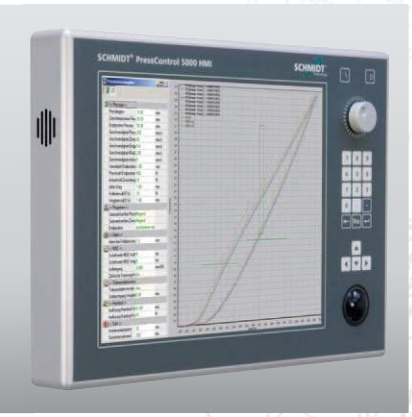
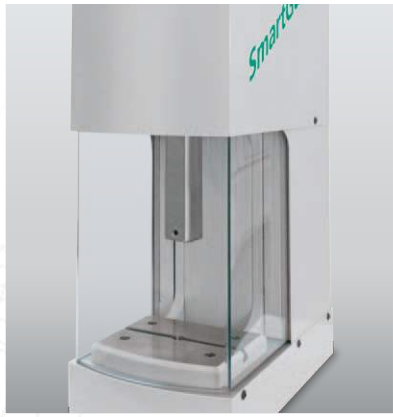
SCHMIDT® Technology

SCHMIDT® Presses

Simply The Best!





Presses, Control Units, Safety & More

Complete Solutions from a Single Source

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Family-Run Company
As internationally accepted technology leader

SCHMIDT Technology is a family-run, medium-sized enterprise at the highest technological level. The success speaks for itself: Today, products and services from **SCHMIDT Technology** are exported to over 80 countries of the world.

The safety and quality of **SCHMIDT Technology** products make them unique on the global market and thus sought after for decades. The international orientation of the company and the combination of creative and intelligent solutions, together with economic and efficient manufacturing in Germany, lay the groundwork for the successful future-oriented position of the enterprise.

Because of this, **SCHMIDT Technology** is valued internationally as a solid, dependable and competent partner. The outstanding characteristics of a successful company must include a strong visionary innovation potential.

SCHMIDT Technology recognized this at an early stage and invested ardently in the fields of research and development. At the same time, the company traditionally keeps in close contact with external research institutes and universities.

As a result, the name **SCHMIDT Technology** is associated with highest quality standards worldwide. In keeping with this, **SCHMIDT Technology** holds all relevant quality certificates such as DIN EN ISO 9001:2008.

Your Profitability
Is our top priority

Anyone who has to assemble two or more components must decide which assembly technology he wants to use. Traditional techniques such as screwing, welding, soldering and bond are being replaced, more and more, by cost-effective and rational pressing and joining operations for economic reasons.

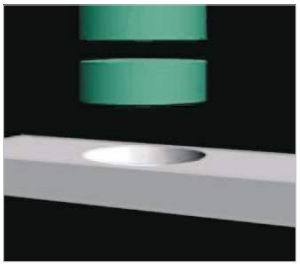
These are exactly our strengths.

Use our knowledge for your application

The right press type can be chosen depending on the application. Today, **SCHMIDT® Presses** stand for first-class assembly technology worldwide. This applies both for stand-alone machines and for assembly modules integrated in complex automation lines.

SCHMIDT Technology a leader in intelligent joining technology, has the widest product range of all producers. From **SCHMIDT® ServoPress** and **SCHMIDT® HydroPneumaticPress** or **SCHMIDT® PneumaticPress** up to our **SCHMIDT® ManualPress** range, our solutions are tailored to meet all of your process requirements. Apart from the presses, the safety and control technology of the **SCHMIDT® PressesControl** sets standards due to its system philosophy, force/stroke monitoring and integrated measurement technology. A continuous process control and the essential ISO-conforming documentation are the tools for high productivity in today's efficient assembly. These performance features make **SCHMIDT Technology** the undisputed technological leader in the field of precision joining technology today.

This is the basis for the excellent reputation of **SCHMIDT Technology**, specifically in the key sectors such as automobile technology, aerospace technology, electrics/electronics, micromechanics and medical technology.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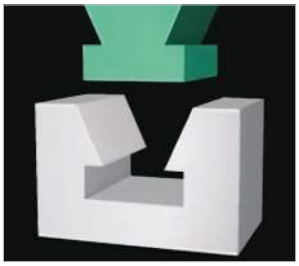
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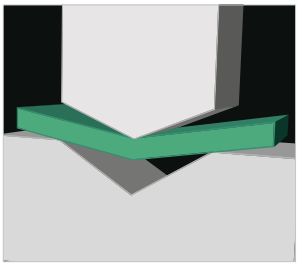
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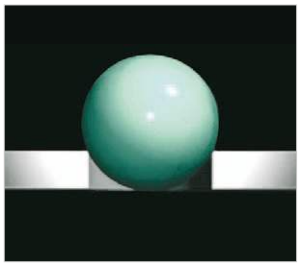
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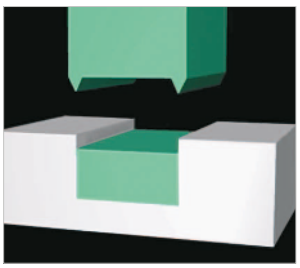
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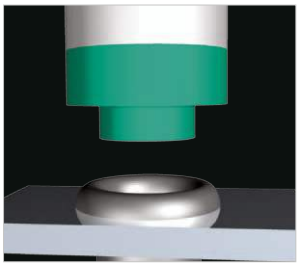
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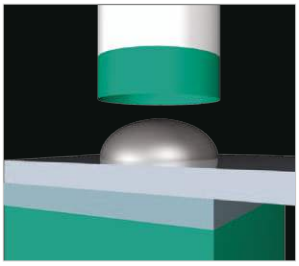
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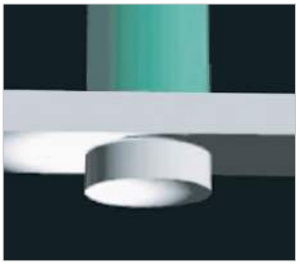
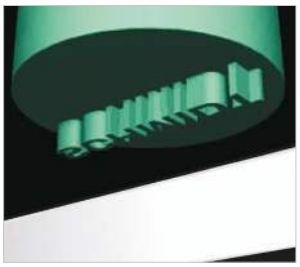
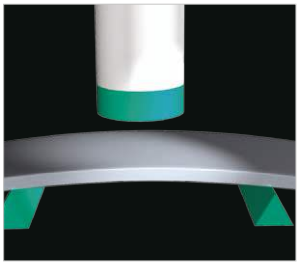

Punching


Marking


Cutting


Bending


Joining

In Partnership
To success

A global market requires linked processes. Thanks to the OPC connection via Ethernet technology, you can access your process data at any time. Furthermore, local representation and rapid response are essential. Our worldwide distribution network of subsidiaries and trained sales & support partners ensure that our customers will receive full support for all their requirements. All our representatives' support teams have been trained specifically on our products.

Deciding in favour of our technology is the first step to a successful partnership.

The economic success is then shown in daily production. High quality products optimized for assembly processes are as important as an efficient after-sales service. Our name is your guarantee.

Safety without Compromise

In 2006, the EC Machine Directives became national law in the EU member states. The articles of this harmonised agreement were the determining factors for the design of safety controls for assembly and press technology. Furthermore, a EC type approval became necessary for applications with manual workstations.

Even before the most recent regulations became legally binding, **SCHMIDT Technology** had delivered all press systems in compliance with this new law to all its customers (even to countries where these regulations are not implemented).

Our philosophy does not allow making compromises with regard to safety and health of the user.

Skills to your Advantage

All our training centers provide machinery and full expertise to assist our customers with their applications.

On this basis, a team of skilled engineers plan economic solutions from the simple manual workstation to the fully automated assembly line.

Competent technical customer service is our strength. We offer training courses and seminars in our **SCHMIDT® TrainingCenters**. Your employees will achieve sustainable knowledge of the presses and their practical use resulting in a benefit for your products.

SCHMIDT® ManualPress
From 1.6 kN to 22 kN / 360 lbs. to 4,945 lbs.

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 < 0.001" /0.002" 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

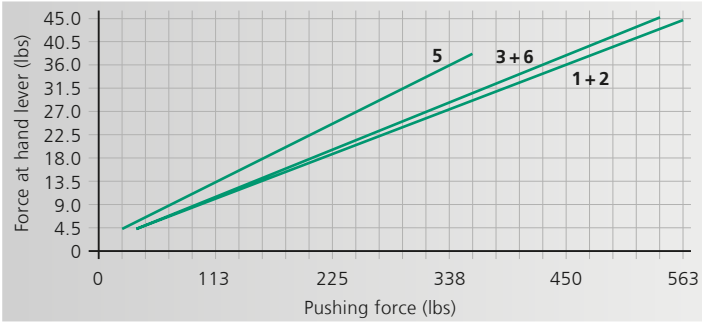
Press Type 5

Press Type 3/6

Press Type 1/2

Press Head

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



From 1.6 kN to 2.5 kN / 360 lbs. to 560 lbs.

Press Type			5	5R	3	3R	6	6R	1	1R	2	2R
Press head type			5	5R	3	3R	3	3R	1	1R	1	1R
Nominal force		lbs	360	360	540	540	540	540	560	560	560	560
Working stroke	**A**	inch	0-1.57	0.66-1.57	0-2.75	0.70-2.75	0-2.75	0.70-2.75	0-3.14	1.02-3.14	0-3.14	1.02-3.14
Special strokes					0-6.29	0.70-3.93	0-6.29	0.70-3.93	0-3.93	1.02-3.93	0-3.93	1.02-3.93
Throat depth	**C**	inch	2.55	2.55	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38
Press head height	**S**	inch	9.4	9.4	13.7	13.7	13.7	13.7	15.7	15.7	15.7	15.7
Ram bore	Ø	mm	10H7	10H7	10H7	10H7	10H7	10H7				
Collet (standard Ø10)	Ø	mm							1-17	1-17	1-17	1-17
Hand lever left			o	o	o	o	o	o	●	●	●	●
Angle of rotation/0.1 inch stroke			10.4°	10.4°	8.2°	8.2°	8.2°	8.2°	5.6°	5.6°	5.6°	5.6°
Max. weight of the upper tool [3]		lbs	3	2	6	4.5	6	4.5	2	2	2	2
Return stroke lock [1]												
Locked position 1	inch bef. BDC			0.45		0.5		0.5		0.76		0.76
Locked position 2	inch bef. BDC			0.13		0.17		0.17		0.27		0.27
Disengaging accuracy		inch		0.0023		0.0027		0.0027		0.0031		0.0031
Working height [4]	**F**											
Frame No. 13		inch	2.1-7.4	2.1-7.4								
Frame No. 3		inch			3.1-8.2	3.1-8.2			4.7-10.2	4.7-10.2		
Frame No. 2		inch					4.7-14.1	4.7-14.1			5.7-14.9	5.7-14.9
Frame No. 2-600 o		inch			7.8-23.6	7.8-23.6	7.8-23.6	7.8-23.6	9.6-25.5	9.6-25.5	9.6-25.5	9.6-25.5
Frame No. 2-1000 o		inch			12.9-40.5	12.9-40.5	12.9-40.5	12.9-40.5	14.9-42.5	14.9-42.5	14.9-42.5	14.9-42.5
Weight	approx. lbs		24	24	49	49	66	66	50	50	68	68

Accessories	5	5R	3	3R	6	6R	1	1R	2	2R
Mechanical counter	o	o	o	o	o	o	o	o	o	o
Throat depth frame (total depth) 4.37 inch, 5.15 inch, 6.29 inch, 7.87 inch			o	o	o	o	o	o	o	o
Additional fixture mounting plate suitable for throat depth frame			o	o	o	o	o	o	o	o
Micrometer stop	o	o	o	o	o	o				

Frame Overview	Press Type	Frame Height M (inch)	Table Size B x T (inch)	Table Bore Ø (mm)	Table Height K (inch)	Mounting Surface B x L (inch)
No. 13	5	12.99	4.33 x 3.15	20H7	1.81	4.33 x 7.28
No. 3	3, 1	15.74	5.91 x 4.33	20H7	2.36	5.90 x 10.23
No. 2	6, 2	21.10	7.28 x 4.33	20H7	2.36	7.28 x 11.02
No. 2-600	3, 6, 1, 2	31.88	7.87 x 6.30	20H7	3.86	7.87 x 11.41
No. 2-1000	3, 6, 1, 2	49.21	7.87 x 6.30	20H7	3.86	7.87 x 11.41

Options

● Series with no additional charge o Additional charge applies

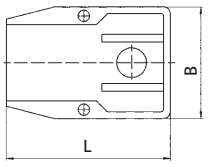
[1] Adjustment of locking position on request

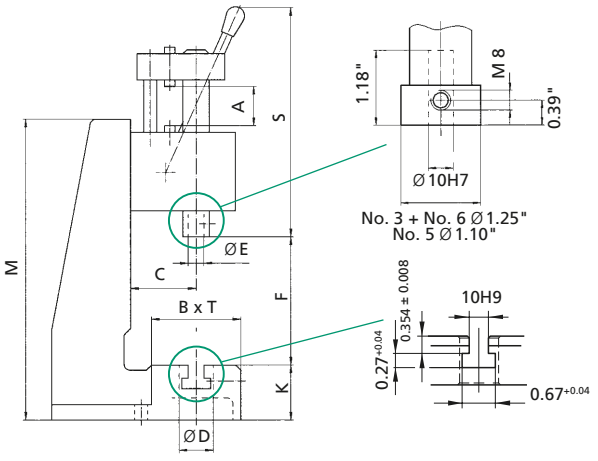
[3] The weight was determined with hand lever position 45° forward (guide)

[4] Typical values; can vary ± 0.118 inch due to cast and production tolerances

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.schmidtpresses.com

SCHMIDT® Toggle Presses
The high force at the end of stroke, just where it is important

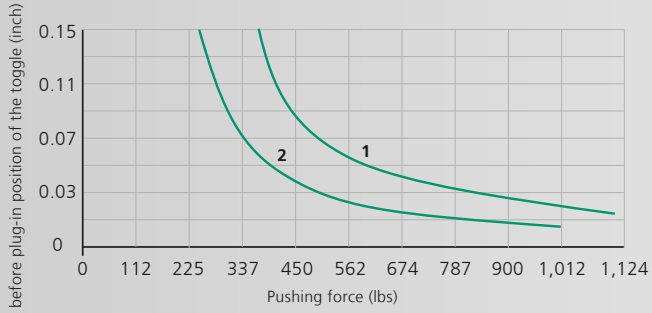
Do you need a high force at the end of stroke for material transforming processes? Then, **SCHMIDT® Toggle Presses** are just the right choice.

Features

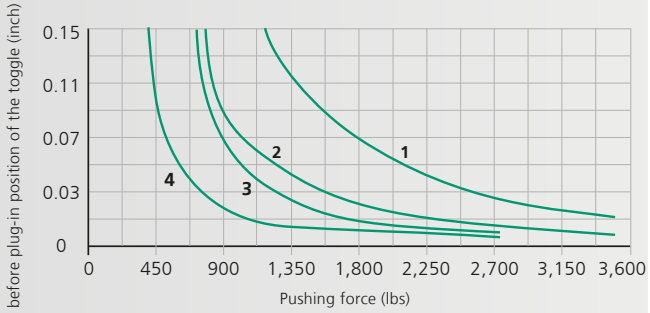
- High force at end of stroke (see diagram below)
- Honed bores and ground rams provide a long service life and a precise guidance

Press Type 13RFZ

Press Type 11/14 -17R



1 = No. 13 Force at the hand lever 200 N / 45 lbs
2 = No. 13 Force at the hand lever 120 N / 27 lbs



1 = No. 17 Force at the hand lever 200 N / 45 lbs
2 = No. 17 Force at the hand lever 120 N / 27 lbs
3 = No. 11, 14, 15, 16 Force at the hand lever 200 N / 45 lbs
4 = No. 11, 14, 15, 16 Force at the hand lever 120 N / 27 lbs

Note: Maximum force will be reached just before extended position

From 5 kN to 15 kN / 1,125 lbs. to 3,370 lbs.

Press Type			13 13F	13R 13RF	11 11F	11R 11RF	15 15F	15R 15RF	14 14F	14R 14RF	16 16F	16R 16RF	17 17F
Press head type			13 - 40 13F - 35	13R - 40 13RF - 35	11 - 45 11F - 35	11R - 45 11RF - 35	11R - 45 11F - 35	11R - 45 11RF - 35	11 - 60 11F - 50	11R - 60 11RF - 50	11 - 60 11F - 50	11R - 60 11RF - 50	11 - 20 11F - 20
Nominal force		lbs	1,125	1,125	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	3,370
Working stroke	**A**	inch	1.57 1.37	1.57 1.37	0 - 1.77 0 - 1.37	0.78 - 1.77 0.78 - 1.37	0 - 1.77 0 - 1.37	0.78 - 1.77 0.78 - 1.37	2.36 1.96	2.36 1.96	2.36 1.96	2.36 1.96	0 - 0.78 0 - 0.78
Throat depth	**C**	inch	2.55	2.55	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38
Press head height	**S**	inch	15.15 15.74	15.15 15.74	20.47 21.25	20.47 21.25	20.47 21.25	20.47 21.25	19.68 20.47	19.68 20.47	19.68 20.47	19.68 20.47	24.40 25.19
Ram bore	Ø	mm	10H7	10H7	10H7	10H7	10H7	10H7	10H7	10H7	10H7	10H7	10H7
Hand lever left			o		o		o		o		o		
Angle of rotation			95°	95°	110°	110°	110°	110°	125°	125°	125°	125°	90°
Max. Weight upper tool [3]		lbs	2.6/7.7 3.3 /6.6	2.6/7.7 3.3/6.6	4.4/9.9 5.5/13.2	4.4/8.8 4.4/13.2	4.4/9.9 5.5/13.2	4.4/8.8 4.4/13.2	3.3/5.5 4.4/11.0	4.4/5.5 3.3 /8.8	4.4/5.5 4.4/11.0	3.3/5.5 3.3 /8.8	5.5/- 5.5/-
Return stroke lock [1]													
Locked position 1	inch bef. BDC			0.53		0.47		0.47		0.55		0.55	
Locked position 2	inch bef. BDC			0.05		0.05		0.05		0.05		0.05	
Disengaging accuracy		inch		0.0011		0.0011		0.0011		0.0015		0.0015	
Working height [4]	**F**												
Frame No. 13		inch	2.55 - 7.08 1.57 - 6.10	2.55 - 7.08 1.57 - 6.10									
Frame No. 3		inch			3.14 - 8.26 2.16 - 7.08	3.14 - 8.26 2.16 - 7.08			3.54 - 8.66 2.55 - 7.67	3.54 - 8.66 2.55 - 7.67			2.75 - 7.87 2.36 - 7.28
Frame No. 2		inch					4.33 - 13.77 3.14 - 12.79	4.33 - 13.77 3.14 - 12.79			4.72 - 14.17 3.54 - 13.18	4.72 - 14.37 3.54 - 13.18	
Frame No. 2-600 o		inch			7.87 - 23.03 6.88 - 22	7.87 - 23.03 6.88 - 22	7.87 - 23.03 6.88 - 22	7.87 - 23.03 6.88 - 22	8.26 - 23.42 7.28 - 22.44	8.26 - 23.42 7.28 - 22.44	8.26 - 23.42 7.28 - 22.44	8.26 - 23.42 7.28 - 22.44	7.87 - 23 6.88 - 22
Frame No. 2-1000 o		inch			13 - 40.15 12 - 39.37	13 - 40.15 12 - 39.37	13 - 40.15 12 - 39.37	13 - 40.15 12 - 39.37	13.38 - 40.55 12.4 - 39.76	13.38 - 40.55 12.4 - 39.76	13.38 - 40.55 12.4 - 39.76	13.38 - 40.55 12.4 - 39.76	13.38 - 40.15 12 - 39.37
Weight	approx. lbs		26	26	51	53	64	64	53	53	64	64	51

Accessories	13 13F	13R 13RF	11 11F	11R 11RF	15 15F	15R 15RF	14 14F	14R 14RF	16 16F	16R 16RF	17 17F
Mechanical counter	o	o	o	o	o	o	o	o	o	o	o
Throat depth frame (total depth) 4.37 inch, 5.15 inch			o	o	o	o	o	o	o	o	
Additional fixture mounting plate suitable for throat depth frame	o	o	o	o	o	o	o	o	o		
Block clamping piece [2]	o o	o o	● o	● o	● o	● o	o o	o o	o o	o o	● o

Options

● Series with no additional charge o Additional charge applies

[1] Adjustment of locking position on request

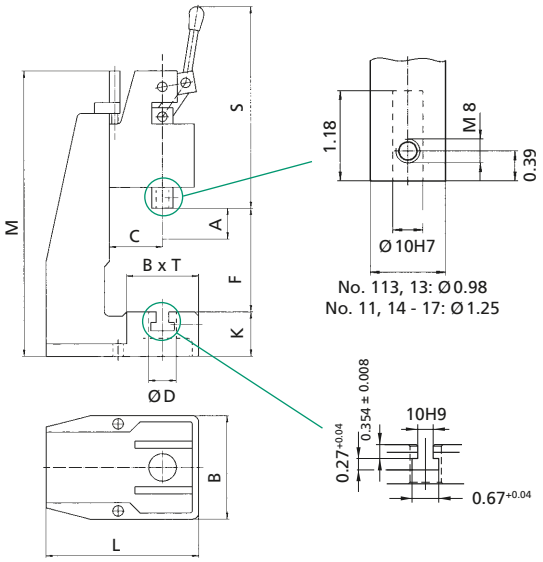
[2] Stroke reduction about 0.39 inch by version with additional charge

[3] The weight was determined with hand lever position 45° forward (guide)

[4] Typical values; can vary ± 0.118 inch due to cast and production tolerances

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.schmidtpresses.com

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

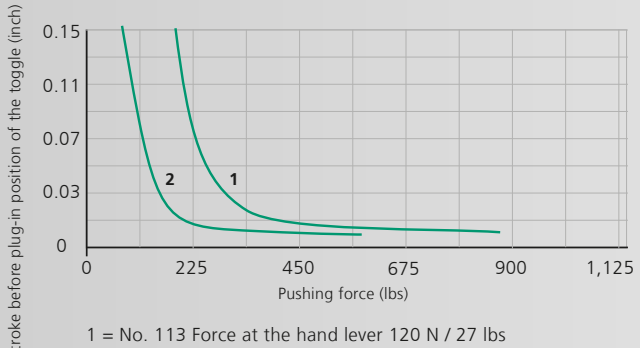
- High force at the end of stroke (see diagram below)
- Honed bores and ground rams provide a long service life and a precise guidance

Press Type 113RFZ

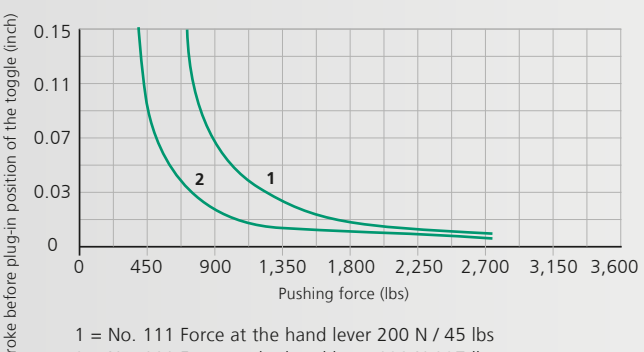
Press Type 111RF

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. We supply press No. 111 including the ergonomic handle (standard scope of supply).



1 = No. 113 Force at the hand lever 120 N / 27 lbs
2 = No. 113 Force at the hand lever 50 N / 11 lbs



1 = No. 111 Force at the hand lever 200 N / 45 lbs
2 = No. 111 Force at the hand lever 120 N / 27 lbs

Note: Maximum force will be reached just before extended position

From 2.5 kN to 12 kN / 560 lbs. to 2,700 lbs.

Press Type			113 113F	113R 113RF	111 111F	111R 111RF
Press head type			113 113F	113R 113RF	111 - 45 111F - 50	111R - 45 111RF - 50
Nominal force		lbs	560	560	2,700	2,700
Working stroke	**A**	inch	0 - 1.10 0 - 1.10	0.86 - 1.10 0.86 - 1.10	0 - 1.77 1.96	0.94 - 1.77 1.96
Throat depth	**C**	inch	2.55	2.55	3.38	3.38
Press head height	**S**	inch	6.69 7.08	7.48 7.87	8.46 8.85	9.44 9.84
Ram bore	Ø	mm	10H7	10H7	10H7	10H7
Hand lever left			-	-	-	-
Angle of rotation			80°	80°	90°	90°
Max. Weight upper tool[3]		lbs	2.2/6.6 1.3/6.6	1.1/5.5 1.3/6.6	5.5/- 6.6/-	5.5/- 6.6/-
Return stroke lock[1]						
Locked position 1	inch bef. BDC			0.47		0.55
Locked position 2	inch bef. BDC			0.019		0.059
Disengaging accuracy		inch		0.0011		0.0027
Working height[4]	**F**					
Frame No. 13		inch	1.96 - 6.49 1.57 - 6.10	1.96 - 6.49 1.57 - 6.10		
Frame No. 3		inch			5.11 - 8.07 4.52 - 7.67	5.11 - 8.07 4.52 - 7.67
Frame No. 2		inch			5.11 - 13.38 4.52 - 12.99	5.11 - 13.38 4.52 - 12.99
Frame No. 2-600 ○		inch			7.87 - 22.83 7.28 - 22.44	7.87 - 22.83 7.28 - 22.44
Frame No. 2-1000 ○		inch			12.99 - 40.15 12.20 - 39.37	12.99 - 40.15 12.20 - 39.37
Weight	approx. lbs		25	25	62	62

Accessories	113 113F	113R 113RF	111 111F	111R 111RF
Mechanical counter	○	○	○	○
Throat depth frame (total depth) 4.37 inch, 5.15 inch			○	○
Additional fixture mounting plate suitable for throat depth frame			○	○
Block clamping piece[2]	● ○	● ○	●	●

Frame Overview	Press Type	Frame Height M (inch)	Table Size B x T (inch)	Table Bore D (Ø inch)	Table Height K (inch)	Mounting Surface B x L (inch)
No. 13	113	18.70	4.33 x 3.14	20H7	1.81	4.33 x 7.28
No. 3	111	21.25	5.90 x 4.33	20H7	2.36	5.90 x 10.23
No. 2	111	27.55	7.28 x 4.33	20H7	2.36	7.28 x 11.02
No. 2-600	111	38.34	7.87 x 6.29	20H7	3.85	7.87 x 11.41
No. 2-1000	111	55.51	7.87 x 6.29	20H7	3.85	7.87 x 11.41

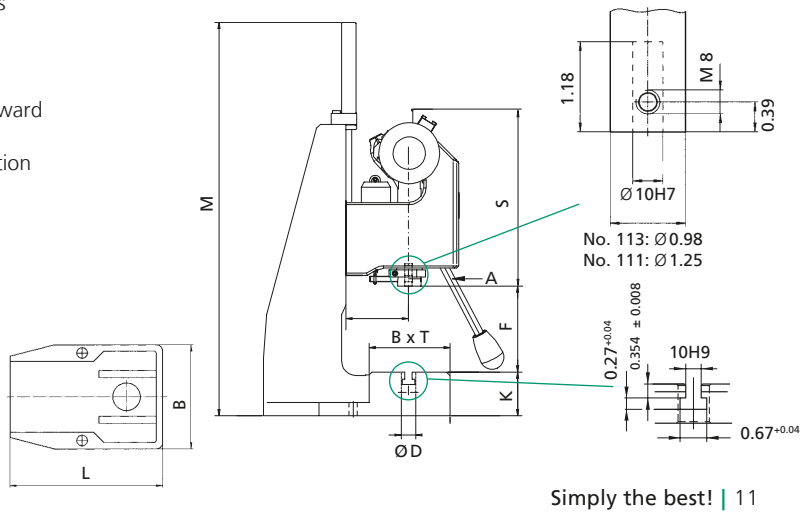
Options

● Series with no additional charge ○ Additional charge applies

1) Adjustment of locking position on request
2) Stroke reduction about 0.39 inch by version with additional charge
3) The weight was determined with hand lever position 45° forward (guide)
4) Typical values; can vary ± 0.118 inch due to cast and production tolerances

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



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.

