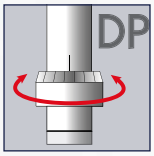
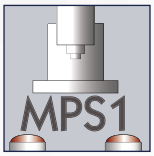
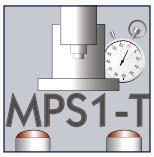
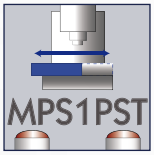
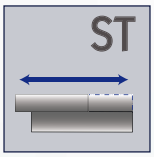
The accessories





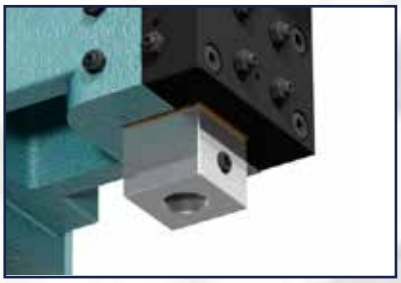






Pneumatic toggle presses APK*L and VKL range

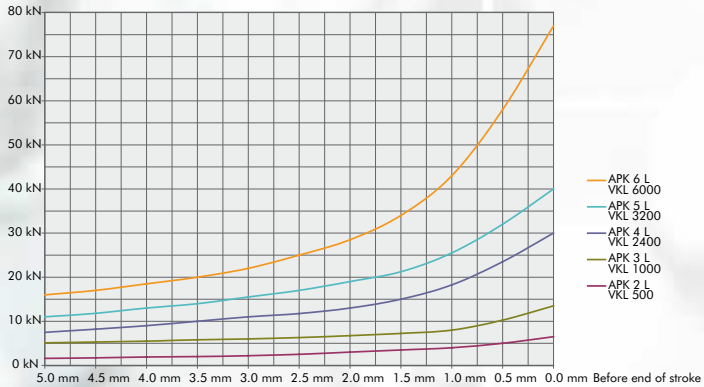
The optimum transmission ratio of the toggle lever produces large forces at the end of the stroke and ensures low air consumption. The resulting low energy consumption means that **mäder** pneumatic toggle presses are a cost-effective production tool, not only at the procurement stage but also in the long term.
All pneumatic toggle presses can be provided with the standard **mäder** MPS-1 controller or with customer-specified controllers.



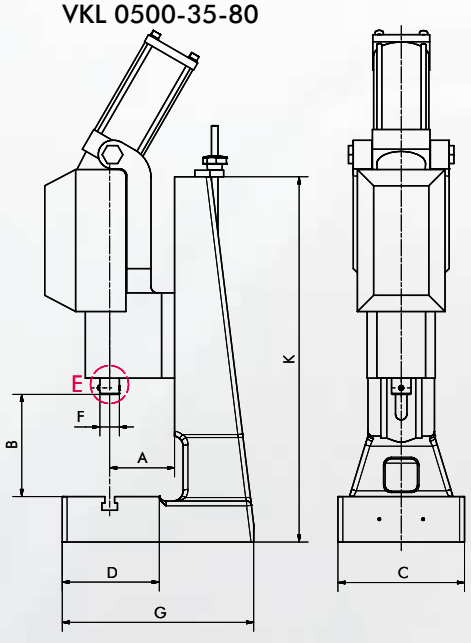
Square Ram

Other quality features:

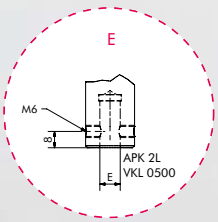
- Factory pre-set pressure point
- Right-angled gearbox for simple height adjustment of the press head
- Side-mounted measuring strip for fast reproduction of settings when changing the tool
- Practically maintenance-free double-acting cylinder
- Low noise: less than 75 dB



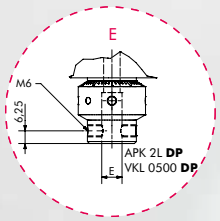
APK 2L
VKL 0500-35-80

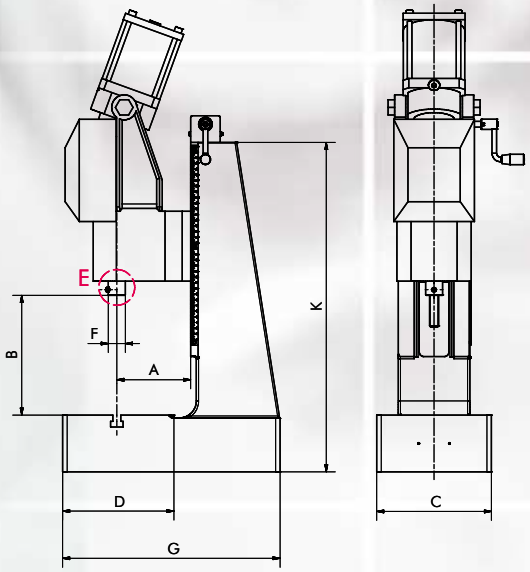


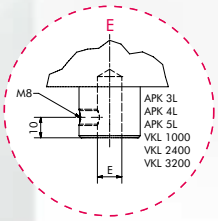
Standard

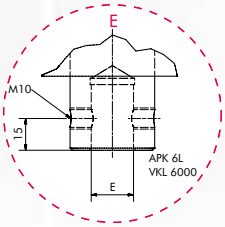


With DP









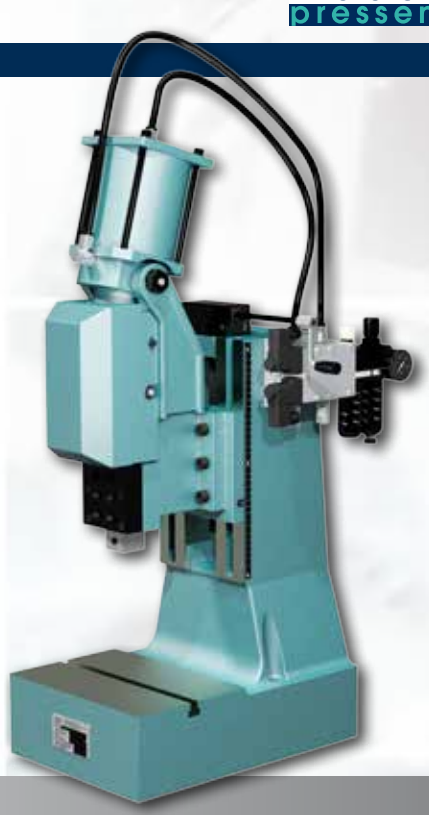
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APK 2 L



APK 4 L / APK 5 L



VKL 6000-40-150

Type			with round ram APK 2 L	APK 3 L	APK 4 L	APK 5 L	APK 6 L
Capacity at 6 bar		kN	5	10	24	32	60
Working stroke		mm	35	40	40	40	40
Throat	A	mm	80	100	130	130	150
Daylight	B	mm	80 - 265	110 - 280	175 - 330	175 - 330	87 - 310
Daylight with DP	B	mm	65 - 250	-	-	-	-
Table size	CxD	mm	157 - 115	185 - 145	200 x 190	200 x 190	300 x 210
T-slot width similar to DIN 650		mm	10	12	14	14	20
Ram bore Ø x Depth	E	mm	10^{H7} x 25	12^{H7} x 30	12^{H7} x 30	12^{H7} x 30	20^{H7} x 34
Ram Ø	F	mm	24	30	30	30	40
Air connection			G 1/4"	G 1/4"	G 3/8"	G 3/8"	G 3/8"
Air consumption/cm cyl. stroke		l	0.26	0.41	1.05	1.05	1.65
Space requirement	CxG	mm	157 x 237	185 x 320	200 x 385	200 x 385	300 x 455
Stand height	K	mm	450	520	580	580	630
Weight		kg	ca. 22	ca. 55	ca. 95	ca. 96	ca. 140

Accessories (see Page 5)	Please specify when ordering.				
Precision ram adjustment	DP	DP	-	-	-

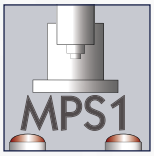
Type			with square ram VKL 0500-35-80	VKL 1000-40-100	VKL 2400-40-130	VKL 3200-40-130	VKL 6000-40-150
Capacity at 6 bar		kN	5	10	24	32	60
Working stroke		mm	35	40	40	40	40
Throat	A	mm	80	100	130	130	150
Daylight	B	mm	80 - 265	110 - 280	175 - 330	175 - 330	90 - 320
Daylight with DP	B	mm	65 - 250	-	-	-	-
Table size	CxD	mm	157 x 115	185 x 145	200 x 190	200 x 190	300 x 210
T-slot width similar to DIN 650		mm	10	12	14	14	20
Ram bore Ø x Depth	E	mm	10^{H7} x 25	12^{H7} x 30	12^{H7} x 30	12^{H7} x 30	20^{H7} x 34
Ram Ø	F	mm	25 x 25	31 x 31	31 x 31	31 x 31	41 x 41
Air connection			G 1/4"	G 1/4"	G 3/8"	G 3/8"	G 3/8"
Air consumption/cm cyl. stroke		l	0.26	0.41	1.05	1.05	1.65
Space requirement	CxG	mm	157 x 237	185 x 320	200 x 385	200 x 385	300 x 455
Stand height	K	mm	450	520	580	580	630
Weight		kg	ca. 22	ca. 55	ca. 95	ca. 96	ca. 140

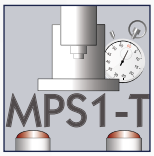
Accessories (see Page 5)	Please specify when ordering.				
Precision ram adjustment	DP	DP	-	-	-

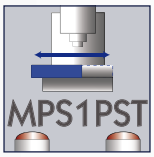
Valve and service unit only included with controller. Design may vary.

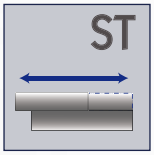
XL-Pneumatic toggle presses ● ■

The accessories



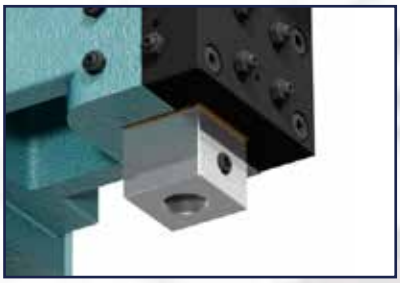






Pneumatic toggle presses XL-APK*L and XL-VKL range

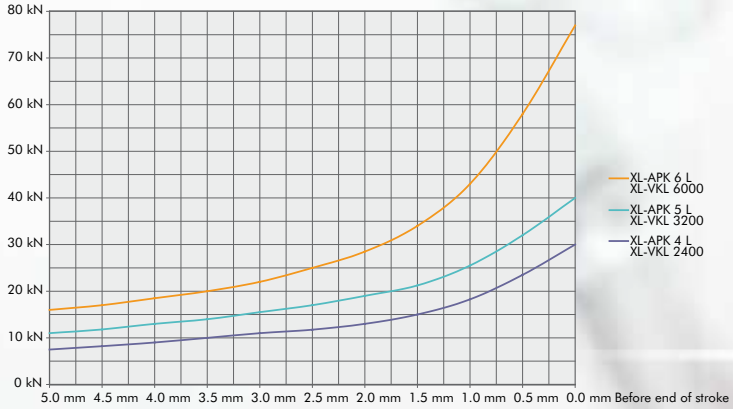
Presses with XL throat are designed for processing large and bulky parts. The press stand consists of a stable welded structure which can be modified to suit customers' requirements. XL pneumatic toggle presses can be provided with the standard **mäder** MPS-1 controller or with customer-specified controllers.

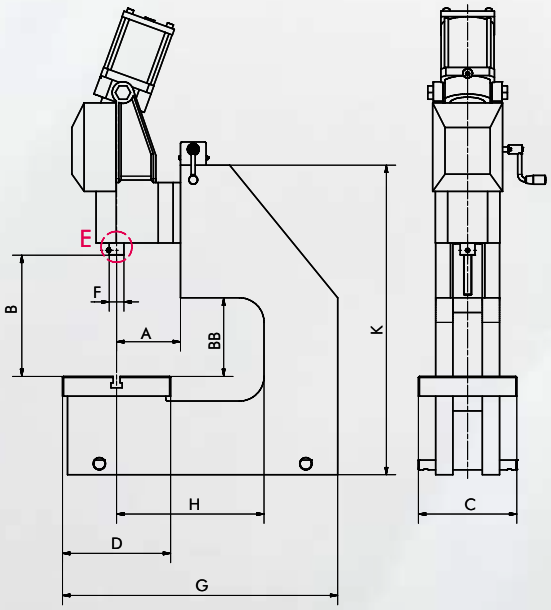


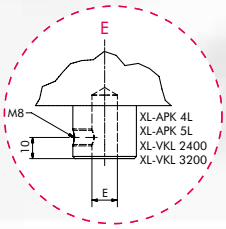
Square ram

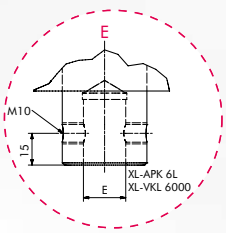
Other quality features:

- Factory pre-set pressure point
- Right-angled gearbox for simple height adjustment of the press head
- Side-mounted measuring strip for fast reproduction of settings when changing the tool
- Practically maintenance-free double-acting cylinder
- Low noise: less than 75 dB

