# Clamping modules - hydraulic

## Hydraulic clamps with universal clamping plate and screw pump, max. clamping force 2.5 kN

**Clamping module with hydraulic clamps**

### Application

With *modulog* clamping modules workpieces for manual assembly operations are easily and reliably positioned, fixed and clamped.
Thus the fitter can exert forces on the workpiece without displacing it.
The quality of the assembly process will be improved.

### Principal use

- Assembly of heavy components
- Assembly of frequently changing components
- Workshop applications
- Clamping during test cycles
- Machining of cylinder heads
- Assembly of electric motors

### Mounting

The clamping modules are screwed onto the grid of the universal clamping plate with socket head cap screws M12. The screws have to be tightened with 80 Nm.

The screw pump is fixed with 2 socket head cap screws M8 at the bottom side of the universal clamping plate.

The universal clamping plate can be mounted with 4 socket head cap screws M10 with flat head on other *modulog* modules.

### Important note!

For dimensioning of the clamps it has to be distinguished if the forces act against a fixed stop or if clamping forces are used by friction.

### Advantages

- Quicker and simpler clamping process
- Uniform, reproducible clamping force by hydraulic clamping
- Quick and easy retrofitting
- Complete sets including universal clamping plate
- Every point on the universal clamping plate is approachable with the clamping elements
- Easy handling for retrofitting due to universal clamping plate made of aluminium
- Easy fixing of the universal clamping plate on other *modulog* modules by the *modulog* interface

### Description

The *modulog* clamping module consists of 2 clamping elements, which are connected by hydraulic hoses to a screw pump. For each clamping element a corresponding fixed stop can be positioned on the universal clamping plate.

The universal clamping plate is provided with a grid for mounting of the clamping elements. This allows flexible positioning of the clamping elements for clamping of very different workpieces.

Also the screw pump is fixed on the universal clamping plate.

The universal clamping plate is equipped with a 140 x140 *modulog* interface in the centre, so that it can be easily mounted on other *modulog* modules. Combined with *modulog* lifting or rotating modules the workpiece can be moved to the ergonomically ideal height or rotating position.

The elements are also available as component parts. The kit contains the complete system, filled with hydraulic oil and bleeded, with screw pump kit and clamping elements.

### Material

| | |
|---|---|
| Clamping elements: | high-tensile aluminium, steel, partially hardened |
| Universal clamping plate: | high-tensile aluminium |
| Screw pump: | steel |

***modulog***
**Clamping modules - hydraulic**

**Clamping module with hydraulic clamps, universalclamping plate and screw pump**

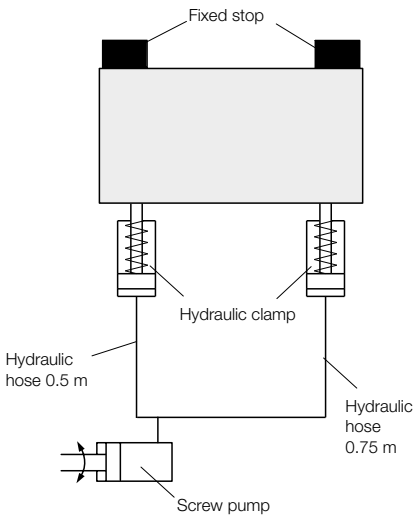
| | |
|---|---|
| Max. clamping force: | 2.5 kN |
| Max. clamping stroke: | 5 mm |
| Operation with wrench | |
| **Part-no.** | **8903-02-04-H** |

**Universal clamping plate**
with grid 50 mm – M12
with ***modulog* interface**
140 x 140 mm - counterbore for DIN 912 M10

