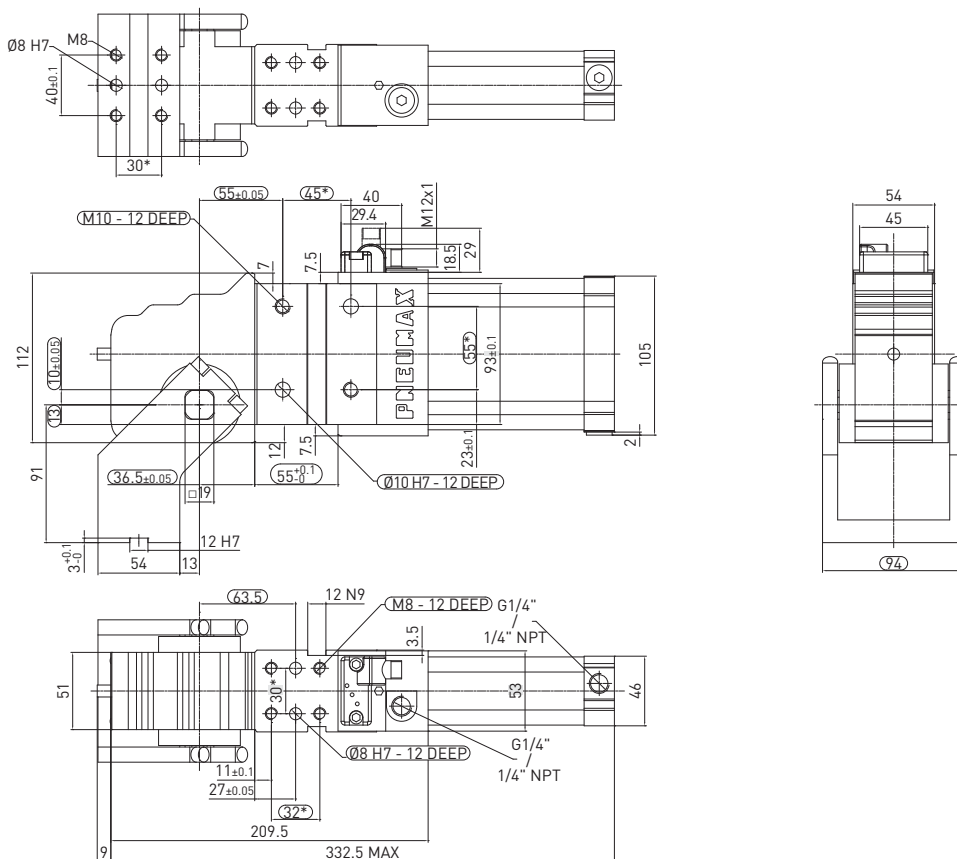


\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02  
DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 00 - 02/08/2019

**P63EG2 / Pivot unit - NAAMS Std - Size 63 mm**

WEIGHT 6.5 kg

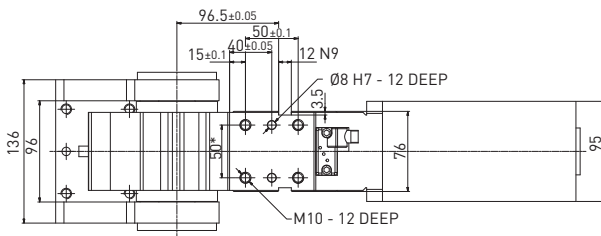
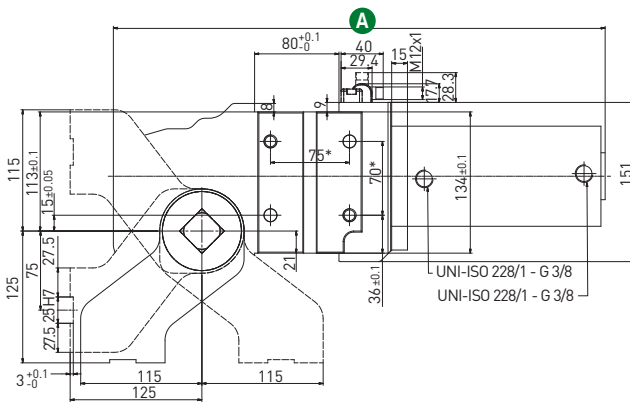
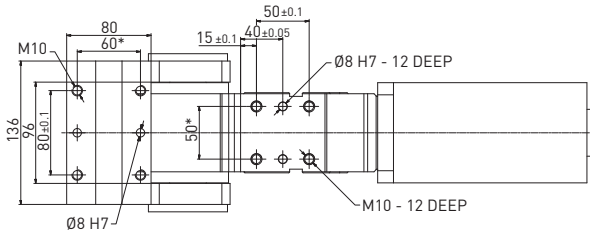


\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02  
DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 00 - 02/08/2019

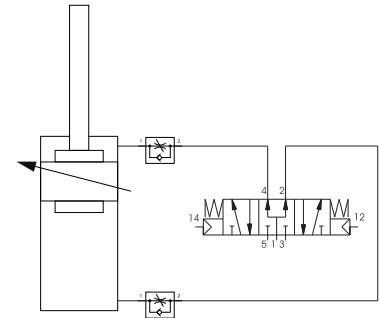
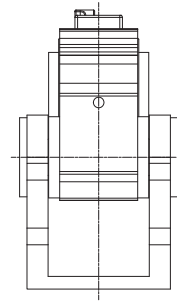
**P80\_N** / Pivot Unit - Size 80 mm

**WEIGHT 10.7 kg**  
135° version



**Overall length**

opening angle	<b>A</b> Overall length (mm)
45°	466.5
60°	479
90°	504.5
120°	529
135°	537

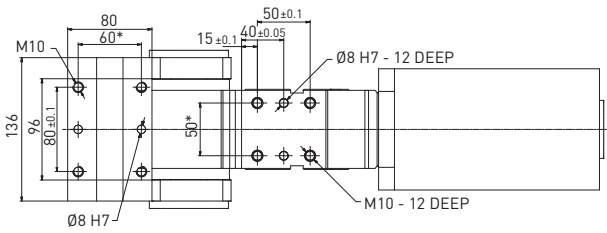


\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES: ±0.02  
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES: ±0.1

REV. 02 - 05/05/2021

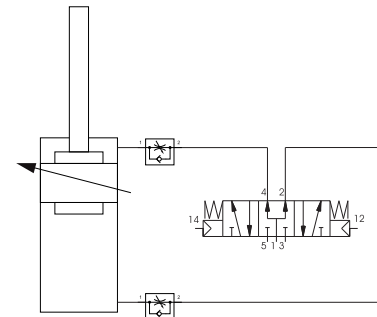
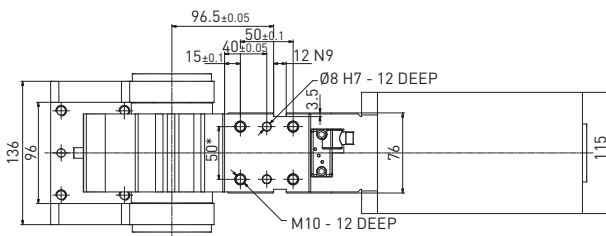
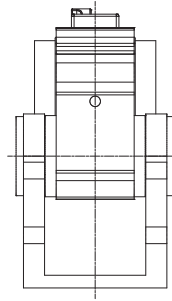
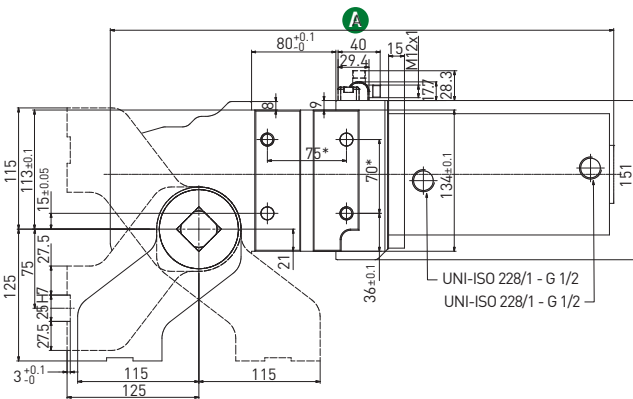
**P100\_N** / Pivot Unit - Size 100 mm

**WEIGHT 12.1 kg**  
135° version



**Overall length**

opening angle	<b>A</b> Overall length (mm)
45°	477.5
60°	490
90°	515,5
120°	540
135°	548

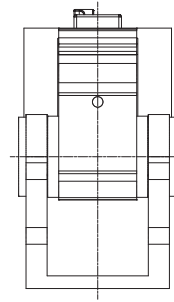
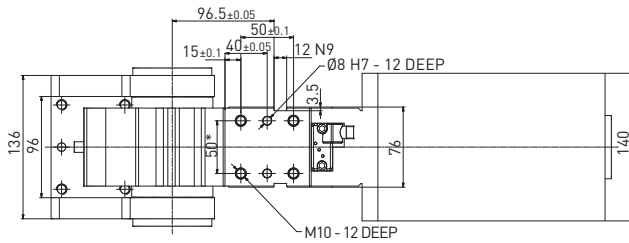
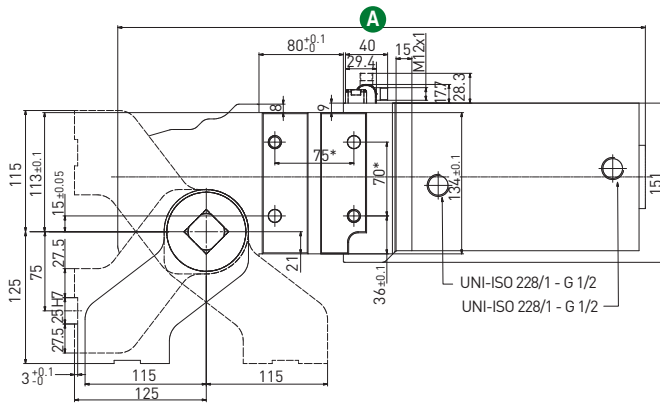
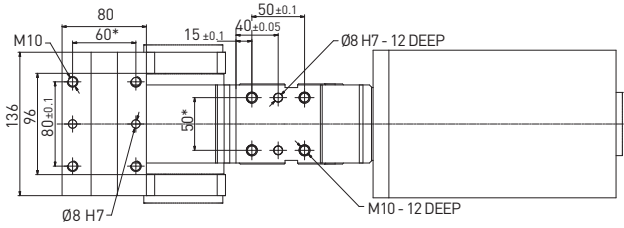


\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES:  $\pm 0.02$   
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES:  $\pm 0.1$

REV. 02 - 05/05/2021

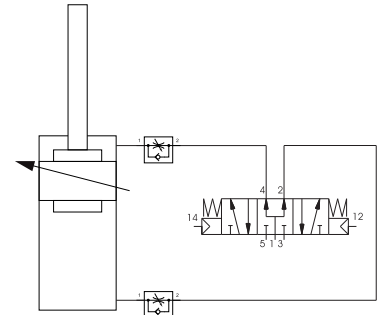
**P125\_N** / Pivot Unit - Size 125 mm

**WEIGHT 15.8 kg**  
135° version



**Overall length**

opening angle	<b>A</b> Overall length (mm)
45°	500.5
60°	513
90°	538.5
120°	563
135°	571



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

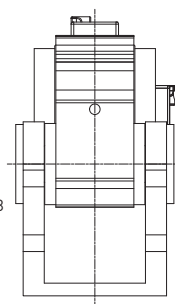
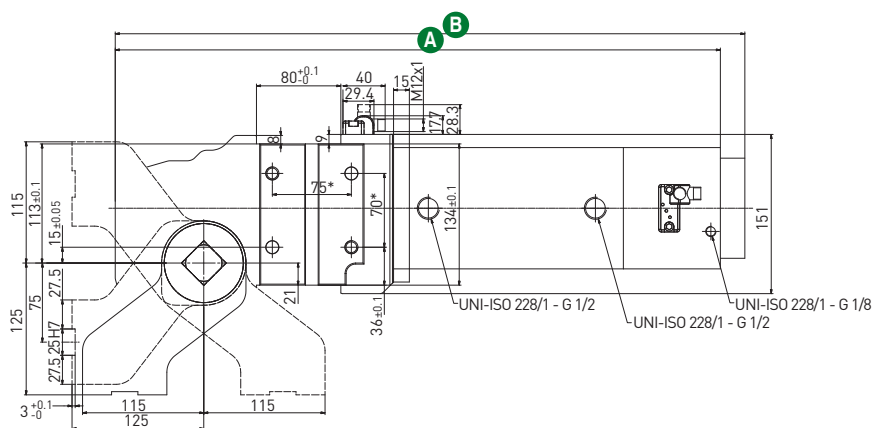
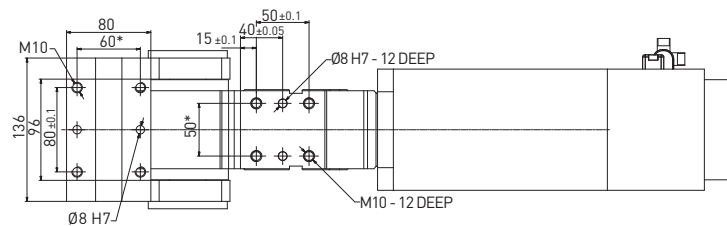
REV. 02 - 05/05/2021



# P100E\_B/S \_\_\_ / Pivot Unit - Size 100 mm

**WEIGHT 16.00 kg**

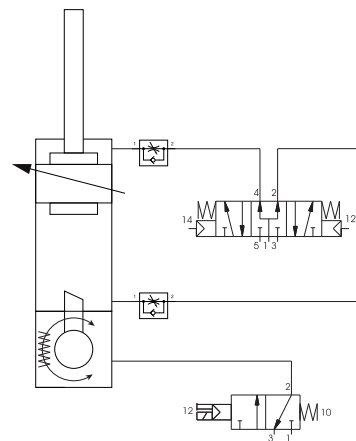
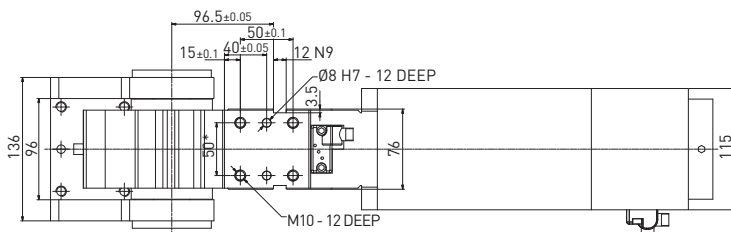
135° version



### Overall length

opening angle	A Overall length (mm)	B Overall length (mm)
45°	597.3	574
60°	607.8	584.5
90°	635.3	612
120°	659.8	636.5
135°	667.8	644.5

PIVOTING



\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

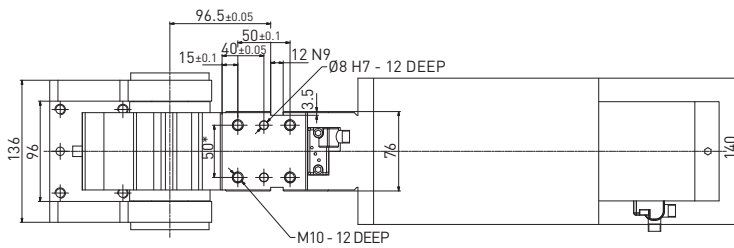
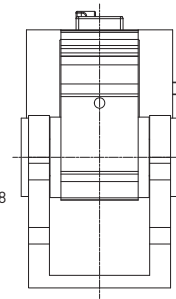
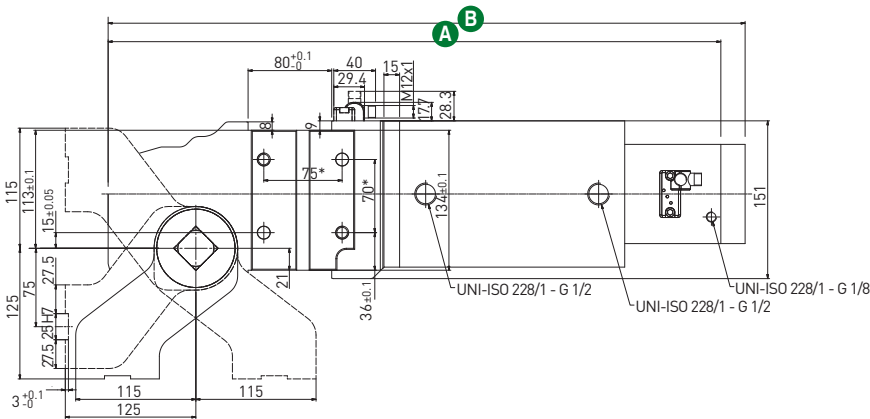
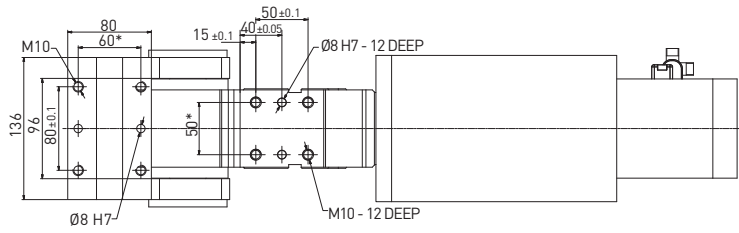
DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

REV. 00 - 05/05/2021



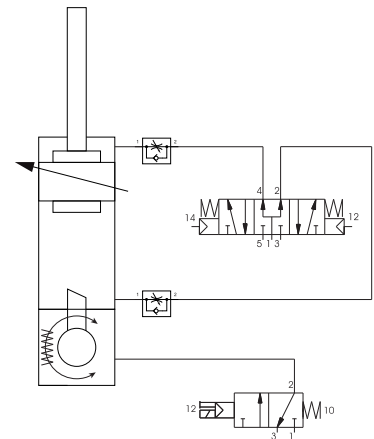
**P125E\_B/S** / Pivot Unit - Size 125 mm

**WEIGHT 19.5 kg**  
135° version



**Overall length**

opening angle	<b>A</b> Overall length (mm)	<b>B</b> Overall length (mm)
45°	609.8	586.5
60°	622.3	599
90°	647.8	624.5
120°	672.3	649
135°	680.3	657



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

REV. 00 - 05/05/2021

# Pivoting 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 units, when they are in operation. Disconnect and lock out pneumatic and electric supply lines before operating on or around power pivots.

## Functional description

PNEUMAX power pivots are rotating units typically used in the field of sheet metal working. A pneumatic cylinder operates a toggle linkage and drives it to its closed or open position. A toggle mechanism, integrated in the power pivot's housings, guarantees the closed condition even in the absence of the actuation command.

An external actuating arm is connected to the shaft of the linkage. Power pivots are robust and reliable devices used in fixtures to accurately position and rotate workpieces: they are equipped with robust conical roller bearings with high-load capacity and side load acceptance. They can be mounted by their rear or front mounting surfaces and be used as dump devices, or they can be mounted by their side mounting surfaces and be used to rotate parts or assemblies. The open and closed positions of the actuating arm, also referred to as swivelling table or saddle arm, is detected by an inductive sensor through integrated sensor means in the linkage. Power pivots can be equipped with brake devices configured to stop the unit during its stroke in case of pressure loss.

## Safety

Power pivots are designed and manufactured as components to be incorporated in more complex systems or toolings: they are not stand-alone or independent ready-to-be-used devices and for this reason they are not equipped with their own safety equipment.

Power pivots should not be operated before the complete safety control system of the tooling is activated and certified as conforming to all directives and related safety requirements.

All operations and any maintenance work on power pivots must be carried out exclusively by trained staff and by observing all conditions which guarantee the safety of the personnel, in a complete standstill of the whole system.

## Handling

Make sure that the packaging is not damaged before unboxing the units; given its considerable weight, it is advisable to use a suitable lifting system and to guarantee that during its handling the load is stably balanced.

## Power pivots installation to the tool

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

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

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

## Operating conditions

Pressure operating range:

**from 2 to 8 bar/ from 30 to 115 psi**

Inline lubrication isn't required:

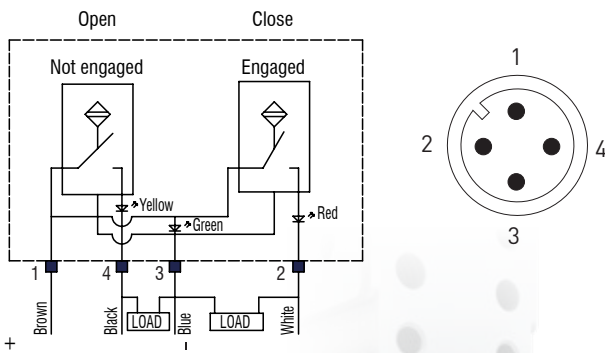
if lubricated air is used, it is necessary to continue using lubricated air, as the oil in it may have removed the basic lubrication in the device.

## Electronic sensor

ES001 is used for all power pivots' sizes and for the detection of the brake condition ( activated/ deactivated).  
Adjustment of the connector: unscrew the tightening screw and set the connector in the required position, then secure the screw with 5 N m / 3.68 lb-ft.

### Technical features

Operating voltage	10-30 VDC
Voltage drop	≤ 2 V
Load current	≤ 100 mA
Current consumption	≤ 30 mA
Short-circuit protection	protected
Protection rating	IP68
Operating temperature	-0 °C +50 °C
Storage temperature	-25 °C +60 °C
Electromagnetic compatibility	EN 60947-5-2:2007 + A1:2012
Power supply indication	green LED
Open position indication	yellow LED
Closed position indication	red LED
Digital output type	PNP

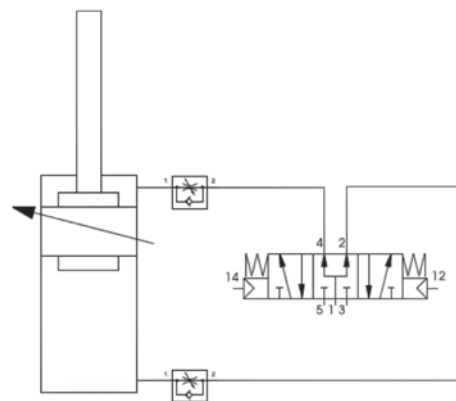


Simplified diagram (PNP)

To replace the sensor, remove the M5 screw and assemble a new one.

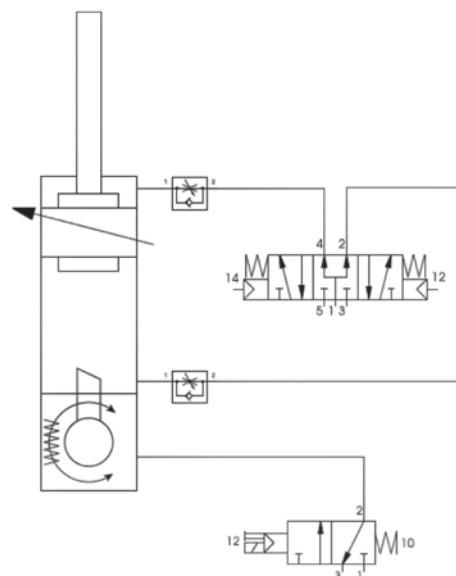


## Pneumatic connection Recommended pneumatic scheme



Power pivot without brake

Power pivot with brake system



## Manual release mechanism of the linkage

A manual override access to untoggle the linkage in case of emergency is provided for all power pivots. Before unlocking the mechanism, make sure not to reach into the swivel area of the saddle arm: once the linkage is untoggled, the arm can move quickly and abruptly in any direction.



**WARNING**

Make sure all safety requirements are met.  
Such operations must be carried out by qualified specialists.



## Brake system

A patented brake system allows for a reliable braking in case of pressure drop. An original design guarantees a wide braking surface in extremely reduced radial dimensions. The brake system is designed for static conditions.

Operating pressure: **2.5 to 8 bar**

We suggest to carry out a yearly functional test of the brake system by simulating an emergency stop.



Patented



## Brake manual unlock device for emergency situations

Power pivots can be equipped with an unlock device to disengage the brake in case of emergency.

A built-in access for a 5 mm Allen wrench is integrated below the rear end cap. A clockwise movement of the Allen wrench will unlock the brake.

This procedure must be carried out exclusively by qualified specialists. Make sure to meet all related safety requirements and make sure that no operator reaches into the swivel area of the arm.



**WARNING**

Unlocking the brake will generate an immediate, abrupt movement of the load.

Once the Allen wrench is removed and air is supplied again to the unit, the brake will reset itself automatically.



## Orientation of the supply ports

The orientation of the supply ports on any power pivot can be easily and quickly modified, simply by untightening the 4 tie rods and rotating the cylinder block. Air must be disconnected during this procedure. Make sure to comply with the tightening torque specifications shown in the previous pages “power pivots installation to the tool”.



## External stops, guides and shock absorbers

Using external stops, guides and shock absorbers is not a recommended procedure, as it may interfere with the correct functioning of the unit. All Pneumax power pivots are equipped with an integrated hard stop for the linkage, which guarantees an accurate and repeatable closed position. By using additional external stops or guides which prevent the power pivot to completely reach its end stroke, the correct functioning of the linkage will be jeopardized and it will invalidate any warranty of the unit.

In case external stops or guides are installed by the customers, they must not interfere with the correct functioning of the unit.

In case external guides are used, they must not generate any interference higher than 0,05 mm on their support.

In case the load conditions require shock absorbers to be installed, it is strongly recommended that they do not reach their end-stroke before the power pivot is toggle locked.

