Efficient manufacturing requires appropriate means of production – not always automation. In particular, with small production runs, manual presses are often the most cost effective solutions.

We are continually developing the range of manual presses so that you can achieve your production targets. The expertise we have gained from our exposure to numerous production applications has been implemented in our new models. Therefore, we can offer a wide range of manual presses to suit all requirements.

**Features**

- **Flexibility**
  - Rapid changeover due to the easy and secure adjustment of the working height
  - Table tops with precision T-slot and precise alignment between the ram and table bores allow for accurate and repeatable set ups which reduces set-up times
  - The original position of the hand lever can be varied by 360°
  - Horizontal Pull (111/113)
  - Available for left-handed and right-handed use
  - The return stroke force of the ram can be adapted to different tool weights

- **Precision**
  - Alignment < 0.05 mm between upper and lower tool

- **Maintenance-free**
  - No lubrication necessary

- **Long service life**

Depending on the application, there is a wide selection of rack and-pinion presses and toggle presses to choose from. Furthermore, a modular product design gives you the opportunity to choose the appropriate press for your application.
**SCHMIDT® Rack-and-Pinion Presses**

**Constant Force over the entire Stroke**

Do you need a long stroke and a constant force progression for assembly processes? Then, **SCHMIDT® Rack-and-Pinion Presses** are just the right choice.

**Features**
- Long stroke
- Linear force progression
- Precise adjustment of the press depth via hardened lower stop
- Honed bores and ground rams provide a long service life and a precise guidance

---

**Press Type 5**

**Press Type 3/6**

**Press Type 1/2**

---

**Press Head**

No.1 and No. 2 have a ground guidance plate and teflon-coated adjustable gibbs for precise and torsion-proof guidance.

---

**Graph:**

- **Pushing force (kN)**
- **Force at the hand lever (N)**

---

6 | SCHMIDT® Presses
From 1.6 kN to 2.5 kN

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**Options**
- Series with no additional charge
- Additional charge applies
- Adjustment of locking position on request
- The weight was determined with hand lever position 45° forward (guidelines)

**Other available Options**
- Nickel plated - Cast parts are electroless nickel plated, steel components black oxide finished, aluminum anodized, precision steel surfaces are untreated
- Custom Paint - Press and column can be painted to customer’s color specification
- Bores for Adapting Tooling - Customer specific sizes can be supplied

Please consult our Sales Department or Representative.
Detailed dimensional drawings can be downloaded: www.schmidttechnology.de
Do you need a high force at the end of stroke for material transforming processes? Then, SCHMIDT® Toggle Presses are just the right choice.

### Features
- High force at end of stroke (see diagram below)
- Honed bores and ground rams provide a long service life and a precise guidance

---

**Press Type 13**

**Press Type 11/14 - 17**

---

**Note:** Maximum force will be reached just before extended position."
From 5 kN to 15 kN

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Optionen

- Series with no additional charge
- Additional charge applies
- Adjustment of locking position on request
- The weight was determined with hand lever position 45° forward (guidelines)

Other available Options

- Nickel plated - Cast parts are electroless nickel plated, steel components black oxide finished, aluminum anodized, precision steel surfaces are untreated
- Custom Paint - Press and column can be painted to customer’s color specification
- Bore for Adapting Tooling - Customer specific sizes can be supplied

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Simply the best! | 9
SCHMIDT® Toggle Presses with Horizontal Pull

The high Force at the End of Stroke, just where it is important

Do you need a high force at the end of stroke for material-transforming processes? Then, SCHMIDT® Toggle Presses are just the right choice.

Features
- High force at end of stroke (see diagramm below)
- Honed bores and ground rams provide a long service life and a precise guidance

Ergonomic Press with horizontal Pull
With press No. 113 and No. 111 the manual force is applied by pulling the lever towards the body. This press is especially suitable for rapid production at small forces.

Press Type 113

Press Type 111

Note: Maximum force will be reached just before extended position
From 2.5 kN to 12 kN

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<td>Working height</td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frame No. 13</td>
<td>mm</td>
<td>50 - 165</td>
<td>130 - 205</td>
<td>130 - 205</td>
</tr>
<tr>
<td>Frame No. 3</td>
<td>mm</td>
<td>130 - 340</td>
<td>130 - 340</td>
<td></td>
</tr>
<tr>
<td>Frame No. 2</td>
<td>mm</td>
<td>200 - 580</td>
<td>200 - 580</td>
<td></td>
</tr>
<tr>
<td>Frame No. 2-600</td>
<td>mm</td>
<td>330 - 1020</td>
<td>330 - 1020</td>
<td></td>
</tr>
<tr>
<td>Frame No. 2-1000</td>
<td>mm</td>
<td>110</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>Weight approx. kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Options**

