



**ROEMHELD**  
HILMA ■ STARK

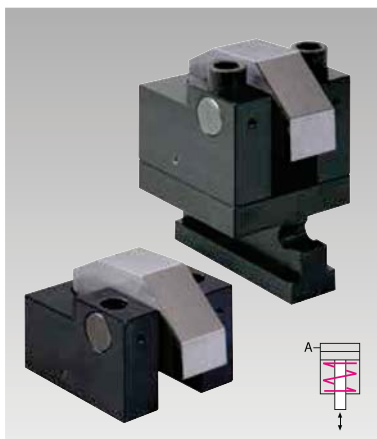
Issue 9-17 E

## WZ 3.2206

### Angular Clamps, Hydraulic

single acting, with spring return

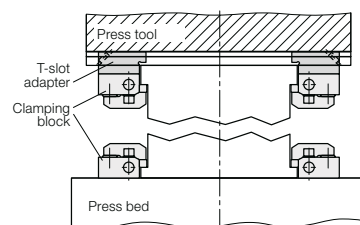
max. operating pressure 400 bar, clamping force from 19 to 78 kN



#### Advantages

- Optimum force transmission
- Compact design
- Easy mounting
- Suitable for minimum clamping edges
- T-slot 18, 22, 28 and 36 mm are available
- Total stroke 5.5 – 6 mm
- Die standardisation with regard to the width and depth is not required
- Easy to retrofit

#### Installation option



#### Application

Angular clamps are used for clamping and locking on machines and plants, on press bed and ram.

Due to the manageable and rounded design, angular clamps are especially suitable where space is limited and with small clamping edges. The use is possible at ambient temperatures up to a maximum of 120 °C.

#### Description

The angular clamp is manually placed in the T-slots provided in press ram or bed.

Clamping on the die clamping edge by the application of hydraulic pressure to the piston and unclamping by spring force.

The clamping block can also be directly screwed without T-slot adapter and can be ordered separately.

#### Application examples

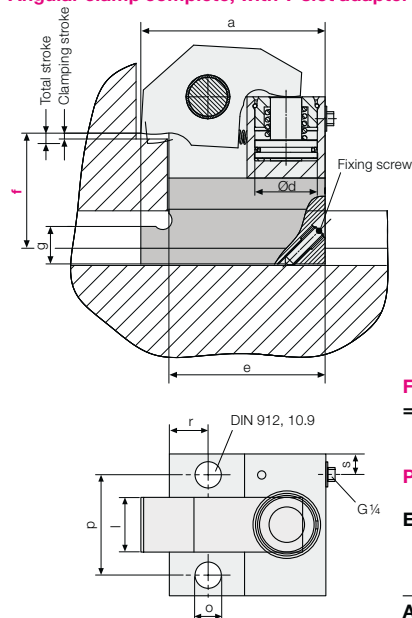


Angular clamp with T-slot adaptor in a high-speed punching press, the clamping force per clamping point is 66 kN

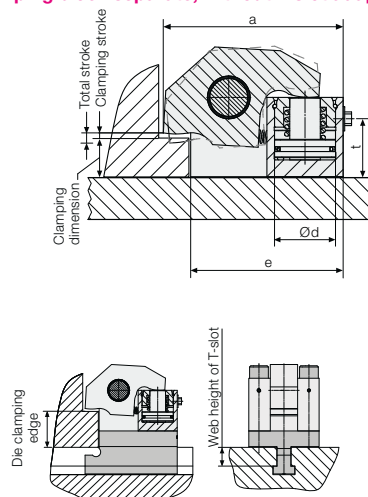
## Technical data Dimensions

### Angular clamp, hydraulic

#### Angular clamp complete, with T-slot adapter



#### Clamping block separate, without T-slot adapter



**Functional dimension "f":**  
= clamping stroke  
+ die clamping edge  
+ web height of T-slot  
**Please specify when ordering**

#### Example of ordering

**8 2314 2211 / F110**

Angular clamp

Clamping force: 66 kN

T-slot

22 mm

Functional dimension "f" [mm]

