

# SCHMIDT® PneumaticPress

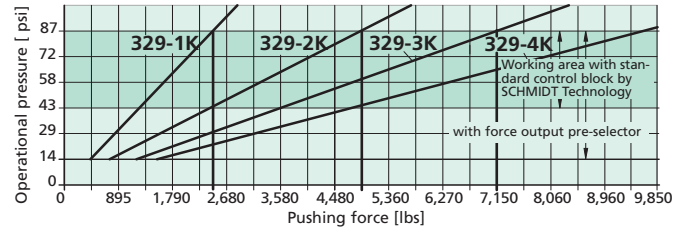
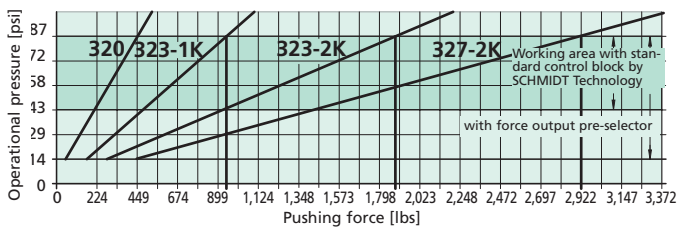
Direct Acting pneumatic presses with force/stroke monitoring



**SCHMIDT® PneumaticPress** with force/stroke monitoring are offered as complete system with control unit **SCHMIDT® PressControl 3000**. 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 due to the force sensor integrated in the ram. Insensitive against side loads.
- Force and displacement sensors are immun to EMI and environmental contamination.
- A measuring data amplification integrated in the press head provides short transmission paths of un-amplified signals.
- Anti-rotational rectangular ram with fully adjustable, Teflon lined gibs for precise travel. No die set required.



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, 150	50, 75, 100, 125, 150	50, 75, 100
Nominal force at 87 psi	lbs		360	945	1890	2925	4495	4945	9665
Resolution, process data acquisition									
- stroke	inch/inc		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
Throat depth	C	inch	5.04	5.16	5.16	5.16	5.16	6.30	6.30
Throat depth frame <sup>1)</sup>	○	inch		5.94	5.94	5.94	5.94		
Fixture mounting platen suitable for throat depth frame				○	○	○	○		
Ram bore	Ø mm		20H7	20H7	20H7	20H7	20H7	20H7	20H7
External ram dimensions	G x H	inch	Ø 1.57	2.76 x 1.97	2.76 x 1.97	2.76 x 1.97	2.76 x 1.97	3.54 x 2.36	3.54 x 2.36
Working height	F								
Frame No. 7	inch		1.97 – 10.63						
Frame No. 7-600 ○	inch		3.35 – 23.62						
Frame No. 301	inch		5.51 – 13.78	5.51 – 13.78	5.51 – 13.78	5.51 – 13.78			
Frame 301-500 ○	inch		12.20 x 19.68	12.20 x 19.68	12.20 x 19.68	12.20 – 19.68			
Frame No. 329	inch						5.12 – 11.81	5.12 – 11.81	5.12 – 11.81
Frame No. 329-460 ○	inch						7.48 – 18.11	7.48 – 18.11	7.48 – 18.11
Weight (standard)	approx. lbs		342	353	364	375	386	705	717

Frame type	Press type	Frame height M	Table size W x D	Table bore	Table height K	Mounting surface W x L
No. 7	320	23.6	7.09 x 5.90	20H7	3.54	12.99 x 14.21
No. 7-600 ○	320	37.79	7.09 x 11.02	20H7	4.33	12.99 x 18.31 – 19.88
No. 301	323, 327	32.7	9.84 x 7.87	40H7	5.71	9.84 x 18.11
No. 301-500	323, 327	39.0	9.84 x 7.87	40H7	5.71	9.84 x 18.90
Special fixture mounting platen ○ <sup>2)</sup> with 3 longitudinal slots			11.81 x 8.66	40H7		
No. 329	329	31.9	11.81 x 9.05	40H7	5.79	11.81 x 21.65
No. 329-460	329	39.0	11.81 x 9.05	40H7	5.79	11.81 x 24.41
Special fixture mounting platen ○ <sup>2)</sup> with 3 longitudinal slots			15.75 x 11.02	40H7		
			19.68 x 11.02	40H7		

**Options**

- <sup>1)</sup> = Additional charge applies
- <sup>2)</sup> = By Press type 320 only in combination with Frame type No. 7-600 with 168 mm, 208 mm or 248 mm.

