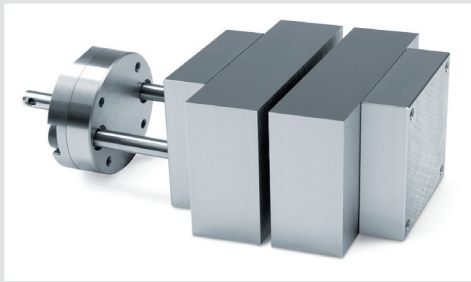


## Innovative into the Future – BOY-Injectioneering

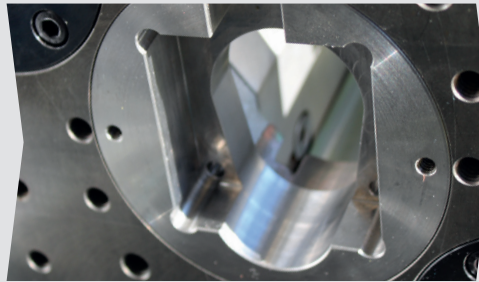


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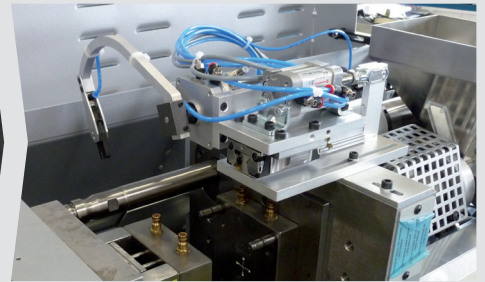
Injection moulding machine BOY XXS



Micro Mold for the BOYS XXS



Off center gating is standard possible  
(Distance 25 mm)



Sprue and removal pickers integrated  
under the safety gate

- **Maximum performance in the smallest area**
- More precise, most economical, extremely compact
- Designed for continuous **industrial operation and laboratory operation**
- Precise Procan ALPHA® control
- Easy to operate
- Maximum energy efficiency
- Easily adaptable to **automated** processes and interface options for Industry 4.0
- Fits through 80 cm door width
- Suitable for clean room production

The BOY XXS is a development from BOY – an injection molding machine designed with **well-proven technology** and all the merits of our larger machines. The difference: the BOY XXS is even **more compact** and thus offers new possibilities for micro and sprueless single-cavity injection molding in modern benchtop construction.

The BOY XXS facilitates **optimal automation solutions** from granules right up to the finished and packaged molded part. The benefit for you: **cost effectiveness** combined with a supreme level of precision. The cantilevered clamping unit allows better accessibility and automation.

