General Catalogue

mäder pressen

Manual presses

Pneumatic presses

Hydropneumatic presses

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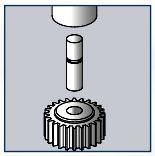
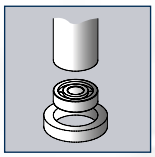
mäder presses, the applications

A number of processes can be performed quickly, precisely and easily with mäder presses.

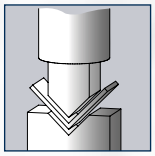
For example:



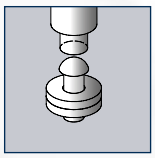
Assembly



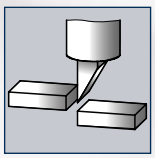
Pressing



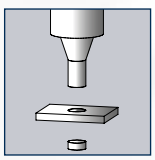
Bending



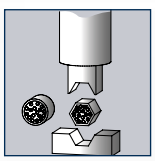
Riveting



Edge cutting



Punching



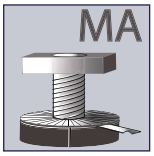
Crimping

We would be happy to determine the press force required based on your parts.

Press & Tool Concept ●

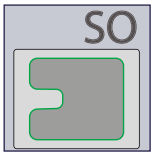
The Press & Tool Concept represents a well-rounded press and tool program for efficient manufacturing, particularly in the sheet metal processing industry, in force ranges from 10 kN - 35 kN.

Quality features:



Micro Adjust

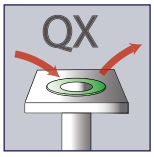
The precision height adjustment of the press table simplifies the set-up of Press & Tool Concept presses and increases their application possibilities. The standard scale disc enables a reading accuracy of 0.1 mm.



Solid Frame

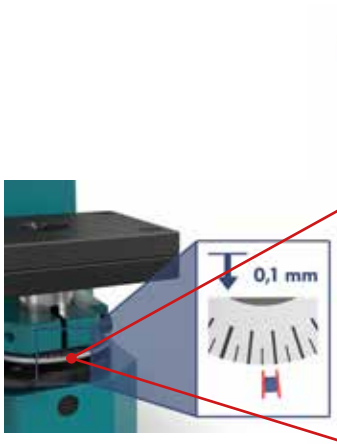
Solid cast frames in C-design with high stability and low resilience for punching operations enable cost-effective free-cutting tools to be used in many working processes.

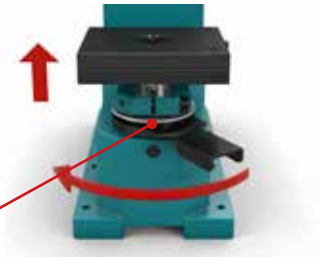
Open clamp



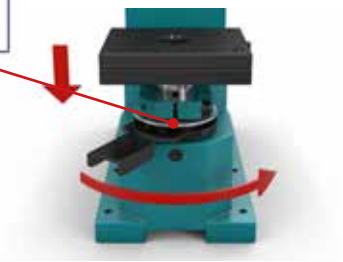
Quick Tool Change

The standardised tool fixing system enables the different tools of the Press & Tool Concept to be changed in next to no time.





Adjust press table upwards



Adjust press table downwards

Tool System

Basic tool system for standard sheet metal processing applications such as punching, 90° bending, radial punching etc.

Fixing position of press table

The components of the Press & Tool Concept

Hand-operated toggle presses

KP 2.1 N
KP 2.1 N Vario

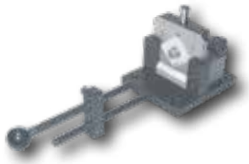
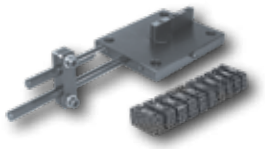
KP 2.1 W
KP 2.1 W Vario

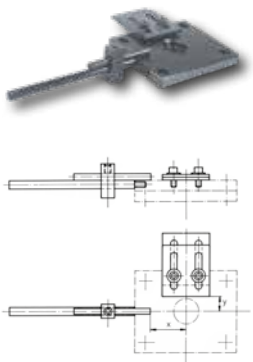
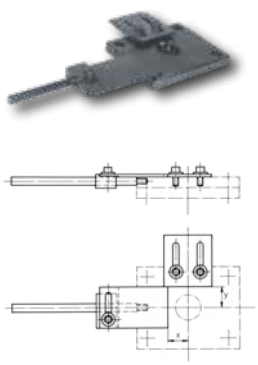
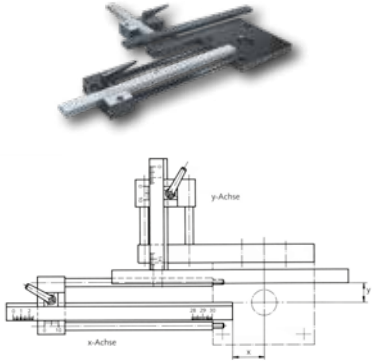
Pneumatic toggle presses