## Stocking conditions

Warehouse temperature: **from -20°C to 50 °C**

Relative humidity: **10% to 90%**

## Info

For any further information, do not hesitate to contact us at

[automotive@pneumaxspa.com](mailto:automotive@pneumaxspa.com)

# MLGA NC Locator

## Multi-Axes Locator for Geometric Alignments

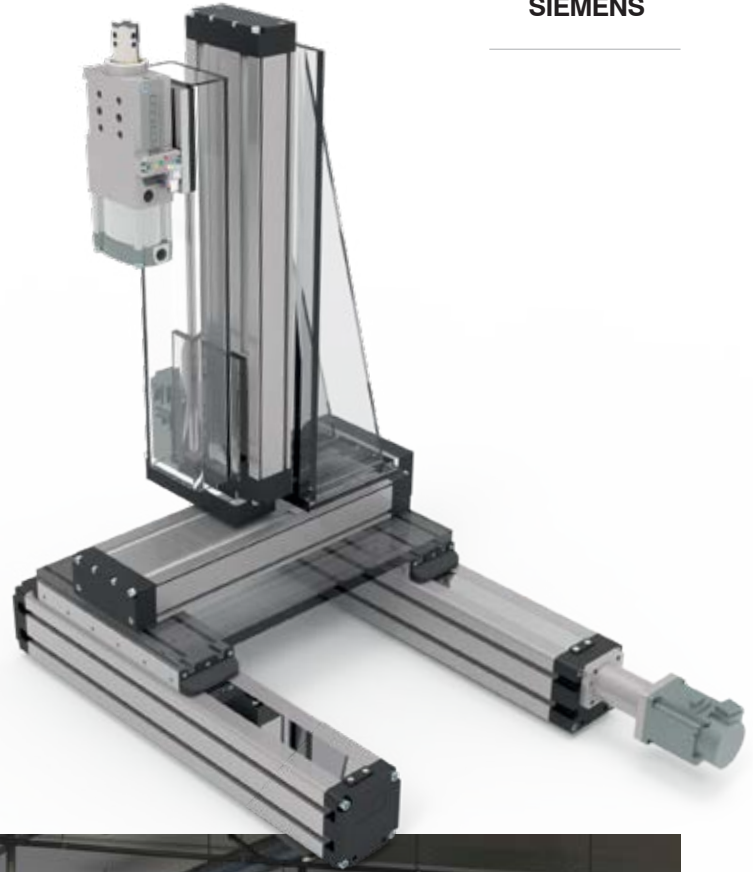
Positioning locator with interpolated electric actuators with ball bushings and brushless servo motors, all controlled by a digital driver system to provide the geometric alignments.

- **Compact design:** the MLGA can be used on grounded toolings or on end effectors with robots
- **High repeatability** and high location accuracy
- **High protection** level against contamination: all components are protected against welding spatter and deposits of debris from on-going mechanical processes. Suitable for harsh environments, as Body In White
- **User-friendly interface** - Simplified HMI, augmented reality and cloud connection.

In partnership with

TELMOTOR

SIEMENS



MLGA NC LOCATOR





Compactness



High repeatability



High resistance



User-friendly Interface

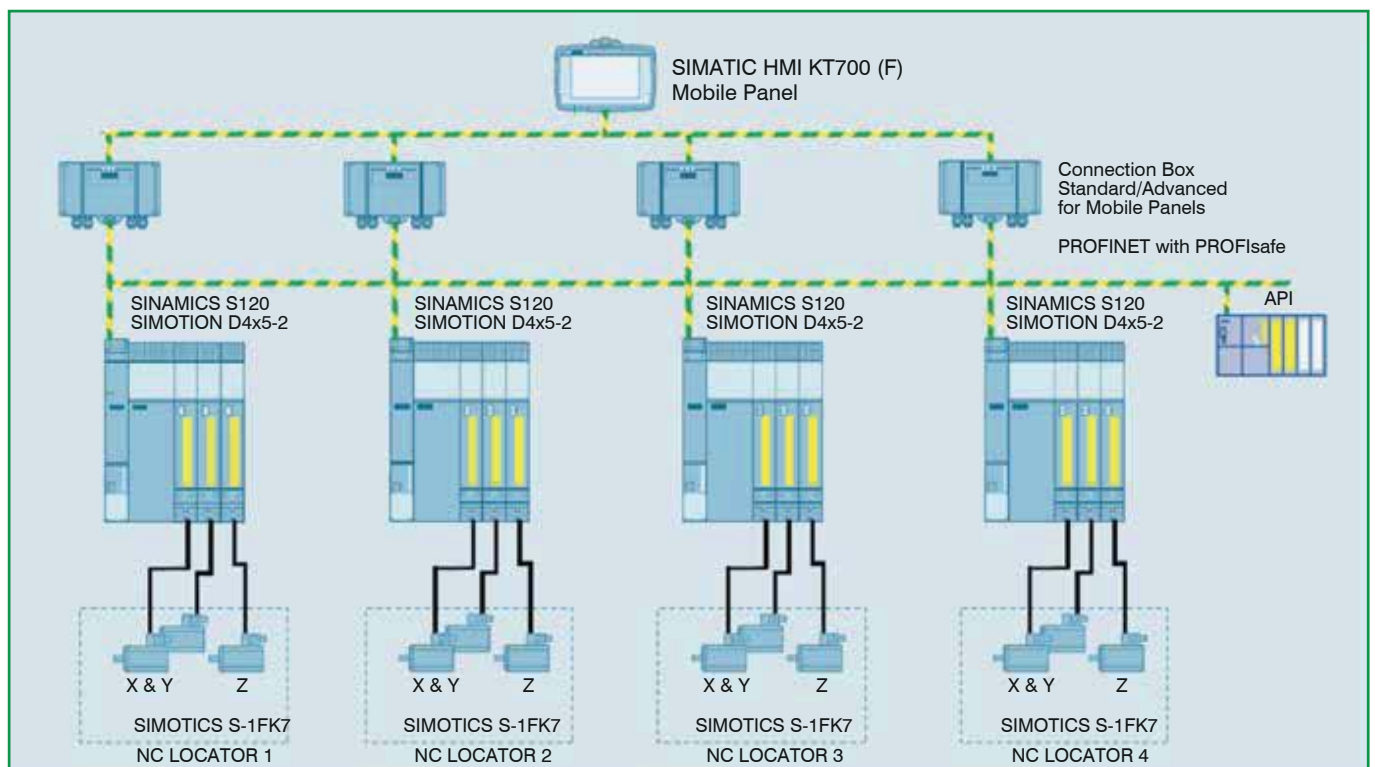
## General features

- **DIGITAL TWIN** for commissioning, testing, training and customer specific adoption.
- **RECONFIGURABILITY**: the system allows the operator to adjust the location in order to quickly and easily adapt to different geometric alignments of different models
- **SINAMICS S120** drives with extended safety functions
- **SIMATIC IoT2040 PLATFORM**: in Cloud accurate monitoring of functional parameters and data analytics.
- **SINEMA REMOTE CONNECT** for secure maintenance and connection
- **AUGMENTED REALITY** for easy to use interoperability with the machine and production line.

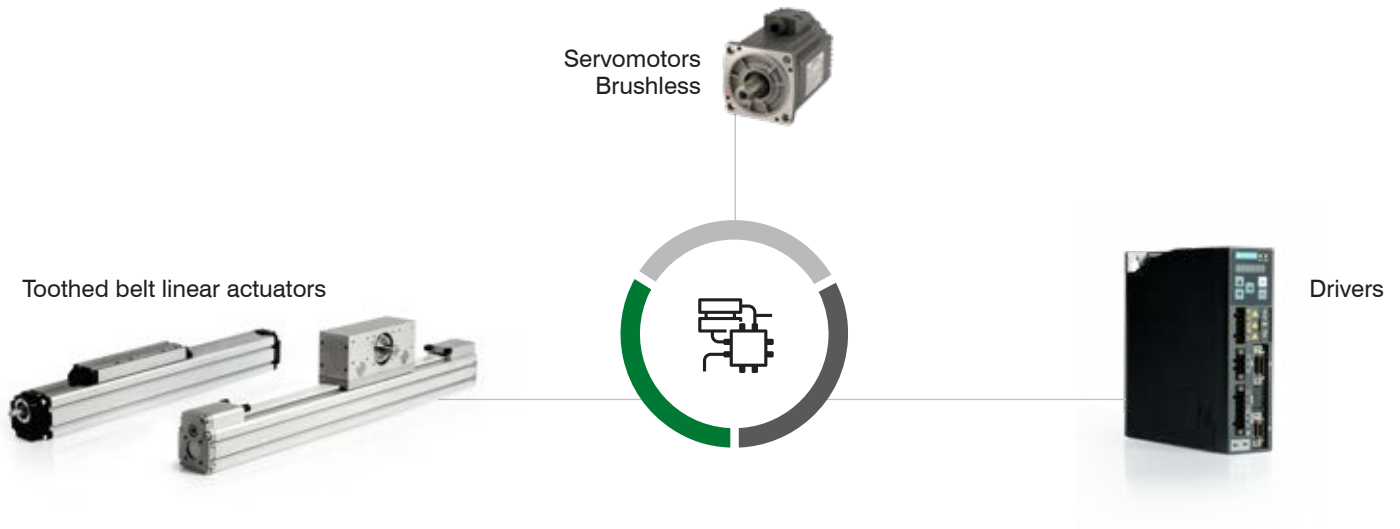


## Interpolation of different systems

Possible configuration for process time reduction



## Electric actuation



## Ball screw linear actuators



The ball screw linear actuators are available in many series and sizes: they show differ load capabilities and maximum precision and reliability.

Anodized aluminum profile with mounting holes to install sensors along the length of the actuators.

Protection against external contamination is achived thanks to hardened stainless steel strip and sliding elements on the outer carriage. Dual-guide versions are ideal for high load and for high inertia moments applications.

- **Compact linear tables with double parallel guides**
- **Hardened stainless steel strip**
- **Compact linear tables**
- **Available with double external guide**
- **Square-profile actuators with single or double guide**
- **Protective bellows and integrated position sensor**
- **“T” slot for proximity switches**



## Toothed belt linear actuators



Linear actuators with steel reinforced polyurethane toothed belt and belt tensioning system are available with one or two ball rail systems. "T" slot as mounting surface and "T" slot for proximity switches.

- Carriage in anodized aluminum with "T" slots
- Square profile with double external guide
- Motor mount assembly available in two different versions
- Actuator with motor mounted to the transmission box for vertical application
- Actuator with single or double carriage and bidirectional movement
- Square profile with single or double guide
- Flat profile
- Integrated tensioning system

## Servomotors and drives



- IP65 protection degree available
- Internal setpoint (IPOS) for position control
- Profinet interface connection
- Maximum productivity and energy efficiency
- Overload possibility: up to thrice of the nominal torque
- Integrated braking resistor
- Pulse train positioning (PTI)

# Complementary products

## Fittings



Fully guided  
sleeve



## Tubes

External layer:  
**Flame resistant V-0**  
Middle layer:  
**Aluminum foil**  
Inner layer:  
**Polyurethane**



## ISO 15592 cylinders



## Compact guided cylinders



## Special design product



# Tubes



Patented



## Three-Layer Polyurethane tube

- High flexibility
- Spatter resistant
- Suitable for arc welding and for pneumatic piping in harsh environments
- Available in 3 colours

### Technical features

Part no.	D x d mm	T mm	P bar	P1 bar	R mm	Weight (kg)	Package mt
FRTTPU0425	4 x 25	1	8	36	30	3.85	100
FRTTPU0604	6 x 4	1	8	36	50	7.2	100
FRTTPU0805	8 x 5	1	8	32	60	8.3	100
FRTTPU1065	10 x 6.5	1	8	28	70	11	100
FRTTPU1208	12 x 8	1	8	24	80	13.5	100

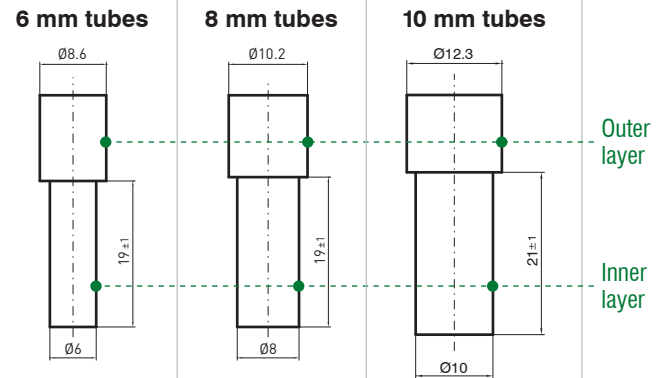
Shore: A 95

**D** = external diameter  
**d** = internal diameter  
**P1** = -breaking pressure

**T** = cover thickness  
**R** = bending radius

To be used with AT-fitting series, to allow a proper protection of the tube from welding sparks.

### Cutting specs



To allow a proper installation of the fittings, cut 19 mm out of the outer layer.

### Ordering string

## Polyurethane tube

**FRTTPU 06 04 N**

-	<b>VERSION</b>	<b>FRTTPU</b> = 3-layer polyurethane tube
06	<b>OUTER DIA</b>	<b>04</b> = Ø 4 mm <b>06</b> = Ø 6 mm <b>08</b> = Ø 8 mm <b>10</b> = Ø 10 mm <b>12</b> = Ø 12 mm
04	<b>INNER DIA</b>	<b>25</b> = Ø 2.5 mm <b>04</b> = Ø 4 mm <b>05</b> = Ø 5 mm <b>65</b> = Ø 6.5 mm <b>08</b> = Ø 8 mm
N	<b>COLOUR</b>	<b>N</b> = black <b>B</b> = blue <b>R</b> = red

## Cutting devices for tubes

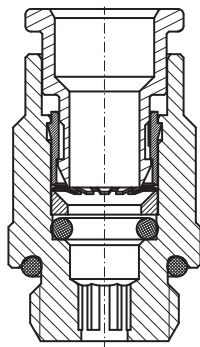
FRC06	CUTTER FOR FRTTPU Ø 6	min. order quantity 5 pieces
FRC08	CUTTER FOR FRTTPU Ø 8	min. order quantity 5 pieces
FRC10	CUTTER FOR FRTTPU Ø 10	min. order quantity 5 pieces
FRC12	CUTTER FOR FRTTPU Ø 12	min. order quantity 5 pieces



# Fittings



Patented



## Brass push-in fittings for welding applications

- No covers required spatter-proof
- Prolonged thrust sleeve for optimal protection of the tube against welding debris
- The internal components are optimally guided for an enhanced retaining of the tubes
- Specific for 3-layer polyurethane tube

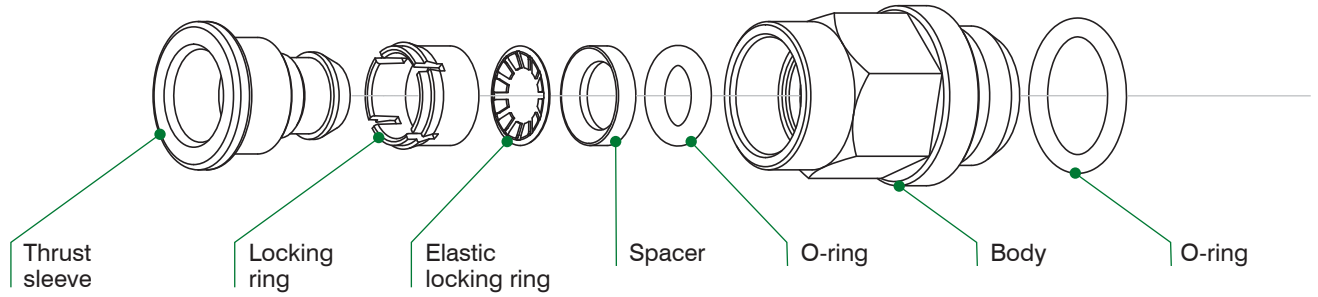


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<b>22AT06M5</b>  pag. 166	<b>22AT0614</b>  pag. 167	<b>22AT0618</b>  pag. 167	<b>22LAT0614</b>  pag. 167	<b>22LAT0618</b>  pag. 168	<b>29AT0614</b>  pag. 168	<b>29AT0618</b>  pag. 168	<b>29AT0614P</b>  pag. 169	<b>29AT0618P</b>  pag. 169
<b>07AT0600</b>  pag. 169	<b>23AT0600</b>  pag. 170	<b>105ATM318</b>  pag. 170	<b>10AT0600</b>  pag. 170					



<b>01AT0814</b>  pag. 171	<b>01AT0818</b>  pag. 171	<b>03AT0800</b>  pag. 171	<b>04AT08L0</b>  pag. 172	<b>05AT0800</b>  pag. 172	<b>08EAT0608</b>  pag. 172	<b>15AT0818</b>  pag. 173	<b>15AT0814</b>  pag. 173	
<b>22AT0814</b>  pag. 173	<b>22AT0818</b>  pag. 174	<b>22LAT0814</b>  pag. 174	<b>22LAT0818</b>  pag. 174	<b>29AT0814</b>  pag. 175	<b>29AT0818</b>  pag. 175	<b>29AT0814P</b>  pag. 175	<b>29AT0818P</b>  pag. 176	<b>29AT0838</b>  pag. 176
<b>07AT0800</b>  pag. 176	<b>23AT0800</b>  pag. 177	<b>10AT0800</b>  pag. 177						

COMPLEMENTARY PRODUCTS



Ø 10

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<b>22AT1038</b>  pag. 180	<b>22AT1012</b>  pag. 180	<b>29AT1038</b>  pag. 180				

### Selection of accessories



<b>6.01.05.F</b>  pag. 181	<b>6.01.18/F</b>  pag. 181	<b>6.01.18/F</b> with lock nut  pag. 181	<b>6.01.F</b> G1/8"  pag. 182	<b>6.01.14/1</b>  pag. 182	<b>6.01.F</b> G1/4"  pag. 182	<b>6.01.F</b> G1/2"  pag. 183	<b>06.01.34</b>  pag. 183		
<b>6.02.I</b>  pag. 183	<b>6.02.I.C.L</b>  pag. 184	<b>6.04.I</b>  pag. 184	<b>6.04.04</b>  pag. 185	<b>6.07.18.G</b>  pag. 185	<b>6.07.T</b>  pag. 185	<b>6.08.C/4</b>  pag. 186	<b>6.08.C/8</b>  pag. 186	<b>6.09.14.F</b>  pag. 187	<b>6.09.12.F</b>  pag. 187
<b>AT50C18V</b>  pag. 187	<b>AT50C18PVM</b>  pag. 188	<b>AT50C14V</b>  pag. 188	<b>AT50C14PVM</b>  pag. 188	<b>AT50C38V</b>  pag. 189	<b>AT50C38PVM</b>  pag. 189	<b>PNM0392</b>  pag. 190	<b>PNM0393</b>  pag. 190	<b>PNM0394</b>  pag. 191	<b>PNM0395</b>  pag. 191

COMPLEMENTARY PRODUCTS

**01AT0614**

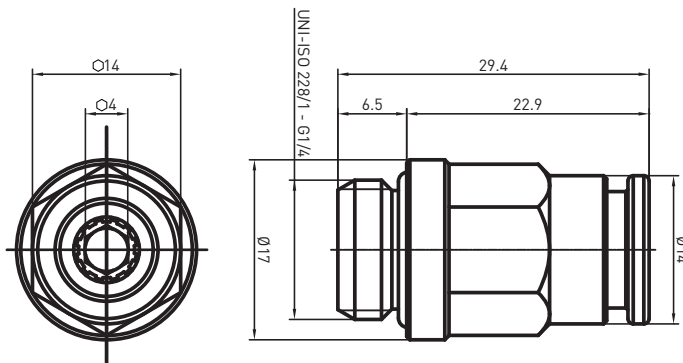
REV. 00 - 12/10/2018



**Straight fitting**

Ø6 G1/4"

AT Series with NBR seals



**01AT0618**

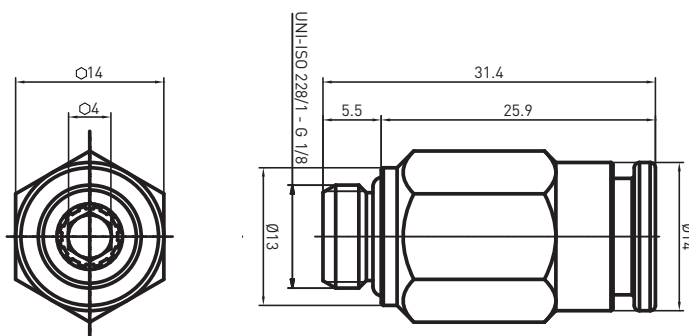
REV. 00 - 12/10/2018



**Straight fitting**

Ø6 G1/8"

AT Series with NBR seals



**03AT0600**

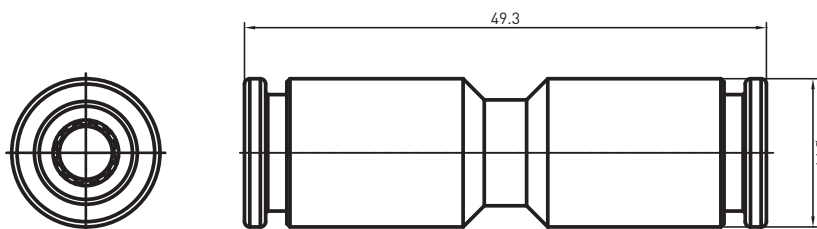
REV. 00 - 15/10/2018



**Straight connector**

Ø6

AT Series with NBR seals



**04AT06L0**

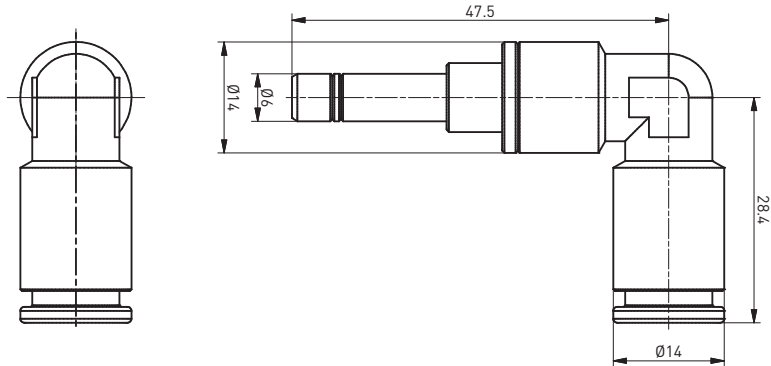
REV. 00 - 15/10/2018



**Elbow connector**

Ø6

AT Series with NBR seals



**05AT0600**

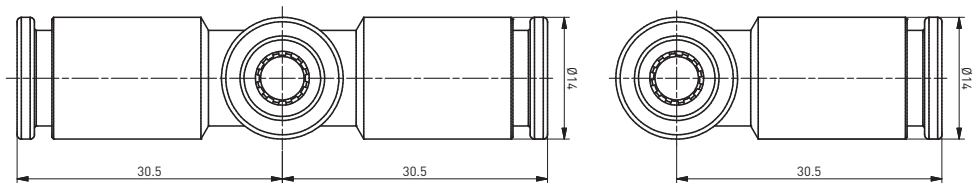
REV. 00 - 29/11/2018



**T connector**

Ø6

AT Series with NBR seals



**08AT0806**

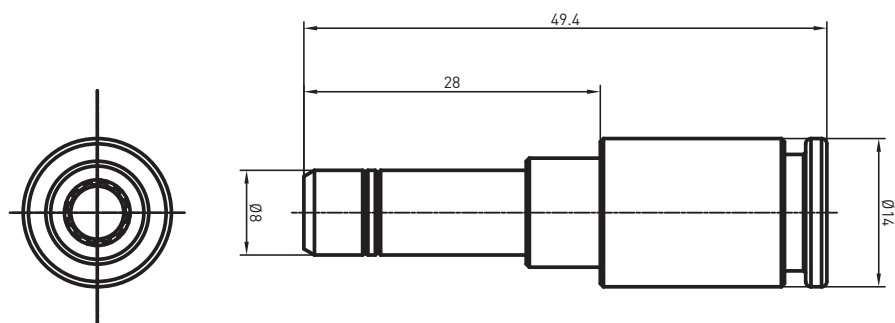
REV. 00 - 27/09/2018



**Plug-in reducer**

Ø8M Ø6F

AT Series with NBR seals



**15AT0618**

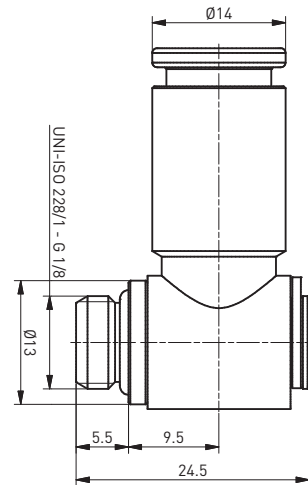
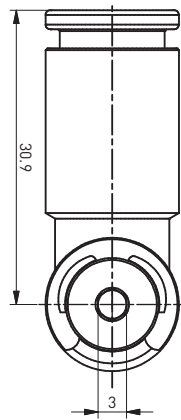
REV. 00 - 15/10/2018



**Complete single banjo**

Ø6 - G1/8"

AT Series with NBR seals



**15AT0614**

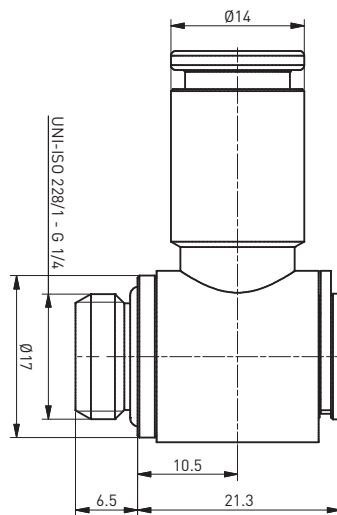
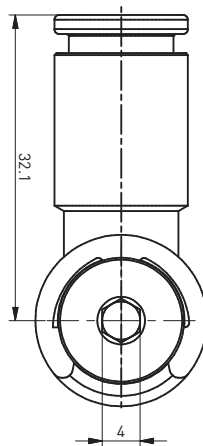
REV. 00 - 15/10/2018



**Complete single banjo**

Ø6 - G1/4"

AT Series with NBR seals



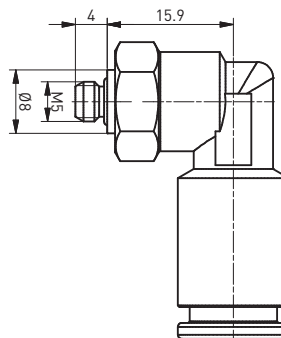
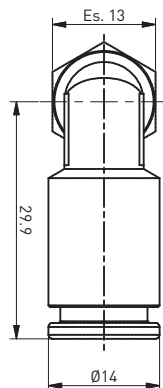
**22AT06M5**

REV. 00 - 29/11/2018



**Swivel elbow male  
adaptor parallel**

Ø6 - M5





**22AT0614**

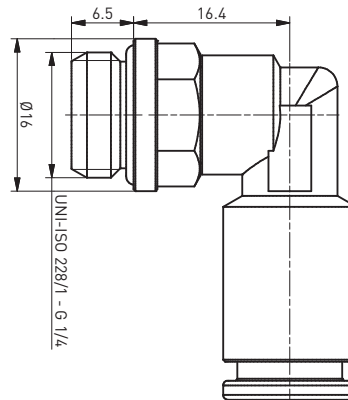
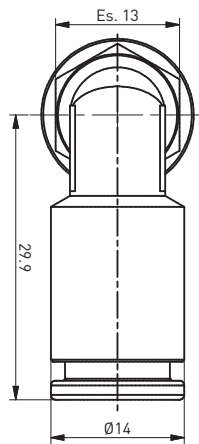
REV. 00 - 15/10/2018