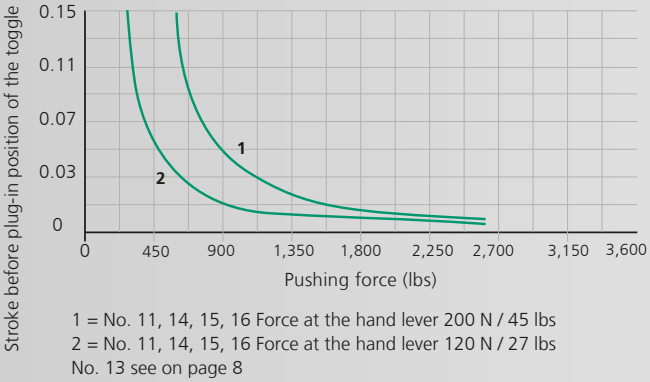
Features

- 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

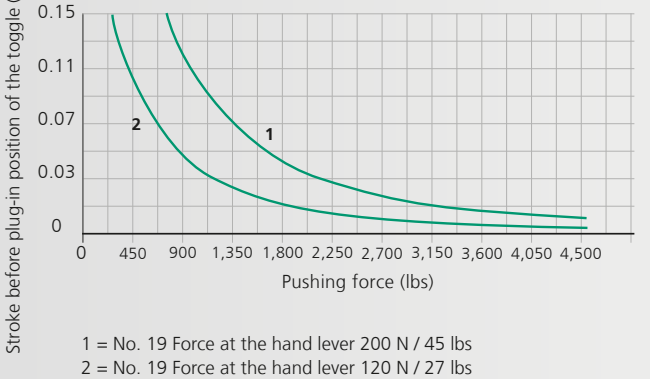
Press Type 11 VRFZ
13 VRFZ
14 VRFZ

Press Type 15 VF
16 VF

Press Type 19 VF



1 = No. 11, 14, 15, 16 Force at the hand lever 200 N / 45 lbs
2 = No. 11, 14, 15, 16 Force at the hand lever 120 N / 27 lbs
No. 13 see on page 8



1 = No. 19 Force at the hand lever 200 N / 45 lbs
2 = No. 19 Force at the hand lever 120 N / 27 lbs

Note: Maximum force will be reached just before extended position

From 5 kN to 22 kN / 1,125 lbs. to 4,950 lbs.

Press Type			13 V 13 VF	13 VR 13 VRF	11 V 11 VF	15 V 15 VF	11 VR 11 VRF	15 VR 15 VRF	14 V 14 VF	16 V 16 VF	14 VR 14 VRF	16 VR 16 VRF	19 V 19 VF	19 VR 19 VRF
Press head type			13V-40 13VF-40	13VR-40 13VRF-40	11V-45 11VF-45	11V-45 11VF-45	11VR-45 11VRF-45	11VR-45 11VF-45	11V-60 11VF-60	11V-60 11VF-60	11VR-60 11VRF-60	11VR-60 11VRF-60	19V-40 [1]	19VR-40 [1]
Nominal force		lbs	1,125	1,125	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	4,950	4,950
Working stroke	**A**	inch	0 - 1.57 0.59 - 1.57	1.02 - 1.57 1.02 - 1.57	0 - 1.77 0.98 - 1.77	0 - 1.77 0 - 1.77	0.78 - 1.77 0.98 - 1.77	0.78 - 1.77 0.98 - 1.77	0 - 2.36 0 - 2.36	0 - 2.36 0 - 2.36	1.10 - 2.36 1.18 - 2.36	1.10 - 2.36 1.18 - 2.36	0 - 1.57 0 - 1.57	10 - 40 10 - 40
Throat depth	**C**	inch	2.55	2.55	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38	5.15	5.15
Press head height	**S**	inch	15.15 15.74	15.15 15.74	20.07 20.86	20.07 20.86	20.07 20.86	20.07 20.86	20.07 20.86	20.07 20.86	20.07 20.86	20.07 20.86	24.40 24.40	24.40 24.40
Ram bore	Ø	mm	10H7	10H7	10H7	10H7	10H7	10H7	10H7	10H7	10H7	10H7	20H7	20H7
Hand lever left			○		○	○			○	○			●	●
Angle of rotation			95°	95°	110°	110°	110°	110°	125°	125°	125°	125°	175°	175°
Max. Weight top tool [4]		lbs	2.5/9 4.5/8	2.5/9 4.5/8	3.5/9 4.5/11	3.5/9 4.5/11	3.5/9 4.5/11	3.5/9 4.5/11	2/8 2/8	2/8 2/8	2/8 2/8	2/8 2/8	4.5/- 4.5/-	4.5/- 4.5/-
Return stroke lock [3]														
Locked position 1	inch	bef. BDC		0.57			0.47	0.47			0.55	0.55		0.17
Locked position 2	inch	bef. BDC		0.06			0.06	0.06			0.06	0.06		0.03
Disengaging accuracy		inch	0.001			0.001	0.001			0.002	0.002	0.002		0.002
Working height [5]	**F**													
Frame No. 13		inch	2.55 - 7.08 1.96 - 6.10	2.55 - 7.08 1.96 - 6.10										
Frame No. 3		inch			3.14 - 8.26 2.36 - 7.08		3.14 - 8.26 2.36 - 7.08		3.14 - 8.26 2.36 - 190		3.14 - 8.26 2.36 - 7.48			
Frame No. 2		inch				4.72 - 13.77 3.93 - 12.79		4.72 - 13.77 3.93 - 12.79		4.72 - 13.77 3.93 - 12.79		4.72 - 13.77 3.93 - 12.79		
Frame No. 2-600 ○		inch				7.87 - 23.03 7.28 - 22.44		7.87 - 23.03 7.28 - 22.44		8.26 - 23.22 7.67 - 22.63		8.26 - 23.22 7.67 - 22.63		
Frame No. 2-1000 ○		inch				12.99 - 40.15 12.40 - 39.37		12.99 - 40.15 12.40 - 39.37		13.38 - 40.55 12.79 - 39.96		13.38 - 40.55 12.79 - 39.96		
Frame No. 19		inch											3.54 - 8.66	3.54 - 8.66
Frame No. 19-400 ○		inch											6.29 - 15.74	6.29 - 15.74
Frame No. 19-500 ○		inch											10.23 - 21.65	10.23 - 21.65
Weight		approx. lbs	26	26	53	71	53	71	53	71	53	71	187	187

Accessories	13 V 13 VF	13 VR 13 VRF	11 V 11 VF	15 V 15 VF	11 VR 11 VRF	15 VR 15 VRF	14 V 14 VF	16 V 16 VF	14 VR 14 VRF	16 VR 16 VRF	19 V 19 VF	19 VR 19 VRF
Mechanical counter	○	○	○	○	○	○	○	○	○	○	○	○
Throat depth frame 4.37 inch, 5.15 inch		○	○	○	○	○	○	○	○			
Throat depth frame 5.94 inch											○	○
Additional fixture mounting plate suitable for throat depth frame			○	○	○	○	○	○	○	○	○ [2]	○ [2]

Frame Overview	Press Type	Frame Height M (inch)	Table Size B x T (inch)	Table Bore D (Ø mm)	Table Height K (inch)	Mounting Surface B x L (inch)
No. 13	13	18.70	4.33 x 3.14	20H7	1.81	4.33 x 3.34
No. 3	11, 14	21.25	5.90 x 4.33	20H7	2.36	5.90 x 10.23
No. 2	15, 16	27.55	7.28 x 4.33	20H7	2.36	7.28 x 11.02
No. 2-600 ○	15, 16	38.34	7.87 x 6.29	20H7	3.85	7.87 x 11.41
No. 2-1000 ○	15, 16	55.51	7.87 x 6.29	20H7	3.85	7.87 x 11.41
No. 19	19	25.19	7.87 x 6.29	25H7	4.40	7.87 x 14.56
No. 19-400 ○	19	33.07	9.84 x 7.87	40H7	5.70	9.84 x 18.11
No. 19-500 ○	19	39.37	9.84 x 7.87	40H7	5.70	9.84 x 18.89

Options

● Series with no additional charge ○ Additional charge applies

[1] Special strokes 0.47 inch and 1.96 inch on request

[2] Fixture mounting plate is already existing in the frame

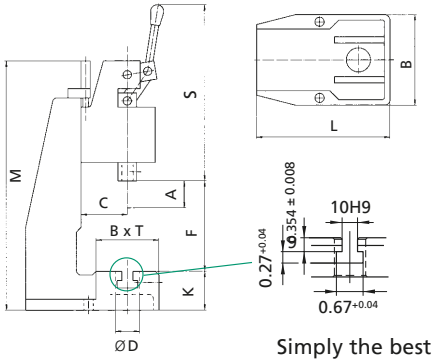
[3] Adjustment of locking position on request

[4] The weight was determined with hand lever position 45° forward (guide)

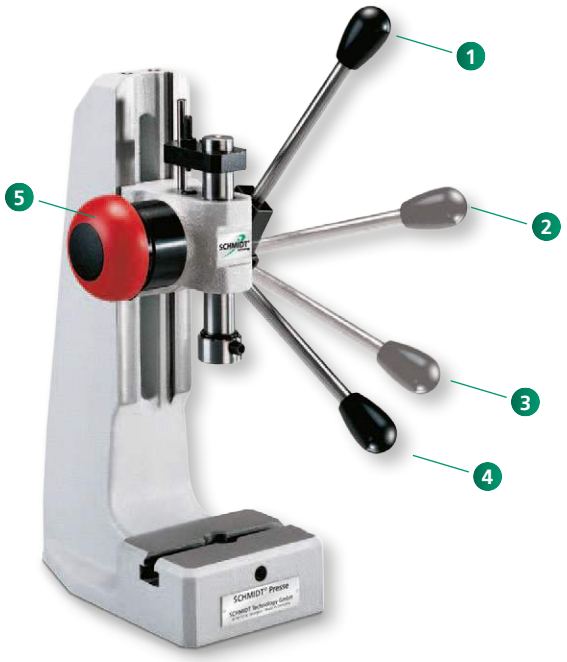
[5] Typical values; can vary ± 0.118 inch due to cast and production tolerances

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



SCHMIDT® ManualPress
Options Suitable For Your Application



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.

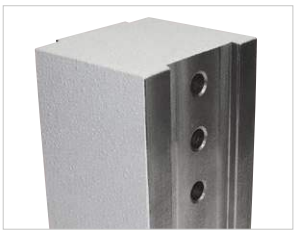
Fine Adjustment with Micrometer Scale for Toggle Presses

By loosening the set screw 1 and turning the adjusting nut 2 with the same tool, the setting of the BDC can be adjusted infinitely. Graduation is 0.0007 inch line to line 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 – 17 mm / 0.03 – 0.66 inch.



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, left-handed or left-/right-handed design is an available option.

Upper Tooling Adapter
Adapter for tools with a diameter of 5 – 20 mm / 0.19 – 0.78 inch.

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 improved comfort; easy and flexible installation on the hand lever.

Press Base
Plastic (9.84 x 13.38 inch), 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 = modular head only
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

SCHMIDT® ManualPress 300 Series
Manual Presses With Process Monitoring

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 at a 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 criterea for 100 % in-process monitoring.

Assembly system with patented return stroke lock and progammable clutch.

SCHMIDT® ManualPress 300 Series

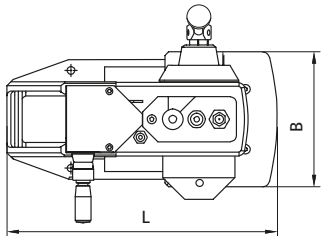
Process Reliability For Manual Workplaces, Force Range 0.4 kN to 12 kN/90 to 2,700 lbs

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 rotation. This results in precise operation 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 0.002 inch
  - 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



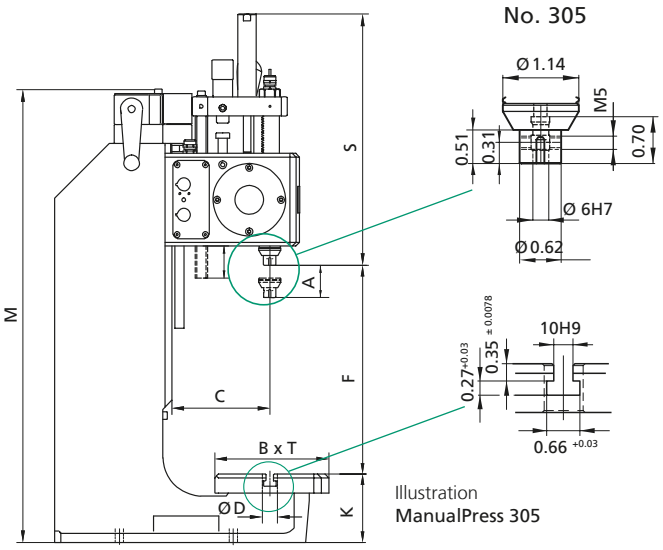
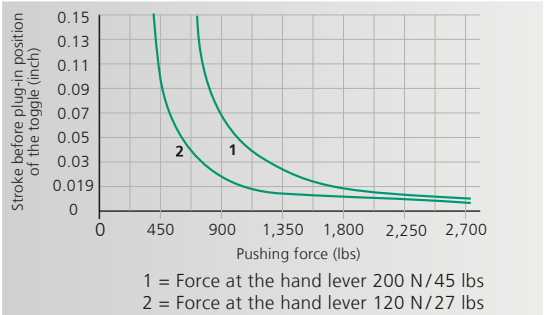


Illustration
ManualPress 305

Press Type			305	307	311
Nominal force		lbs	90	900	2,700
Force at the hand lever		approx. lbs	11	45	45
Working stroke	**A**	inch	0 - 1.65	0 - 2.12	0 - 1.96 [1]
Throat depth	**C**	inch	5.03	5.03	5.03
Press head height	**S**	inch	12.20	16.41	21.85
Ram bore	Ø	mm	6H7	10H7	10H7
Stroke fine adjustment		inch	0.0007	0.0007	0.0007
Stroke resolution		inch	0.0001	0.0001	0.0001
Angle of rotation/mm stroke			3.3°	4.8°	non linear
Resolution, process data acquisition	stroke force	inch/inc lbs/inc	0.0002 0.028	0.0002 0.28	0.0002 0.78
Working height [5]	**F**				
Frame No. 7-420		inch	2.36 - 16.54	1.97 - 16.14	1.97 - 11.41
Frame No. 7-600 [3]		inch	3.54 - 23.62	3.14 - 23.62	3.14 - 18.89
Max. Weight upper tool [4]		lbs	1	2	3
Weight		approx. lbs	90	90	132
Protection type			IP 54	IP 54	IP 54

ManualPress 311



1 = Force at the hand lever 200 N/45 lbs
2 = Force at the hand lever 120 N/27 lbs

Note: Maximum force will be reached just before extended position

Accessories			
Stronger return assist spring	o	o	
Speed control	o	o	
Throat depth frame [2] [3] (total depth) 6.65, 8.22, 9.80 inch	o	o	

Frame Overview	Press Type	Frame Height M (inch)	Table Size B x T (inch)	Table bore D Ø mm	Table Height K (inch)	Mounting Surface B x L (inch)
No. 7-420	305, 307, 311	29.13	7.08 x 5.90	20H7	3.54	8.66 x 14.25
No. 7-600 o	305, 307, 311	37.79	7.08 x 11.02	20H7	4.33	13 x 18.30 - 19.88

Options

o Additional charge applies

[1] The fine adjustment increases the working stroke by 0.12 inch

[2] Throat depth frame only available with frame No. 7-600

[3] Increased throat and higher frame lead to smaller nominal forces for No. 311

[4] The weight was determined with hand lever position 45° forward (guide)

[5] Typical values; can vary ± 0.018 inch due to cast and production tolerances

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

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 properly.
  - 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.

SCHMIDT® ManualPress 300 Series
Examples With Process Verification Workplaces

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.

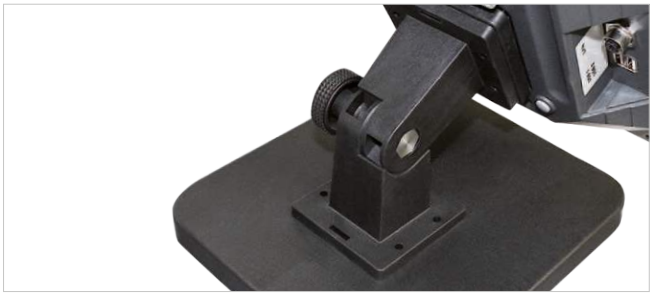
SCHMIDT® ManualPress 307

- The control unit **SCHMIDT® PressControl 600** analyzes the force/stroke signals of the **SCHMIDT® ManualPress** using windows
- Depending on the analysis, 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

SCHMIDT® ManualPress 311

- 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° (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.

Speed Control

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

Ergonomic Handle

Swivelling handle for improved comfort; easy and flexible installation on the hand lever.

Press Base

Plastic (9.84 x 13.38 inch), incl. fasteners.

SCHMIDT® PneumaticPress

Maximum Pressing Force from 1.6 kN to 60 kN / 350 lbs. to 13,490 lbs.

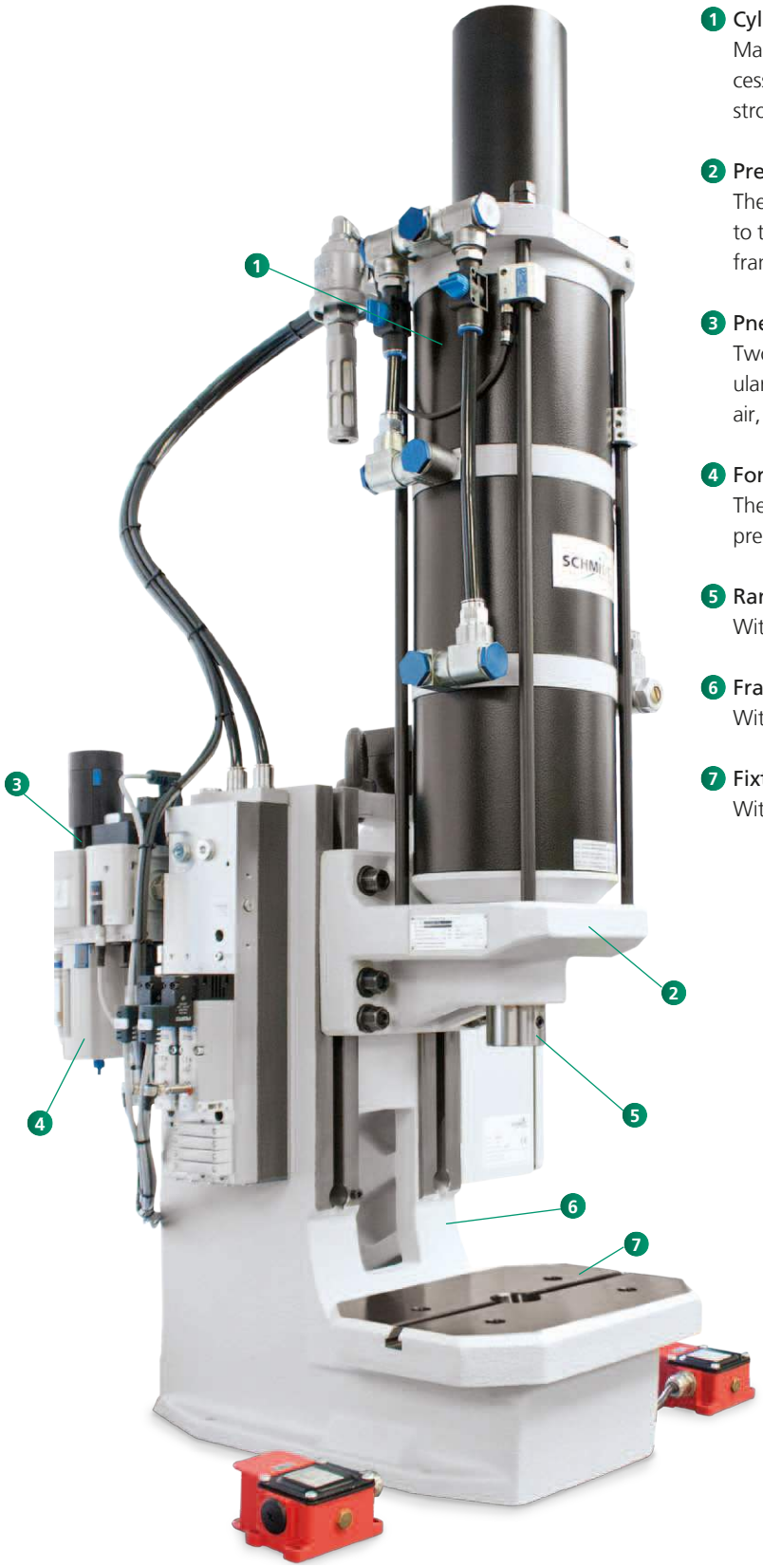
SCHMIDT® PneumaticPresses consist of a modular system suitable for optimal transforming, joining and assembling operations within the pressing capacities of 1.6 to 60 kN / 350 lbs. to 13,490 lbs.

With the addition of the **SCHMIDT® PressControl 75** or **600** and the optional process monitoring, these presses become EC type-approved, CE-conformed workstations. Therefore these press systems can be used in either single cycle mode or automatic mode.

The application determines the selection of the press system. Consideration is given to the flexible design of the assembly location taking into account ergonomic and safety aspects. These characteristics are achieved by means of a finely adjusted, modular type product range. The efficiency and increased process reliability of these press systems have been proven many times, in single applications, semi-automated assembly systems and have been integrated into automated production lines.

SCHMIDT® PneumaticPress

Example Of a System Design With a Direct Acting Press



1 Cylinder Unit
Maintenance-free specifically developed for the assembly processes; with flow control for speed regulation of the downstroke.

2 Press Head Unit
The working height can be rapidly and accurately adjusted due to the height adjustment's ease of use. Can be used without the frame as processing station in automated installations.

3 Pneumatic Control Package
Two-channel pneumatic package (as shown) is based on a modular valve block, designed to operate with filtered, non-lubricated air, supply pressure range of 3 – 6 bar/44 – 87 psi.

4 Force Control
The press force output can easily be controlled via a separate pressure regulator and pressure gauge (not shown).

5 Ram
With precision bore for tool holding and built-in adjustable stop.

6 Frame
With precision machined press head guide rails.

7 Fixture Mounting Plate
With precision T-slot and bore for tool location.

SCHMIDT® PneumaticPress
Principle Of Operation

Functional Description Using Of a 3-Chamber Pneumatic Cylinder – As An Example

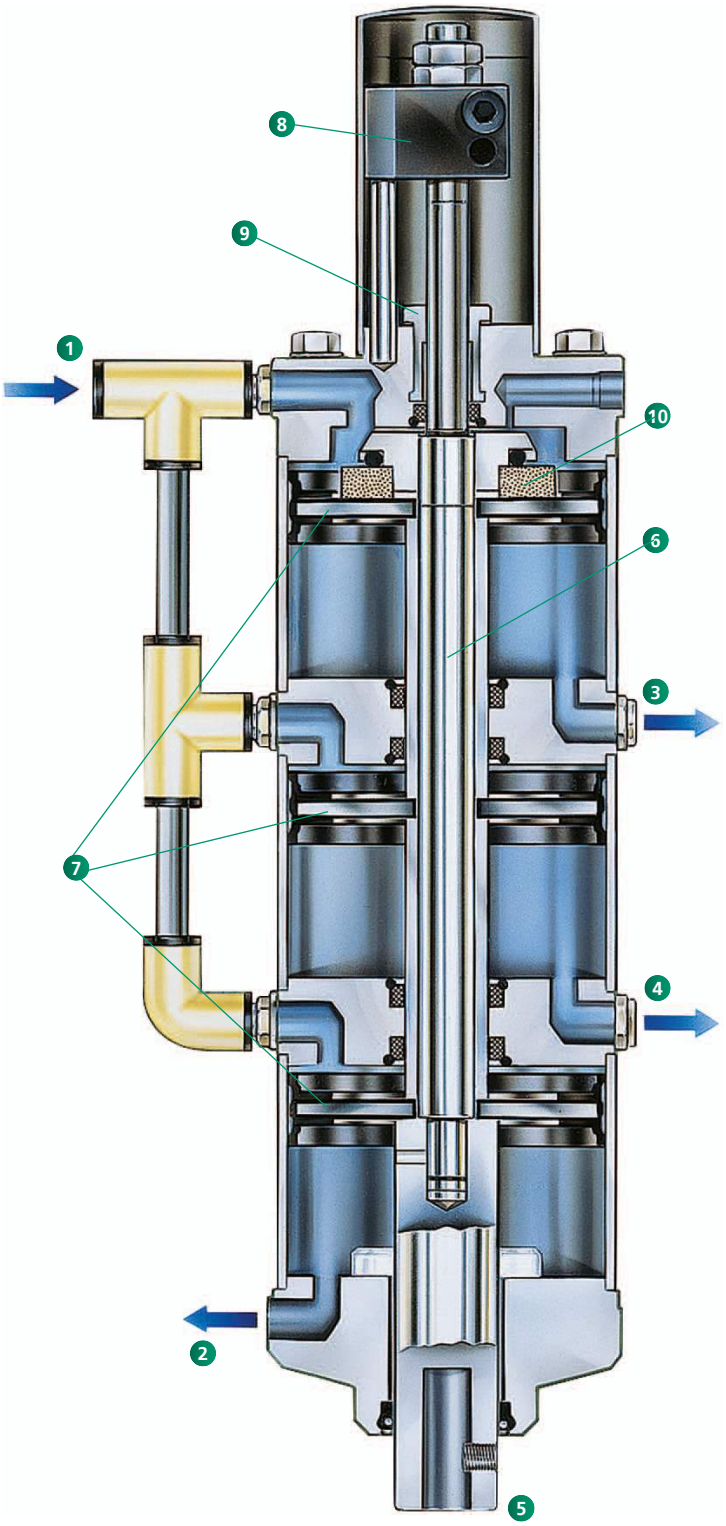
In working stroke, three pistons 7 connected by the piston rod 6 are pressurized with compressed air via air connection 1 and move downward. The air below the pistons exhausts from the cylinder chambers via depressurized connection 2 and breather vents 3 and 4. The ram 5 extends up to the maximum working stroke.

In return stroke, the upper cylinder chambers are depressurized via connection 1 and only the bottom piston is pressurized with compressed air via air connection 2. Ambient air enters in both remaining cylinder chambers via breather vents 3 and 4. The ram with the three pistons moves upward.

This construction has the same effect as a parallel connection of three cylinders. Thus, a powerful working stroke is achieved with a compact design as well as an economic use due to the low air consumption in the return stroke.

The stroke can be limited by setting Stroke Limit Block 8 to an approximate, desired position. The gap between Stroke Limit Block and Stroke Fine Adjustment 9 now determines the maximum stroke that the ram can travel. In order to fine-tune this stroke, Fine Adjustment Nut 9 can be adjusted.

All direct acting presses have a built-in permanent magnet 10. This magnet facilitates sensing of the ram position via tie rod mounted sensors.



Features

- Optimally adapted to individual requirements due to its modular design
- Process optimization by means of adjustable parameters (stroke, force, speed)
- Easy adaptation to different tool and part heights because of easy stroke and height adjustment
- Additional safety measures when using heavy tools due to the optional device for retention of ram in home position
- Optional end position request via cylinder switch as signal transmitter for peripheral processes
- Low noise level (< 75 dBA)
- Double-acting, wear-resistant cylinders with low air consumption for the return stroke
- High flexibility due to short changeover time
- Long service life and high precision due to wear-resistant Teflon coated bushings at top and bottom of cylinder
- Precision ground ram
- Precision double ram guides

SCHMIDT® PneumaticPress

Direct Acting With Constant Force Over The Entire Stroke

Features

- Round anti-rotational ram
- Adjustable ram position in BDC by means of precision lower stop (1 division line = 0.001 inch) on scale
- T-slot with locking set screw in fixture mounting plate

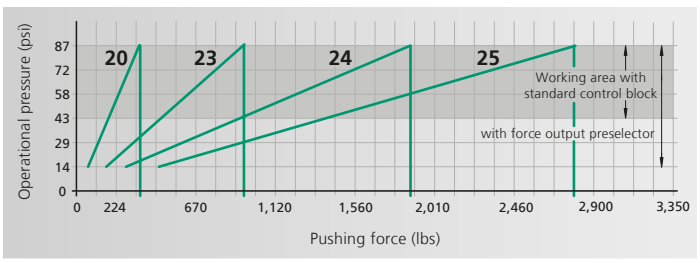
Press Type 20

Press Type 23

Press Type 24

Press Type 25

Pneumatic Cylinder
with piston and magnet kit for ram position via cylinder switch.



From 1.6 kN to 12.5 kN / 360 lbs. to 2,800 lbs.

