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

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

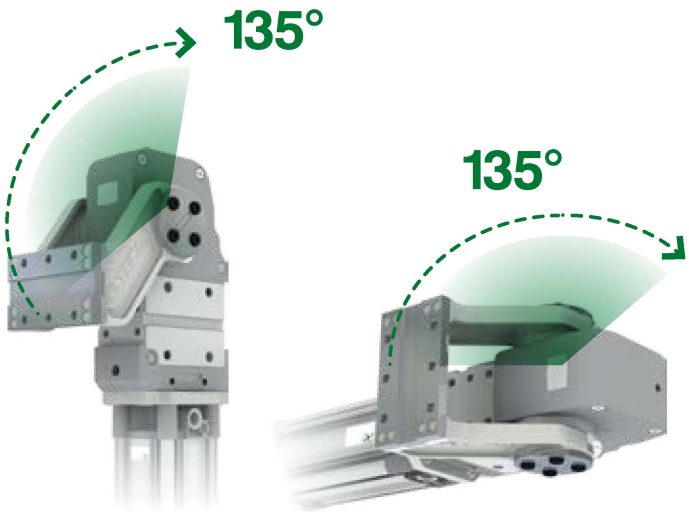
to ensure a high protection degree against contaminants and years of service life **without maintenance** to minimize downtime associated with contamination.