**Swivel elbow male  
adaptor parallel**

Ø6 - G1/4"

AT Series with NBR seals



**22AT0618**

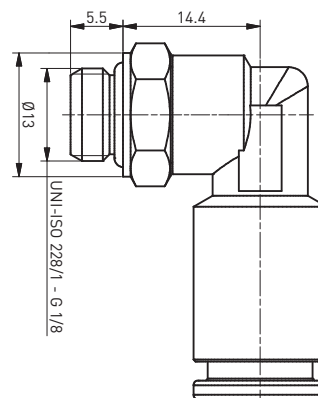
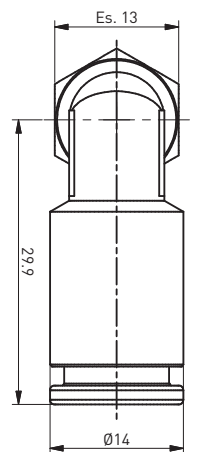
REV. 00 - 15/10/2018



**Swivel elbow male  
adaptor parallel**

Ø6 - G1/8"

AT Series with NBR seals



**22LAT0614**

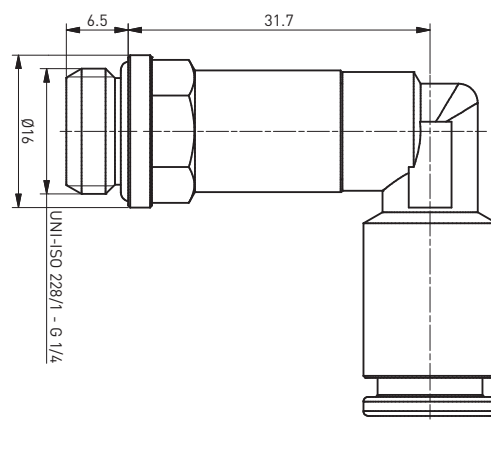
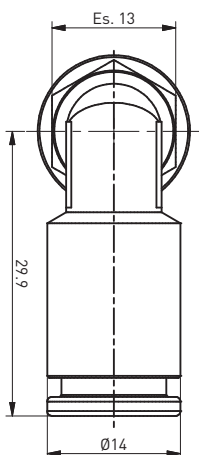
REV. 00 - 27/09/2018



**Swivel longer elbow male  
adaptor parallel**

Ø6 - G1/4"

AT Series with NBR seals



**22LAT0618**

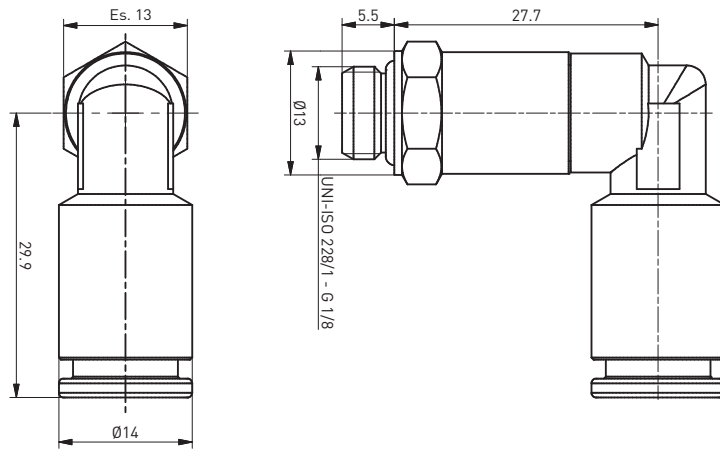
REV. 00 - 15/10/2018



**Swivel longer elbow  
male adaptor parallel**

Ø6 - G1/8"

AT Series with NBR seals



**29AT0614**

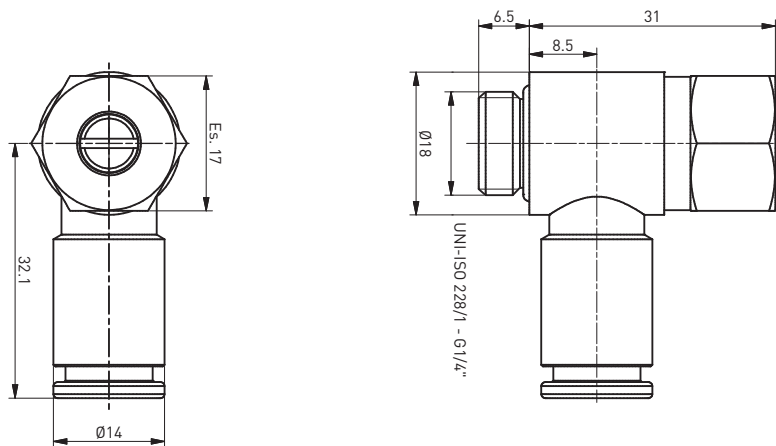
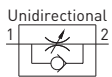
REV. 00 - 29/08/2018



**Flow adjuster**

Ø6 - G1/4"

AT Series with NBR seals



**29AT0618**

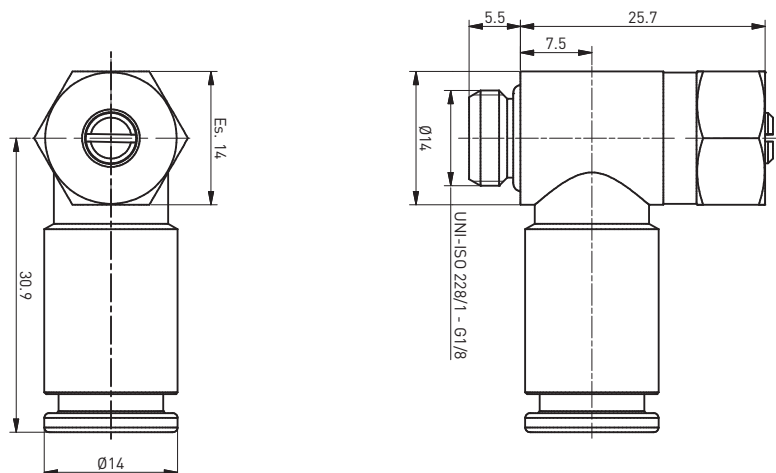
REV. 00 - 29/08/2018



**Flow adjuster**

Ø6 - G1/8"

AT Series with NBR seals



### 29AT0614P

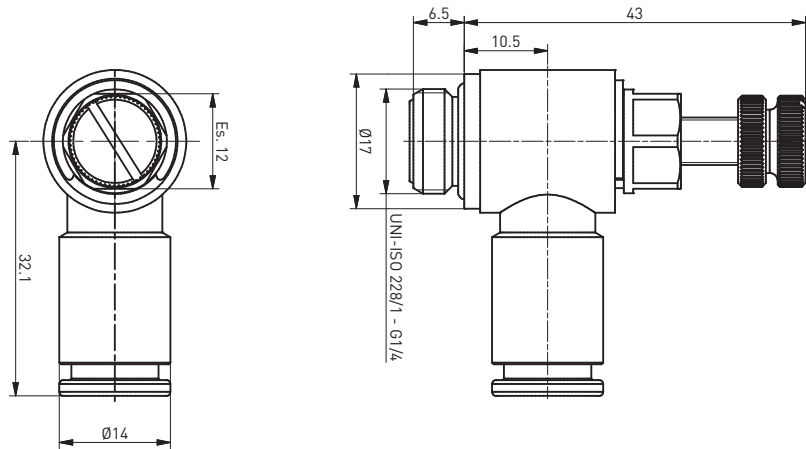
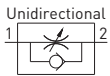
REV. 00 - 11/10/2018



**Flow adjuster**

Ø6 - G1/4"

AT Series with NBR seals



### 29AT0618P

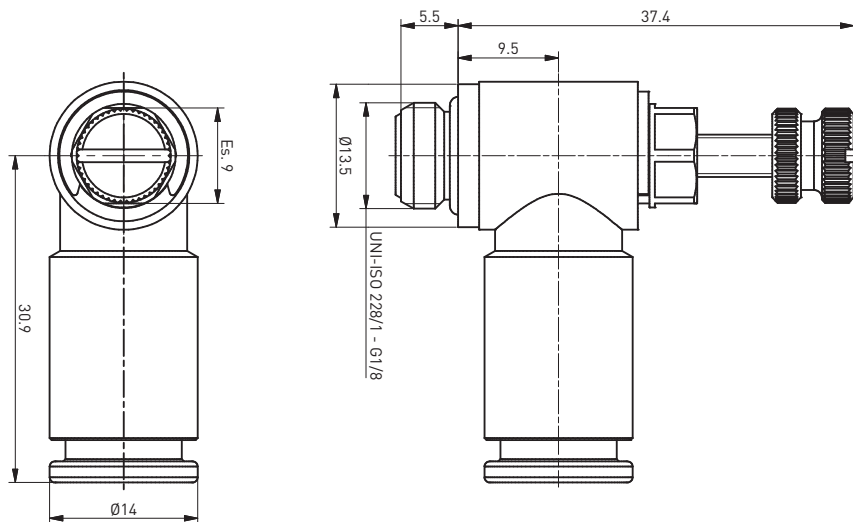
REV. 00 - 11/10/2018



**Swivel elbow male  
adaptor parallel**

Ø6 - G1/8"

AT Series with NBR seals



### 07AT0600

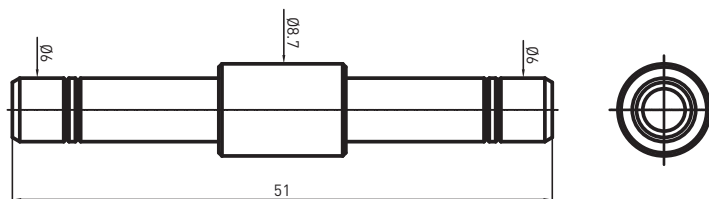
REV. 00 - 11/09/2018



**Connector**

Ø6

AT Series



**23AT0600**

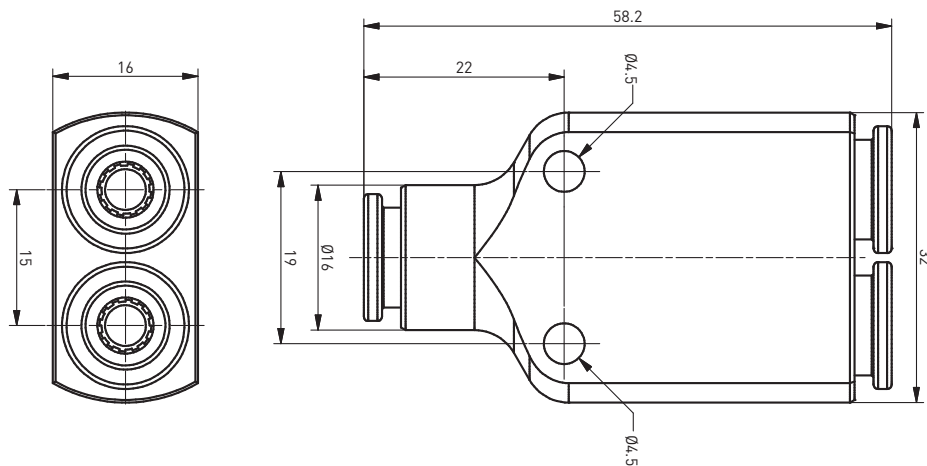


**Y Connector**

Ø6

AT Series

REV. 00 - 06/03/2019



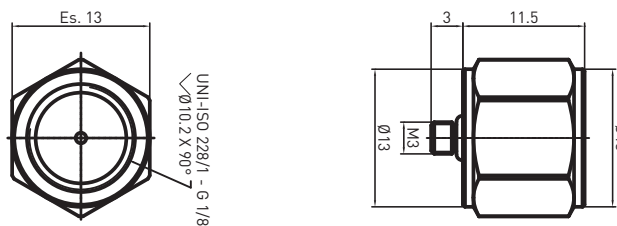
**105ATM318**



**Adaptator**

M3 - 1/8"

REV. 00 - 28/03/2018



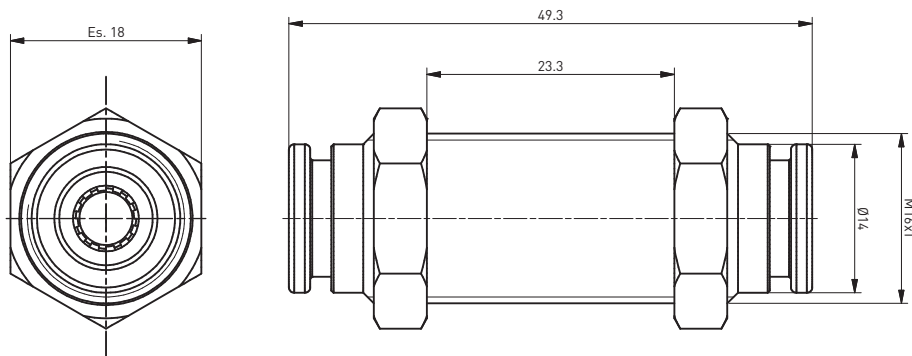
**10AT0600**



**Straight threaded  
connector**

Ø6 - M16x1

REV. 00 - 22/05/2019



**01AT0814**

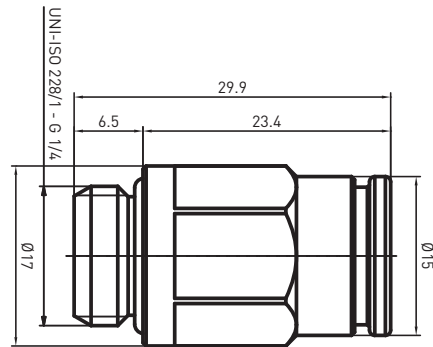
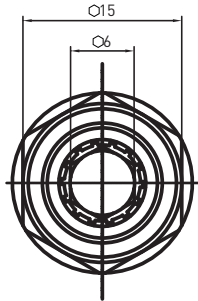
REV. 00 - 08/03/2018



**Straight fitting**

Ø8 G1/4"

AT Series with NBR seals



**01AT0818**

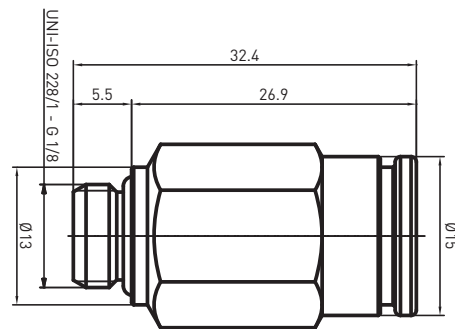
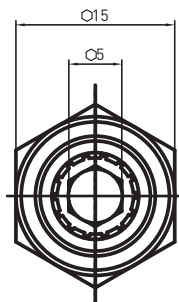
REV. 00 - 29/08/2018



**Straight fitting**

Ø8 G1/8"

AT Series with NBR seals



**03AT0800**

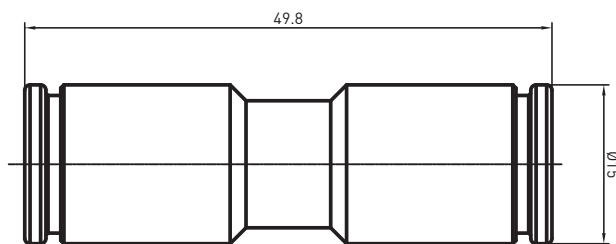
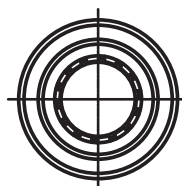
REV. 00 - 03/09/2018



**Straight connector**

Ø8

AT Series with NBR seals



**04AT08L0**

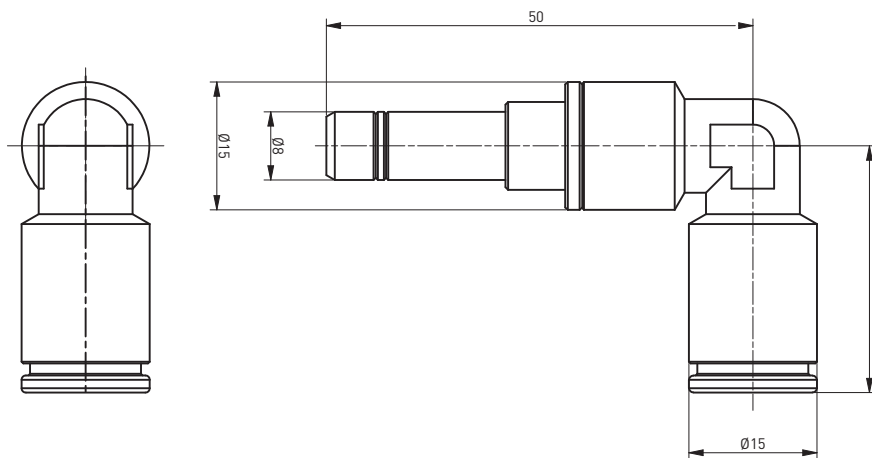


**Elbow connector**

Ø8

AT Series with NBR seals

REV. 00 - 14/10/2018



**05AT0800**

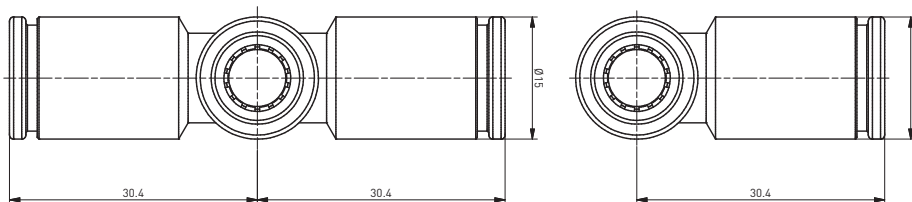


**T connector**

Ø8

AT Series with NBR seals

REV. 00 - 03/12/2018



**08EAT0608**

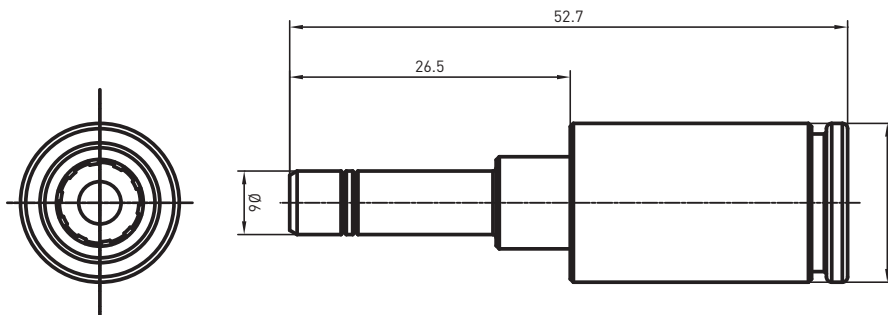


**Plug-in increaser**

Ø6M Ø8F

AT Series with NBR seals

REV. 00 - 22/05/2019

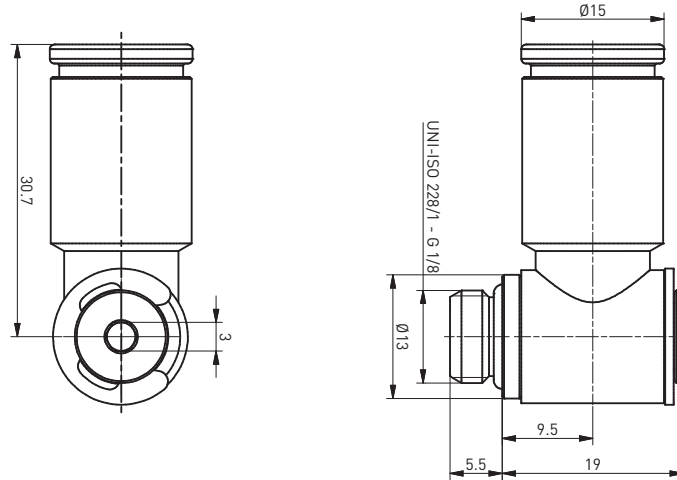


**15AT0818**

REV. 00 - 30/08/2018



**Complete single banjo**  
Ø8 - G1/8"  
AT Series with NBR seals

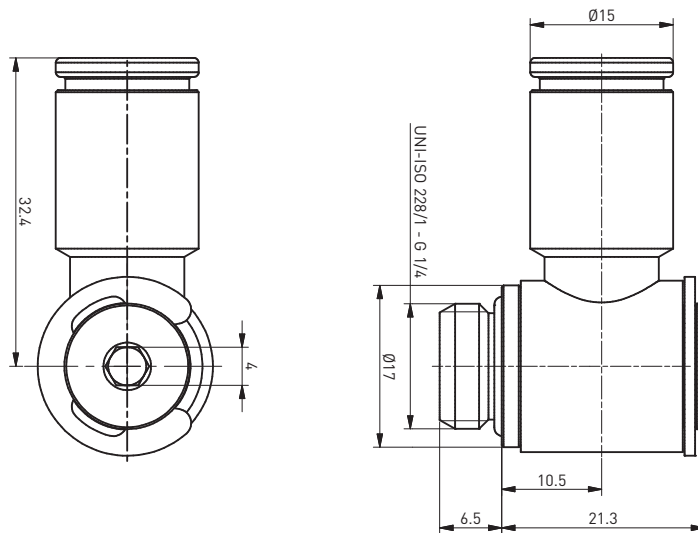


**15AT0814**

REV. 00 - 30/08/2018



**Complete single banjo**  
Ø8 - G1/4"  
AT Series with NBR seals

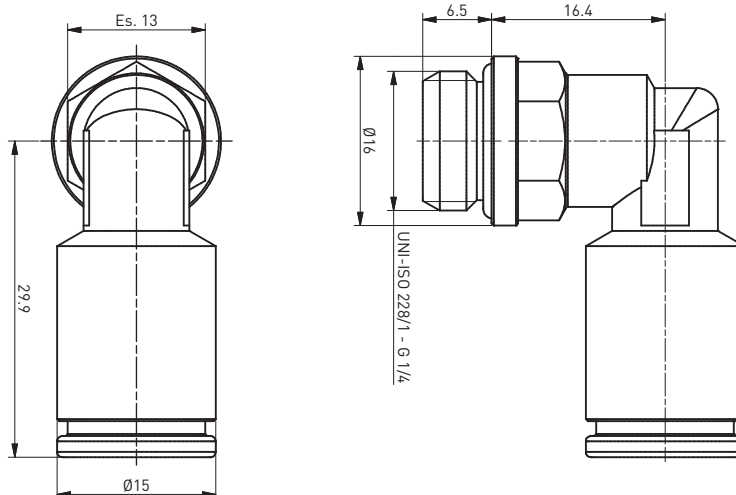


**22AT0814**

REV. 00 - 03/12/2018



**Swivel elbow male  
adaptor parallel**  
Ø8 - G1/4"  
AT Series with NBR seals



**22AT0818**

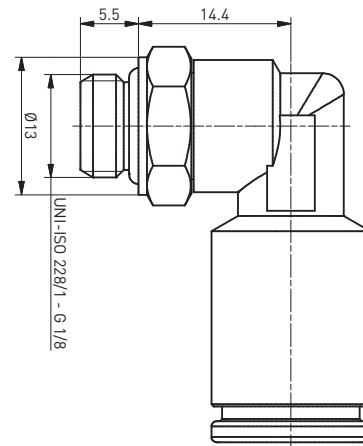
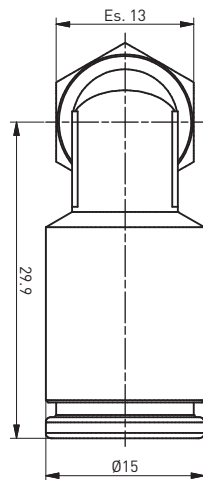
REV. 00 - 03/12/2018



**Swivel elbow male  
adaptor parallel**

Ø8 - G1/8"

AT Series with NBR seals



**22LAT0814**

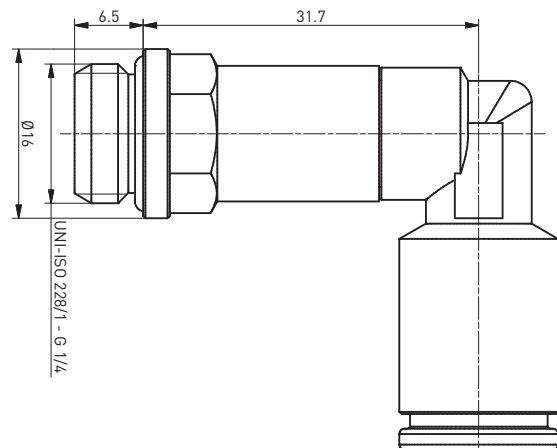
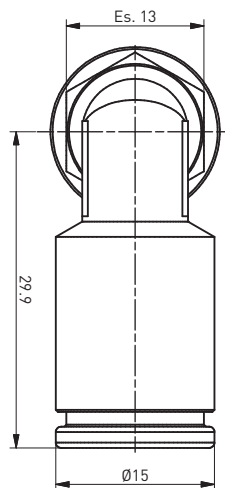
REV. 00 - 30/08/2018



**Swivel longer elbow  
male adaptor parallel**

Ø8 - G1/4"

AT Series with NBR seals



**22LAT0818**

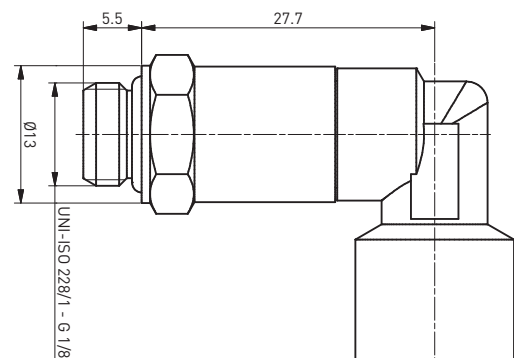
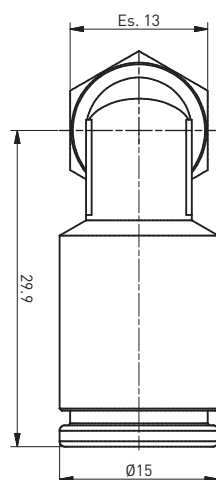
REV. 00 - 30/08/2018



**Swivel longer elbow  
male adaptor parallel**

Ø8 - G1/8"