Press Type			20	23	24	25
Working stroke	**A**	mm	50, 75 100, 125 160, 200 250, 300	50, 75 100, 125 160, 200 250, 300	50, 75 100, 125 160	50, 75 100
Nominal force at 87 psi		lbs	360	945	1,890	2,800
Throat depth	**C**	inch	3.38	3.38	3.38	3.38
Throat depth frame ○		inch	4.37, 5.15 6.29, 7.87	4.37, 5.15 6.29, 7.87	4.37, 5.15 6.29, 7.87	4.37, 5.15
Additional fixture mounting plate suitable for throat depth frame			○	○	○	○
Ram bore	Ø	mm	20H7	20H7	20H7	20H7
Ram diameter	Ø	inch	1.57	1.57	1.57	1.57
Working height [1]	**F**					
Frame No. 3		inch	3.14 - 8.66	3.54 - 8.26	3.54 - 8.26	3.54 - 8.26
Frame No. 2 ○		inch	4.33 - 14.17	4.72 - 13.77	4.72 - 13.77	4.72 - 13.77
Frame No. 2-600 ○		inch	7.87 - 23.62	8.26 - 22.83	8.26 - 22.83	8.26 - 22.83
Frame No. 2-1000 ○		inch	12.99 - 40.94	13.18 - 40.15	13.18 - 40.15	13.18 - 40.15
Weight		approx. lbs	66	77	88	99
Flange model			20-FL	23-FL	24-FL	25-FL
Cylinder	**Z**	Ø inch	2.71	4.17	4.17	4.17
Flange	**FL**	Ø inch	4.33	5.51	5.51	5.51
Width across flats	**SW**	inch	3.14	4.40	4.40	4.40
Centering shoulder	**ZA**	Ø inch	2.36	2.67	2.67	2.67

Frame Overview	Press Type	Frame Height M (inch)	Table Size B x T (inch)	Table Bore D Ø mm	Table Height K (inch)	Mounting Surface B x L (inch)
No. 3	20, 23, 24, 25	21.25	5.90 x 4.33	20H7	2.36	5.90 x 10.23
No. 2	20, 23, 24, 25	27.55	7.28 x 4.33	20H7	2.36	7.28 x 11.02
No. 2-600 ○	20, 23, 24, 25	38.34	7.87 x 6.29	20H7	3.85	7.87 x 11.41
No. 2-1000 ○	20, 23, 24, 25	55.51	7.87 x 6.29	20H7	3.85	7.87 x 11.41

Options

○ Additional charge applies

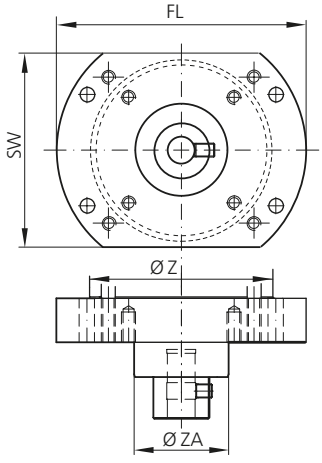
[1] Typical values; can vary ± 0.118 inch due to cast and production tolerances

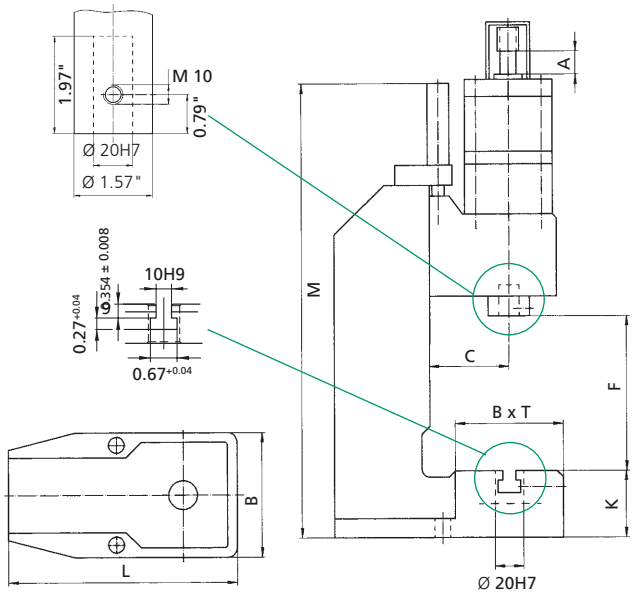
Other Available Options

- 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

Bottom View Of The Press Head, Flange Model

Mounting drill pattern flange/ram





Please consult our Sales Department or Representative.

Detailed dimensional drawings can be downloaded: www.schmidtpresses.com

SCHMIDT® PneumaticPress

Direct Acting With Constant Force Over The Entire Stroke

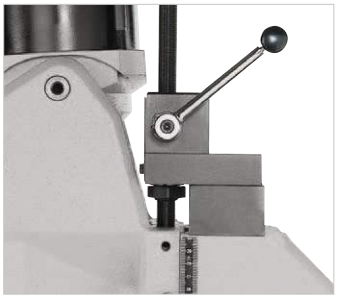
Features

- Round anti-rotational ram
- Adjustable ram position in BDC by means of precision lower stop (1 division line = 0.001 inch) on scale
- T-slot with locking set screw in fixture mounting plate

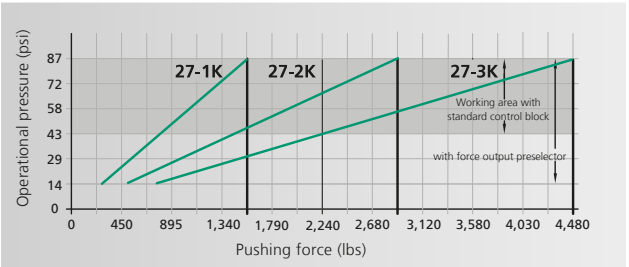
Press Type 27

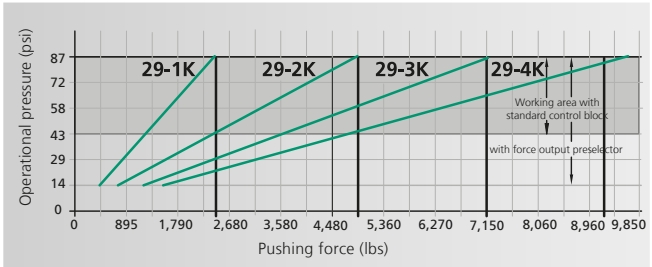
Press Type 29

Precision Lower Stop



Height Adjustment
Fast, accurate setting of the work height.





From 7 kN to 43 kN / 1,575 lbs. to 9,670 lbs.

Press Type			27-1K	27-2K	27-3K	29-1K	29-2K	29-3K	29-4K
Working stroke	**A**	mm	50, 75, 100 160, 200 250, 300	50, 75 100, 125 160, 200	50, 75 100, 125 160	50, 75 100, 160 200, 300	50, 75 100, 125 160, 200	50, 75 100, 125 160	50, 75 100
Nominal force at 87 psi		lbs	1,575	2,920	4,495	2,475	4,945	7,195	9,670
Throat depth	**C**	inch	5.15	5.15	5.15	5.51	5.51	5.51	5.51
Throat depth frame o		inch	5.94	5.94	5.94	6.29, 7.28	6.29, 7.28	6.29, 7.28	6.29
Additional fixture mounting plate suitable for throat depth frame			o	o	o	o	o	o	o
Ram bore	Ø	mm	20H7	20H7	20H7	20H7	20H7	20H7	20H7
Ram diameter	Ø	inch	1.57	1.57	1.57	1.96	1.96	1.96	1.96
Working height [1]	**F**								
Frame No. 34		inch	3.54 - 10.62	3.54 - 10.62	3.54 - 10.62				
Frame No. 301 o		inch	6.29 - 15.74	6.29 - 15.74	6.29 - 15.74				
Frame No. 301-500 o		inch	12.20 - 21.65	12.20 - 21.65	12.20 - 21.65				
Frame No. 29		inch				3.14 - 11.41	3.14 - 11.41	3.14 - 11.41	3.14 - 11.41
Frame No. 29-500 o		inch				5.90 - 19.68	5.90 - 19.68	5.90 - 19.68	5.90 - 19.68
Frame No. 29-600 o		inch				9.84 - 23.62	9.84 - 23.62	9.84 - 23.62	9.84 - 23.62
Weight (standard)		approx. lbs	190	190	190	265	265	265	265
Flange model			27-1K-FL	27-2K-FL	27-3K-FL	29-1K-FL	29-2K-FL	29-3K-FL	29-4K-FL
Cylinder	**Z**	Ø inch	5.19	5.19	5.19	6.69	6.69	6.69	6.69
Flange	**FL**	Ø inch	7.08	7.08	7.08	8.66	8.66	8.66	8.66
Width across flats	**SW**	inch	5.51	5.51	5.51	7.08	7.08	7.08	7.08
Centering shoulder	**ZA**	Ø inch	2.67	2.67	2.67	3.14	3.14	3.14	3.14

Frame Overview	Press Type	Frame Height M (inch)	Table Size B x T (inch)	Table Bore D Ø mm	Table Height K (inch)	Mounting Surface B x L (inch)
No. 34	27	24.80	7.87 x 6.29	25H7	4.37	7.87 x 14.56
No. 301	27	32.67	9.84 x 7.87	40H7	5.70	9.84 x 18.11
Frame No. 301-500 o	27	38.97	9.84 x 7.87	40H7	5.70	9.84 x 18.89
Special fixture mounting plate with 3 longitudinal slots o			11.81 x 8.66 15.74 x 9.05	40H7 40H7		
Frame No. 29	29	27.16	11.81 x 8.66	40H7	5.55	11.81 x 18.11
Frame No. 29-500 o	29	38.97	11.81 x 8.66	40H7	6.53	11.81 x 21.25
Frame No. 29-600 o	29	43.70	11.81 x 8.66	40H7	6.53	11.81 x 22.24
Special fixture mounting plate with 3 longitudinal slots o			13.97 x 8.85 15.74 x 9.05	40H7 40H7		

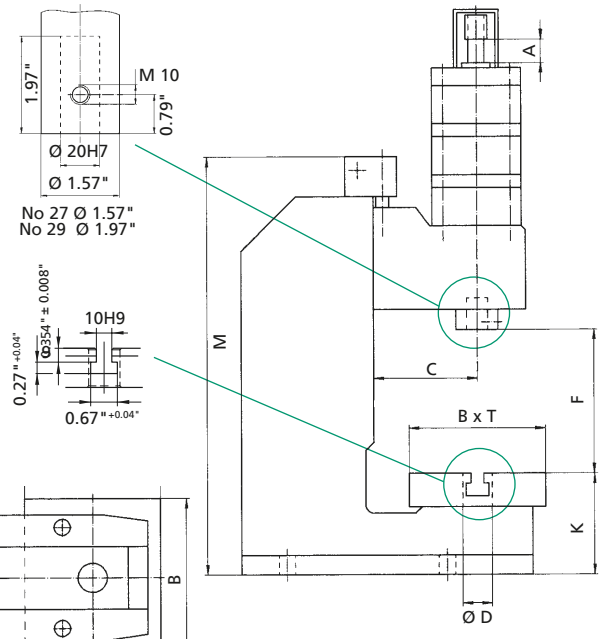
Options

o Additional charge applies

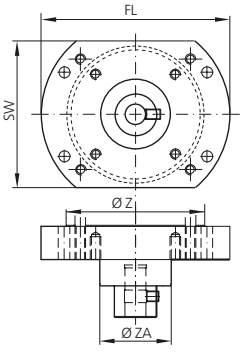
[1] Typical values; can vary ± 0.118 inch due to cast and production tolerances

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



Bottom View Of The Press Head, Flange Model
Mounting drill pattern flange/ram



SCHMIDT® PneumaticPress

Pneumatic Toggle Presses With Maximum Force At The End Of Stroke

Features

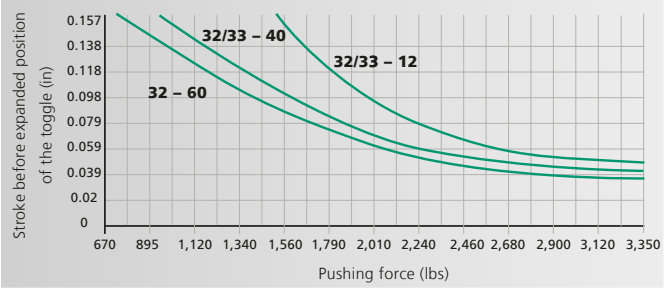
- Cross hole with locking screw in the press table for safe installation of tool
- Accurate adjustable ram position via fine adjustment (**Type 33**)
- T-slot with set screw in fixture mounting plate to secure bottom tool

Press Type 32

Press Type 33

Fine Adjustment
for **Press No. 33** with scale
1 division line = 0.0007 inch.

Flexible Stroke Adjustment
reduces the air consumption for shorter strokes.



Up to 15 kN / 3,375 lbs.

Press Type			32	33
Working stroke	**A**	mm	0 - 12 4 - 40 6 - 60	0 - 12 4 - 40
Nominal force at 87 psi		lbs	3,375	3,375
Throat depth	**C**	inch	3.38	3.38
Throat depth frame ○		inch	4.37, 5.15	4.37, 5.15
Additional fixture mounting plate suitable for throat depth frame			○	○
Ram bore	Ø	mm	20H7	20H7
External ram dimensions	Ø	inch	1.57	1.57
Fine adjustment				●
Working height [1)]	**F**			
Frame No. 3		inch	3.54 - 8.26	
Frame No. 2		inch	4.72 - 13.38	2.75 - 11.41
Frame No. 2-600 ○		inch	8.26 - 22.83	6.29 - 20.86
Frame No. 2-1000 ○		inch	13.38 - 40.15	11.41 - 38.18
Weight		approx. lbs	100	110

Frame Overview	Press Type	Frame Height M (inch)	Table Size B x T (inch)	Table Bore D Ø (mm)	Table Height K (inch)	Mounting Surface B x L (inch)
No. 3	32	21.25	5.90 x 4.33	20H7	2.36	5.90 x 10.23
No. 2	32, 33	27.55	7.28 x 4.33	20H7	2.36	7.28 x 11.02
Frame No. 2-600 ○	32, 33	31.88	7.87 x 6.29	20H7	3.85	7.87 x 11.41
Frame No. 2-1000 ○	32, 33	49.13	7.87 x 6.29	20H7	3.85	7.87 x 11.41

Options

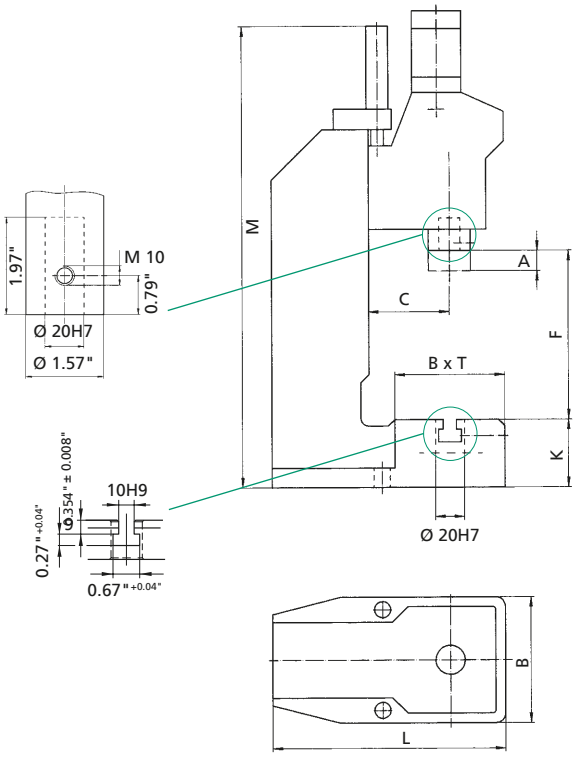
● Series standard with no additional charge

○ Additional charge applies

[1)] Typical values; can vary ± 0.118 inch due to cast and production tolerances

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.schmidtpresses.com

SCHMIDT® PneumaticPress

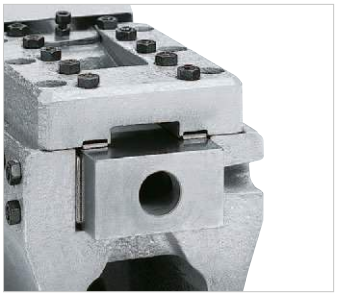
Pneumatic Toggle Presses With Maximum Force At The End Of Stroke

Features

- Anti-rotational square ram with fully adjustable, Teflon lined gibs for precise travel, no die set required
- Exact positioning due to fine adjustment scale (1 division line = 0.001 inch)

Press Type 34

Press Type 36

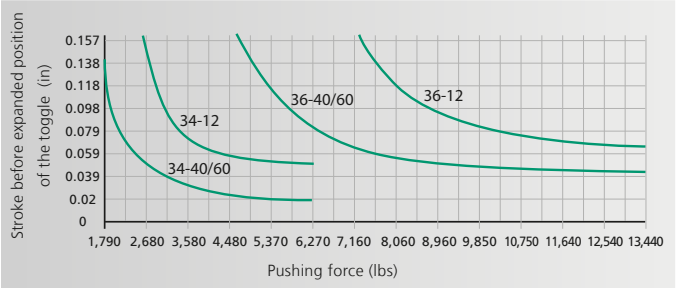


Square Ram

Fine Adjustment

Pushing Force Diagram

Operational pressure: 87 psi



From 28 kN to 60 kN / 6,295 lbs. to 13,490 lbs.

Press Type			34	36
Working stroke	**A**	mm	0-12 4-40 6-60	0-12 4-40 6-60
Nominal force at 87 psi		lbs	6,295	13,490
Throat depth	**C**	inch	5.15	6.29
Throat depth frame o		inch	5.94, 6.69	7.28
Fixture mounting plate suitable for throat depth frame			o	o
Ram bore	Ø	mm	20H7	20H7
External ram dimensions	**G x H**	Ø inch	1.41 x 2.48	1.81 x 3.38
Working height [1]	**F**			
Frame No. 34		inch	3.93-9.84	
Frame No. 301		inch	6.29-15.74	
Frame No. 301-500		inch	12.20-21.65	
Frame No. 35		inch		3.93 - 9.84
Frame No. 35-500		inch		5.90-19.68
Frame No. 35-600		inch		9.84-23.62
Weight		approx. lbs	200	330

Frame Overview	Press Type	Frame Height M (inch)	Table Size B x T (inch)	Table Bore D Ø mm	Table Height K (inch)	Mounting Surface B x L (inch)
No. 34	34	24.80	7.87x6.29	25H7	4.37	7.87 x 14.56
No. 301	34	32.67	9.84x7.87	40H7	5.70	9.84 x 18.11
No. 301-500	34	38.97	9.84x7.87	40H7	5.70	9.84 x 18.89
Special fixture mounting plate with 3 longitudinal slots o			11.81 x 8.66 15.74 x 9.05	40H7		
No. 35	36	27.55	11.81 x 8.66	40H7	5.55	11.81 x 18.89
No. 35-500	36	38.97	11.81 x 8.66	40H7	6.53	11.81 x 22.04
No. 35-600	36	43.70	11.81 x 8.66	40H7	6.53	11.81 x 23.03
Special fixture mounting plate with 3 longitudinal slots o			13.97 x 8.85 15.74 x 11.02	40H7		

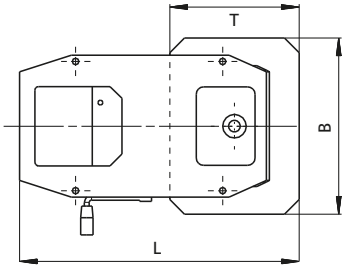
Options

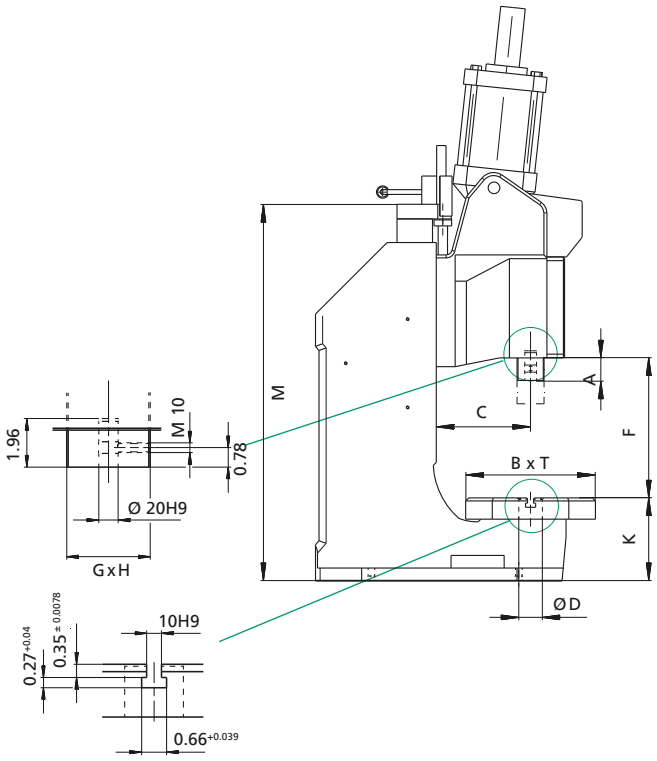
o Additional charge applies

[1] Typical values; can vary ± 0.118 inch due to cast and production tolerances

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.schmidtpresses.com

SCHMIDT® PneumaticPress

Direct Acting Pneumatic Presses With Force/Stroke Monitoring

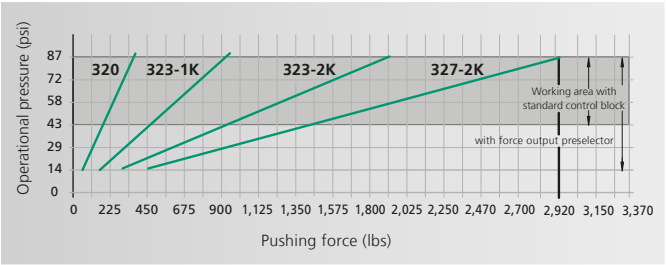
SCHMIDT® PneumaticPresses with force/stroke monitoring are offered as complete system with control unit **SCHMIDT® PressControl 600**. These systems are characterized by sensors and signal amplification integrated in the press head. These signals are evaluated in real time.

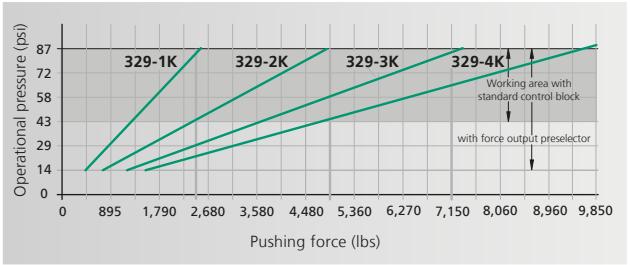
Features

- Direct forces are measured with a force sensor integrated in the ram. Insensitive against side loads
- Force and displacement sensors are immune to EMI and environmental conterminaton
- A measuring data amplification integrated in the press head provides short transmission paths of unamplified signals
- Anti-rotational square ram with two fully adjustable guiding gibs for precise work, also with tools without guide (not for **type 320**, here special anti-twist protection in the roller-guided round ram)

Press Type 323, 327, 329

Press Type 320





From 1.6 kN to 43 kN / 360 lbs. to 9,665 lbs.

Press Type			320	323-1K	323-2K	327-2K	327-3K	329-2K	329-3K	329-4K
Working stroke	**A**	mm	100	50, 75, 100, 125, 150	50, 75, 100	50, 75, 100, 125, 150	50, 75, 100	50, 75, 100, 150	50, 75, 100, 125, 150	50, 75, 100
Nominal force at 87 psi		lbs	360	945	1,890	2,920	4,495	4,950	7,195	9,665
Resolution, process data acquisition										
- stroke		inch/inc	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
- force		lbs/inc	0.28	0.56	2.25	2.25	2.25	5.62	5.62	5.62
Throat depth	**C**	inch	5.03	5.15	5.15	5.15	5.15	6.29	6.29	6.29
Throat depth frame ○		inch		5.94	5.94	5.94	5.94			
Fixture mounting plate suitable for throat depth frame				○	○	○	○			
Ram bore	Ø	mm	20H7	20H7	20H7	20H7	20H7	20H7	20H7	20H7
External ram dimensions	**G x H**	inch	Ø 1.57	2.75 x 1.96	2.75 x 1.96	2.75 x 1.96	2.75 x 1.96	3.54 x 2.36	3.54 x 2.36	3.54 x 2.36
Working height [1]	**F**									
Frame No. 7-420		inch	1.96 - 16.54							
Frame No. 7-600 ○		inch	3.34 - 23.62							
Frame No. 301		inch		5.51 - 13.77	5.51 - 13.77	5.51 - 13.77	5.51 - 13.77			
Frame No. 301-500 ○		inch		12.20 - 19.68	12.20 - 19.68	12.20 - 19.68	12.20 - 19.68			
Frame No. 329		inch						5.11 - 11.81	5.11 - 11.81	5.11 - 11.81
Frame No. 329-460 ○		inch						7.48 - 18.11	7.48 - 18.11	7.48 - 18.11
Weight (standard)		approx. lbs	154	375	375	375	375	705	716	727

Frame Overview	Press Type	Frame Height M (inch)	Table Size B x T (inch)	Table Bore D Ø mm	Table Height K (inch)	Mounting Surface B x L (inch)
No. 7-420	320	29.13	7.08 x 5.90	20H7	3.54	8.66 - 14.25
No. 7-600	320	37.79	7.08 x 11.02	20H7	4.33	12.99 x 18.30 - 19.88
No. 301	323, 327	32.67	9.84 x 7.87	40H7	5.70	9.84 x 18.11
No. 301-500	323, 327	38.97	9.84 x 7.87	40H7	5.70	9.84 x 18.89
Special fixture mounting plate with 3 longitudinal slots [2] ○			11.81 x 8.66 15.74 x 9.05	40H7		
No. 329	329	31.88	11.81 x 9.05	40H7	5.78	11.81 x 21.65
No. 329-460	329	38.97	11.81 x 9.05	40H7	5.78	11.81 x 24.40
Special fixture mounting plate with 3 longitudinal slots [2] ○			15.74 x 11.02 19.68 x 11.02	40H7		

Options

○ Additional charge applies

[1] Typical values; can vary ± 0.118 inch due to cast and production tolerances

[2] With Press type **320** only in combination with Frame type No. **7-600** with 6.61, 8.18 or 9.76 inch

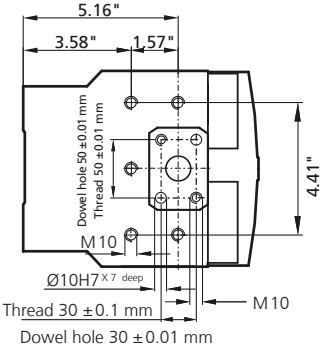
Other Available Options

- 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

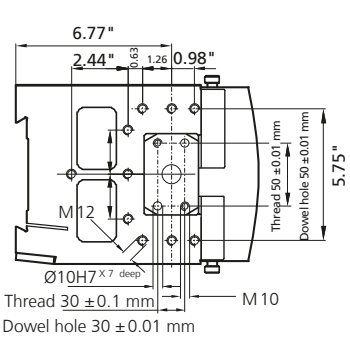
Bottom View Of The Press Head

Fastening drill pattern flange/ram

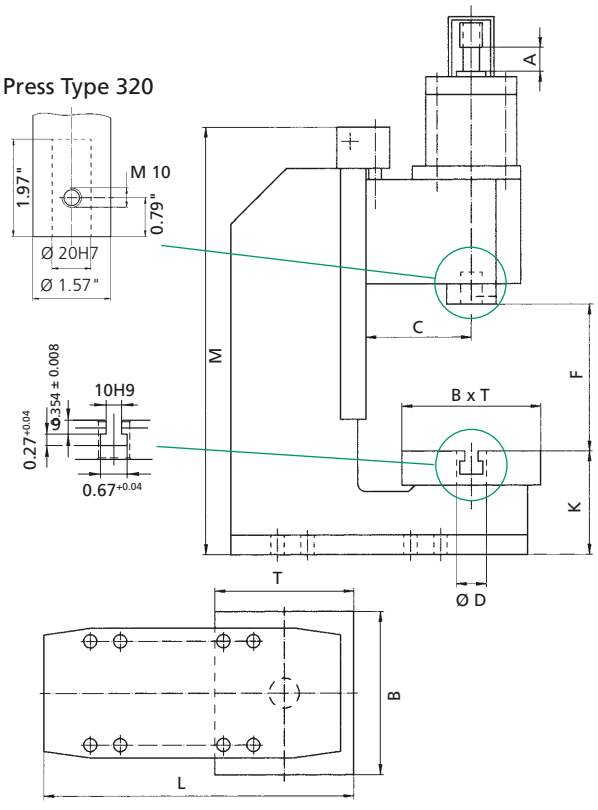
Press Type 323/327



Press Type 329



Press Type 320



Calculation Of The Air Consumption

The air consumption per stroke is calculated in cubic feet (scf)[1] at a working pressure of 87 psi.

The entire consumption consists of a constant and a variable part that depends on the stroke.

