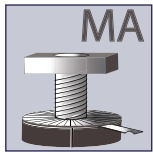


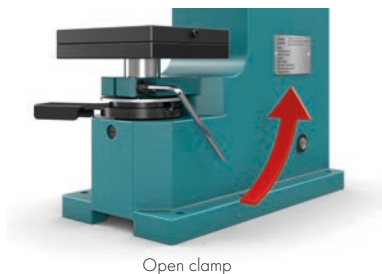
The Press & Tool Concept represents a well-rounded press and tool program for efficient manufacturing, particularly in the sheet metal processing industry, in force ranges from 10 kN - 35 kN.

Quality features:

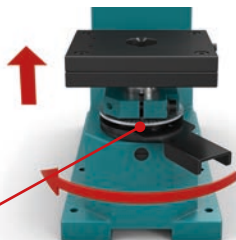


Micro Adjust

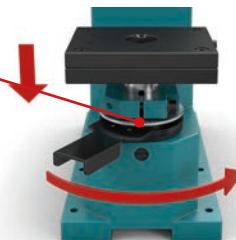
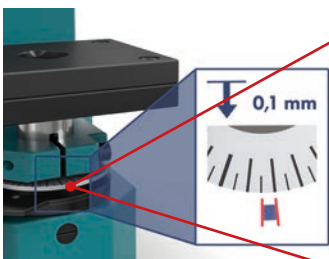
The precision height adjustment of the press table simplifies the set-up of Press & Tool Concept presses and increases their application possibilities. The standard scale disc enables a reading accuracy of 0.1 mm.



Open clamp



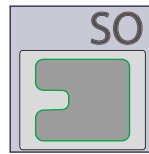
Adjust press table upwards



Adjust press table downwards

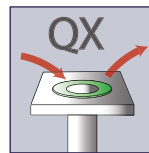


Fixing position of press table



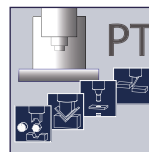
Solid Frame

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.



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.



Tool System

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

The components of the Press & Tool Concept

Hand-operated toggle presses

Pneumatic toggle presses



KP 2.1 N
KP 2.1 N Vario



KP 2.1 W
KP 2.1 W Vario



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

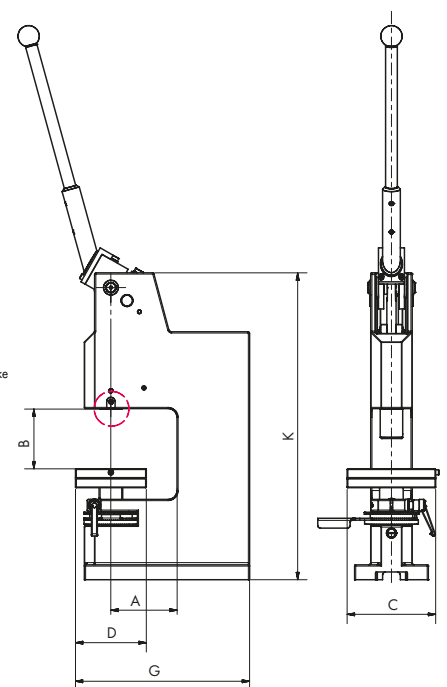
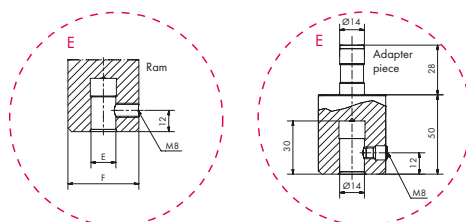
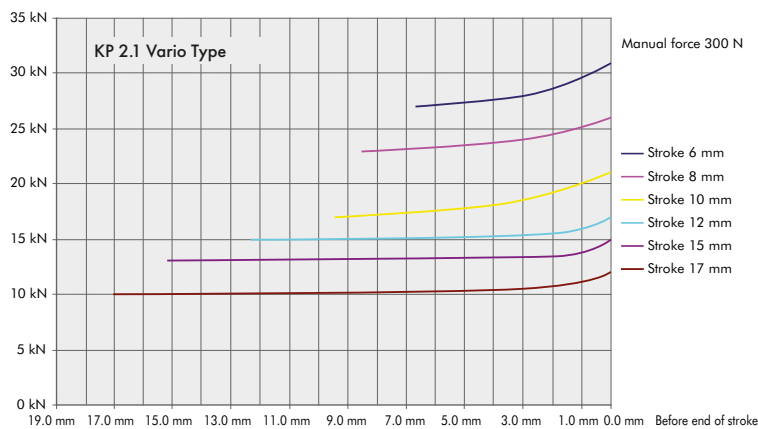
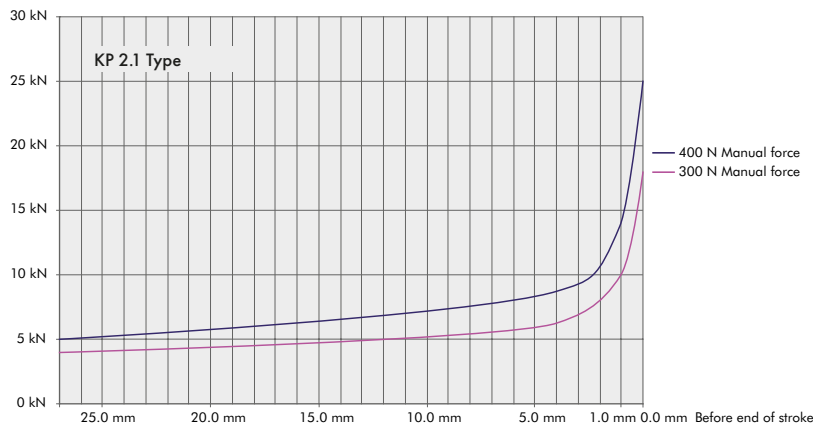
The standard toggle press of the Press & Tool Concept

