Capacity range: from 1.5 kN to 30 kN

Manual presses provide great economy for production processes and batch sizes which require no automation. They can be used quickly and flexibly in such applications.

mäder produces two types of manual presses with different force characteristics: toggle presses and rack and pinion presses. All mäder manual presses can be provided with round or square rams.

Quality features

- Factory-set pressure point
- Simple and rapid adjustment of the height of the press head using a threaded spindle
- Hardened and ground ram
- Long, honed and therefore high-precision round ram guide
- High-accuracy square ram guide by means of adjustable jib strips
- Ground press table
- mäder manual presses are virtually maintenance-free

If your hand-operated press is to remain mobile

The ERGO hand lever for mäder hand-operated presses improves their ergonomics. The horizontal and rotatable hand lever permits operation of the press without fully grasping it, and so increases the ease of use.

The hand-operated press fastened to a practical baseplate stands firm and does not tilt. Rubber stoppers prevent it from slipping. Two movable threaded inserts can be adjusted to the distance between the fixing holes of the press.

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

Pictograms in the catalogue show which accessories are possible for which presses.

Precision ram adjustment (DP)

As toggle presses do not achieve their maximum force until BDC, adjusting the height of the press head by means of the threaded spindle is often too inaccurate. The precision ram adjustment enables the press pressure point to be precisely set directly at the ram. The scale on the adjustment ring enables the fine setting to be read off to 0.02 mm. The adjustment range is ±1.5 mm. The precision ram adjustment is used when the utmost precision is required for the press depth. Ideal for prototype manufacture and serial production when accurate and easy adjustment within the tolerance range is required.

Micrometer stop (MICRO)

The micrometer stop is used with rack and pinion presses for high-precision assembly work or for when the tool has to be accurately positioned. This enables the press stroke length to be accurately adjusted to 0.01 mm.

Return travel lock (HS)

The return travel lock for toggle and rack and pinion presses is an effective contribution to quality assurance during production. The return travel lock rules out partial strokes and therefore incomplete operations. Forming, assembly and joining operations are always reliably and completely executed, as the return stroke of the press is blocked on the downward stroke. The interlock is only released and the lever can only be returned when the stroke is complete. The Quick-Release mechanism enables this inhibit to be released and jammed parts to be removed in any position. The Quick-Release is automatically deactivated when the lever is returned.

Table bore (TB)

The bottom part of the tool can be mounted in the centric table bore. Fixing is by means of a transverse screw in all models up to 80 mm throat. The table bore enables the tool to be changed quickly and reduces set-up time. The alignment accuracy of the ram bore with the table bore is <0.05 mm.

Stroke counter (Z)

A rapid overview of the number of items produced can be obtained with the five-digit stroke counter. The number of items can be reset.
Manual toggle presses with round ram EP range

EP Type toggle presses in 5 kN, 7.5 kN and 12 kN sizes are designed for serial or individual manufacture in manual workstations. As the nominal end force is produced at the end of the stroke, a large force can be exerted at the exact point it is required. The manual force of 120 N to be applied is user-friendly. As many applications require less force, fatigue-free working is possible even with serial production.

ERGOPRESS® hand lever

- Ergonomic user comfort.
- 360° stepless adjustment
- Lever angled to the side: free view of work area and ergonomically comfortable position.
- Simple and easy conversion for left-handers (except HS and Z option) without losing the tool setting. Ideal for job sharing on one press.

EP-type presses are modern production tools with high precision. The user-friendly design increases productivity and prevents forced and abnormal postures of the operator due to the workplace.

