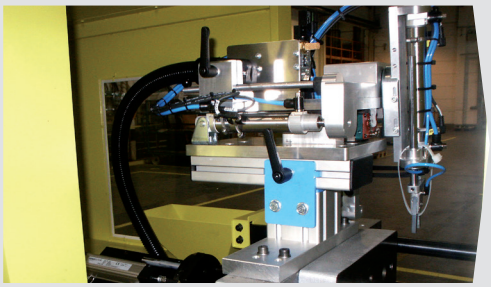
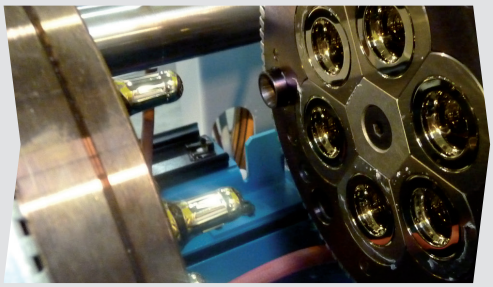
Spritzgiessautomaten

Innovative into the Future – BOY-Injectioneering

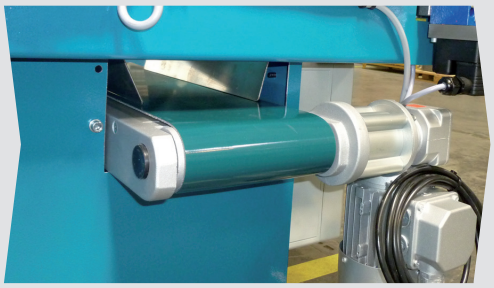
Injection moulding machine BOY 22 A PRO



Sprue and removal pickers integrated under the safety housing



Production of silicone pacifiers with two-component silicone (LSR)



Optional sorting conveyor – integrated in the trip chute

- Attractive price/performance ratio
- Robust, well thought-out design
- High efficiency through low machine hour rates
- Generous mould mounting dimensions with additional mounting possibilities (Pitch circle diameter of 170 mm; hole Ø 12.5 mm)

The BOY 22 A **PRO** is a ruggedly designed injection moulding machine constructed for industrial continuous operation and longevity.

The very compact injection moulding machine (merely 2.1 m^2) features a cantilevered clamping unit which offers optimal accessibility and parts removal.

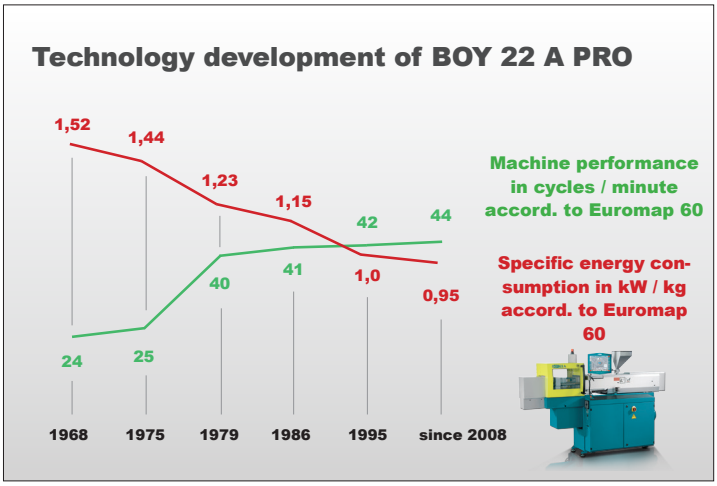
Equipped with 220 kN clamping force and an energy-saving, electronically controlled variable displacement pump as well as the multipatented Procan ALPHA screen control, the BOY 22 A **PRO** delivers efficient production in a compact space.

Even in comparison to older machine generations, the BOY 22 A **PRO** is impressive in its low energy consumption and faster cycle times.