AT Series with NBR seals





### 29AT0814

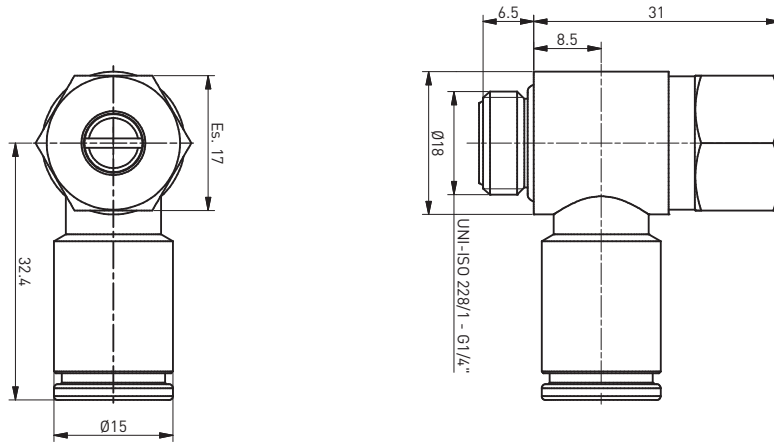
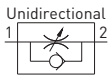
REV. 00 - 29/08/2018



**Flow adjuster**

Ø8 - G1/4"

AT Series with NBR seals



### 29AT0818

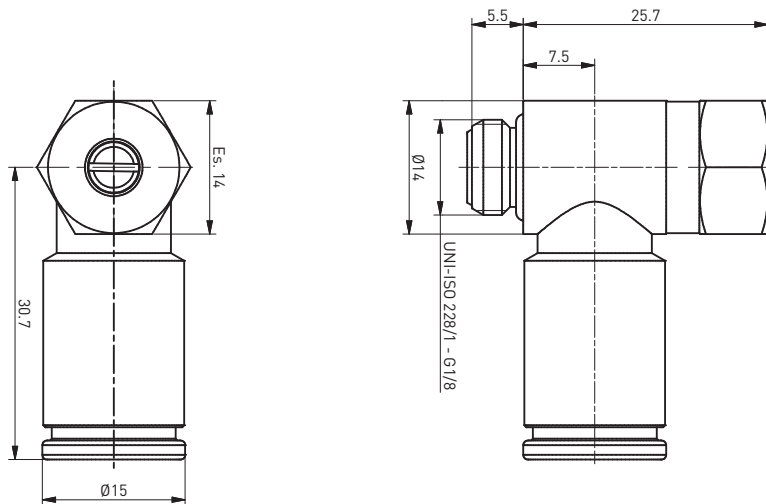
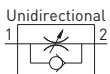
REV. 00 - 30/08/2018



**Flow adjuster**

Ø8 - G1/8"

AT Series with NBR seals



### 29AT0814P

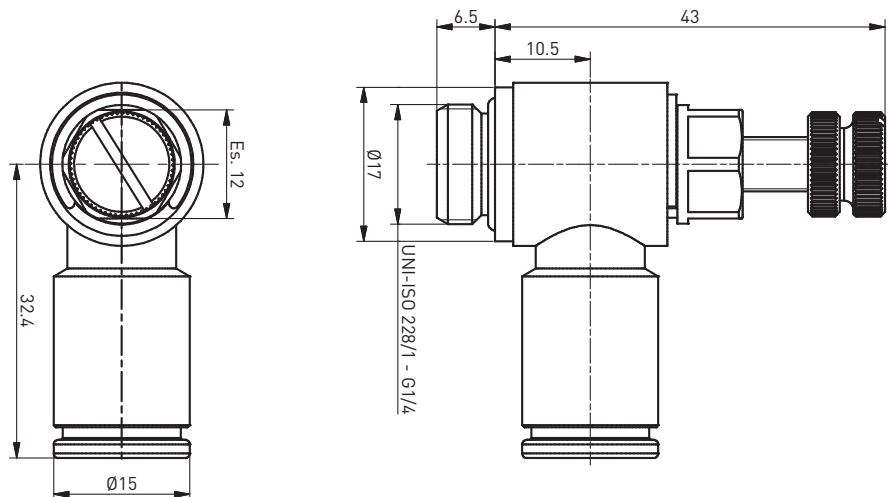
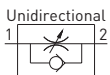
REV. 00 - 11/10/2018



**Flow adjuster**

Ø8 - G1/4"

AT Series with NBR seals



**29AT0818P**

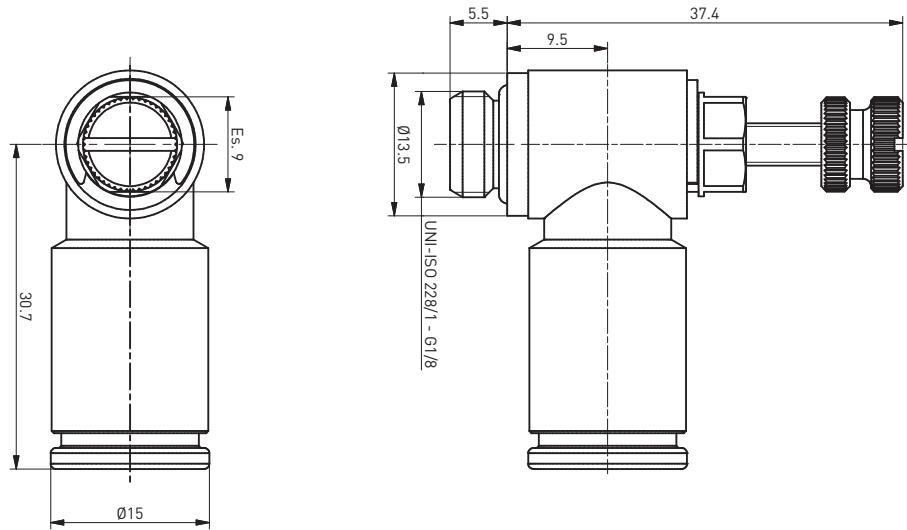


REV. 00 - 11/10/2018

**Flow adjuster**

8 - G1/8"

AT Series with NBR seals



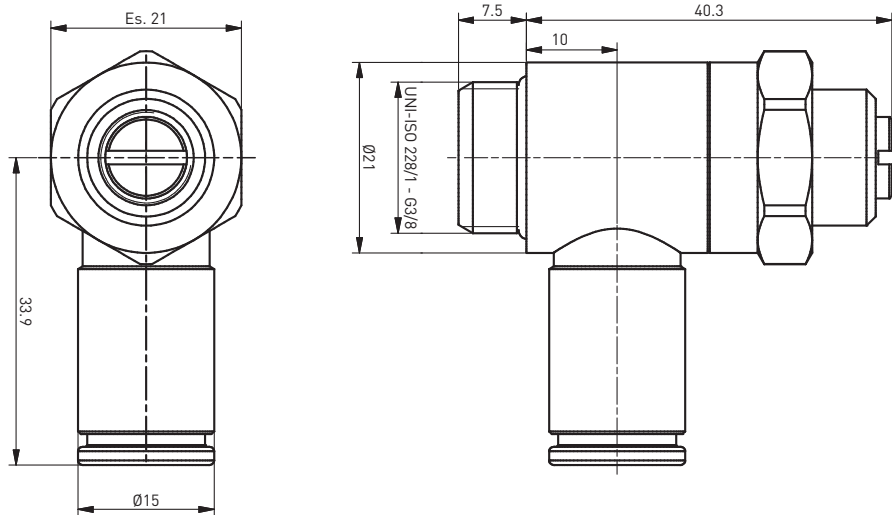
**29AT0838**



REV. 00 - 04/06/2019

**Flow adjuster**

Ø8 - G3/8



**07AT0800**

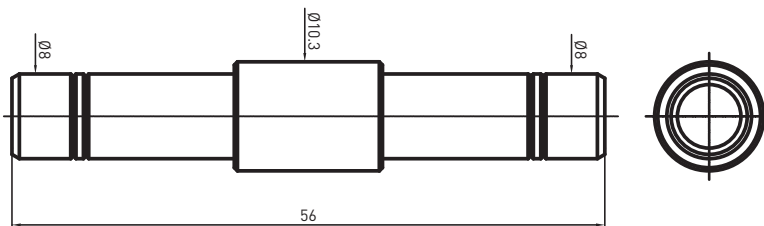


REV. 00 - 11/09/2018

**Connector**

Ø8

AT Series



### 23AT0800

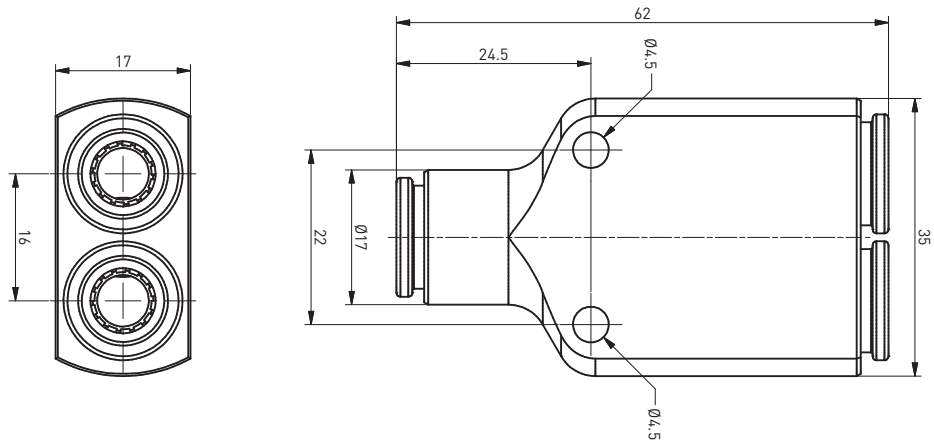
REV. 00 - 06/03/2019



**Y Connector**

Ø8

AT Series



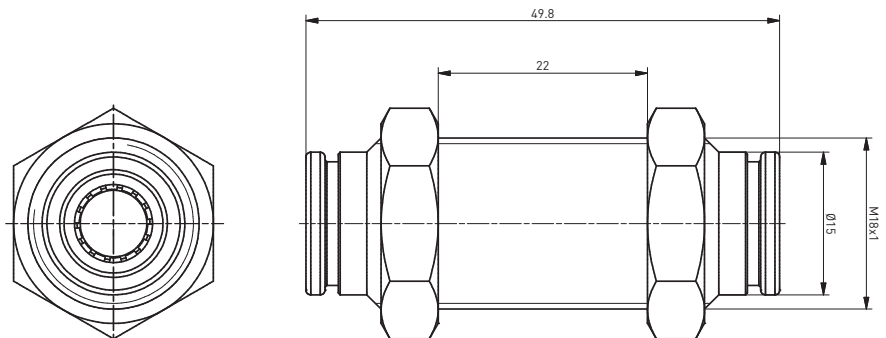
### 10AT0800

REV. 00 - 22/05/2019



**Straight threaded  
connector**

Ø8 - M18x1



### 01AT1038

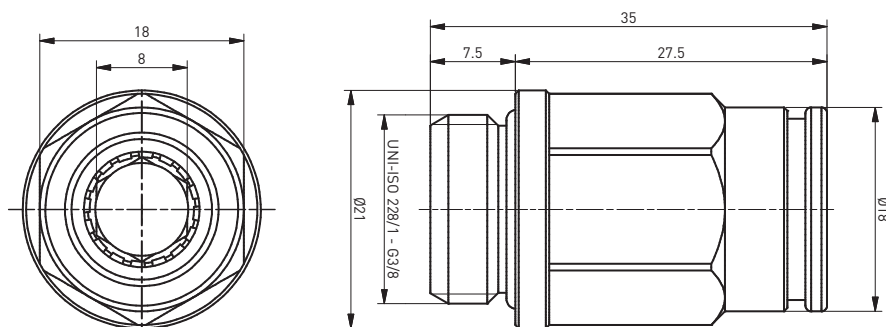
REV. 00 - 28/05/2019



**Straight fitting**

Ø10 G3/8"

AT Series with NBR seals



**01AT1012**

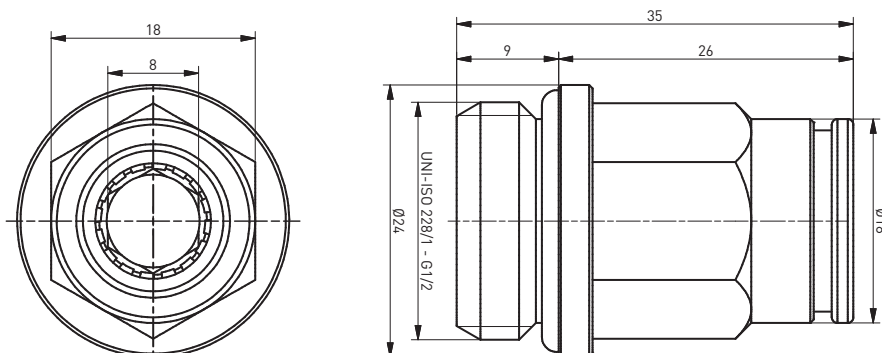
REV. 00 - 28/05/2019



**Straight fitting**

Ø10 G1/2"

AT Series with NBR seals



**03FAT1000**

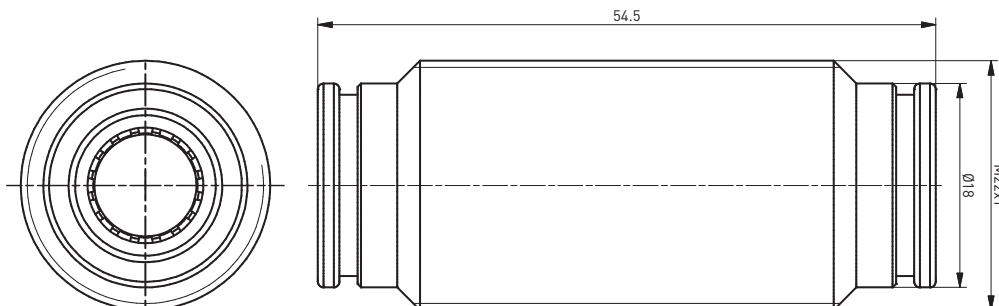
REV. 00 - 27/05/2019



**Straight threaded  
connector**

Ø10

AT Series with NBR seals



**05AT1000**

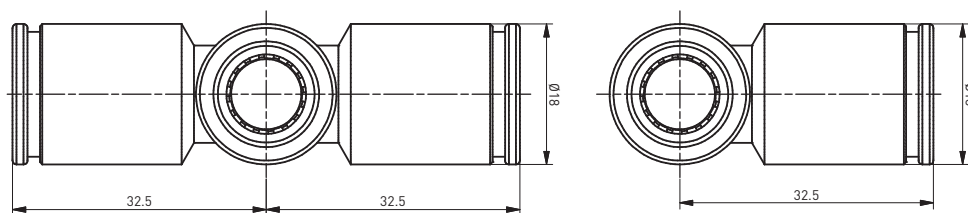
REV. 00 - 28/05/2019



**T connector**

Ø10

AT Series with NBR seals



### 07AT1000

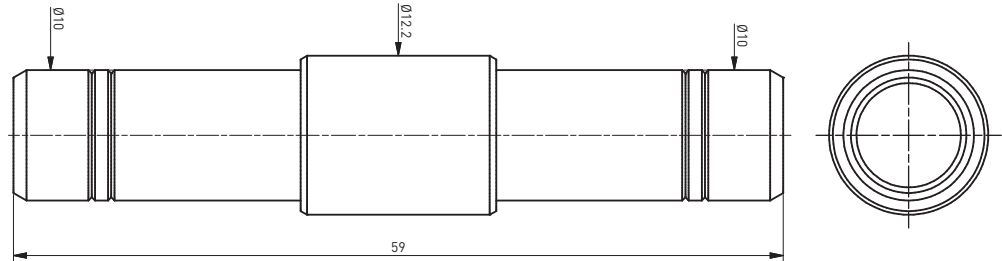
REV. 00 - 28/05/2019



**Connector**

Ø10

AT Series



### 10AT1000

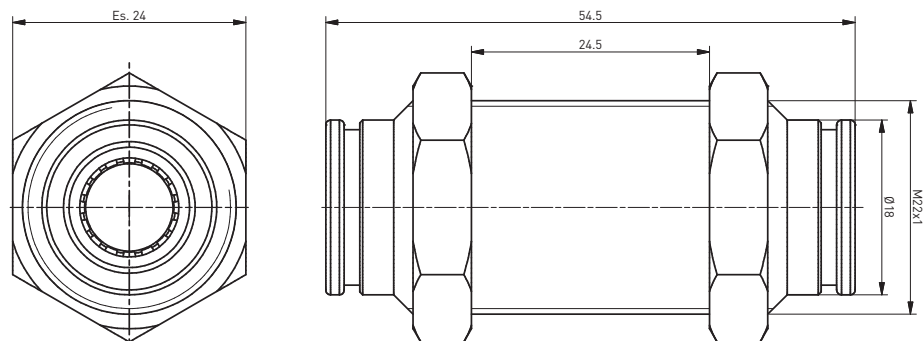
REV. 00 - 27/05/2019



**Bulkhead connector**

Ø10

AT Series with NBR seals



### 15AT1038

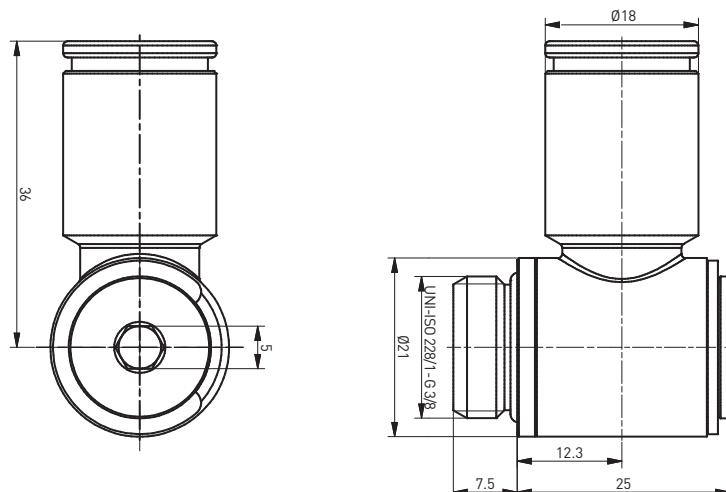
REV. 00 - 30/08/2018



**Complete single banjo**

Ø10 - G3/8"

AT Series with NBR seals



**22AT1038**

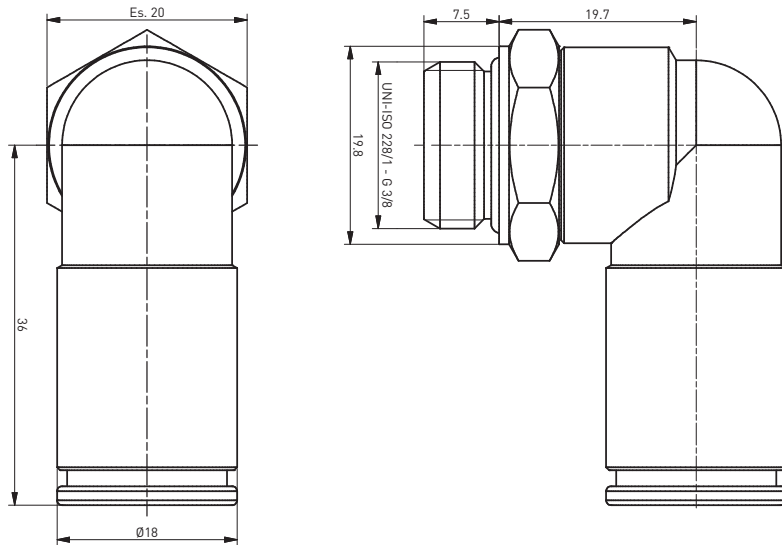
REV. 00 - 04/06/2019



**Swivel elbow male  
adaptor parallel**

Ø10 - G3/8"

AT Series with NBR seals



**22AT1012**

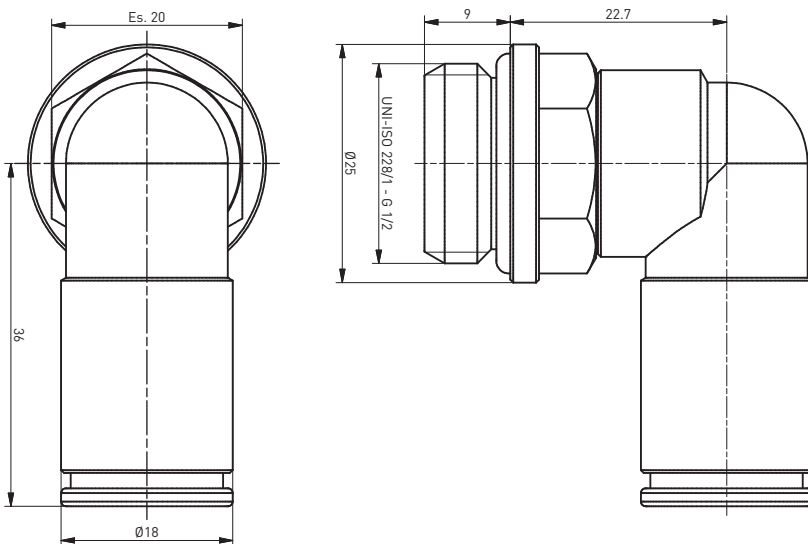
REV. 00 - 04/06/2019



**Swivel elbow male  
adaptor parallel**

Ø10 - G1/2"

AT Series with NBR seals



**29AT1038**

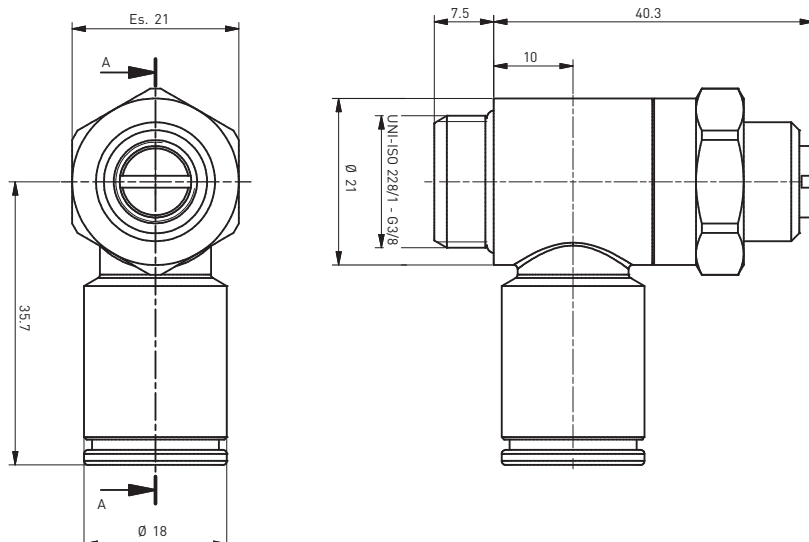
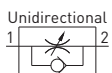
REV. 00 - 04/06/2019



**Flow adjuster**

Ø10 - G3/8"

AT Series with NBR seals



**6.01.05.F**

**Function F** 180 = Unidirectional 180/2 = Bidirectional

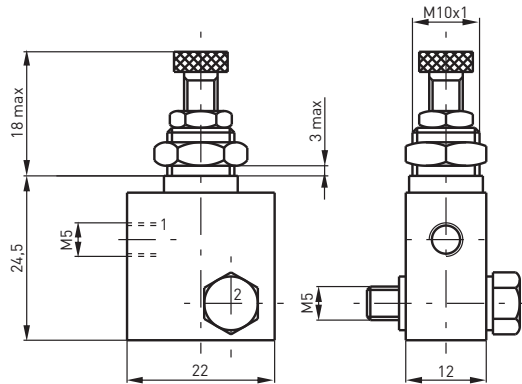
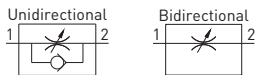


Fluid	Filtered air
Max working pressure (bar)	10
Temperature °C	-5 / +70
Orifice size (mm)	2

**WEIGHT 52 g**

REV. 00 - 31/03/2015

**Flow control valve M5 with a through bolt**



**6.01.18/F**

**Function F** 4 = Unidirectional 5 = Bidirectional



Fluid	Filtered air
Max working pressure (bar)	10
Temperature °C	-5 / +70
Orifice size (mm)	3

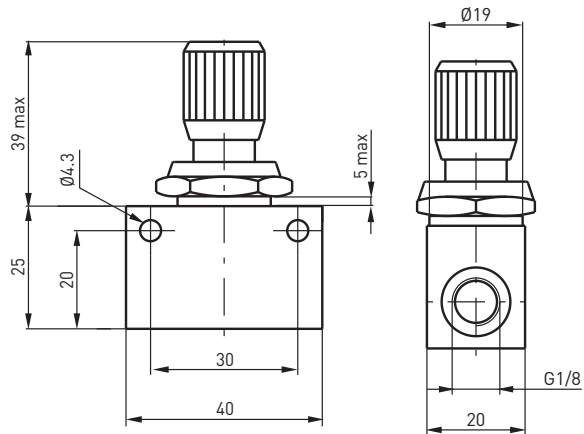
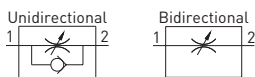
**WEIGHT 100 g**

REV. 00 - 31/03/2015

**Flow control valve M5 with a through bolt**

G1/8"

Ultrasensitive



**6.01.18/F**

**Function F** 6 = Unidirectional 7 = Bidirectional



Fluid	Filtered air
Max working pressure (bar)	10
Temperature °C	-5 / +70
Orifice size (mm)	3

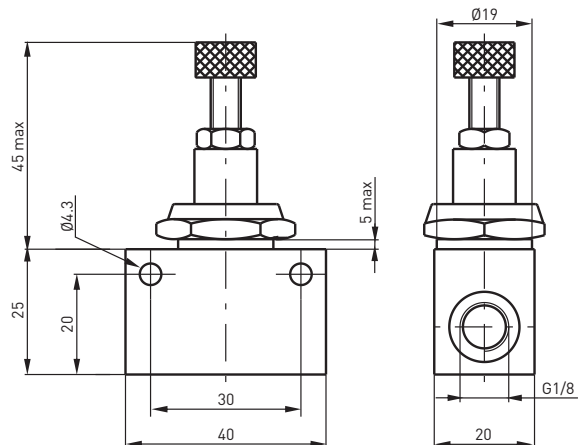
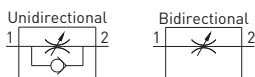
**WEIGHT 105 g**

REV. 00 - 31/03/2015

**Flow control valve**

G1/8"