The accessories

Standard

With DP

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

### L-EP range with extra large daylight

**EP 500-40**
- **Type**: EP 500-40
- **Working stroke**: 40 mm
- **Throat**: A mm 63
- **Daylight**: B mm 40 - 213
- **Table size**: CxD mm 110 x 65
- **T-slot width similar to DIN 650**: mm 10
- **Ram bore Ø x Depth**: E mm 10H7 x 25
- **Space requirement**: CxG mm 110 x 164
- **Stand height**: K mm 355
- **Weight**: kg ca. 10

**EP 750-40**
- **Type**: EP 750-40
- **Working stroke**: 40 mm
- **Throat**: A mm 80
- **Daylight**: B mm 58 - 265
- **Table size**: CxD mm 157 x 115
- **T-slot width similar to DIN 650**: mm 12
- **Ram bore Ø x Depth**: E mm 10H7 x 25
- **Space requirement**: CxG mm 157 x 237
- **Stand height**: K mm 450
- **Weight**: kg ca. 20

**L-EP 1200-60**
- **Type**: L-EP 1200-60
- **Working stroke**: 60 mm
- **Throat**: A mm 80
- **Daylight**: B mm 62 - 240
- **Table size**: CxD mm 157 x 115
- **T-slot width similar to DIN 650**: mm 12
- **Ram bore Ø x Depth**: E mm 10H7 x 25
- **Space requirement**: CxG mm 156 x 275
- **Stand height**: K mm 450
- **Weight**: kg ca. 28

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<td>Throat</td>
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<td>80</td>
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<tr>
<td>Daylight</td>
<td>B mm</td>
<td>40 - 213</td>
<td>58 - 265</td>
<td>55 - 375</td>
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<td>B mm</td>
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<td>10H7 x 25</td>
<td>10H7 x 25</td>
<td>10H7 x 25</td>
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<td>ca. 20</td>
<td>ca. 28</td>
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**Accessories (see Page 7)**

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</tr>
<tr>
<td>Counter</td>
<td>Z</td>
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<tr>
<td>Table bore 12&quot;</td>
<td>TB</td>
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*Not included. Accessories must be ordered separately.*
The accessories

APK T range

The extra-powerful hand-operated toggle presses of the APK T 3 and APK T 4 ranges are especially suitable for the frequently changing applications in modelmaking and in the workshop. Their high forces of up to 30 kN enable them to be flexibly used for widely differing applications.

The advantages:
- Choice of different stroke lengths
- Extra-stable press base design
- Daylight easily adjustable by means of the standard press head threaded spindle height adjustment
- The nominal force of the press can be achieved with moderate applied force

XL-APKT range with 250 mm throat

A larger throat is required wherever bulky parts are processed, e.g. the processing of printed circuit boards, sheet metal and similar parts. mäder XL presses with 250 mm throat are employed in such cases. The base is a stable welded structure to which different standard press heads can be fitted.

Standard

With DP
### APK T range

**XL-APK T range with 250 mm throat**

#### APK T 3-40

- Equipped with ERGO hand lever*

#### APK T 3-S-60

#### XL-APK T 3-40

<table>
<thead>
<tr>
<th>Type</th>
<th>APK T3-40</th>
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<th>APK T3-S-40</th>
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<td>A mm</td>
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<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
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<td>35 - 154</td>
<td>30 - 151</td>
<td>46 - 274</td>
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<td>185 x 145</td>
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<td>12</td>
<td>12</td>
<td>12</td>
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<td>12</td>
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<tr>
<td>Ram bore Ø x Depth</td>
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<td>10” x 30</td>
<td>10” x 30</td>
<td>10” x 30</td>
<td>10” x 30</td>
<td>10” x 30</td>
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<td>10” x 25</td>
<td>10” x 25</td>
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<td>Stand height</td>
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<td>Weight</td>
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<td>ca. 43</td>
<td>ca. 58</td>
<td>ca. 63</td>
<td>ca. 63</td>
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#### Accessories (see Page 7)

- Please specify when ordering.
- Precision ram adjustment: DP, DP, DP, DP, DP, DP, DP
- Return travel lock: HS, HS, HS, HS, HS, HS, HS
- Table bore 12”**: TB, TB, TB, TB, TB, TB

*Not included. Accessories must be ordered separately.
The square ram has significant advantages compared with the round ram:
- Absolute protection against twisting
- Hardened and precisely ground ram
- Press ram guide free from play
- Readjustable jib strips for square ram
- Large tool locating surface
- Guides in tool therefore usually unnecessary
- Practically maintenance-free operation

maederm hand-operated toggle presses with square ram are ideal tools for manufacturing small precision parts with tight tolerances in small and medium-sized batches where automation would be too cost-intensive.