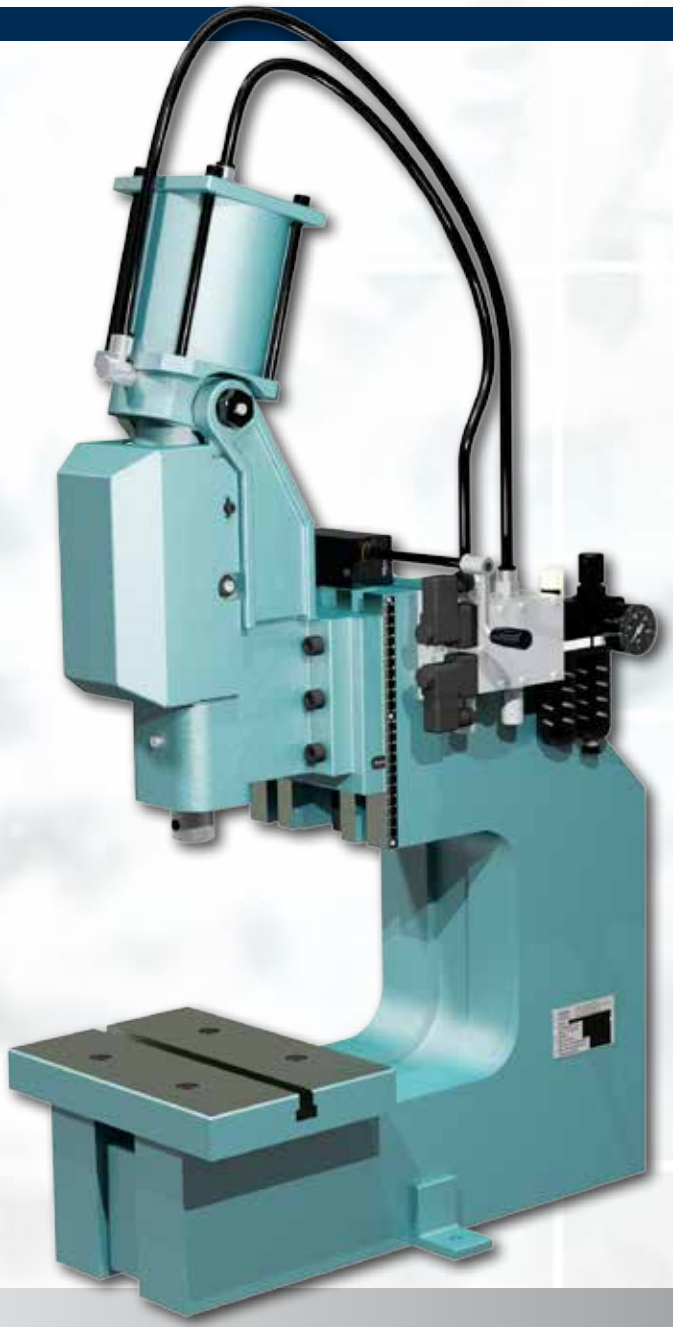








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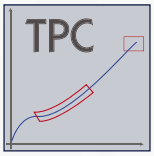


XL-APK 6 L

Type			with round ram XL-APK 4 L	XL- APK 5 L	XL-APK 6L	with square ram XL-VKL 2400-40-300	XL-VKL 3200-40-300	XL-VKL 6000-40-300
Capacity at 6 bar		kN	24	32	60	24	32	60
Working stroke		mm	40	40	40	40	40	40
Throat	A	mm	130	130	150	130	130	150
Throat C-frame	H	mm	300	300	300	300	300	300
Daylight	B	mm	130 - 280	130 - 280	130 - 230	130 - 280	130 - 280	130 - 230
Daylight C-frame	BB	mm	158	158	190	158	158	190
Table size	CxD	mm	200 x 220	200 x 220	310 x 220	200 x 220	200 x 220	310 x 220
T-slot width similar to DIN 650		mm	14	14	16	14	14	16
Ram bore Ø x Depth	E	mm	12^{H7} x 30	12^{H7} x 30	20^{H7} x 34	12^{H7} x 30	12^{H7} x 30	20^{H7} x 34
Ram Ø / Ram area	F	mm	30	30	40	31 x 31	31 x 31	41 x 41
Air connection			G 3/8“	G 3/8“	G 3/8“	G 3/8“	G 3/8“	G3/8“
Air consumption/cm cyl. stroke		l	1.05	1.05	1.65	1.05	1.05	1.65
Space requirement	CxG	mm	200 x 560	200 x 560	320 x 610	200 x 560	200 x 560	320 x 610
Stand height	K	mm	630	630	630	630	630	630
Weight		kg	ca. 149	ca. 150	ca. 250	ca. 149	ca. 150	ca. 250

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

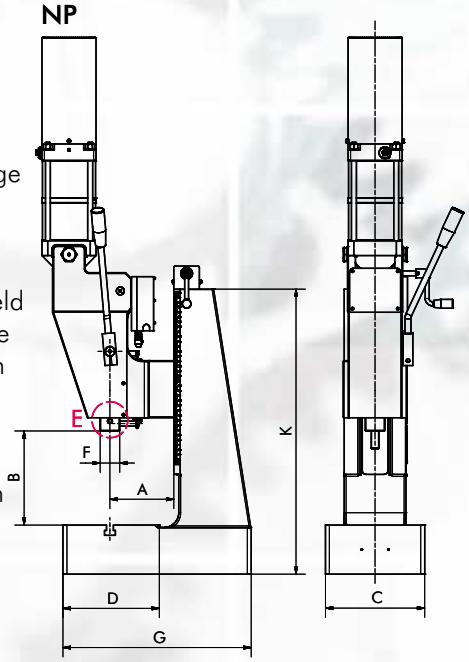
The accessories

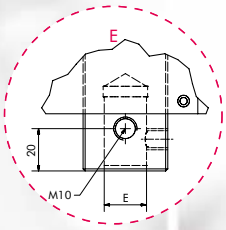


Manually assisted pneumatic toggle presses

Manually assisted toggle presses are used when, due to particular features of the workpiece, both hands cannot be engaged in two-handed operation at the beginning of the working stroke and a large force still has to be achieved at the end of the stroke.
With the NP manually assisted pneumatic toggle presses, safe working is possible in such cases. The ram is lowered to the power stroke position using the manual lever and the workpiece is then held by the force of the lever. A sensor registers this position. At the same time, the workpiece can be released and a pushbutton pressed with the second hand which then initiates the power stroke.
The power stroke can only be initiated when both hands are engaged. Hence, if the manual lever were released, for example, the ram would be raised by a safety mechanism and the permission for the power stroke in the controller would thus be removed.
The length of the pneumatic power stroke of NP manually assisted pneumatic toggle presses and therefore the TDC position can be steplessly adjusted with high precision from 0 mm - 6 mm stroke length using the standard fine adjustment facility.
As a result of the special transmission mechanism, a constant power stroke is available over the whole length of the stroke.

NP



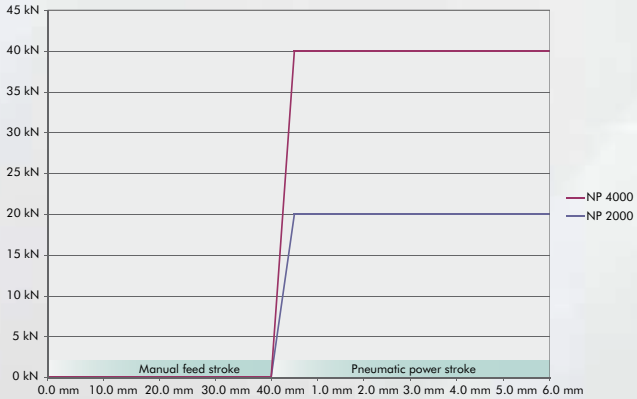




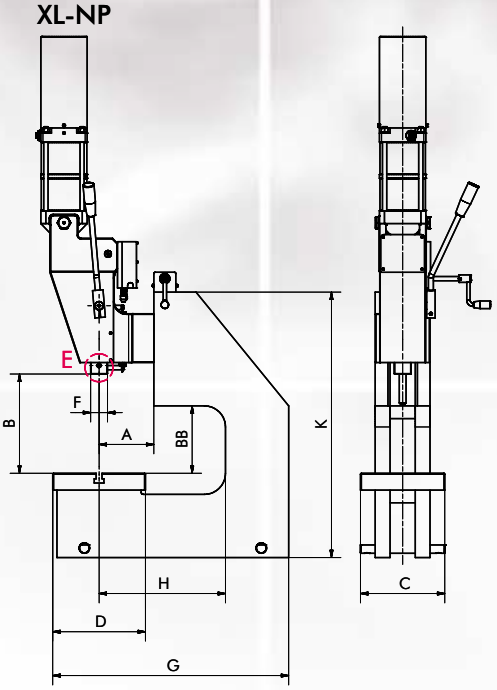
Complete unit



Stroke adjustment



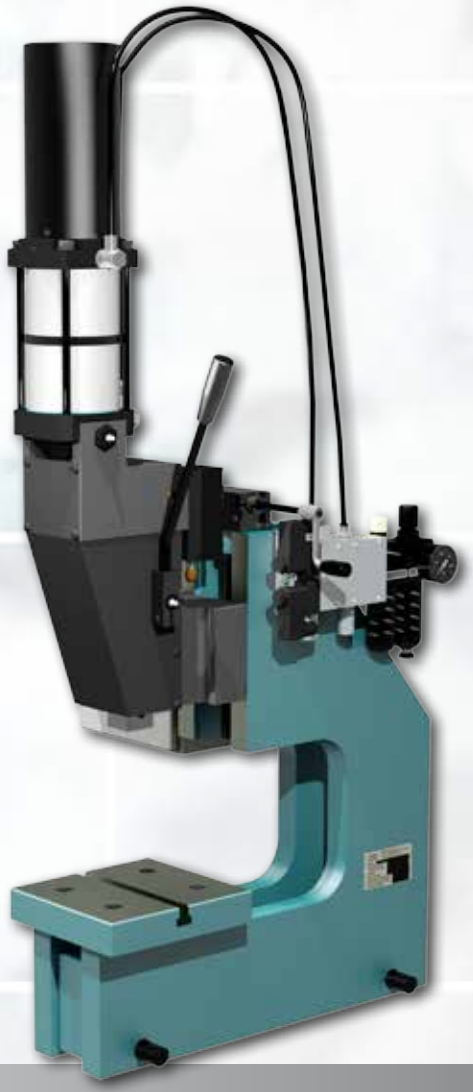
XL-NP



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NP 2000



XL-NP 4000

Type			NP 2000	NP 4000	XL-NP 2000	XL-NP 4000
Capacity at 6 bar		kN	20	40	20	40
Manual feed stroke		mm	40	40	40	40
Pneumatic power stroke		mm	0 - 6	0 - 6	0 - 6	0 - 6
Throat	A	mm	130	130	130	130
Throat C-frame	H	mm	-	-	300	300
Daylight	B	mm	58 - 325	58 - 325	125 - 265	125 - 265
Daylight C-frame	BB	mm	-	-	158	158
Table size	CxD	mm	200 x 190	200 x 190	200 x 220	200 x 220
T-slot width similar to DIN 650		mm	14	14	14	14
Ram bore Ø x Depth	E	mm	20^{H7} x 25	20^{H7} x 25	20^{H7} x 25	20^{H7} x 25
Ram Ø	F	mm	40 x 40	40 x 40	40 x 40	40 x 40
Air connection			G 3/8"	G 3/8"	G 3/8"	G 3/8"
Air consumption/cm cyl. stroke		l	0.5	0.75	0.5	0.75
Space requirement	CxG	mm	200 x 385	200 x 385	200 x 560	200 x 560
Stand height	K	mm	580	580	630	630
Weight		kg	ca. 95	ca. 96	ca. 135	ca. 136

Direct-acting pneumatic presses

DA range

DA presses are the logical implementation of modern press technology for direct-acting pneumatic presses. Due to their modular design, exactly the size needed for the application can be selected, thus optimising the price/performance ratio.
Standard stroke lengths from 40 mm to 120 mm are available in 20 mm steps. Special lengths can be provided on request.
Direct-acting pneumatic presses produce a constant force over the whole stroke length. All direct-acting pneumatic presses can be provided as automation components or with **mäder** controllers for individual workstations.
The processing of sheet metal, printed circuit boards and other bulky components requires presses to have a larger throat. XL-DA presses with 250 mm and 300 mm throat enable even these workpieces to be processed.
L-DA presses with up to 350 mm daylight are used for tall parts which require more vertical space. For dimensions which lie outside the standard, presses with press frames in welded design can be manufactured to your specifications.
DA presses are practically maintenance-free, as all moving parts are mounted in bearings. Cylinders are pre-greased and are therefore suitable for oil-free operation.

Quality features:

- Anti-twist, hard-chrome-plated ram guided in Teflon bushes
- Simple adjustment of the height of the press head using a threaded spindle and right-angle gearbox
- Side-mounted measuring strip for fast reproduction of settings when changing the tool
- Practically maintenance-free double-acting cylinder
- Adjustable cylinder end-position damping
- Low noise: less than 75 dB





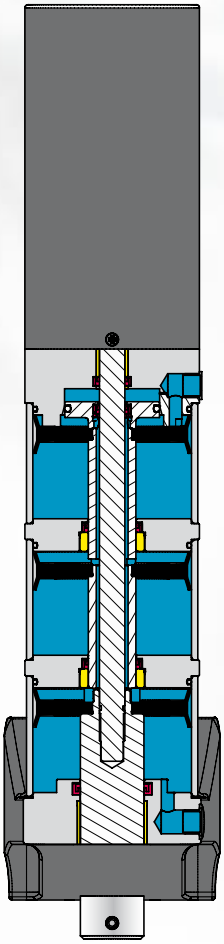
Sensors are not included

Adjusting the stroke of DA presses

DA presses are fitted as standard with an innovative, precise and easy-to-use system which enables accurate stroke adjustment and protects the ram against twisting.

Operation:

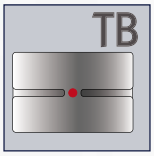
- The press depth can be adjusted to a reading accuracy of 0.01 mm over the whole stroke length with only one scale nut (A). The stroke length can be read off using the side scale (B) and the vernier on the scale nut (A).
- The position of the ram can be checked by means of reed contacts (C) which are slid onto the standard scale.
- The sensors do not have to be readjusted when the stroke length is changed, as the stroke length control magnets always move to the same end positions.