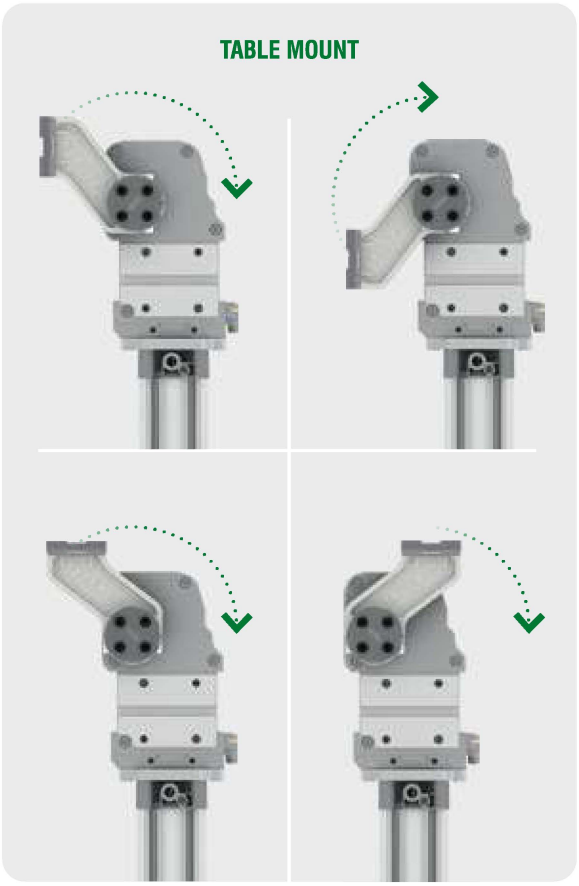
Power pivots

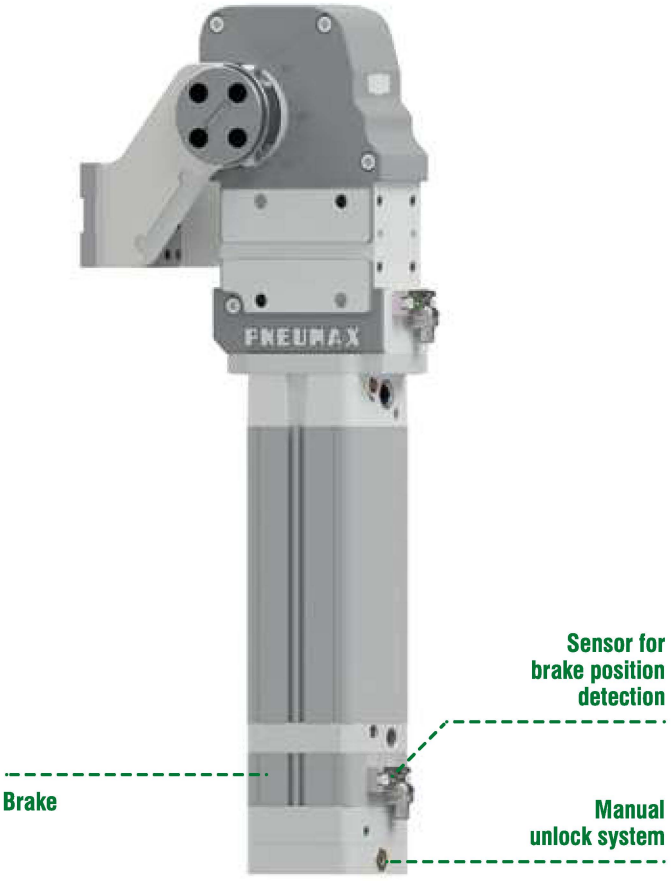
P-Series

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**





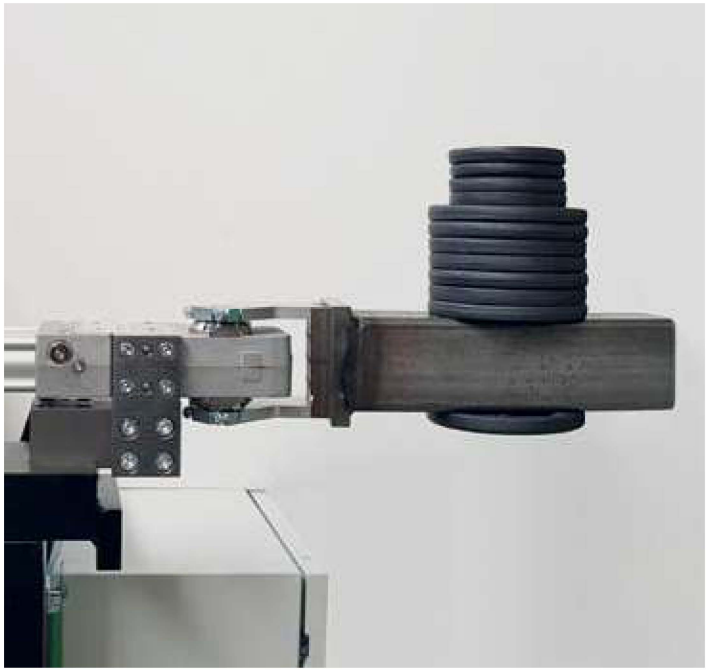


P63-Series

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

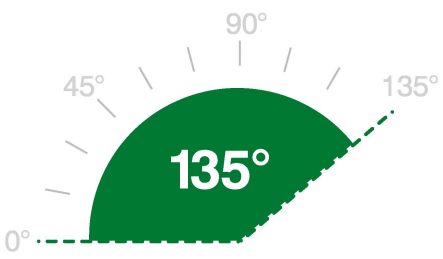
Conforming to standard

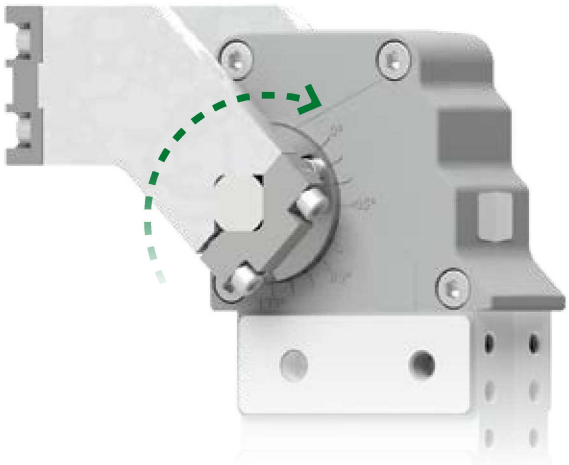
GLOBAL STANDARD COMPONENTS NAAMS



Max swivel angle: 135°

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





PIVOTING

P-Series

Pivot units

INTERNATIONAL MOUNT

GLOBAL STANDARD COMPONENTS NAAMS

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**

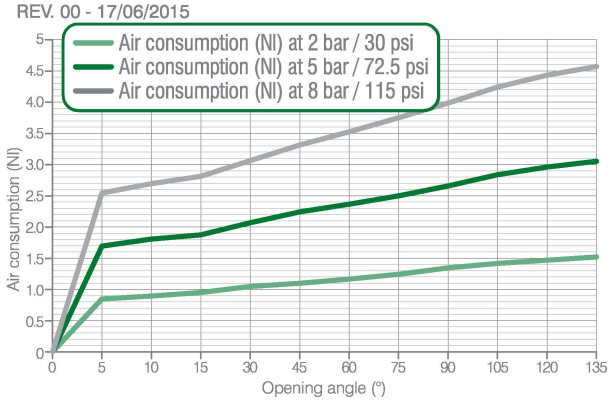
	Pos. 1	Pos. 2	Pos. 3	Pos. 4
135°	✔	✘	✔	✘
120°	✔	✘	✔	✘
115°	✔	✔	✔	✘
90°	✔	✔	✔	✘
60°	✔	✔	✔	✔
45°	✔	✔	✔	✔

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)

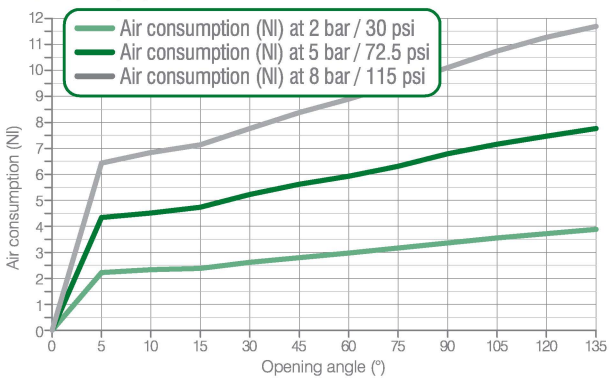
REV. 00 - 17/06/2015



Size 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)

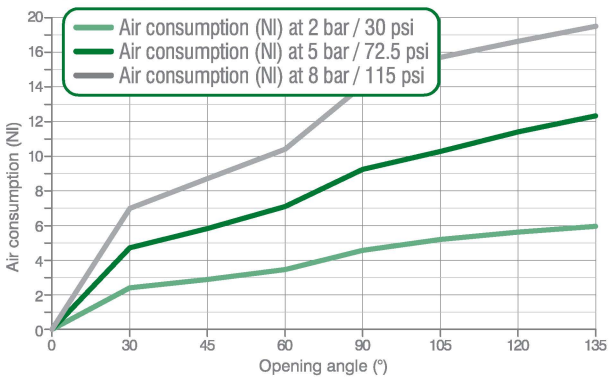
REV. 00 - 15/05/2015



Size 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)

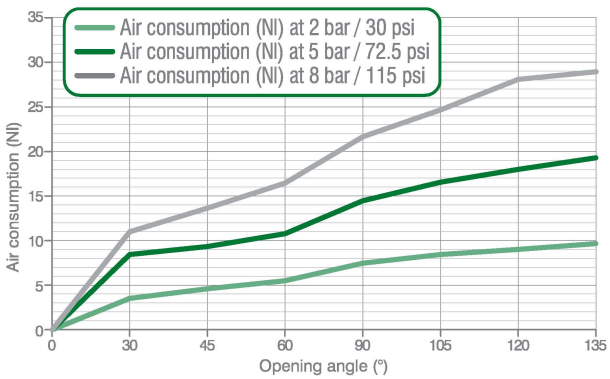
REV. 00 - 15/05/2015



Size 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

P — VERSION

P = Pivot unit

63 — SIZE

63 = 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

1 — MOUNTING PATTERN

1 = International mount
2 = NAAMS Standard

INTERNATIONAL MOUNT

GLOBAL STANDARD COMPONENTS NAAMS

1 — TABLE MOUNT

1 = 
Max op. angle 135°

2 = 
Max op. angle 112°

3 = 
Max op. angle 135°

4 = 
Max op. angle 70°

N — BRAKE SYSTEM

N = no brake

ADJ — OPENING ANGLE

ADJ = stepless opening angle from 0° to 135°

Size 80, 100, 125

P	80	E	1	G	1	N	45	U

P — VERSION

P = Pivot unit

80 — SIZE

80 = Ø 80 mm
100 = Ø 100 mm
125 = Ø 125 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