ERGOPRESS® hand lever
- Ergonomic user comfort.
- 360° stepless adjustment
- Lever angled to the side: free view of work area and ergonomically comfortable position.
- Simple and easy conversion for left-handers (except HS and Z option) without losing the tool setting. Ideal for job sharing on one press.

Toggle presses with square ram

The accessories

Manual lever can be refitted for right and left-handers

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

**L-VK range with extra large daylight**

<table>
<thead>
<tr>
<th>Type</th>
<th>VK 500-40</th>
<th>VK 750-40</th>
<th>L-VK 750-40</th>
<th>VK 1200-60</th>
<th>L-VK 1200-60</th>
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<td>12.0</td>
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<td>mm</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>Throat</td>
<td>A mm</td>
<td>63</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Daylight</td>
<td>B mm</td>
<td>40 - 213</td>
<td>53 - 265</td>
<td>55 - 375</td>
<td>45 - 245</td>
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<tr>
<td>Daylight with DP</td>
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<td>25 - 197</td>
<td>38 - 250</td>
<td>39 - 359</td>
<td>31 - 231</td>
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<td>110 x 65</td>
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<td>157 x 115</td>
<td>157 x 115</td>
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<tr>
<td>T-slot width similar to DIN 650</td>
<td>mm</td>
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<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Ram bore Ø x Depth</td>
<td>E mm</td>
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<td>10(^{12}) x 25</td>
<td>10(^{12}) x 25</td>
<td>10(^{12}) x 25</td>
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<td>kg</td>
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<td>ca. 20</td>
<td>ca. 28</td>
<td>ca. 24</td>
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</table>

**Accessories (see Page 7)**

- Precision ram adjustment: DP, DP, DP, DP, DP
- Return travel lock: HS, HS, HS, HS, HS
- Counter: Z, Z, Z, Z, Z
- Table bore 12\(^{12}\): TB, TB, TB, TB, TB

*Not included. Accessories must be ordered separately.*
The accessories

**VK range**

The extra-powerful hand-operated toggle presses of the VK range are especially suitable for the frequently changing applications in modelmaking and in the workshop. Their high forces of up to 30 kN enable them to be flexibly used for widely differing applications.

**The advantages:**

- Choice of different stroke lengths
- Extra-stable press base design
- Daylight easily adjustable by means of the standard press head threaded spindle height adjustment
- The nominal force of the press can be achieved with moderate applied force

**XL-VK range with 250 mm throat**

A larger throat is required wherever bulky parts are processed, e.g. the processing of printed circuit boards, sheet metal and similar parts. mäder XL presses with 250 mm throat are employed in such cases. The base is a stable welded structure to which different standard press heads can be fitted.

---

**The accessories**

**VL range**

The extra-powerful hand-operated toggle presses of the VL range are especially suitable for the frequently changing applications in modelmaking and in the workshop. Their high forces of up to 30 kN enable them to be flexibly used for widely differing applications.

**The advantages:**

- Choice of different stroke lengths
- Extra-stable press base design
- Daylight easily adjustable by means of the standard press head threaded spindle height adjustment
- The nominal force of the press can be achieved with moderate applied force

**XVL range with 250 mm throat**

A larger throat is required wherever bulky parts are processed, e.g. the processing of printed circuit boards, sheet metal and similar parts. mäder XL presses with 250 mm throat are employed in such cases. The base is a stable welded structure to which different standard press heads can be fitted.
### VK range