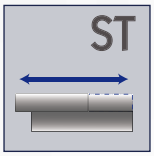


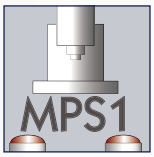
Tandem cylinders

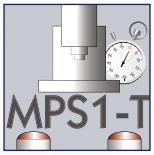
The energy-efficient tandem cylinder design is used for larger forces. Several pneumatic cylinders are connected in tandem, thus increasing the force of the cylinder accordingly. The air consumption is optimised, as the return stroke is only via one cylinder chamber. The press can be operated using only two air connections, as the air is channelled within the pneumatic cylinder.

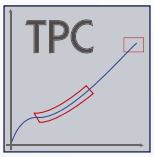
The accessories

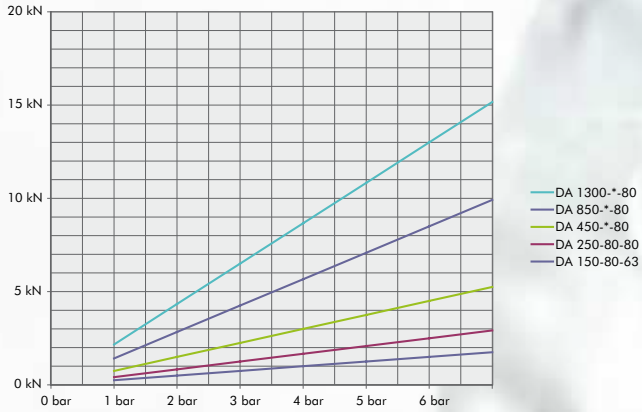


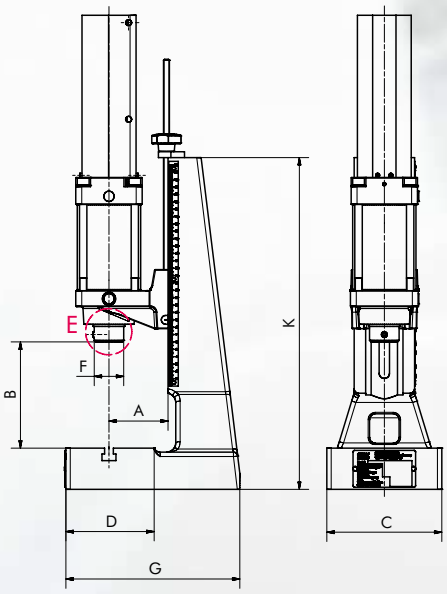


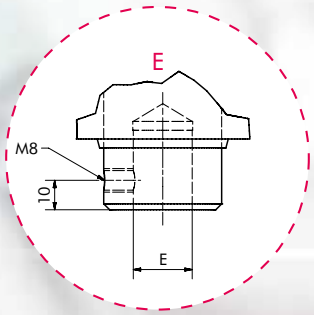












For details of fine stroke adjustment see page 31



DA 150-80-63 DA 250-80-80 L-DA 1300-40-80

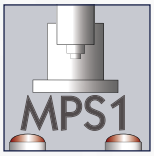
Type			DA 150-80-63	DA 250-80-80	L-DA 250-80-80	DA 450-*-80	L-DA 450-*-80	DA 850-*-80	L-DA 850-*-80	L-DA 1300-*-80
Capacity at 6 bar		kN	1.5	2.5	2.5	4.5	4.5	8.5	8.5	13
Working stroke max.*		mm	80	80	80	40/60/80/ 100/120	40/60/80/ 100/120	40/60/80/ 100/120	40/60/80/ 100/120	40/60/80/ 100/120
Throat	A	mm	63	80	80	80	80	80	80	80
Daylight	B	mm	40 - 215	70 - 280	65 - 390	58 - 243	65 - 350	58 - 243	65 - 350	65 - 350
Table size	CxD	mm	100 x 65	157 x 115	157 x 115	157 x 115	157 x 115	157 x 115	157 x 115	157 x 115
T-slot width similar to DIN 650		mm	10	12	12	12	12	12	12	12
Ram bore Ø x Depth	E	mm	16^{H7} x 25	20^{H7} x 25	20^{H7} x 25	20^{H7} x 25	20^{H7} x 25	20^{H7} x 25	20^{H7} x 25	20^{H7} x 25
Ram Ø	F	mm	30	40	40	40	40	40	40	40
Air connection			G 1/4“	G 1/4“	G 1/4“	G 3/8“	G 3/8“	G 3/8“	G 3/8“	G 3/8“
Air consumption/cm cyl. stroke		l	0.2	0.3	0.3	1.0	1.0	1.5	1.5	2.1
Space requirement	CxG	mm	110 x164	157 x 237	155 x 280	155 x 237	156 x 275	155 x 237	156 x 275	156 x 275
Stand height	K	mm	355	450	570	450	570	450	570	570
Weight		kg	ca. 11.5	ca. 25	ca. 31	ca. 28	ca. 34	ca. 31	ca. 37	ca. 40

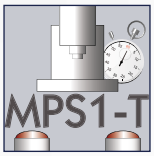
Extras (siehe Seite 5)	Please specify when ordering.							
Table bore 12^{H7}	TB	TB	TB	TB	TB	TB	TB	TB

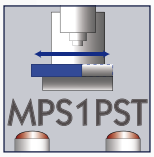
* Specify the stroke length when ordering.

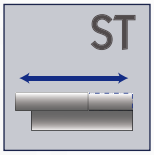
Valve and service unit only included with controller. Design may vary.

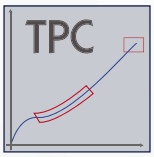
The accessories

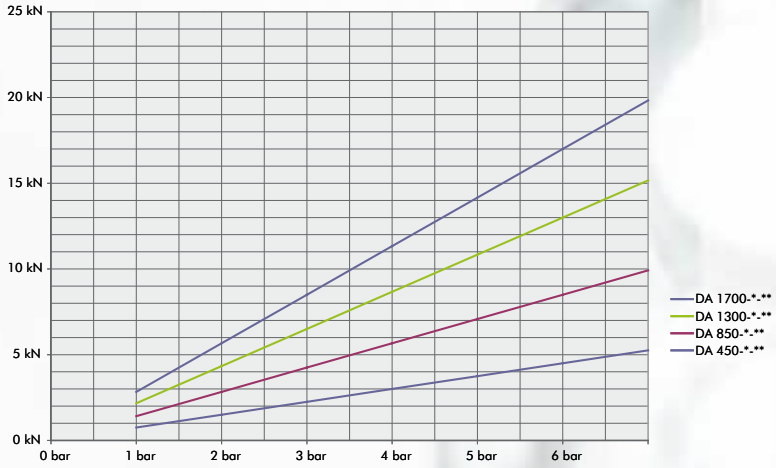


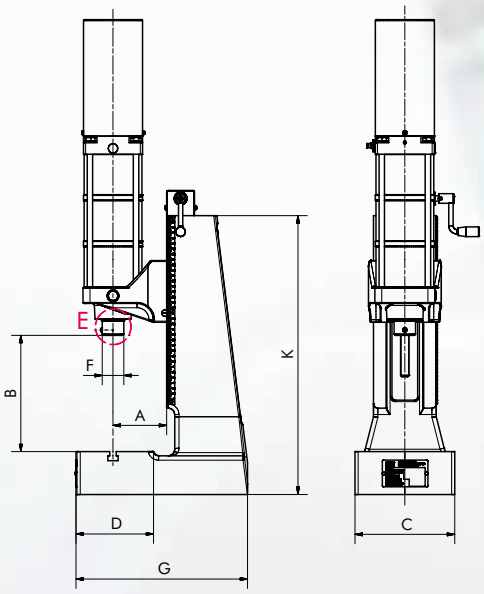


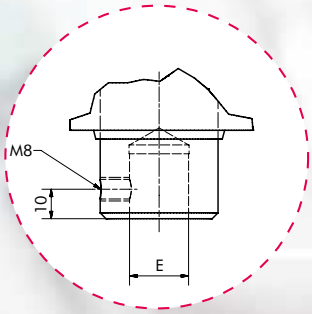










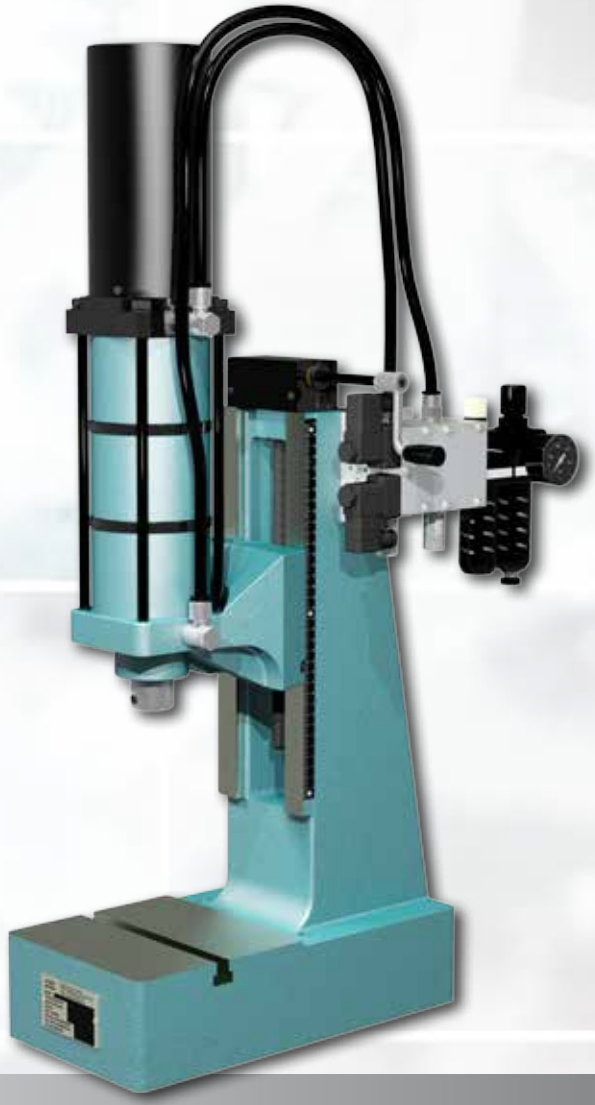


For details of fine stroke adjustment see page 31

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DA 850-40-100



DA 1300-40-130

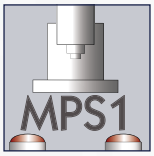
Type			DA 450-*-100	DA 850-*-100	DA 1300-*-100	DA 1700-*-100
Capacity at 6 bar		kN	4.5	8.5	13.0	17.0
Working stroke max.*		mm	40/60/80/ 100/120	40/60/80/ 100/120	40/60/80/ 100/120	40/60/80/ 100/120
Throat	A	mm	100	100	100	100
Daylight	B	mm	60 - 285	60 - 285	60 - 285	60 - 285
Table size	CxD	mm	185 x 145	185 x 145	185 x 145	185 x 145
T-slot width similar to DIN 650		mm	12	12	12	12
Ram bore Ø x Depth	E	mm	20^{H7} x 25	20^{H7} x 25	20^{H7} x 25	20^{H7} x 25
Ram Ø	F	mm	40	40	40	40
Air connection			G 3/8"	G 3/8"	G 3/8"	G 3/8"
Air consumption/cm Cyl. stroke		l	1.0	1.5	2.1	2.6
Space requirement	CxG	mm	185 x 320	185 x 320	185 x 320	185 x 320
Stand height	K	mm	520	520	520	520
Weight		kg	ca. 62	ca. 65	ca. 68	ca. 71

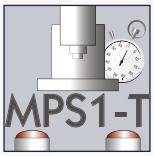
DA 450-*130	DA 850-*-130	DA 1300-*-130	DA 1700-*-130
4.5	8.5	13.0	17.0
40/60/80/ 100/120	40/60/80/ 100/120	40/60/80/ 100/120	40/60/80/ 100/120
130	130	130	130
70 - 325	70 - 325	70 - 325	70 - 325
200 x 190	200 x 190	200 x 190	200 x 190
14	14	14	14
20^{H7} x 25	20^{H7} x 25	20^{H7} x 25	20^{H7} x 25
40	40	40	40
G 3/8"	G 3/8"	G 3/8"	G 3/8"
1.0	1.5	2.1	2.6
200 x 385	200 x 385	200 x 385	200 x 385
580	580	580	580
ca. 77	ca. 80	ca. 83	ca. 86

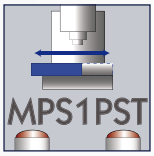
* Specify the stroke length when ordering.

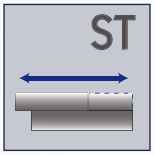
Valve and service unit only included with controller. Design may vary.