- Series with no additional charge
- Additional charge applies
- Adjustment of locking position on request
- Stroke reduction about 10 mm by version with additional charge
- The weight was determined with hand lever position 45° forward (guidelines)

**Other available Options**

- Nickel plated - Cast parts are electroless nickel plated, steel components black oxide finished, aluminum anodized, precision steel surfaces are untreated
- Custom Paint - Press and column can be painted to customer's color specification
- Bores for Adapting Tooling - Customer specific sizes

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Please consult our Sales Department or Representative.
Detailed dimensional drawings can be downloaded: www.schmidttechnology.de

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 Simply the best! | 11
SCHMIDT® Toggle Presses with Square Ram
Optimum Guidance and Anti-Rotation

Do you need a high force at the end of stroke for material-transforming processes? Then, SCHMIDT® Toggle Presses are just the right choice.

Features
- High force at end of stroke
- Square ram is anti-rotational (no die sets required)
- Precise adjustment of the press depth via hardened lower stop
- Fully adjustable, play-free teflon-lined gibs

Press Type

<table>
<thead>
<tr>
<th>Press Type</th>
<th>11 V</th>
<th>13 V</th>
<th>14 V</th>
<th>15 V</th>
<th>16 V</th>
<th>19 V</th>
</tr>
</thead>
</table>

Note: Maximum force will be reached just before extended position
From 5 kN to 22 kN

### Press Type Overview

<table>
<thead>
<tr>
<th>Press Type</th>
<th>13 V</th>
<th>13 VF</th>
<th>12 VF</th>
<th>12 VR VRF</th>
<th>11 V</th>
<th>11 VF</th>
<th>10 V</th>
<th>10 VF</th>
<th>9 V</th>
<th>9 VF</th>
<th>19 V</th>
<th>19 VF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal force</td>
<td>kN</td>
<td>5</td>
<td>5</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Throat depth</td>
<td>C mm</td>
<td>65</td>
<td>65</td>
<td>86</td>
<td>86</td>
<td>86</td>
<td>86</td>
<td>86</td>
<td>86</td>
<td>86</td>
<td>86</td>
<td>86</td>
</tr>
<tr>
<td>Press head height</td>
<td>S mm</td>
<td>385</td>
<td>385</td>
<td>510</td>
<td>510</td>
<td>510</td>
<td>510</td>
<td>510</td>
<td>510</td>
<td>510</td>
<td>510</td>
<td>510</td>
</tr>
<tr>
<td>Ram bore</td>
<td>Ø mm</td>
<td>10H7</td>
<td>10H7</td>
<td>10H7</td>
<td>10H7</td>
<td>10H7</td>
<td>10H7</td>
<td>10H7</td>
<td>10H7</td>
<td>10H7</td>
<td>10H7</td>
<td>10H7</td>
</tr>
<tr>
<td>Max. Weight top tool*</td>
<td>N</td>
<td>12/20</td>
<td>12/20</td>
<td>16/20</td>
<td>16/20</td>
<td>16/20</td>
<td>16/20</td>
<td>16/20</td>
<td>16/20</td>
<td>16/20</td>
<td>16/20</td>
<td>16/20</td>
</tr>
<tr>
<td>Hand lever left</td>
<td></td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Angle of rotation</td>
<td></td>
<td>95°</td>
<td>95°</td>
<td>110°</td>
<td>110°</td>
<td>110°</td>
<td>110°</td>
<td>110°</td>
<td>110°</td>
<td>110°</td>
<td>110°</td>
<td>110°</td>
</tr>
<tr>
<td>Max. Weight top tool*</td>
<td></td>
<td>12</td>
<td>12</td>
<td>16/20</td>
<td>16/20</td>
<td>16/20</td>
<td>16/20</td>
<td>16/20</td>
<td>16/20</td>
<td>16/20</td>
<td>16/20</td>
<td>16/20</td>
</tr>
</tbody>
</table>

### Return stroke lock<sup>1) 2) 3)</sup>

| Locked position 1 | mm bef. BDC | 14.5 | 12 | 12 | 14 | 14 | 4.5 | 4.5 |
| Locked position 2 | mm bef. BDC | 1.5  | 1.5 | 1.5 | 1.5 | 1.5 | 0.9 | 0.9 |
| Disengaging accuracy | mm | 0.03 | 0.03 | 0.03 | 0.04 | 0.04 | 0.02 | 0.02 |

