



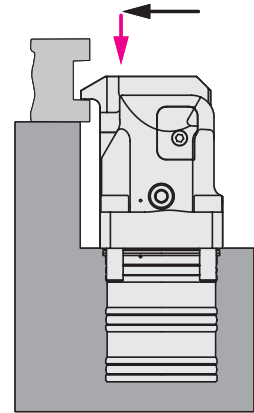
Compact Clamp with Horizontal Stroke

Cartridge type, pneumatic position monitorings optional,
 double acting, max. operating pressure 220 bar, clamping force 6.5 kN



Advantages

- Horizontal clamping in clamping recess possible
- Partially immersed body
- Unimpeded loading and unloading of the clamping fixture
- Minimum dimensions
- Mounting without pipes
- Workpiece clamping without any side loads
- Clamping lever can be adapted to the workpiece
- Mounting position: any



Application

Compact clamps with a horizontal stroke are used to clamp workpieces in hydraulic fixtures where access to the clamping surface is not possible by swinging a clamping lever or clamping arm either sideways or vertically.

The clamping lever of the compact clamp moves horizontally toward the workpiece and then clamps vertically downward.

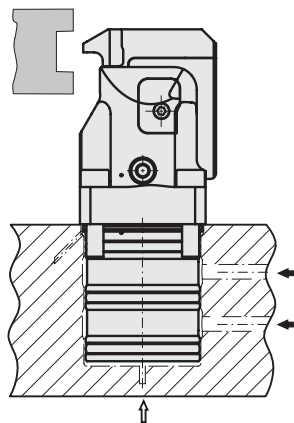
This allows clamping into closed clamping recesses, drilled channels, or other recesses.

Due to the minimum space required, the compact clamp with a horizontal stroke is especially suitable for clamping fixtures that have little space for the installation of hydraulic clamping elements.

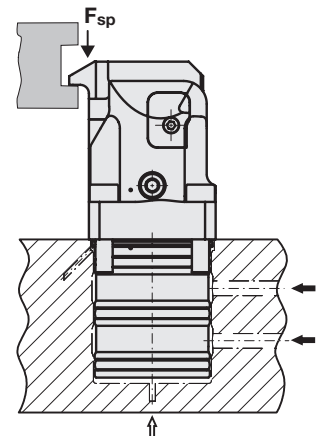
Typical applications are the clamping of cast workpieces (usually made of aluminium or grey cast iron) in multi-sided machining.

Installation and connecting possibilities

Unclamped



Clamped



Available versions

1. With pneumatic

clamping monitoring 18031 X0H

The clamping monitoring signals:

"The clamping lever is within the usable clamping range and the workpiece is clamped with minimum clamping force (min. 70 bar)".

2. With pneumatic

unclamping monitoring 18031 X0HA

The unclamping monitoring signals:

"The clamping lever is within the clamping range".

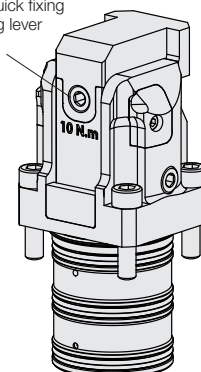
3. Without

position monitoring 18031 X0HB

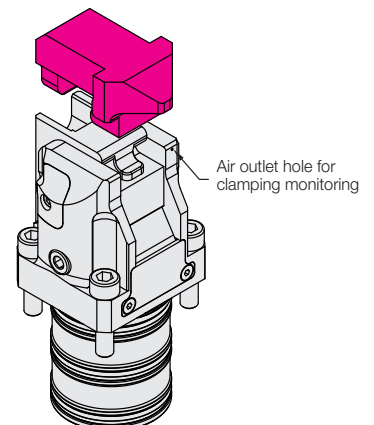
Pneumatic position monitoring, see page 3

Quick fixing the clamping lever for adapted clamping lever (made of clamping lever blank)

Screw for quick fixing the clamping lever



With standard clamping lever



Stroke diagram

8 Horizontal stroke
4.5
Clamping range start
3 Clamping stroke
1 Safety stroke
8.5 Vertical stroke, total
Clamping range end

A = Clamping
B = Unclamping

* Bore hole for pneumatic clamping and unclamping monitoring, only if required

Materials

Body hardened, stainless
Clamping lever short HRC 48 – 55, stainless
Clamping lever blank X37CrMo V5–1 tempered
HRC 440, nitrated
Seals NBR and PUR (max. 80° C)