Ultrasensitive with lock nut



**6.01.F**
**Function F**
**18N** = Unidirectional  
**18/1N** = Bidirectional

**18NE** = Unidirectional economic version  
**18/1NE** = Bidirectional economic version

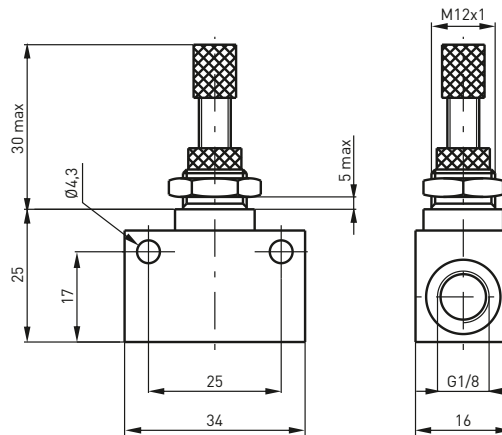
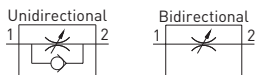

Fluid	Filtered air
Max working pressure (bar)	10
Temperature °C	-5 / +70
Orifice size (mm)	4

**WEIGHT 50 g**

REV. 00 - 31/03/2015

**Flow control valve**

G1/8"


**6.01.14/1**


Fluid	Filtered air
Max working pressure (bar)	10
Temperature °C	-5 / +70
Orifice size (mm)	5.5

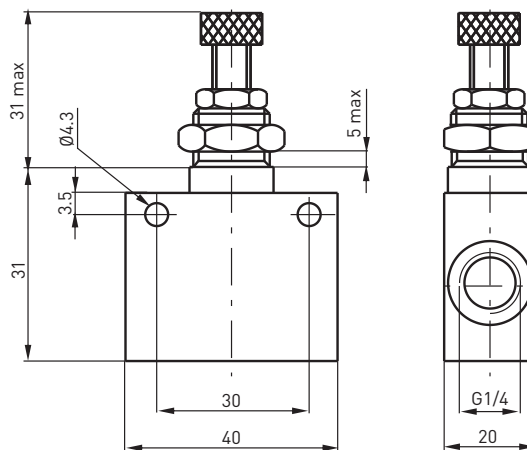
**WEIGHT 100 g**

REV. 00 - 31/03/2015

**Flow control valve**

G1/4"

Compact type unidirectional


**6.01.F**
**Function F**
**14N** = Bidirectional

**14/1N** = Bidirectional economic version

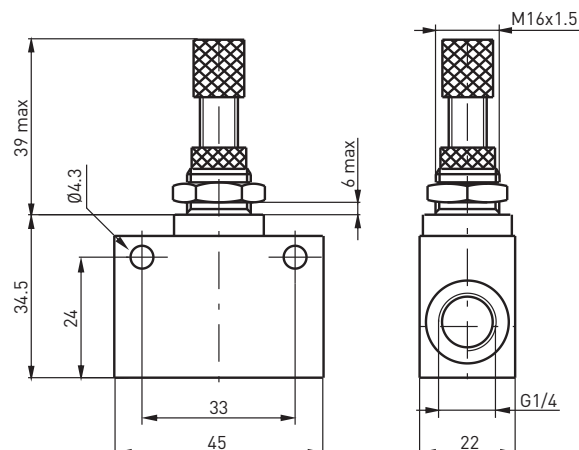
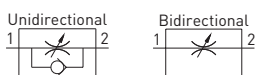

Fluid	Filtered air
Max working pressure (bar)	10
Temperature °C	-5 / +70
Orifice size (mm)	7

**WEIGHT 105 g**

REV. 00 - 31/03/2015

**Flow control valve**


G1/4"





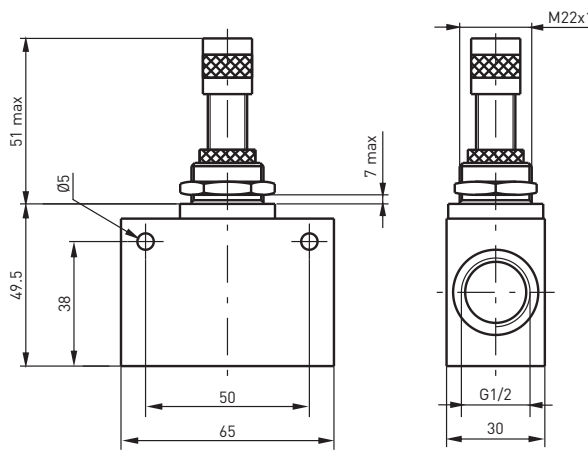


**6.01.F**      **Function F**      **12N** = Bidirectional      **12/1N** = Bidirectional economic version

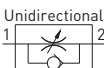



Fluid	Filtered air
Max working pressure (bar)	10
Temperature °C	-5 / +70
Orifice size (mm)	12


**WEIGHT 290 g**  
REV. 00 - 31/03/2015



**Flow control valve**  
G1/2"

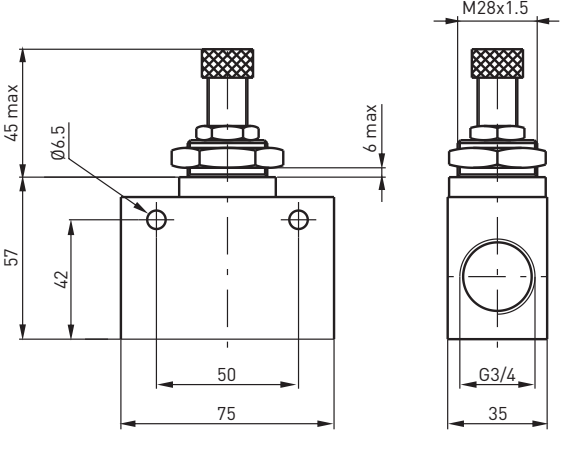



**06.01.34**




Fluid	Filtered air
Working pressure (bar)	0,5 ÷ 10
Temperature °C	-5 / +70
Orifice size (mm)	12


**WEIGHT 500 g**  
REV. 00 - 31/03/2015



**Flow control valve**  
G3/4"  
Unidirectional

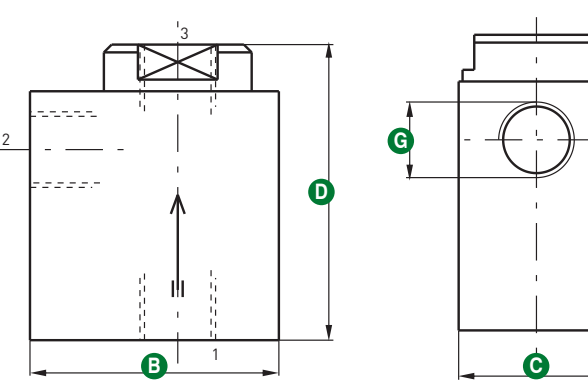


**6.02.I**      **Connection I**      **05** = M5      **18** = G1/8"      **14** = G1/4"      **12** = G1/2"




Fluid	Filtered air
Working pressure (bar)	0,5 ÷ 10
Temperature °C	-5 / +70

REV. 00 - 31/03/2015



<b>G</b>	M5	1/8"	1/4"	1/2"
<b>B</b>	22	32	35	52
<b>C</b>	12	20	25	37
<b>D</b>	28	38	50	62
<b>Weight (g)</b>	50	62	112	310
<b>Flow rate Nl/min at 6 bar with Δp=1 (from 1 to 2)</b>	29	33,2	34	39
<b>Flow rate Nl/min at 6 bar on free exhaust (from 2 to 3)</b>	29	33,2	34	39

**Quick exhaust valve**



**6.02.I.C.L**

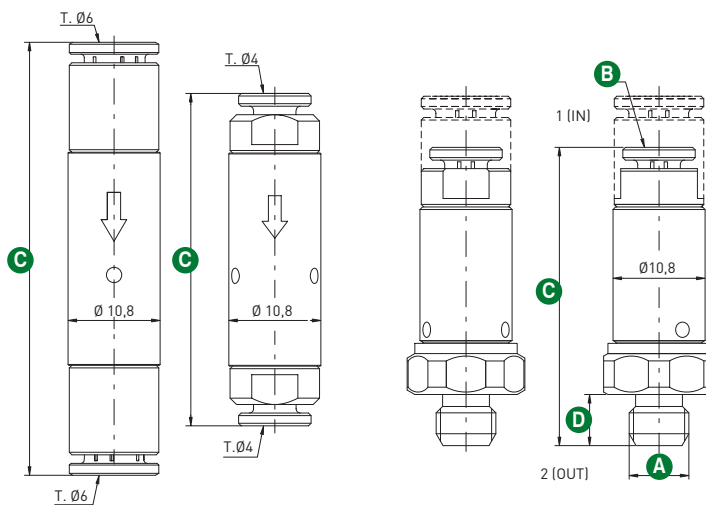
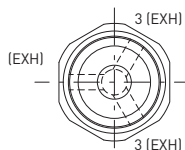
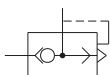
**Connection (in) I** M = M5    03 = tube Ø3    04 = tube Ø4    06 = tube Ø6  
**Connection (out) C** M5 = M5    M7 = M7    18 = G1/8"    I 04 = tube Ø4    06 = tube Ø6

REV. 00 - 31/03/2015



Fluid	Filtered air
Max working pressure (bar)	10
Temperature °C	-5 / +70

**Quick exhaust  
in line valve**



A	M5				M7				G1/8"				Ø4		Ø6			
	M5	Ø3	Ø4	Ø6	M5	Ø3	Ø4	Ø6	M5	Ø3	Ø4	Ø6	G1/8"	Ø4	G1/8"	Ø6	G1/8"	
B																		
C	29	33,2	34	39	30,5	34,7	35	40	30,5	34,7	35	40	35,5	39	39,5	51	45	
D	4,5								6				-	5,5	-	5,5		
Weight (g)	17								18				17	20	18			
Flow rate NI/min at 6 bar with Δp=1 (from 1 to 2)	90								110				90	110				
Flow rate NI/min at 6 bar on free exhaust (from 2 to 3)	240								350				240	350				

**6.04.I**

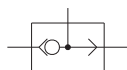
**Connection I** 05 = M5    18 = G1/8"    14 = G1/4"

REV. 00 - 31/03/2015

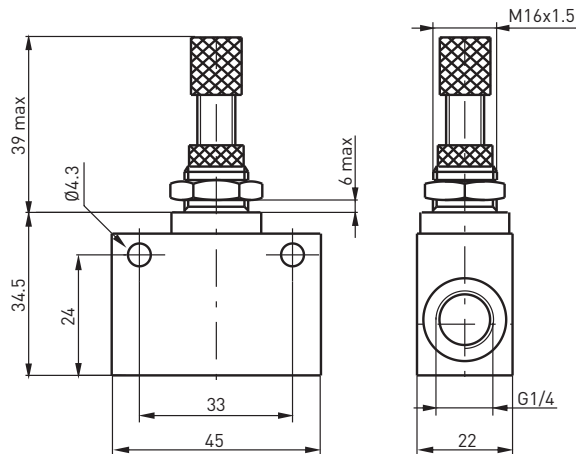


Fluid	Filtered air
Max working pressure (bar)	10
Temperature °C	-5 / +70

**Shuttle valve "OR"**



G	M5		1/8"		1/4"	
	M5	1/8"	1/4"	M5	1/8"	1/4"
A	27	44	62			
B	12	16	22			
C	17	25	30			
D	15	25	35			
ØE	3,5	4,5	5,5			
F	3,5	4,5	5,5			
Weight (g)	33	50	110			
Flow rate NI/min at 6 bar with Δp=1	110	700	2200			





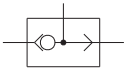
**6.04.04**



Fluid	Filtered and lubricated air
Max working pressure (bar)	10
Temperature °C	-5 / +70
Flow rate at 6 bar with Δp=1 (Nl/min)	105
Orifice size (mm)	2.5
Connections	Fitting T = 4

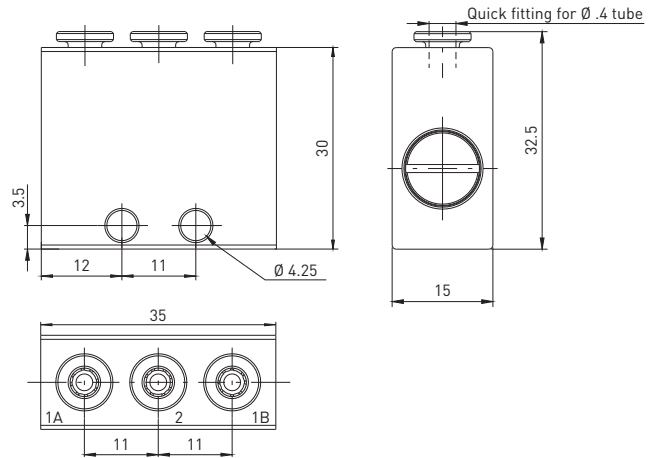
Shuttle valve "OR"

T=4



**WEIGHT 50 g**

REV. 00 - 31/03/2015



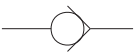
**6.07.18.G**

**Seals G** R = NBR VR = FPM



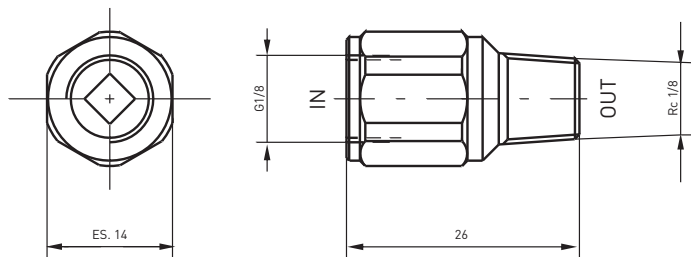
Fluid	Filtered air
Working pressure (bar)	0,5 ÷ 10
Temperature °C	-5 / +70
Flow rate at 6 bar with Δp=1 (Nl/min)	100

G 1/8" compact check valves



**WEIGHT 50 g**

REV. 00 - 31/03/2015



**6.07.T**

**Poppet T** 05 = NBR - M5 18 = NBR - G 1/8" 14 = NBR - G 1/4" 38 = NBR - G 3/8" 12 = NBR - G 1/2" 18V = FPM - G 1/8" 14V = FPM - G 1/4" 38V = FPM - G 3/8" 12V = FPM - G 1/2"

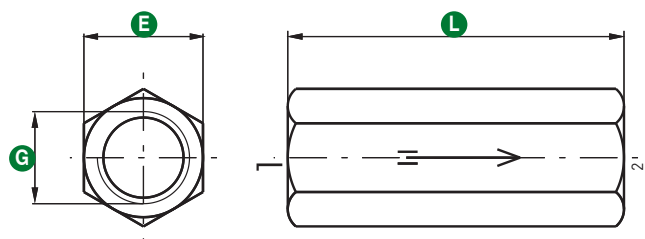


Fluid	Filtered and lubricated air				
Working pressure (bar)	10				
Temperature °C	-5 / +70 (+150°C FPM)				
<b>G</b>	M5	1/8"	1/4"	3/8"	1/2"
<b>E</b>	10	14	17	21	25
<b>L</b>	21	37	48	50	60
Weight (g)	14	35	60	85	136
Flow rate Nl/min at 6 bar with Δp=1	160	650	1150	2600	3500

Non return valve



REV. 00 - 31/03/2015



COMPLEMENTARY PRODUCTS

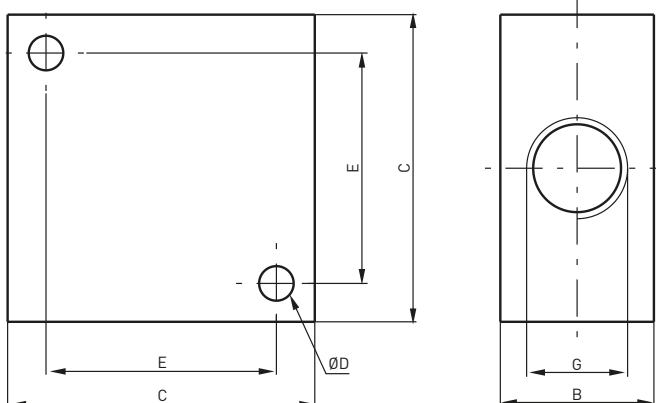
**6.08.C/4**
**Connection C** 05 = M5 18 = G 1/8" 14 = G 1/4" 38 = G 3/8" 12 = G 1/2"

REV. 00 - 31/03/2015



Fluid	Filtered air
Max working pressure (bar)	20
Temperature °C	-5 / +70

<b>G</b>	M5	1/8"	1/4"	3/8"	1/2"
<b>B</b>	10	16	20	20	30
<b>C</b>	20	32	40	40	50
<b>ØE</b>	3.3	4.5	4.5	5.5	6.5
<b>E</b>	14	22	30	30	38
Weight (g)	28	38	68	54	135

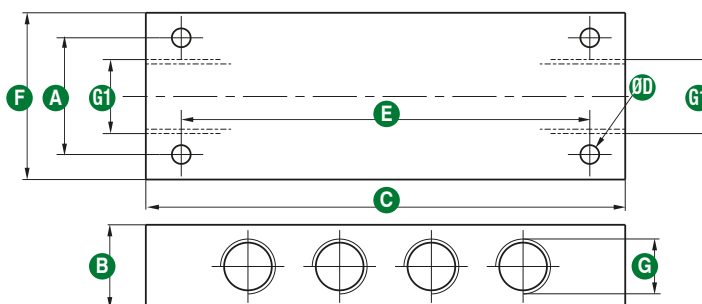
**Manifold 4 ports**

**6.08.C/8**
**Connection C** 05 = M5 18 = G 1/8" 14 = G 1/4" 38 = G 3/8" 12 = G 1/2"

REV. 00 - 31/03/2015



Fluid	Filtered air
Max working pressure (bar)	20
Temperature °C	-5 / +70

<b>G</b>	M5	1/8"	1/4"	3/8"	1/2"
<b>Gi</b>	G1/8"	1/8"	1/4"	3/8"	1/2"
<b>A</b>	16	20	28	28	36
<b>B</b>	12	18	20	20	30
<b>C</b>	60	90	115	130	170
<b>ØD</b>	3.3	4.5	4.5	5.5	5.5
<b>E</b>	50	75	98	112	150
<b>F</b>	22	32	40	40	50
Weight (g)	92	110	185	165	460

**Manifold 10 ports**




### 6.09.14.F

#### Function F

UN = Unidirectional

BN = Bidirectional



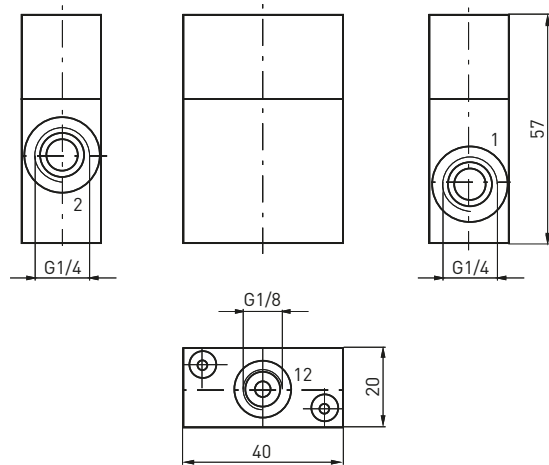
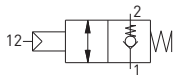
Fluid	Filtered and lubricated air
Max working pressure (bar)	10
Min working pressure (bar)	4
Temperature °C	-5 / +70
Flow rate at 6 bar with Δp=1 (Nl/min)	700
Orifice size (mm)	7

WEIGHT 122 g

REV. 00 - 31/03/2015

**Block valve**

G1/4"



### 6.09.12.F

#### Function F

UN = Unidirectional

BN = Bidirectional



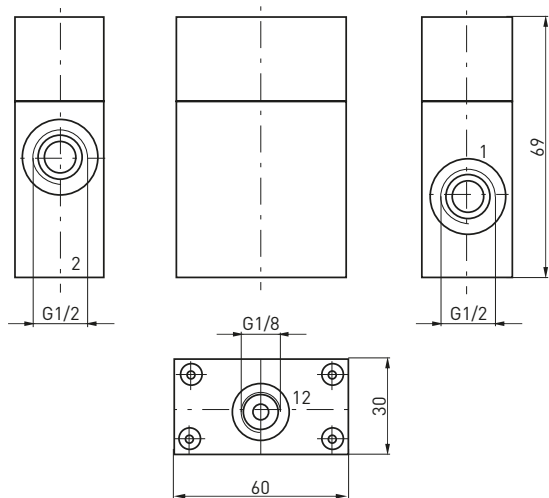
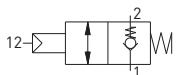
Fluid	Filtered and lubricated air
Max working pressure (bar)	10
Min working pressure (bar)	4
Temperature °C	-5 / +70
Flow rate at 6 bar with Δp=1 (Nl/min)	2000
Orifice size (mm)	12

WEIGHT 305 g

REV. 00 - 31/03/2015

**Block valve**

G1/2"



### AT50C18V

#### Connection C

06 = Ring AT Ø6 08 = Ring AT Ø8

#### Version V

U = Unidirectional B = Bidirectional

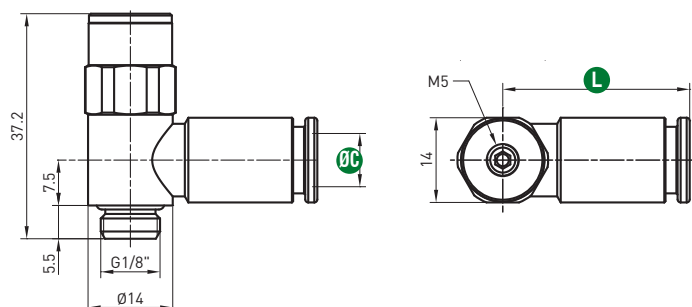
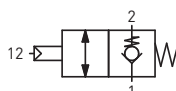


Part. No.	ØC	L
AT500618U AT500618B	6	31
AT500818U AT500818B	8	31

REV. 00 - 20/09/2019

**Blocking valve**

1/8"



### AT50C18PVM

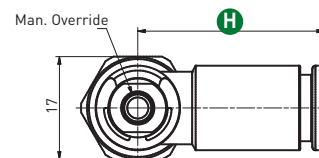
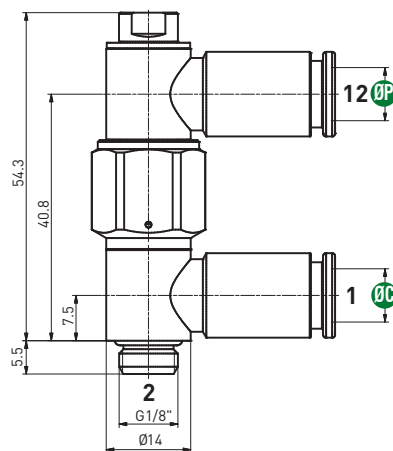
**Connection C** 06 = Ring AT Ø6 08 = Ring AT Ø8

**Pilot P** 06 = Ring AT Ø6 08 = Ring AT Ø8 **Version V** U = Unidirectional B = Bidirectional

REV. 00 - 20/09/2019

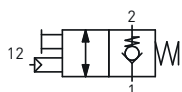


Part. No.	ØC	ØP	H
AT50061806UM AT50061806BM	6		30.9
AT50081808UM AT50081808BM	8		30.7



**Blocking valve  
with manual override  
and swivel pilot**

1/8"



### AT50C14V

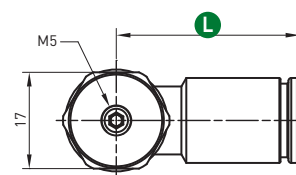
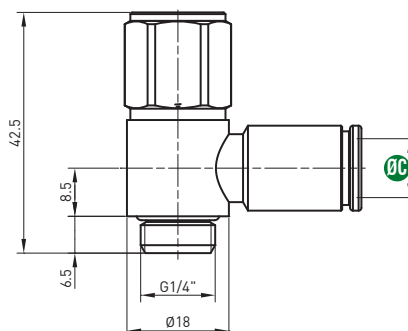
**Connection C** 06 = Ring AT Ø6 08 = Ring AT Ø8

**Version V** U = Unidirectional B = Bidirectional

REV. 00 - 20/09/2019

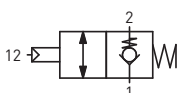


Part. No.	ØC	H
AT500614U AT500614B	6	20
AT500814U AT500814B	8	30.9



**Blocking valve**

1/4"



### AT50C14PVM

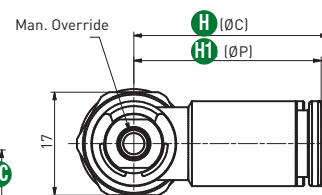
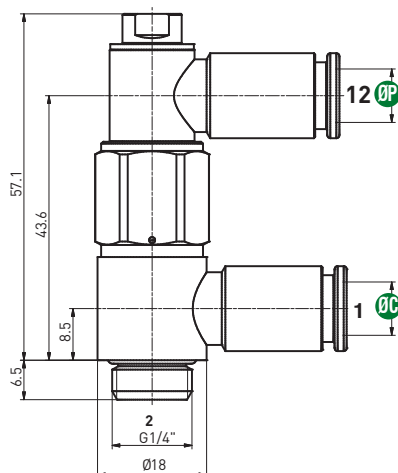
**Connection C** 06 = Ring AT Ø6 08 = Ring AT Ø8

**Pilot P** 06 = Ring AT Ø6 08 = Ring AT Ø8 **Version V** U = Unidirectional B = Bidirectional

REV. 00 - 20/09/2019

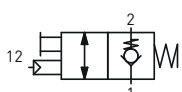


Part. No.	ØP	H	ØC	H1
AT50061406UM AT50061406BM	6	30.9	6	32.1
AT50081408UM AT50081408BM	8	30.7	8	32.4



**Blocking valve  
with manual override  
and swivel pilot**

1/4"



### AT50C38V

Connection **C** 08 = Ring AT Ø8 10 = Ring AT Ø10 Version **V** U = Unidirectional B = Bidirectional

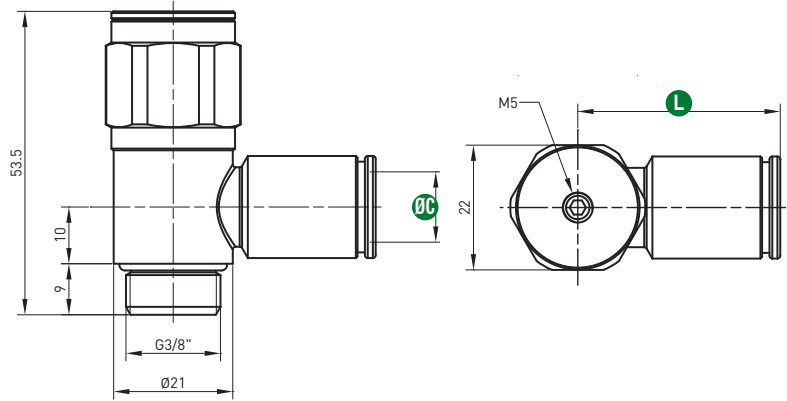
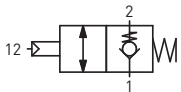


