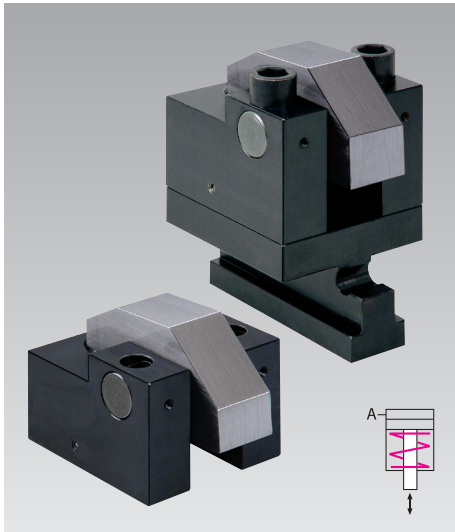




## Angular Clamps, Hydraulic

single acting, with spring return

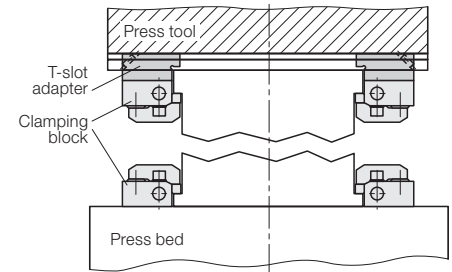
max. operating pressure 400 bar, clamping force from 40 to 110 kN



### 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.

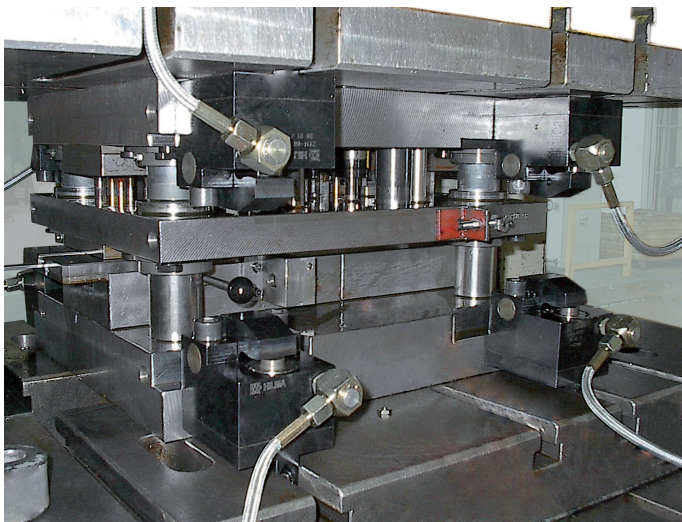
### Description

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

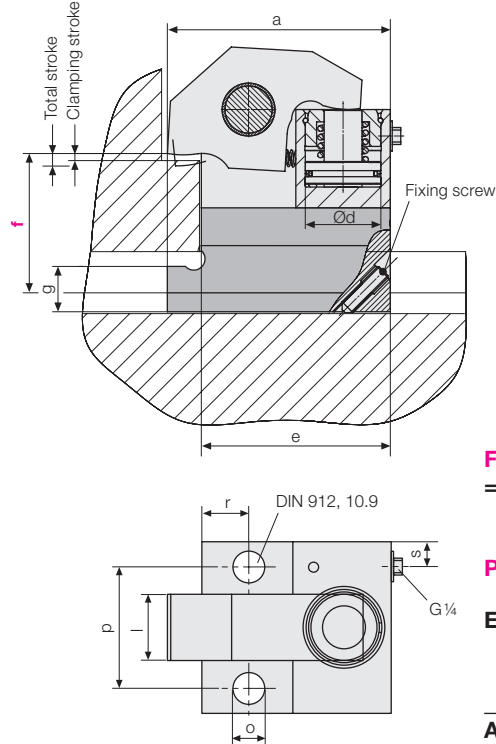


Angular clamp with T-slot adaptor in a high-speed punching press, the clamping force per clamping point is 66 kN