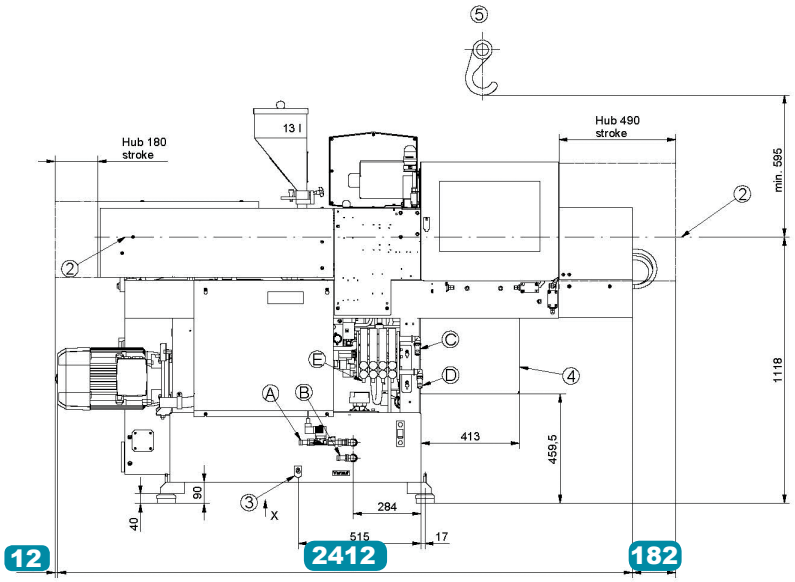
In addition to the injection units 11 and 15, the injection unit SP 52 with a total of seven screw diameters offers a wide range of possible applications.

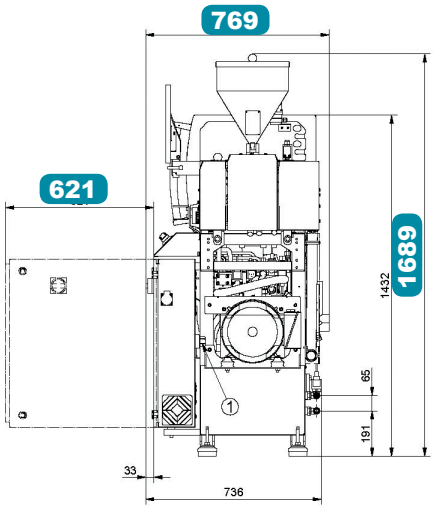
Additionally, there is a large range of options that complete the BOY 22 A **PRO** package.

In particular, an optional integrated handling interface and picker are available that can be positioned under the safety gate. The optional EUROMAP 12 handling interface is also available.



1. The machine design features the best ergonomics and efficient operation.
2. The ejector chute, open on three sides, guarantees optimum removal of the moulded parts.
3. Easy handling and flexibility with regard to additional equipment due to the cantilevered clamping system.
4. Optimum control technology with intuitive operation concept.
5. Robust machine design with integrated oil tank.





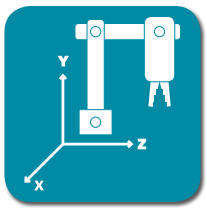
All dimensions in mm

Technical Data – standard version[1)]