Part. No.	ØC	L
AT500838U AT500838B	8	34
AT501038U AT501038B	10	36

REV. 00 - 20/09/2019

**Blocking valve**

3/8"



### AT50C38PVM

Connection **C** 08 = Ring AT Ø8 10 = Ring AT Ø10  
Pilot **P** 06 = Ring AT Ø6 08 = Ring AT Ø8 Version **V** U = Unidirectional B = Bidirectional

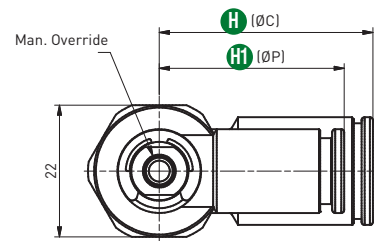
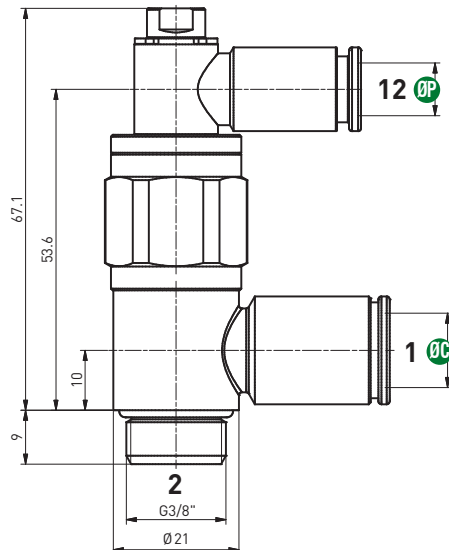
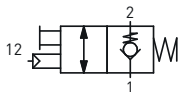


Part. No.	ØP	H	ØC	H1
AT50083806UM AT50083806BM	6	30.9	8	33.9
AT50103808UM AT50103808BM	8	30.7	10	35.7

REV. 00 - 20/09/2019

**Blocking valve  
with manual override  
and swivel pilot**

3/8"

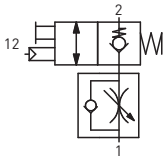


**PNM0392**

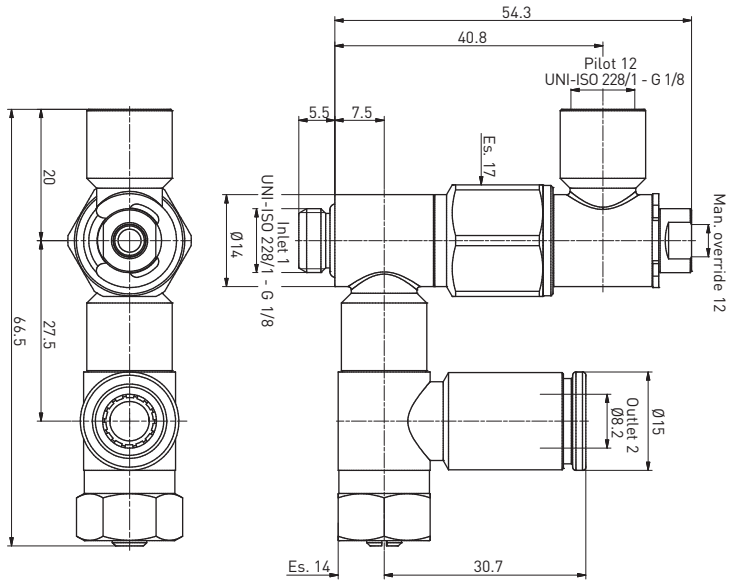


**Blocking valve with manual, flow adjuster and swivel pilot for Ø8 tubes**

G1/8"



REV. 00 - 22/10/2018

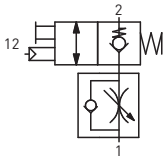


**PNM0393**

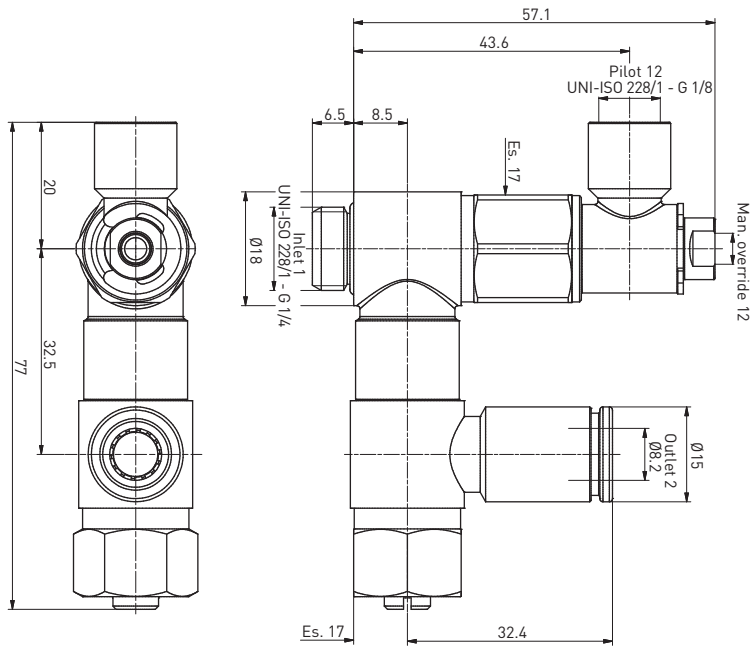


**Blocking valve with manual, flow adjuster and swivel pilot for Ø8 tubes**

G1/4"



REV. 00 - 22/10/2018





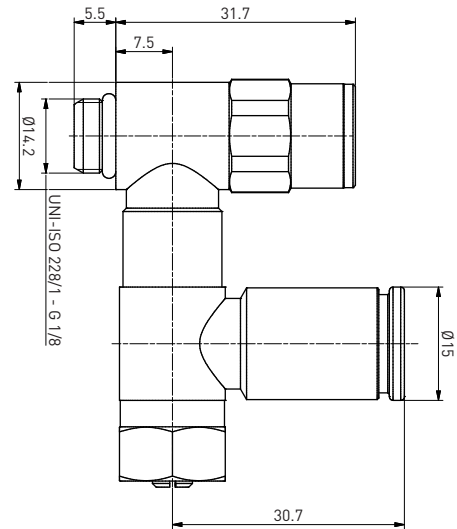
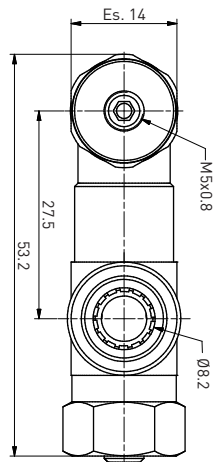
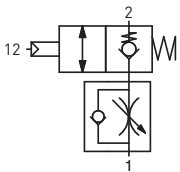
**PNM0394**

REV. 00 - 22/10/2018



**Blocking valve and flow adjuster for Ø8 tubes**

G1/8"



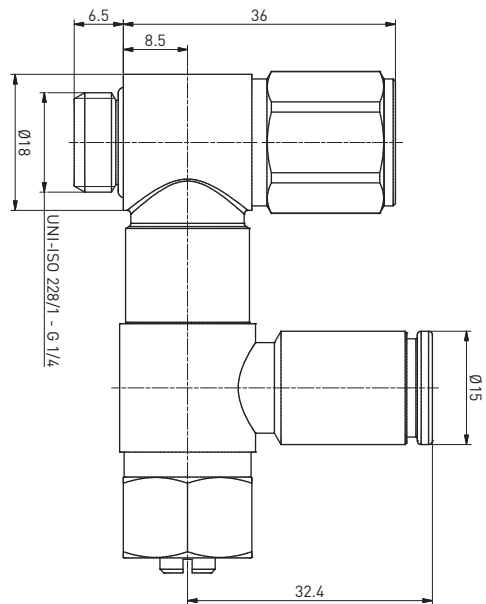
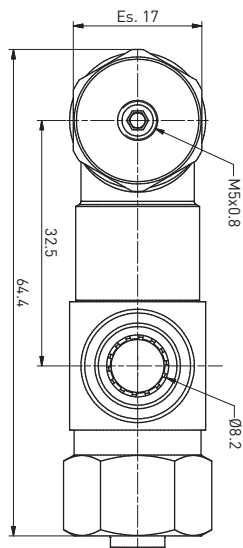
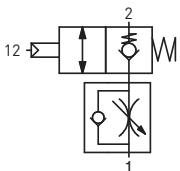
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REV. 00 - 22/10/2018



**Blocking valve and flow adjuster for Ø8 tubes**

G1/4"



# 1390-Series



## Ecolight cylinders according to ISO 15552 standard with integrated metal rodscraper

**Permanent protection** of the piston rod against welding debris particles: the metallic wiper constantly wipes any welding deposits off the piston rod.

The seal is made of a special FKM-based elastomer with approx. 81 shore hardness.

Technical features	
Fluid	Filtered and preferably lubricated air (if lubricated the lubrication must be continuous)
Max. pressure	10 bar

Product features	
End plates	Die-casting aluminum
Rod	C43 chromed steel
Barrel	Anodised aluminum alloy
Rod-guide bushing	Spheroid bronze on steel band with P.T.F.E. coat
Seals	Standard: NBR oil resistant rubber, PUR piston rod seals (PUR seals available upon request)
Cushion adjusting screws	Brass

Ecolight cylinders										
<b>Bore</b>	32	40	50	63	80	100	125	160	200	
<b>AM</b>	22	24	32	32	40	40	54	72	72	
<b>B (d11)</b>	30	35	40	45	45	55	60	65	75	
<b>BG</b>	16	16	18	18	16	16	21	25	25	
<b>E</b>	47	54	65	76	95	113	138	180	216	
<b>EE</b>	G1/8"	G1/4"	G1/4"	G3/8"	G3/8"	G1/2"	G1/2"	G3/4"	G3/4"	
<b>G</b>	29.5	33	32	36	38.5	41.5	48	49	49	
<b>KK</b>	M10x1.25	M12x1.25	M16x1.5	M16x1.5	M20x1.5	M20x1.5	M27x2	M36x2	M36x2	
<b>KV</b>	17	19	24	24	30	30	41	55	55	
<b>KW</b>	6	7	8	8	9	9	12	18	18	
<b>L2</b>	19	22	29	29	35	36	45	50	60	
<b>L3</b>	4	4	5	5	/	/	/	/	/	
<b>L8</b>	94	105	106	121	128	138	160	180	180	
<b>MM</b>	12	16	20	20	25	25	32	40	40	
<b>PL</b>	13	16	18	18	16	18	25	26	25	
<b>PM</b>	3	4	5	4.5	2.5	6	8	11	11	
<b>RT</b>	M6	M6	M8	M8	M10	M10	M12	M16	M16	
<b>SW</b>	10	13	17	17	22	22	27	36	36	
<b>TG</b>	32.5	38	46.5	56.5	72	89	110	140	175	
<b>VA</b>	4	4	4	4	4	4	6	6	6	
<b>VB</b>	33	41	51	51	65	71	75	70	75	
<b>VD</b>	4	4	4	4	4	4	6	6	6	
<b>VF</b>	12	12	16	16	20	20	25	30	30	
<b>VG</b>	48	54	69	69	86	91	119	152	167	
<b>WH</b>	26	30	37	37	46	51	65	80	95	
<b>Weight (g)</b>	Stroke 0	460	650	1,030	1,360	2,180	2,890	5,700	11,200	14,900
	every 10 mm	23	32	45	49	75	81	130	195	245

Ordering string

1390-Series

1390

050

0400

01R

1390

VERSION

050

SIZE

32 = Ø 32 mm  
40 = Ø 40 mm  
50 = Ø 50 mm  
63 = Ø 63 mm  
80 = Ø 80 mm

0400

STROKE

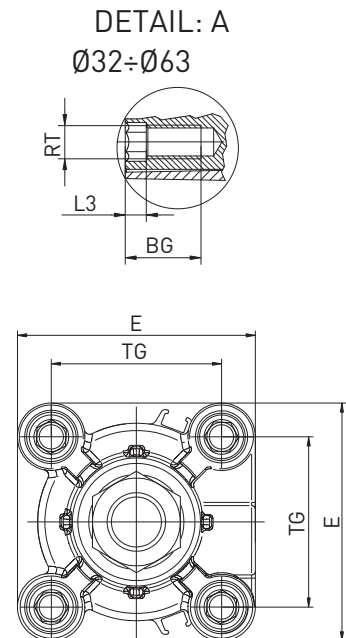
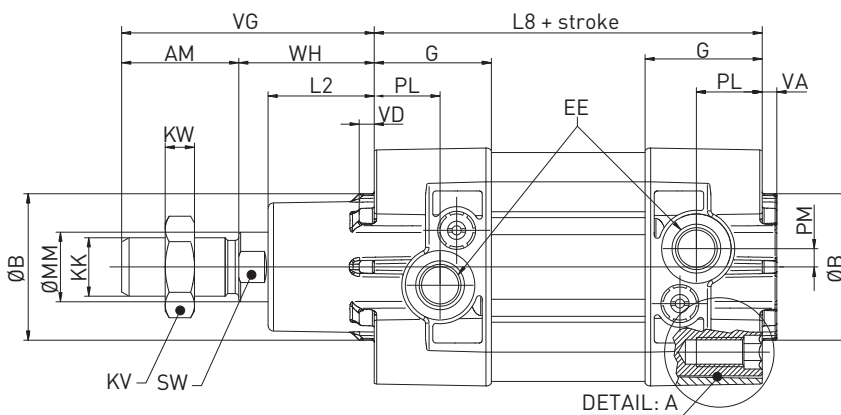
From 0 to 150 mm = every 25 mm  
From 150 to 500 mm = every 50 mm  
From 500 to 1000 mm = every 100 mm

01R

SPECIFICATION

01R = chromed rod; with metal rodscraper

1390 / Ecolight cylinders



\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES: ±0.02

DIMENSIONAL TOLERANCE  
FOR THREADED HOLES: ±0.1

REV. 00 - 03/04/2015

# 6110-Series

## Guided compact cylinder with additional metal rod scrapers



The rod guide is equipped with bearing bushings and guarantees **high precision and high loads**.

### Technical characteristics

<b>Function</b>	double acting
<b>Fluid</b>	filtered air, if lubricated, the lubrication must be continuous
<b>Working pressure</b>	max. 10 bar
<b>Working temperature</b>	-5°C - +70°C
<b>Cushioning</b>	elastic bumper on both ends

### Construction characteristics

<b>Body</b>	anodised aluminium
<b>Guide rods</b>	tempered and chromed steel
<b>Piston</b>	aluminium
<b>Piston rod</b>	C43 chromed steel
<b>Rods bushing</b>	bearing bushing
<b>End plate</b>	anodised aluminium
<b>Piston seal</b>	oil resistant NBR rubber
<b>Piston rod seal</b>	PUR
<b>External rod scraper</b>	brass
<b>Internal rod scraper</b>	NBR
<b>Plate</b>	nickel plated steel

The cylinders are equipped with 4 rod scrapers on the guide rods and 1 rod scraper on the central piston rod

### Standard strokes

Bore	Stroke								
	10	20	25	50	100	125	150	175	200
Ø32			•	•	•	•	•	•	•
Ø40			•	•	•	•	•	•	•
Ø50			•	•	•	•	•	•	•
Ø63			•	•	•	•	•	•	•

Intermediate strokes can be obtained using spacers with defined length (5, 10, 15, 20 mm).

Example: It is possible to obtain a **6110.32.45.B** cylinder from a **6110.32.50.B** cylinder by inserting a spacer with length of 5 mm.

The intermediate strokes manufactured without the use of spacers are considered special executions.

### Ordering string

## 6110-Series

**6110 50 175 C**

**6110**

**VERSION**

**50**

**SIZE**

**32** = Ø 32 mm  
**40** = Ø 40 mm  
**50** = Ø 50 mm  
**63** = Ø 63 mm

**175**

**STROKE**

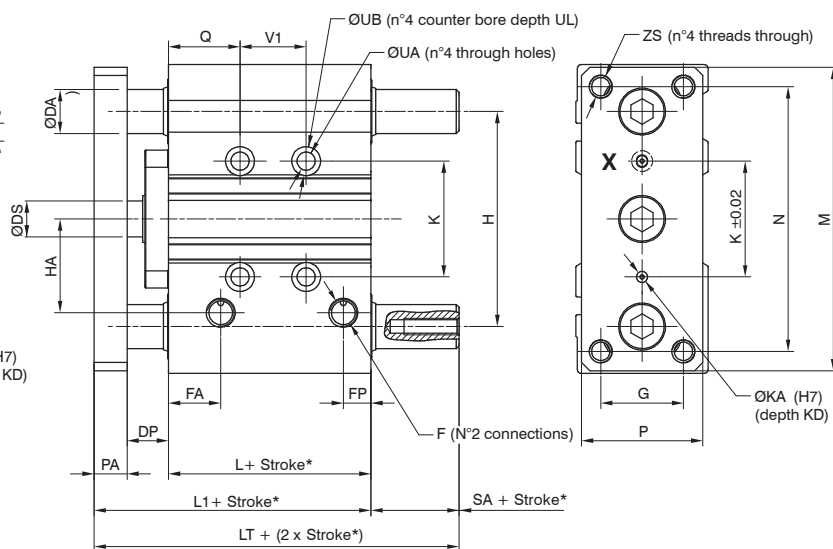
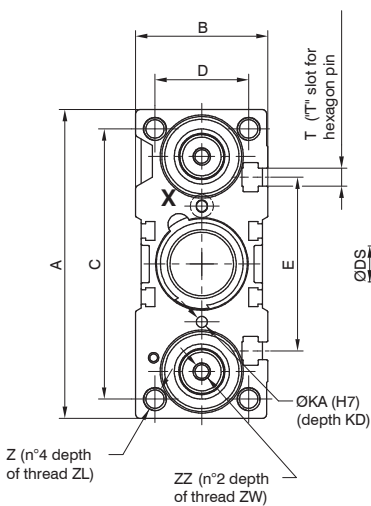
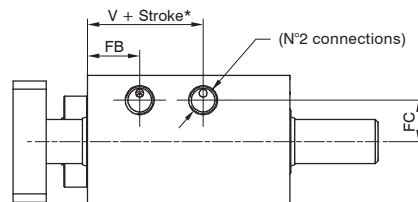
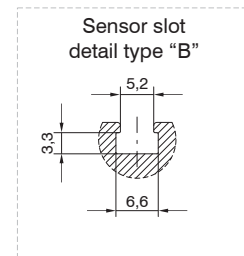
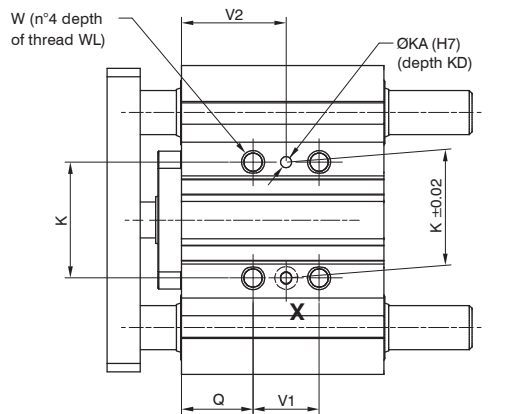
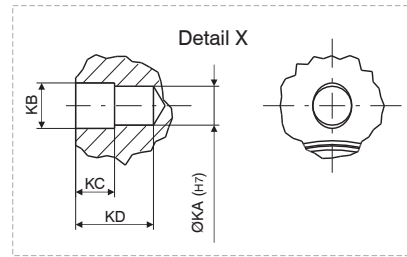
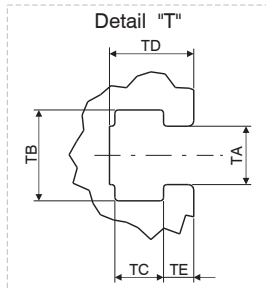
**25** = 25 mm      **150** = 150 mm  
**50** = 50 mm      **175** = 175 mm  
**100** = 100 mm    **200** = 200 mm  
**125** = 125 mm

**C**

**SPECIFICATION**

**C** = Side supply ports closed  
**CL** = Top supply ports closed

6110 / Guided compact cylinder



\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES:  $\pm 0.02$

DIMENSIONAL TOLERANCE  
FOR THREADED HOLES:  $\pm 0.1$

REV. 00 - 03/04/2015

**Overall dimensions**

Bore	Ø32	Ø40	Ø50	Ø63
Table of dimensions				
<b>A</b>	112	120	148	162
<b>B</b>	48	54	64	78
<b>C</b>	98	106	130	142
<b>D</b>	34	40	46	58
<b>DA</b>	16	16	20	20
<b>DP</b>	15	20	23	23
<b>DS</b>	16	16	20	20
<b>E</b>	63	72	92	110
<b>F</b>	G1/8"	G1/8"	G1/4"	G1/4"
<b>FA</b>	19	13	13	14
<b>FB</b>	19	13	13	14
<b>FC</b>	15	18	21,5	28
<b>FP</b>	10	11	11	12,5
<b>G</b>	30	30	40	50
<b>H</b>	78	86	110	124
<b>HA</b>	34	38	47	55
<b>K</b>	42	50	66	80
<b>KA</b>	4	4	5	5
<b>KB</b>	4,5	4,5	6	6
<b>KC</b>	3	3	4	4
<b>KD</b>	6	6	8	8
<b>L</b>	48,5	50	50	55
<b>L1</b>	75,5	82	88	93
<b>LT</b>	82,5	89	93	100
<b>M</b>	110	118	146	158

Bore	Ø32	Ø40	Ø50	Ø63
Table of dimensions				
<b>N</b>	96	104	130	130
<b>PA</b>	12	12	15	15
<b>P</b>	44	44	60	70
<b>Q</b>	26	22	24	24
<b>SA</b>	7	7	5	7
<b>T</b>	M6	M6	M8	M10
<b>TA</b>	6,5	6,5	8,5	11
<b>TB</b>	10,5	10,5	13,5	17,8
<b>TC</b>	5,5	5,5	7,5	10
<b>TD</b>	9,5	11	13,5	18,5
<b>TE</b>	3,5	4	4,5	7
<b>UA</b>	6,6	6,6	8,6	8,6
<b>UB</b>	11	11	14	14
<b>UL</b>	7,5	7,5	9	9
<b>V</b>	17	19	15	20
<b>V1</b>	See table 1			
<b>V2</b>				
<b>W</b>	M8x1,25	M8x1,25	M10x1,5	M10x1,5
<b>WL</b>	16	16	20	20
<b>Z</b>	M8x1,25	M8x1,25	M10x1,5	M10x1,5
<b>ZL</b>	20	20	22	22
<b>ZS</b>	M8x1,25	M8x1,25	M10x1,5	M10x1,5
<b>ZZ</b>	M6	M8	M10	M10
<b>ZW</b>	20	20	25	25

Table 1	V1			V2		
	stroke ≤ 25	25 < stroke ≤ 100	100 < stroke ≤ 200	stroke ≤ 25	25 < stroke ≤ 100	100 < stroke ≤ 200
<b>Ø32</b>	24	48	124	38	50	88
<b>Ø40</b>				34	46	84
<b>Ø50</b>				36	48	86
<b>Ø63</b>	28	52	128	38	50	88

## Special design products

### Cooling water intake cylinder for welding guns' electrodes replacement

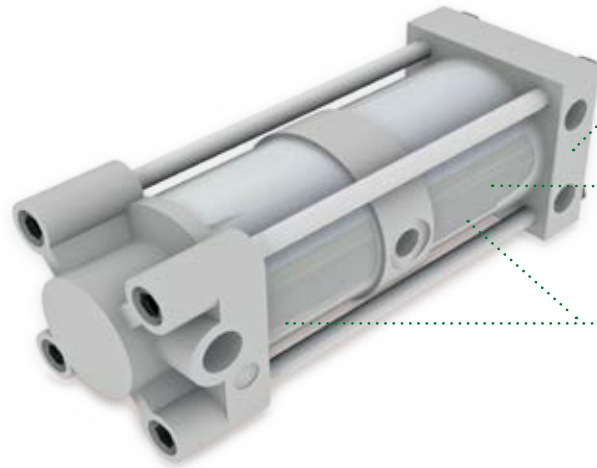
#### Customized special design products:

PNEUMAX engineering department will analyse every request for any specific application and will adapt or develop new components to meet the customer's needs. **Get in touch with us!**

The capacity of the intake chamber is 0.1 l.

The cylinder can be mounted to the service panel (RIP) for automated welding.

Not suitable for manual  
welding operations



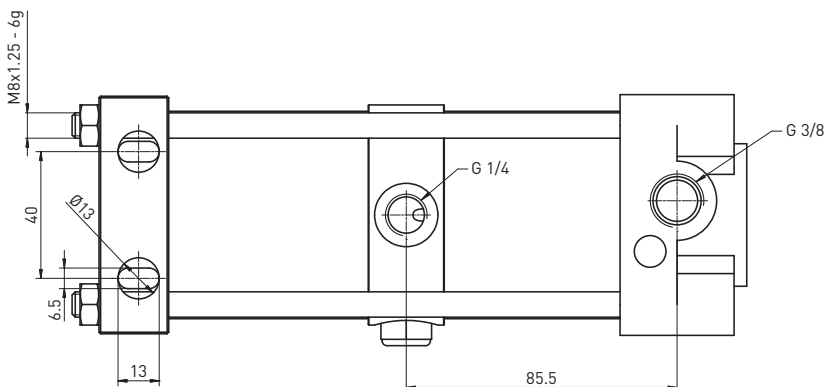
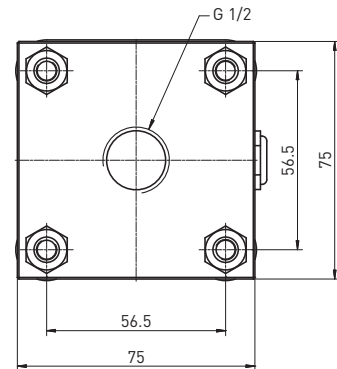
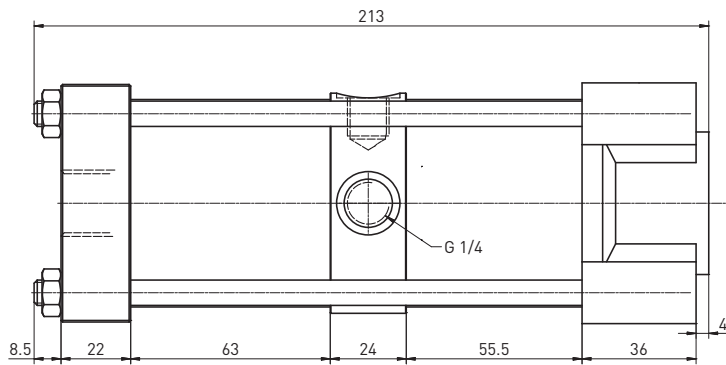
Piping for  
the connection  
to the welding gun

Intake chamber

Two chambers cylinder

#### PCY0050 / Cooling water intake cylinder

REV. 00 - 18/02/2015



# Accessories

## Sensor

M12 or M8  
connector;  
PNP or NPN



Patented



## EC001

Sensor cable

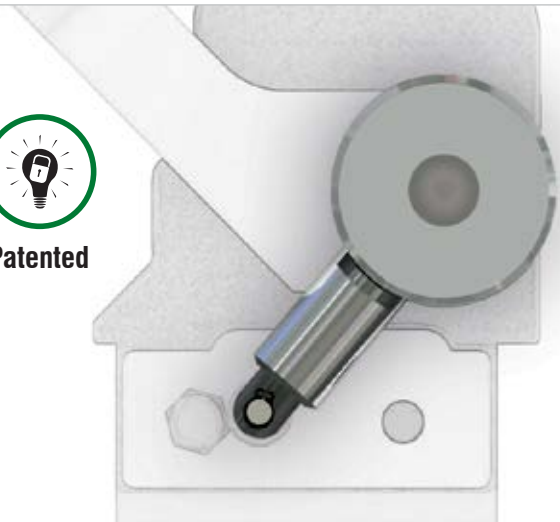


## Auto-retaining device

for opening position An extremely light device which maintains the clamping arm in its defined opening position in case of air loss. The AR-series has been designed for **maximum load capacity** and due to its compact dimensions, it can be used on the same side of the manual operation handle.