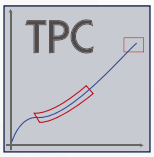
The accessories

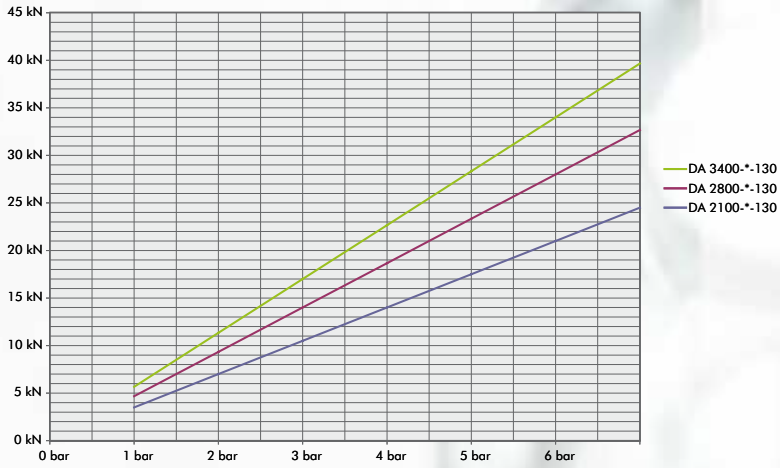


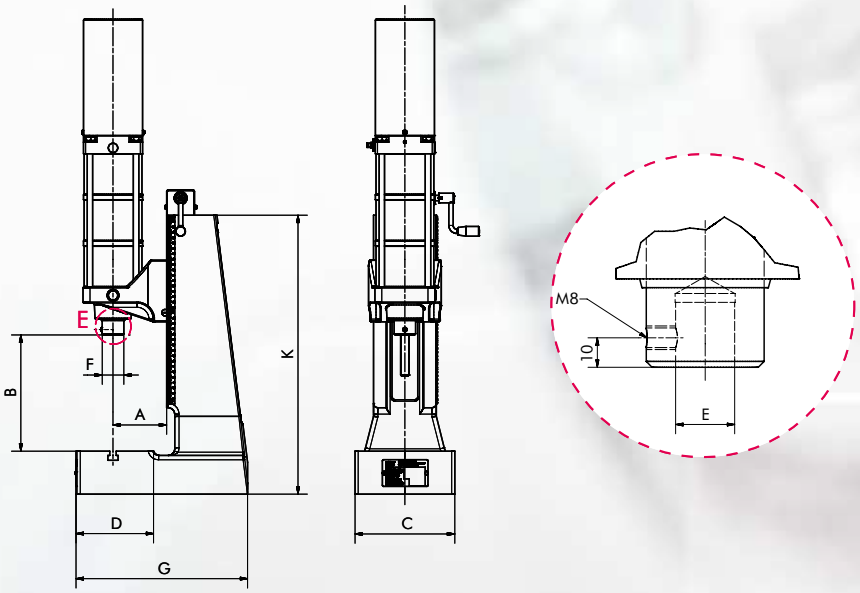












For details of fine stroke adjustment see page 31



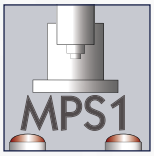
DA 3400-40-130

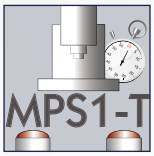
Type			DA 2100-*-130	DA 2800-*130	DA 3400-*-130
Capacity at 6 bar		kN	21.0	28.0	34.0
Working stroke max.*		mm	40/60/80/100/120	40/60/80/100/120	40/60/80/100/120
Throat	A	mm	130	130	130
Daylight	B	mm	75 - 330	75 - 330	75 - 330
Table size	CxD	mm	200 x 190	200 x 190	200 x 190
T-slot width similar to DIN 650		mm	14	14	14
Ram bore Ø x Depth	E	mm	20^{H7} x 25	20^{H7} x 25	20^{H7} x 25
Ram Ø	F	mm	40	40	40
Air connection			G 3/8“	G 3/8“	G 3/8“
Air consumption/cm cyl. stroke		l	3.0	3.7	4.5
Space requirement	CxG	mm	200 x 385	200 x 385	200 x 385
Stand height	K	mm	580	580	580
Weight		kg	ca. 92	ca. 99	ca. 105

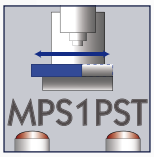
* Specify the stroke length when ordering.

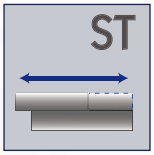
Valve and service unit only included with controller. Design may vary.

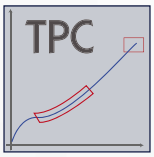
The accessories

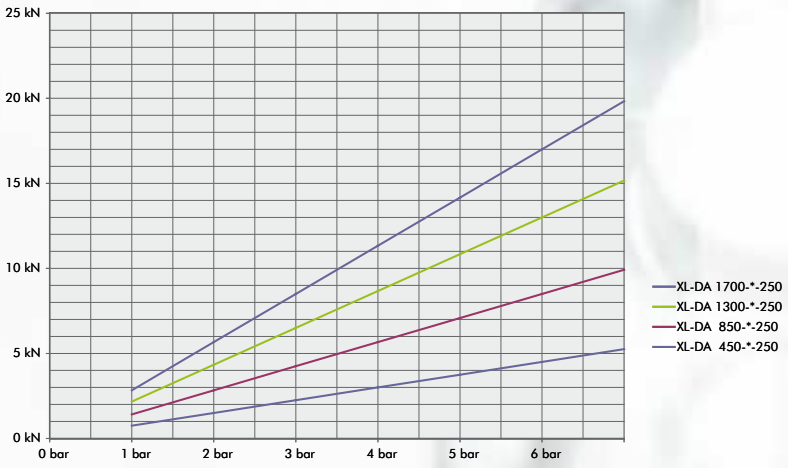


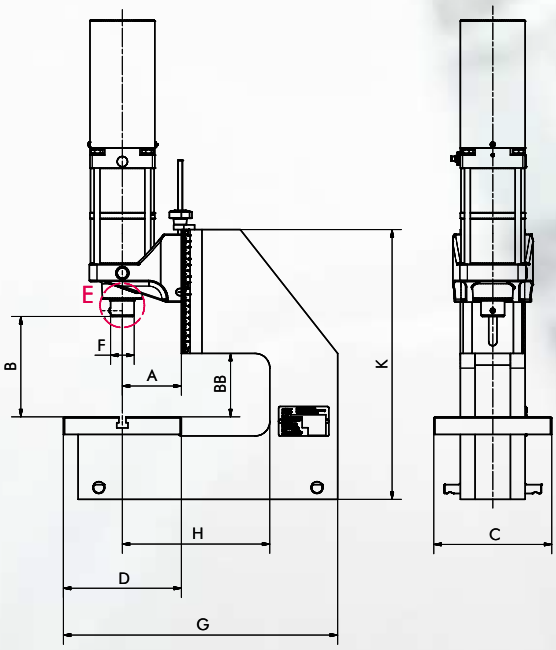


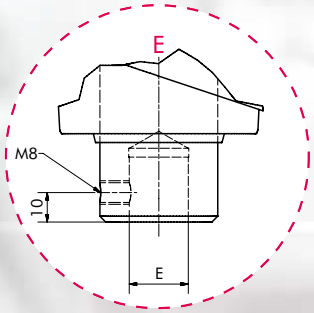












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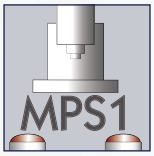
XL-DA 1300-40-250

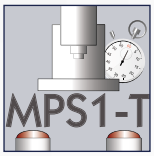
Type			XL-DA 450-*-250	XL-DA 850-*-250	XL-DA 1300-*-250	XL-DA 1700-*-250
Capacity at 6 bar		kN	4.5	8.5	13.0	17.0
Working stroke max.*		mm	40/60/80/100/120	40/60/80/100/120	40/60/80/100/120	40/60/80/100/120
Throat	A	mm	100	100	100	100
Throat C-frame	H	mm	250	250	250	250
Daylight	B	mm	75 - 175	75 - 175	75 - 175	75 - 175
Daylight C-frame	BB	mm	100	100	100	100
Table size	CxD	mm	200 x 200	200 x 200	200 x 200	200 x 200
T-slot width similar to DIN 650		mm	12	12	12	12
Ram bore Ø x Depth	E	mm	20^{H7} x 25	20^{H7} x 25	20^{H7} x 25	20^{H7} x 25
Ram Ø	F	mm	40	40	40	40
Air connection			G 3/8“	G 3/8“	G 3/8“	G 3/8“
Air consumption/cm cyl. stroke		l	1.0	1.5	2.1	2.6
Space requirement	CxG	mm	200 x 465	200 x 465	200 x 465	200 x 465
Stand height	K	mm	465	465	465	465
Weight		kg	ca. 57	ca. 60	ca. 63	ca. 66

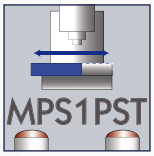
* Specify the stroke length when ordering.

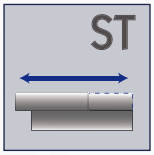
Valve and service unit only included with controller. Design may vary.

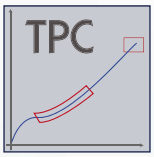
The accessories

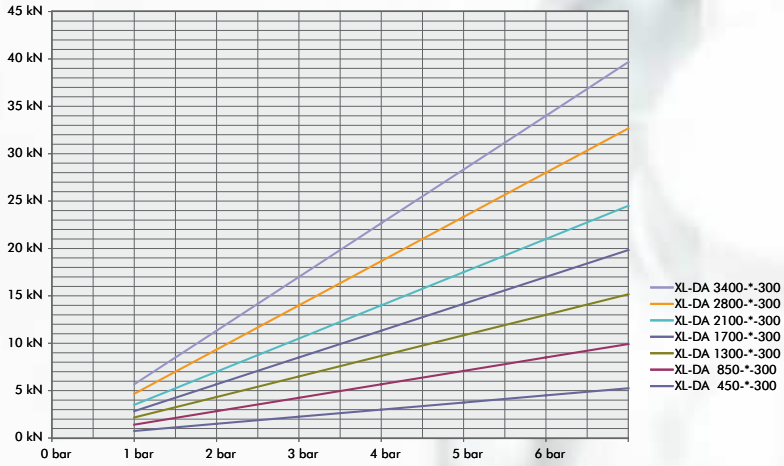


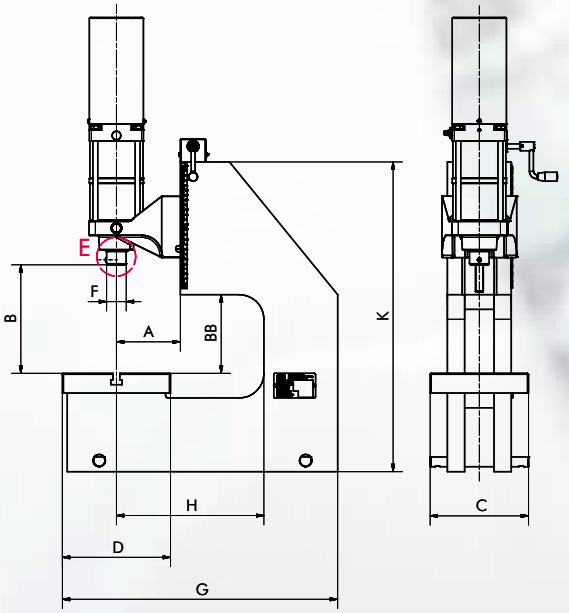


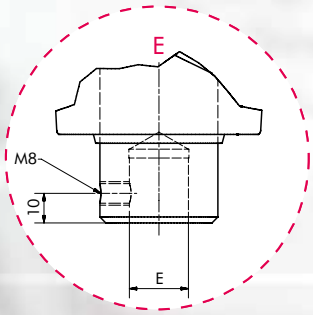












For details of fine stroke adjustment see page 31



XL-DA 2800-40-300

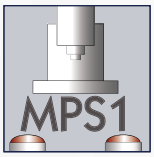
Type			XL-DA 450-*-300	XL-DA 850-*-300	XL-DA 1300-*-300	XL-DA 1700-*-300	XL-DA 2100-*-300	XL-DA 2800-*-300	XL-DA 3400-*-300
Capacity at 6 bar		kN	4.5	8.5	13.0	17.0	21.0	28.0	34.0
Working stroke max.*		mm	40/60/80/100/120	40/60/80/100/120	40/60/80/100/120	40/60/80/100/120	40/60/80/100/120	40/60/80/100/120	40/60/80/100/120
Throat	A	mm	130	130	130	130	130	130	130
Throat C-frame	H	mm	300	300	300	300	300	300	300
Daylight	B	mm	140 - 275	140 - 275	140 - 275	140 - 275	130 - 275	130 - 275	130 - 275
Daylight C-frame	BB	mm	158	158	158	158	158	158	158
Table size	CxD	mm	200 x 220	200 x 220	200 x 220	200 x 220	200 x 220	200 x 220	200 x 220
T-slot width similar to DIN 650		mm	14	14	14	14	14	14	14
Ram bore Ø x Depth	E	mm	20^{H7} x 25	20^{H7} x 25	20^{H7} x 25	20^{H7} x 25	20^{H7} x 25	20^{H7} x 25	20^{H7} x 25
Ram Ø	F	mm	40	40	40	40	40	40	40
Air connection			G 3/8"	G 3/8"	G 3/8"	G 3/8"	G 3/8"	G 3/8"	G 3/8"
Air consumption/cm Cyl. stroke		l	1.0	1.5	2.1	2.6	3.0	3.7	4.5
Space requirement	CxG	mm	200 x 560	200 x 560	200 x 560	200 x 560	200 x 560	200 x 560	200 x 560
Stand height	K	mm	630	630	630	630	630	630	630
Weight		kg	ca. 135	ca. 138	ca. 141	ca. 144	ca. 141	ca. 158	ca. 164

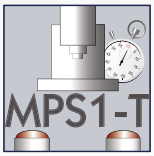
* Specify the stroke length when ordering.

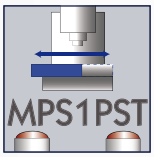
Valve and service unit only included with controller. Design may vary.