1 — SUPPLY PORTS POSITION

1 = on the left side from the sensor
2 = on the front side
3 = on the right side from the sensor
4 = on the sensor's side

The supply ports position of the brake is the same as the cylinder's

G — PORTS

G = G thread – BSPP

1 — TABLE MOUNT

1 = 
2 = 
3 = 
4 = 

N — BRAKE SYSTEM

B = brake
N = no brake
S = sensor on the brake

45 — OPENING ANGLE

45°
60°
90°
120°
135°

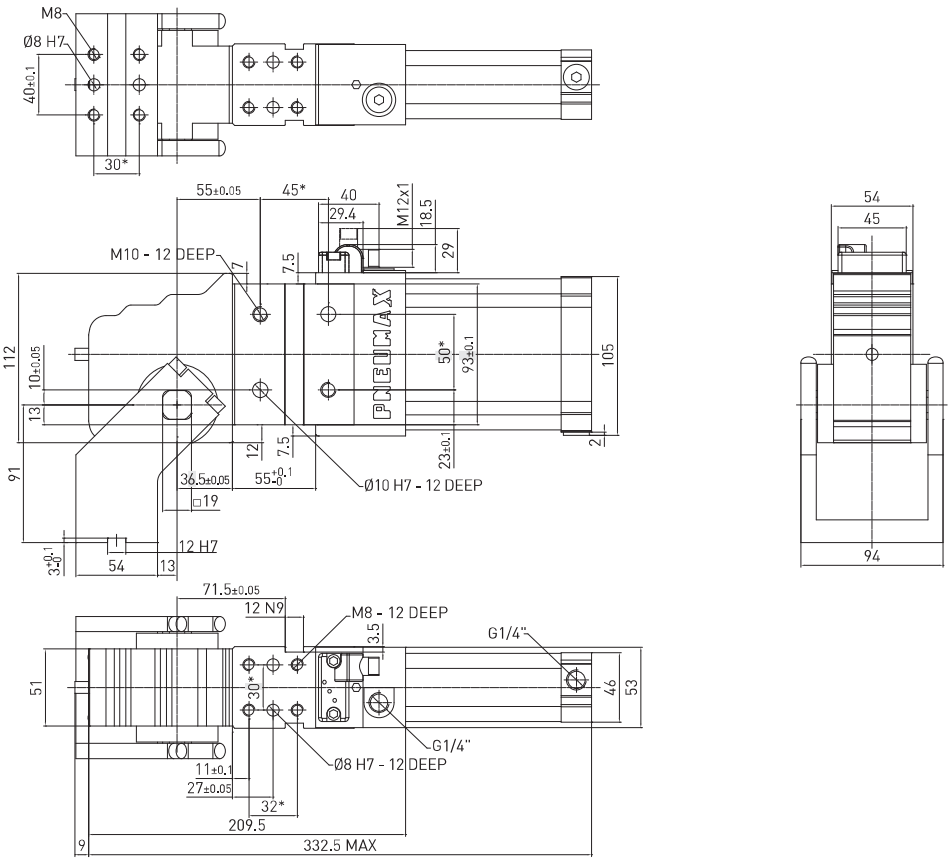
Any intermediate opening angle is available upon request - Please see the charts for table position as well as for max. opening angle

U — UNLOCK MECHANISM FOR THE BRAKE

U = unlock mechanism (only for brake system: B,S)

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

WEIGHT 6.5 kg



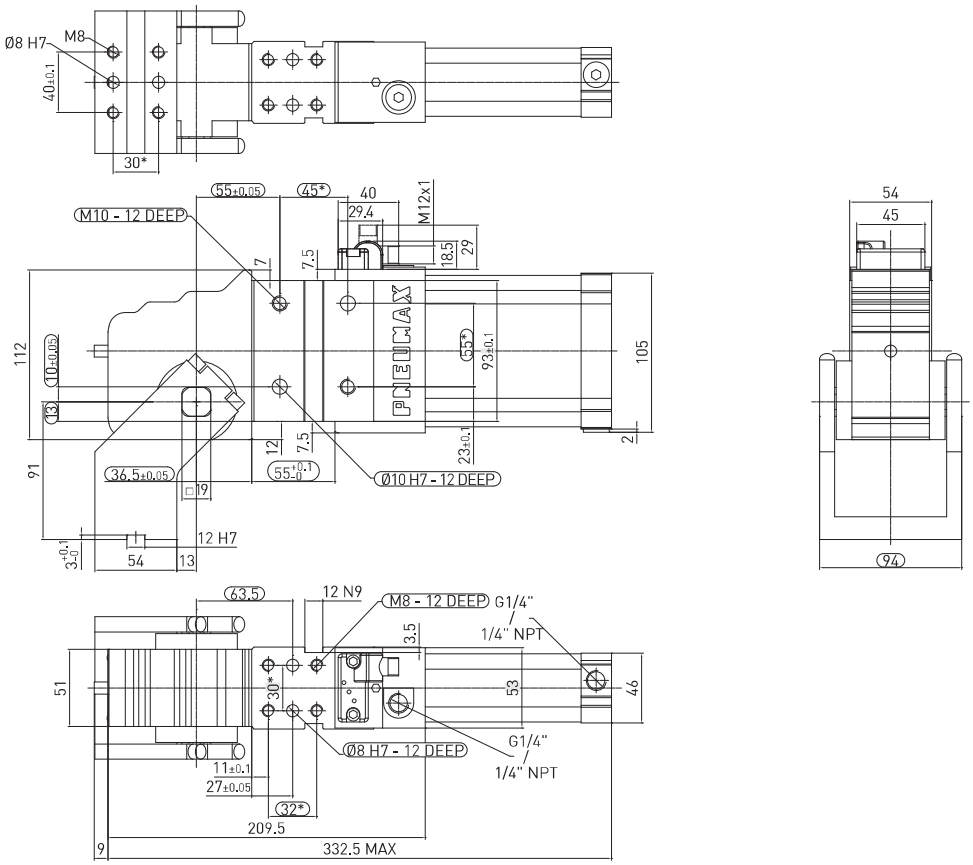
* DIMENSIONAL TOLERANCE
FOR DOWEL HOLES: ±0.02