SCHMIDT® PneumaticPress Air Consumption per Stroke
At 87 psi in cubic feet (scf)

Press Type	Constant	Variable (per inch Stroke)[4]	Air Connection[3]
20	= max. stroke / 1.96 inch x 0.03 scf	0.0007 scf	G 1/4"
23	= max. stroke / 1.96 inch x 0.09 scf	0.0017 scf	G 1/4"
24	= max. stroke / 1.96 inch x 0.09 scf	0.003 scf	G 1/4"
25	= max. stroke / 1.96 inch x 0.09 scf	0.005 scf	G 1/4"
27-1K	= max. stroke / 1.96 inch x 0.14 scf	0.002 scf	G 3/8"
27-2K	= max. stroke / 1.96 inch x 0.14 scf	0.005 scf	G 3/8"
27-3K	= max. stroke / 1.96 inch x 0.14 scf	0.008 scf	G 3/8"
29-1K	= max. stroke / 1.96 inch x 0.22 scf	0.004 scf	G 1/2"
29-2K	= max. stroke / 1.96 inch x 0.22 scf	0.009 scf	G 1/2"
29-3K	= max. stroke / 1.96 inch x 0.22 scf	0.013 scf	G 1/2"
29-4K	= max. stroke / 1.96 inch x 0.22 scf	0.018 scf	G 1/2"
320	= max. stroke / 1.96 inch x 0.03 scf	0.0007 scf	G 1/4"
323-1K	= max. stroke / 1.96 inch x 0.09 scf	0.0017 scf	G 1/4"3)
323-2K	= max. stroke / 1.96 inch x 0.09 scf	0.003 scf	G 1/4"3)
327-2K	= max. stroke / 1.96 inch x 0.09 scf	0.005 scf	G 1/2"3)
329-2K	= (max. stroke +0.98 inch) / 1.96 inch x 0.22 scf	0.009 scf	G 1/2"3)
329-3K	= (max. stroke +0.98 inch) / 1.96 inch x 0.22 scf	0.013 scf	G 1/2"3)
329-4K	= (max. stroke + 0.98 inch) / 1.96 inch x 0.22 scf	0.018 scf	G 1/2"3)
32-12	0.03 scf	0.003 scf	G 1/4"
32-40	0.05 scf	0.0015 scf	G 1/4"
32-60	0.07 scf	0.0012 scf	G 1/4"
33-12	0.035 scf	0.0031 scf	G 1/4"
33-40	0.05 scf	0.0015 scf	G 1/4"
34-12	0.05 scf	0.004 scf	G 1/4"
34-40	0.07 scf	0.002 scf	G 1/4"
34-60	0.10 scf	0.002 scf	G 1/4"
36-12	0.14 scf	0.012 scf	G 3/8"
36-40	0.21 scf	0.007 scf	G 3/8"
36-60	0.28 scf	0.006 scf	G 3/8"

Total Consumption = Constant Consumption (scf)[2] + Variable Consumption (scf)

Variable Consumption = Air Consumption per inch of Stroke (scf/inch)[2] X Working Stroke (inch)

SCHMIDT® HydroPneumaticPress Air Consumption per Stroke
At 87 psi in cubic feet (scf)

Press Type Standard	Rapid Stroke / Return Stroke (constant)	Power Stroke Per Inch (variable)	Air Connection[3]
61-50-6 / 361-50-6	0.07 scf	0.04 scf	G 1/4"
61-100-12 / 361-100-12	0.14 scf	0.06 scf	G 1/4"
62-50-6 / 362-50-6	0.10 scf	1.85 scf	G 1/4"
62-100-12 / 362-100-12	0.21 scf	0.09 scf	G 1/4"
65-50-6 / 365-50-6	0.17 scf	0.07 scf	G 1/4"
65-100-12 / 365-100-12	0.35 scf	0.10 scf	G 1/4"
64-50-6 / 364-50-6	0.28 scf	0.14 scf	G 1/2"
64-100-12 / 364-100-12	0.56 scf	0.21 scf	G 1/2"
68-50-6 / 368-50-6	0.28 scf	0.11 scf	G 1/2"
68-100-12 / 368-100-12	0.56 scf	0.17 scf	G 1/2"
74-50-6 / 374-50-6	0.28 scf	0.14 scf	G 1/2"
74-100-12 / 374-100-12	0.56 scf	0.21 scf	G 1/2"
76-100-12 / 376-100-12	0.91 scf	0.35 scf	G 1/2"

Total Consumption = Constant Consumption (scf)[2] + Variable Consumption (scf)

Variable Consumption = Air Consumption per inch of Stroke (scf/inch)[2] X Working Stroke (inch)

[1] The air volume is measured under standard conditions ($1.013 \cdot 10^5$ pascal = 1 atm and a temperature of 25 °Celsius [298 Kelvin])
[2] Value according to table [3] For presses with force/stroke monitoring, the air connection refers to the two-channel control block used by us
[4] For the determination of the consumption, the single stroke is used, the return stroke is automatically contained in the result

SCHMIDT® HydroPneumaticPress

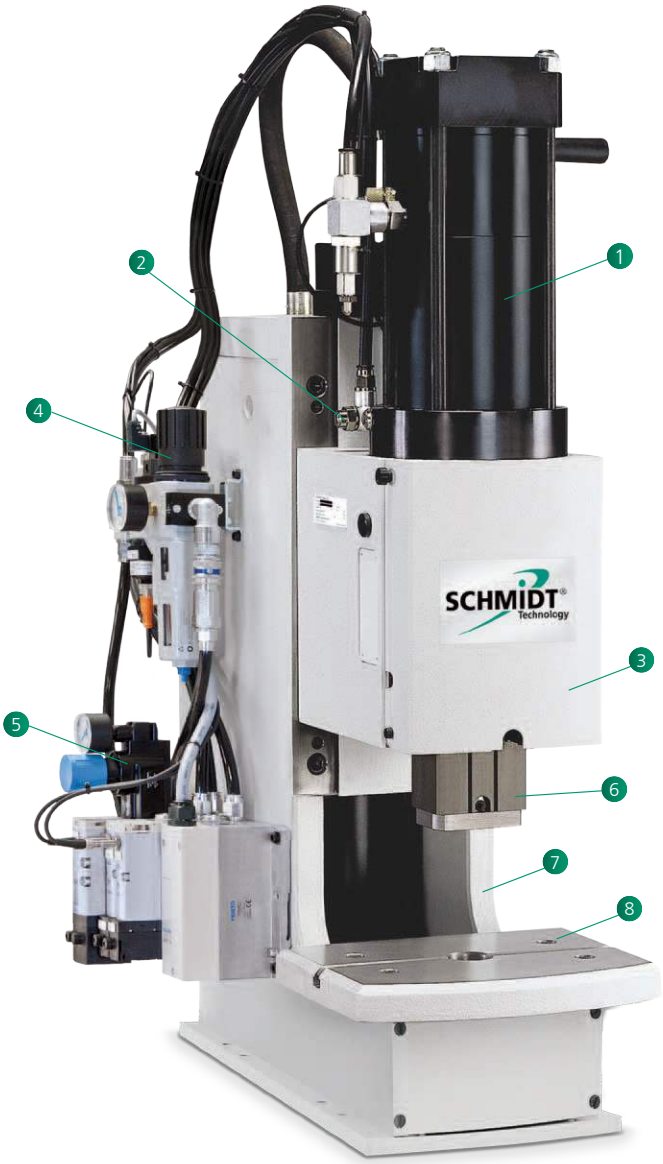
Maximum Force Range from 15 kN to 220 kN / 3,375 lbs. to 49,460 lbs.

The **SCHMIDT® HydroPneumaticPress** range consists of a modular system suitable for optimally transforming, joining and assembling within the pressing force range 15 – 220 kN / 3,375 lbs. to 49,460 lbs.

With the addition of the **SCHMIDT® PressControl 75** or **600** and the optional process monitoring, these presses become EC type-approved, CE-conformed workstations. Therefore these press systems can be used in either single cycle mode or automatic mode.

The application determines selection of the press system. Consideration is given to the flexible design of the assembly location taking into account the ergonomic and safety aspects. These characteristics are achieved by means of a finely adjusted, modular type product range. The efficiency and increased process reliability of these press systems have been proven thousands of times, in single applications, semi-automated assembly systems and have been integrated into automated production lines.

SCHMIDT® HydroPneumaticPress
System Design



1 **Cylinder Unit**
hydro pneumatic

2 **Air Throttle Rapid Approach Stroke**
for speed control of the downstroke

3 **Press Head Unit**
the working height can be rapidly and accurately adjusted due to the height adjustment's ease of use. Can be used without the frame as processing station in automated installations

4 **Pneumatic Control Package**
two-channel pneumatic package (as shown) is based on a modular valve block

5 **Force output Preselector**
the press force output can easily be controlled via a separate pressure regulator and pressure gauge.The pressure for the power stroke can be reduced to 14.5 psi

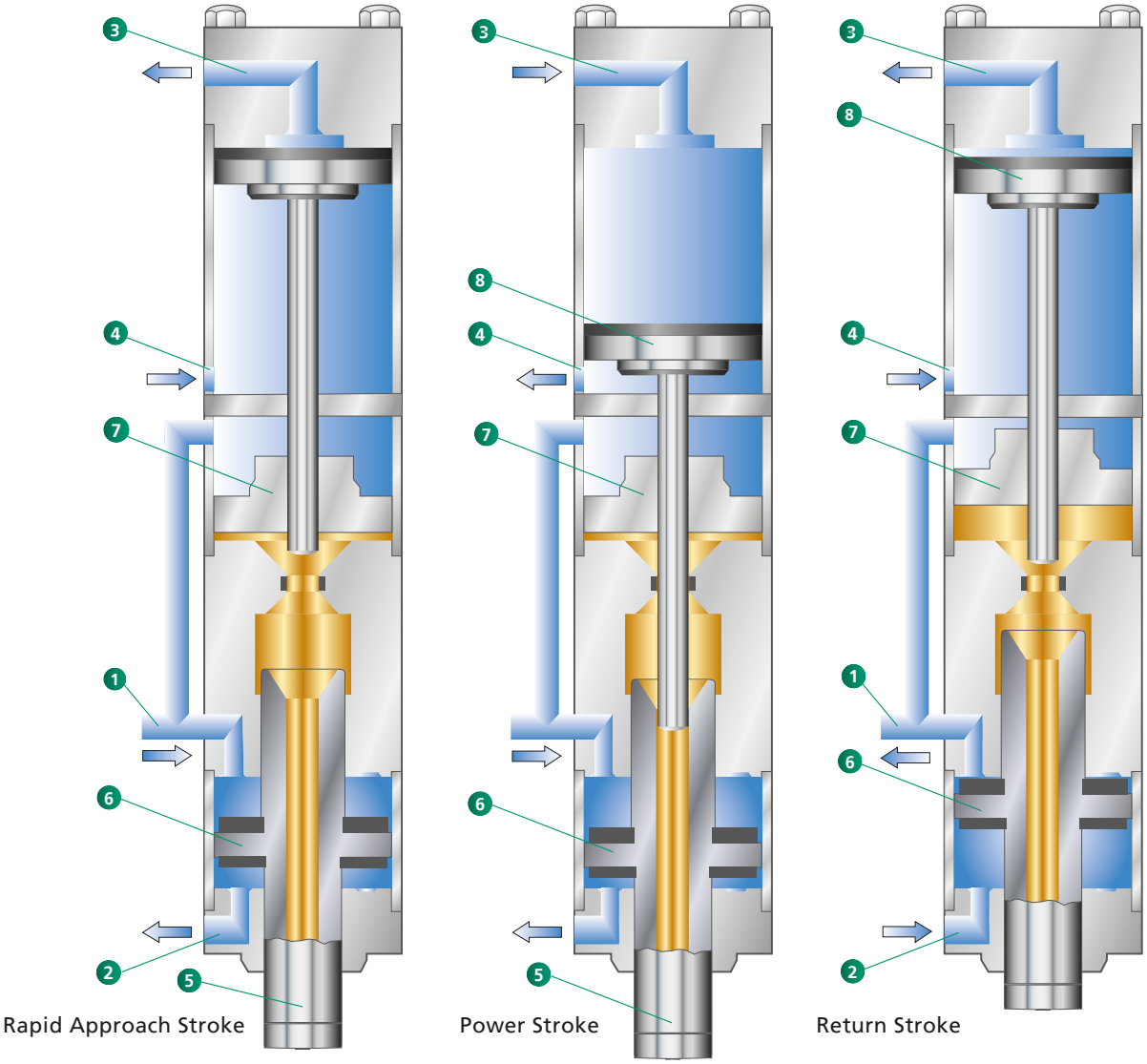
6 **Square Ram**
square ram with fully adjustable, Teflon lined gibs for precise travel, precision machined bore

7 **Frame**
with precision machined press head guide rails (for **No. 68** and **368** designed as dovetail guide)

8 **Fixture Mounting Plate**
with precision T-slot and bore for tool location

Stroke Feedback
Ram with key-ways for switch target pieces for an inductive position feedback. Optional: Stroke-dependent activation of the power stroke by means of the proximity switch.

SCHMIDT® HydroPneumaticPress
Principle Of Operation



Rapid Approach Stroke
In rapid approach stroke, the air connections 1 and 4 are pressurized with compressed air. The air connections 2 and 3 are depressurized. The approach stroke piston 6 and the reservoir piston 7 are moving with low force until the ram 5 encounters resistance.

Power Stroke
If the ram 5 encounters resistance, a valve switches the compressed air from 4 to connection 3, and the power stroke piston 8 moves downwards. A rod enters the high pressure cylinder, separating the hydraulic oil between reservoir piston 7 and approach stroke piston 6. The ram 5 moves out with boosted force.

Return Stroke
For the return stroke, the connections 1 and 3 are depressurized, and the connections 2 and 4 are pressurized. Approach stroke 6 and power stroke piston 8 move back simultaneously. After the hydraulic connection between approach 6 and reservoir piston 7 oil flows back into the reservoir, moving the reservoir piston into its home position.

Features
- Optimally adapted to individual requirements due to its modular design
- High flexibility and economic efficiency due to short changeover times
- Easy and accurate positioning of tools due to the precise alignment between ram bore and the ground fixture mounting plate
- The force output preselector allows reducing the pressure for the power stroke to 14.5 psi. This reduces the nominal press force to 1/6 of the maximum force
- The end positions of the ram can be sensed via the inductive proximity switches
- No mechanical compression spring in the cylinder of the hydropneumatic system, providing a long service life
- Low maintenance resulting in high productivity
- Long service life and precision due to maintenance-free guides
- Tool protection due to smooth switchover from rapid approach stroke to power stroke
- Additional safety when using heavy tools due to the optional ram drift lock device for retention of ram in home position.
- Low noise level (< 75 dBA)

SCHMIDT® HydroPneumaticPress
C-Frame Design

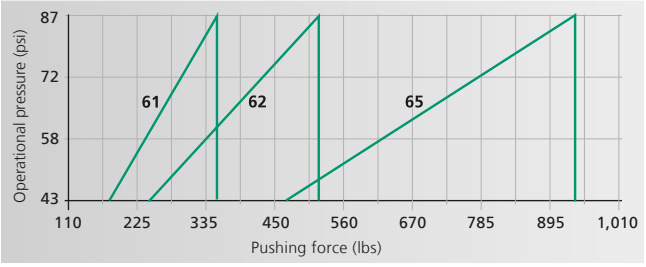
Features

- The C-Frame design offers full accessibility when manually placing and removing parts
- Easy adaptation to different tool and part heights because of simplistic height adjustment with angular gear
- Anti-rotational square ram with fully adjustable, Teflon lined gibs for precise travel. No die set required
- High precision due to long precise guides of the square ram

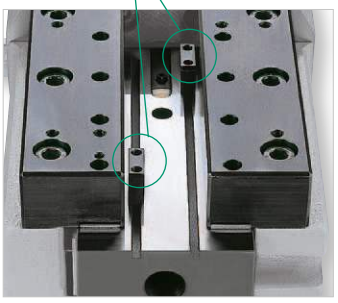
Press Type 61/62

Press Type 65

Rapid Approach Stroke

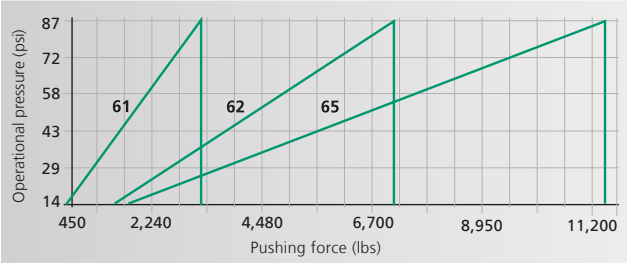


Adjustable switch target pieces for position detection via an inductive position sensor

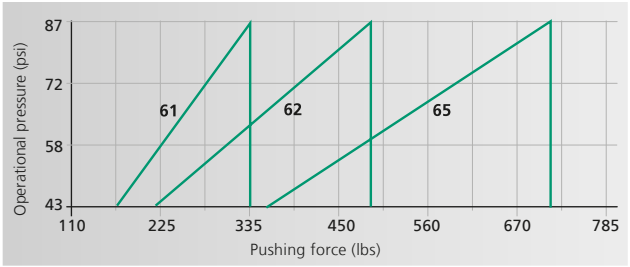


Square Ram
with bilaterally adjustable, play-free gibs, precision machined bore with set screw for mounting of tooling. Some models feature additional provisions for tooling adaption.

Power Stroke



Return Stroke



Operational pressure < 43.5 psi: can only be operated with press force preselector!

From 15 kN to 52 kN / 3,375 lbs. to 11,690 lbs. in Power Stroke

Press Type			61	62	65
Total stroke - Power stroke [1]		mm	50-6, 100-12	50-6, 100-12	50-6, 100-12
Nominal force at 87 psi		lbs	3,375	6,745	11,690
Throat depth	**C**	inch	5.15	5.15	6.29
Throat depth frame ○		inch	5.94	5.94	7.28
Fixture mounting plate suitable for throat depth frame			○	○	○
Ram bore	Ø	mm	20H7	20H7	20H7
External ram dimensions	**G x H**	inch	1.41 x 2.48	1.41 x 2.48	1.81 x 3.38
Working height [2]	**F**				
Frame No. 34		inch	3.93-9.84	3.93-9.84	
Frame No. 301 ○		inch	6.29-15.74	6.29-15.74	
Frame No. 301-500 ○		inch	12.20-21.65	12.20-21.65	
Frame No. 35		inch			3.14-9.25
Frame No. 35-500 ○		inch			5.90-19.68
Frame No. 35-600 ○		inch			9.84-23.62
Weight (standard)		approx. lbs	200	240	350

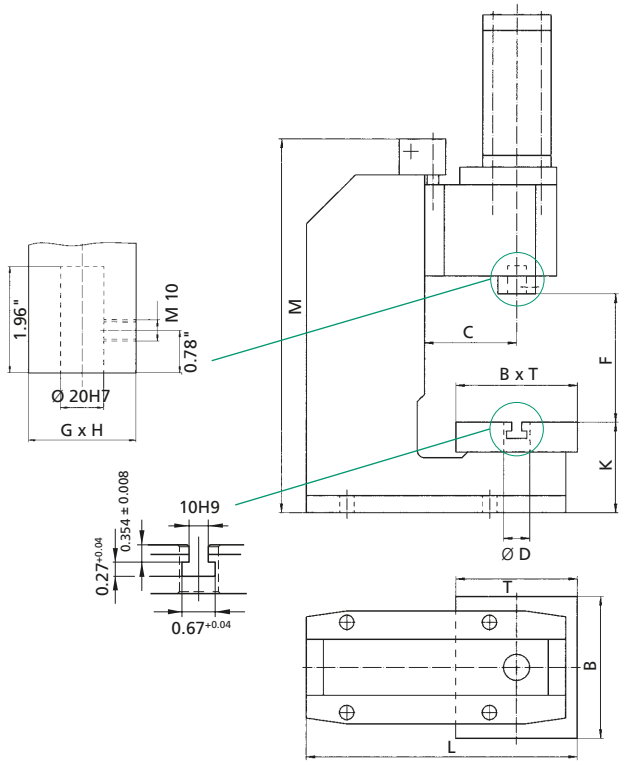
Frame Overview	Press Type	Frame Height M (inch)	Table Size B x T (inch)	Table Bore D Ø mm	Table Height K (inch)	Mounting Surface B x L (inch)
No. 34	61, 62	24.80	7.87 x 6.29	25H7	4.37	7.87 x 14.56
No. 301	61, 62	32.67	9.84 x 7.87	40H7	5.70	9.84 x 18.11
No. 301-500	61, 62	38.97	9.84 x 7.87	40H7	5.70	9.84 x 18.89
Special fixture mounting plate with 3 longitudinal slots ○			11.81 x 8.66 15.74 x 9.05	40H7		
No. 35	65	27.55	11.81 x 8.66	40H7	5.55	11.81 x 18.89
No. 35-500	65	38.97	11.81 x 8.66	40H7	6.53	11.81 x 22.04
No. 35-600	65	43.70	11.81 x 8.66	40H7	6.53	11.81 x 23.03
Special fixture mounting plate with 3 longitudinal slots ○			13.97 x 8.85 15.74 x 11.02	40H7		

Options

○ Additional charge applies

[1] Special models total stroke/power stroke on request

[2] Typical values; can vary ± 0.118 inch due to cast and production tolerances



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

SCHMIDT® HydroPneumaticPress
C-Frame Design With Welded Press Frame

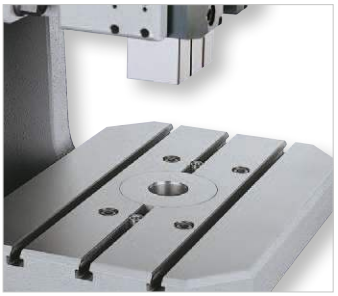
Features

- The welded press frame offers highest stability
- Space-saving and compact due to separate working cylinder for **Press No. 68**

Press Type 68

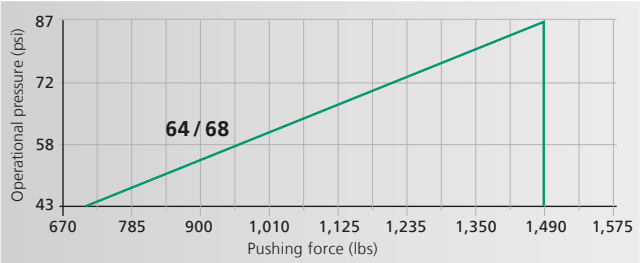
Press Type 64

Square Ram
with bilaterally adjustable, play-free gibs, precision machined bore with set screw for mounting of tooling. Some models feature additional provisions for tooling adaption.

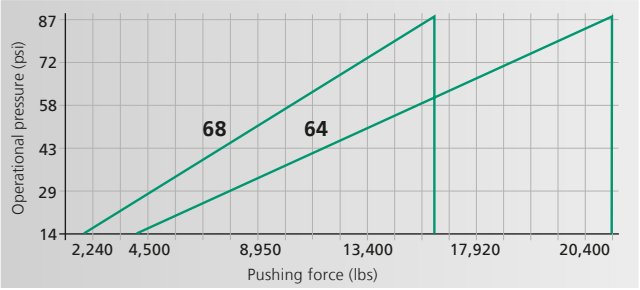


Fixture Mounting Plate
(for **Press No. 64**)
with 3 T-slots and precision machined bore for tool location.

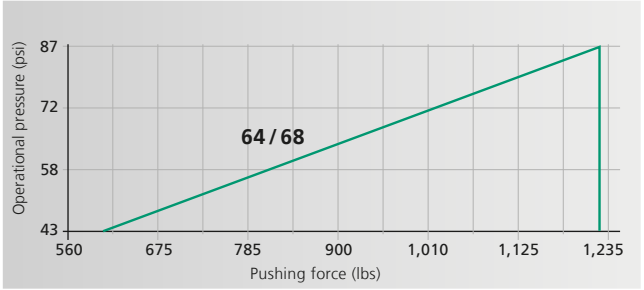
Rapid Approach Stroke



Power Stroke



Return Stroke



Operational pressure < 43.5 psi: can only be operated with press force preselector!

From 72 kN to 100 kN / 16,185 lbs. to 22,480 lbs. in Power Stroke

Press Type			64	68
Total stroke - Power stroke [1]		mm	50-6, 100-12	50-6, 100-12
Nominal force at 87 psi		lbs	22,480	16,185
Throat depth	**C**	inch	6.29	6.29
Ram bore	**E**	Ø mm	25H7	20H7
External ram dimensions	**G x H**	inch	2.36 x 3.54	2.36 x 3.54
Working height [3]	**F**			
Frame No. 64		inch	7.08-13.77	
Frame No. 64-600 ○		inch	16.92-23.62	
Frame No. 68 [2]		inch		5.11-11.81
Frame No. 68/5 [2] ○		inch		7.48-18.11
Weight (standard)		approx. lbs	925	770

Frame Overview	Press Type	Frame Height M (inch)	Table Size B x T (inch)	Table Bore D Ø mm	Table Height K (inch)	Mounting Surface B x L (inch)
No. 64	64	37.00	15.74 x 11.41	40H7	7.28	15.74 x 24.60
No. 64-600 ○	64	47.24	15.74 x 11.41	40H7	7.28	15.74 x 26.96
No. 68 [2]	68	31.88	11.81 x 9.05	40H7	5.78	11.81 x 21.65
No. 68/5 [2] ○	68	38.97	11.81 x 9.05	40H7	5.78	11.81 x 24.40
Special fixture mounting plate with 3 longitudinal slots ○			15.74 x 11.02 19.68 x 11.02	40H7		

Options

○ Additional charge applies

[1] Special models total stroke/power stroke on request

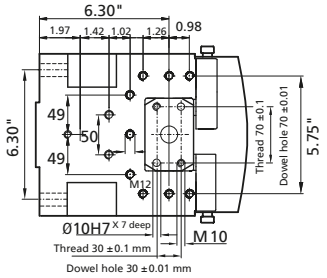
[2] Frame 68/5 required for 1.18 inch power stroke

[3] Typical values; can vary ± 0.118 inch due to cast and production tolerances

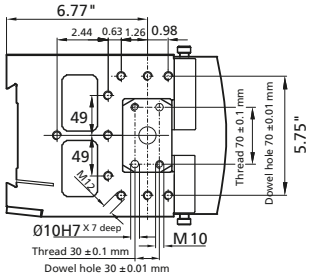
Bottom View of the Press Head

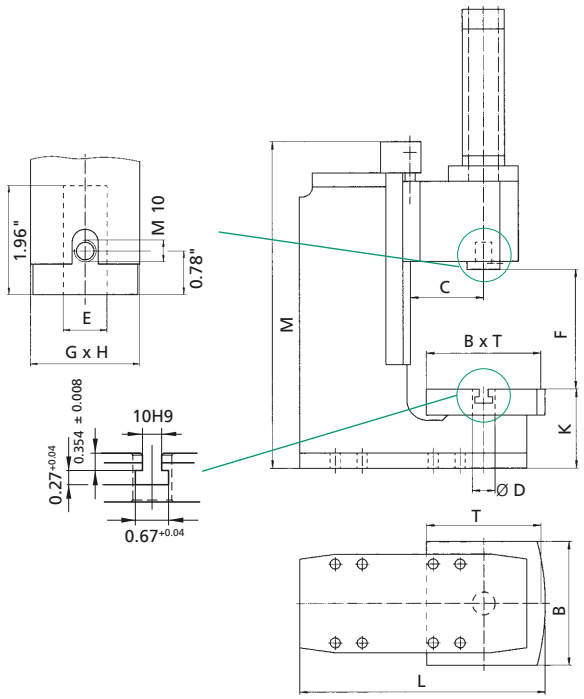
Mounting drill pattern flange/ram

Press Type 64



Press Type 68





Please consult our Sales Department or Representative.

Detailed dimensional drawings can be downloaded: www.schmidtpresses.com

SCHMIDT® HydroPneumaticPress
C-Frame Design With Force/Stroke Monitoring

SCHMIDT® HydroPneumaticPresses with force/stroke monitoring are offered as complete system with control unit **SCHMIDT® PressControl 600**. These systems are characterized by sensors and signal amplification integrated in the press head. These signals are evaluated in real time.