#### XL-VK range with 250 mm throat

**VK 1500-40** equipped with ERGO hand lever*

**VK 2500-60**

**XL-VK 1500-40**

<table>
<thead>
<tr>
<th>Type</th>
<th>VK 1500-40</th>
<th>VK 2500-40</th>
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<th>VK 3000-30</th>
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<td>49 - 168</td>
<td>49 - 168</td>
<td>60 - 290</td>
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<td>35 - 154</td>
<td>35 - 154</td>
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<td>12</td>
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<tr>
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<td>10(\text{m}) x 30</td>
<td>10(\text{m}) x 30</td>
<td>10(\text{m}) x 30</td>
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<td>ca. 63</td>
<td>ca. 63</td>
<td>ca. 55</td>
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**Accessories (see Page 7)**

| Precision ram adjustment | DP | DP | DP | DP | DP | DP |
| Return travel lock        | HS | HS | HS | HS | HS | HS |
| Counter                   | Z  | Z  | Z  | Z  | Z  | Z  |
| Table bore 12\(\text{m}\) | TB | TB | TB | TB | TB | TB |

*Not included. Accessories must be ordered separately.
The accessories

APZ range, L-APZ range with extra large daylight

mäder rack and pinion presses transmit their force constantly over the whole stroke length. The direct transmission of force via the manual lever allows fine control. Rack and pinion presses are therefore used where a constant force characteristic over a longer stroke is required.

Manual lever with ergonomic user comfort

- Can be turned through 360°: adaptable for any body size and application.
- Lever angled to the side: free view of work area and ergonomically comfortable position.
- R/L Version: simple and easy conversion for left-handers without losing the tool setting. Ideal for job sharing on one press.
## APZ range

### L-APZ range with extra large daylight

<table>
<thead>
<tr>
<th>Type</th>
<th>APZ T 1-40</th>
<th>APZ T 1-90</th>
<th>APZ T 2-50</th>
<th>APZ T 2-100</th>
<th>L-APZ T 2-50</th>
<th>L-APZ T 2-100</th>
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<td>mm</td>
<td>40</td>
<td>90</td>
<td>50</td>
<td>100</td>
<td>50</td>
</tr>
<tr>
<td>Throat</td>
<td>A</td>
<td>63</td>
<td>63</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Daylight</td>
<td>B</td>
<td>40 - 235</td>
<td>40 - 235</td>
<td>42 - 290</td>
<td>42 - 290</td>
<td>55 - 390</td>
</tr>
<tr>
<td>Table size</td>
<td>CxG</td>
<td>110 x 65</td>
<td>110 x 65</td>
<td>157 x 115</td>
<td>157 x 115</td>
<td>157 x 115</td>
</tr>
<tr>
<td>T-slot width similar to DIN 650</td>
<td>mm</td>
<td>10</td>
<td>10</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Ram bore Ø x Depth</td>
<td>E</td>
<td>10H7 x 25</td>
<td>10H7 x 25</td>
<td>10H7 x 25</td>
<td>10H7 x 25</td>
<td>10H7 x 25</td>
</tr>
<tr>
<td>Ram Ø</td>
<td>F</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>25</td>
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<tr>
<td>Space requirement</td>
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<td>110 x 164</td>
<td>157 x 237</td>
<td>157 x 237</td>
<td>156 x 275</td>
</tr>
<tr>
<td>Stand height</td>
<td>K</td>
<td>355</td>
<td>355</td>
<td>450</td>
<td>450</td>
<td>570</td>
</tr>
<tr>
<td>Weight</td>
<td>kg</td>
<td>ca. 8.5</td>
<td>ca. 8.5</td>
<td>ca. 21</td>
<td>ca. 21</td>
<td>ca. 29</td>
</tr>
</tbody>
</table>

### Accessories (see Page 7)

**Return travel lock**
- HS

**Micrometer stop**
- MICRO

**Counter**
- Z

**Table bore 12°**
- TB

**Left/right-hander version**
- R/L

*Can only be combined with the MICRO and TB accessories.