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

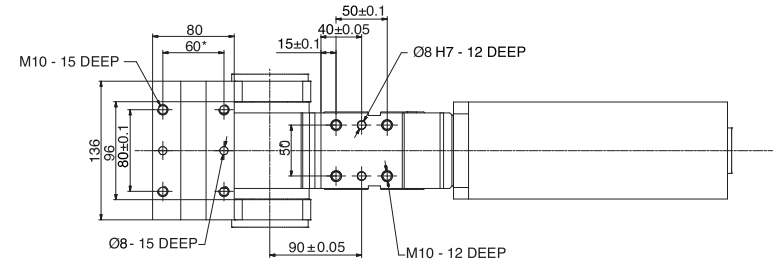
DIMENSIONAL TOLERANCE
FOR THREADED HOLES: ±0.1

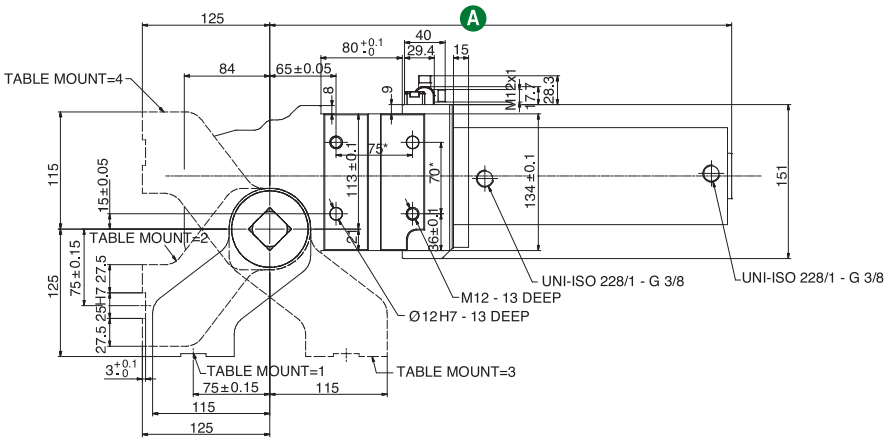
REV. 00 - 02/08/2019

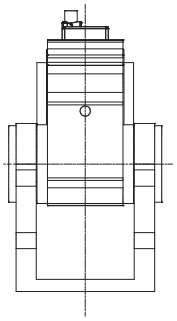
PIVOTING

P80_N_ / Pivot Unit - Size 80 mm

WEIGHT 15 kg
135° version

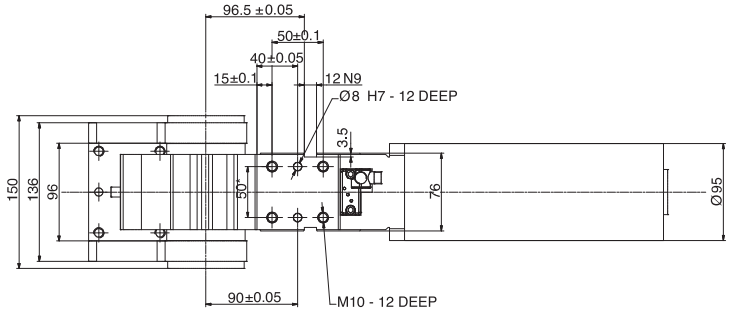


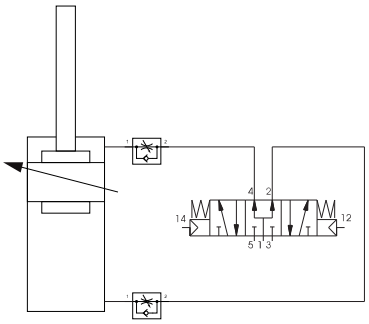




Overall length

opening angle	A Overall length (mm)
45°	382.5
60°	395
90°	420.5
120°	445
135°	453





Not included in the scope of the supply

* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

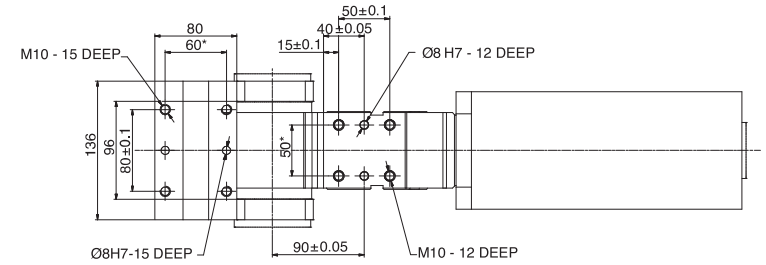
DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

