

# Pneumatic fastening clamps

## Operating principle / types

These pneumatic fastening clamps (patent MISATI) are used for clamping, holding, gripping and positioning of work pieces in jigs and handling systems.

The salient points of these pneumatic fastening clamps are:

- the high clamping force
- the small dimensions
- the reduced air consumption
- the light weight

The working principle of these three types of clamps can be seen from the sketches on the right.

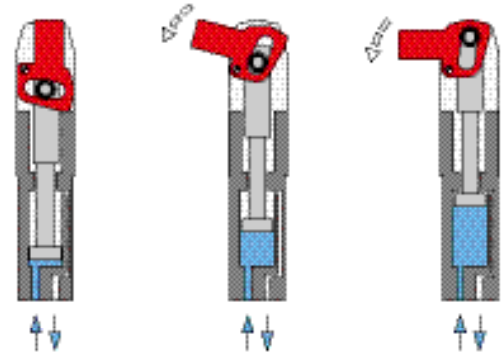
Pistons with diameters of 20, 32, 40 and 50 mm yield a clamping force of 60 Nm up to 475 Nm, which leads to clamping forces being much above those of competitors' clamps.

The pneumatic fastening clamps have been designed and configured to achieve an extended life. Functional tests have proved that even after 20 million cycles they were still serviceable.

Further salient design points are:

- The movement path is designed in such a manner that at the end of the clamping stroke (clamping force FS), irreversible self locking (holding force FH) is achieved.
- The forward stroke sequence of the clamping arm is rapid but the ultimate clamping action is slow and as a result pneumatic damping is normally not required. Upon request, however, it can be supplied when big masses are moved.
- The clamping mechanism is fitted with needle bearings which give optimum clamping forces and reduced wear.
- The steel cylinder with the integrated clamping mechanism are in one unit. This leads to high stability for these small units with an extended range of applications. The placement of the air connection at the bottom end leads also to many other advantages.
- The clamping mechanism of GN 864 (see page 1634) is also shrouded to avoid the ingress of dirt and other objects which could interfere with the proper functioning of the clamps (such as welding operations!)

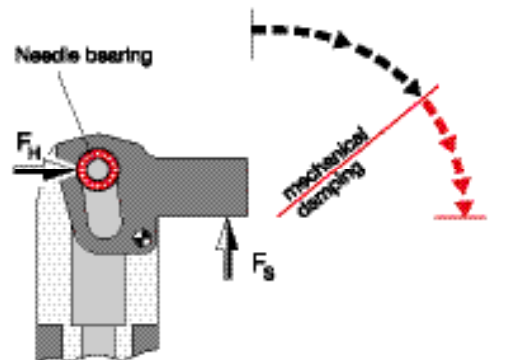
GN 864



GN 865



GN 866



# Pneumatic fastening clamps

## Mounting methods / accessories

The mounting holes on the main body of the pneumatic fastening clamps have been designed to allow installation direct on the female threaded holes or alternatively with through bolts.

Centering guide bushings present an important function when mounting the pneumatic fastening clamps: they absorb lateral thrust and they ensure a precise alignment.

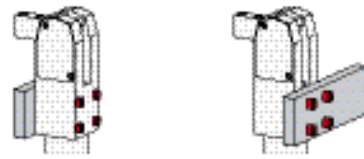
Mounting of the cylinder by a collar clamp increases the numerous ways they can be installed. Even collar clamps use centering guide bushings for precise positioning.

There is an extensive range of accessories available for pneumatic fastening clamps, such as tool holders (for clamping arms) thrust bolts and clamping jaws. The sketches shown on the right give some idea.

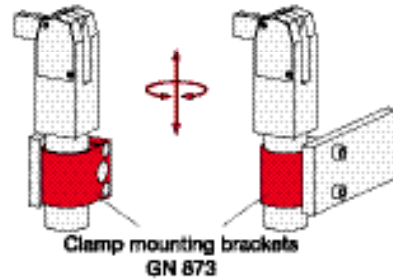
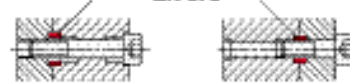
The combination of clamping tools on the clamping arm and brackets represent together a tool set.

For the fixing and precise positioning of clamping arms and jaw blocks, GN 870 (see page 1645) centering guide bushings are also used. The individual data sheets give further information.

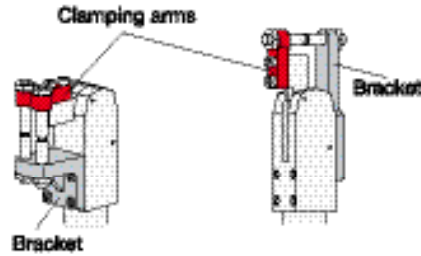
All pneumatic fastening clamps can be fitted with proximity switches (inductive sensors) to monitor the end position of the stroke.



Centering guide bushings  
GN 870



Clamp mounting brackets  
GN 873

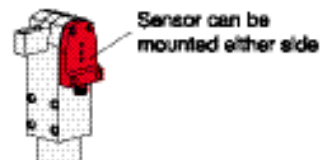
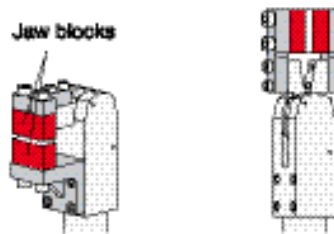


Clamping arms

Bracket

Bracket

Jaw blocks



Sensor can be mounted either side