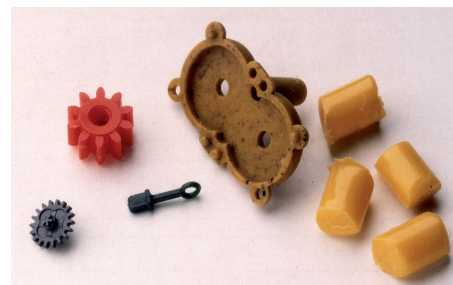


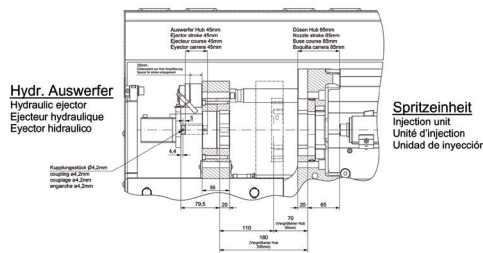
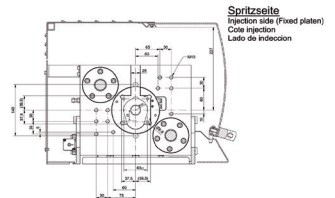
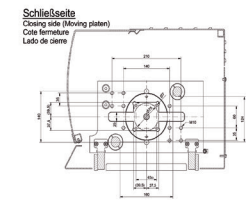
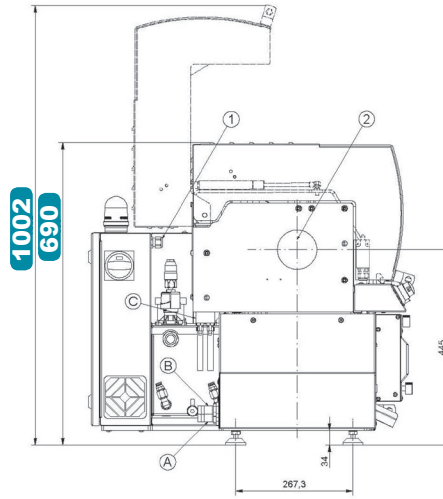
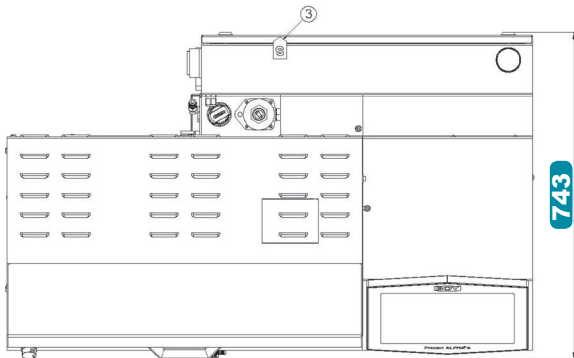
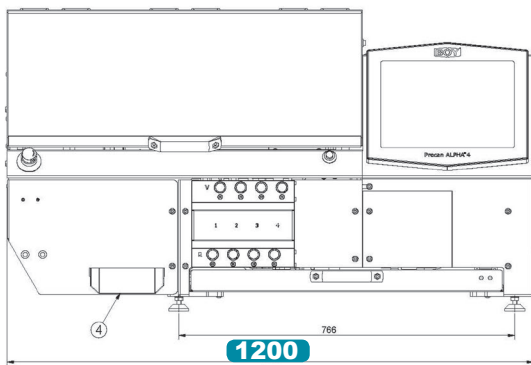
- 1 The machine design features the best ergonomics and efficient operation.
- 2 The ejector chute (optional), open on three sides, guarantees optimum removal of the moulded parts.
- 3 Easy handling and flexibility with regard to additional equipment due to the cantilevered clamping system.
- 4 Optimum control technology with intuitive operation concept.
- 5 Mobile table with floor cupboard (optional).

The BOY XXS is not equipped as common with this size injection molding machines with a plunger type injection but with a reciprocating **plasticizing screw** with diameters from **8 to 18 mm** working after the „first in first out“ principle and with specific injection pressures up to 2.750 bar. The intelligent design is ideally suited for the requirements of micro injection molding. **A 8 mm plasticizing unit assures shortest residence times – a great advantage for considerate processing of temperature-sensitive materials.**

The innovative and **multi-patented** Procan ALPHA® control provides for absolute precision and repeatability with **easy operability**.

BOY's well-established, cantilevered two-platen clamping system reduces the space requirement to a minimum. The two **diagonally arranged** tie bars provide optimal access to the plasticizing unit, mould area, and ejector. The mold fixing platens are specially designed to fit standard bolsters plate systems of most of the well known bolster manufacturers for micro moulds.





## Technical Data – standard version

Injection unit for processing thermoplastics		SP 3 <sup>1</sup>		SP 14		SP 23	
Screw diameter	mm / inch	8 / 0.31	12 / 0.47	14 / 0.55	16 / 0.63	18 / 0.71	
Screw- L/D-ratio		22	19.7	16.9	14.6	16	
Max. stroke volume (theoretical)	in <sup>3</sup>	0.06	0.27	0.37	0.49	0.93	
Max. shot weight in PS (theoretical)	oz	0.04 (POM)	0.14	0.20	0.26	0.49	
Injection force	US Tons	1.4	3.41	3.41	3.41	4.29	
Injection flow (theoretical)	oz/s	0.14	0.73	0.99	1.30	1.63	
Max. spec. injection pressure	psi	36,753	45,368	33,330	25,527	21,988	
Max. screw stroke	inch	20 / 0.79	40 / 1.57	40 / 1.57	40 / 1.57	60 / 2.36	
Nozzle force / contact pressure	US Tons	1.10	2.20	2.20	2.20	2.20	
Nozzle retraction stroke	inch	85 / 3.35	85 / 3.35	85 / 3.35	85 / 3.35	85 / 3.35	
Screw torque	ft / lbf	9.2 (362.6 psi)	36.9 (1,071 psi)	55.3 (1,643 psi)	73.7 (2,143 psi)	73.7 (2,143 psi)	
Screw speed (infinitely variable)	rpm	max. 340	max. 340	max. 340	max. 340	max. 340	
Screw pulback force	US Tons	0.55	0.55	0.55	0.55	0.55	
Heating power (nozzle + cylinder)	W	1335	1825	1825	1825	1825	
Hopper capacity	US gal.	0.79	0.79	0.79	0.79	0.79	