### Working height

| Frame No. 13 | mm | 65 - 180 | 50 - 155 | 65 - 180 | 50 - 155 |
| Frame No. 3  |     | 80 - 210 | 60 - 180 | 80 - 210 | 60 - 190 | 80 - 210 | 60 - 190 |
| Frame No. 2  | mm | 120 - 350 | 100 - 325 | 120 - 350 | 100 - 325 | 120 - 350 | 100 - 325 |
| Frame No. 2-600 | mm | 200 - 585 | 185 - 570 | 200 - 585 | 185 - 570 | 210 - 590 | 195 - 570 | 210 - 590 | 195 - 575 |
| Frame No. 19 | mm | 330 - 1020 | 315 - 1000 | 330 - 1020 | 315 - 1000 | 340 - 1030 | 325 - 1015 | 340 - 1030 | 325 - 1015 |
| Frame No. 19-400 | mm | 90 - 220 | 90 - 220 |
| Frame No. 19-500 | mm | 160 - 400 | 160 - 400 |
| Frame No. 19-500 | mm | 260 - 550 | 260 - 550 |
| Weight approx. kg | 12 | 12 | 24 | 32 | 24 | 32 | 32 | 32 | 85 | 85 |

### Accessories

<table>
<thead>
<tr>
<th>Press Type</th>
<th>13 V</th>
<th>13 VF</th>
<th>11 V</th>
<th>11 VF</th>
<th>15 V</th>
<th>15 VF</th>
<th>19 V</th>
<th>19 VF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical counter</td>
<td></td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Throat depth frame 111 mm</td>
<td></td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Throat depth frame 151 mm</td>
<td></td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
</tbody>
</table>

### Additional fixture mounting plate suitable for throat depth frame

<table>
<thead>
<tr>
<th>Press Type</th>
<th>13 V</th>
<th>13 VF</th>
<th>11 V</th>
<th>11 VF</th>
<th>15 V</th>
<th>15 VF</th>
<th>19 V</th>
<th>19 VF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame No. 13</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Frame No. 19</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
</tbody>
</table>

### Options

- Series with no additional charge
- Additional charge applies
  - Special strokes 12 mm and 50 mm on request
  - Adjustment of locking position on request
  - The weight was determined with hand lever position 45° forward (guidelines)

### Other available Options

- Nickel plated - Cast parts are electroless nickel plated, steel componets black oxide finished, aluminum anodized, precision steel surfaces are untreated
- Custom Paint - Press and column can be painted to customer’s color specification
- Bores for Adapting Tooling - Customer specific sizes

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<sup>1) 2) 3)</sup> Adjustment of locking position on request

<sup>a) b) c)</sup> The weight was determined with hand lever position 45° forward (guidelines)
The return Stroke lock guarantees reaching the required pressing Depth with every Stroke.

1. TDC (Top Dead Center) position
2. First locking position: Loose tools can still be aligned
3. Second locking position before BDC (Bottom Dead Center). From here you can only continue to BDC.
4. After reaching BDC (Bottom Dead Center) by completing the stroke the return stroke lock is released. This guarantees a repeatable BDC and thus a constant press depth
5. The emergency button releases the locking function in any position

The Micrometer Screw serves as Stop for the rack and pinion Presses

A micrometer adjustable stop specially developed for presses for the fine adjustment of the BDC. The robust and precise design ensures the repeatability of the stop, no matter how many strokes are taken.

Fine Adjustment with Micrometer Scale for Toggle Presses

By loosening the tensioning screw 1 and turning the adjusting nut 2 with the same tool, the setting of the BDC can be adjusted infinitely. Graduation is in the 0.02 mm line to line range and is reached rapidly and precisely.
SCHMIDT® ManualPress
Options suitable for your Application

Mechanical Counter
A four digit counter monitors the number of pieces produced. The counter is provided with a reset function.

Collet
For the rack-and-pinion presses No. 1 and No. 2, collet bore diameter of 1 to 17 mm.

Throat extension Block
We offer various sizes for extended throat depths.

Special fixture Mounting Plates
Special fixture tabletops, designed in conjunction with throat extension blocks, provide ram to table bore alignment when spacer is used.

Ergonomic left-handed Design
With most press types, lefthanded or left-/right-handed design is an available option.

Upper Tooling Adapter
Adapter for tools with a diameter of 5 – 20 mm.

Nickel plated Design
Press frames and cast parts are electroless nickel-plated, steel components are black oxide finished, aluminum parts are anodized, precision steel surfaces are untreated.

Ergonomic Handle
Swivelling handle for discharge of the wrist; easy and flexible assembly on the hand lever.

Press Base
Plastic (250 x 340 mm), including fasteners.

Stop Clamp
For Toggle Presses.