Clamping force at 220 bar	[kN]	6.5
Clamping lever movement horizontal	[mm]	8
Clamping stroke vertical	[mm]	4
Oil volume, clamping	[cm ³]	6.4
Oil volume, unclamping	[cm ³]	10.2
Max. flow rate	[cm ³ /s]	22

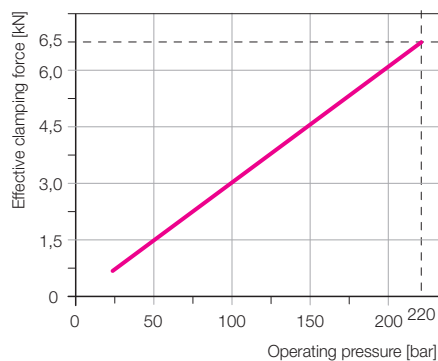
With pneumatic clamping monitoring

With pneumatic unclamping monitoring

Without position monitoring

Horizontal clamp without clamping lever	1803100HB
Horizontal clamp with short clamping lever	1803110HB
Horizontal clamp with clamping lever blank	1803130HB

Operating conditions, tolerances and other data, see data sheet A 0.100



Mounting body Pneumatic position monitorings

Pneumatic position monitorings

1. Pneumatic clamping monitoring

In the clamping area, the clamping lever slides downwards at two hardened surfaces of the body. In one of the surfaces there is the bore hole for the pneumatic clamping monitoring. The clamping lever overruns the bore hole, but does not completely close it. Only when the workpiece is really clamped, the clamping lever supports itself on the sliding surface and the bore hole will be firmly closed.

The clamping monitoring signals:

- The clamping lever is in the usable clamping range and
- A workpiece is clamped.

Important note

Required minimum pressures for clamping monitoring:

Hydraulics	> 70 bar to clamp > 20 bar to release
Pneumatics	3 bar

2. Pneumatic unclamping monitoring

In the unclamping position the clamping lever closes a pneumatic bore hole.

Important note

The horizontal clamp is available with "clamping monitoring" or "unclamping monitoring". Controlling both positions is not possible since the minimum dimensions of the housing allow only one pneumatic connection.

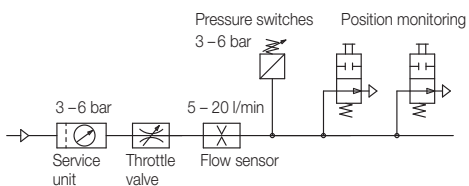
Monitoring by pneumatic pressure switch

To evaluate the pneumatic pressure increase, standard pneumatic pressure switches can be used.

Important note

Pneumatic position monitorings are only process-safe when air pressure and air volume are precisely adjusted.

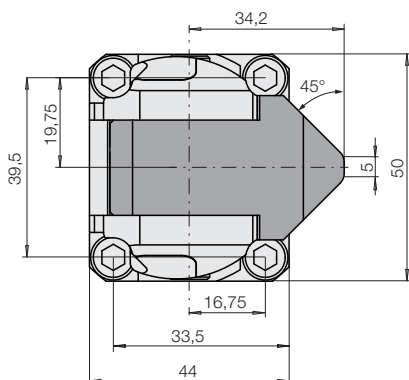
Appropriate devices are available for measuring the air volume. Please contact us.



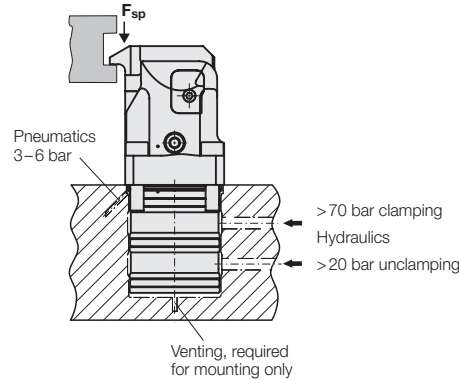
Accessory clamping lever

Standard clamping lever (clamping position)