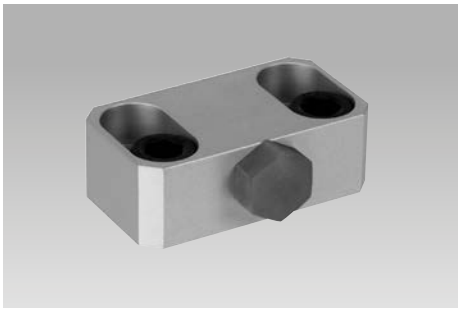
**Screw pump**

| | |
|---|---|
| Max. operating pressure: | 500 bar |
| Function: | single acting |
| Operation with wrench | |

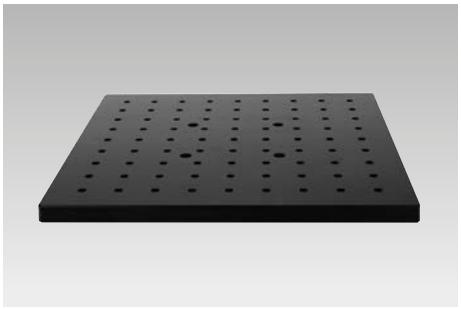
### Hydraulic circuit diagram



**Hydraulic clamp 6505-339**



**Fixed stop 6505-340**



**Universal clamping plate 6311-572**

**Screw pump of the kit 6505-341**

## Description

This clamping module contains 2 hydraulically-operated hydraulic clamps and 2 fixed stops. Both hydraulic clamps are clamped and unclamped with the screw pump.

The hydraulic clamps excel by their compactness and their simple operation.

## Installation and operation

If possible the workpiece has to be clamped so that the highest forces act against the fixed stop. The workpiece must safely rest.

The screw pump is operated with as socket or a wrench SW 13 and thus the workpiece is safely clamped against the 2 fixed stops.

## Important notes!

When mounting, pay attention to the maximum clamping stroke.

The maximum clamping force is obtained with maximum operating pressure of the screw pump. The required torque at the screw pump is 53 Nm. (see diagram)

## Part numbers

**Clamping module with hydraulic clamps** **8903-02-04-H**

Delivery:

- 2 off hydraulic clamps
- 2 off fixed stops
- 1 off universal clamping plate
- 1 off screw pump kit including 2 hydraulic hoses with fittings

**Part numbers individual elements:**

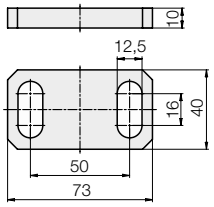
| | |
|---|---|
| Hydraulic clamp: | **6505-339** |
| Fixed stop: | **6505-340** |
| Universal clamping plate: | **6311-572** |
| Screw pump kit: | **6505-341** |

## Technical characteristics

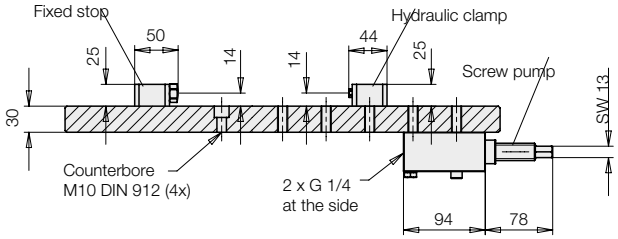
| | | |
|---|---|---|
| Function: | | single acting |
| Clamping force (per hydraulic clamp): | [kN] | 2.5 |
| Clamping stroke: | [mm] | max. 5 |
| Max. operating pressure: | [bar] | 500 |
| Hose nominal diameter: | | ND 4 |