Patented



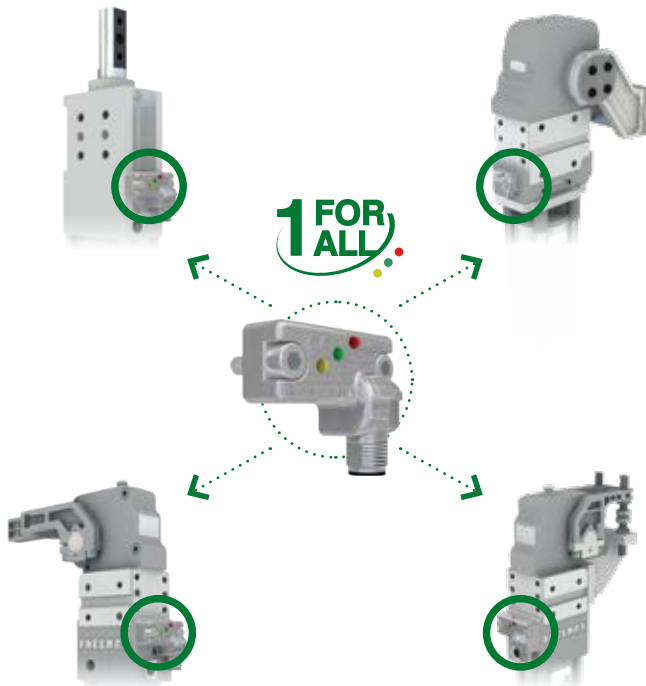
## Shims and spacers





# Sensor

## ES001. Electronic sensor used for all clamps, all sizes and series

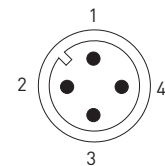
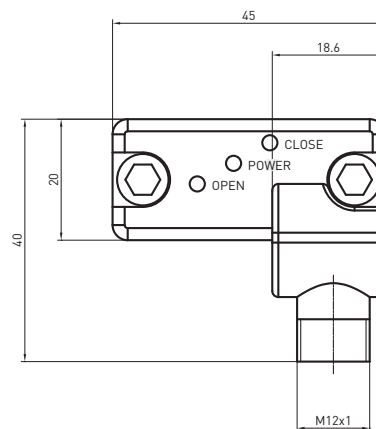
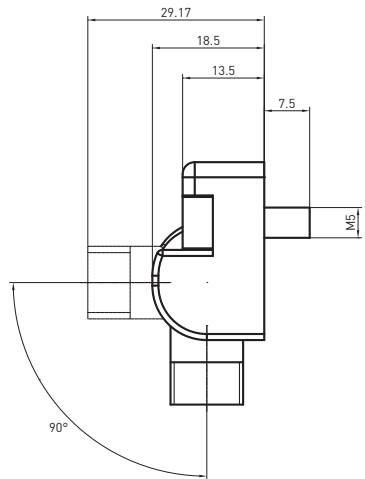


### Technical features

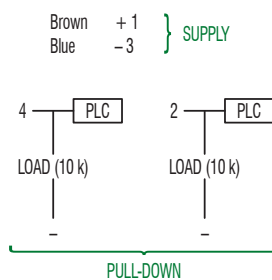
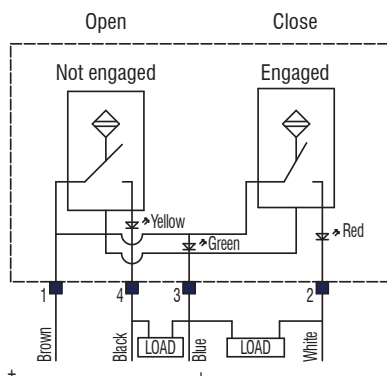
Operating voltage	10-30 VDC
Voltage drop	≤ 2 V
Load current	≤ 100 mA
Current consumption	≤ 30 mA
Short-circuit protection	protected
Protection rating	IP68
Operating temperature	-0 °C +50 °C
Storage temperature	-25 °C +60 °C
Electromagnetic compatibility	EN 60947-5-2:2007 + A1:2012
Power supply indication	green LED
Open position indication	yellow LED
Closed position indication	red LED
Digital output type	PNP

### ES001 / Electronic sensor with M12 swivel connector - PNP

REV. 00 - 31/03/2015

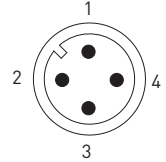
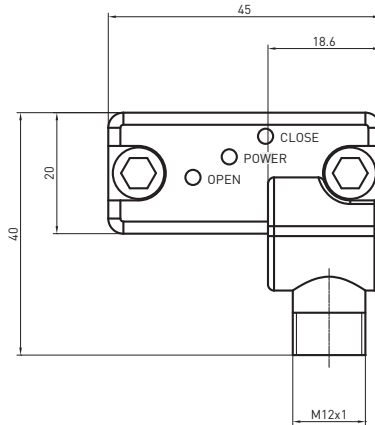
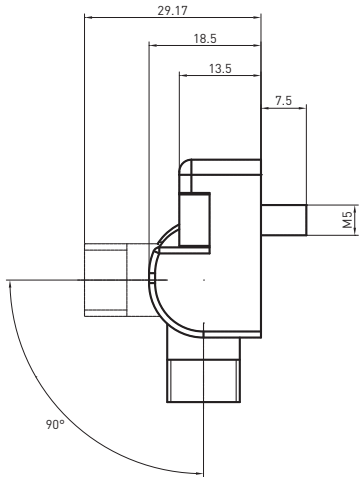


Simplified diagram (PNP)

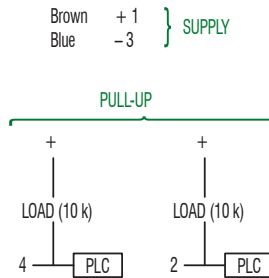
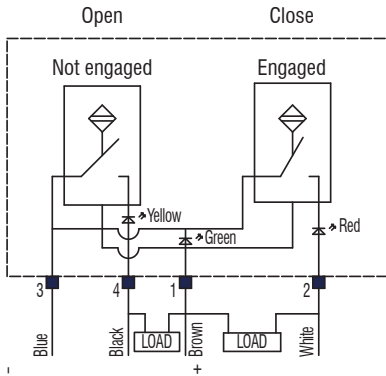


**ES002 / Electronic sensor with M12 swivel connector - NPN**

REV. 00 - 31/03/2015

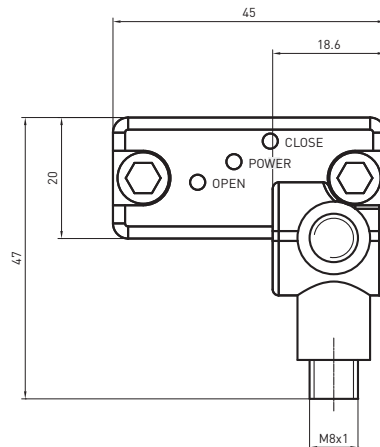
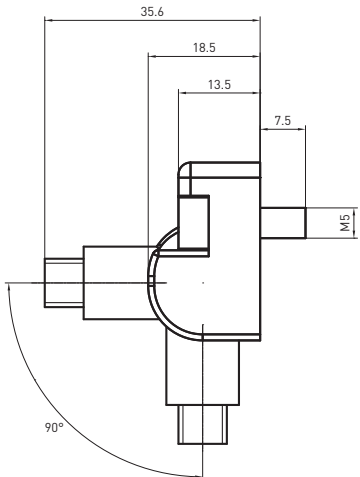


Simplified diagram (NPN)



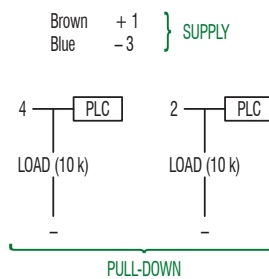
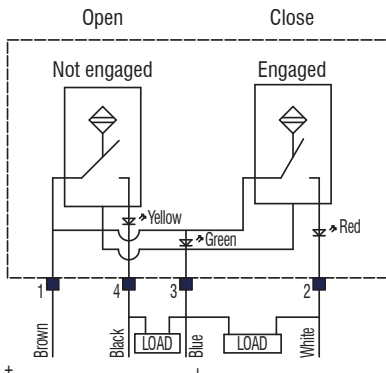
**ES003 / Electronic sensor with M8 swivel connector - PNP**

REV. 00 - 31/03/2015

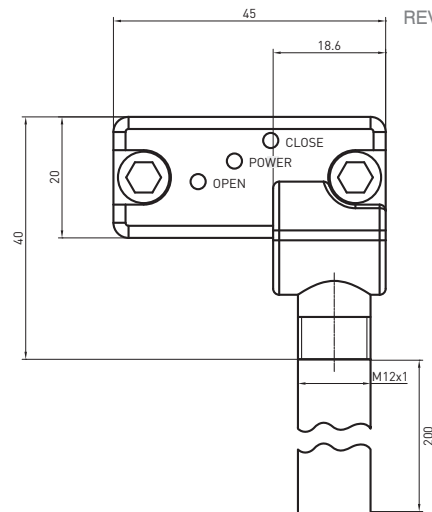
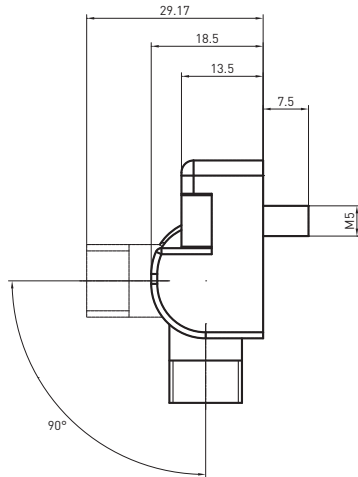


ACCESSORIES

Simplified diagram (PNP)

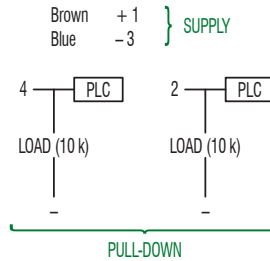
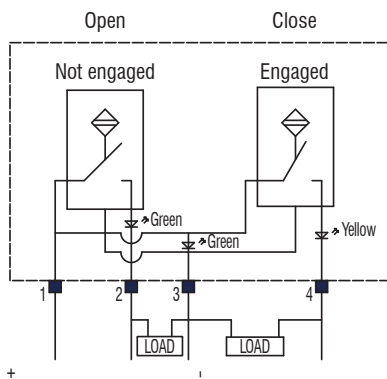


## ES004 / Electronic sensor with M12 swivel connector - PNP



REV. 00 - 12/12/2016

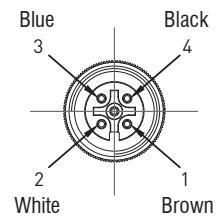
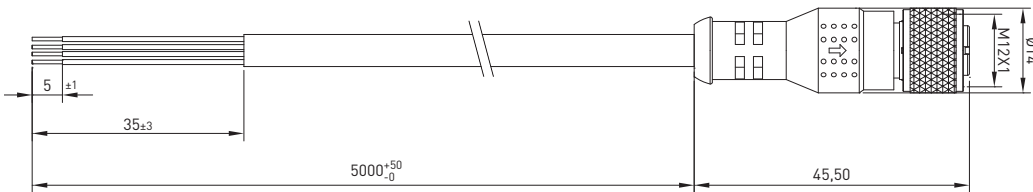
Simplified diagram (PNP)



Technical features	
Power supply indication	green LED
Open position indication	green LED
Closed position indication	yellow LED

## Cable

### EC001-05

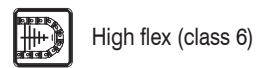


### Technical features

Connector features	
Product type	M12 circular connector with moulded cable
Connector type	Straight 180°
Contacts type	Female 4 poles
Pin	4
Protection class	IP69K
Rated voltage	250V AC/DC
Rated current	4 A

Cable features	
Pneumax cable code	EC001-05
Numbers of conductors	4
Conductors section	0,34 mm <sup>2</sup> (AWG22)
Cable material	PUR UL style 21576
Coating colour	Black
Conductors insulation material	TPO
Cable length	5000 mm
Stripping	35 mm Standard
Peeling and tinning	5 mm Standard

\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02  
 DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1  
 REV. 00 - 03/04/2015



# AR-Series



## Optional: auto-retaining device for opening position

An extremely light device which maintains the clamping arm in its defined opening position in case of air loss. The AR-series has been designed for **maximum load capacity** and due to its compact dimensions, it can be used on the same side of the manual operation handle. It locks the manual lever and guarantees the working position of the pin package with no air. It can easily be assembled on the right, as well as on the left side of the unit.



Patented



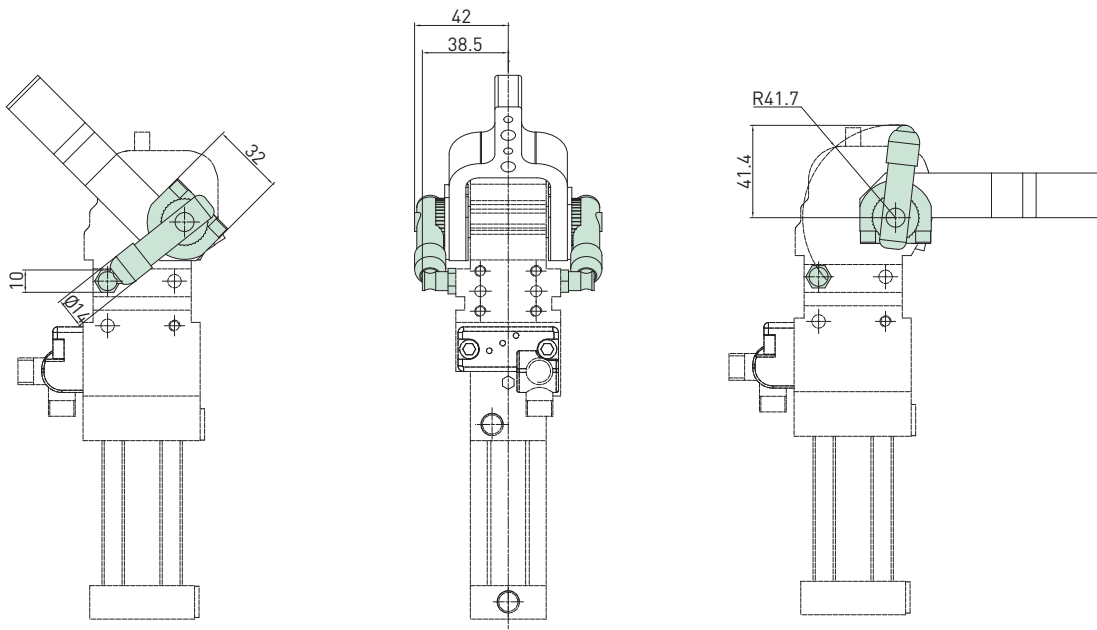
### Ordering string

## AR-Series

**AR 12**

AR	PRODUCT	AR	= Auto-retaining device
12	SIZE	12	= Clamp's shaft 12 mm
		16	= Clamp's shaft 16 mm
		19	= Clamp's shaft 19 mm
		22	= Clamp's shaft 22 mm
		30	= Clamp's shaft 30 mm
		19N	= Clamp's shaft 19 mm NAAMS
		22N	= Clamp's shaft 22 mm NAAMS
		30N	= Clamp's shaft 30 mm NAAMS
		09R	= for RD250 pin packages

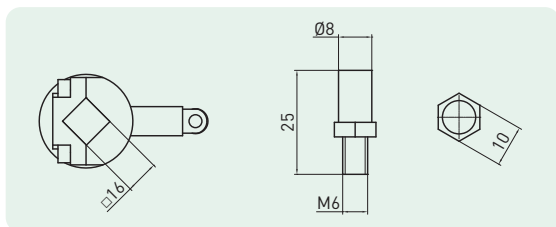
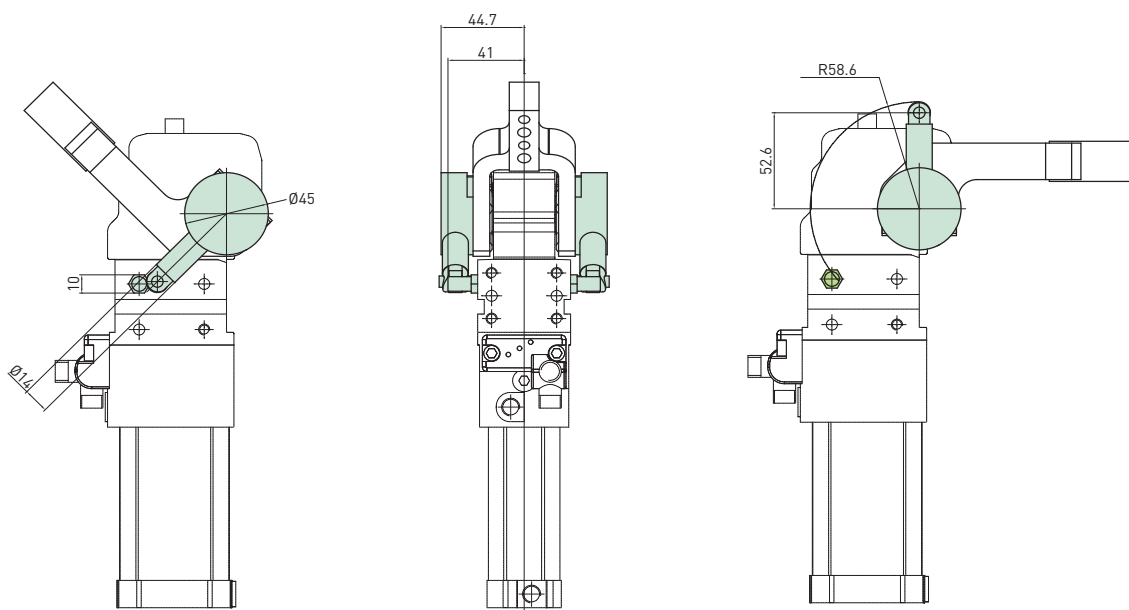
### AR12 / Clamp's shaft 12 mm



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

REV. 00 - 17/02/2016

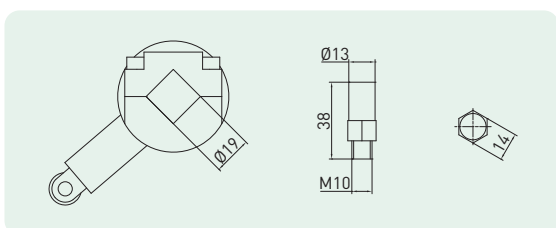
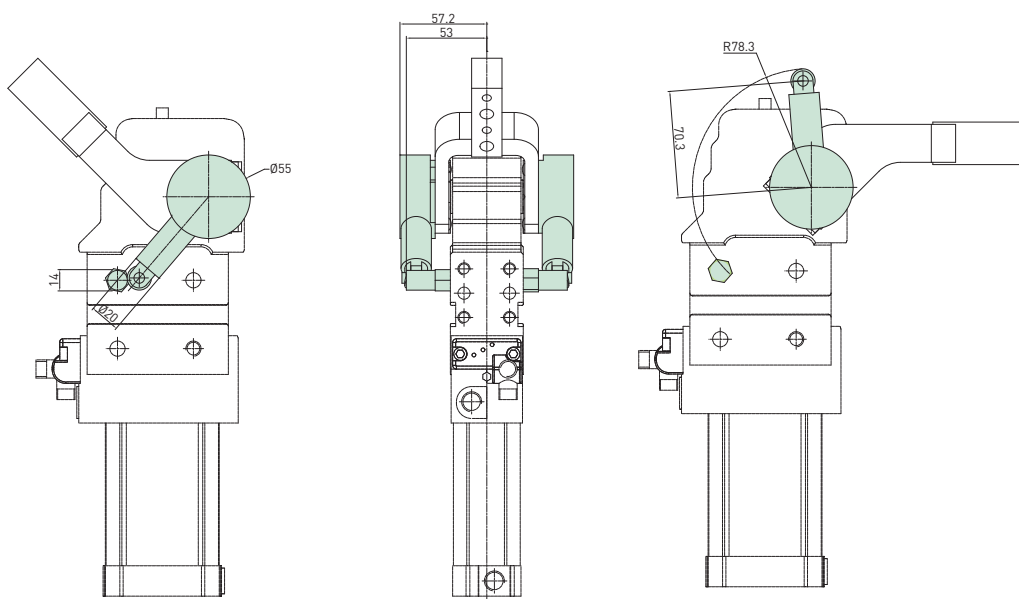
### AR16 / Clamp's shaft 16 mm



\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES:  $\pm 0.02$   
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES:  $\pm 0.1$

REV. 00 - 16/02/2016

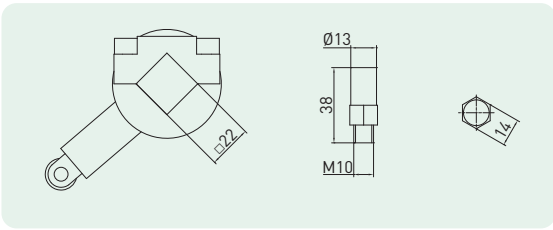
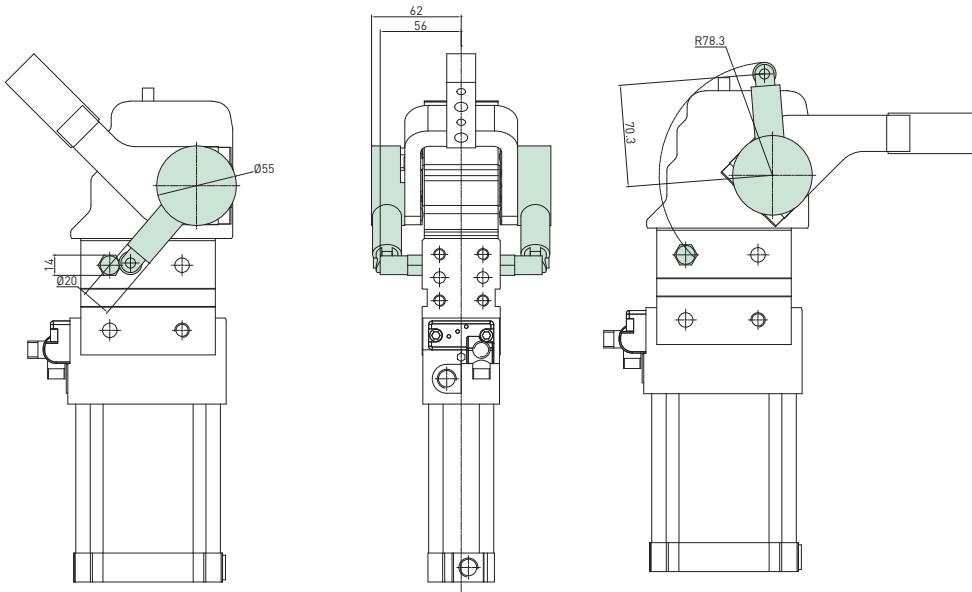
### AR19 / Clamp's shaft 19 mm



\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES:  $\pm 0.02$   
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES:  $\pm 0.1$

REV. 00 - 16/02/2016

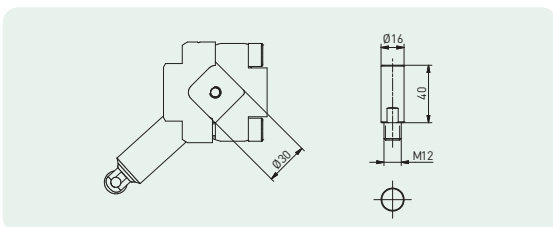
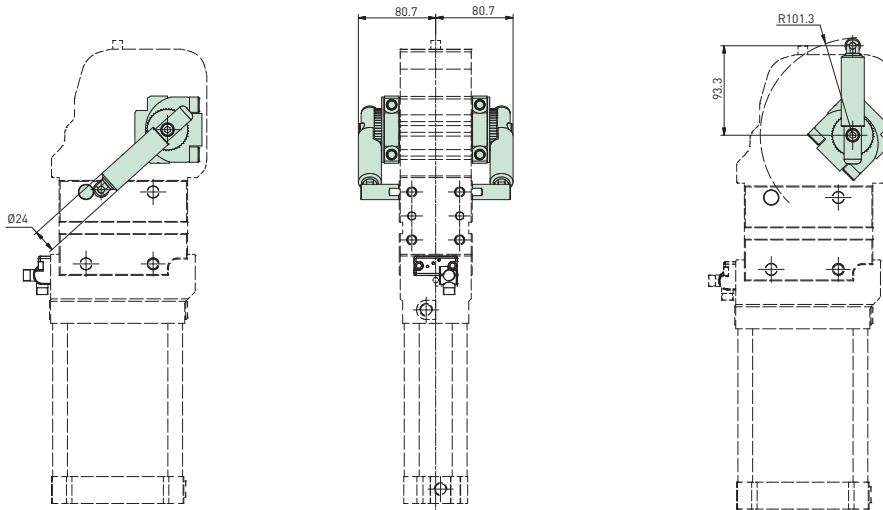
**AR22 / Clamp's shaft 22 mm**