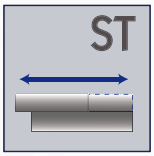
Direct-acting pneumatic presses ●

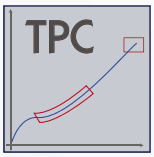
The accessories*



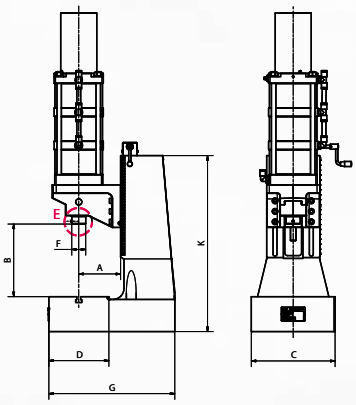




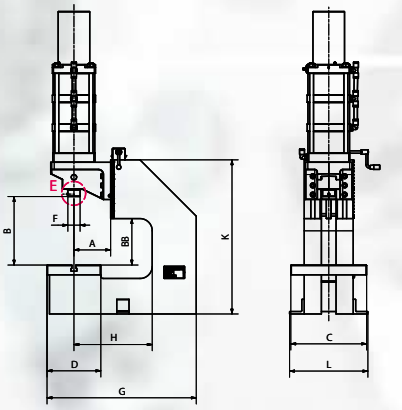




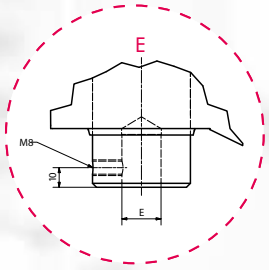




DA Type



XL-DA Type



For details of fine stroke adjustment see page 31

DA Series with round ram and 150 mm throat
XL-DA Series with round ram and 300 mm throat



DA 5600-40-150 XL-DA 5600-40-300

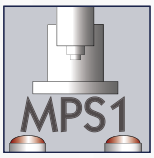
Type			DA 3300-*-150	DA 4500-*-150	DA 5600-*-150	XL-DA 3300-*-300	XL-DA 4500-*-300	XL-DA 5600-*-300
Capacity at 6 bar		kN	33	45	56	33	45	56
Working stroke max.*		mm	40/60/80/100/120	40/60/80/100/120	40/60/80/100/120	40/60/80/100/120	40/60/80/100/120	40/60/80/100/120
Throat	A	mm	150	150	150	150	150	150
Throat C-frame	H	mm				300	300	300
Daylight	B	mm	155 -365	155 -365	155 -365	195 - 290	195 - 290	195 - 290
Daylight C-frame	BB	mm				190	190	190
Table size	CxD	mm	300 x 210	300 x 210	300 x 210	310 x 220	310 x 220	310 x 220
T-slot width similar to DIN 650		mm	14	14	14	16	16	16
Ram bore Ø x Depth	E	mm	20^{H7} x 25	20^{H7} x 25	20^{H7} x 25	20^{H7} x 25	20^{H7} x 25	20^{H7} x 25
Ram Ø	F	mm	50	50	50	50	50	50
Air connection			G 1/2“	G 1/2“	G 1/2“	G 1/2“	G 1/2“	G 1/2“
Air consumption/cm cyl. stroke		l	5.2	6.5	7.9	5.2	6.5	7.9
Space requirement	CxG	mm	300 x 455	300 x 455	300 x 455	320 x 610	320 x 610	320 x 610
Stand height	K	mm	630	630	630	630	630	630
Weight		kg	227	233	239	300	306	312

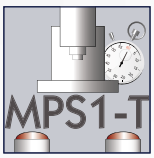
* Specify the stroke length when ordering.

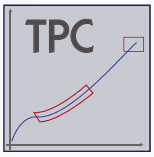
Valve and service unit only included with controller. Design may vary.

DAP Portal Press

The accessories



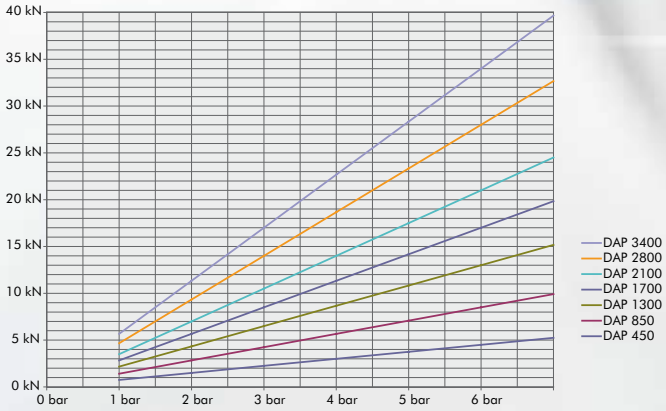


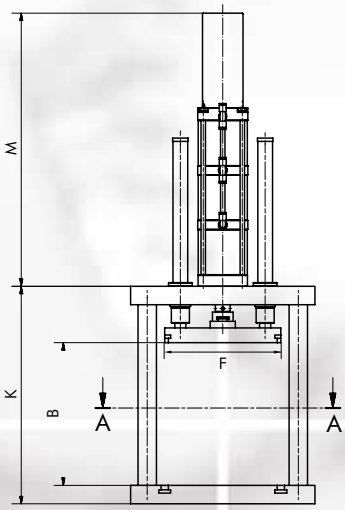


The DAP Portal Press is made up of standard **mäder** components: the DAF press cylinder and the portal frame with ram plate. The cylinder used generates force constantly over the entire stroke length.
mäder DAP Portal Presses are available both as automation components or with **mäder** controllers of type MPS-1 and the TPC-MIDI process monitor.

Quality features

- Large force range from 4.5 kN to 34 kN
- Stable construction
- Anti-twist locked and guided ram plate with two columns
- Ram plate enables flat pressure
- Cross-shaped slots for secure accommodation of tools
- Large die space
- Daylight can be fully occupied by using spacers
- On request, the Portal Press can also be supplied with other dimensions





For details of fine stroke adjustment see page 31

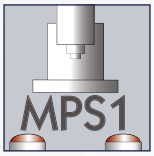
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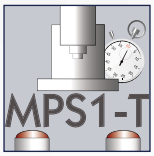


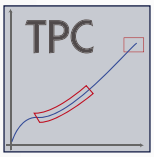
Type			DAP 450-80	DAP 850-80	DAP 1300-80	DAP 1700-80	DAP 2100-80	DAP 2800-80	DAP 3400-80
Capacity		kN	4.5	8.5	13	17	21	28	34
Return force		kN	4	4	4	4	20	27	33
Working stroke		mm	80	80	80	80	80	80	80
Ram plate area	F	mm	315 x 315	315 x 315	315 x 315	315 x 315	315 x 315	315 x 315	315 x 315
Maximum daylight	B	mm	387	387	387	387	387	387	387
Working surface	L x D	mm	360 x 175	360 x 175	360 x 175	360 x 175	360 x 175	360 x 175	360 x 175
Slot width similar to DIN 650		mm	14	14	14	14	14	14	14
Air connection			G3/8“	G3/8“	G3/8“	G3/8“	G3/8“	G3/8“	G3/8“
Air consumption per 10 mm stroke		l	1.0	1.5	2.1	2.6	3.0	3.7	4.5
Space required	C x G	mm	500 x 315	500 x 315	500 x 315	500 x 315	500 x 315	500 x 315	500 x 315
Frame height	K	mm	590	590	590	590	590	590	590
Cylinder height	M	mm	443	569	695	821	741	889	1037
Weight		kg	197	200	203	206	212	219	226

DAF Direct-acting press cylinders

The accessories

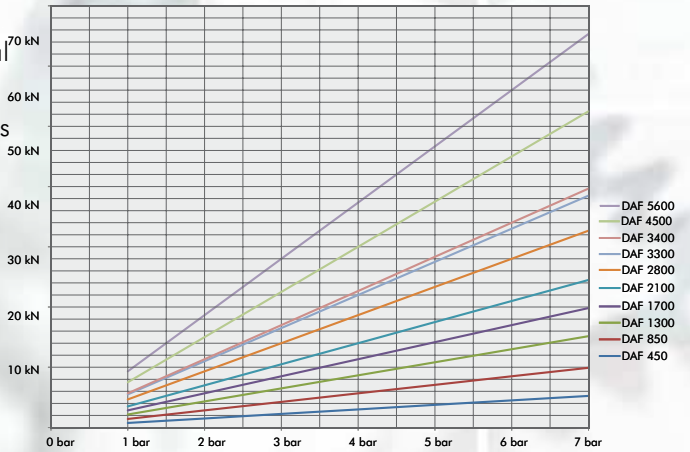






DAF direct-acting press cylinders with flange have been designed for flexible use in special machines. DAF press cylinders come with all the advantages of modern pneumatic presses as standard:

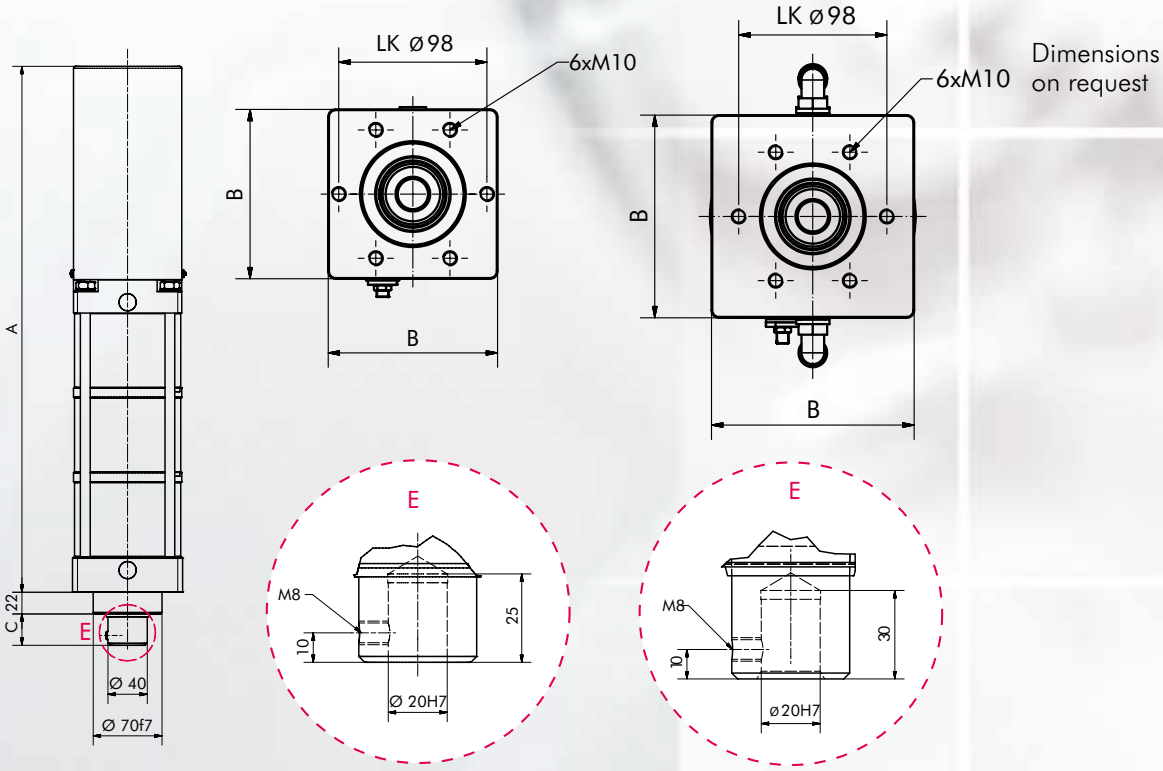
- Stepless adjustment of stroke length
- Adjustable end-position damping
- Tool mounting hole
- Easy to automate



DAF 450
DAF 850
DAF 1300
DAF 1700

DAF 2100
DAF 2800
DAF 3400

DAF 1100
DAF 2200
DAF 3300
DAF 4500
DAF 5600



Dimensions on request

For details of fine stroke adjustment see page 31

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DAF cylinders

Type		DAF 450	DAF 850	DAF 1300	DAF 1700
Capacity at 6 bar	kN	4.5	8.5	13	17
Return force at 6 bar	kN	4	4	4	4
Stroke max.*	mm	40/60/80/100/120	40/60/80/100/120	40/60/80/100/120	40/60/80/100/120
A	mm	363	449	535	621
B	mm	112	112	112	112
C	mm	32	32	32	32

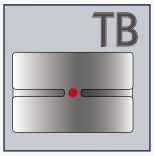
Type		DAF 2100	DAF 2800	DAF 3400
Capacity at 6 bar	kN	21	28	34
Return force at 6 bar	kN	20	27	33
Stroke max.*	mm	40/60/80/100/120	40/60/80/100/120	40/60/80/100/120
A	mm	581	689	797
B	mm	134	134	134
C	mm	38	38	38

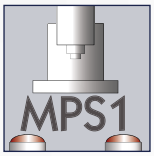
Type		DAF 1100	DAF 2200	DAF 3300	DAF 4500	DAF 5600
Capacity at 6 bar	kN	11	22	33	45	56
Return force at 6 bar	kN	10	10	10	10	10
Stroke max.*	mm	40/60/80/100/120	40/60/80/100/120	40/60/80/100/120	40/60/80/100/120	40/60/80/100/120

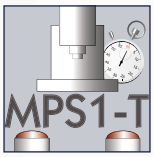
* Specify the stroke length when ordering.

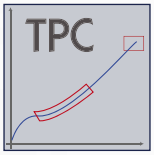
MicroPress® with square ram

The accessories





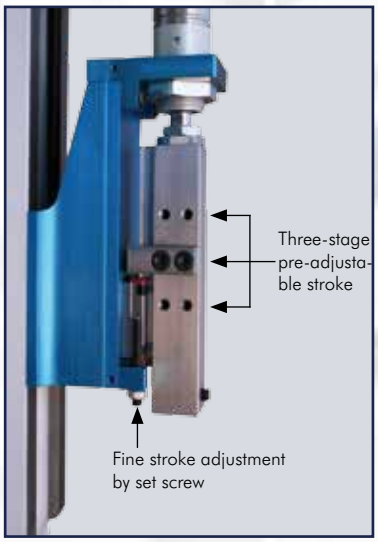


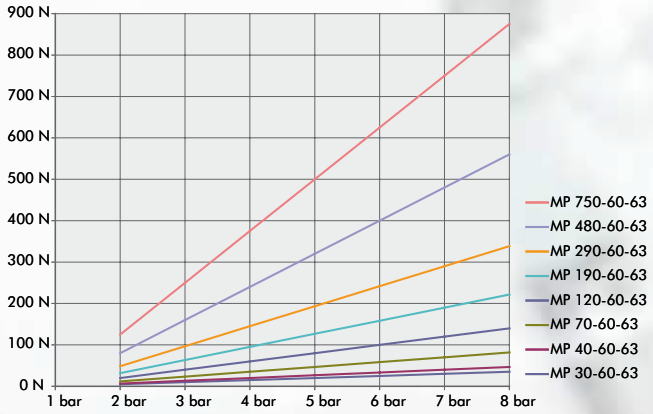


MicroPress® is a pneumatic press for smaller capacities with a robust press base. MicroPress® types are ideal for joining and shaping applications where components require low pressure and precise stroke depth. Examples are applications in medical engineering, electronics manufacturing and precision mechanics.