**Not included. Accessories must be ordered separately.
Rack and pinion presses with square ram

The accessories

VZ range, L-VZ range with extra large daylight

The square ram has significant advantages compared with the round ram:

- Absolute protection against twisting
- Press ram guide free from play
- Readjustable guide rails for square ram
- Large tool locating surface
- Guides in tool therefore usually unnecessary
- Practically maintenance-free operation

mäder rack and pinion presses with square ram are ideal tools for manufacturing small precision parts with tight tolerances in small and medium-sized batches where automation would be too cost-intensive.

Manual lever with ergonomic user comfort

- Can be turned through 360°: adaptable for any body size and application.
- Lever angled to the side: free view of work area and ergonomically comfortable position.
- R/L Version: simple and easy conversion for left-handers without losing the tool setting. Ideal for job sharing on one press.
## VZ Series

**L-VZ Series with extra large daylight**

### Types and Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>VZ 150-40</th>
<th>VZ 150-90</th>
<th>VZ 250-50</th>
<th>VZ 250-100</th>
<th>L-VZ 250-50</th>
<th>L-VZ 250-100</th>
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<tr>
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<td>50</td>
<td>100</td>
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<tr>
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<td>35 - 235</td>
<td>35 - 235</td>
<td>42 - 290</td>
<td>42 - 290</td>
<td>55 - 390</td>
</tr>
<tr>
<td>Table size</td>
<td>CxD</td>
<td>110 x 65</td>
<td>110 x 65</td>
<td>157 x 115</td>
<td>157 x 115</td>
<td>157 x 115</td>
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<td>T-slot width similar to DIN 650</td>
<td>mm</td>
<td>10</td>
<td>10</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Ram bore Ø x Depth</td>
<td>E mm</td>
<td>10” x 25</td>
<td>10” x 25</td>
<td>10” x 25</td>
<td>10” x 25</td>
<td>10” x 25</td>
</tr>
<tr>
<td>Ram Ø</td>
<td>F</td>
<td>20 x 20</td>
<td>20 x 20</td>
<td>20 x 20</td>
<td>20 x 20</td>
<td>20 x 20</td>
</tr>
<tr>
<td>Space requirement</td>
<td>CxG mm</td>
<td>110 x 164</td>
<td>110 x 164</td>
<td>157 x 237</td>
<td>157 x 237</td>
<td>156 x 275</td>
</tr>
<tr>
<td>Stand height</td>
<td>K</td>
<td>355</td>
<td>355</td>
<td>450</td>
<td>450</td>
<td>570</td>
</tr>
<tr>
<td>Weight</td>
<td>kg</td>
<td>ca. 8.5</td>
<td>ca. 8.5</td>
<td>ca. 21</td>
<td>ca. 21</td>
<td>ca. 29</td>
</tr>
</tbody>
</table>

### Accessories (see Page 7)

- **Return travel lock**: H5, H5, H5, H5, H5, H5
- **Micrometer stop**: MICRO, MICRO, MICRO, MICRO, MICRO, MICRO
- **Counter**: Z, Z, Z, Z, Z, Z
- **Table bore 12mm**: TB, TB, TB, TB, TB, TB
- **Left/right-handers version**: R/L, R/L, R/L, R/L, R/L, R/L

---

*HS - Return travel lock
MICRO - Micrometer stop
equipped with ERGO hand lever**
The MicroPress® rack and pinion press is particularly suitable for precise fitting work in light engineering, where the force needed is low but where the operator wants to work sensitively.