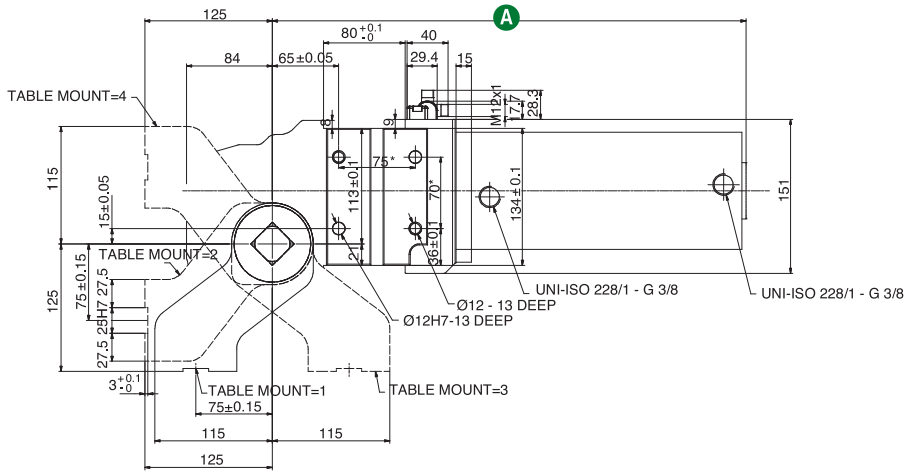
REV. 02 - 05/05/2021

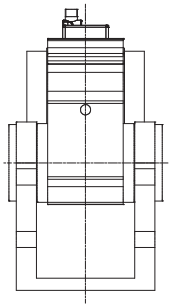
PIVOTING

P100__N__/ Pivot Unit - Size 100 mm

WEIGHT 15.8 kg
135° version

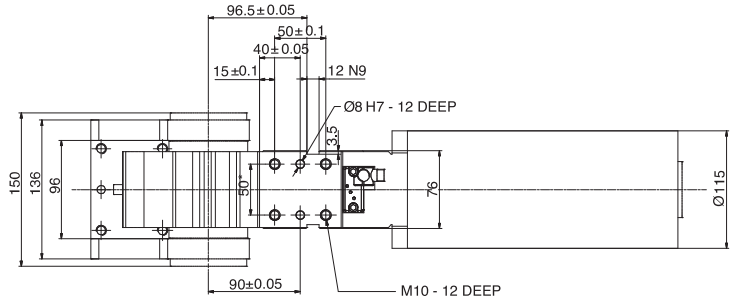


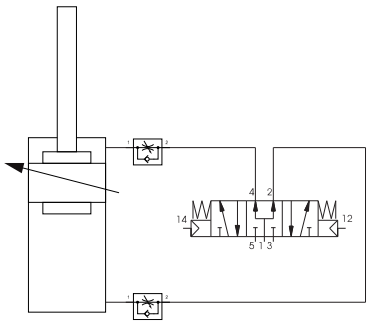




Overall length

opening angle	A Overall length (mm)
45°	393.5
60°	406
90°	431.5
120°	456
135°	464





Not included in the scope of the supply

* DIMENSIONAL TOLERANCE
FOR DOWEL HOLES: ±0.02

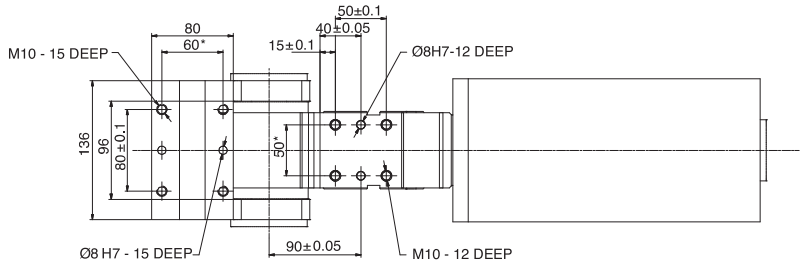
DIMENSIONAL TOLERANCE
FOR THREADED HOLES: ±0.1

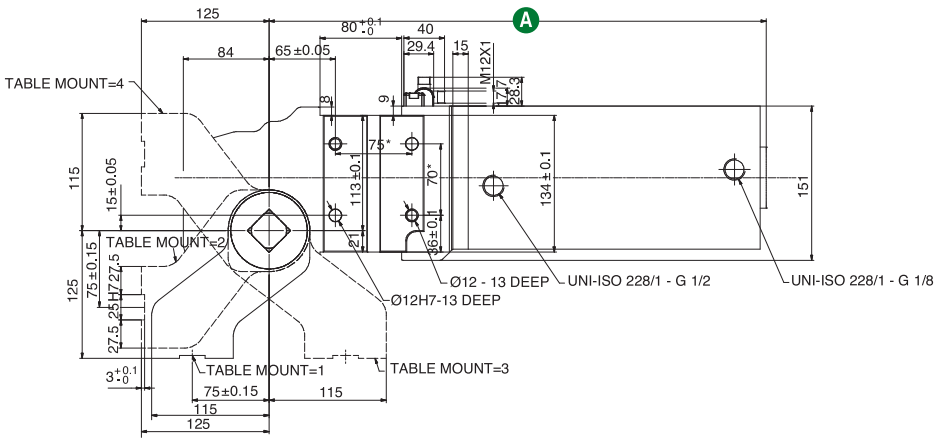
REV. 02 - 05/05/2021

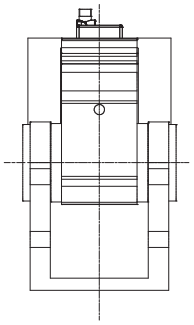
PIVOTING

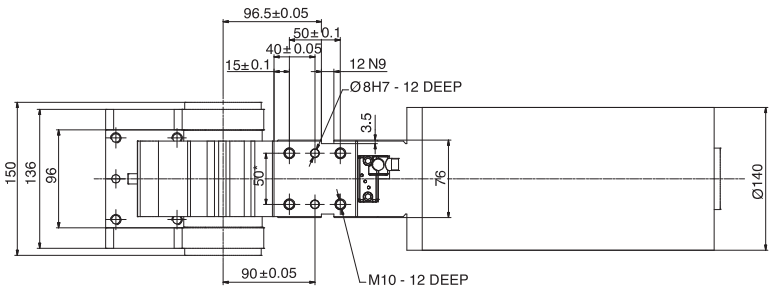
P125__N__ / Pivot Unit - Size 125 mm

WEIGHT 18.5 kg
135° version



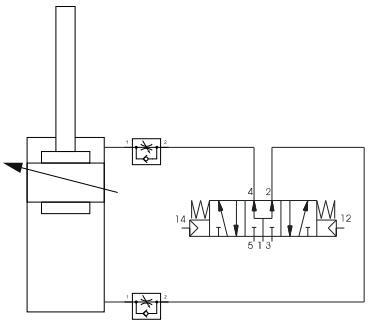






Overall length

opening angle	A Overall length (mm)
45°	416.5
60°	429
90°	454.5
120°	479
135°	487



Not included in the scope of the supply

* DIMENSIONAL TOLERANCE
FOR DOWEL HOLES: ±0.02

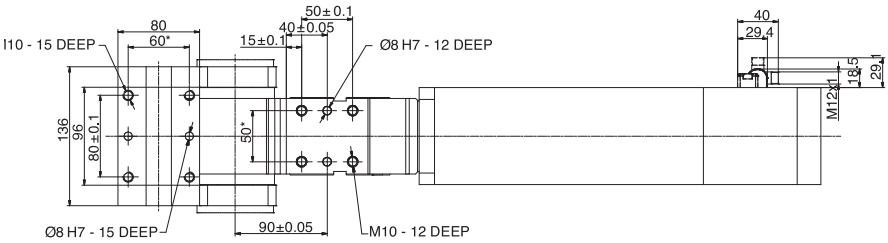
DIMENSIONAL TOLERANCE
FOR THREADED HOLES: ±0.1