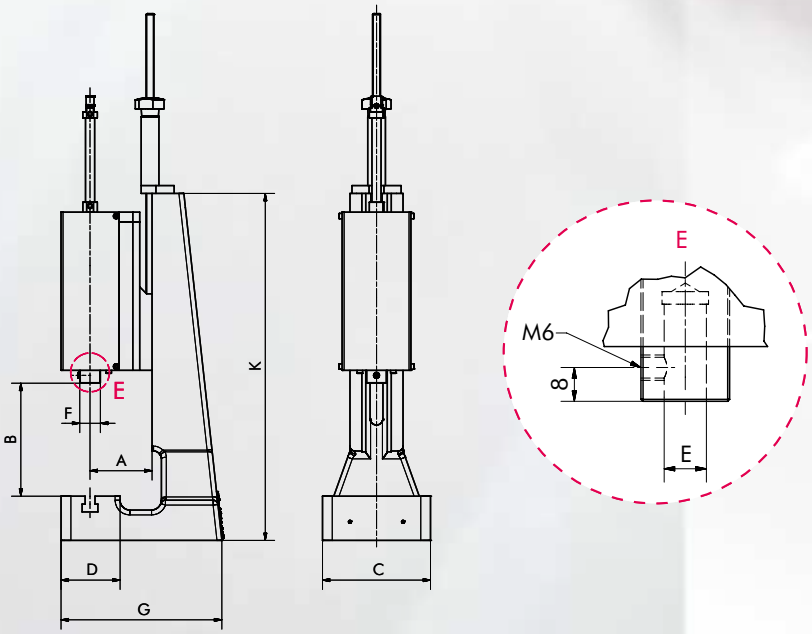
Quality features:

- Square ram
- Precision ram guide
- Adjustable stroke length
- Height-adjustable press head
- Practically maintenance-free cylinder
- Low noise









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MicroPress 190-60-63

Type MicroPress			MP 30-60-63	MP 40-60-63	MP 70-60-63	MP 120-60-63	MP 190-60-63	MP 290-60-63	MP 480-60-63	MP 750-60-63
Capacity at 6 bar		N	30	40	70	120	190	290	480	750
Working stroke max.*		mm	60	60	60	60	60	60	60	60
Throat	A	mm	63	63	63	63	63	63	63	63
Daylight	B	mm	43 - 208	43 - 208	43 - 208	43 - 208	43 - 208	43 - 208	43 - 208	43 - 208
Table size	CxD	mm	100 x 65	100 x 65	100 x 65	100 x 65	100 x 65	100 x 65	100 x 65	100 x 65
T-slot width similar to DIN 650		mm	10	10	10	10	10	10	10	10
Ram bore Ø x Depth	E	mm	10^{H7} x 25	10^{H7} x 25	10^{H7} x 25	10^{H7} x 25	10^{H7} x 25	10^{H7} x 25	10^{H7} x 25	10^{H7} x 25
Ram Ø	F	mm	21 x 21	21 x 21	21 x 21	21 x 21	21 x 21	21 x 21	21 x 21	21 x 21
Air connection			M5	M5	M5	M5	$G\frac{1}{8}$"	$G\frac{1}{8}$"	$G\frac{1}{8}$"	$G\frac{1}{8}$"
Air consumption/ 60 mm stroke		l	0.04	0.06	0.08	0.16	0.24	0.38	0.64	1.0
Space requirement	CxG	mm	110 x 164	110 x 164	110 x 164	110 x 164	110 x 164	110 x 164	110 x 164	110 x 164
Stand height	K	mm	355	355	355	355	355	355	355	355
Weight		kg	ca. 9.5	ca. 10	ca. 10	ca. 11	ca. 11	ca. 12	ca. 12	ca. 12

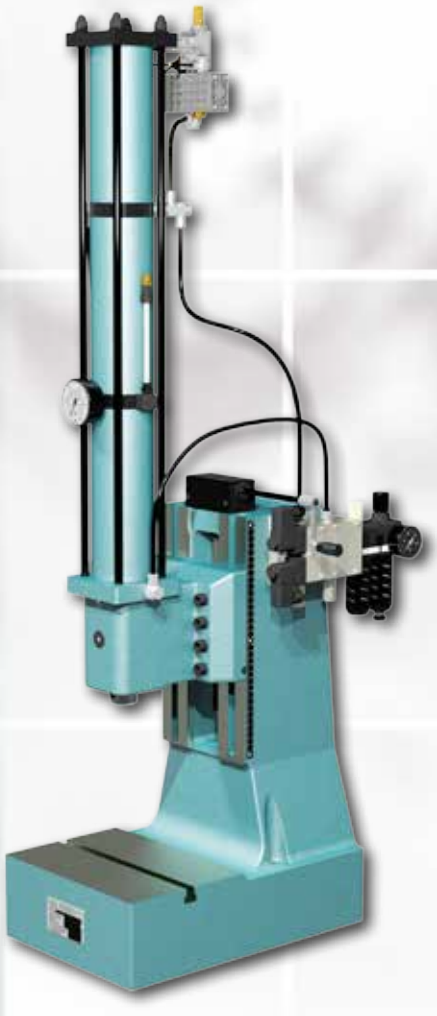
Accessories (see Page 7)	Please specify when ordering.							
Table bore 12^{H7}	TB	TB	TB	TB	TB	TB	TB	TB

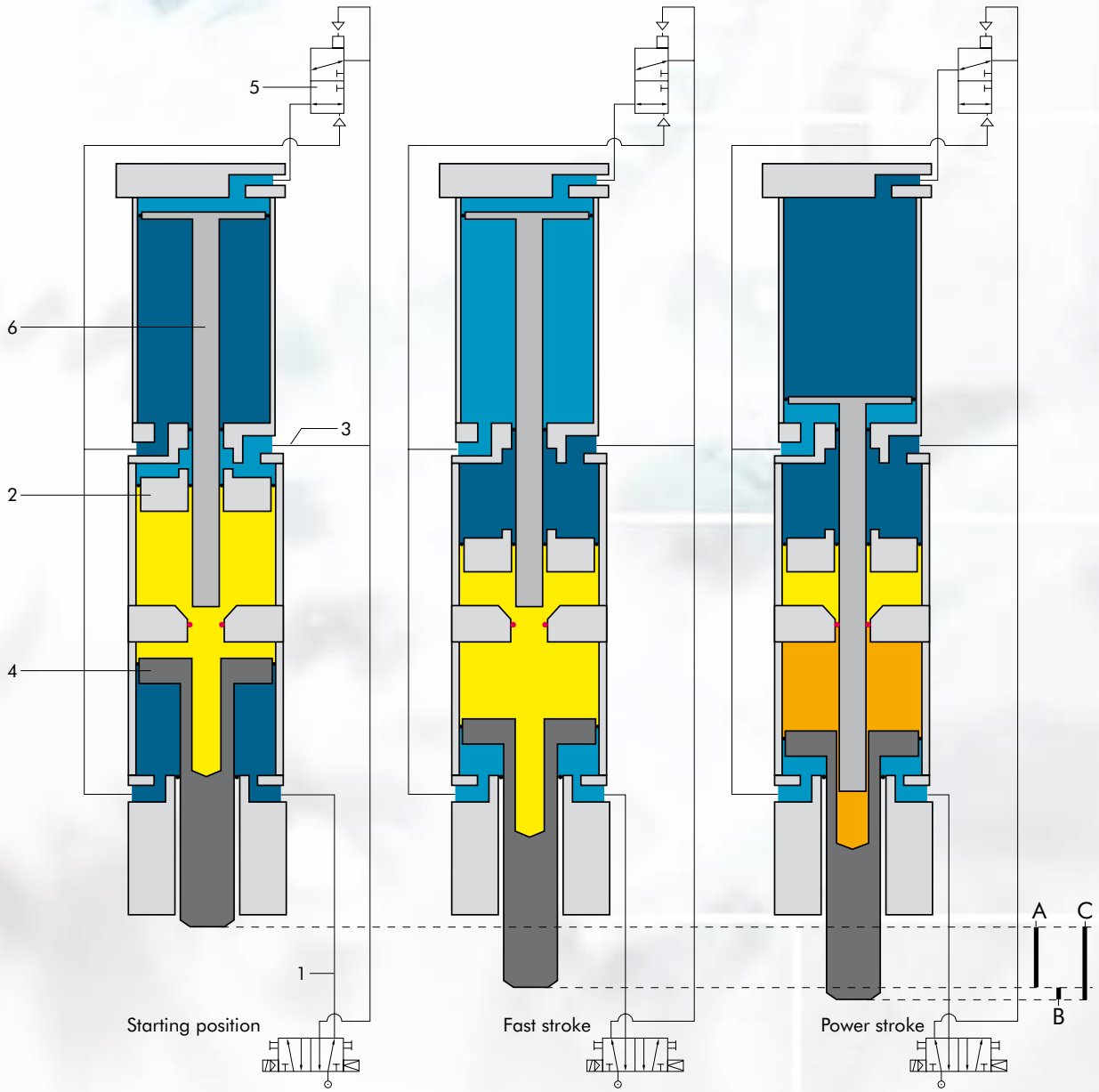
Hydropneumatic presses

mäder hydropneumatic presses are initially driven by compressed air only and activate the hydraulic power stroke automatically. They combine the advantages of pneumatic and hydraulic presses. In the pneumatically driven fast stroke, the workpiece is approached rapidly with low force. The hydraulic power stroke is then activated automatically when resistance is encountered.
Because of this, the applied energy is used to the most economic effect particularly in these models. The operation of hydropneumatic presses is described on the following page. As **mäder** hydropneumatic presses do not need a hydraulic power pack, they can also be used where space is at a premium. All hydropneumatic presses can be provided with the standard **mäder** controller or with customer-specified controllers.
The processing of sheet metal, printed circuit boards and other bulky components requires presses to have a larger throat. XL-HP presses with 300 mm throat enable even these parts to be processed. For dimensions which lie outside the standard, presses with stands in welded design can be manufactured to your specifications.

Quality features:

- Anti-twist, hardened ram
- Long, honed ram guide for maximum precision
- Two power stroke lengths provided as standard
- Simple adjustment of the height of the press head using a threaded spindle and right-angle gearbox
- Side-mounted measuring strip for fast reproduction of settings when changing the tool
- Low noise: less than 75 dB





Oil without pressure
Oil under pressure
Air without pressure
Air under pressure

A = Fast stroke
B = Power stroke
C = Total stroke

Description of operation:

Starting position:
Compressed air is applied to the compressed air line (1); the rest of the system is unpressurised.

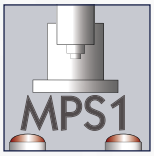
Fast stroke (A):
Pressure is applied to the fast stroke piston (2) via the compressed air connection (3). The piston moves out and pushes the power stroke piston (4) down by means of the oil at high speed onto the workpiece.

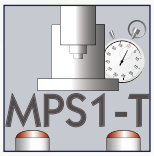
Power stroke (B):
The changeover unit (5) now switches over automatically; the plunger (6) is pressurised with compressed air, moves out and closes the oil chamber causing the power transmission to take place. The ram (4) moves out at reduced speed and with increased force in the power stroke.

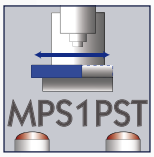
Return stroke (C):
System reversal; all pistons return simultaneously with pneumatic force.

