Product overview
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.
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 forefront of a group of 23 companies, with over 660 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.
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.
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.

### Special Clamping products:

**Double workpiece identification** > **Product Series+X**
Example: C1X..., C2X..., HE1X..., HE2X...

**Sealed** > **Product Series+S**
Example: C1S..., C2S..., HE1S..., HE2S...
Automotive Product Overview

Locating
- RP50
- RP63
- RC50
- RC63
- RD50

Handling
- JP40
- JD40
- P63
- P80
- P100
- P125

Pivoting

Complementary products
- Fittings
- Tubes
- Shims
- Spacers
- Sensors
- Sensor cables
- Auto-retaining devices

Technical information are provided for informative purpose only and can be subject to change without prior notice.
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.
Life test and approval. The products are subjected to **functional, performance, temperature tests** for millions of cycles.

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

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

Verification and validation that the product meets the requirements.
Clamping

Our rigid linkage prevents the unwilling clamping of two workpieces together, thus enabling the clamp to detect such anomalies in the process. Stepless adjustment with the quickest set-up time in the market.

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.

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 serie - EMC compliance to EN 60947-5-2:2007+A1:2012.

Swivel connector 0°-90°

**Efficient cushioning system**

- Shorter cycle time
- Controlled movements
- Longer lifetime
- Less noise
- Less abrupt movements
  - no slamming - no shocks
- Less impact forces generated by dynamics 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.
Clamping products

High efficiency clamps

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 European and NAAMS mounts available.

Clamps with integrated device for double workpiece identification

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.

Nano clamps

Compact, light power clamps in sizes 25 and 32 mm
With toggle action mechanism for automotive manufacturing and metal processing industry.

• 4-sided mounting pattern
• Efficient cushioning system
• Maintenance-friendly solution. No lubrication neither preventive maintenance is required.
• Fully enclosed housings

Supply-ports on both sides of the cylinder.
**Clamps with double arms**
- Stepless adjustable opening angle from 0° to 90°
- 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

**Manual clamps**
Mainly used for prototypes and material processing
Same mounting pattern as conventional pneumatic clamps to allow a consecutive automatization of the tooling without replacing the mountings.
Fully enclosed aluminum body. Slag resistance.

**Sealed clamps**
- 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
**Locating**

High locating accuracy. Best corrosion and weld spray resistance.

**Extra-light products**

- **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

- **Resistance to laser dust**

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

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Locating products

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

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.

Nano pin packages

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

Pneumatic gripper clamps with fully adjustment opening angle

![Quick set-up](image1)
![No flow valve required](image2)

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.
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 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.

Max swivel angle: 135°

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

**Fittings**

**Sensor**
M12 or M8 connector;
PNP or NPN

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

**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.

**EC001**
Sensor cable

**Shims and spacers**
NC Locator
MLGA 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
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
Components for the automotive industry

Pneumax is a one-source supplier for the Automotive Industry with a comprehensive line of:

- Pneumatic drives
- Valves
- Valve terminals
- Communication control blocks
- Compressed air preparation
- Grippers
- Exhaustive range of clamping, locating, handling and pivoting devices for BIW.

- **ECOMPACT**
  Compact cylinders

- **SHORT STROKE**
  Compact cylinders

- **ECOLIGHT ISO 15552**
  Standard-based light cylinders

- **ISO 6432**
  Standard-Based microcylinders

- **ECOFLOAT**
  Flat cylinders

- **RODLESS**
  Cylinders

- **GUIDED**
  Compact cylinders

- **GUIDED COMPACT CYLINDERS**
  Metal Rod Scrapers
Serial connections with:

- CANopen
- EtherCAT
- DeviceNet
- IO-Link
- PROFIBUS
- PROFINET
- EtherNet/IP

**AIRPLUS**
Modular Air Service Units

**ROTARY ACTUATORS**
Cylinders

**OPTYMA**
Valve Manifold series

**PARALLEL GRIPPERS**
Compact cylinders
- Radial grippers (180°)
- Three-points grippers
- Angle grippers
- Mini slides

**SERIE 1700**
Proportional regulators

**CABINETS AND SYSTEMS**

**ISO 15407**
Valve Manifold series

**SPECIAL SOLUTION**
Cooling water intake cylinder

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