REV. 02 - 05/05/2021

PIVOTING

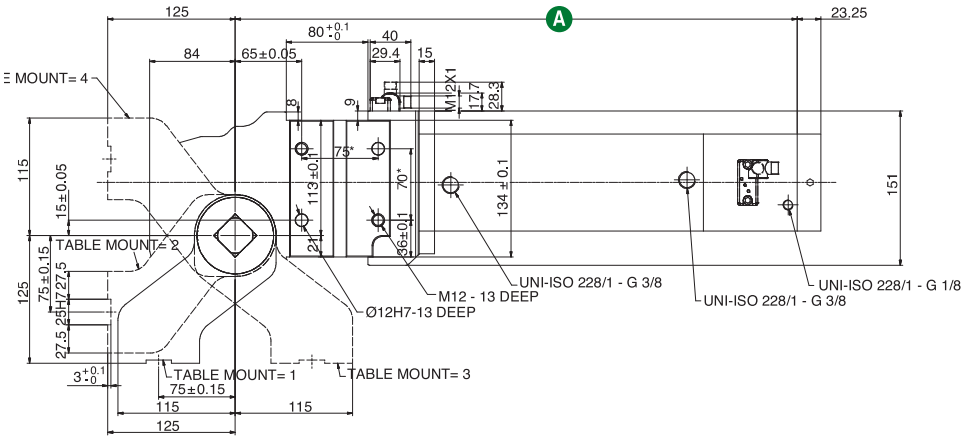
P80E__B/S___ / **Pivot Unit** - Size 80 mm

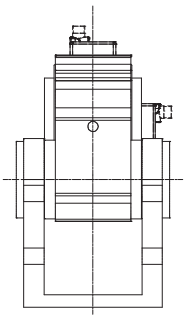
WEIGHT 18.9 kg
135° version

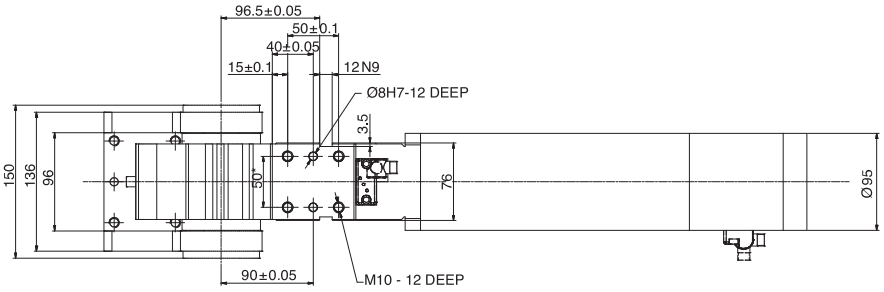


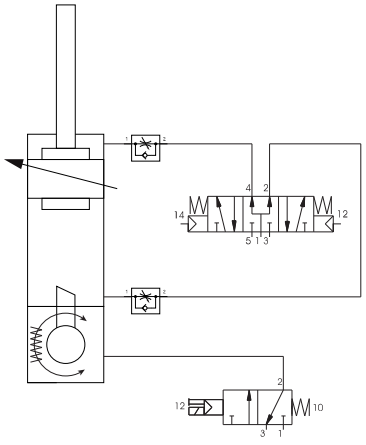
Overall length

opening angle	A Overall length (mm)
45°	480
60°	492
90°	518
120°	543
135°	551









Not included in the scope of the supply

* DIMENSIONAL TOLERANCE
FOR DOWEL HOLES: ±0.02

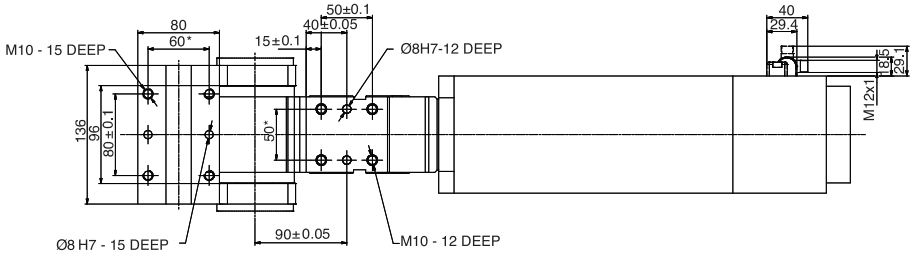
DIMENSIONAL TOLERANCE
FOR THREADED HOLES: ±0.1

REV. 00 - 05/05/2021

PIVOTING

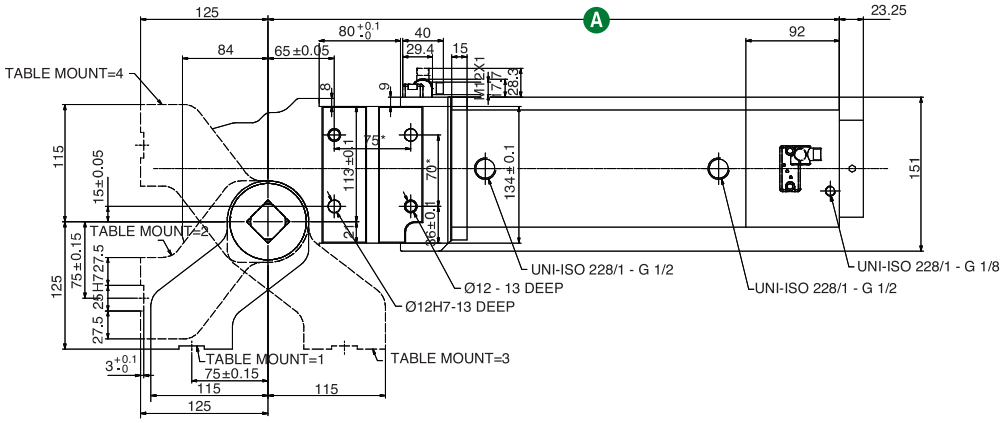
P100E__B/S___ / **Pivot Unit** - Size 100 mm