Features

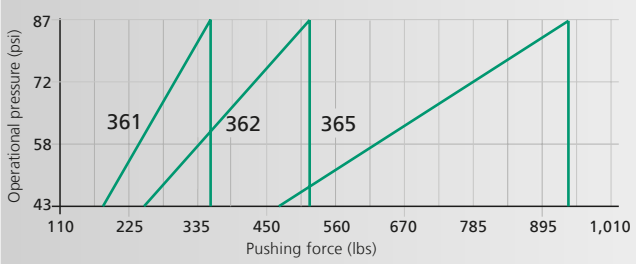
- Direct forces are measured with a force sensor integrated in the ram. Insensitive against side forces
- Signal readings are not affected by outside interference
- A measuring data amplification integrated in the press head provides short transmission paths of unamplified signals
- Precision guide rails for precise working. Bilaterally adjustable, play-free gibs, precision machined bore for tool location. No die-set required

Press Type 361

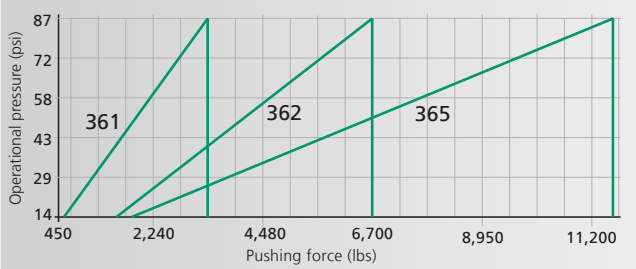
Press Type 362

Press Type 365

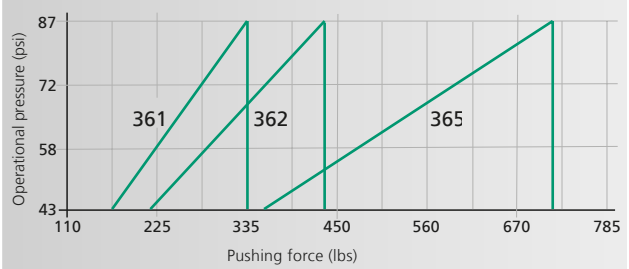
Rapid Approach Stroke



Power Stroke



Return Stroke



Operational pressure < 43.5 psi: can only be operated with press force preselector!

From 15 kN to 52 kN / 3,370 lbs. to 11,690 lbs. in Power Stroke

Press Type			361	362	365
Total stroke - Power stroke [1]		mm	50-6, 100-12	50-6, 100-12	50-6, 100-12
Nominal force at 87 psi		lbs	3,370	6,745	11,690
Process data acquisition stroke force		 inch/inc lbs/inc	 0,0002 2.25	 0,0002 5.62	 0,0002 11.24
Throat depth	**C**	inch	5.15	6.29	6.29
Throat depth frame ○			5.94		
Fixture mounting plate suitable for throat depth frame			○		
Ram bore	Ø	mm	20H7	20H7	20H7
External ram dimensions	**G x H**	inch	2.75 x 1.96	3.54 x 2.36	3.54 x 2.36
Working height [2]	**F**				
Frame No. 301		inch	6.29-15.74		
Frame No. 301-500 ○		inch	12.20-19.68		
Frame No. 329		inch		5.11-11.81	5.11-11.81
Frame No. 329-460 ○		inch		7.48-18.11	7.48-18.11
Weight (standard)		approx. lbs	375	705	725

Frame Overview	Press Type	Frame Height M (inch)	Table Size B x T (inch)	Table Bore D Ø mm	Table Height K (inch)	Mounting Surface B x L (inch)
No. 301	361	32.67	9.84 x 7.87	40H7	5.70	9.84 x 18.11
No. 301-500 ○	361	38.97	9.84 x 7.87	40H7	5.70	9.84 x 18.89
Special fixture mounting plate with 3 longitudinal slots ○			11.81 x 8.66 15.74 x 9.05	40H7		
No. 329	362, 365	31.88	11.81 x 9.05	40H7	5.78	11.81 x 21.65
No. 329-460 ○	362, 365	38.97	11.81 x 9.05	40H7	5.78	11.81 x 24.40
Special fixture mounting plate with 3 longitudinal slots ○			15.74 x 11.02 19.68 x 11.02	40H7		

Options

○ Additional charge applies

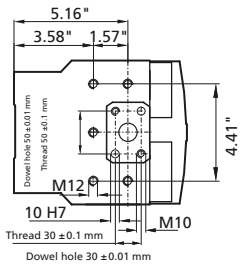
[1] Special models total stroke/power stroke on request

[2] Typical values; can vary ± 0.118 inch due to cast and production tolerances

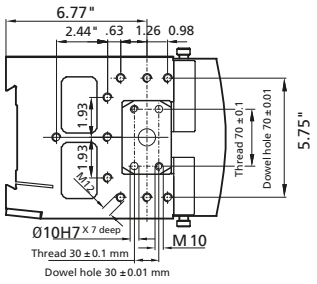
Bottom View Of The Press Head

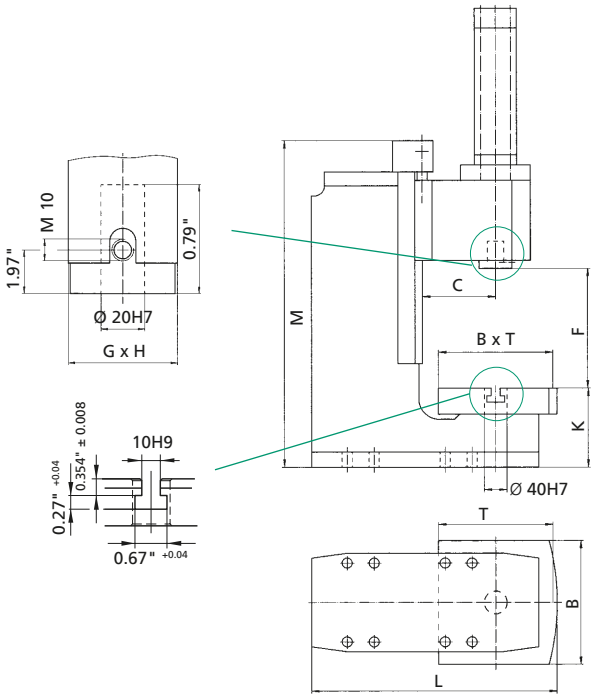
Mounting drill pattern flange/ram

Press Type 361



Press Type 362/365





Please consult our Sales Department or Representative.

Detailed dimensional drawings can be downloaded: www.schmidtpresses.com

SCHMIDT® HydroPneumaticPress
In C-Frame Design With Force/Stroke Monitoring

SCHMIDT® HydroPneumaticPress with force/stroke monitoring are offered as complete system with control unit **SCHMIDT® PressControl 600**. These systems are characterized by sensors and signal amplification integrated in the press head. These signals are evaluated in real time.

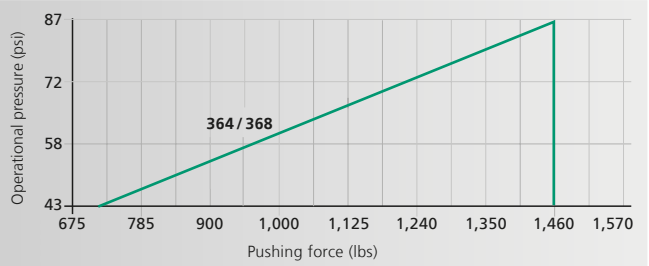
Features

- Direct forces are measured with a force sensor integrated in the ram. Insensitive against side forces
- Signal readings are not affected by outside interference
- A measuring data amplification integrated in the press head provides short transmission paths of unamplified signals
- Precision bilaterally adjustable, play-free gibs, precision ground bore for tool location. No die-set required

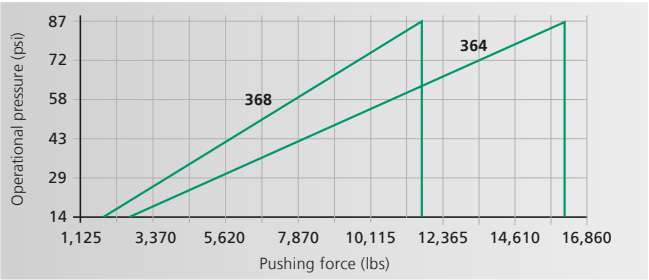
Press Type 364

Press Type 368

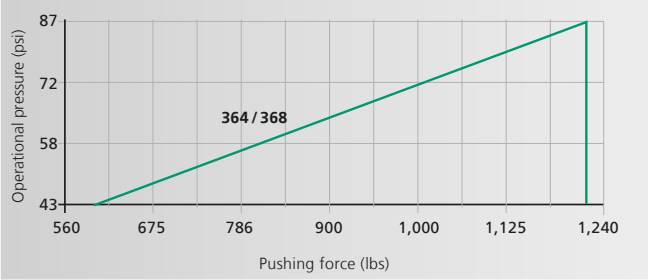
Rapid Approach Stroke



Power Stroke



Return Stroke



From 72 kN to 100 kN / 16,185 lbs. to 22,480 lbs. in Power Stroke

Press Type			364	368
Total stroke - Power stroke [1]		mm	50-6, 100-12	50-6, 100-12
Nominal force at 87 psi		lbs	22,480	16,185
Process data acquisition Stroke Force		 inch/inc lbs/inc	 0.0002 14.05	 0.0002 11.24
Throat depth	**C**	inch	6.29	6.29
Ram bore	**E**	Ø mm	25H7	20H7
External ram dimensions	**G x H**	Ø inch	3.54 x 2.36	3.54 x 2.36
Working height [3]	**F**			
Frame No. 64		inch	7.08-13.77	
Frame No. 64-600 ○		inch	16.92-23.62	
Frame No. 68 [2]		inch		5.11-11.81
Frame No. 68/5 [2] ○		inch		7.48-18.11
Weight (standard)		approx. lbs	925	770

Frame Overview	Press Type	Frame Height M (inch)	Table Size B x T (inch)	Table Bore D Ø mm	Table Height K (inch)	Mounting Surface B x L (inch)
No. 64	364	37.00	15.74 x 11.41	40H7	7.28	15.74 x 24.60
No. 64-600 ○	364	47.24	15.74 x 11.41	40H7	7.28	15.74 x 26.96
No. 68 [2]	368	31.88	11.81 x 9.05	40H7	5.78	11.81 x 21.65
No. 68/5 [2] ○	368	38.97	11.81 x 9.05	40H7	5.78	11.81 x 24.40
Special fixture mounting plate with 3 longitudinal slots ○			15.74 x 11.02 19.68 x 11.02	40H7		

Options

○ Additional charge applies

[1] Special models total stroke/power stroke on request

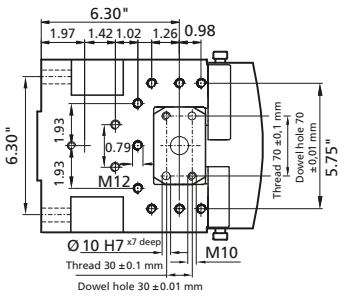
[2] Frame 68/5 required for 1.18 inch power stroke

[3] Typical values; can vary ± 0.118 inch due to cast and production tolerances

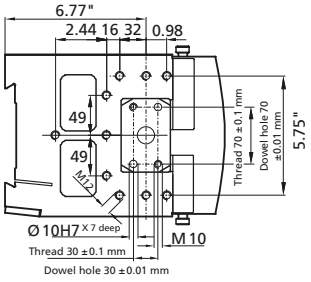
Bottom View Of The Press Head

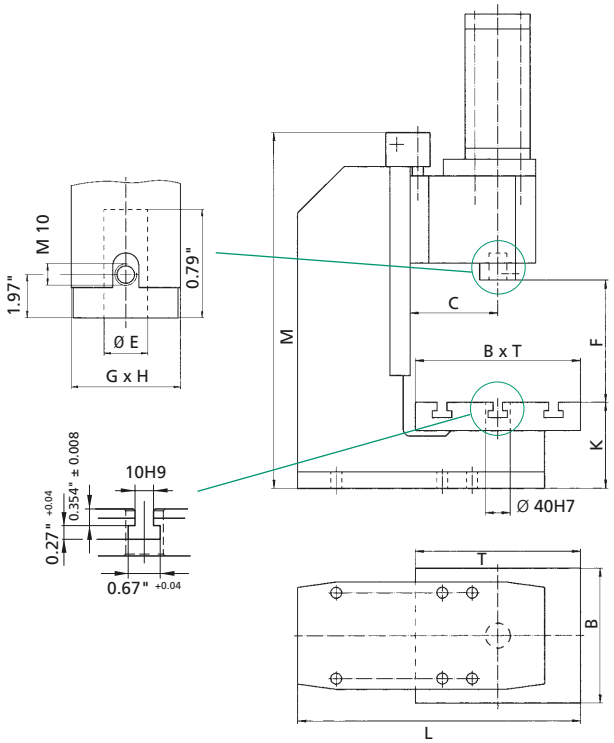
Mounting drill pattern flange/ram

Press Type 364



Press Type 368





Please consult our Sales Department or Representative.

Detailed dimensional drawings can be downloaded: www.schmidtpresses.com

SCHMIDT® HydroPneumaticPress

H-Frame Design With And Without Force/Stroke Monitoring

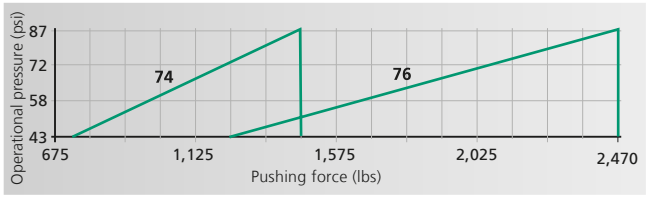
Features

- Stable frame with low bending for absorption of high forces
- Flexible tool location in the fixture mounting plate due to replaceable centering bushing with precision bore
- The large working area offers sufficient space for large tools
- The force is determined via a pressure transducer with force/stroke monitored presses

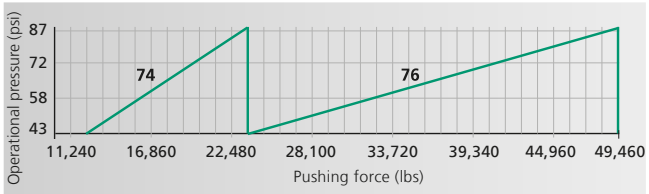
Round Ram locked against Rotation with TDC switch (**74/76**) or position measuring system (**374/376**) on the rotational guide rod.

Press Type 74/76
374/376 (with force/stroke monitoring)

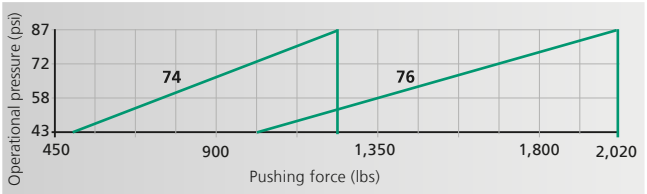
Rapid Approach Stroke



Power Stroke



Return Stroke



From 100 kN to 220 kN / 22,480 lbs. to 49,460 lbs. in Power Stroke

Press Type			74	76
Total stroke - Power stroke [1]		mm	100 - 12	100 - 12
Nominal force at 87 psi		lbs	22,480	49,460
Ram bore	**G**	Ø mm	25H7	32H7
External ram dimensions		Ø inch	2.75	3.54
Working height [2]	**F**	inch	13.77	13.77
Table height	**K**	inch	3.74	3.74
Frame hight	**M**	inch	25.19	25.19
Table size	**B x T**	inch	27.55 x 21.65	27.55 x 21.65
Table bore	**D**	Ø mm	40H7	40H7
Clearance	**C**	inch	16.53	16.53
Clearance ○		inch	20.47	20.47
Weight (standard)		approx. lbs	1,600	1,675

Press Type			374	376
Total stroke - Power stroke [1]		mm	**100 - 12**	**100 - 12**
Nominal force at 87 psi		lbs	22,480	49,460
Process data acquisition Stroke Force		 inch/inc lbs/inc	 0.0002 7.19	 0.0002 14.05
Ram bore	**G**	Ø mm	25H7	32H7
External ram dimensions		Ø inch	2.75	3.54
Working height [2]	**F**	inch	13.77	13.77
Table height	**K**	inch	3.74	3.74
Frame height	**M**	inch	25.19	25.19
Table size	**B x T**	inch	27.55 x 21.65	27.55 x 21.65
Table bore	**D**	Ø mm	40H7	40H7
Clearance	**C**	inch	16.53	16.53
Clearance ○		inch	20.47	20.47
Weight (standard)		approx. lbs	1,600	1,675

Options

○ Additional charge applies

[1] Special models total stroke/power stroke on request

[2] Typical values; can vary ± 0.118 inch due to cast and production tolerances

Accessories

High-Pressure Switch

After switching from rapid approach stroke to power stroke, the oil pressure rises in the hydraulic chamber of the cylinder. The high-pressure switch can be adjusted to reach a determined press force through the output generated by the oil pressure in the press.

Adjustment Bushing For **SCHMIDT®** HydroPneumatic-Press No. **74** and **76**

For an easy adjustment of the working height with a setting range of 3.93 inch. This greatly reduces the need for spacers to accommodate different working heights during setup changes.

Oil Pump

For an air-free refilling of the **SCHMIDT®** HydroPneumatic-Press with hydraulic oil, including 1 liter Hydraulic oil.

SCHMIDT® Cylinder Units
For Flexible Use

SCHMIDT® Double-acting **Cylinder Units** are useful components for construction of special machines. They can be mounted independently and are equipped with a magnet kit for detecting the corresponding end position using a cylinder switch. As flange or side-mount model, with toggle transmission or as hydropneumatic cylinder unit in the force range up to 22,480 lbs.

Press Head (side-mount) Model

Flange Model

Technical Data	SCHMIDT® Cylinder Units	
Typ No.	**Press Head Model**	**Flange Model**
20 - 29	•	•
32 - 36	•	•
61 - 68	•	• (not for **No. 61, 62, 65**)
323 - 368	•	•

For the performance data, please refer to the chapters **SCHMIDT**® **PneumaticPress** and **SCHMIDT**® **HydroPneumaticPress**, optional with force/stroke monitoring.

Order Indications
Key for design options

Cylinder Unit / Stroke / Design

Order Example 65 - 50 - 6
Press No.
Total stroke
Power stroke

= **SCHMIDT**® Cylinder Unit No. 65
with total stroke 1.96 inch and power stroke 0.23 inch as press head model

Cylinder Unit / Stroke / Design

Order Example 20 - 50 - FL
Press No.
Stroke
Model

= **SCHMIDT**® Cylinder Unit No. 20
with stroke 1.96 inch as flange model

SCHMIDT® ElectricPress
A New Approach To Assembly Technology

To use electric drives instead of pneumatic or hydropneumatic driven cylinders, is a modern advancement in assembly technology. **SCHMIDT Technology** combined its proven rugged mechanics with the latest electric drive technology to create assembly presses for industrial production applications. The high efficiency of electric drives may not be the only reason to choose them. The individual process, the infrastructure and the quality of the compressed air should also have a bearing on that decision.

The key advantages of the **SCHMIDT® ElectricPress**:
- Easy programming of parameters reduces set-up time
- Stored press ram motion profiles allow for quick changeover
- Enhanced flexibility
- Reduced tooling costs and wear due to precise positioning
- Elimination of the slip-stick effect optimizes the assembly process compared to pneumatic drives, especially at low speeds
- Low noise level reduces operator fatigue and stress

An efficient and reliable assembly process is the key to the success of your products and hence success in competitive markets. The new **SCHMIDT® ElectricPress 345** with **SCHMIDT® PressControl 600** improves production significantly:
- reduced assembly cost, due to the innovative electrical drive technology
- trustworthiness of its precise monitoring

The **SCHMIDT® ElectricPress 345** comes now with up to **10 kN** (**2,250 lbs**.) of force and is based on proven system components. Designed for a durable automation technology the new **SCHMIDT® ElectricPress 345** will safeguard your success.

To meet the highest quality standards expected of a **SCHMIDT® Press**, the **SCHMIDT® ElectricPress 345** press system underwent a rigorous, continuous press-stroke test cycle over a 4 month period at a maximum force of 10 kN (2,250 lbs.) All mechanical, electrical and motor elements passed that stress test with flying colors.
- Process monitoring in real-time
- Extremely energy efficient
- Integration friendly
- Drive profile repeatability
- All-electric

SCHMIDT® ElectricPress 43/45 with PressControl 75

SCHMIDT® **PressControl 75** for quick set-up or rapid change-over and easy programming of press parameters; stores up to 24 data-sets.
This combination can be used both in manual workstations as well as in automation solution.

SCHMIDT® **ElectricPress** manual workstation with **SafetyModule.**

SCHMIDT® ElectricPress 43 / 45
automation

Features:
- Reproducible values for position, velocity, acceleration and deceleration
- Combination of up to 14 individual ram motion profiles into one complete profile by using a standard PLC
- Press to exact position (closed loop control stroke)
- Press to force (determined by motor current) to
  - press to final force
  - press to position but interrupt if force is exceeded
  - touch force to determine position of workpiece

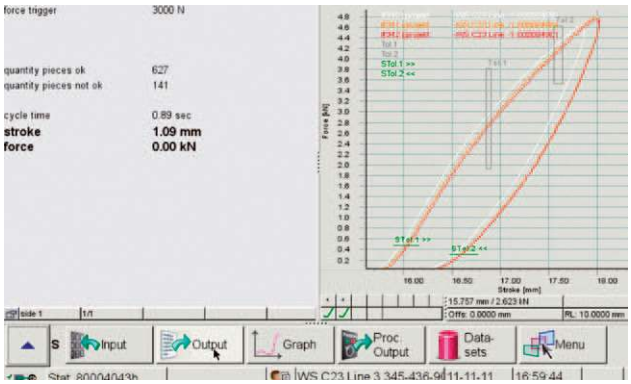
SCHMIDT® ElectricPress 343/345 with PressControl 600

In conjunction with the **SCHMIDT**® **PressControl 600**, the **SCHMIDT**® **ElectricPress** becomes a force/stroke monitored system. The continuous force control provides maximum precision and identifies individual and complex displacement profiles for assembly processes.

SCHMIDT® **ElectricPress** utilizes an integrated load cell. That means:

- Quickly reaching the nominal values
- No overshooting of the target values
- Precise positioning in the 1/100 mm range, even with dynamically changing force outputs
- The system works with predefined optimum acceleration values (no incorrect entries possible)
- Optimization of the processing times is possible due to an additional graphical display force/time [F/t], stroke/time [s/t] for an analysis of the behavior of the process.

SCHMIDT® **ElectricPress 343** and **345** with the **SCHMIDT**® **PressControl 600** can be used both in manual workstations as well as in automation solutions.



Process visualization

SCHMIDT® ElectricPress 345

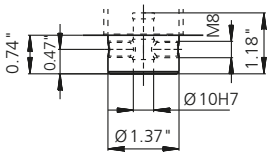
Optional:
Integrated remote handwheel for set-up of
- stroke control
- force control

Press Type			43	343	45	345
Force F max. [1]		lbs	900	900	2.250	2.250
Force F at 100 % duty cycle [2]		lbs	560	560	1,350 [3]	1,350 [3]
Ram stroke	A	inch	3.93	3.93	5.9	5.9
Ram speed max.		inch / s	5.90	5.90	7.87	7.87
Drive resolution		µm	< 1	< 1	< 1	< 1
Resolution PDA - Stroke - Force		 inch/inc lbs/inc		 0.0001 0.28		 0.09 0.12
Throat depth	C	inch	5.07	5.07	5.07	5.07
Decibel level		dB A	60	60	60	60
Power supply - Motor power - Logic unit			 42 V DC / 13 A (22 A max.) 24 V DC / 0.5 A	 42 V DC / 13 A (22 A max.) 24 V DC / 0.5 A	 230 V AC / 5,9 A (11,8 A max.) 24 V DC / 0,5 A	 230 V AC / 5,9 A (11,8 A max.) 24 V DC / 0,5 A
Working height frame 7-420 [4] Working height frame 7-600 [4]	F	inch	2.44 – 10.78 3.93 – 24.01	2.44 – 10.78 3.93 – 24.01	1.97 – 14.17	1.97 – 14.17
S-H x S-B x S-T		inch	13.11 x 8.14 x 14.25	14.48 x 9.52 x 14.25	20.87 x 10.83 x 16.14	20.87 x 10.83 x 16.14
Weight		lbs	75	75	115	115
PRC Gateway, number of I/O's				16 inputs / 16 outputs		16 inputs / 16 outputs
Mounting surface with Frame - No. 7-420 - No. 7-600	[5]	inch	 11.49 x 14.40 11.49 x 18.42	 11.49 x 14.40 11.49 x 18.42	12.6 x 14.41	12.6 x 14.41

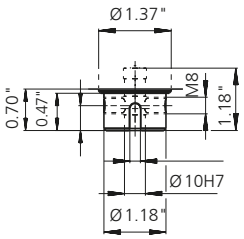
Frame Overview	Press Type	Frame Height M (inch)	Table Size B x T (inch)	Table Bore D Ø (mm)	Table Height K (inch)	Mounting surface B x L (inch)
No. 7-420	43, 343, 45, 345	29.13	7.08 x 5.9	20H7	3.54	8.66 x 14.25
No. 7-600	43, 343	37.79	7.08 x 11.02	20H7	4.33	8.67 x 18.37 – 19.88

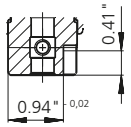
[1] Temporary peak load
[2] Nominal power in continuous operation
[3] Minimum force for free positioning application is 400 N (90 lbs.)
[4] Typical values; can vary ± 0.118 inch due to casting and production tolerances
[5] Max. dimensions

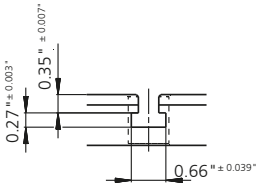
Press Type 43



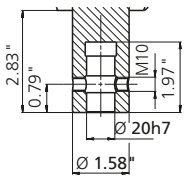
Press Type 343



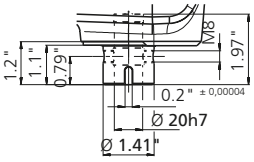


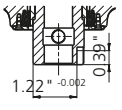


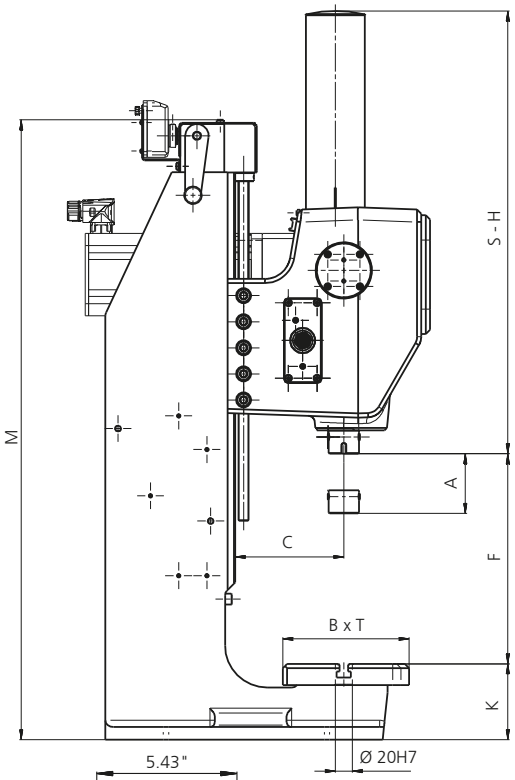
Press Type 45

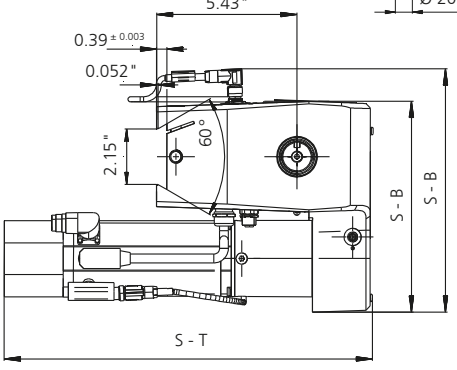


Press Type 345









SCHMIDT® ServoPress / TorquePress

The reference for precise assembly

An economic and high quality assembly is the key to the success of your product. The aim is to join together precise assemblies from low-cost individual components with different tolerances. Electrically driven spindle presses and servo presses are ideal for such tasks. **SCHMIDT® ServoPress** systems offer an integrated solution of **SCHMIDT® PressControl 600** or **5000** control unit and **SCHMIDT® ServoPress** modules. They meet the most complex requirements, as stand-alone machines or in automated production lines.

The very high torque of the **SCHMIDT® TorquePress** allows very high forces without additional mechanical transmissions. The considerably higher speed constancy compared to conventional drives entails a higher machine precision.

In comparison to high ratio electric motor driven spindle presses the **SCHMIDT® TorquePress** has an essential lower self moment of inertia and thereby a high dynamic. For this reason the run-up time from zero to working speed is very short. The noise remains remarkably low with all load conditions.