How to Order
Order Key for press options
R = incl. return stroke lock with emergency release
F = incl. fine adjustment (for toggle presses)
Z = incl. mechanical counter
M = micrometer screw (for rack-and-pinion presses)
RF = incl. return stroke lock with emergency release and fine adjustment

Order Example
No. 3 R = SCHMIDT® Rack-and-Pinion Press No. 3 incl. return stroke lock with emergency release
or
No. 13 RFZ = SCHMIDT® Toggle Press No. 13 incl. return stroke lock with emergency release, fine adjustment and mechanical counter
Process reliability, force/stroke monitoring of the joining process and EN ISO-compatible documentation of the results are becoming the major factors for small and medium production within the manual workplace.

The **SCHMIDT® ManualPress 300 Series** system with **SCHMIDT® PressControl 600** includes:
- Integrated reliable measuring technology
- High resolution of the obtained process data
- Graphical and numerical output of the processing results
- Quality monitoring using freely selectable tolerances

**Process reliability – not just a slogan**
The system software allows easy setup of quality control criteria for 100% in-process monitoring.
SCHMIDT® ManualPress 300 Series

Process Reliability for Manual Workplaces, Force Range 0.4 to 12 kN

Features
- Linear force progression for No. 305 and No. 307
- High force at the end of stroke for No. 311
- Precise adjustment of the press depth via micrometer fine adjustment
- Guides require little maintenance, have little wear and are locked against anti-rotation. This results in precise working and a long service life
- Optimum fit and form closure due to dovetail guide on the press head
- Quick set-up
  - Exact alignment of ram bore to the table of 0.05 mm
  - Height adjustment using a crank
  - Precision bores in ram and column base plate

Functional components
- Electronic stroke lock
- Integrated transducer
  - Force sensor
  - Incremental encoder
- Integrated signal amplifier
- Programmable overload coupling

Features
- Linear force progression for No. 305 and No. 307
- High force at the end of stroke for No. 311
- Precise adjustment of the press depth via micrometer fine adjustment
- Guides require little maintenance, have little wear and are locked against anti-rotation. This results in precise working and a long service life
- Optimum fit and form closure due to dovetail guide on the press head
- Quick set-up
  - Exact alignment of ram bore to the table of 0.05 mm
  - Height adjustment using a crank
  - Precision bores in ram and column base plate

Functional components
- Electronic stroke lock
- Integrated transducer
  - Force sensor
  - Incremental encoder
- Integrated signal amplifier
- Programmable overload coupling

Press Type 305 307 311
Nominal force kN 0.4 4 12
Force at the hand lever approx. N 50 200 200
Working stroke A mm 0 - 42 0 - 54 0 - 50
Throat depth C mm 129 129 129
Press head height S mm 310 417 555
Ram bore Ø mm 6H7 10H7 10H7
Stroke fine adjustment mm 0.02 0.02 0.02
Stroke resolution mm 0.005 0.005 0.005
Angle of rotation/mm stroke 3.3° 4.8° non linear
Resolution, process data acquisition stroke/µm/inc force/N/inc 5 0.125 5 1.25 5 3.5
Working height F
Frame No. Press Type Frame Height M (mm)
7 305, 307, 311 600
7-600 305, 307, 311 960
Max. Weight (total depth) N 6 10 10/30
Weight approx. kg 41 41 60
Protection type IP 54 IP 54 IP 54

Other available Options:
- Nickel plated – Cast parts are electroless nickel plated, steel components black oxide finished, aluminum anodized, precision steel surfaces are untreated
- Custom Paint – Press and column can be painted to customer’s color specification
- Bores for Adapting Tooling – Customer specific sizes can be supplied

Frames Overview

Frame Height M (mm)
600
960

Table Size B x T (mm)
180 x 150
20H7
180 x 280
20H7
110
330 x 361
330 x 465 - 505

Table bore Ø (mm)
10H7

ManualPress 305

ManualPress 311

Options
- Additional charge applies
- The fine adjustment increases the working stroke by 0.12 inch
- Throat depth frame only available with frame No. 7-600
- Increased throat and higher frame lead to smaller nominal forces for No. 311
- The weight was determined with hand lever position 45° forward (guidelines)

Note: Maximum force will be reached just before extended position

Other available Options:
- Nickel plated – Cast parts are electroless nickel plated, steel components black oxide finished, aluminum anodized, precision steel surfaces are untreated
- Custom Paint – Press and column can be painted to customer’s color specification
- Bores for Adapting Tooling – Customer specific sizes can be supplied