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)





KP 2.1 N



KP 2.1 N Vario

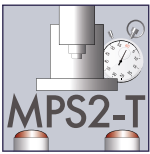
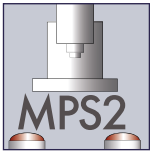


KP 2.1 W



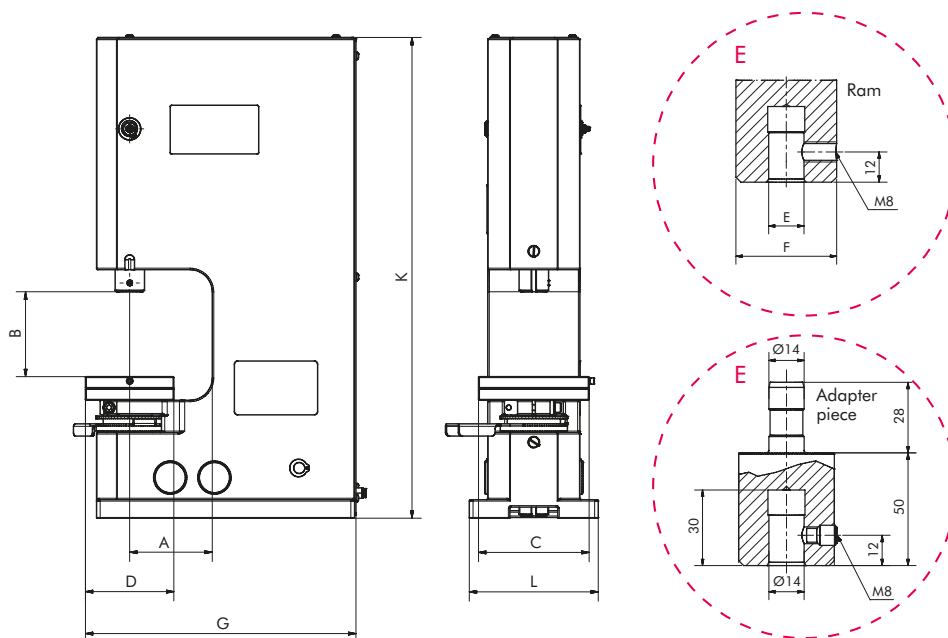
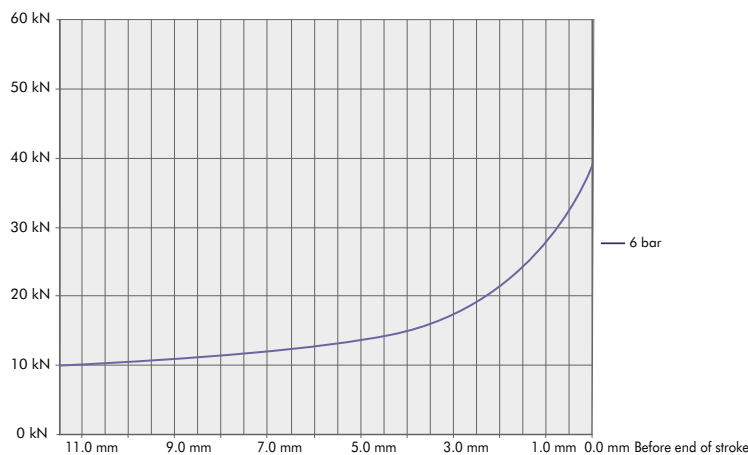
KP 2.1 W Vario