Injection unit for processing thermoplastics		SP 11	SP 15		SP 52			
Screw diameter	mm / inch	12 / 0.47	14 / 0.55	18 / 0.71	22 / 0.87	24 / 0.95	28 / 1.1	32 / 1.26
Screw- L/D-ratio		18	18	20	17.5	22	18.6	16.3
Max. stroke volume (theoretical)	in^3	0.27	0.37	1.24	1.86	2.21	3.01	3.92
Max. shot weight in PS (theoretical)	oz	0.14	0.20	0.66	0.98	1.16	1.57	2.05
Injection force	US Tons	3.05	4.08	7.24	7.24	7.24	7.24	7.24
Injection flow (theoretical)	oz/s	0.51	0.70	1.16	1.74	2.05	2.79	3.64
Max. spec. injection pressure	psi	35,534	34,998	37,521	25,121	21,103	15,505	11,864
Max. screw stroke	mm / inch	40 / 1.58	40 / 1.58	80 / 3.15	80 / 3.15	80 / 3.15	80 / 3.15	80 / 3.15
Nozzle force / contact pressure	US Tons	5.28 (HV = 3.96)	5.28 (HV = 3.96)	5.28 (HV = 3.96)	5.28 (HV = 3.96)	5.28 (HV = 3.96)	5.28 (HV = 3.96)	5.28 (HV = 3.96)
Nozzle retraction stroke	mm / inch	180 / 7.09	180 / 7.09	180 / 7.09	180 / 7.09	180 / 7.09	180 / 7.09	180 / 7.09
Screw torque	ft / lbf	36.9 (1,088 psi)	55.3 (987 psi)	95.9 (1,741 psi)	132.7^2 / 213.90^3	132.7^2 / 213.90^3	132.7^2 / 213.90^3	132.7^2 / 213.90^3
Screw speed (infinitely variable)	rpm	500	500	500	400^2 / 250^3	400^2 / 250^3	400^2 / 250^3	400^2 / 250^3
Screw pulback force	US Tons	2.44	3.37	3.37	3.37	3.37	3.37	3.37
Heating power (nozzle + cylinder)	W	2200	2560	3250	3550	5800	5800	5800
Hopper capacity	US gal.	1.98	1.98	3.4	3.4	3.4	3.4	3.4
Clamping unit								
Clamping force	US Tons	24.2	24.2	24.2	24.2	24.2	24.2	24.2
Distance between tie bars	inch (h x v)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Max. daylight between platen	mm / inch	400 / 15.75	400 / 15.75	400 / 15.75	400 / 15.75	400 / 15.75	400 / 15.75	400 / 15.75
Max. opening stroke (adjustable)	mm / inch	200 / 7.87	200 / 7.87	200 / 7.87	200 / 7.87	200 / 7.87	200 / 7.87	200 / 7.87
Min. mould height	mm / inch	200 / 7.87	200 / 7.87	200 / 7.87	200 / 7.87	200 / 7.87	200 / 7.87	200 / 7.87
Max. mould weight on moveable clamping side	lb	331	331	331	331	331	331	331
Mould opening force	US Tons	4.4	4.4	4.4	4.4	4.4	4.4	4.4
Mould closing force	US Tons	1.94	1.94	1.94	1.94	1.94	1.94	1.94
Ejector stroke (max.)	mm / inch	80 / 3.15	80 / 3.15	80 / 3.15	80 / 3.15	80 / 3.15	80 / 3.15	80 / 3.15
Ejector force pushing / pulling	US Tons	2.0 / 1.32	2.0 / 1.32	2.0 / 1.32	2.0 / 1.32	2.0 / 1.32	2.0 / 1.32	2.0 / 1.32
General								
Installed driving power / total power	kW	5.5 / 7.7	5.5 / 8.1	5.5 / 8.8	5.5 / 9.1	5.5 / 11.3	5.5 / 11.3	5.5 / 11.3
Duration of the dry cycle (EUROMAP 6)	s – mm	1.6 – 178	1.6 – 178	1.6 – 178	1.6 – 178	1.6 – 178	1.6 – 178	1.6 – 178
Hydraulic system pressure	psi	2321	2321	2321	2321	2321	2321	2321
Oil tank capacity	US gal.	30.38	30.38	30.38	30.38	30.38	30.38	30.38

Dimensiones and weights		BOY 22 A PRO
Dimensions (LxWxH) / Footprint	inch / in^2	94.9 x 30.3 x 66.5 / 2875
Total weight net (without oil)	lb	1697
Total weight gross (pallet & foil / wooden case)	lb	1829 / 2182
Transport dimensions / case (LxWxH) approx.	inch	90.6 x 65.4 x 86.6 / 90.6 x 37.8 x 64.6

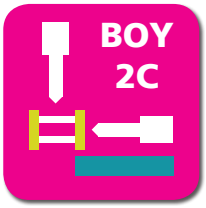
1) more injection units see Technical Data and Equipment 2) hydraulic motor with stroke volume 100 cm^3 / 1885 psi 3) hydraulic motor with stroke volume 160 cm^3 / 1885 psi