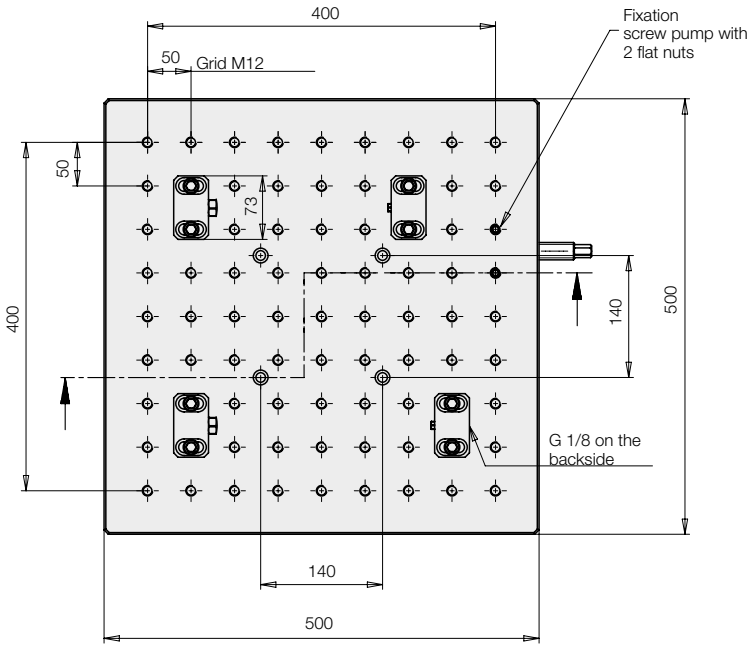
## Accessory

**Height plate**
**Part-no. 6311-633**

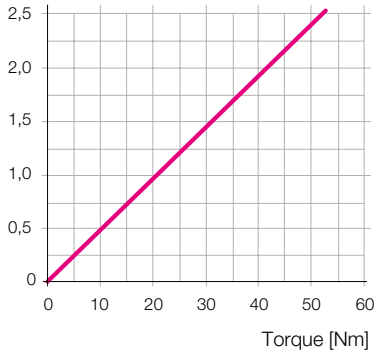



## Dimensions



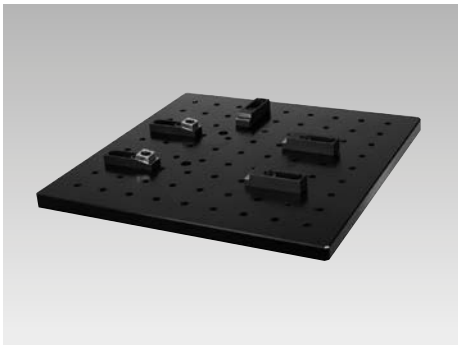




## Operating torques at the screw pump



# Clamping modules - mechanical

## Clamps or swing clamps with universal clamping plate, max. clamping force 6 and 10 kN



**Clamping module with clamps**

**Clamping module with swing clamps**

### Application

With *modulog* clamping modules workpieces for manual assembly operations are easily and reliably positioned, fixed and clamped.
Thus the fitter can exert forces on the workpiece without displacing it.
The quality of the assembly process will be improved.

### Principal use

- Assembly of heavy components
- Assembly of frequently changing components
- Workshop applications
- Clamping during test cycles
- Machining of cylinder heads
- Assembly of electric motors

### Advantages

- Quicker and simpler clamping process
- Quick and easy retrofitting
- Optionally clamping module with clamps or swing clamps
- Complete sets including universal clamping plate
- Every point on the universal clamping plate is approachable with the clamping elements
- Easy handling for retrofitting due to universal clamping plate made of aluminium
- Easy fixing of the universal clamping plate on other *modulog* modules by the *modulog* interface

### Description

These *modulog* clamping modules are mechanical clamping elements that are offered together with a universal clamping plate as a kit.

Alternatively the clamping modules contain clamps or swing clamps with the corresponding support elements. The universal clamping plate is provided with a grid for mounting of the clamping elements. This allows flexible positioning of the clamping elements for clamping of very different workpieces.

The universal clamping plate is equipped with a 140 x140 *modulog* interface in the centre, so that it can be easily mounted on other *modulog* modules.

Combined with *modulog* lifting or rotating modules the workpiece can be moved to the ergonomically ideal height or rotating position.

### Mounting

The clamping modules are screwed onto the grid of the universal clamping plate with socket head cap screws M12. The screws have to be tightened with 80 Nm.