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 x 350	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:

- $\tau_{\alpha Bmax}$ = 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:

$$F = \tau_{\alpha Bmax} \cdot l \cdot s$$

Calculation example:

Punching a hole \varnothing : 8.5 mm in 1.5 mm thick
AlMg 5 half-hard

$$(\tau_{\alpha Bmax} = 240 \text{ N/mm}^2)$$

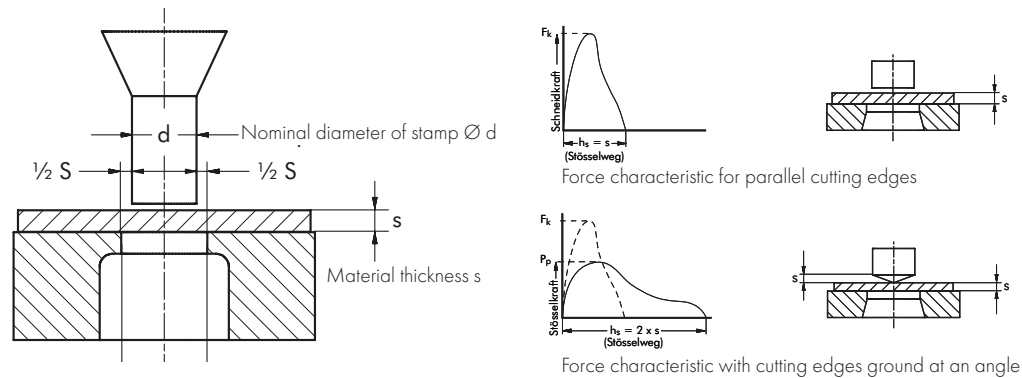
$$F = 8.5 \text{ mm} \cdot \pi \cdot 1.5 \text{ mm} \cdot 240 \text{ N/mm}^2$$

$$F = 9608.4 \text{ N} \sim 9.6 \text{ kN}$$

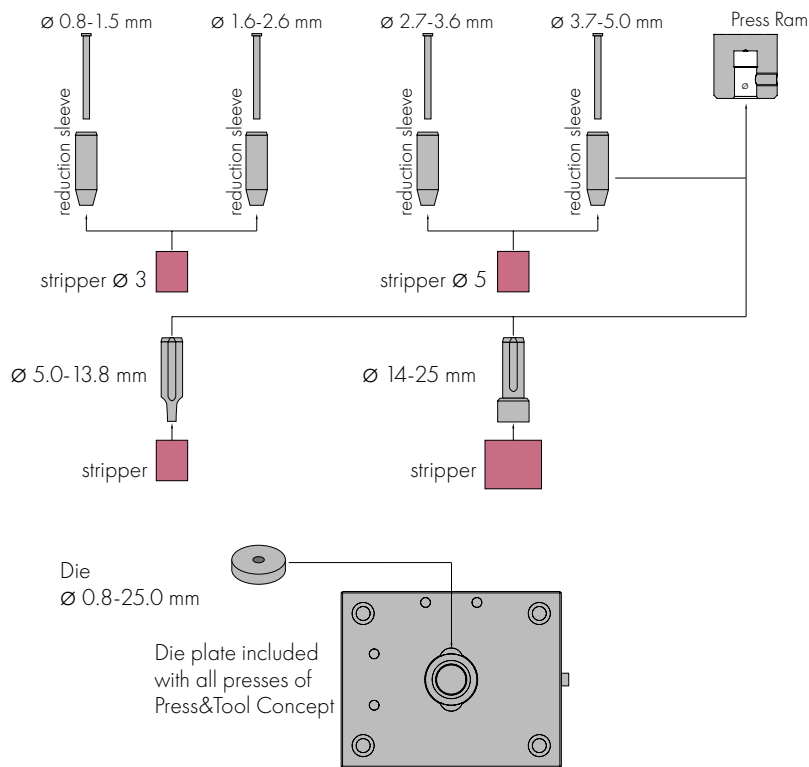
The required cutting force can be reduced by angled or serrated cutting.

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.



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



Round hole tools $\varnothing 0.8 - 5$ mm

	$\varnothing 0.8 - 1.5$	$\varnothing 1.6 - 2.6$	$\varnothing 2.7 - 3.6$	$\varnothing 3.7 - 5.0$
	stamp step grade 0.1 mm	stamp step grade 0.1 mm	stamp step grade 0.1 mm	stamp step grade 0.1 mm
	reduction sleeve	reduction sleeve	reduction sleeve	reduction sleeve
	stripper	stripper	stripper	stripper
	die	die	die	die

Round hole tools $\varnothing 5 - 13.8$ 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 $\varnothing 14 - 25$ 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

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