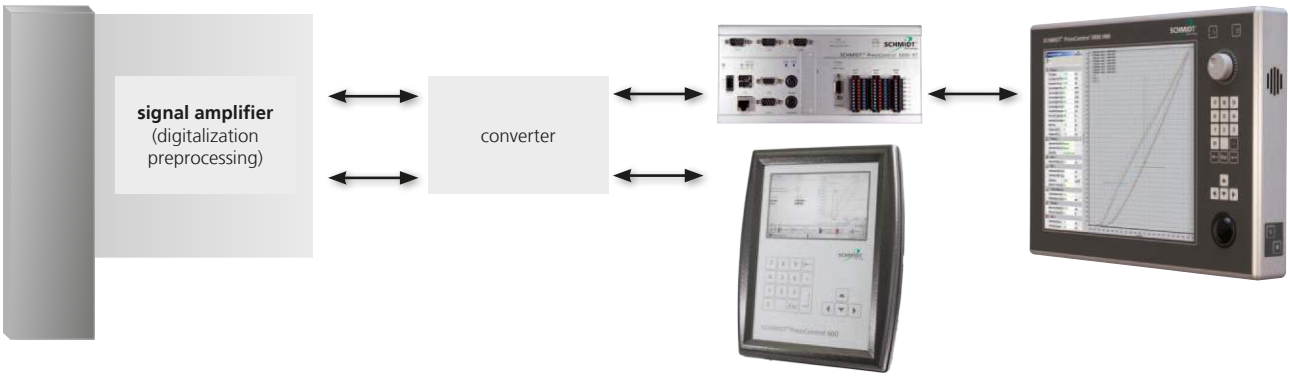
ServoPress

TorquePress 520

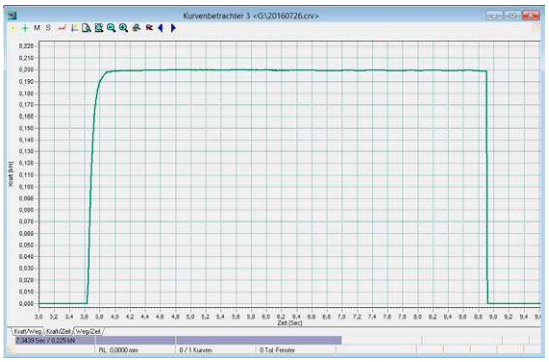
SCHMIDT® ServoPress/TorquePress
Superior controlled behavior

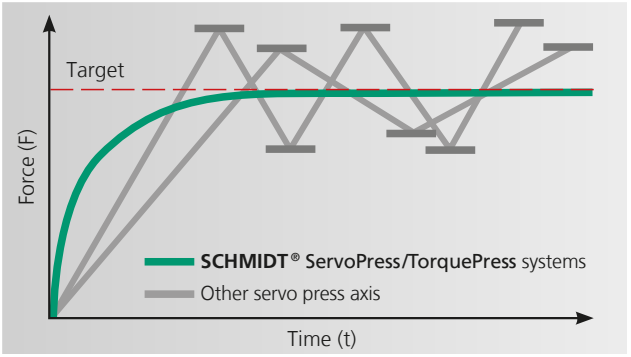
The combination of a spindle with a servo drive is not sufficient to achieve optimum joining results. The key for intelligent assembly is quick and exact controlled behavior of the press. This requires an integrated system consisting of drive unit, process measurement technology and control unit. These requirements have been taken into account in the system architecture of a **SCHMIDT®** Servo-Press/TorquePress.

SCHMIDT® ServoPress module



SCHMIDT® PressControl 600





SCHMIDT® ServoPress/TorquePress work with real-time force controllers, unlike the simple switching controllers used by other manufacturers. That means:

- Quickly reaching the nominal values
- No overshooting of the target values
- Precise positioning in the 1/100 mm range, even with dynamically changing force outputs
- High precision force control
- The control parameters can be adjusted.
  - Optimum adaptation to your application
  - No PLC programming necessary
  - The system works with predefined optimum acceleration values (no incorrect entries possible)
- Optimization of the processing times is possible due to an additional graphical display force/time [F/t], stroke/time [s/t] for an analysis of the process. The classic force/stroke [F/s] display of conventional electronic axis cannot be compared to the reliable recording and visualization possibilities of the **SCHMIDT®** ServoPress/TorquePress

These characteristics are achieved exclusively by combining the following features:

- Integrated measurement technology [scanning rate 2000 Hz]
  - Free-of-play distance measurement, force measurement without lateral forces
- Amplification of the process signals on the **SCHMIDT®** ServoPress/TorquePress module
  - Insensitive against electromagnetic interferences (EMC)
- The system is completed by using **SCHMIDT®** PressControl 600 or **5000** (PC-based system), i. e. servo amplifier and motor receive nominal values from the control unit
  - Optimized PLC control algorithm
  - Force [F], stroke [s] or other external control inputs are simultaneously processed
  - The control input can be freely selected
- Quick signal processing on software-based PLC with integrated CNC

SCHMIDT® ServoPress / TorquePress
Uncompromising quality

The solid, unique mechanics of the **SCHMIDT® ServoPress / TorquePress** is essential for precise joining results, even in the toughest industrial environments.

Test Bench

Before a new model is released, modules are endurance tested under the most severe operating conditions. The rigorous testing helps identify limitations. Improvements are implemented, which ultimately benefit you.

- Test duration is 3 months
- 20 million loading cycles over the entire working stroke with nominal force and lateral forces components at full travel speed
- Cycle time approx. 2 seconds

Continuous full load capable modules

- Over the entire ram stroke
- With rapid process times
- Via exact roller guiding of the ram with little play
- Square ram benefits
  - Insensitive to lateral forces
  - Locked against rotation

Built-in auto-protection and maintenance

- Fully automated spindle lubrication
- Mechanical clutch as overload protection for motor and load cell
- Cooling and thermal monitoring of mechanical and electronic system
- Current limitation if admissible load is exceeded
- Machine safeguarded against operator error

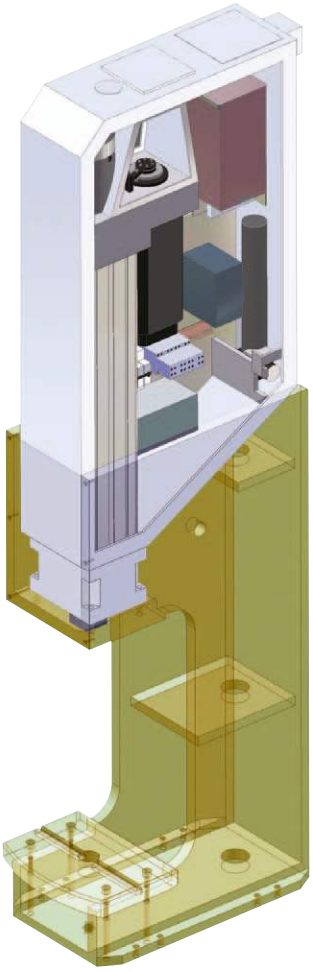
Service-friendly

- Low maintenance
- Easy module change possible. The control unit recognizes the new module. No modifications of the data sets are necessary. This is achieved due to a high-precision ram position in the reference point with relation to the supporting surface

Built-in safety in light curtain system or protective housing SmartGuard, of course EC type-approved

As a result, this means the following for your application:

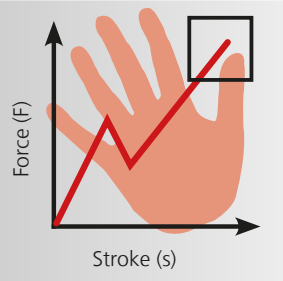
✓ **Excellent efficiency**
✓ **Maximum capacity**
✓ **High production safety**



Dynamic Bend Up Compensation
Patented Feature

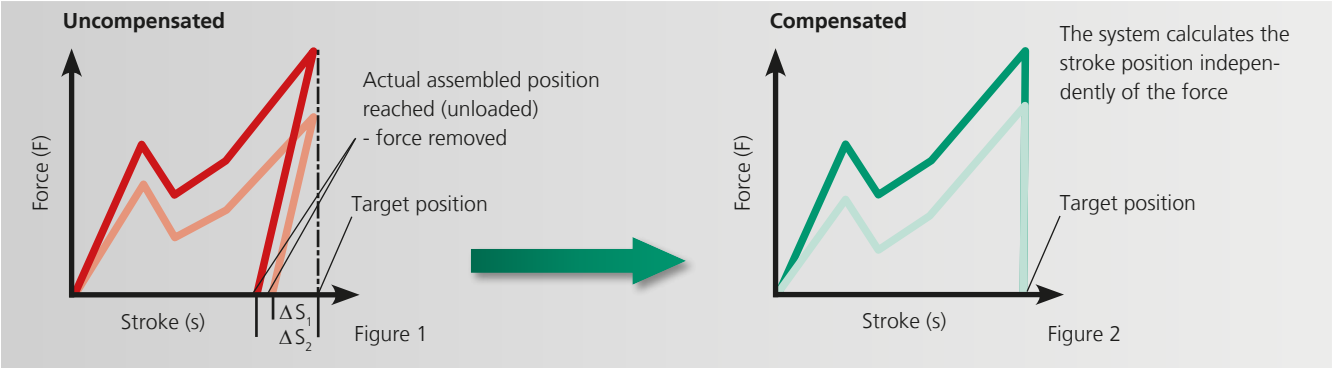
In order to achieve assembly requirements in the 1/100 mm range, compensation of the system yield is required. Workpiece, tooling and machine are elastically deformed by the varying forces induced during the pressing process. Once the operation is complete and the press force is removed, this deformation disappears. The result is that the assemblies are not joined to their programmed dimensions. This yielding effect makes it impossible to produce high precision joints regardless of a systems positioning accuracy.

First, a complete process representation of the force characteristic in loaded and unloaded state is necessary so that the system can carry out the required compensation.



Conventional procedures end in the block position – but the process is not finished yet. The system is under force.

Patented Dynamic Bend up Compensation by **SCHMIDT Technology**

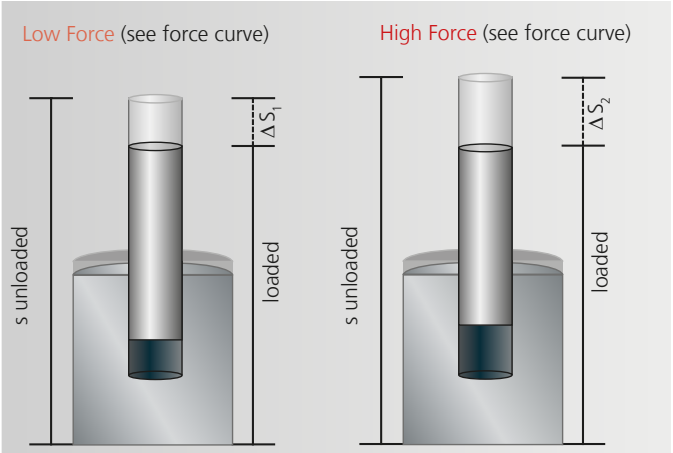


In typical applications, the force required to complete an assembly varies up to 40% from part to part. When freely positioning, such as without a positive stop, the press ram extends to the same target position, regardless of load. But a closer inspection of the completed assembly and the force/distance curve generated, shows that the final pressed position will vary due to the forces in the operation. (figure 1) In order to overcome this effect, **SCHMIDT® ServoPress/TorquePress** systems compensate dynamically to the changing forces. This compensation allows for the assembly to be pressed to the target position, regardless of force (figure 2).

Example: Press in a Pin in a Bushing

The elasticity of an assembly depends on the equipment, process and the component geometries. This effect becomes significant for assemblies with which the assembly forces of the individual components differ strongly from one another. This can particularly be seen in the example shown.

- The **SCHMIDT® ServoPress/TorquePress** system determines easily and precisely the system elasticity and compensates it dynamically in real time
- Only with dynamic bend up compensation, the end position can be reached to an accuracy of the 1/100 mm range
- Free positioning with compensation of the system elasticity is more accurate than pressing on hard tool stop
- Dynamic bend up compensation does not reduce the process speed
- Dynamic bend up compensation in connection with other intelligent functions, such as offset of tolerance data, has been patented



„ΔS" changes proportionally to the force output, that means, the components have different dimensions depending on the force requirement of each component.

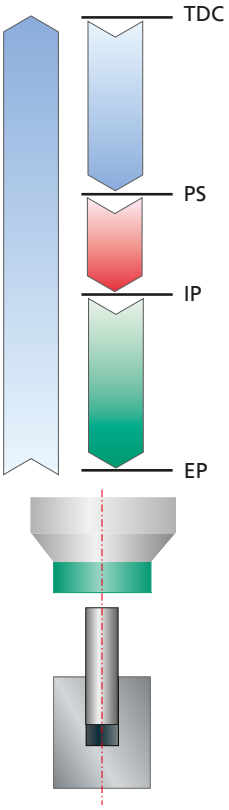
SCHMIDT® ServoPress / TorquePress
Operating Profiles And Applications

SCHMIDT® ServoPress / TorquePress allows for a simple setup of the operating profiles. Different standard operating profiles are provided for a quick set-up. According to experience, these standard operating profiles and the combinations of them cover most applications.

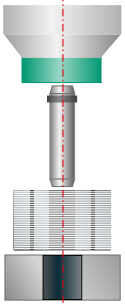
TDC = top dead center of the process [1)]
PS = Pressing start, start of the process data recording [1)]
PP = Probing position (depending on the component geometry)
IP = Intermediate position [1)] (is required for monitoring purposes)
EP = End position [1)]

[1)] adjustable

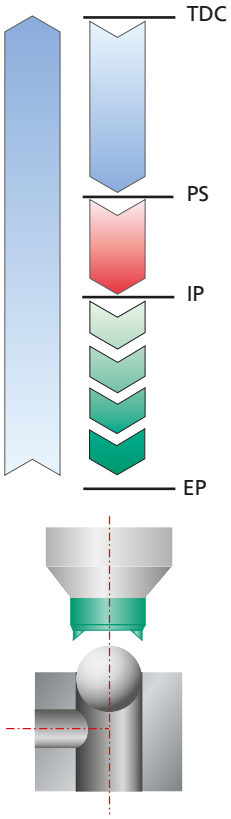
Target is "Stroke"
Normal operating profile, is typically combined with bend up compensation.



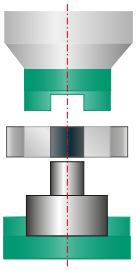
Pressing until reaching a specified position leads to precise results in connection with bend up compensation.



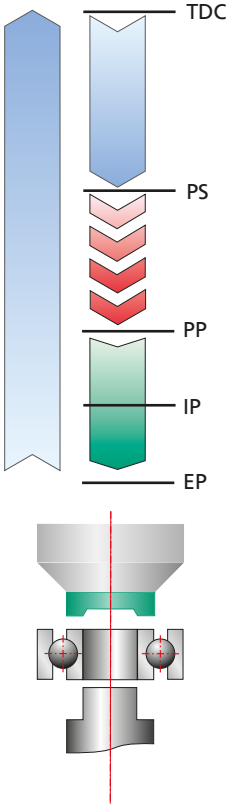
Target is "Force"
For processes in which the force reached is a measure for the process quality e. g. material compression.



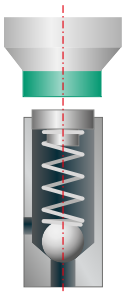
Plugging blind bores – a sphere is pressed in and crimped. Force output correlates to material displacement to determine density and retain force independent of stroke.



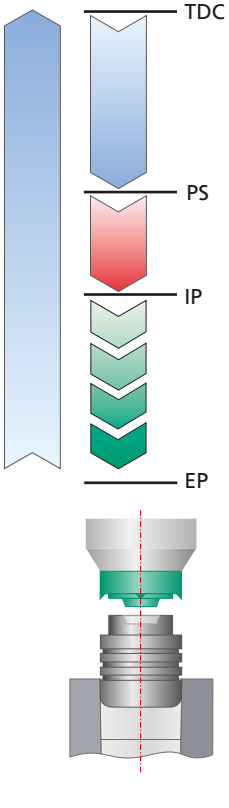
Target is "Delta Stroke" with probing Force
For processes in which component tolerances must be detected. The press detects the surface and presses from this point to a programmed distance.



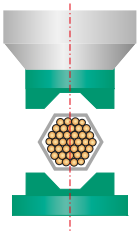
Pressing to a predetermined force which identifies a target feature with which the final pressing distance is measured and pressed.



Target is "Force Increase"
The return stroke is triggered by detecting a customer defined force slope.



Pressing of "Beta" plugs or „König" expanders. Sealing and retaining function depend on a force increase that is the return stroke criterion for the press.



SCHMIDT® ServoPress

Modules With Large Application Range

Press Type 405

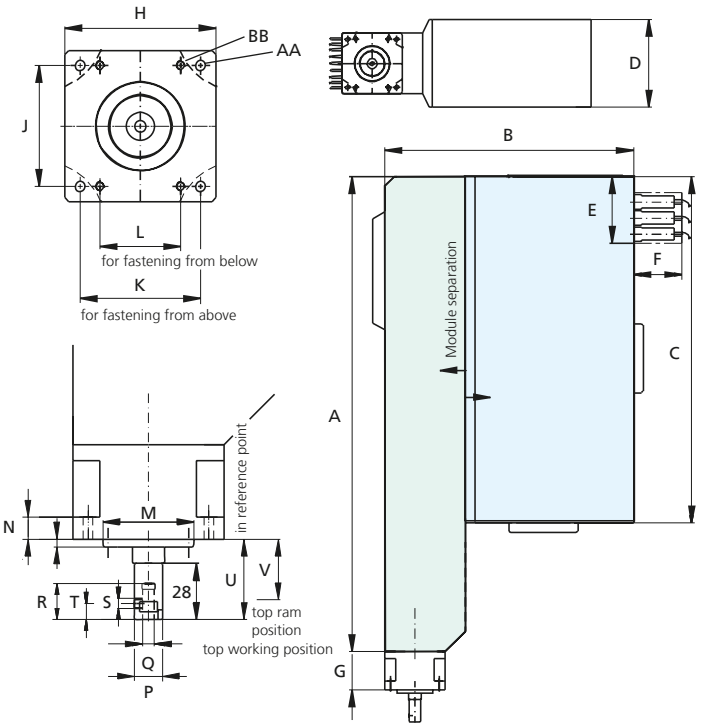
Press Type 415/416

Press Type 417

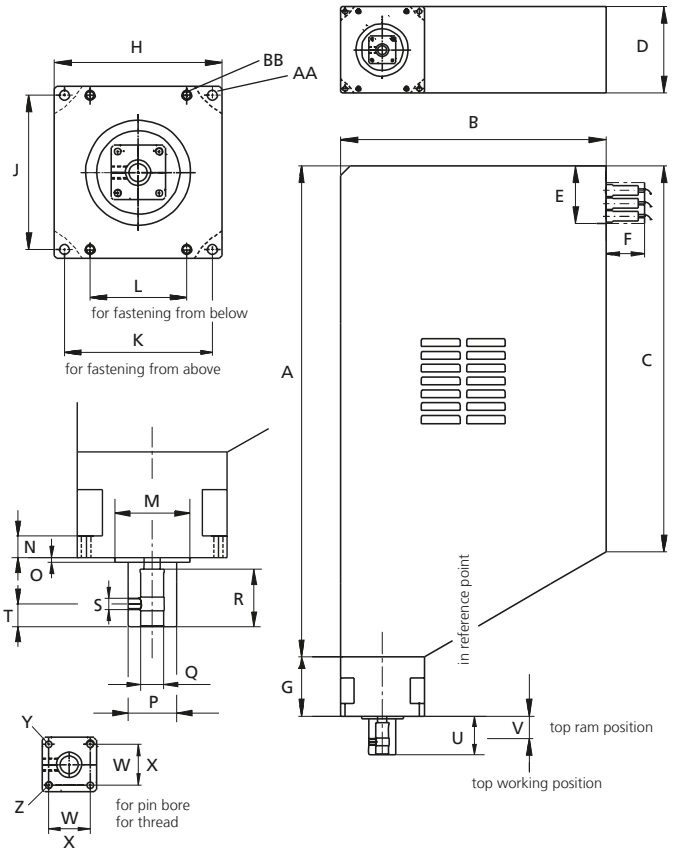
Press Type 420

Press Type 450/460

ServoPress 405



ServoPress 415 to 460



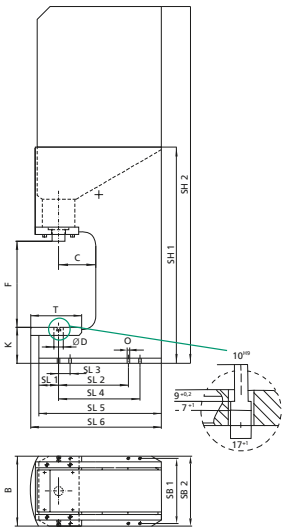
Modules

With Force Outputs of 15 N to 150 kN / Ounces up to 33,720 lbs.

ServoPress Type			405	415	416	417	420	450	460
Force F	F	max. lbs	180	1,010	1,125	3,150	7,870	16,860	33,720
Force F at 100% duty cycle	F	lbs	110	340	675	1,690	4,500	11,240	22,480
Ram stroke		mm / lbs	150/5.90	200/7.87	200/7.87	300/11.81	400/15.74	500/19.68	500/19.68
Resolution (drive control)		inch	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
Resolution data acquisition									
Stroke		lbs	< 0.0001	0.0001	0.0001	0.0001	0.0002	0.0003	0.0003
Force		lbs/inc	0.06	0.22	0.22	0.90	2.25	5.39	10.79
Ram speed		inch/s	0 - 11.81	0 - 7.87	0 - 7.87	0 - 7.87	0 - 7.87	0 - 7.87	0 - 3.93
Overload protection			-	Mech. clutch	Mech. clutch	Mech. clutch	Mech. clutch	Mech. clutch	Mech. clutch
Service life of the cycles acc. to standard operating profile			2 x 10^7	2 x 10^7	2 x 10^7	2 x 10^7	2 x 10^7	2 x 10^7	1 x 10^7
Drive			ball screw	ball screw	ball screw	ball screw	roller screw	roller screw	roller screw
Power supply			230 V 1~/6.3 A (208 V 3~/6.3 A)	230 V 1~/6.3 A (208 V 3~/6.3 A)	230 V 1~/6.3 A (208 V 3~/6.3 A)	230 V 1~/16 A	400 V 3~/16 A	400 V 3~/35 A	400 V 3~/35 A
Weight (standard)		approx. lbs	44	60	60	154	265	530	530
	A	inch	23.22	22.04	22.04	29.99	38.50	45.90	45.90
	B	inch	12.16	12.99	12.99	16.22	21.06	26.65	26.65
	C	inch	17.32	17.08	17.08	23.62	30.03	39.05	39.05
	D	inch	4.29	4.29	4.29	5.27	7.08	9.29	9.29
Cable connection	E	inch	~ 2.95	~ 2.95	~ 3.54	~ 3.54	~ 3.93	~ 3.54	~ 3.54
	F	inch	~ 2.36	~ 2.36	~ 2.36	~ 2.36	~ 2.36	~ 2.36	~ 2.36
Flange	G	inch	1.85	3.03	3.03	3.62	4.72	120	120
	H	inch	2.95	2.95	2.95	5.11	5.90	150	150
	J	±0.004"	2.36	3.46	3.46	4.72	8.26	210	210
	K	±0.004"	2.36	2.48	2.48	4.52	5.11	130	130
	L	±0.004"	1.57	59.4 x 59.4	59.4 x 59.4	2.95			
	M	Ø mm	45h7	45h7	45h7	65h7	90h7	100h7	100h7
	N	inch	0.43	0.43	0.43	0.74	1.25	1.29	1.29
	O	inch	0.01	0.01	0.01	0.01	0.19	0.19	0.19
	AA	Ø inch	5.3	6.3	6.3	8.4	10.1	12.0	12.0
	AB	Ø mm	M5	M6	M6	M8	M12		
	AC	Ø mm						12.0 / M14	12.0 / M14
Ram									
External ram dimensions	P	inch	Ø 0.55	1.25 x 1.25	1.25 x 1.25	1.65 x 1.65	2.16 x 2.16	2.55 x 2.55	2.55 x 2.55
Ram bore (with bushing)	Q	Ø mm	6H7	10H7	10H7	20H7	20H7	20H7	20H7
	R	inch	0.70	1.18	1.18	1.96	1.57	1.96	1.96
	S		M5	M8	M8	M10	M10	M10	M10
	T	inch	0.31	0.39	0.39	0.78	0.78	0.78	0.78
Top working position	U	inch	1.57	1.96	1.96	2.36	2.36	2.36	2.36
Top ram position	V	inch	1.18	1.53	1.53	1.29	1.77	1.77	1.77
for pin bore	W	±0.0008"		0.86	0.86	1.25	1.57	1.57	1.57
for thread	X	inch		0.86	0.86	1.25	1.57	1.57	1.57
	Y			M5	M5	M6	M8	M8	M8
	Z	Ø mm		5H7	5H7	5H7	8H7	8H7	8H7

[1] 100 kN S3 66 % 30 s; 90 kN 100 % ED

Press Type			SP 405	SP 415/416	SP 417	SP 420	SP 450	SP 460
Frame								
Throat depth	C	inch	5.11	5.11	5.90	6.29	6.29	6.29
Table bore	D	Ø mm	20H7	20H7	40H7	40H7	40H7	40H7
Working height	F	inch	9.84	11.81	15.23	20.27	20.15	19.76
Table height	K	inch	3.66	4.44	5.03	6.10	7.48	8.66
Table size	B x T	inch	6.29 x 5.51	8.66 x 6.88	9.84 x 7.87	11.81 x 8.66	14.56 x 9.05	14.56 x 9.05
Mounting surface	B x SL 6	inch	6.29 x 13.58	8.66 x 15.94	9.84 x 18.11	11.81 x 22.16	14.56 x 25.00	14.56 x 29.92
	O	Ø inch	0.35	0.43	0.43	0.51	0.51	0.51
	SL 1	inch	1.96	3.14	3.14	3.34	3.74	3.74
	SL 2	inch	8.66	9.84	9.84	11.81	13.77	13.77
	SL 3	inch				1.96	1.96	1.96
	SL 4	inch				13.77	15.74	19.68
	SL 5	inch	12.79	15.35	16.92	20.78	23.62	28.54
	SL 6	inch	13.58	15.74	18.11	22.16	25.00	29.92
	SH 1	inch	20.07	24.80	30.70	42.51	41.33	42.99
	SH 2	inch	40.00	43.30	56.29	72.24	80.70	81.49
	SB 1	inch	5.51	7.87	8.66	11.02	13.77	13.77
	SB 2	inch	6.29	8.66	9.84	11.81	14.56	14.56



SCHMIDT® TorquePress
Precise dynamic

TorquePress 200

TorquePress 520

- rapid speed change
- compact design
- maximum force at low rotational speed

The ideal automation component
Driven by an entirely new torque motor development, the **SCHMIDT® TorquePress 520** is the perfect press component for quick and high-precision applications. The new drive technology offers high press force capacities at a much lower inertia. Combining this motor technology with a direct drive system provides an increase in the system force and positioning precision. In automation solutions the quality and the efficiency can thus be considerably improved.

Innovative drive
In comparison to high ratio servomotors and gear motors the torque motors have a much lower moment of inertia and thus a high dynamic. The start-up time from zero to working speed is only about 100 ms.

Constant high torque
Due to the polarity design of the torque motor, the maximum torque is reached at a lower speed.

Constant high speed
The speed consistency is improved by a factor of about 10 when compared with conventional servo motor drives, resulting in higher machine precision.

Fully integrated process data acquisition
The **SCHMIDT® TorquePress 520** uses an integrated load cell (measures direct ram forces) and an absolute position measuring system, that measures physical ram location to a resolution of 0.1 µm. Combining these with our integrated force/stroke monitoring system the true closed-loop position and force control, this system provides unparalleled accuracy, precision and process control.

Modular interface
The exchange of data via higher level control, permits easier and more flexible interface to the system. The user is free to select our pre-defined displacement profiles, or to have direct access to control position, speed, force and dwell time and other parameters.