Part no. 3548 4277



Clamping monitoring



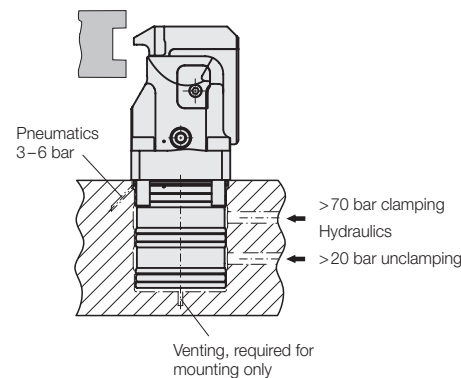
Example for clamping position

Required switching pressure 4.5 bar
Pressure drop, if 1 compact clamp is not clamped approx. 2 bar

As per diagram:

Required flow rate approx. 10–13 l/min
(depending on the number of connected compact clamps)

Unclamping monitoring



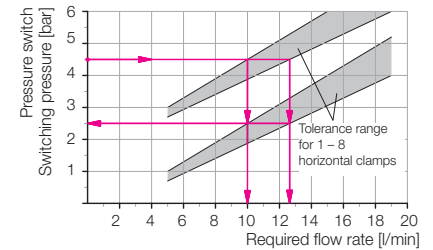
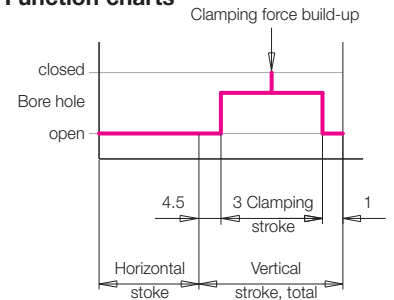
Example for unclamping position

Required switching pressure 4.5 bar
Pressure drop, if 1 compact clamp is not unclamped approx. 2 bar

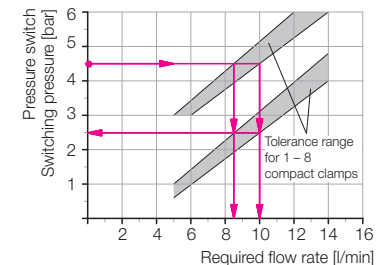
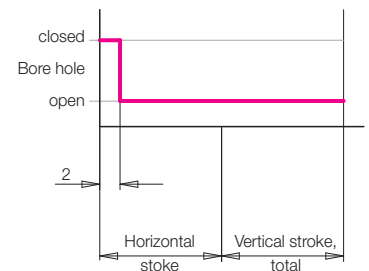
As per diagram:

Required flow rate approx. 8.5–10 l/min
(depending on the number of connected horizontal clamps)

Function charts



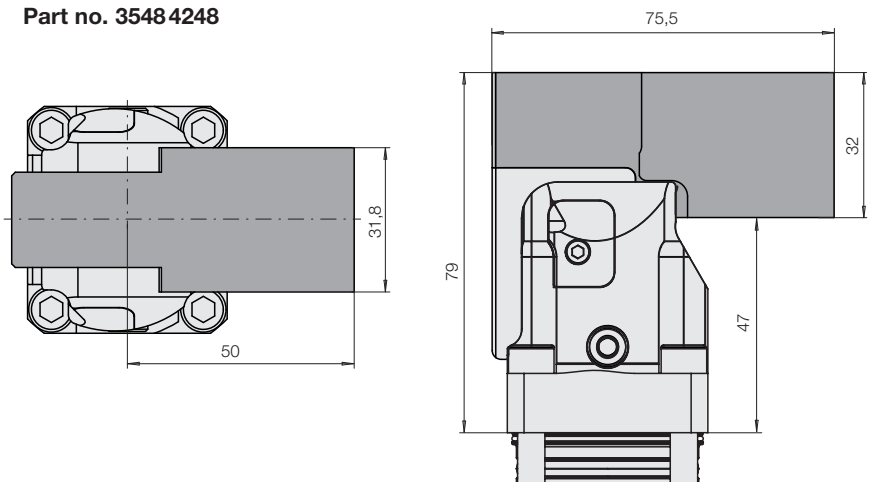
Required flow rate depending on the switching pressure of the pneumatic pressure switch for a pressure drop Δp 2 bar



Required flow rate depending on the switching pressure of the pneumatic pressure switch for a pressure drop Δp 2 bar

Clamping lever blank (unclamping position)

Part no. 3548 4248



Operating conditions, tolerances and other data, see data sheet A 0.100