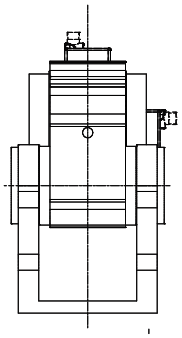
WEIGHT 20.5 kg
135° version

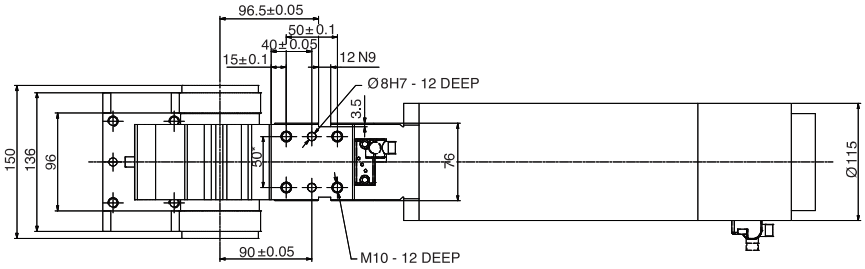


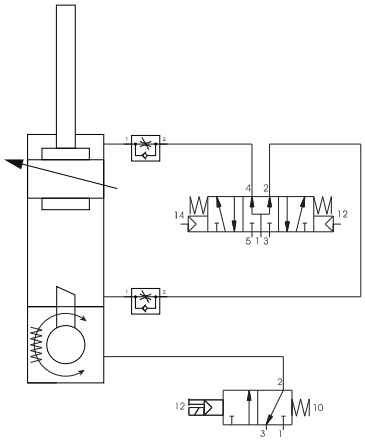
Overall length

opening angle	A Overall length (mm)
45°	486
60°	498
90°	524
120°	549
135°	557









Not included in the scope of the supply

* DIMENSIONAL TOLERANCE FOR DOWEL HOLES: ±0.02

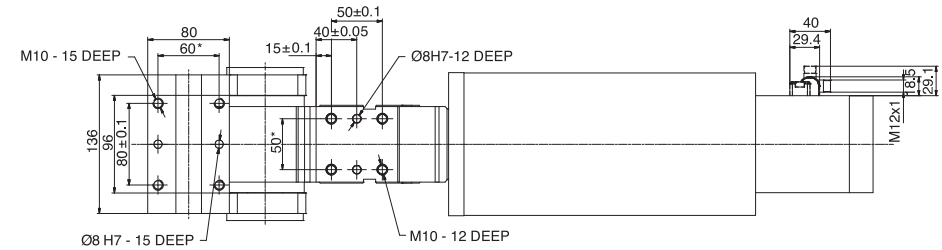
DIMENSIONAL TOLERANCE FOR THREADED HOLES: ±0.1

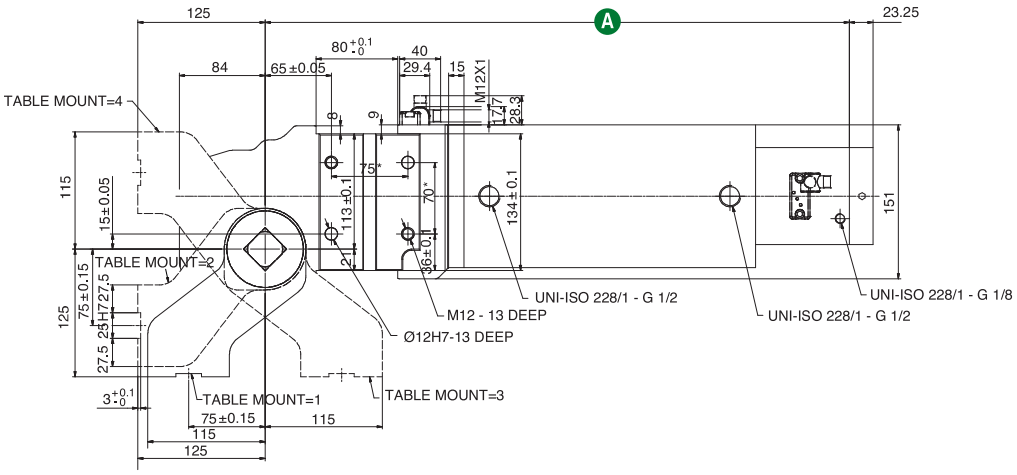
REV. 00 - 05/05/2021

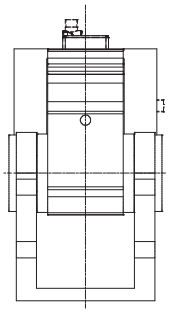
PIVOTING

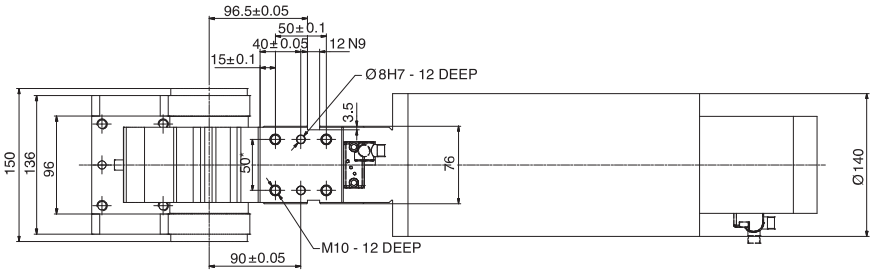
P125E__B/S___ / **Pivot Unit** - Size 125 mm

WEIGHT 22.00 kg
135° version



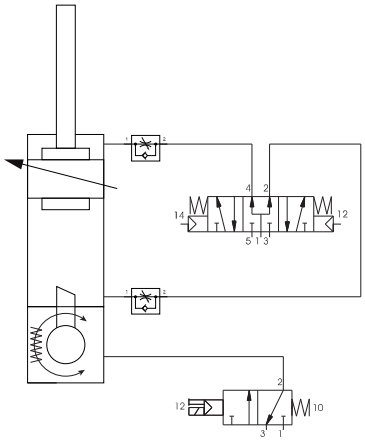






Overall length

opening angle	A Overall length (mm)
45°	416.5
60°	429
90°	454.5
120°	479
135°	487



Not included in the scope of the supply

* DIMENSIONAL TOLERANCE
FOR DOWEL HOLES: ±0.02

DIMENSIONAL TOLERANCE
FOR THREADED HOLES: ±0.1

REV. 00 - 05/05/2021

PIVOTING

Pivoting

Quick installation guide

QIG_C_EN Rev.00 04.2022

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:

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.