The universal clamping plate can be mounted with 4 socket head cap screws M10 on other *modulog* modules.

***modulog***
**Clamping modules - mechanical**

**Clamping module with clamps and universal clamping plate**

Max. clamping force: 6 kN
Max. clamping stroke: 2 mm
Operation with Allen key

**Part no.** **8903-06-05-O**

**Clamping module with swing clamps and universal clamping plate**

Max. clamping force: 10 kN
Max. clamping stroke: 1.5 mm
Operation with hand lever

**Part no.** **8902-10-08-M**
Accessory: Height cylinder

**Universal clamping plate**

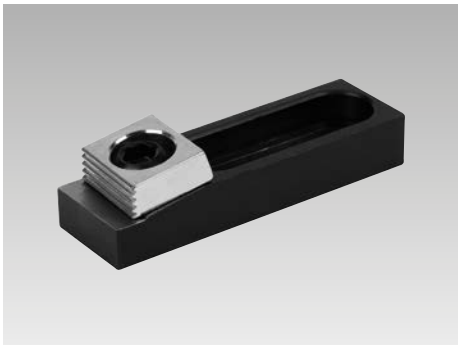
with grid 50 mm – M12
with ***modulog* interface**
140 x 140 mm - counterbore for DIN 912 M10

### Material

| | |
|---|---|
| Clamping elements: | steel, partially hardened |
| Universal clamping plate: | high-tensile aluminium |

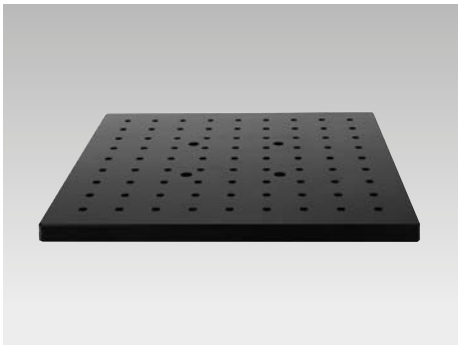
### Important note!

For dimensioning of the clamps it has to be considered if the forces act against a fixed stop or if clamping forces are used by friction.



**Clamp 6351-642**

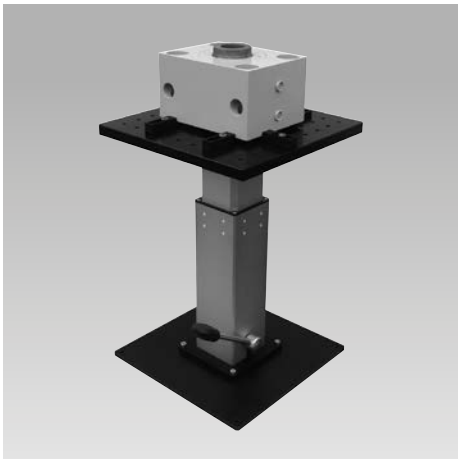
**Support element 6351-643**



**Universal clamping plate 6311-572**

**Application example**

Assembly of a hydraulic cylinder. The universal clamping plate is mounted on a *modulog* lifting module to easily adjust the optimum working height.



**Description**

This clamping module contains 2 clamps and 3 support elements.
Since the clamps can also be used as supports, all in all 5 support surfaces can be realised.

The support elements are designed so that they can also be used as fixed stops. Thus the workpieces can always be reproducibly clamped in the same positon.

The clamps and support elements excel by their compactness and precise support and stop faces.

**Installation**

If possible the workpiece has to be clamped so that the highest forces act against the fixed stop.
The workpiece must safely rest on all support surfaces.

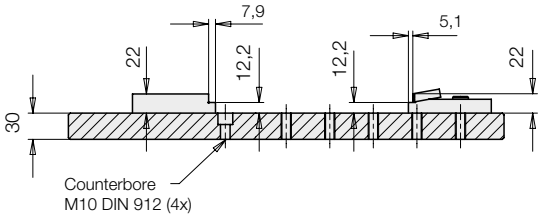
The 2 clamps have to be positioned so that they clamp against the 2 support elements. The 3rd support element can be used as fixed stop across the clamping direction.