KP 3.1 N

KP 3.1 W

Tool system

Punching tool	Strip cutting tool	Angle separating tool	Profile rail punch with 10 plug-in centring inserts
			
Profile cutting tool	**Bending tool**	**Rotatable radius punch**	**Combination corner punch**

Standard stop, bar design Type: Z-100	Standard stop, plate design Type: Z-101	Coordinate stops
X-axis 250 mm without scale Y-axis 40 mm without scale 	X-axis 250 mm without scale Y-axis 40 mm without scale 	X-axis 300 mm X-axis 520 mm Y-axis 120 mm Y-axis 255 mm 

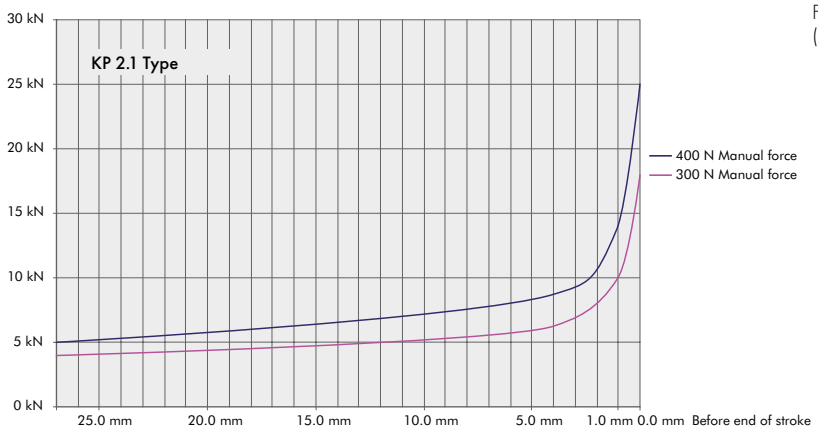
KP hand-operated toggle presses ●

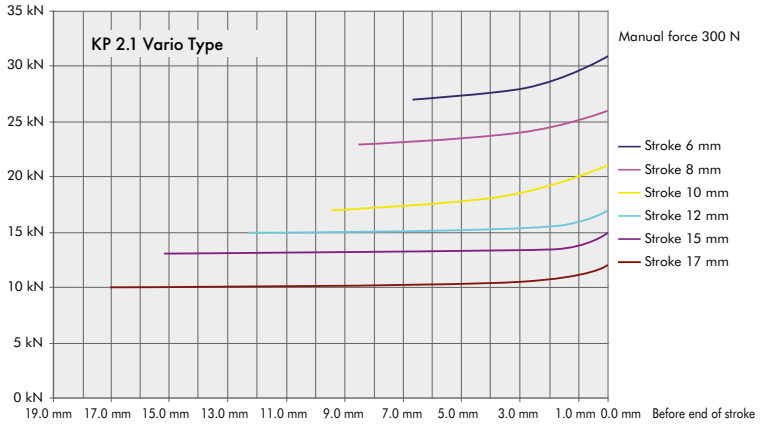
The standard toggle press of the Press & Tool Concept

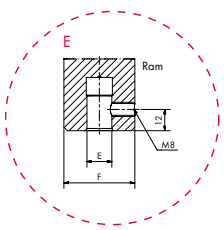
Ideal for punching, bending, assembly, embossing, pressing, riveting, straightening, gluing.

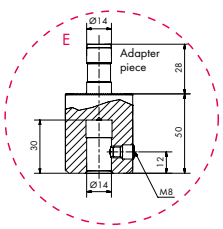
- Simple handling
- Factory-set end position with high repeat accuracy
- The MICRO ADJUST system enables the press table to be quickly and accurately adjusted in height
- Reading accuracy 0.1 mm
- Fixing by means of quick-clamp lever without additional tools
- Ideal in conjunction with the tool system
- Adapter piece included