Modules
With force outputs of 20 kN to 230 kN

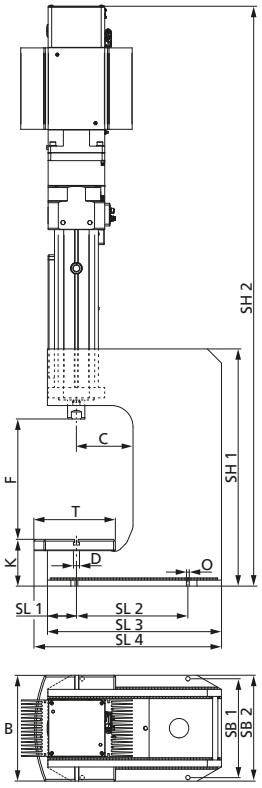
Technical Data	TorquePress 520	TorquePress 200
Force F max. [1]	4,500 lbs	51,700 lbs
Force F at 100 % ED [2]	2,250 lbs	45,000 lbs
Ram stroke	250 mm / 9.84 inch	500 mm / 19.7 inch
Resolution (drive control)	< 0.1 µm / < 0.000004"	10 µm / inc. / < 0.0004 inch
Process data acquisition - Force - Stroke	 4 µm/inc. / 0.00015"/inc. 6.25 N/inc. / 1.4 lb/inc.	 8 µm/inc. / 0.0003 inch 100 N/inc. / 22.5 lbs/inc.
Ram speed (max.)	260 mm/s / 10.24 inch/s	7.87 inch/s
Overload protection	electrical	mechanical
Service life of the cycles acc. to standard operating profile	2×10^7	1×10^7
Drive	ball screw	Planetary roller screw drive
Power supply	400 – 480 V 3~ / 16 A	400 V 3~ / 32 A, 400 V power socket CEE
Weight / height resp. length - Module (approx.) - H-frame (approx.) - Press base	 210 lbs / 43.3 inch 265 lbs / 26.38 inch	 1,700 lbs/90.5 inch (upright resp. horizontal) 2,160 lbs/33.5 inch (upright resp. horizontal) approx. 275 lbs / height flexible
Control unit	**SCHMIDT®** PressControl 5000 / 600	**SCHMIDT®** PressControl 5000 / 600

[1] Temporary peak load

[2] Nominal power in continuous operation

Press Type			TP 520	TP 200
Frame				
Throat depth	**C**	inch	6.3	– [3]
Table bore	**D**	Ø mm	40H7	40H7
Working height	**F**	inch	13.4	22
Table height	**K**	inch	5.2	4.5
Table size	**B x T**	inch	11.8 x 9	– [3]
Mounting surface	**B x SL 6**	inch	11.8 x 20.9	31.9 x 24
	O	Ø inch	0.49	0.69
	SL 1	inch	3.2	6.1
	SL 2	inch	11.8	– [3]
	SL 3	inch	19.4	– [3]
	SL 4	inch	20.5	11.8
	SL 5	inch		
	SL 6	inch		
	SH 1	inch	26.4	33.5
	SH 2	inch	64.6	117.7
	SB 1	inch	11	23.6
	SB 2	inch	11.8	31.9

[3] H-frame version



Detailed dimensional drawings can be downloaded:
www.schmidtpresses.com

SCHMIDT® PressControl
Machine Control Units

SCHMIDT® PressControl 75, 600 and **5000** are control units of the latest generation, which allow the design of modern production processes – from the single workstation to complete automation. You benefit from our competence in:

- Safety technology – type-approved devices
- Process measurement technology – simultaneous measuring during the process
- Process documentation

SCHMIDT® PressControl control units have the following features:

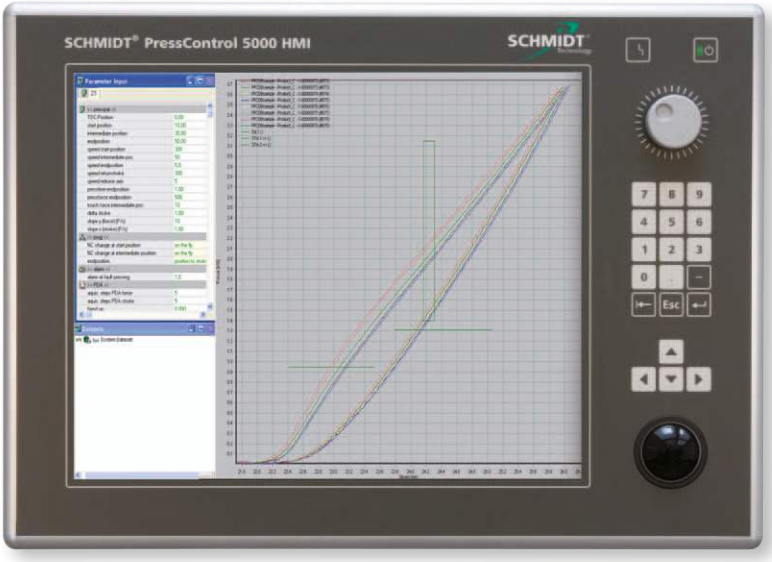
- Efficiency due to intuitive user interfaces
- Quick and secure process set-up e. g. thanks to the touchscreen and additional handwheel ram control function with **SCHMIDT® PressControl 600** and **5000** in combination with the **ServoPress/TorquePress**
- The integrated PLC allows programming of additional inputs/outputs or sensors/actuators and the application-specific design of the workstation or the line
- The integrated measurement data processing is insensitive against interferences (EMC). This results in a high measurement security of the entire system
- With integrated safety technology, the entire system becomes a type-approved single workstation
- Service functions such as "Firmware Update" ensure the liability in the future
- Guaranteed complete process documentation with full traceability

SCHMIDT® PressControl 75

SCHMIDT® PressControl 5000 RT

SCHMIDT® PressControl 600

SCHMIDT® PressControl 5000 HMI



SCHMIDT® PressControl 75
Compact Functionality

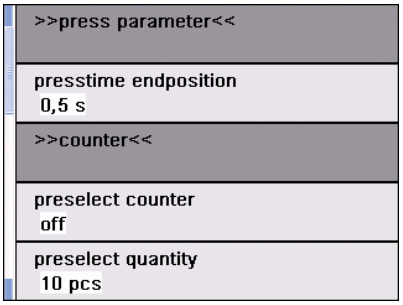
Highly compact yet multifunctional **SCHMIDT®** PressControl 75
Available for these press systems:

- **SCHMIDT®** ElectricPress
- **SCHMIDT®** PneumaticPress
- **SCHMIDT®** HydroPneumaticPress

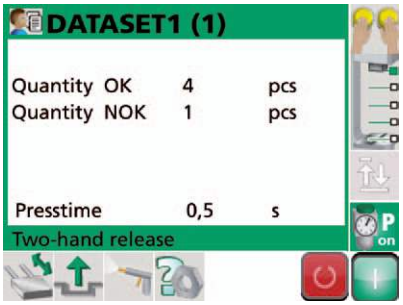
Its easy and intuitive touchscreen allows for quick and efficient process set-up or change-over. Process specific data can be stored in up to 24 datasets.

The **SCHMIDT®** SafetyModule allows the design of manual workstations with safety technology that meets the latest global standards for two-hand cycle initiation, guarding or light-curtain protection.

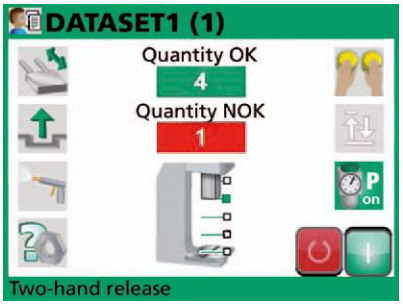
Data input



Data output



Data output



Technical Data

Supply voltage	24 V DC
Current	< 3 A
Operating temperature	0 – 40 °C
Protection class	IP 54
Interfaces	■ RK512 protocol ■ CANopen for PRC-Gateway or CANopen Compact Box IP 2401
Electrical connections	All connections are pluggable
Display	■ 2.8" TouchScreen ■ Process information
Operation	■ 4 function keys ■ 3 languages
Modes of operation	■ Two-hand release with SafetyModule ■ Light curtain with SafetyModule ■ Start button for operation without SafetyModule ■ Workpiece control ■ Activation of sliding table ■ Return stroke initation with external signal ■ Blow-out/blow-off
Operating functions	■ Piece- or preselection counter ■ Set-up mode ■ BDC dwell time ■ User Management
Dimensions	3.5 x 4.7 x 2.3" (h x w x d))
Mounting	Fastening screws, optional magnet holder

SCHMIDT® PressControl 600

Press Control With Integrated PLC & Process Data Management

The **SCHMIDT® PressControl 600** with integrated PLC and process data management is made for intelligent process control of force/stroke monitored **SCHMIDT® ManualPress, (Hydro) PneumaticPress**, **SCHMIDT® ElectricPress** or **SCHMIDT® ServoPress/TorquePress**. Additional automation tasks around the press process can also be realized by the **SCHMIDT® PressControl 600**.

Control Unit

All process integrated system elements and data are controlled and managed centrally by the **SCHMIDT® PressControl 600**. The standard system configuration already includes a basic programming, special applications can be programmed as well.

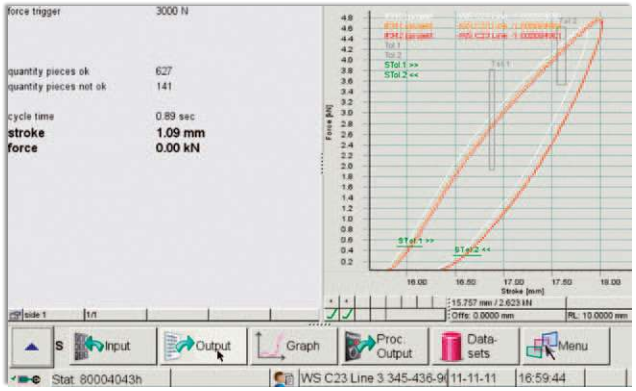
Integrated Operator Panel

The integrated operator panel of **SCHMIDT® PressControl 600** with complete operating interface is made for parametrizing and operating the control as well as for visualization, administration, and documentation of process data (dataset management).

Features

- User-friendly, intuitive menu navigation by touchscreen
- Individual design of user interface
- Keypad with integrated membrane for the input of numerical values and choice of functions
- Softkeys have different functions on different levels and simplify the handling
- Quality evaluation on the basis of force/stroke tolerances, and thus a reliable detection of NOK parts with process monitored presses
- Handwheel software for setup mode for **SCHMIDT® ElectricPress** (force/stroke monitored) or **SCHMIDT® ServoPress/TorquePress**), external handwheel as a handheld as an option (connection via **SCHMIDT® PRC Gateway**)
- Industrial strength, even in harsh environments
- Protection class IP 54

SCHMIDT® DataBase software maps the process data of all individual assembly steps into a data bank, including historic data. And with the **SCHMIDT® PRC OPC** software available on these models, data exchange will now become the automation standard.



Technical Data

Industry PC with	■ Integrated PLC ■ Integrated CNC (with **SCHMIDT® ServoPress/TorquePress**) ■ Intelligent process control ■ Diagnosis and service functions ■ Linux operating system
Drive	Solid State Drive
Field bus	■ CANopen with possibility to connect: - 1 force/stroke monitored **SCHMIDT® ManualPress 3xx**, 1 **SCHMIDT® (Hydro)PneumaticPress**, 1 **SCHMIDT® ElectricPress** or 1 **SCHMIDT® ServoPress/TorquePress** - **SCHMIDT® PRC Gateway** - CANopen Compact box ■ EtherNet TCP/IP ■ PROFIBUS (optionally via external CANopen/PROFIBUS-Gateway) 16 Byte input/output data ■ PROFINET (optionally via external CANopen/PROFINET-Gateway) 16 Byte input/output data ■ EtherCAT (optionally via external CANopen/EtherCAT-Gateway) 16 Byte input/output data
Interfaces	■ EtherNet (10 / 100 MBit) ■ 2 x USB
Panel with	■ Intuitive user interface ■ Diagnosis and service functions
Screen	■ Integrated 7" widescreen TFT display (800 x 480) with touchscreen
Power supply	■ 24 V DC with integrated UPS
Assembly	■ Mech. adaption VESA 75 for optional table or wall fixture as well as fixture for housing

SCHMIDT® PressControl 5000
Compact System Control For Intelligent Process Control

Control 5000 RT

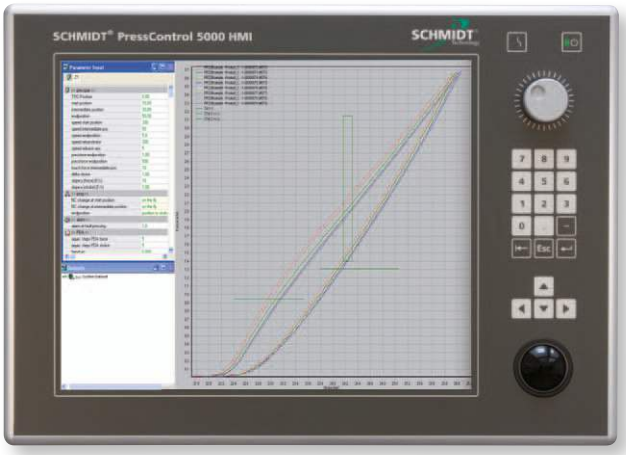
All system elements and data involved in the process are centrally controlled and administrated by the control unit **SCHMIDT® PressControl 5000 RT**. The integrated PROFIBUS interface permits integration of the press system as an intelligent Profibus slave into existing PROFIBUS networks. Parametrization, operation and programming will be effected by using software components which are installed on the operating panel **SCHMIDT® PressControl 5000 HMI** or on a user PC. The standard system configuration already includes a basic programming for different operating profiles; special applications can be additionally programmed.

Technical Data 5000 RT

Industry PC with	■ Integrated PLC ■ Integrated CNC with all-digital drive control (integrated force-, position- and speed control loop) for up to 6 axis ■ Intelligent process control ■ Diagnosis and service functions ■ Linux operating system ■ Assembly on DIN rail (TS 35) according to EN 50022 (1.37 x 0.29 inch)
Drive	■ Integrated hard disk 30 GB
Field bus	■ CANopen with possibility to connect: - 6 **SCHMIDT® ServoPress-/TorquePress-**modules or NC axis as well as press force monitored **SCHMIDT® ManualPress**, **SCHMIDT® (Hydro)PneumaticPress** and **SCHMIDT® ElectricPress** - **SCHMIDT® PRC Gateway** - more than 2000 I/O's ■ EtherNet TCP/IP ■ PROFIBUS: - PPROFIBUS Slave interface - 48 Byte input/output data ■ PROFINET (optionally via external CANopen/ PROFINET-Gateway) 16 Byte input/output data ■ EtherCAT (optionally via external CANopen/ EtherCAT-Gateway) 16 Byte input/output data
Interfaces	■ EtherNet (10/100 Bit) ■ 6 x USB ■ 2 x RS 232 (COM 1/COM 2) for diagnosis purposes ■ 4 digital inputs (24 V) galvanically isolated ■ 4 digital outputs (24 V) galvanically isolated
EMC	Acc. to requirements of EMC law
Power supply	24 V DC with integrated UPS
Ambient temperature	0 – 40 °C

Operating panel 5000 HMI

SCHMIDT® PressControl 5000 HMI can be parametrized and operated via operator panel **SCHMIDT® PressControl 5000 RT** with its complete operating interface. Furthermore visualization, administration and documentation of process data (dataset management) can be effected as well by this instrument.



Technical Data 5000 HMI

Operating panel with	■ Intuitive user interface ■ Diagnosis and service functions ■ Microsoft Windows XP™ operating system Screen ■ Integrated 19" TFT display (SXGA resolution) with touchscreen
Drive	■ Integrated hard disk 80 GB
Interfaces	■ 1 x PS/2 keyboard ■ 1 x VGA ■ 3 x USB ■ 1 x RS232 ■ 2 x Ethernet (10/100 MBit)
EMC	■ Acc. to requirements of EMC law
Power supply	■ 24 V DC
Current consumption	■ 4 A
Ambient temperature	■ 0 – 40 °C
Protection class	■ IP 54
Weight	■ Approx. 33 lbs

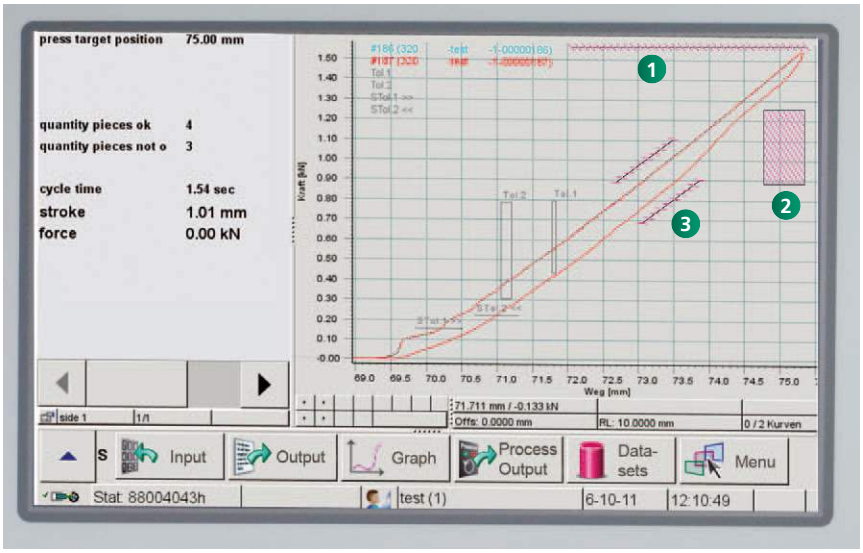
User Interface For Professional Assembly
For **PressControl 600** and **5000**

The user interface for professional assembly is installed in the **SCHMIDT® PressControl 600** and **5000**. The functionality has been developed especially for assembly operations with direct intervention in the process.

The following functions are available
- Process visualization
- Process data management
- Development tool (PLC editor)
- **SCHMIDT® PRC DataBase** as an option

Features
- Easy and quick setup of the processes
- Definition of the data sets and operating profiles by parameters
- Process optimization due to switchover of the process display (F/s, F/t, s/t)
- Easy and quick definition and evaluation of the processes using the quality monitor
- 12 free definable process observers (F/s-windows or stroke tolerances)
- Guaranteed detection of "failed" parts
- Unambiguous documentation and component assignment
- Software PLC for freely programming processes
- Service functions for diagnosis and system updates

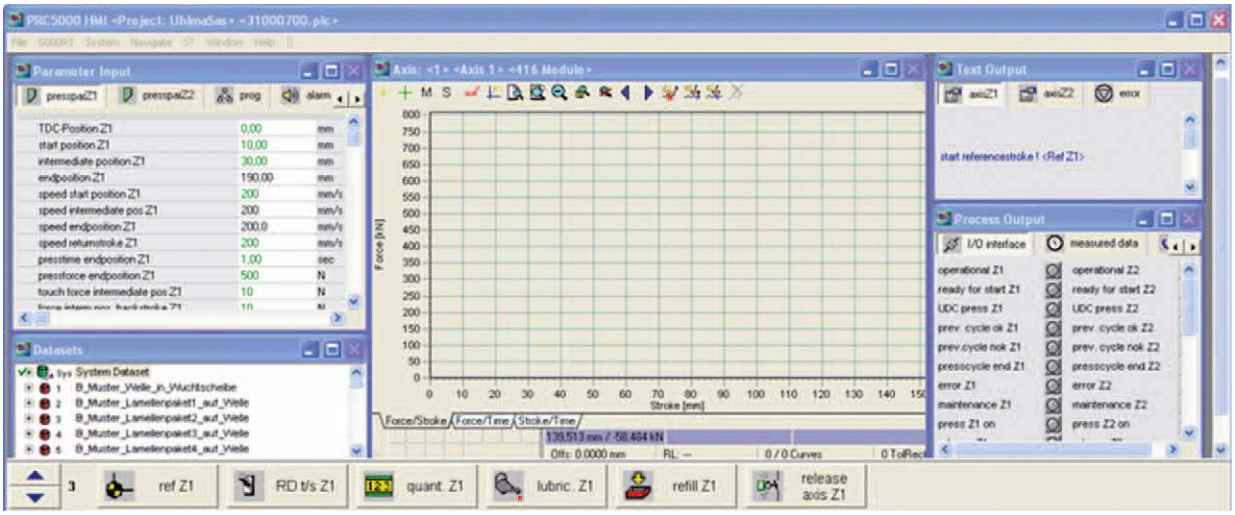
User Interface **SCHMIDT®** PRC 600



1 + 2 Each tolerance can be inverted, creating a do-not pass-through area or line.

3 Stroke tolerance can be positioned at any angle from horizontal to vertical.

User Interface **SCHMIDT®** PRC 5000



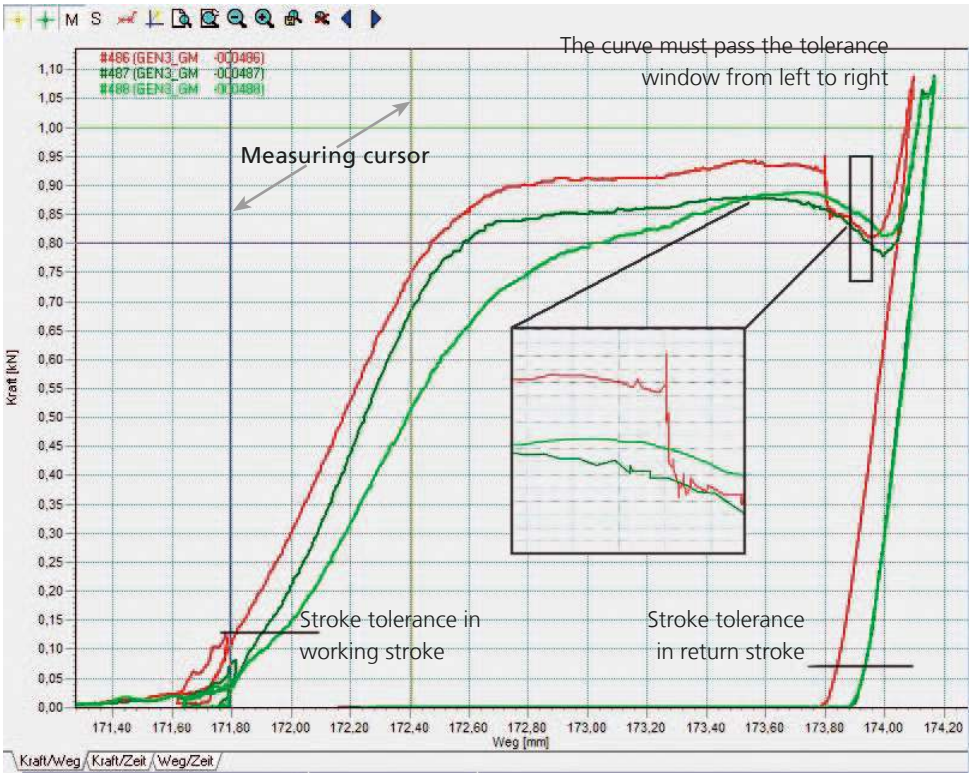
Visualization and Process Analysis
For **PressControl 600** and **5000**

Visualized Display

Force output and press stroke are important parameters for evaluating the quality of pressed assemblies. The data of these measurements are recorded during the process and displayed by the software as force/stroke behaviour curve F/s, F/t or s/t.

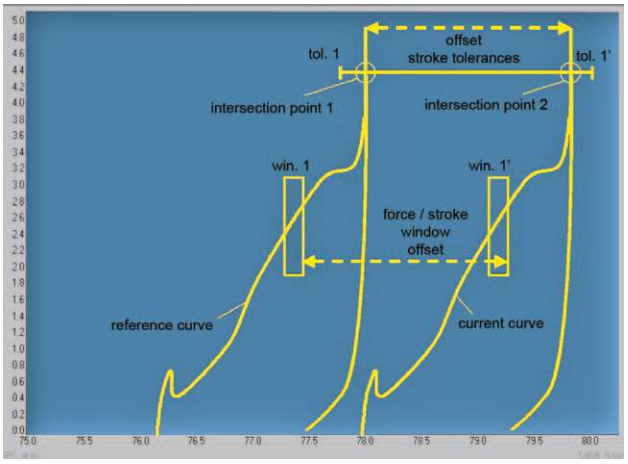
Freely definable tolerances in the form of force/stroke windows and stroke tolerances are provided for quality assurance of the assembly process. With the help of these criteria, quality critical areas can be monitored selectively. If the tolerances in the monitored curve areas are not met, application-specific interventions can be carried out (e. g. selection measures).

It is easy to create tolerance criteria and to display curve behaviour exactly. For an evaluation of the behaviour, the working stroke and the return stroke are important. The high resolution of our measurement systems allows a large number of measuring points that are required for a process-safe evaluation. Zoom and measuring functions allowing detailed documentation about the assembly processes.



Process analysis – graphic display force over stroke

SCHMIDT® MoveTol
Patented offset of tolerance, data software for **PressControl 600** and **5000**



Assembled parts are subject to certain manufacturing tolerances. Dimensional deviations of the parts result in an offset of the curves in the curve window. The curves of the parts with higher tolerance deviations may then be situated outside of the defined tolerance limits and are classified as "failed" part.

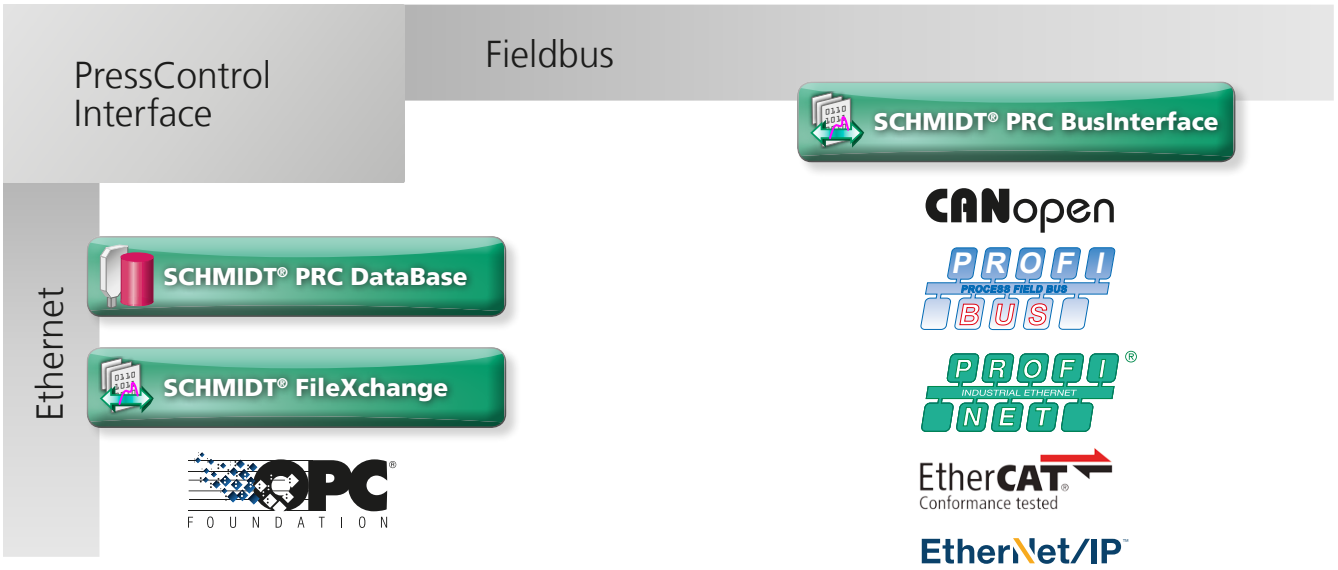
Using the function "Offset of tolerance data", the altitude tolerances of parts can be taken into account. The defined tolerance windows and stroke tolerances are offset by the distance of a reference position. After that, the pass/fail evaluation is carried out.

Offset of tolerance data in relation to freely selectable reference

SCHMIDT® PRC Interface

Interface For Data Evaluation And Control

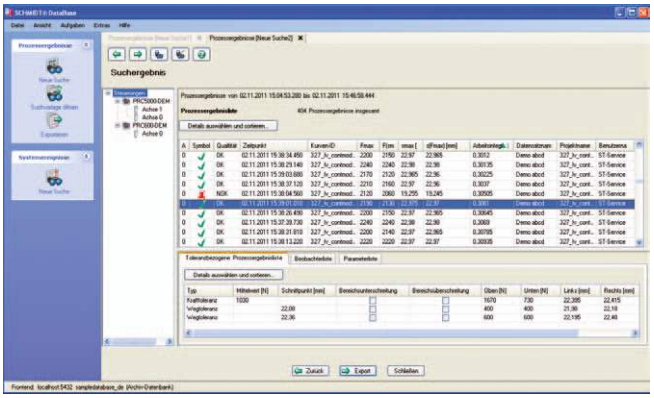
The modular **SCHMIDT®** PRC Interface of **SCHMIDT Technology** meets multiple requirements in the field of data management. It offers possibilities in the areas of system control, data storage, and exchange as well as visualization and analysis. Various requirements with respect to quality assurance, traceability, and optimization of production processes can be attained. A large number of current interfaces are available on fieldbus level and allow easy integration of the press system into master control systems. The data obtained during the press process allow conclusions on quality fluctuations in components or also in preliminary production processes. Not only do data acquisition and storage play a key role but also analysis and evaluation. **SCHMIDT®** PRC DataBase as well as **SCHMIDT®** PRC FileXChange offers a whole range of possibilities. Evaluation can be carried out either with standard tools or via the IT systems of the user to which the process results are transmitted.