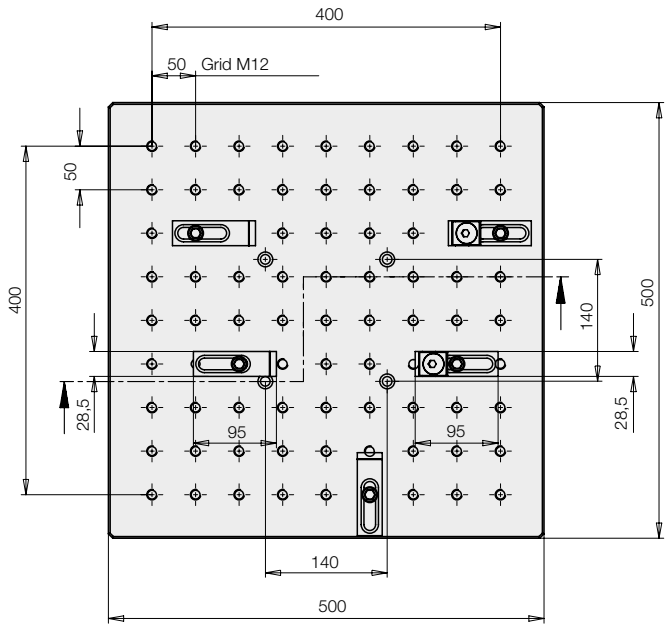
With an Allen key SW 8 the clamping eccentric of the clamps is tightened by approx. 1/4 revolution so that the workpiece is safely clamped against the fixed stop.

**Important note!**

When mounting, pay attention to the maximum clamping stroke.

**Dimensions**




**Part numbers**

**Clamping module with clamps** **8903-06-05-O**

Delivery:

- 2 off clamps
- 3 off support elements
- 1 off universal clamping plate

**Part numbers of individual elements:**

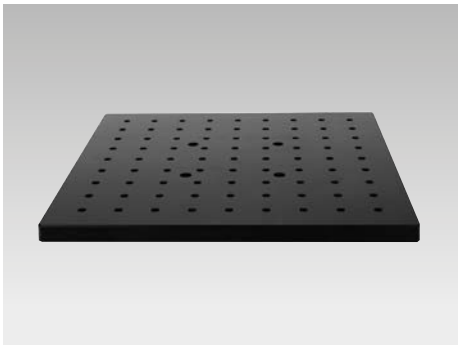
| | |
|---|---|
| Clamp: | **6351-642** |
| Support element: | **6351-643** |
| Universal clamping plate: | **6311-572** |

**Technical data**

| | | |
|---|---|---|
| Clamping force (per clamp): | [kN] | 6 |
| Extraction force (clamping module): | [kN] | approx. 3 |
| Clamping stroke: | [mm] | max. 2 |
| Support height: | [mm] | 12.2 |

**Swing clamp 6351-640**

**Jack screw 6351-641**



**Universal clamping plate 6311-572**

## Description

This clamping module contains 4 swing clamps and 4 jack screws.
The height of the clamping points of the swing clamps as well as the support height of the jack screws can be adjusted.
This allows clamping of workpieces with support points in different heights. If the adjusting range is not sufficient, it can be enlarged by means of the accessory height cylinder.

The clamping module with mechanical swing clamps excels by its flexibility and variety.

## Installation

First the 4 jack screws are positioned to the appropriate height and then locked with an open-end wrench SW36/SW30.
The workpiece must safely rest on the support surfaces.

The 4 swing clamps have to be positioned so that they clamp against the 4 jack screws. For clamping the clamping arms are manually swung above the clamping points. By operation of the clamping lever the clamping process is effected.

## Important note!

When mounting, pay attention to the maximum clamping stroke.