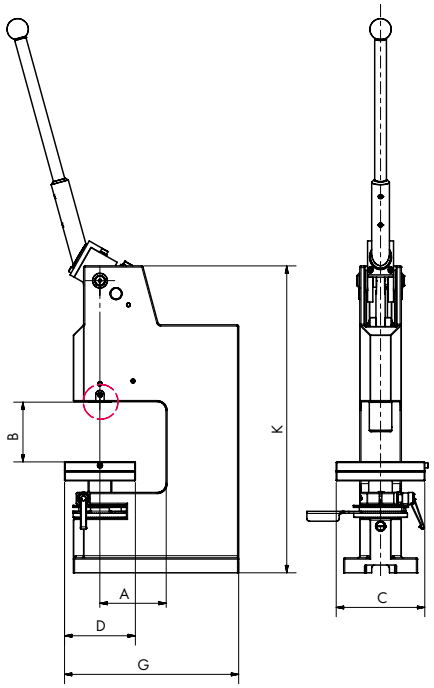
Fitted stripper frame (special accessory)











Request CAD at www.maederpressen.de or directly from Tel.+49 (0) 74 67 - 94 67 - 0

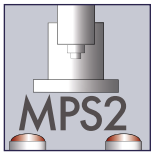
KP 2.1 N

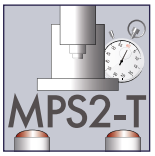
KP 2.1 N Vario

KP 2.1 W

KP 2.1 W Vario

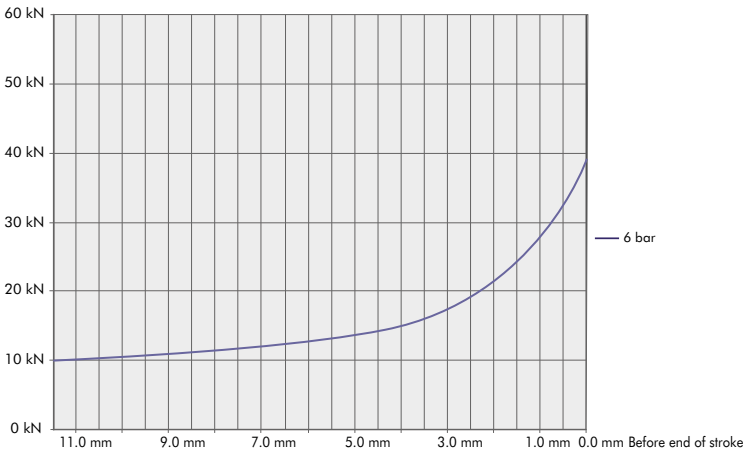
Type			KP 2.1 N	KP 2.1 W	KP 2.1 N Vario	KP 2.1 W Vario
Capacity		kN	25	25	10 - 30	10 - 30
Working stroke		mm	27	27	6 - 17	6 - 17
Throat	A	mm	112	275	112	275
Daylight max.	B	mm	122	122	112	117
Table traverse		mm	70	70	70	70
Table size	D x C	mm	120 x 150	120 x 150	120 x 150	120 x 150
Ram bore Ø x Depth	E	mm	14H7 x 30	14H7 x 30	14H7 x 30	14H7 x 30
Ram Ø	F	mm	40h7	40h7	40h7	40h7
Space requirement	C x G	mm	125 x 280	125 x 520	125 x 280	125 x 520
Stand height	K	mm	520	520	520	520
Weight		ca. kg	35	85	35	85