**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

**5/8 inch bushing available upon request for imperial version.** Please consult our sales department or representative.

**Stroke Length Conversions**

50 mm	1.97 inch
75 mm	2.95 inch
100 mm	3.94 inch
125 mm	4.92 inch
150 mm	5.90 inch

**Tolerance conversion of typical sizes of SCHMIDT® Presses**

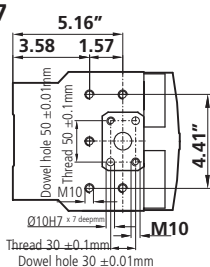
Metric	Nominal Inch	Tolerance Inch
10H7	0.3937	-0 / +0.0006
20H7	0.7874	-0 / +0.0008
25H7	0.9842	-0 / +0.0008
32H7	1.2598	-0 / +0.0010
40H7	1.5748	-0 / +0.0010
10H9	0.3937	-0 / +0.0014

Threads	Pitch
M8	1.25 mm
M10	1.50 mm

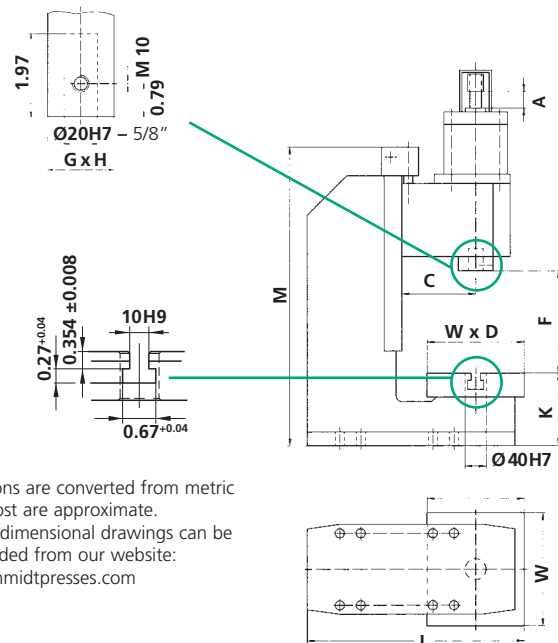
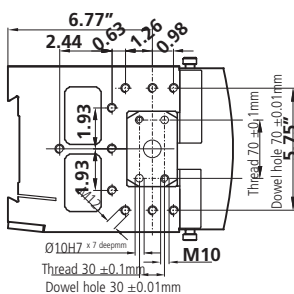
**Bottom view of the press head**

Fastening drill pattern flange / ram

**323 / 327**



**329**



Dimensions are converted from metric units, most are approximate. Detailed dimensional drawings can be downloaded from our website: [www.schmidtpresses.com](http://www.schmidtpresses.com)

# SCHMIDT® PneumaticPress

## Control Versions



### Single-channel control

(Integration of the press in an automatic installation)

- Single-channel pneumatic control block**  
Incl. flow control for adjusting the speed in working stroke
- 2 cylinder switches**  
For inquiry TDC / BDC incl. holding fixture

**External control**

Press-specific installation material

### Optional

- Ram drift lock to secure ram in home position when air supply has been removed.
- Force output preselector approx. 3...6 bar (44...87 psi). (only with direct-acting pneumatic press)

### Two-channel control

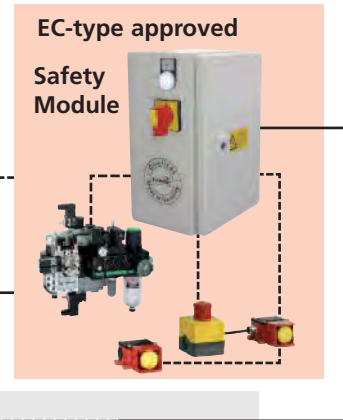
(For manually operated work station)

Control unit SCHMIDT® PressControl 70 / 600 1)