## Part numbers

**Clamping module with swing clamps** **8902-10-08-M**

Delivery:

- 4 off swing clamps
- 4 off jack screws
- 1 off universal clamping plate

**Part numbers individual elements:**

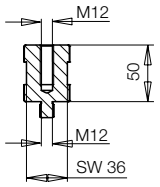
| | |
|---|---|
| Swing clamp: | **6351-640** |
| Jack screw: | **6351-641** |
| Universal clamping plate: | **6311-572** |

## Technical data

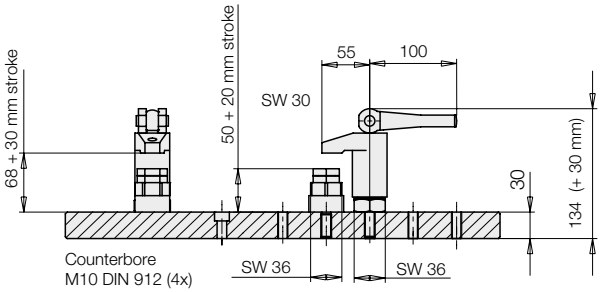
| | | |
|---|---|---|
| Max. clamping force (per swing clamp): | [kN] | 10 |
| Extraction force (clamping module): | [kN] | > 10 |
| Clamping stroke: | [mm] | max. 1.5 |
| Basic height: | [mm] | 68 up to 98 |
| Support height: | [mm] | 50 up to 70 |