Press Type 305 307 311
Nominal force kN 0.4 4 12
Force at the hand lever approx. N 50 200 200
Working stroke A mm 0 - 42 0 - 54 0 - 50
Throat depth C mm 129 129 129
Press head height S mm 310 417 555
Ram bore Ø mm 6H7 10H7 10H7
Stroke fine adjustment mm 0.02 0.02 0.02
Stroke resolution mm 0.005 0.005 0.005
Angle of rotation/mm stroke 3.3° 4.8° non linear
Resolution, process data acquisition stroke/µm/inc force/N/inc 5 0.125 5 1.25 5 3.5
Working height F
Frame No. Press Type Frame Height M (mm)
7 305, 307, 311 600
7-600 305, 307, 311 960
Max. Weight (total depth) N 6 10 10/30
Weight approx. kg 41 41 60
Protection type IP 54 IP 54 IP 54

Other available Options:
- Nickel plated – Cast parts are electroless nickel plated, steel components black oxide finished, aluminum anodized, precision steel surfaces are untreated
- Custom Paint – Press and column can be painted to customer’s color specification
- Bores for Adapting Tooling – Customer specific sizes can be supplied

Frame Overview

Frame Height M (mm)
600
960

Table Size B x T (mm)
180 x 150
20H7
180 x 280
20H7
110
330 x 361
330 x 465 - 505

Table bore Ø (mm)
10H7

ManualPress 305

ManualPress 311

Options
- Additional charge applies
- The fine adjustment increases the working stroke by 0.12 inch
- Throat depth frame only available with frame No. 7-600
- Increased throat and higher frame lead to smaller nominal forces for No. 311
- The weight was determined with hand lever position 45° forward (guidelines)
**SCHMIDT® ManualPress 300 Series**

**Process Reliability for Manual Workplaces**

**ManualPress 300 Series** included with the control unit **SCHMIDT® PressControl 600**

- Force/stroke monitoring of the entire pressing operation
  - Allows for extensive error analysis
- Process reliability:
  - Separation of the power flow
  - Utilizing the interface of external sensors and actuators, the clutch is engaged once the workpieces are placed probably.
  - Locking of the press with failed parts
  - Secure separation and acknowledgement of Pass and Fail ("Poka Yoke")

- Freely programmable positioning, stopping and braking in forward and return stroke and end position.
  - Process intervention
  - Quality monitoring
  - Reduction of error costs and elimination of errors
- Short changeover times due to preselection of stored working profiles

**Forward Stroke Lock Mode (the return Stroke is released)**

Press blocked/restricts the force flow in forward stroke
- When reaching a defined force
- When reaching the stroke

For protecting the produced parts and the force sensor of the press.

**Return Stroke Lock Mode (the forward Stroke is released)**

Press blocks the return stroke
- If the necessary force has not been reached
- If the required stroke has not been reached

This ensures that the user always completes the operation.
Both examples below can be combined arbitrarily when taking into account the maximum available inputs and outputs. In addition, the functions of the different operating modes are available, which can be freely parameterized or programmed for special functions.

- The control unit SCHMIDT® PressControl 600 analyses the force/stroke signals of the SCHMIDT® ManualPress using windows.
- Depending on the analyses, the PLC actuates a flap. Thus, the parts are securely separated into pass/fail bins.
- The light barrier generates an acknowledgement signal.
- This releases the press again.

- The control unit SCHMIDT® PressControl 600 does not release the press until all parts are completely and correctly positioned.
- This avoids erroneous pressing.
Options suitable
For your Application

Control Mounting Bracket
Used for fastening the SCHMIDT® PressControl 600, either mounted to the table or to the wall. The mounting bracket permits the unit to swivel 70° (included with control).

External Reset Button
We recommend an external reset button in rough production environments.

Calibration Tool
The calibration tool is a clamping device with which a constantly defined force is applied to the load cell of the SCHMIDT® ManualPress Serie 300 Series. In order to complete calibration, either a SCHMIDT® LoadCheck or a customer supplied calibration device is required. Photo on left side shows the device for the SCHMIDT® ManualPress 305. The right side is for SCHMIDT® ManualPress 307. The SCHMIDT® ManualPress 311 is being calibrated by using the fine adjustment mechanism in BDC.

CANopen Compact Box
With this add-on up to 16 digital combination in-/outputs (8 in- and 8 outputs) are provided, useable optionally as in- or output.

Ergonomic Handle
Swivelling handle for discharge of the wrist; easy and flexible assembly on the hand lever.

Speed Control
To reach a very high repeatability by pressing on force and stroke, a speed control can be inserted optionally instead of the micrometer screw, which brakes the pressing process shortly before achievement of the end position.

Press Base
Plastic (250 x 340 mm), incl. fasteners.