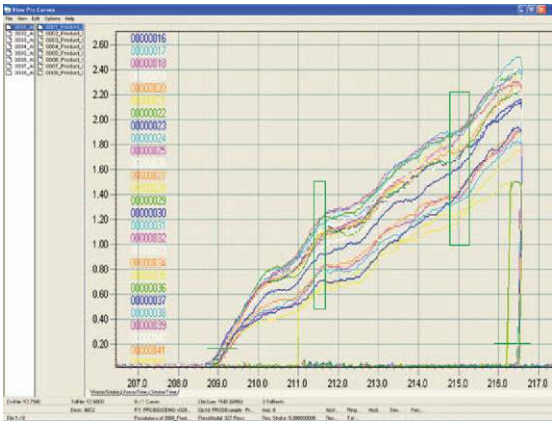


SCHMIDT® PRC DataBase

Database Software For **PressControl 600** And **5000**

SCHMIDT® PRC DataBase is an optional software for the modular control system **SCHMIDT®** PressControl 5000 or **SCHMIDT®** PressControl 600. The database software is used for storing and analysing the data of the control system – process specifications and process results – particularly under quality assurance aspects.





Features

- Documentation
- Analysis
- Quality assurance
- Traceability
- Data export in CSV format
- Q-DAS interface with certification

SCHMIDT® PRC BusInterface
Bidirectional Communication In The Fieldbus World

The new PLC interface, **PRC BusInterface**, enables the bi-directional communication between the **SCHMIDT® press system** and a master control allowing the master control to be programmed to run the press system.

For every position the following control parameters are available:
- set-up mode
- target position
- target speed
- target force
- force increase in the target
- dwell time after reaching the target (for self-running control sequences only)
- speed adjustment at the start of the movement

The following process results can be transmitted to the master control system:
- status signals of system, also error status
- status signals of press axis
- output of current position and force
- output of process data
- signals for data set handling

The procedure of the pressing process is defined s described in the previous points. Further conditions to consider are hardware release (Control On), safety aspects (ServoPress brake test), PDA handling including results and data handling as well as functions like bend up compensation, MoveTol and automatic force taring.
The PDA records process data and produces the pressing results based on defined olerances. After the pressing process, the master control system receives information about the pressing results together with further selectable result values and tolerance errors.
The data transfer concerning the runtime performance of the whole signaling processes has basically been optimized so that very fast applications which require higher cycle rates can be achieved.
Further functions such as MoveTol offer the possibility to modify the position of the tolerances or by presetting the offset via interface to adjust the evaluation to the individual product. Single tolerances can be influenced directly via PLC program during runtime.

SCHMIDT® PRC FileXchange
Safe Exchange Of Process Data

In addition to data exchange within an automation solution via the interface PRC Businterface, data exchange can also be performed via data files.
For every press process, process results, tolerances, observer, and parameters are written into a file whose format and content can be configurated via intuitive user interface.
The following output formats are available:
- Microsoft Excel (CSV)
- Q-DAS
- **SCHMIDT®** CRV/TOL
- XML

This provides safe production data transmission from PressControl to PC (file sys-tem). That means, if the connection between PressControl and PC is broken, this is recorded and the process is stopped. Once the connection is reestablished, the data of the last press process will be transmitted again.
It is also possible to import default values for press processes from a configuration file. A production range which comprises several different products can, for example, be managed via standard PC application and thus be used as production database.

SCHMIDT® PRC OPC
Data Exchange Via The De Facto Automation Standard

In the field of automation, the data communication, using coordinated systems and the reference level, is becoming increasingly important. OPC defines a manufacturer-independent interface.
All parties participating in the communication must only support this interface. The OPC-capable components can be combined just like elements of a construction kit.

OPC® FOUNDATION

SCHMIDT® PRC Interface – Hardware

SCHMIDT® PRC Gateway
- 2 CANopen connections for control (master) and PDA (slave), with 24 V power supply
- 24 V interface with 16 inputs and 16 outputs
- Short-circuit-proof and overload-proof
- Status LED's for CAN bus and I/O's
- Encoder interface for external handwheel as handheld
- Supply voltage 24 V DC
- Top hat rail mounting

The communication with co-ordinated control system is realized via a standardized interface program with **SCHMIDT®** PressControl **600** and **5000**.
All relevant system states as well as "failed" productions are transferred from one control to another via a simple signal transfer. The production data stored in datasets are recallable via the SPS program. If e. g. tools are equipped with an explicit identification code, the production data automatically adapt themselves
to the specific process.

All standard physical interfaces, such as
- I/O interface
- CANopen
- EtherNet
- PROFIBUS
- PROFINET (via CANopen/PROFINET-Gateway)
- EtherCAT (via CANopen/EtherCAT-Gateway)
- USB

can be used for signal transfer with the automation environment.

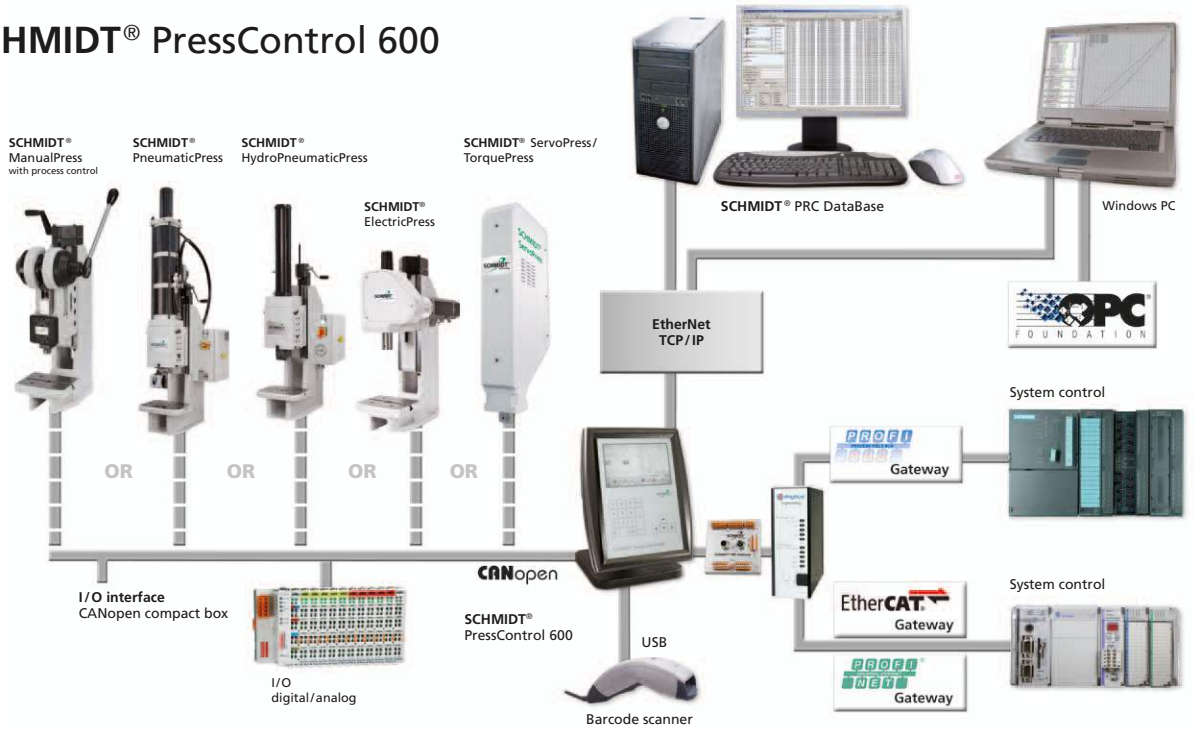
External Handwheel as Handheld
for **SCHMIDT®** PressControl **600** and **5000 RT** in conjunction with press force monitored **SCHMIDT®** ElectricPress or **SCHMIDT®** ServoPress/TorquePress, connection via **SCHMIDT®** PRC Gateway.

CANopen Compact Box
- 16 digital combination inputs/outputs (8 inputs and 8 outputs), useable optionally as input and output (24 V)
- Plug 4-pins M8 screw type

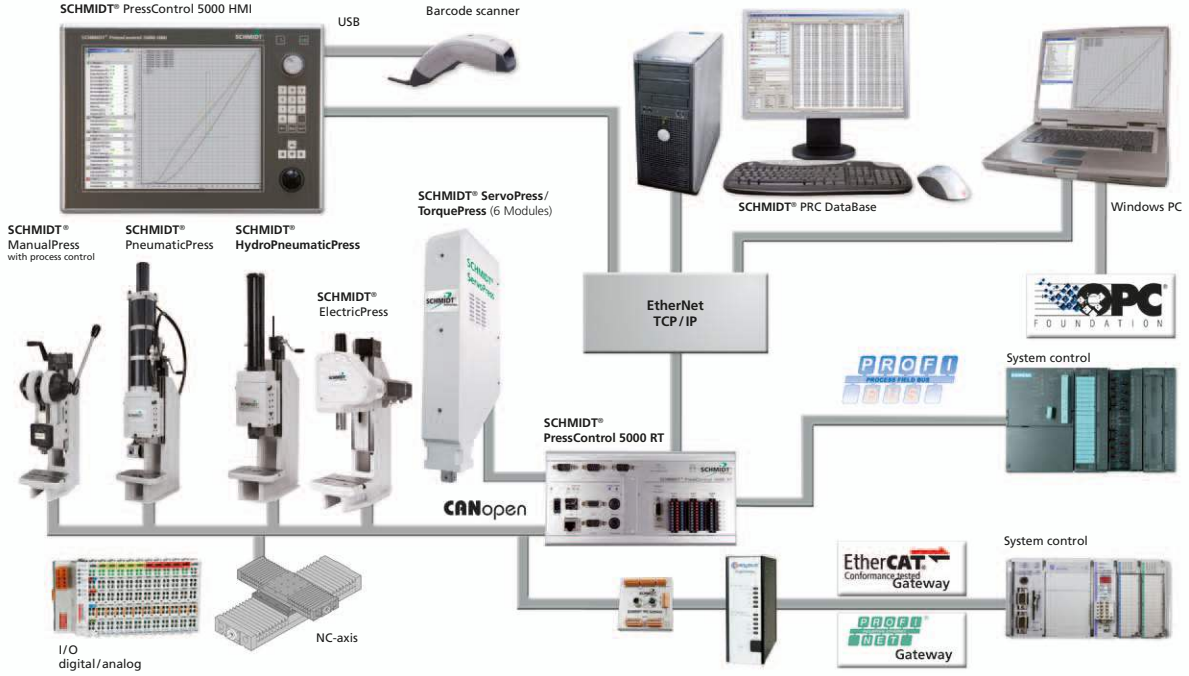
SCHMIDT® PressControl
System Architecture

SCHMIDT® PressControl does work as a system control and takes over the process monitoring. The hard- and software components forming a system concept with real time characteristics. This is guaranteed by a system architecture with CANopen fieldbus. Press force monitored **SCHMIDT® ManualPress**, **SCHMIDT® (Hydro-) PneumaticPress**, **SCHMIDT® ElectricPress** or **SCHMIDT® ServoPress/TorquePress** will be activated via fieldbus. The collected measuring data as well as in-/output data will be exchanged by the fieldbus.

SCHMIDT® PressControl 600



SCHMIDT® PressControl 5000



SCHMIDT® Manual Workstations

Ergonomic Manual Workstations With Safety Technology

SCHMIDT® manual workstations are delivered ready for operation with certified safety technology, press base, and corresponding operating elements. Depending on customer requirements, the workstations can be equipped with light curtain, **SCHMIDT®** SmartGuard protective housing or the proven two-hand safety technology.
These systems are single workstations which can be delivered with all **SCHMIDT®** presses.

Included in the scope of delivery are:

- **SCHMIDT®** press module mounted on frame and/or gantry
- **SCHMIDT®** PressControl 75, **SCHMIDT®** PressControl 600 or **SCHMIDT®** PressControl 5000 with pivoting support arm system
- press workstation.

Available safety equipment:

- transparent protective housing with light curtain and workplace illumination (adjustable distance of the light curtain in order to ensure a safe distance to the tool)
- **SCHMIDT®** SmartGuard protective housing with automatic transparent safety door
- two-hand safety technology

All systems are EC type-approved!

SCHMIDT® Press Bases
Ergonomic in Focus

The **SCHMIDT® Press Base** offers a safe base for the vibration-free installation of all **SCHMIDT® Press Systems**. They are suitable as seated or standing press base according to the latest ergonomic guidelines.

The **SCHMIDT® Press Base** offers the following features:
- Adjustable height (PU-10 is not adjustable, but can be ordered as sitting or standing press base)
- Allows mounting of auxiliary components, such as part bins and staging, safety guarding, work piece clamping devices, rotary indexer, slide table, controls, etc.

Options
- Adjustable foot support (fixed support with PU-1)
- Alternate table top materials (nickel-plated steel, aluminum, stainless steel skin, composite)
- Casters, two of them swivel, two fixed (not height-adjustable)

PU 1 Press Base

PU 10 Press Base

Height as seated press base:
A 820 – 880 mm / 32.28 – 34.65 inches,
B with casters, 920 mm / 36.22 inches
Height in standing position:
A 1020 – 1070 mm / 40.16 – 42.13 inches,
B with casters, 1110 mm / 43.70 inches

Casters for PU 10*

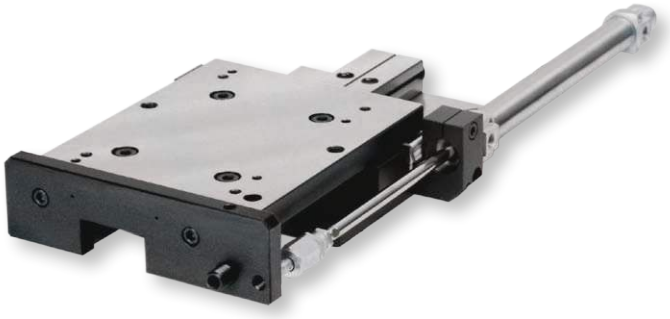
* Not for HydroPneumaticPress No. 64, 68, 74, 76 and ServoPress No. 420, 450, 460 and TorquePress 200

SCHMIDT® Slide Tables
For Efficient Production

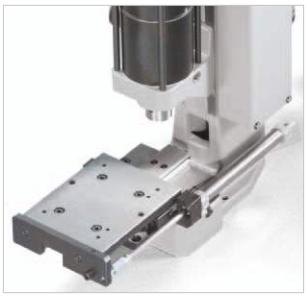
SCHMIDT® Slide Tables are specially designed for the high forces of press systems and where a position requires high precision against an adjustable stop. It is an economical solution for tall parts and for placement of parts outside of the danger area. They can be mounted, depending on the type, both in longitudinal and lateral positions, and can be adapted for automated processes.

Features

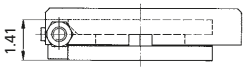
- Cross roller bearings for high-precision guidance
- Play-free adjustment of the table guidance is possible
- Maintains its working position via pneumatic cylinders
- Position detection of the slide table via integrated sensors
- Integrated shock absorbers cushion impact at end positions
- Positioning via pneumatic cylinders in automatic mode
- The press stroke is activated only when the slide is in its proper position

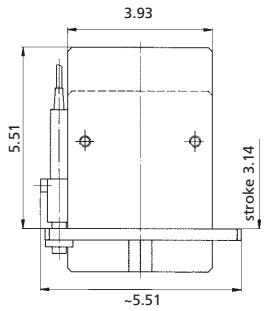


SCHMIDT® Slide Table
ST 45 P longitudinal

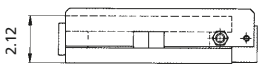


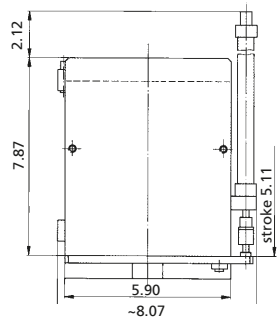
ST 10/ST 10 P
(stroke 3.14 inch)



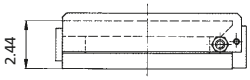


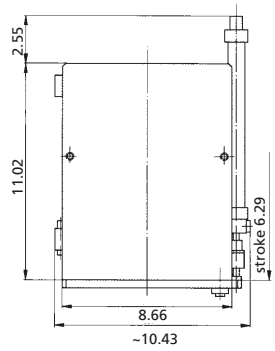
ST 45 P
(stroke 5.11 inch)





ST 140 P
(stroke 6.29 inch)





SCHMIDT® Slide Table
ST 45 P lateral
with adapter plate for fastening on the fixture mounting plate

SCHMIDT® Slide Table ST 45
with bow-type handle, manual

Type		ST 10	ST 10 P	ST 45	ST 45 P	ST 140 P
Pressure load	lbs	2,250	2,250	10,120	10,120	31,500
Stroke	inch	3.14, 6.29	3.14, 6.29	5.11, 7.87 9.84	5.11, 7.87 9.84	6.29, 7,87, 9.84, 11.81
Suitable for press type		20, 23, 24, 320, 323,*	20, 23, 24, 320, 323	20, 23, 24, 25, 27, 32, 33, 34, 61, 62, 65, 320, 323, 327, 361,**	20, 23, 24, 25, 27, 32, 33, 34, 61, 62, 65, 320 323, 327, 361	29, 36, 65, 68, 74, 76, 329, 362, 365, 368, 374
Manual presses		up to 2,000 lbs	up to 2,000 lbs	all	all	all
ServoPresses		405, 415, 416	405, 415, 416	420 max.	420 max.	all
Shock absorber			•		•	•
Bow-type handle		•		•		
Operating mode		manual	pneumatic	manual	pneumatic	pneumatic

Mounting holes available upon request

- Standard

* all **ManualPress** < 2,000 lbs

** all **ManualPress**

Special designs for very long strokes on request
manual = without cylinder, without sensors, without shock absorber

SCHMIDT® Safety Technology
Safety Concepts

SCHMIDT® SmartGuard

The transparent protective housing entirely encloses the working area during the press process. It thus prevents the user and a third person from getting their hands into the danger area and efficiently protects against the particles or splinters that may be ejected. The distances to the working zone are minimized which considerably improves the ergonomics and the efficiency of the workstations. This fully programmable guarding system allows for position and speed values to be input into the system, yet eliminates pinch point concerns by using the **SCHMIDT Technology**'s TUV/CE certified safety technology.

SmartGuard	Typ	405	415/416	417	520
Variable opening stroke	inch	11	13.8	16.1	16.1
Speed opening	inch/s	7.9 – 39.4			
Speed closing	inch/s	7.9 – 19.7			
Electr. safety lock	cat	Ple			
Drive	typ	Servo motor			
Min. cycle	s	6			
Maximum power	W	80			
Protection class	IP				
Deep	inch	17.1	19.1	22.6	23.6
Wide	inch	9.1	11.3	12.3	13.5
Height	inch	40.1	43.7	56.7	64.6
Material guard	PC	antistatic / transparent			

Light curtain with transparent protective housing

The light curtain control provides optimum safety to the user. The danger area is protected with Lexan windows against contact. A light curtain protects the access to the danger area on the side of insertion. The working process is immediately interrupted and the press is stopped when intervening. The cycle can be continued automatically after leaving the danger area. In combination with **SCHMIDT® ServoPress**, the light curtain control is the basic version. The press can be activated via the light curtain. Depending on the application, it can be selected between 1-cycle and 2-cycle activation.

Two-hand safety technology

In basic design, **SCHMIDT® PneumaticPress**, **SCHMIDT® HydroPneumaticPress** as well as **SCHMIDT® ElectricPress** are operated with **two-hand safety technology**. This anti-tie down / anti-repeat dual channel and TUV/CE certified safety circuit requires the user to maintain contact with both two-hand switches until both a ram position and a cylinder pressure sensor is reached, eliminating the pinch point. If either button is released, the ram will return to the TDC position. Once both of the sensors are made, the control will take over the operation with ram retraction based on the control type and the operation mode selected.

SCHMIDT® Customer-Specific Solutions

Standard 'out of the catalog' products, customized or complete turn-key solutions. **SCHMIDT Technology** is an invaluable source for your assembly needs, with the center point being a press. We welcome the opportunity to evaluate your application, perform feasibility studies, process sample parts to determine process capability from a control, as well as monitoring standpoint.

We can take your applications from process development and manufacturing of prototype tooling to providing you with custom designed, turn-key solutions.

SCHMIDT engineers and sales force have gained a wealth of experience while working on a wide array of applications.

SCHMIDT Technology products are suitable for a broad variety of industries and can be tailored to the specific requirements and challenges that applications present, from very basic and simple pressing operations to intelligent, precise and complex processes, combined with monitoring.

The ever rising need to log and exchange process data with third party systems can easily be addressed by the various ways our control systems can be interfaced.

Your need is our challenge. We look forward to the opportunity to be of service.

SCHMIDT® ElectricPress 43/343 Automation
Integrates easily and quickly into an automated system; ideal for new design concepts, integration or as a replacement in an existing production line.

SCHMIDT® PressControl 5000 RT
controlling a 6 axis system consisting of:

- ServoPress 420
- ServoPress 416
- NC Axis for the tooling shuttle
- NC Gripper with NC X/Y positioning axis

SCHMIDT® Customer-Specific Solutions

„Press-Fit" Application

SCHMIDT® ServoPressSystems are the ideal tool for press-fit applications. Their integrated process data and closed-loop force control are perfect for the assembly and disassembly of electronic components. In contrast to soldering, press-fit contacts on a circuit board requires precisely defined and closely monitored assembly processes at very slow speeds. A **SCHMIDT® Press** can be the solution.

SCHMIDT® Rotary Indexing Systems are the basis for an economic rationalization. All **SCHMIDT® Press Types** can be integrated in a rotary indexing system. Mostly, the machines are designed for manual loading. The machine designs are as varied as the requirements. Depending on the requirements of the customer, an individual design is planned.

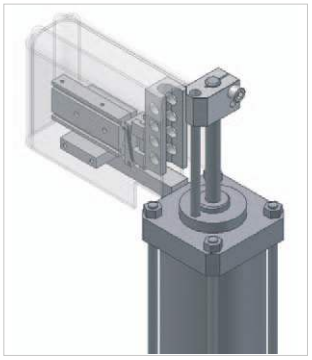
Hybrid Assembly Cell Configuration with
- A monitored PneumaticPress
- A monitored ServoPress
- A conventional HydroPneumaticPress

A single **SCHMIDT® PressControl 5000 RT** can control all of these presses as well as an indexing table. It acquires all stroke/force process data, which can then be transmitted to the **SCHMIDT® DataBase** software for storage and analysis.

SCHMIDT® PneumaticPress & ManualPress
Accessories

Electronic Stoke Completion Sensor
Will confirm that the end of the stroke has been reached. Installed into hardened mounting block on top of fine adjustment screw on the Model No. 20 – 29. Triggered via the stroke limit block of the press. Automatically accepts changes in stroke adjustments.

Intermediate Stop
For two-stroke or safety stop sequential operations.



Handle Rotation Reduction Package
Ergonomic device reduces handle rotation to ram travel on Nr 3 / 6 Rack & Pinion presses for same ram stroke with less handle motion. Handle rotation to stroke ratio is approx. 7 mm / ¼ " of ram travel per 10 degree handle rotation. Note: when device is installed, maximum force output of press is 550 N / 125 lbs. at 200 N / 45 lbs. handle pull.

Speed Control
This accessory in conjunction with a pneumatic press can be a very cost effective solution to good ram speed control.

A speed control on a pneumatic press provides the following benefits:

- Completely eliminate slip-stick effect
- Better accuracy in conjunction with force or distance control
- Improved cycle times, as it allows rapid approach, reduced speed for actual process

Metric Conversions

Stroke Length	Conversions
50 mm	1.97 inch
75 mm	2.95 inch
100 mm	3.94 inch
125 mm	4.92 inch
160 mm	6.30 inch
200 mm	7.87 inch
250 mm	9.84 inch
300 mm	11.81 inch

Metric	Norminal Inch	Tolerance Inch
10H7	0.3937	- 0 / + 0.0006
20H7	0.7874	- 0 / + 0.0008
25H7	0.9842	- 0 / + 0.0008
40H7	1.5748	- 0 / + 0.0010
10H9	0.3937	- 0 / + 0.0014

Threads	Pitch
M8	1.25 mm
M10	1.50 mm

SCHMIDT® PneumaticPress & ManualPress
Accessories

DIE PLATE MALE
COUPLING 1540

DIE PLATE MALE
COUPLING 1554

RAM FEMALE
COUPLING 1560

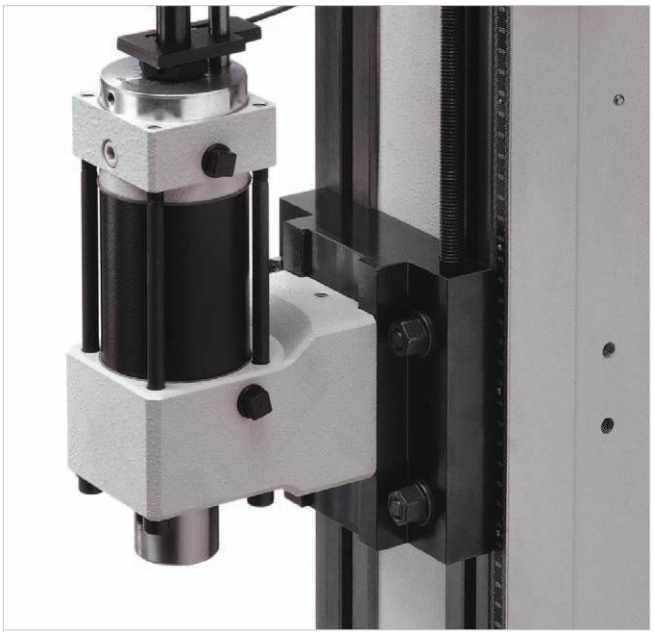
For **SCHMIDT® Presses** that are tooled with column-guided die sets, optional Modular Coupling Devices can be attached for quick, easy removal and installation of die sets.

DIE PLATE MALE Coupling	RAM FEMALE Coupling	Press Model
SN 1540-16 X 1.5 SN 1554-63	SN 1560-20 SN 1560-32	All **PneumaticPresses** except 64 – 76
SN 1540-16 X 1.5 SN 1554-63	SN 1560-25 SN 1560-25	64 & 74
SN 1540-20 X 1.5 SN 1554-80	SN 1560-32 SN 1560-32	76

More accessories available. Contact us for additional information.

More Throat: **SCHMIDT®** Spacers

SCHMIDT® Spacers for Additional Throat Clearance A spacer is used in case the standard throat depth is not adequate for the application. Throat depth is measured from press ram centerline to surface on which the press head gets mounted.



SCHMIDT® Service / Support
Close To The Customer Thanks To A Perfect Service

In order to meet the high quality standards of modern production, to comply with legal requirements periodic calibrations and safety tests of the press systems according to DIN ISO 9000, safety measures are required.

SCHMIDT Technology assists you by means of a strong service package in meeting these requirements.

SCHMIDT® Calibration
for force-monitored press systems

SCHMIDT® PressControl
- Checking the measurement system
- Calibration
- Issue of a test certificate incl. test report
- Calibration sticker on the machine

SCHMIDT® SafetyCheck
for all **SCHMIDT® PressSystems** with type approval
- Test according to the relevant standards
- Measurement and test of the two-hand switching
- Follow-up measurement
- Functional safety check
- General functional check
- Issue of a test report
- Test sticker on the machine

For Light Curtain Systems
- Additional test according to the relevant standards

SCHMIDT® DemoBus
Our press technology will come to your premises. The **SCHMIDT® DemoBus** contains a selection of fully functional presses and accessories.
- See the innovative news and trends
- Get a wide overview over our products
- Do not lose time and save travel costs
- Discuss your assembly applications with our experts
- Conduct trials (by prior arrangements)

SCHMIDT® CompetenceCenter
We have a large number of presses and press systems in our exhibition and testing area at your disposal. Visitors are welcome to our Competence Center to discuss at first hand their specific requirements with our team of experts, who will be pleased to conduct trials on their tools and offer advice and best solutions for all applications.

SCHMIDT Technology Corporation provides many Services
A highly trained and motivated workforce ensures product quality and the success of your company. We provide application testing, calibration and training for all your press requirements.

Our training packages prepare the participants fully in theory and practice for their daily work with **SCHMIDT® Press Systems**, by offering comprehensive user training courses and seminars on complex technological products. These training courses deal with the handling of the products as well as the correct use of the control and process software.

In order to meet the high quality standards of modern production, to comply with legal requirements periodic calibrations and safety tests of the press systems according to DIN ISO 9000 (traceable calibration to meet: ISO/IEC 17025 / ANSI/NCSL Z540.1), safety measures are required. **SCHMIDT Technology** assists you by means of a strong service package in meeting these requirements.

Telephone Support
Telephone support is available workdays from 8 am to 5 pm (EST). If any technical queries cannot be resolved by telephone, we can provide our engineer on site within 24 hours. This service at your site reduces your production downtime to a minimum.
You can reach our service department by phone at
(800) 959 - 1218.