**Please specify when ordering**

| T-slot as per DIN 650                                    | [mm]            | 18               | 22               | 22               | 28               | 28               | 36               |
|----------------------------------------------------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Clamping force at 400 bar                                | [kN]            | 40               | 40               | 66               | 66               | 110              | 110              |
| Clamping force at 100 bar                                | [kN]            | 10               | 10               | 16.5             | 16.5             | 27.5             | 27.5             |
| Total stroke                                             | [mm]            | 5.5              | 5.5              | 6                | 6                | 6                | 6                |
| Clamping stroke                                          | [mm]            | 2.5              | 2.5              | 3                | 3                | 3                | 3                |
| Clamping dimension                                       | [mm]            | ± 1              | ± 1              | ± 1.5            | ± 1.5            | ± 1.5            | ± 1.5            |
| Oil volume                                               | [cm³]           | 6.5              | 6.5              | 10               | 10               | 16               | 16               |
| Dimension "f" min.                                       | [mm]            | 61               | 66               | 76               | 83               | 97               | 107              |
| Dimension "f" max.                                       | [mm]            | 90               | 95               | 96               | 103              | 157              | 167              |
| a                                                        | [mm]            | 101              | 101              | 118              | 118              | 147              | 147              |
| b                                                        | [mm]            | 75               | 75               | 90               | 90               | 120              | 120              |
| c max. (at "f" min.)                                     | [mm]            | 93               | 93               | 106              | 106              | 133              | 133              |
| c1                                                       | [mm]            | 80               | 80               | 88               | 88               | 108              | 108              |
| c2                                                       | [mm]            | 62.5             | 62.5             | 67.5             | 67.5             | 85.0             | 85.0             |
| d                                                        | [mm]            | 32               | 32               | 40               | 40               | 50               | 50               |
| e                                                        | [mm]            | 85               | 85               | 100              | 100              | 125              | 125              |
| g                                                        | [mm]            | 24               | 32               | 32               | 42               | 41               | 53               |
| h                                                        | [mm]            | 25               | 30               | 30               | 37               | 37               | 47               |
| i                                                        | [mm]            | 10               | 14               | 14               | 18               | 18               | 23               |
| k                                                        | [mm]            | 18               | 22               | 22               | 28               | 28               | 36               |
| l                                                        | [mm]            | 25               | 25               | 35               | 35               | 55               | 55               |
| m                                                        | [mm]            | 28               | 35               | 35               | 44               | 44               | 54               |
| o                                                        | [mm]            | 12.5             | 12.5             | 16.5             | 16.5             | 22.0             | 22.0             |
| p                                                        | [mm]            | 50               | 50               | 64               | 64               | 90               | 90               |
| r                                                        | [mm]            | 20               | 20               | 25               | 25               | 30               | 30               |
| s                                                        | [mm]            | 13               | 13               | 13               | 13               | 20               | 20               |
| t                                                        | [mm]            | 32               | 32               | 38               | 38               | 45               | 45               |
| <b>Clamping block with T-slot adapter</b>                | <b>Part no.</b> | <b>823121802</b> | <b>823122202</b> | <b>823142211</b> | <b>823142811</b> | <b>823152811</b> | <b>823153611</b> |
| Weight                                                   | [kg]            | 4.0              | 4.4              | 6.7              | 7.4              | 14.2             | 15.5             |
| <b>Clamping block, separate</b>                          | <b>Part no.</b> | <b>823120101</b> | <b>823120101</b> | <b>823140501</b> | <b>823140501</b> | <b>823150501</b> | <b>823150501</b> |
| Clamping dimension                                       | [mm]            | 20.5 ± 1         | 20.5 ± 1         | 25 ± 1.5         | 25 ± 1.5         | 32 ± 1.5         | 32 ± 1.5         |
| Weight                                                   | [kg]            | 2.6              | 2.6              | 4.0              | 4.0              | 8.6              | 8.6              |
| <b>Clamping block, separate with position monitoring</b> | <b>Part no.</b> | <b>823120104</b> |                  | <b>823140504</b> |                  |                  |                  |

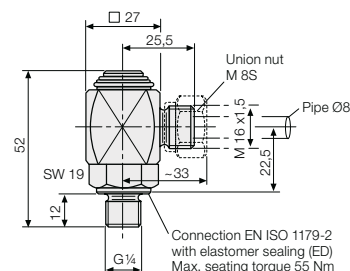
Please consult us if aggressive spray is used. Max. operating pressure 400 bar, max. operating temperature 120 °C.  
Further sizes and special versions are available on request.

## Accessories

### Angular rotary coupling (M 8S / G 1/4)

Part no. 9208176

For easier handling when changing dies.  
Max. operating pressure 400 bar

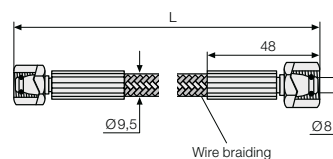


### High-pressure hoses ND4



#### Technical data

|                                   |      |
|-----------------------------------|------|
| Burst pressure [bar]              | 2000 |
| Smallest bending radius [mm]      | 100  |
| Further information see DIN 20066 |      |



#### Notes on high pressure hoses

The freely selectable hose lengths should be generously dimensioned, in order to avoid kinking, abrasion marks, torsion, tensile and compressive stress and unacceptable bending radii. Protect against hot swarf.

#### Preferred lengths of the type 4500XXXX33

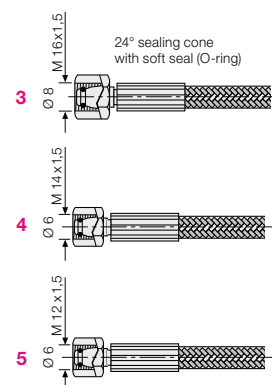
at both sides with hose connection  
Union nut M 16 x 1.5 mm

| Length [mm] | Part no.  |
|-------------|-----------|
| 600         | 270010131 |
| 800         | 270010133 |
| 1200        | 270010137 |
| 1600        | 270010141 |

#### Code for part numbers for variable lengths and connections

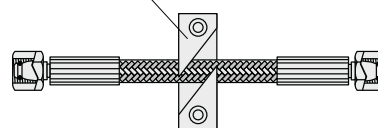
|                                 |   |     |      |   |   |
|---------------------------------|---|-----|------|---|---|
| Internal hose diameter (mm)     | 4 | 500 | XXXX | X | X |
| Operating pressure max. 500 bar |   |     |      |   |   |
| Hose length L in mm             |   |     |      |   |   |
| Hose connection on the left     |   |     |      |   |   |
| Union nut                       |   |     |      |   |   |
| 3 = M 16 x 1.5                  |   |     |      |   |   |
| 4 = M 14 x 1.5                  |   |     |      |   |   |
| 5 = M 12 x 1.5                  |   |     |      |   |   |
| Hose connection on the right    |   |     |      |   |   |
| Union nut                       |   |     |      |   |   |
| 3 = M 16 x 1.5                  |   |     |      |   |   |
| 4 = M 14 x 1.5                  |   |     |      |   |   |
| 5 = M 12 x 1.5                  |   |     |      |   |   |

#### Hose connections on the left/right



#### Accessories

Hose holder made from Delrin  
Part no. 550650003



#### Hydraulic power units

see product group 7

#### Hydraulic accessories

see product group 11