The advantages:
- Press table with T-slot as standard in scope of supply
- Alternatively, press tables with table bore TB or in flat version or to customer specification can be supplied.
- Quickly and easily converted from right-handed to left-handed operation.
- Adjustable daylight
- Precise guidance of ram
- Cushioned return stroke
- Stroke length adjustable
- Hand lever adjustable over 360°
- Lightweight design
### MicroPress® Rack pinion presses with round ram

<table>
<thead>
<tr>
<th>Type</th>
<th>MPZ 500-30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>N 500</td>
</tr>
<tr>
<td>Working stroke</td>
<td>mm 25</td>
</tr>
<tr>
<td>Throat</td>
<td>mm 30</td>
</tr>
<tr>
<td>Daylight</td>
<td>mm 25-150</td>
</tr>
<tr>
<td>Table size</td>
<td>CxD mm 60 x 80</td>
</tr>
<tr>
<td>Ram bore Ø x Depth</td>
<td>E mm 6H7 x 12</td>
</tr>
<tr>
<td>Ram Ø</td>
<td>F mm 16</td>
</tr>
<tr>
<td>Space requirement</td>
<td>CxG mm 90 x 80</td>
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<tr>
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</tr>
<tr>
<td>Weight</td>
<td>kg ca. 1.5</td>
</tr>
<tr>
<td>Tabletop</td>
<td></td>
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<tr>
<td>Table 1 T-slot width similar to DIN 650</td>
<td>mm 10</td>
</tr>
<tr>
<td>Table 2 T-slot with TB</td>
<td>mm 8H7</td>
</tr>
<tr>
<td>Table 3 plan</td>
<td></td>
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</tbody>
</table>

*Not included. Accessories must be ordered separately.*
Low-cost monitoring and logging of pressing processes with mäder hand presses.

TPC ForceMaster Process monitoring

- Can be fitted to all mäder hand presses
- Intelligent sensors, automatic recognition of sensor values
- Auto-configuration of the measurement program with the master-card
- Easy, one-button operation
- 2 line, easy read display
- Bright OK /NOK displays
- Adjustable alarm tone
- Diverse counter functions
- One channel measurement (force only) possible

Options:
- Measurement logging via USB interface
- Tool card for storing and setting tool-specific measurement data
- Cam PLC operation
- PLC card for storing and setting programs.
TPC ForceMaster Process monitoring

The TPC ForceMaster can be set up quickly and easily:

**Sensor detection**
The connectors of the force and displacement sensors are not interchangeable, and are therefore protected from false connections. The characteristics of the sensor are already stored on a printed circuit board in the connector plug. When the TPC ForceMaster is switched on, the sensors are automatically detected and the zero point determined. If the sensors are exchanged, the sensor change will be shown in the display and must be confirmed.

**Auto-configuration**
The TPC ForceMaster creates a process monitoring proposal, based on a one-time teach-in process of a good part. This proposal can either be accepted or modified manually on the device or with the help of the supplied software. A good part consists of parts which were checked before the pressing process as to whether they are within the manufacturing tolerances and from which it can therefore be expected that the process will in turn manufacture a good part.

**Evaluation variants**

**Threading**
The threading area performs a check to determine whether the maximum force will be exceeded at the start of a joining process. An alarm will notify a warning that parts or the tool could possibly be damaged. The threading area must be activated.

**Gates**
With the auto-configuration, 5 gates will be activated. A gate is defined by a path position and a minimum and maximum force. The forced-displacement curve for good parts must run through all the gates, and no gate may be circumvented. The evaluation is performed when the press stroke has exceeded the path position of all the gates.

**Force thresholds**
Force thresholds define a minimum force to be achieved and a maximum force threshold, within which the entire force fitting process must be performed once the minimum force has been reached.

**Block area**
Often the force fitting process is concluded with a high force exertion at the end of the stroke: the block area. It is defined by a force and displacement range which may not be under-run or exceeded. The block area is always inactive after the auto-configuration and must be activated as required.

**Press-fit stem path**
During the deformation processes which occur at the end of the stroke, the press-fit stem path can also be monitored. The press-fit stem path monitoring can only be activated with an active block area. The press-fit stem path is calculated from the path differential between the reaching of the block area and the beginning of the return stroke.
TPC ForceMaster Process monitoring

OK/NOK notifications
The ForceMaster confirms the manufacturing of an OK part with a green indicator light. A NOK part is notified with a pre-settable signal tone and a red indicator light. By default, the TPC ForceMaster is pre-set in such a manner that the NOK message can only be acknowledged with a master-card. In the manual configuration of the measurement program, this feature can be disabled.