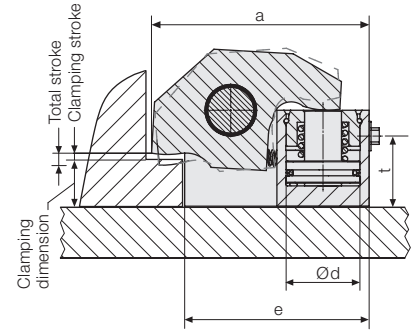
# Technical data Dimensions

## Angular clamp, hydraulic

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



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



T-slot dimensions as per DIN 650.  
See also product group 1  
"General Information", page 5

### 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	[cm <sup>3</sup> ]	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

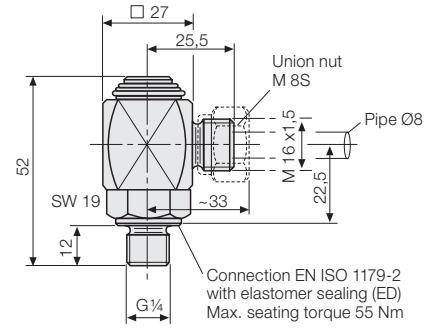
Clamping block with T-slot adapter	Part no.	823121802	823122202	823142211	823142811	823152811	823153611
Weight	[kg]	4.0	4.4	6.7	7.4	14.2	15.5
Clamping block, separate	Part no.	823120101	823120101	823140501	823140501	823150501	823150501
Clamping dimension	[mm]	20.5 ±1	20.5 ±1	25 ±1.5	25 ±1.5	32 ±1.5	32 ±1.5
Weight	[kg]	2.6	2.6	4.0	4.0	8.6	8.6
Clamping block, separate with position monitoring	Part no.	823120104		823140504			

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.

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

**Part no. 9208176**

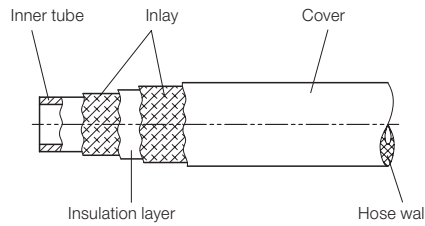
For easier handling when changing dies.  
Max. operating pressure 400 bar



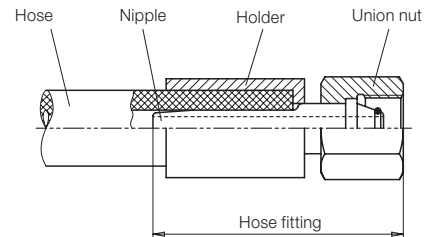
**Hydraulic high-pressure hoses assembled ready for connection**  
**max. operating pressure 250 / 500 bar**

High-pressure hoses are used for energy and signal transmission in hydraulic systems. The hose lengths should be generously dimensioned to avoid kinks, abrasion marks, torsion, tensile and compressive stress and unacceptable bending radii.

**Hose structure**



**Hose union**

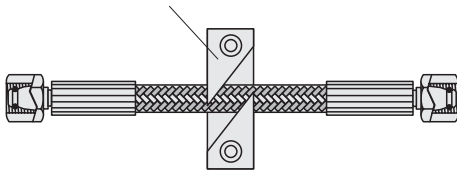


High-pressure hose	ND	4	4	6.3	6
Max. operating pressure [bar]		250	500	250	500
Port size		8L	8S	8L	8S
Union nut		m8L (M 14 x 1.5)	m8S (M 16 x 1.5)	m8L (M 14 x 1.5)	m8S (M 16 x 1.5)
SW [mm]		17	19	17	19
<b>Preferred lengths</b>	L =				
	500 [mm]	<b>93751 00500</b>	<b>93752 00500</b>	<b>93206 00500</b>	<b>93706 00500</b>
	1000 [mm]	<b>93751 01000</b>	<b>93752 01000</b>	<b>93206 01000</b>	<b>93706 01000</b>
	1600 [mm]	<b>93751 01600</b>	<b>93752 01600</b>	<b>93206 01600</b>	<b>93706 01600</b>
	2500 [mm]	<b>93751 02500</b>	<b>93752 02500</b>	<b>93206 02500</b>	<b>93706 02500</b>

Other hose connections left / right on request. For further information and technical data, see data sheet WZ 11.3800

**Accessory**

Hose holder made from Delrin  
**Part no. 550650003**



**Other accessories**

**Hydraulic power units**  
see product group 7

**Hydraulic accessories**  
see product group 11