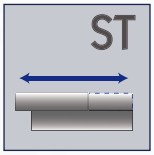
Hydropneumatic presses

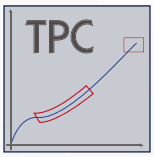
The accessories

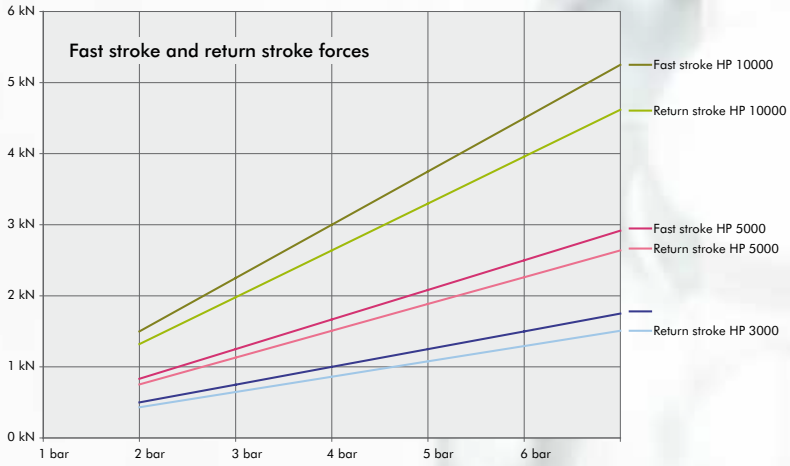


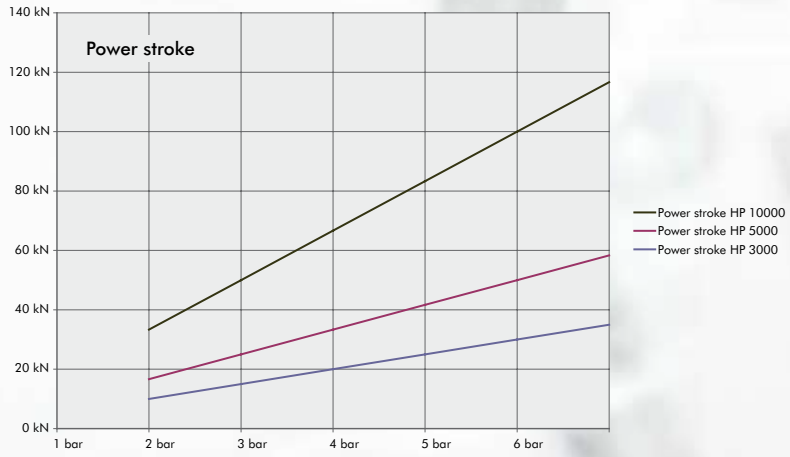




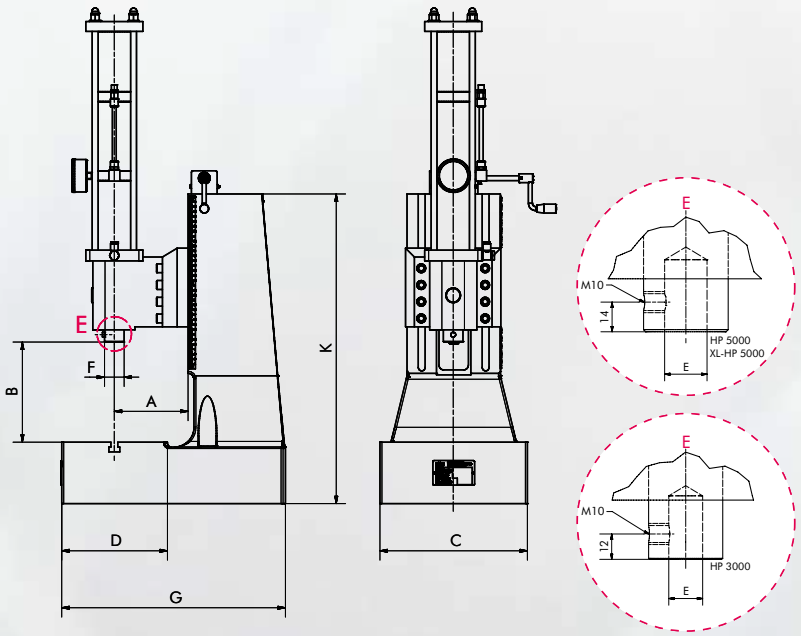




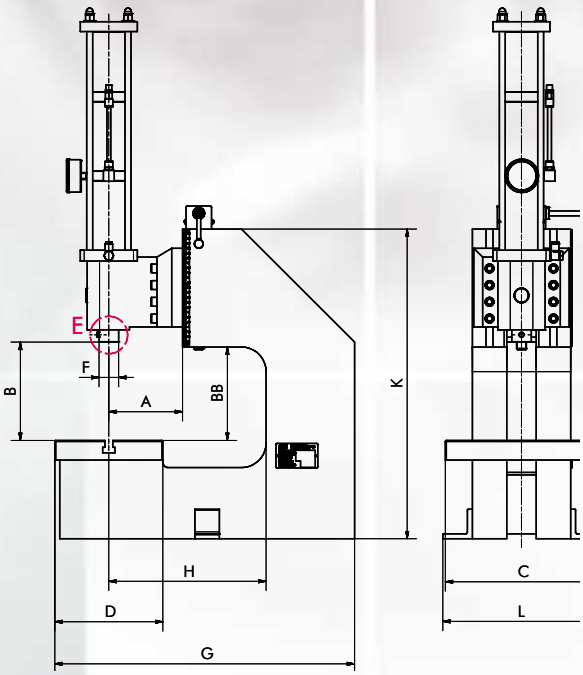




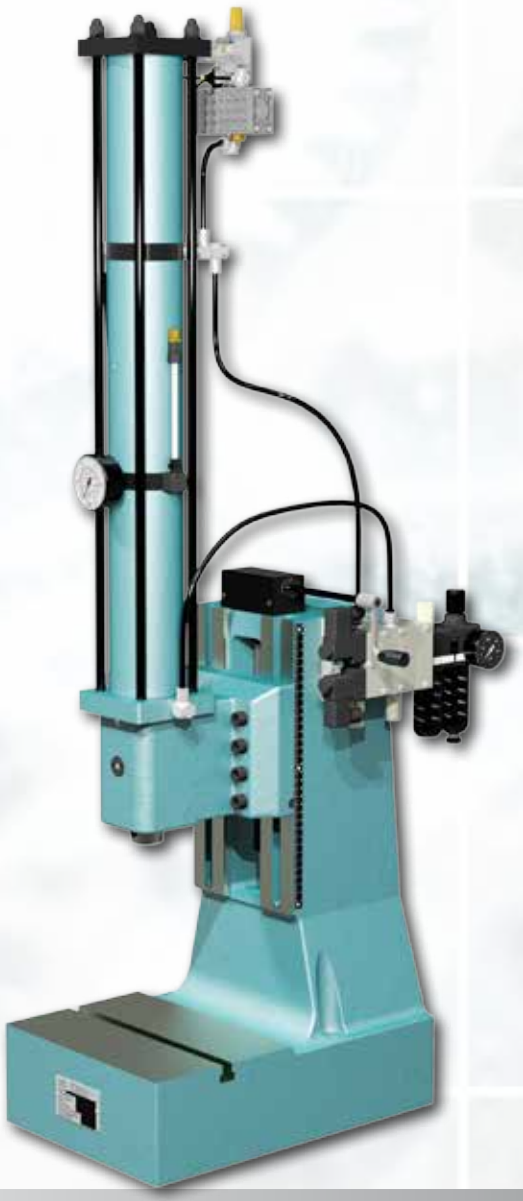
HP range



XL-HP range



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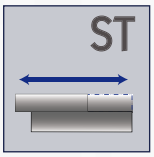
HP 5000 HV

Type			HP 3.000 HV	HP 5.000 HV	HP 10.000 HV	XL-HP 3.000 HV	XL-HP 5.000 HV	XL-HP 10.000 HV
Capacity at 6 bar		kN	30	42	100	30	42	100
Working stroke		mm	40	50	50	40	50	50
thereof power stroke*		mm	4/8	5/10	5/10	4/8	5/10	5/10
Capacity of rapid stroke 6 bar		kN	1.5	2.5	4.5	1.5	2.5	4.5
Capacity of return stroke 6 bar		kN	1.3	1.7	4.1	1.3	1.7	4.1
Throat	A	mm	130	150	150	130	150	150
Throat C-frame	H	mm	-	-	-	300	300	300
Daylight	B	mm	140 - 385	119 - 320	117 - 312	200 - 327	145 - 235	200 - 270
Daylight C-frame	BB	mm	-	-	-	158	190	190
Table size	CxD	mm	200 x 190	300 x 210	310 x 220	200 x 220	310 x 220	310 x 220
T-slot width similar to DIN 650		mm	14	14	14	14	16	16
Ram bore Ø x Depth	E	mm	16^{H7} x 30	20^{H7} x 34	20^{H7} x 34	16^{H7} x 30	20^{H7} x 34	20^{H7} x 34
Ram Ø	F	mm	35	40	40	35	40	40
Air connection			G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 1/4"
Space requirement	LxG	mm	200 x 385	300x455	310 x 500	200 x 560	320 x 610	320 x 610
Stand height	K	mm	580	630	650	630	630	630
Weight		kg	ca. 78	ca. 163	ca. 287	ca. 184	ca. 241	ca. 311

* Specify the stroke length when ordering.

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

Slide tables



mäder pneumatic and manual side tables simplify manual and automatic insertion and therefore increase the economic efficiency of assembly processes.

The advantages:

- Insertion is carried out outside the danger area
- Parts can be preassembled spatially unhindered by the press
- Versatile options for automation and feed tasks
- Precise positioning of workpieces



MST 80
MST 100

Other quality features:

	MST 80	MST 100	MST 130	PST 130
Manual slide table	●	●	●	
Pneumatic slide table				●
Teflon slideway	●	●		
Hardened and ground guide columns	●	●		
Precision cross-roller guide with high loading capacity			●	●
Slideway adjustable without play			●	●
Installs transversely or longitudinally	●	●	●	●
Damping at both end positions			●	●
Self-latching in end position	●	●	●	●

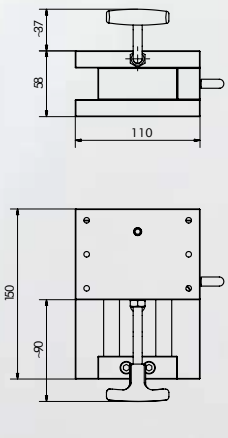


MST 130

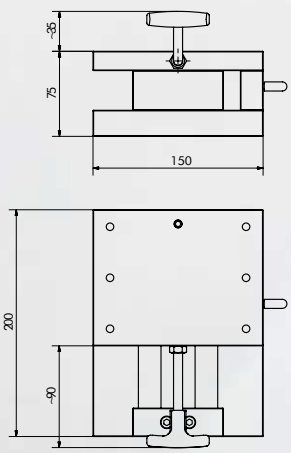


PST 130

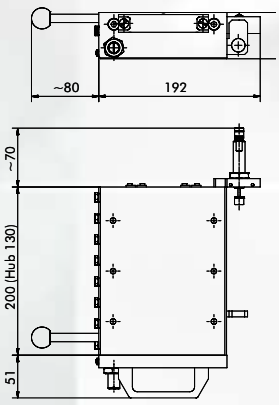
MST 80



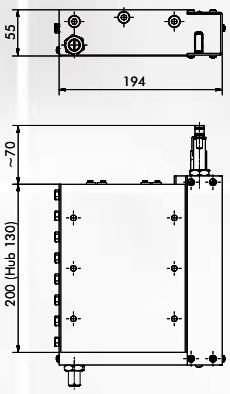
MST 100



MST 130



PST 130

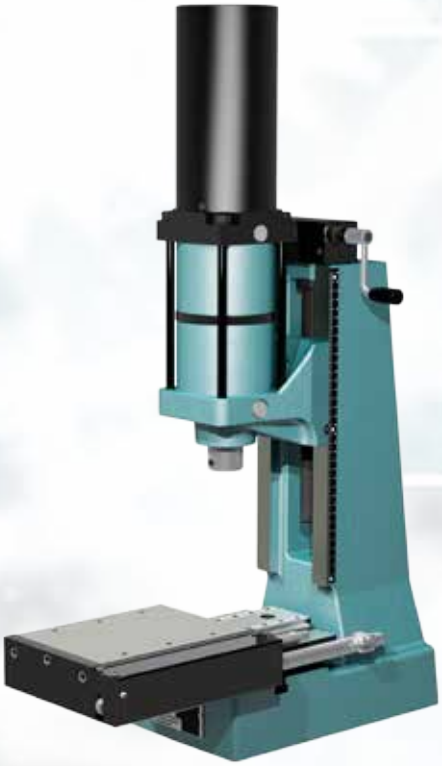


Request CAD at www.maederpressen.de or directly from Tel. +49 (0)7467-9467-0

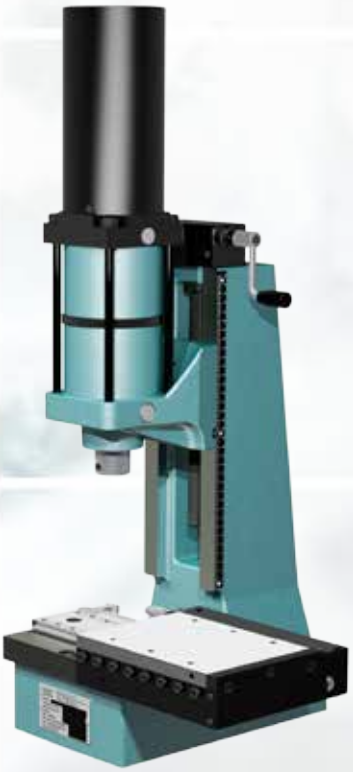
Installation examples



EP 500 with MST 80



DA type press with PST 130
Installation from the front



Installation from the side

Type		MST 80	MST 100	MST 130	PST 130
Stroke	mm	80	100	130	130
Load capacity	kN	12	30	50	50
Suitable for presses with throat	mm	63/80	80/100	100/130/150/250/300	100/130/150/250/300

Press heads

Press heads are components for automation or for special-purpose machinery construction. The press head from any press can therefore be purchased individually for an individualised installation. The need for complex and expensive one-off designs is thus avoided by the use of complete kits, and costs are lowered.



Press head of manual toggle press



Press head of rack and pinion press



Press head of pneumatic toggle press



Press head of direct-acting pneumatic presses

Press frame in welded design

So you've found a suitable press from our standard range, but the installation space underneath the press doesn't fit your fixture or your part? Just tell us what throat and what daylight range you need. We will make for you a press frame with the dimensions you specify, to which the required press head is then attached. Modifiable preliminary designs in our CAD library permit rapid and inexpensive manufacture.

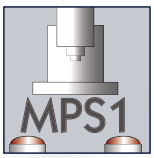


Example of a press frame with increased daylight

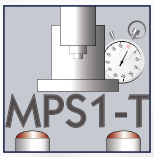


Type MPS-1 controllers are type-tested and approved in accordance with the EC Machinery Directive 2006/42/EC to work with presses in workstations with manual loading and open tools. Here, safety is provided by the controller, which is designed to be both electrically and pneumatically redundant.

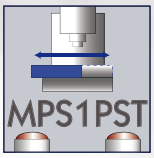
Type MPS-1 controllers comprise an electrical safety module with two-hand buttons and an electronic 5-digit parts counter. It is possible to switch from two-hand mode to an external start signal for the press, e.g. a foot switch, by means of a key-operated switch if a safe tool is used. The foot switch or equivalent is not included with the Type MPS-1 controller.



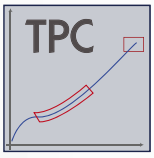
MPS-1
Basic version for two-hand operation.