ForceMaster structural layout
From left to right:
- Card slot
- Speaker
- OK / NOK indicator lights
- Rotary pushbutton for programming

Counter
Six different counter types can be set via the configuration menu:
- OK parts
- NOK parts
- Total of all parts
- Count down counter
- R-set (set value for countdown counter)
- Total stroke counter

Software
The software for the visualisation and correction of the auto-configuration is included in the scope of delivery.

Options:
USB interface for a USB stick
The graphical curve data can be stored on a USB stick for documentation and evaluation purposes. The cycle time should be $\geq 3$ seconds.

Cam PLC
The cam PLC functions in the same manner as an electronic, path-controlled step chain controller. When a cam is reached, the movement direction of the press ram is also evaluated. This enables the programming of an action in the cam area, which is dependent on the work or return stroke. This is based on a step chain control, which sequentially performs an array of processes. Only when a condition is fulfilled will an action be executed and a jump to the next step be performed.

There are 8 inputs and 8 outputs available for programming.
The cam PLC can not be used for press-safety purposes.

SmartCards
Tool card
PLC card

Single-dimensional operation
It is also possible to operate the TPC ForceMaster with the force sensor only.
TPC ForceMaster Process monitoring

TPC ForceMaster Technical Data

General device data
Display: 2-line backlit LCD display
Warning and acknowledgement sounds: type of signal can be set
Warning sound volume: up to 100 dB
Measuring channels: force/displacement or force/time
Communication interfaces: USB - Type B slave port, on the rear side, RS232 - D-SUB 9, data rate 19.2 kbps

Interface: USB, RS232
Measurement error: 0.5% from calibration
Electrical connection: 90 ... 240 V AC / 50 ... 60 Hz
Cut-off frequency: 1 kHz
Working temperature range: 0 ... 60 °C
Humidity: 10 ... 80%, non-condensing
Housing: aluminium profile housing
Protection class: IP20
Connections: coded special connectors
Sampling rate: 10 kHz
Number of I/O: 8 inputs / 8 outputs
Dimensions (W x H x D): 150 x 95 x 260 [mm]
Weight: approx. 3 kg

TPC ForceMaster sensors

Load cell for TPC ForceMaster
The ideal, user-friendly force sensors for hand lever presses.
Cross-thread for the tool attachment.

Overall measurement error: <± 1% from calibration
Maximum usage force: approx. 120% of the rated power
Protection class: according to EN 60529: IP54
Diameter: 50 mm
Height without clamping pin: 50 mm
Clamping pin diameter: 10mm x 21 mm
Sensor bore diameter x depth: 10H7 x 25 mm
The sensor must not be subjected to lateral forces.

Potentiometer
Linearity deviation: from 0.1% from calibration
Resolution: 0.01 mm
Protection class according to EN 60529: IP 40

Retrofit kit for potentiometer
Existing hand lever presses can be retrofitted with a potentiometer with the retrofit kit. An illustration with the drilling pattern is included.
müder 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

Other quality features:

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

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

**Installation examples**

<table>
<thead>
<tr>
<th>Type</th>
<th>MST 80</th>
<th>MST 100</th>
<th>MST 130</th>
<th>PST 130</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke (mm)</td>
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<td>100</td>
<td>130</td>
<td>130</td>
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<tr>
<td>Load capacity (kN)</td>
<td>12</td>
<td>30</td>
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<td>50</td>
</tr>
<tr>
<td>Suitable for presses (mm)</td>
<td>63/80</td>
<td>80/100</td>
<td>100/130/150/250/300</td>
<td>100/130/150/250/300</td>
</tr>
</tbody>
</table>

**EP 500 with MST 80**

**Installation from the front**

**DA type press with PST 130**

**Installation from the side**