Automation

Made in Germany

Procan ALPHA 2®



Multi Component

Equipment

Injection unit

Pivoting injection unit	–
Preset screw speed values with ramping transition	■
Cold start protection	■
Number of set points of injection speed	8
Number of set points of injection pressure	2
Start of holding pressure dependent on hydraulic pressure, stroke and time	■
Start of holding pressure, cavity pressure-dependent	□
Number of set points of holding pressure	8
Production monitoring at start of holding pressure	■
Closed loop control for the complete injection profile and back pressure	■
Control for intrusion-injection	■
PID microprocessor-controlled heating zones for cylinder + nozzle set and temp. display	5
Hydraulically actuated needle shut-off nozzle (pneumatic for XS-LSR)	○
Slide-away for quick material change (25 / 35 / 60 VV / 35 HV / 2C M without hopper)	○
Automatic material loader / feeder	□
Adjustable nozzle force	■
Delayed nozzle retraction	■
Servo-electric screw drive (separate feed line required)	–
High wear-resistant plasticizing units	○
High wear-resistant EconPlast unit	–
Speed injection	–

Clamping unit

Reduced mould height by 50 mm	□
Moving platen support to improve the precision when using large moulds	–
Number of set points of mould closing speed / opening speed	8/8
Number of reopening attempts after mould closing	■
Hydr. ejector with dig. adjustable pressure, speed, position + no. of strokes, intermediate stop position	■
Hydraulic ejector with adjustable stroke 80 mm	■
Hydraulic ejector with adjustable stroke 130 mm	–
Hydraulic ejector with adjustable stroke 150 mm and 42,7 kN force	–
Hydraulic unscrewing device, one or two directions of rotation with intermediate stop	–
Hydraulic unscrewing device, two directions, proportional valve and pulse generator	–
Core pull control with 4/3 way directional control valve and freely selectable operational programmes	□
Injection compression (coining) and breathing with mould degassing control	□
Hydraulic guard safety device	■
Self adjusting mechanical drop bar safety system with electronic monitor	■
Safety gate for handling devices	○
Electronically operated safety gate	○
Selection flap	○
Air ejection	□
Mould lifting crane	–
Simultaneous ejector movement (with double pump)	–
Integrated sprue picker	–

Electronics

USB interface for access and data exchange	■
Interface kit: Serial/Temperature device, USB/Printer and Ethernet	□
OPC interface	–
4 freely programmable inputs/outputs	□
Piece counter	■
Preselect cycle counter with auto shut-off	■
Grounded socket outlet 230 V ~ / 10 A (alternatively can be switched off)	■(□)
CEE socket outlet 400 V ~ / 16 A (alternatively can be switched off)	– (–)
Socket distributor 400 V ~ / 230 V ~ switched (separate feed line required)	–
Energy distributor with four fixed connections, up to 5 x 400 V CEE + 3 x 230 V (sockets can be switched off optionally). Standard supply 125 A / 5 x 50 mm²	–
Switch cabinet ventilation	■
Standardized interface for handling units (EUROMAP 12)	□
Separate feeder (heating and motor current)	○
7-day timer	■
Additional temperature control	□
Brush control	□
Connector for safety switch to inhibit mould closing	□
Integrated hot runner control, 8/16-fold (separate feed line required)	□
Air conditioning unit for control cabinet	□
Alarm signal with sound	□

Hydraulics

Electronically controlled variable pump	■
Servo-motor pump drive (Servo-drive)	–
Oil preheating circuit automatic	■
Oil temperatur gauge / Controlled oil cooling / Oil level indicator	■
Oil level and temperature monitoring	■
Optical oil filter contamination indicator	–
Proportional action valve for the clamping unit	–
Proportional valve with stroke feedback and positioning action for clamp unit	–

General

6- / 8-zone cooling water distributor with electric shut-off valve for injection mould	○
Temperature control for feed throat	□
6- / 8-zone water distributor	○
Tool kit	■
Spare parts package	□
Oil filling	□
Anti-vibration mounts	■

■ standard ○ alternatively □ optional – not available

A 000767
A 01/23

You would like to learn more about this BOY injection moulding machine?

Data and Equipment (complete overview)

Competence brochure

BOY®
Spritzgiessautomaten

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