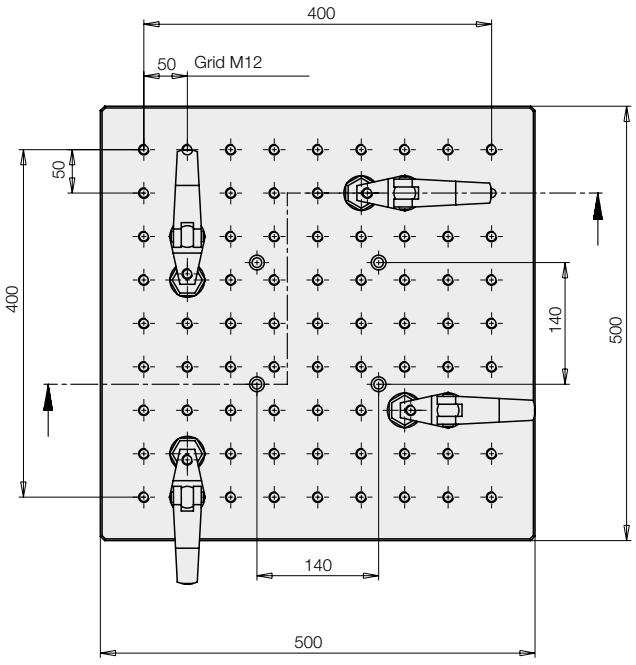
## Accessory

**Height cylinder 50 mm**
**Part-number 6311-632**




## Dimensions



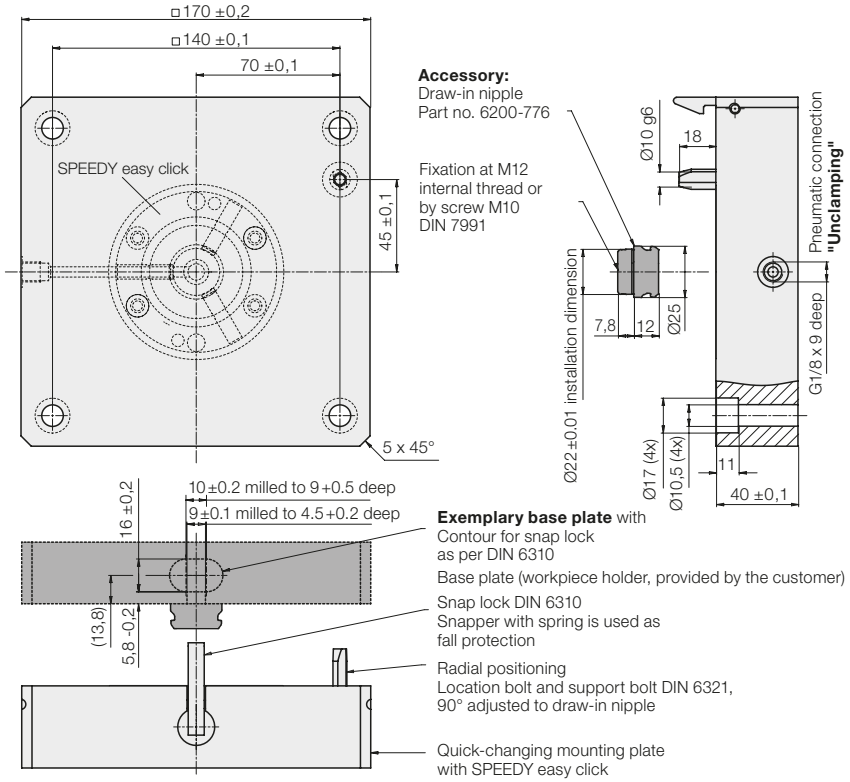
# Quick-Change Mounting Plate
## with zero point clamping system SPEEDY easy click for *modulog* interfaces

### Advantages
- *modulog* interface
- Workpiece change in seconds by SPEEDY easy click
- Engages immediately without any energy supply!
- Immediate build up of the clamping force 5 kN
- Max. retention force 10 kN
- Pneumatics for unclamping available everywhere
- Radial positioning by locating bolts
- Snapper as a safety against falling out in the changing position

### Application
The quick-change mounting plate can be mounted onto all *modulog* modules and devices with interface 140 x 140 mm.
The built-in STARK zero point clamping system SPEEDY easy click allows a very fast workpiece change.
A prerequisite is that the workpieces are mounted on base plates which are equipped with a draw-in nipple for the SPEEDY easy click.

This system is particularly suitable,
- when workpieces must be frequently changed very quickly at the assembly station.
- when different workpieces or parts families are to be routed through one assembly station.
- when workpieces are to be routed through several assembly stations.
- when the workpiece with the required base plate is still manually tradable.

### Description
The quick-change mounting plate is designed as adaptor plate with connecting dimensions of the *modulog* interface 140 x 140.
A STARK zero point clamping system SPEEDY easy click is installed in the centre.
This is a fast-closing clamp plate that engages immediately and clamps without energy supply. For unclamping a pneumatic connection is required.
The required draw-in nipple is mounted on the base plate for the workpiece to be clamped. The radial positioning is made by a location bolt. A suitable drill bush is embedded in the base plate. In addition, there is a snapper installed to secure the workpiece against falling out after the pneumatic unclamping of the zero point clamping element.




## *modulog*

**Quick-change mounting plate for SPEEDY easy click**

**Part no. 890301P**

### Combinable with the modules
- Lifting module Shop Floor as per data sheet M 4.301

- Rotating module with flow power as per data sheet M 1.202

### *modulog* interface
- 140 x 140 - M10

### Technical data

| | | |
|---|---|---|
| Clamping force (traction) approx. | [kN] | 5 |
| Retention force maxi. | [kN] | 10 |
| Force to engage approx. | [N] | 80 |
| Pneumatic unclamping pressure | [bar] | 3 – 8 |
| Clamping time approx. | [s] | 0.1 |
| Unclamping time approx. | [s] | 0.1 |
| Admissible workpiece weight | [kg] | 100 |
| Admissible side load | [kN] | 2.5 |
| Admissible radial torque | [Nm] | 200 |
| Repeatability | [mm] | 0.01 |
| Weight, approx. | [kg] | 8.2 |

### Accessories

| | |
|---|---|
| Draw-in nipple (1 piece) | **6200-776** |

### Workpiece change

### Workpiece engaged