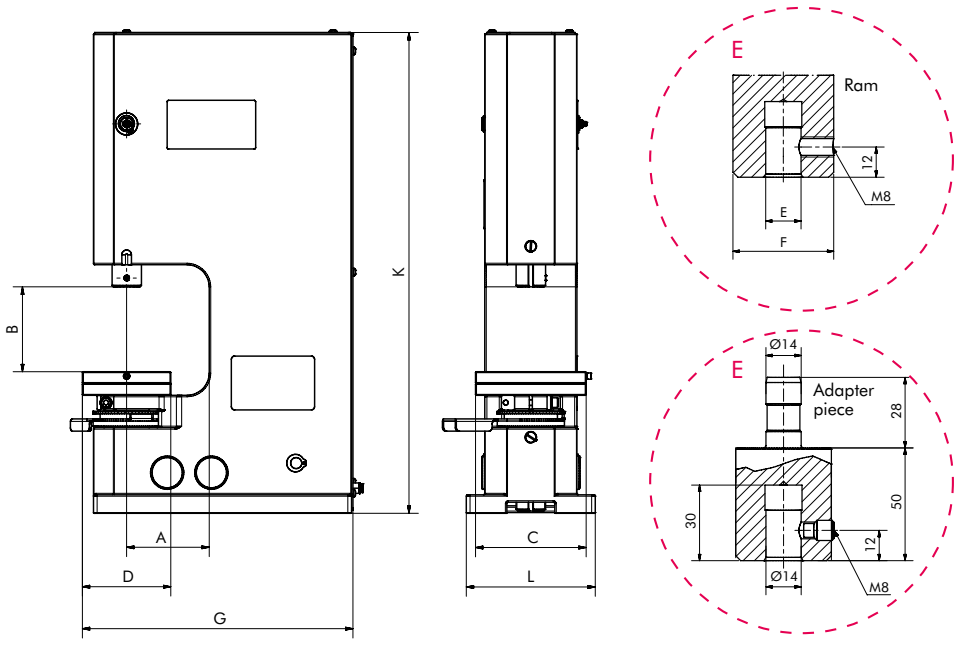




The pneumatic toggle presses of the KP 3.1 range

- Driven by double-acting pneumatic cylinders
- Factory-set end position with high repeat accuracy
- Anti-twist ram
- Adapter piece for bridging working height as standard
- The stroke limit allows the user to set up a low stroke length for safe working
- The MICRO ADJUST system enables the press table to be quickly and accurately adjusted in height
- Reading accuracy 0.1 mm
- Ideal in conjunction with the W 14 tool system





KP 3.1 N
equipped with
MPS-2 controller

KP 3.1 W

Type			KP 3.1 N	KP 3.1 W
Capacity at 6 bar		kN	35	35
Working stroke		mm	6 - 27	6 - 27
Throat	A	mm	112	275
Daylight	B	mm	55 - 145	55 - 145
Table size	D x C	mm	120 x 150	120 x 150
Ram bore Ø x Depth	E	mm	14^{H7} x 30	14^{H7} x 30
Ram Ø	F	mm	40h7	40h7
Air connection			G 1/4"	G 1/4"
Air consumption/stroke		l	7.1	7.1
Space requirement	C x G	mm	175 x350	175 x 565
Stand height	K	mm	650	720
Weight		kg	75	125

Valve and service unit only included with controller. Design may vary.

Calculating the shear forces

The force required for punching is calculated from the following quantities:

τ_{aBmax} = Shear strength of the material in N/mm²
l = Length of cut edge in mm
s = Material thickness in mm
When the cutting edges of the stamp and die are parallel, the required shear force is calculated as follows:

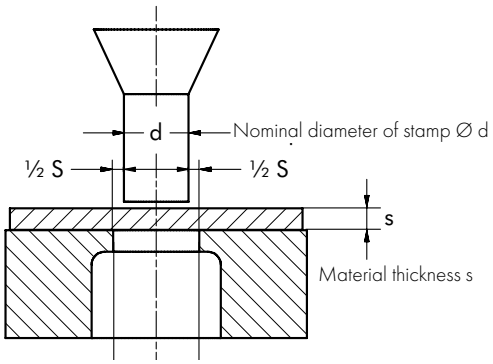
$F = \tau_{aBmax} \bullet l \bullet s$

Calculation example:

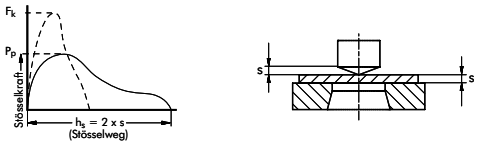
Punching a hole Ø: 8.5 mm in 1.5 mm thick
AlMg 5 half-hard
(τ_{aBmax} = 240 N/mm²)
F = 8.5 mm • π • 1.5 mm • 240 N/mm²
F = 9608.4 N ~ 9.6 kN
The required cutting force can be reduced by angled or serrated cutting.

Cutting clearance:

As a rule of thumb, it can be assumed that the cutting clearance should be 10% of the material thickness s. The W 14 tool system is supplied with a standard cutting clearance of 0.1 mm. The cutting clearance must be modified particularly in the case of soft materials, plastics and thin foils.