\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES:  $\pm 0.02$   
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES:  $\pm 0.1$

REV. 00 - 16/02/2016

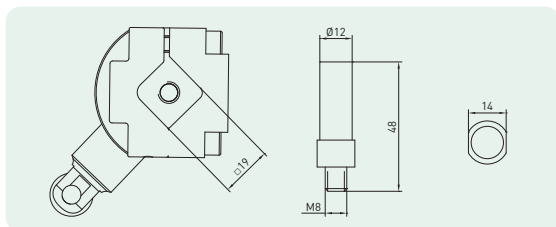
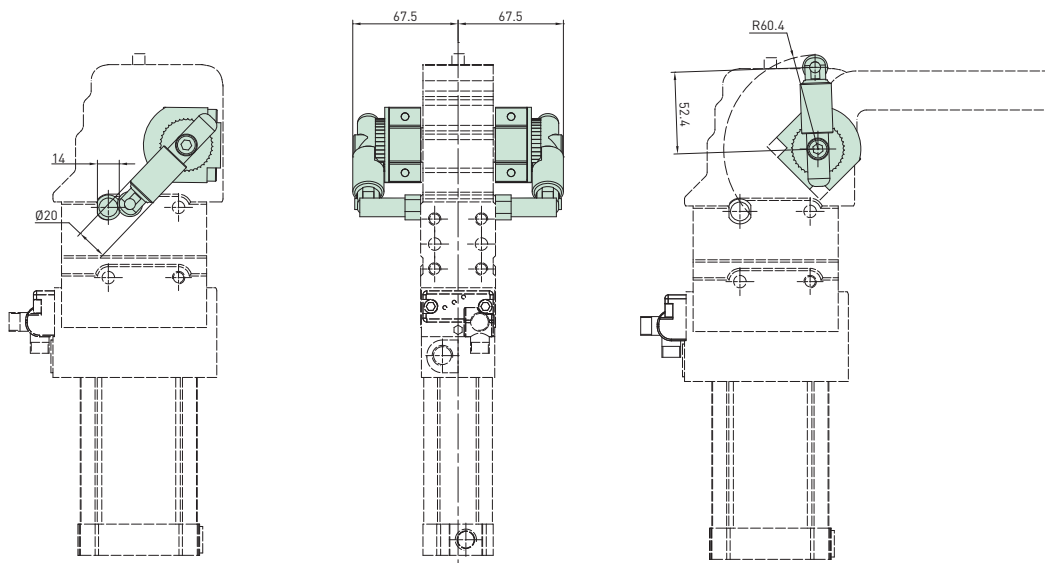
**AR30 / Clamp's shaft 30 mm**



\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES:  $\pm 0.02$   
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES:  $\pm 0.1$

REV 00 - 29/03/2019

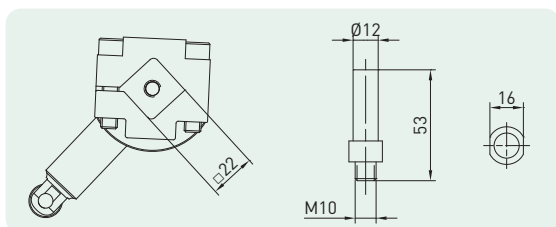
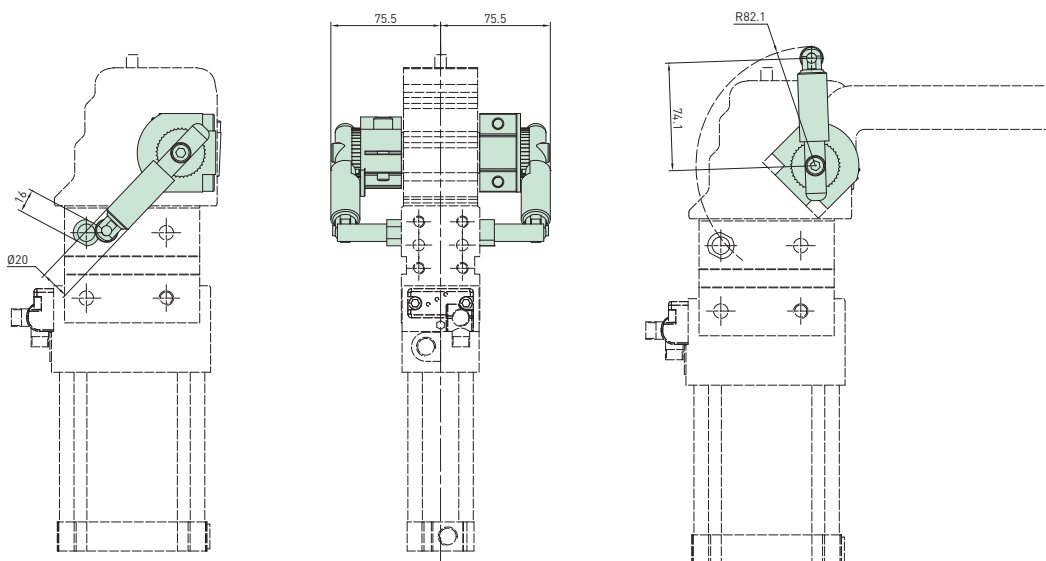
**AR19N** / Clamp's shaft 19 mm - NAAMS std



\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES:  $\pm 0.02$   
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES:  $\pm 0.1$

REV 00 - 29/03/2019

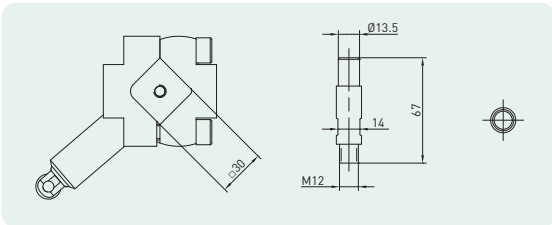
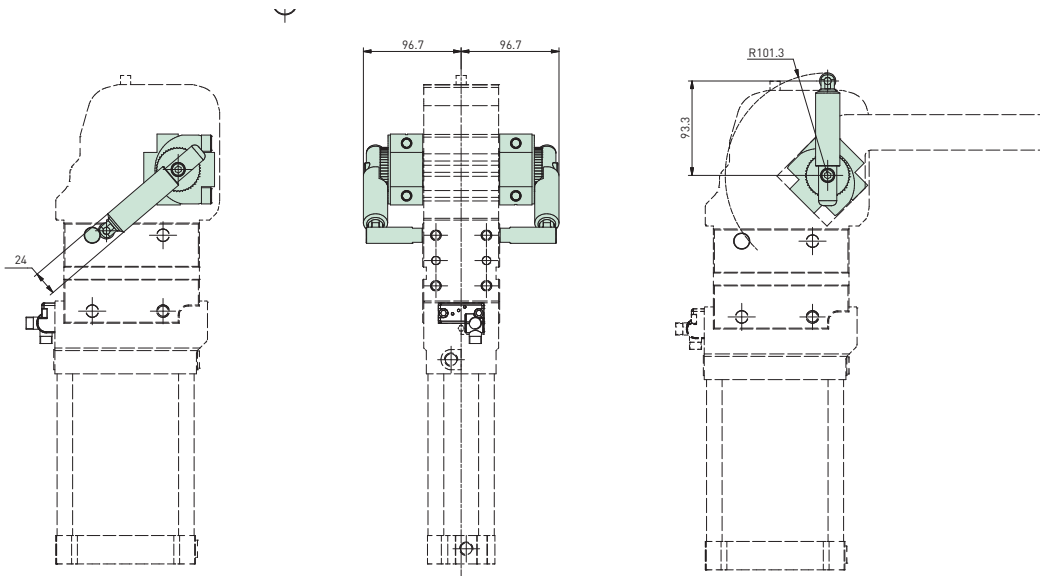
**AR22N** / Clamp's shaft 22 mm - NAAMS std



\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES:  $\pm 0.02$   
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES:  $\pm 0.1$

REV 00 - 29/03/2019

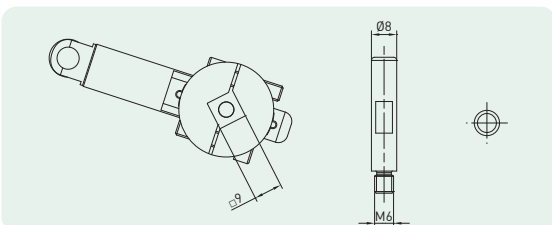
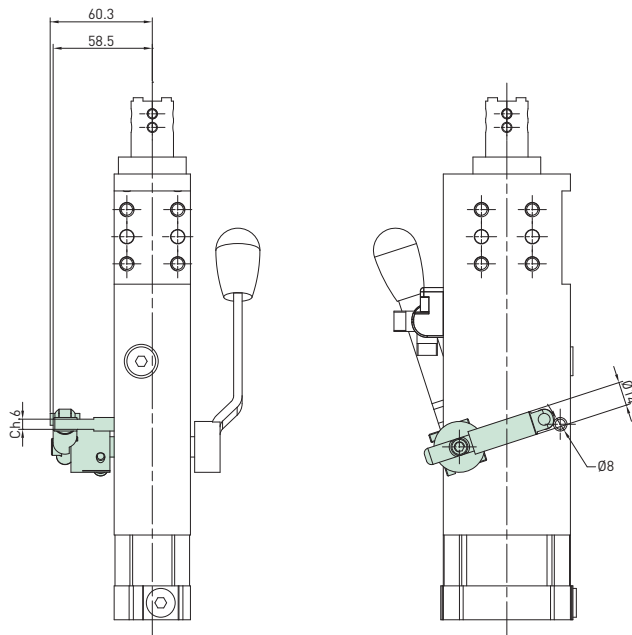
**AR30N** / Clamp's shaft 30 mm - NAAMS Std



\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES:  $\pm 0.02$   
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES:  $\pm 0.1$

REV. 00 - 29/03/2019

**AR09RD** / Auto-retaining system for pin packages with manual operation



\* DIMENSIONAL TOLERANCE  
FOR DOWEL HOLES:  $\pm 0.02$   
DIMENSIONAL TOLERANCE  
FOR THREADED HOLES:  $\pm 0.1$

REV. 00 - 05/03/2018



# Auto-retaining device

## 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 and lock out pneumatic and electric supply lines before operating on or around clamps.

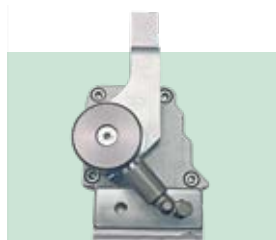
A worksheet for the right sizing of the pin packages is available upon request. Visit our website for technical documents

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



### Clamps in open position with auto-retain device

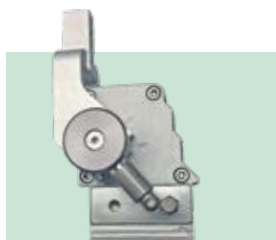
#### Clamp arm assembly



Position **1**



Position **2**



Position **3**



Position **4**

Please check the max opening angle related to the different arm position in our catalogue.

#### Auto-retaining device for opening position



Patented

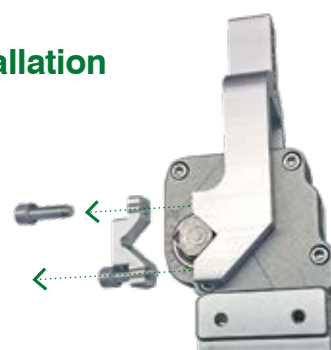
An extremely light device which maintains the clamping arm in its defined opening position in case of air loss. The AR-series has been designed for **maximum load capacity** and due to its compact dimensions, it can be used on the same side of the manual operation handle.

### With the clamping arm in the opening position

#### Clamp arm installation

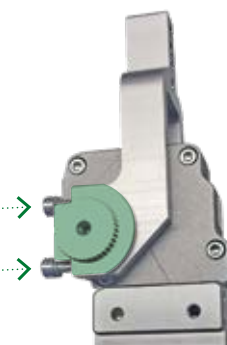
##### Step 1

Remove the standard bracket.



##### Step 2

Replace the standard bracket with the specific bracket included AR kit, and tighten it.



##### Step 3

Adjust the retaining device according to the opening angle, install the pin screw in the threaded hole of the side mount and tighten the retaining device with its screw.



##### Step 4

Set the interference between the holding device and the pin screw by slightly increasing or decreasing the opening angle adjustment, till the function is secured.



# Shims and spacers

## Ordering string



### Shims

**SH A 16 477 05**

<b>SH</b>	<b>PRODUCT</b>	<b>SH</b> = shims
<b>A</b>	<b>MOUNTS</b>	<b>A</b> = for clamping arms <b>M</b> = front, rear or side mounts of clamps or pin packages
<b>16</b>	<b>SIZE</b>	<b>16</b> = for clamping arms with 16 mm shaft <b>1922</b> = for clamping arms with 19 OR 22 mm shaft <b>30</b> = for clamping arms with 30 mm shaft <b>30x32</b> = mounting dimensions
<b>477</b>	<b>HOLE PATTERN</b>	<b>477</b> = 4 holes, 2 Ø 7 screw holes and 2 Ø 7 dowel holes <b>499</b> = 4 holes, 2 Ø 9 screw holes and 2 Ø 9 dowel holes <b>399</b> = 3 holes, 2 Ø 9 screw holes and 1 Ø 9 dowel holes
<b>05</b>	<b>THICKNESS</b>	<b>01</b> = 0.1 mm <b>02</b> = 0.2 mm <b>05</b> = 0.5 mm <b>15</b> = 1.5 mm <b>20</b> = 2 mm <b>5</b> = 5 mm

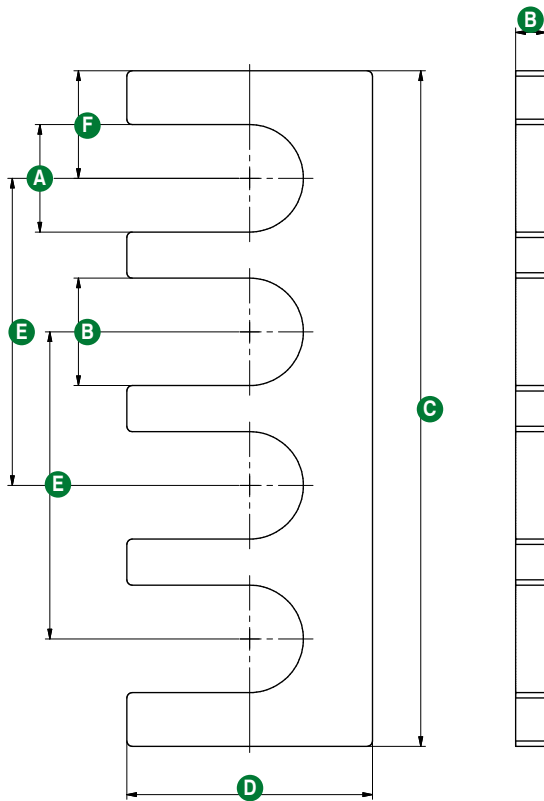


### Spacers

**SP A 16 477 50**

<b>SP</b>	<b>PRODUCT</b>	<b>SP</b> = spacers
<b>A</b>	<b>MOUNTS</b>	<b>A</b> = for clamping arms <b>M</b> = front, rear or side mounts of clamps or pin packages
<b>16</b>	<b>SIZE</b>	<b>16</b> = for clamping arms with 16 mm shaft <b>1922</b> = for clamping arms with 19 OR 22 mm shaft <b>30</b> = for clamping arms with 30 mm shaft <b>30x32</b> = mounting dimensions
<b>477</b>	<b>HOLE PATTERN</b>	<b>477</b> = 4 holes, 2 Ø 7 screw holes and 2 Ø 7 dowel holes <b>499</b> = 4 holes, 2 Ø 9 screw holes and 2 Ø 9 dowel holes <b>399</b> = 3 holes, 2 Ø 9 screw holes and 1 Ø 9 dowel holes
<b>05</b>	<b>THICKNESS</b>	<b>50</b> = 5 mm

## Shims



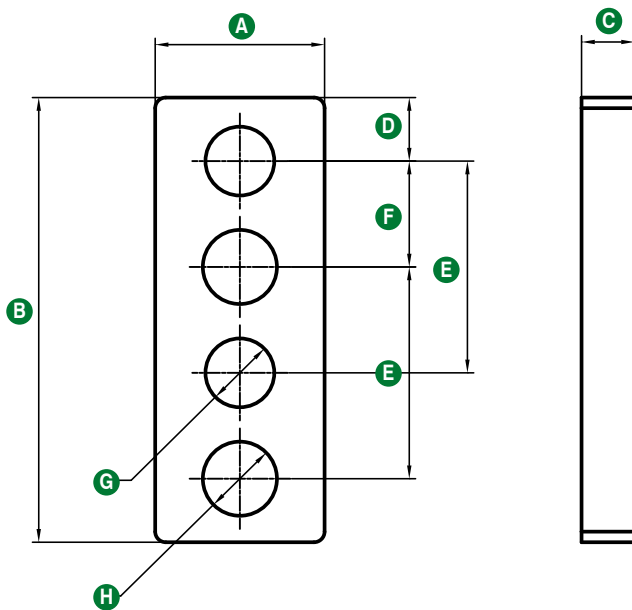
\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES:  $\pm 0.02$

DIMENSIONAL TOLERANCE FOR THREADED HOLES:  $\pm 0.1$

REV. 00 - 01/10/2015

	A	B	C	D	E	F	G	TYPE
SHA1647701	7	7	44	16	20	7	0.1	4 SLOTS
SHA1647702	7	7	44	16	20	7	0.2	4 SLOTS
SHA1647705	7	7	44	16	20	7	0.5	4 SLOTS
SHA1647710	7	7	44	16	20	7	1	4 SLOTS
SHA1647720	7	7	44	16	20	7	2	4 SLOTS
SHA1647750	7	7	44	16	20	7	5	4 SLOTS
SHA192249901	9	9	60	20	30	7.5	0.1	4 SLOTS
SHA192249902	9	9	60	20	30	7.5	0.2	4 SLOTS
SHA192249905	9	9	60	20	30	7.5	0.5	4 SLOTS
SHA192249910	9	9	60	20	30	7.5	1	4 SLOTS
SHA192249920	9	9	60	20	30	7.5	2	4 SLOTS
SHA192249950	9	9	60	20	30	7.5	5	4 SLOTS
SHM30X3239901	9	9	50	50	32	9	5	3 SLOTS
SHM30X3239902	9	9	50	50	32	9	5	3 SLOTS
SHM30X3239905	9	9	50	50	32	9	5	3 SLOTS
SHM30X3239910	9	9	50	50	32	9	5	3 SLOTS
SHM30X3239920	9	9	50	50	32	9	5	3 SLOTS
SHM30X3239950	9	9	50	50	32	9	5	3 SLOTS
SPA1647750	7	7	44	16	20	7	5	4 HOLES
SPA192249950	9	9	60	20	30	7.5	5	4 HOLES
SPA3047750	9	9	60	25	30	7.5	5	4 HOLES
SPM192239950	9	9	50	50	32	9	5	6 HOLES

## Spacers



\* DIMENSIONAL TOLERANCE FOR DOWEL HOLES:  $\pm 0.02$

DIMENSIONAL TOLERANCE FOR THREADED HOLES:  $\pm 0.1$

REV. 00 - 01/10/2015

	A	B	C	D	E	F	G	H
SPA1647650	16	42	5	6	20	10	6.5	7
SPA192247650	20	60	5	7.5	30	15	9	9
SPA3047650	25	60	5	7.5	30	15	9	9

# ATEX Directive



## Clamping

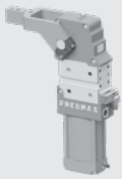
ATEX READY <b>SERIES C1</b>				
	part no. <b>XC1_25/80</b>			
	Marking	Temperature	Size	Mounting Pattern
	II 2G Ex h IIC T6 Gb X II 2D Ex h IIIC T85°C Db X	0°C ≤ Ta ≤ +50°C (T6/T85°C)	Ø25 - Ø80mm	International mount
ATEX READY <b>SERIES C2</b>				
	part no. <b>XC2_50/80</b>			
	Marking	Temperature	Size	Mounting Pattern
	II 2G Ex h IIC T6 Gb X II 2D Ex h IIIC T85°C Db X	0°C ≤ Ta ≤ +50°C (T6/T85°C)	Ø50 - Ø80mm	NAAMS Standard
ATEX READY <b>SERIES HE1</b>				
	part no. <b>XHE1P0/1/2/3/4</b>			
	Marking	Temperature	Size	Mounting Pattern
	II 2G Ex h IIC T6 Gb X II 2D Ex h IIIC T85°C Db X	0°C ≤ Ta ≤ +50°C (T6/T85°C)	Ø40 - Ø80mm	International mount
ATEX READY <b>SERIES HE2</b>				
	part no. <b>XHE2P1/2/3</b>			
	Marking	Temperature	Size	Mounting Pattern
	II 2G Ex h IIC T6 Gb X II 2D Ex h IIIC T85°C Db X	0°C ≤ Ta ≤ +50°C (T6/T85°C)	Ø50 - Ø80mm	NAAMS Standard



ATEX READY



**SERIES CX**



part no. **XC\_X40/50/63**

Marking	Temperature	Size	Mounting Pattern
II 2G Ex h IIC T6 Gb X II 2D Ex h IIIC T85°C Db X	0°C ≤ Ta ≤ +50°C (T6/T85°C)	Ø40 - Ø63mm	International mount / NAAMS Standard

ATEX READY



**SERIES CS/HES**



part no. **XCS/HES**

Marking	Temperature	Size	Mounting Pattern
II 2G Ex h IIC T6 Gb X II 2D Ex h IIIC T85°C Db X	0°C ≤ Ta ≤ +50°C (T6/T85°C)	Ø40 - Ø80mm	International mount / NAAMS Standard

ATEX READY



**SERIES CB**



part no. **XCB40/63**

Marking	Temperature	Size	Mounting Pattern
II 2G Ex h IIC T6 Gb X II 2D Ex h IIIC T85°C Db X	0°C ≤ Ta ≤ +50°C (T6/T85°C)	Ø40; Ø63mm	International mount

ATEX READY



**SERIES AR**



part no. **XAR\_/AR\_N/AR09R**

Marking	Temperature	Size	Mounting Pattern
II 2G Ex h IIC T6 Gb X II 2D Ex h IIIC T85°C Db X	0°C ≤ Ta ≤ +50°C (T6/T85°C)	12mm; 16mm; 19mm; 22mm; 30mm	International mount / NAAMS Standard

# Locating

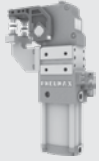
ATEX READY <b>SERIES R</b>				
	part no. <b>XR_32</b>			
	Marking	Temperature	Size	Stroke
	II 2G Ex h IIC T6 Gb X II 2D Ex h IIIC T85°C Db X	0°C ≤ Ta ≤ +50°C (T6/T85°C)	Ø32mm	20mm; 40mm
	part no. <b>XR_50/63</b>			
Marking	Temperature	Size	Stroke	
II 2G Ex h IIC T6 Gb X II 2D Ex h IIIC T85°C Db X	0°C ≤ Ta ≤ +50°C (T6/T85°C)	Ø50; Ø63mm	15mm; 25mm; 40mm; 50mm; 60mm	
ATEX READY <b>SERIES RT</b>				
	part no. <b>XRT_40</b>			
	Marking	Temperature	Size	Stroke
	II 2G Ex h IIC T6 Gb X II 2D Ex h IIIC T85°C Db X	0°C ≤ Ta ≤ +50°C (T6/T85°C)	Ø40 mm	40 mm
ATEX READY <b>SERIES RC</b>				
	part no. <b>XRC_D50/63</b>			
	Marking	Temperature	Size	Stroke
	II 2G Ex h IIC T6 Gb X II 2D Ex h IIIC T85°C Db X	0°C ≤ Ta ≤ +50°C (T6/T85°C)	Ø50; Ø63mm	25mm; 50mm
ATEX READY <b>SERIES HP</b>				
	part no. <b>XHP50</b>			
	Marking	Temperature	Size	Stroke
	II 2G Ex h IIC T6 Gb X II 2D Ex h IIIC T85°C Db X	0°C ≤ Ta ≤ +50°C (T6/T85°C)	Ø50mm	15mm; 25mm; 40mm; 50mm; 60mm
ATEX READY <b>SERIES F</b>				
	part no. <b>XF_40/41/63</b>			
	Marking	Temperature	Size	Stroke
	II 2G Ex h IIC T6 Gb X II 2D Ex h IIIC T85°C Db X	0°C ≤ Ta ≤ +50°C (T6/T85°C)	Ø40 mm, Ø41 mm, Ø63mm	15mm; 25mm; 40mm; 50mm; 60mm
ATEX READY <b>SERIES FT</b>				
	part no. <b>XFT_50</b>			
	Marking	Temperature	Size	Stroke
	II 2G Ex h IIC T6 Gb X II 2D Ex h IIIC T85°C Db X	0°C ≤ Ta ≤ +50°C (T6/T85°C)	Ø50 mm	40mm

## Handling

ATEX READY



### SERIES J

part no. **XJ\_40**

Marking	Temperature	Size	Arm
II 2G Ex h IIC T6 Gb X II 2D Ex h IIIC T85°C Db X	0°C ≤ Ta ≤ +50°C (T6/T85°C)	Ø40 mm	Aluminum / Steel

## Pivoting

ATEX READY



### SERIES P

part no. **XP63**

Marking	Temperature	Size	Opening Angle
II 2G Ex h IIC T6 Gb X II 2D Ex h IIIC T85°C Db X	0°C ≤ Ta ≤ +50°C (T6/T85°C)	Ø63 mm	0°-135°

cod. **XP80/100/125**

Marking	Temperature	Size	Opening Angle
II 2G Ex h IIC T6 Gb X II 2D Ex h IIIC T85°C Db X	0°C ≤ Ta ≤ +50°C (T6/T85°C)	Ø80, Ø100 mm, Ø125 mm	45°; 60°; 90°; 120°; 135°

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- **Valves**
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**GUIDED**  
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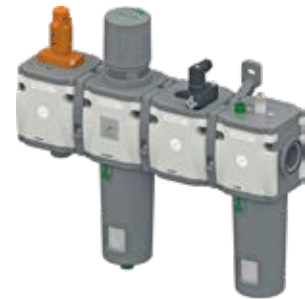
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[www.interfluid.it](http://www.interfluid.it)

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vendite@airfluidcenter.it  
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[www.airpneumatic.it](http://www.airpneumatic.it)



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