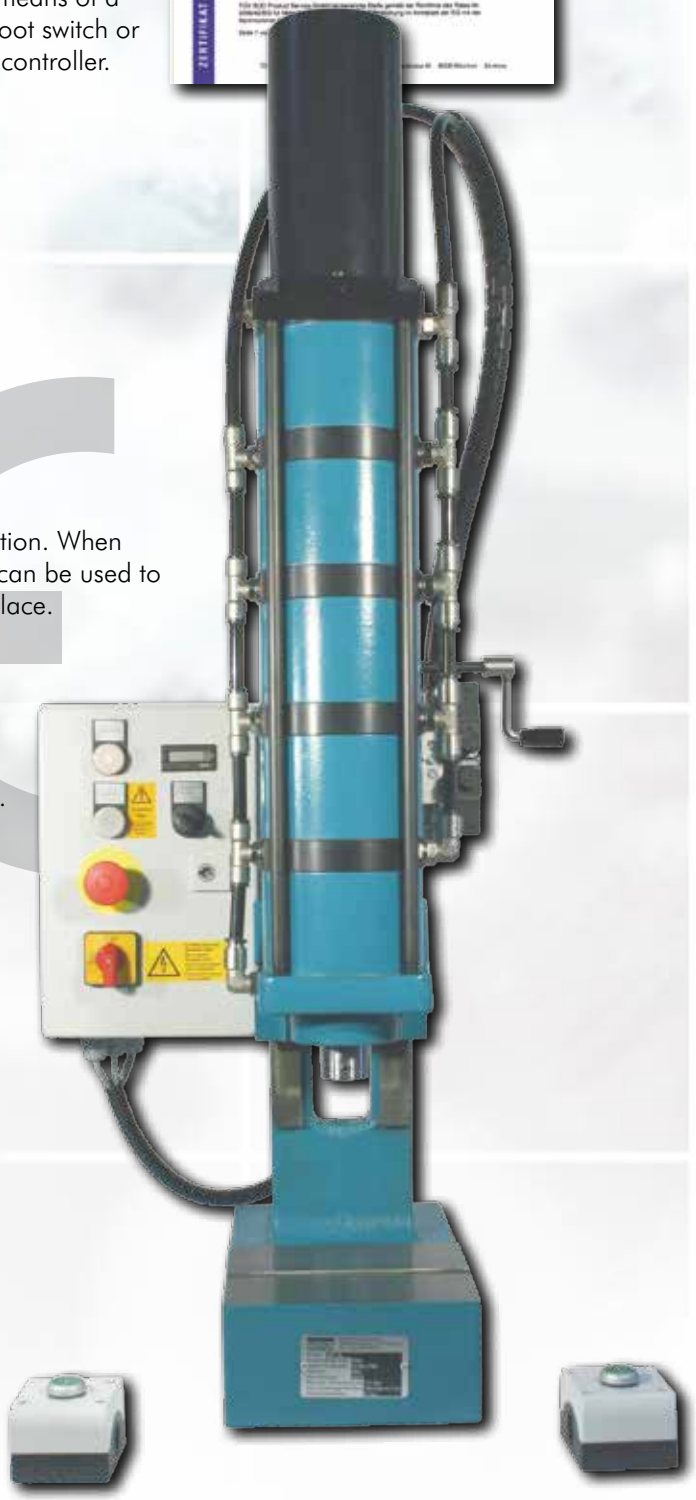
MPS-1 T
MPS-1 controller with additional stop time function. When the press has reached its end position, a timer can be used to determine when the return stroke should take place.



MPS-1 PST
This type of MPS-1 controller is used to control a pneumatic slide table in addition to the press. The scope of supply also includes the stop time function (see MPS-1 T)



MPS-1 TPC
MPS-1 controller with an additional module TPC-MIDI for force/displacement monitoring.



TPC-MIDI Process monitoring

Applications:

Joining and assembly processes using presses must today be carried out safely and if possible without retrospective checking. Specified parameters which define the press process must be maintained during production. Only in this way can the quality and safety of the manufactured product be guaranteed. For this reason, TPC-MIDI is used wherever consistent joining processes are required, the progress of which has to be checked and if applicable documented by means of software.

TPC-MIDI monitors the press operation, compares the actual progress with the requirements and subsequently evaluates it. In this way, reject parts can be reliably detected and separated out.
TPC-MIDI can be used both with hand-operated presses and with pneumatic presses. In the case of pneumatic presses, the **MPS-1 TPC** controller is supplied together with a PLC onto which the type-tested two-hand MPS-1 safety controller is superimposed.
However, the TPC-MIDI is also available as a pure system component if a PLC environment already exists, e.g. in an automation system.

The advantages:

- TPC-MIDI can be programmed via the membrane keyboard or conveniently using the PC software.
- TPC-MIDI stores 8 different measuring programs
- 3 windows possible per program
- Modern curve evaluation via freely parameterisable windows
- 4 window types: insertion, pass-through and block windows as well as an envelope curve.
- Force measurement directly in the force characteristic with DMS sensor developed especially for presses.
- Software for programming and saving measuring programs
- Documentation of each press operation

Clear OK / NOK message

With OK parts, the indicator light is green and the press is ready for the next working stroke.

NOK parts are reliably reported by the TPC-MIDI as an audible signal and by a red indicator light.
The next press stroke cannot be initiated until the error has been acknowledged.



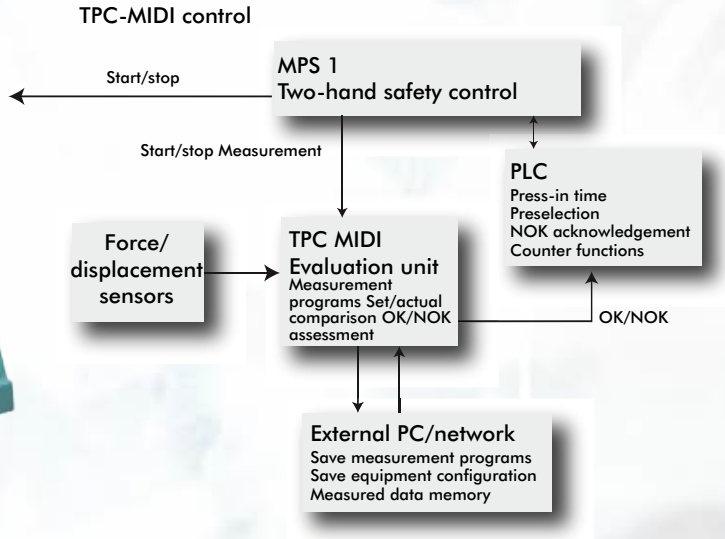
Laptop not included

DA 850-40-100 with MPS-1 TPC

Request CAD at www.maederpressen.de or directly from Tel.+49 (0)7467-9467-0

System structure





Load cell force sensors for TPC-MIDI

The load cell force sensor is fixed inside the ram bore. The tool holder can be fixed in the hole at the other end of the sensor. The force sensor is therefore always directly in the force flow between the press ram and the tool.

Measurement range	Measured value divergence	Tool holder
0 – 500 N	≤ ± 0.5% of EV	10H7 x 24 mm
0 – 1 kN	≤ ± 0.5% of EV	10H7 x 24 mm
0 – 2 kN	≤ ± 0.5% of EV	10H7 x 24 mm
0 – 5 kN	≤ ± 2.0% of EV	10H7 x 24 mm
0 – 10 kN	≤ ± 2.0% of EV	10H7 x 24 mm
0 – 20 kN	≤ ± 1.0% of EV	10H7 x 24 mm
0 – 50 kN	≤ ± 1.0% of EV	20H7 x 24 mm
0 – 100 kN	≤ ± 1.0% of EV	20H7 x 24 mm



Unless expressly required to the contrary, the load cell force sensor is selected to match the maximum capacity of the press used

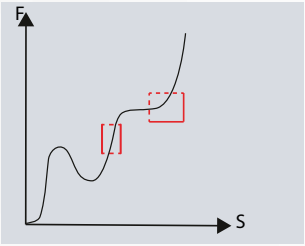
Potentiometric travel meter

Travel is measured potentiometrically. The service life of the sensors is 10^8 movements

Press stroke	Resolution	Linearity error
40 mm	0.025 mm	0.42%
60/80 mm	0.038 mm	0.41%
100 mm	0.050 mm	0.40%
120 mm	0.075 mm	0.40%

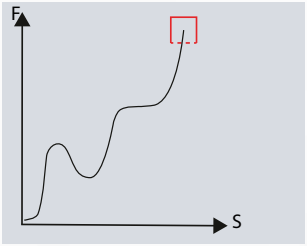
Monitoring windows

Pass-through window



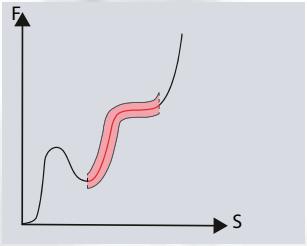
The force/displacement curve must pass through the window from the entry to the exit side as defined without one of the other window boundaries being infringed. The entry and exit sides can be freely selected.

Block window



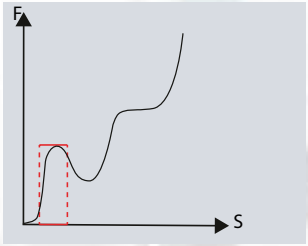
The block window monitors the final values of the press operation. With this type of window, the force/displacement curve must enter the specified entry side and must not leave the window again.

Envelope curve



The measuring curve must pass continuously through the envelope curve and must not infringe it. The envelope curve is taught by means of a teach-in process. Its X-axis parameters and the delta-Y, i.e. the force tolerance range, are then defined.

Monitoring window

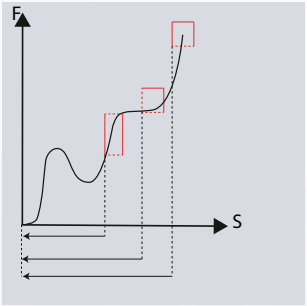


With this window, it is possible to monitor at the start of the press-in process whether parts become jammed or are not correctly inserted. If the force rises too steeply, the window is exited upwards and a real-time signal is generated that can be used to abort the process.

The reference points of the monitoring windows

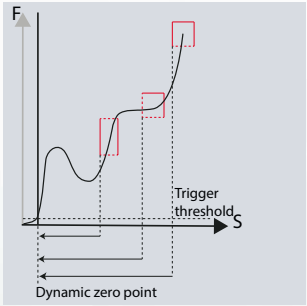
The reference points of the monitoring windows on the X-axis can be defined both rigidly and dynamically.

Absolute



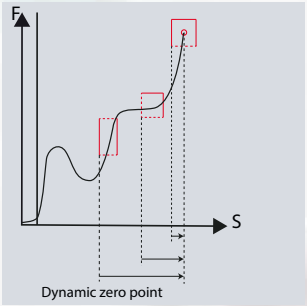
In the case of assembled parts with high repeat accuracy, the calibrated zero point of the displacement sensor on the X-axis is used as the reference point.

Trigger



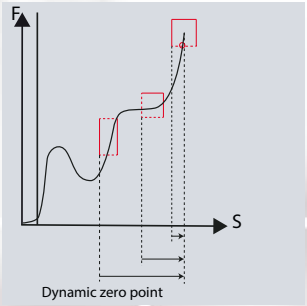
If the assembly sequence is identical as such, but the start of assembly has a major deviation on the X-axis, the beginning of the measurement can be defined by setting a trigger threshold on the Y-axis.

End force



If a measurement with an absolute or a trigger reference point is not useful, the position of the end force (Fmax) on the X-axis can be selected as the reference point. The position of the evaluation window on the X-axis then relates in reverse to this dynamic zero point.

Block window

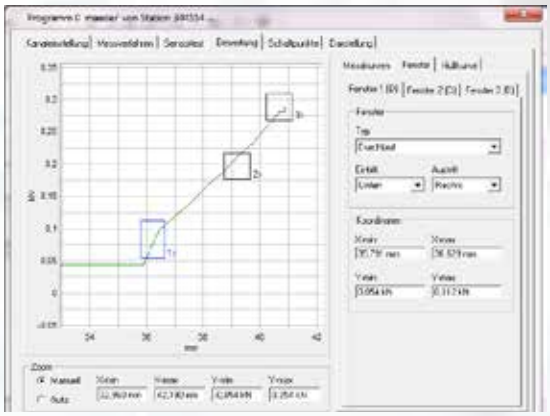


If the end force shows a wide spread, the reference point of the evaluation windows can also be defined using the entry of the curve into the block window. Any values after the block window has been reached are no longer taken into account. The position of the evaluation windows on the X-axis then relates in reverse to this dynamic zero point.

Request CAD at www.maederpressen.de or directly from Tel. +49 (0)7467-9467-0

PC Software

TPC-MIDI is supplied as standard with the basic version of the software, with which the configuration of TPC-Midi and measurement programs can be set up and saved.

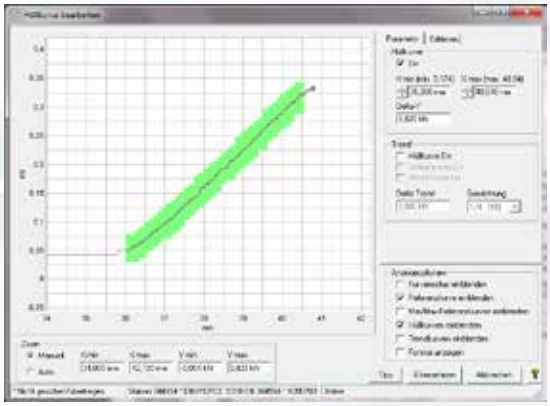


Equipment configuration

- Settings or teach-in of the force and displacement sensors (X/Y axes)
- Stipulation of measurement method and reference points

Measurement programs

- Creation and internal saving of 8 measuring programs.
  Further measurement programs can be created, saved and reloaded when required.
- Input of sets of curves
- Creation of monitoring windows and envelope curve
- Test runs with OK or NOK assessment



With the licensed full version, the production data per press-in operation can be recorded in addition.

- Production mode
- Measured data recording
- Clear-cut part reference
- Besides the program's own format, export in ASCII and Excel