**Additional valves: Option 1**  
1/8" – 5/2 additional valves mounted to the pneumatic control block

**Additional valves: Option 2**  
CAN bus valve terminal

- 2-hand-release
- Light curtain



CAN bus

Control unit SCHMIDT® PressControl 70 / 600 1)



ControlTool

USB

<sup>1)</sup> in development

**SCHMIDT® SafetyModule**  
Safety circuit with terminals to connect the 2-channel pneumatic block and the release elements. The release of the press, 2-hand-release or automatic mode (light curtain or pneumatic guard door), must be configured and parameterized accordingly. The communication with the control is via CAN-Bus.

**2-channel pneumatic block**  
inclusive 2 flow controls for the speed adjustment in the working and return stroke.

# SCHMIDT® PneumaticPress

## Control versions with force/stroke monitoring

Press-specific installation material  
**Optional**

- Ram drift lock to secure ram in home position when air supply has been removed.
- Force output preselector approx. 3...6 bar (44...87 psi).



### Single-channel control

(Integration of the press in an automatic installation)

**Single-channel pneumatic control block**  
 Incl. flow control for adjusting the speed in working stroke

**8 inputs / 4 outputs:**  
 Terminal box for wiring the valve and the press sensors

External control

**Interface to external control**  
 a) CAN bus coupler with input/output boards  
 b) CAN profibus gateway

CAN bus

21pole connection

ControlTool SPC

USB

Signals of the force/stroke sensors

### Two-channel control

(For manually operated work station)

**Additional valves: Option 1**  
 1/8" – 5/2 additional valves mounted to the pneumatic control block

**Additional valves: Option 2**  
 CAN bus valve terminal

- 2-hand-release
- Light curtain

External control

**CAN bus coupler**  
 With input and output termination strip if more than 8 I / 4 O are required  
**CAN profibus gateway**  
 As interface to the external control

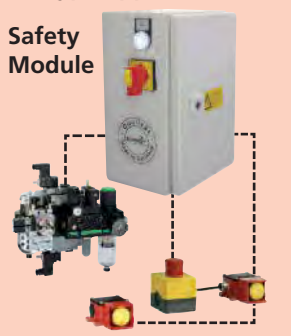
**8 inputs / 4 outputs**  
 Wiring options:  
 - Terminal box  
 - 8-port manifold sensor box

21-pole connection

Signals of the force/stroke sensors

EC-type approved

Safety Module



**SCHMIDT® SafetyModule**  
 Safety circuit with terminals to connect the 2-channel pneumatic block and the release elements. The release of the press, 2-hand-release or automatic mode (light curtain or pneumatic guard door), must be configured and parameterized accordingly. The communication with the control is via CAN-Bus.

**2-channel pneumatic block**  
 inclusive 2 flow controls for the speed adjustment in the working and return stroke.

**Electrical power stroke connection**  
 incl. force output preselector

CAN bus

ControlTool SPC

USB

# Calculation of the air consumption

The air consumption per stroke is calculated in normal litres (NL)<sup>1)</sup> at a working pressure of 6 bar / 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 6 bar in normal litres (NL)