### Clamping unit

Clamping force	US Tons	6.93	6.93	6.93	6.93	6.93	
Distance between tie bars	inch (h x v)	6.30 (diagonal 8.07)	6.30 (diagonal 8.07)	6.30 (diagonal 8.07)	6.30 (diagonal 8.07)	6.30 (diagonal 8.07)	
Max. daylight between platen	inch	7.09 (opt. 8.07)	7.09 (opt. 8.07)	7.09 (opt. 8.07)	7.09 (opt. 8.07)	7.09 (opt. 8.07)	
Max. opening stroke (adjustable)	inch	4.33	4.33	4.33	4.33	4.33	
Min. mould height	inch	2.76 (opt. 3.74)	2.76 (opt. 3.74)	2.76 (opt. 3.74)	2.76 (opt. 3.74)	2.76 (opt. 3.74)	
Max. mould weight on moveable clamping side	lb	48.5	48.5	48.5	48.5	48.5	
Mould opening force	US Tons	1.32 / 0.88	1.32 / 0.88	1.32 / 0.88	1.32 / 0.88	1.32 / 0.88	
Mould closing force	US Tons	1.77	1.77	1.77	1.77	1.77	
Ejector stroke (max.)	mm / inch	6.05 / 3.03	6.05 / 3.03	6.05 / 3.03	6.05 / 3.03	6.05 / 3.03	
Ejector force pushing / pulling	US Tons	5 / 2.5	5 / 2.5	5 / 2.5	5 / 2.5	5 / 2.5	

### General

Installed driving power / total power	kW	5.6 / 7 (400 V)	5.6 / 7 (400 V)	5.6 / 7 (400 V)	5.6 / 7 (400 V)	5.6 / 7 (400 V)	
Duration of the dry cycle (EUROMAP 6)	s – mm	1.3 – 110	1.3 – 110	1.3 – 110	1.3 – 110	1.3 – 110	
Hydraulic system pressure	psi	3191	3191	3191	3191	3191	
Oil tank capacity	US gal.	3.96	3.96	3.96	3.96	3.96	

### Dimensiones and weights

		BOY XXS	
Dimensions (LxWxH) / Footprint	inch / in <sup>2</sup>	47.2 x 29.3 x 27.2 <sup>1</sup> / 1383	
Total weight net (without oil)	lb	695	
Total weight gross (pallet & foil / wooden case)	lb	767 / 834	
Transport dimensions / case (LxWxH) approx.	inch	- / 66.9 x 39.4 x 68.9	

<sup>1)</sup> not suitable for all materials; applicability on request

<sup>2)</sup> max. 39.4 inch



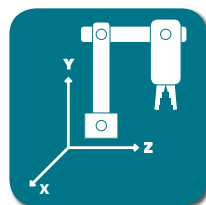
Procan ALPHA®



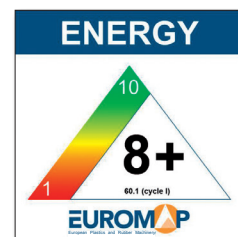
Servo-Drive



Screw Ø 8 mm



Automation



The specified efficiency classification is achievable depending on the respective machine equipment.

## 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	2+1 □
Needle shut-off nozzle (pneumatic for XXS-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

Enlarged mould height by 25 mm	■
Moving platen support to improve the precision	–
Number of set points of mould closing speed / opening speed	8/8
Number of reopening attempts after mould closing	■
Hydr. ejector with adjustable pressure, speed, position + no. of strokes, intermediate stop position	□
Hydraulic ejector with adjustable stroke 45 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/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	–
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 67)	□
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 temperature 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

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	□
Mobile table with tool drawer	□

■ standard    ○ alternatively    □ optional    – not available

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



Data and Equipment (complete overview)



Competence brochure

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