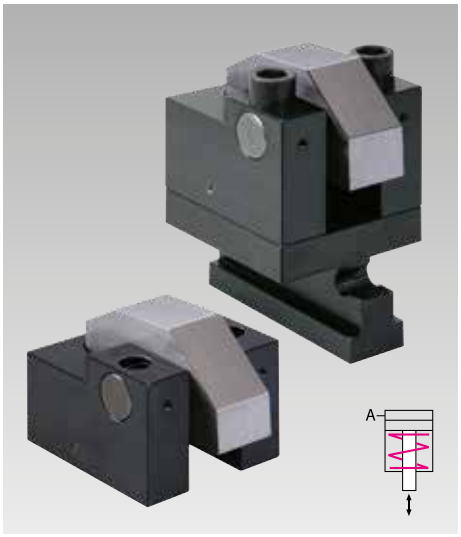
Angular Clamps, Hydraulic

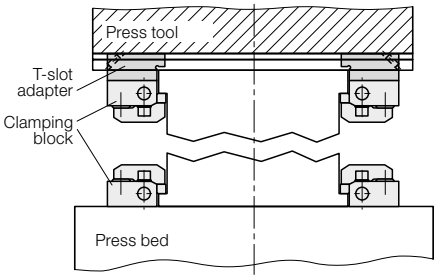
single acting, with spring return
max. operating pressure 400 bar, clamping force from 19 to 78 kN



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

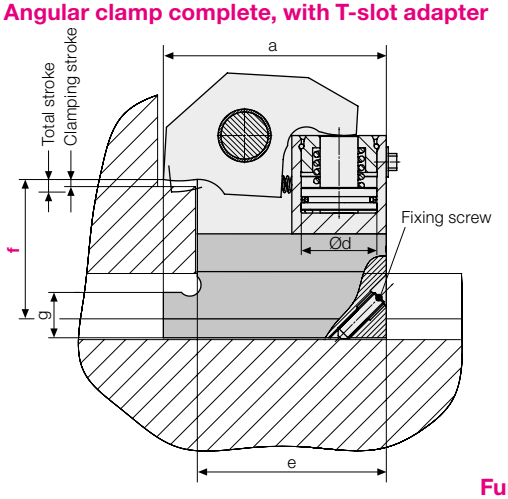
The angular clamp is manually placed in the T-slots provided in press ram or bed.
Clamping on the die clamping edge by the application of hydraulic pressure to the piston and unclamping by spring force.
The clamping block can also be directly screwed without T-slot adapter and can be ordered separately.

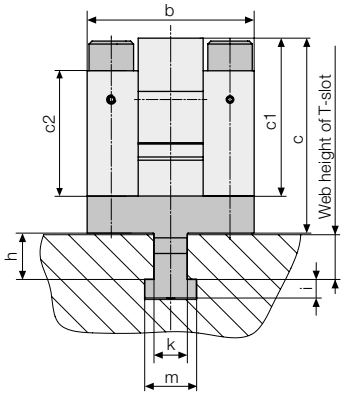
Application examples

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

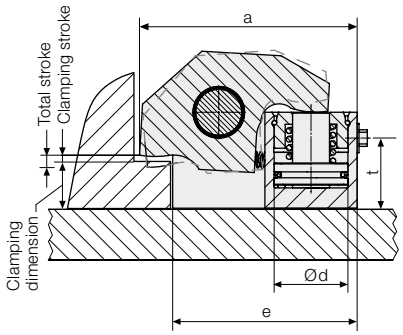
Angular clamp, hydraulic

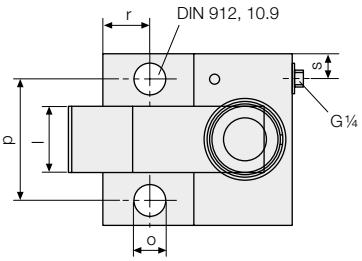
Angular clamp complete, with T-slot adapter



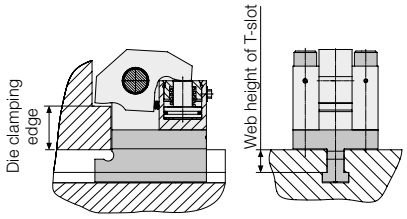


Clamping block separate, without T-slot adapter





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

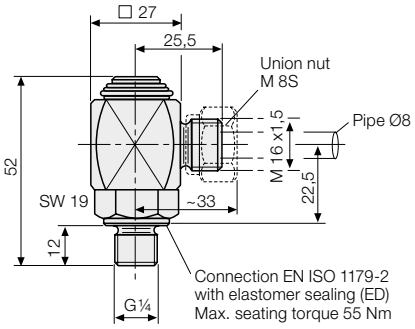
T-slot as per DIN 650	**[mm]**	**18**	**22**	**22**	**28**	**28**	**36**
Clamping force at 400 bar	**[kN]**	**40**	**40**	**66**	**66**	**110**	**110**
Clamping force at 100 bar	**[kN]**	**10**	**10**	**16.5**	**16.5**	**27.5**	**27.5**
Total stroke	[mm]	5.5	5.5	6	6	6	6
Clamping stroke	[mm]	2.5	2.5	3	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
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.

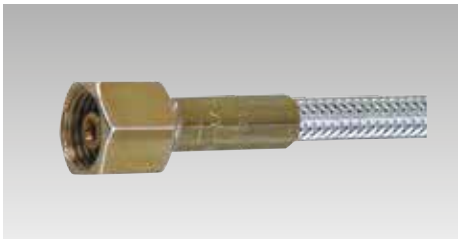
Angular rotary coupling (M 8S / G 1/4)

Part no. 9208176

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

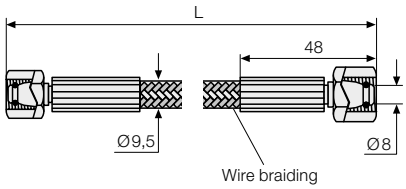


High-pressure hoses ND4



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

4 500 XXXX X X

Internal hose diameter (mm)

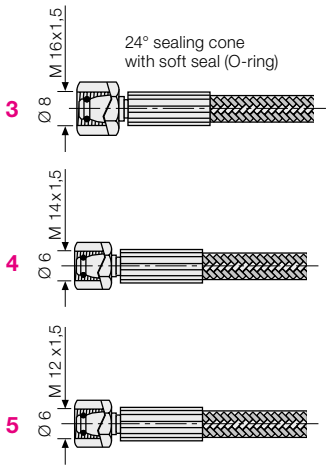
Operating pressure
max. 500 bar

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

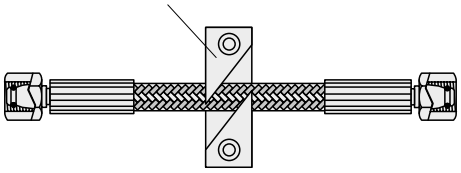
Hose connection on the right
Union nut
3 = M 16 x 1.5
4 = M 14 x 1.5
5 = M 12 x 1.5

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