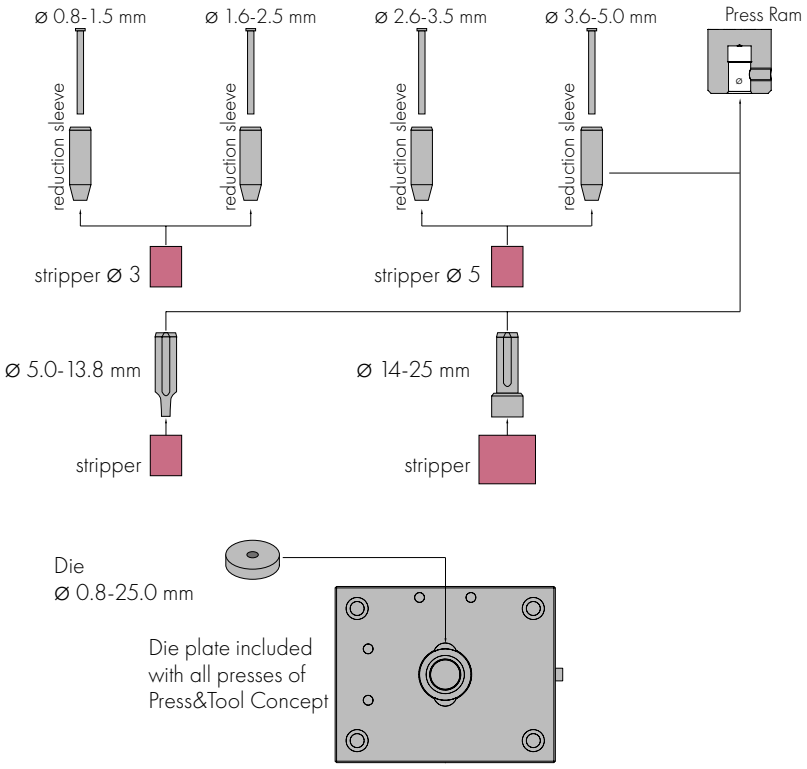


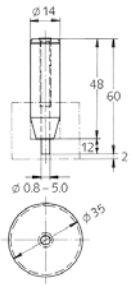
Force characteristic for parallel cutting edges

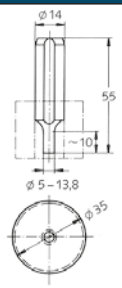


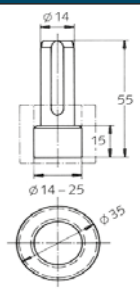
Force characteristic with cutting edges ground at an angle

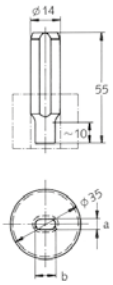
Selection of materials with shear strength τ_{aBmax} in N/mm²		
Aluminium	Al 99 soft	60 - 80
	Al 99 half-hard	60 - 100
Alu alloys	Al Mo 3 soft	150 - 200
	Al Mg 5 soft	190 - 210
	Al Mg 5 half-hard	200 - 240
	Al Mg 7 soft	240 - 280
	Al Mg 7 half-hard	280 - 320
Fine steel sheet	T St 10	220 - 400
	U St 12	220 - 340
	U St 14 2	80 - 320
Structural steel	St 37	300 - 360
	St 50	400 - 480
	St 60	480 - 580
	St 70	560 - 680
Heat-treated steel	Ck 22	340 - 400
	Ck 35	400 - 480
	Ck 45	480 - 580
	Ck 60	560 - 680
Stainless steel	V2A	600 - 900
Spring steel, hard		800 - 1200
Brass	Ms 58	300 - 450
Copper	Cu	200 - 230
Polyvinyl chloride, soft	PVC 1	20 - 180
Polyvinyl chloride, hard	PVC	160 - 250
Epoxy (print material)		180 - 300
Laminated paper		70 - 90

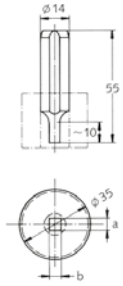


Round hole tools Ø 0.8 - 5 mm				
	Ø 0.8 - 1.9	Ø 2.0 - 2.9	Ø 3.0 - 3.9	Ø 4.0 - 4.9
	stamp step grade 0.1 mm	stamp step grade 0.1mm	stamp step grade 0.1mm	stamp step grade 0.1mm
	reduction sleeve	reduction sleeve	reduction sleeve	reduction sleeve
	stripper	stripper	stripper	stripper
	die	die	die	die

Round hole tools Ø 5 - 13.8 mm	
	stamp step grade 0,0/0.2/0.5/0.8 (5.0) to(13.8)
	stripper red (spring range 33%) brown (spring range 20%)
	die W 14-3550 to W 14-35138

Round hole tools Ø 14 - 25mm	
	stamp step grade 0.0/0.2/0.5/0.8 (5.0) to 13.8)
	stripper red (spring range 33%) brown (spring range 20%)
	die W 14-3550 to W 14-35138

Slot cutting fittings	
	stamp step grade 0.0/0.2/0.5/0.8 (5.0) to (13.8)
	stripper red (spring range 33%) brown (spring range 20%)
	die

Square and rectangular cutting fittings	
	stamp step grade 0.0/0.2/0.5/0.8 (5.0) to(13.8)
	stripper red (spring range 33%) brown (spring range 20%)
	die