Press type	constant	variable (per mm stroke) <sup>4)</sup>	Air connection <sup>3)</sup>
20	= max. stroke / 50 mm x 1 NL	0.02 NL	G 1/4"
23	= max. stroke / 50 mm x 2.5 NL	0.05 NL	G 1/4"
24	= max. stroke / 50 mm x 2.5 NL	0.1 NL	G 1/4"
25	= max. stroke / 50 mm x 2.5 NL	0.15 NL	G 1/4"
27-1K	= max. stroke / 50 mm x 4 NL	0.08 NL	G 3/8"
27 -2K	= max. stroke / 50 mm x 4 NL	0.16 NL	G 3/8"
27-3K	= max. stroke / 50 mm x 4 NL	0.24 NL	G 3/8"
29 -1K	= max. stroke / 50 mm x 6.5 NL	0.13 NL	G 1/2"
29-2K	= max. stroke / 50 mm x 6.5 NL	0.26 NL	G 1/2"
29 -3K	= max. stroke / 50 mm x 6.5 NL	0.39 NL	G 1/2"
29-4K	= max. stroke / 50 mm x 6.5 NL	0.52 NL	G 1/2"
320	= max. stroke / 50 mm x 1 NL	0.02 NL	G 1/4"
323 -1K	= max. stroke / 50 mm x 2.5 NL	0.05 NL	G 1/4" <sup>3)</sup>
323-2K	= max. stroke / 50 mm x 2.5 NL	0.1 NL	G 1/4" <sup>3)</sup>
327 -2K	= max. stroke / 50 mm x 2.5 NL	0.16 NL	G 1/2" <sup>3)</sup>
329-2K	= (max. stroke +25 mm) / 50 mm x 6.5 NL	0.26 NL	G 1/2" <sup>3)</sup>
329 -3K	= (max. stroke +25 mm) / 50 mm x 6.5 NL	0.39 NL	G 1/2" <sup>3)</sup>
329-4K	= (max. stroke +25 mm) / 50 mm x 6.5 NL	0.52 NL	G 1/2" <sup>3)</sup>
32-12	1 NL	0.09 NL	G 1/4"
32-40	1.5 NL	0.045 NL	G 1/4"
32-60	2 NL	0.035 NL	G 1/4"
33-12	1 NL	0.09 NL	G 1/4"
33-40	1.5 NL	0.045 NL	G 1/4"
34-12	1.5 NL	0.12 NL	G 1/4"
34-40	2.2 NL	0.08 NL	G 1/4"
34-60	3 NL	0.06 NL	G 1/4"
36-12	4 NL	0.36 NL	G 3/8"
36-40	6 NL	0.2 NL	G 3/8"
36-60	8 NL	0.18 NL	G 3/8"

Total consumption = constant consumption [litre]<sup>2)</sup> + variable consumption [litre]

variable consumption = air consumption per mm of stroke [litre/mm]<sup>2)</sup> x working stroke [mm]

Example: Press No. 23-50

Actual working stroke 40 mm

Constant consumption: 2.5 l

Variable air consumption: 0.05 l/mm

Total consumption = 2.5 l + 0.05 l/mm x 40 mm = 4.5 l

Conversion to cubic feet: NL / 0.0353 = CF per one press cycle

## SCHMIDT® HydroPneumaticPress Air consumption per stroke

at 6 bar in normal litres (NL)

Press type standard	Rapid approach stroke / return stroke (constant)	Power stroke per mm (variable)	Air connection <sup>3)</sup>
61-50-6 / 361-50-6	2 NL	1.25 NL	G 1/4"
61-100-12 / 361-100-12	4 NL	1.9 NL	G 1/4"
62-50-6 / 362-50-6	3 NL	1.85 NL	G 1/4"
62-100-12 / 362-100-12	6 NL	2.6 NL	G 1/4"
65-50-6 / 365-50-6	5 NL	2.1 NL	G 1/4"
65-100-12 / 365-100-12	10 NL	3.1 NL	G 1/4"
64-50-6 / 364-50-6	8 NL	4 NL	G 1/2"
64-100-12 / 364-100-12	16 NL	6 NL	G 1/2"
68-50-6 / 368-50-6	8 NL	3.2 NL	G 1/2"
68-100-12 / 368-100-12	16 NL	5.2 NL	G 1/2"
74-50-6 / 374-50-6	8 NL	4 NL	G 1/2"
74-100-12 / 374-100-12	16 NL	6 NL	G 1/2"
76-100-12 / 376-100-12	26 NL	10 NL	G 1/2"

Total consumption = constant consumption [litre]<sup>2)</sup> + variable consumption [litre]

variable consumption = air consumption per mm of power stroke [litre/mm]<sup>2)</sup> x power stroke [mm]

<sup>1)</sup> The air volume is measured under standard conditions (1.013 10<sup>5</sup> pascal = 1 atm and a temperature of 25 °Celsius [298 Kelvin]).

<sup>2)</sup> Value according to table

<sup>3)</sup> For presses with force/stroke monitoring, the air connection refers to the two-channel control block used by us

<sup>4)</sup> For the determination of the consumption, the single stroke is used, the return stroke is automatically contained in the result.