Operating conditions

Pressure operating range:

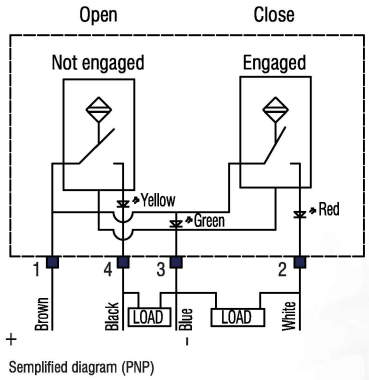
from 2 to 8 bar/ from 30 to 115 psi

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.

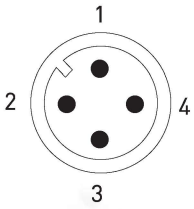
Electronic sensor

ES001 is used for all power pivots' sizes and 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

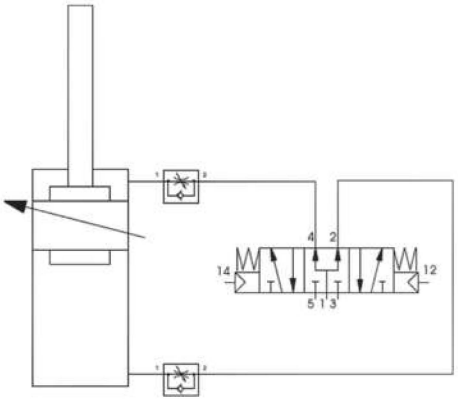


Semplified diagram (PNP)



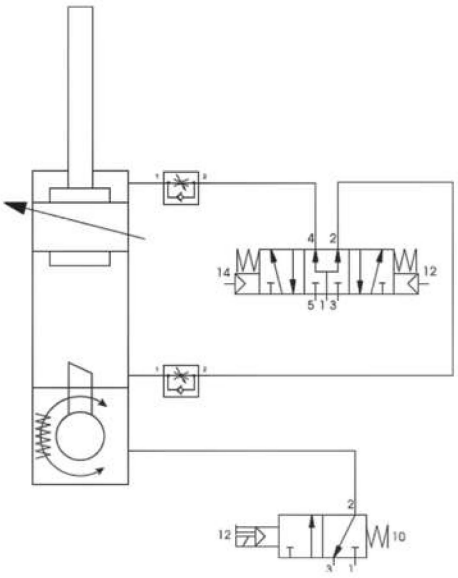
To replace the sensor, remove the M5 screw and assemble a new one.

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.

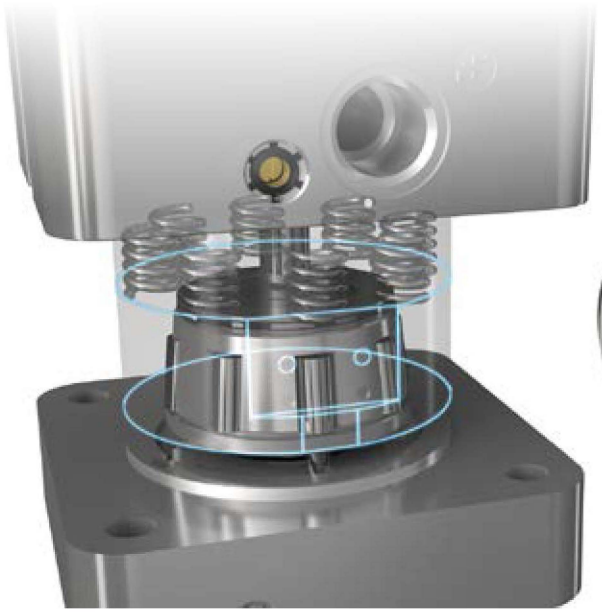
WARNING

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.

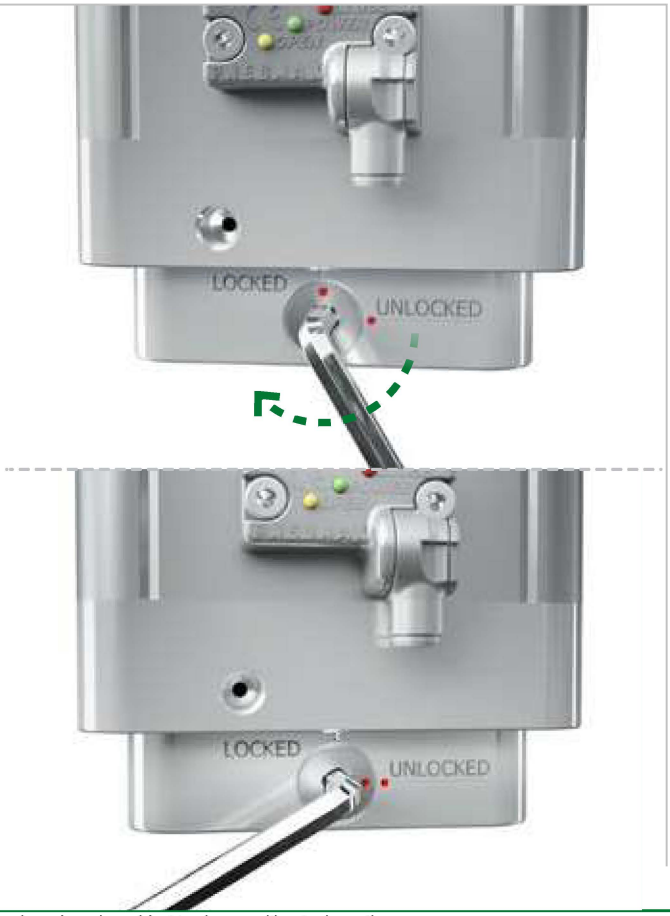
Patented



PIVOTING

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 mus be carried out exclusively by qualified specialists. Make sure to meet all related safety requirements and make sure that no operatorreaches 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