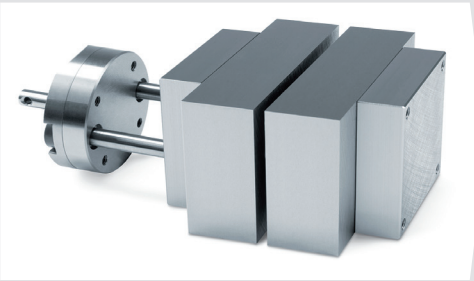
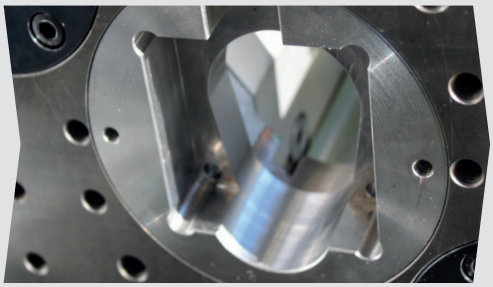
BOY®
Spritzgiessautomaten

Innovative into the Future – BOY-Injectioneering

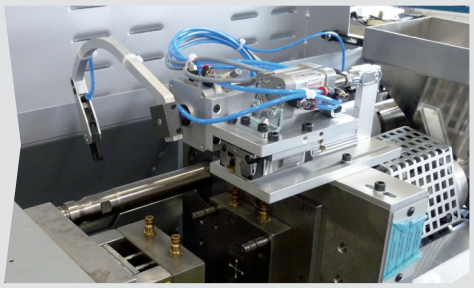
Injection moulding machine **BOY XXS**



Micro Mould for the BOYS XXS



Off center gating is standard possible (Distance 25 mm)



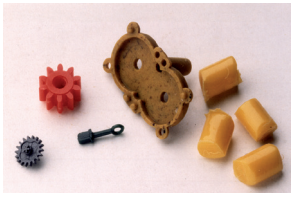
Sprue and removal pickers integrated under the safety gate (Option)

- **Maximum performance in the smallest area**
- More precise, most economical, extremely compact
- Designed for continuous **industrial operation**
- A **slidable plasticizing unit** (distance 25 mm) ensures a decentralized injection
- Precise Procan ALPHA ® 4 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 moulding machine designed in modern benchtop construction with **well-proven technology** and all the merits of our larger machines.

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

The BOY XXS is not equipped as common with this size injection moulding 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" principal and with specific injection pressures up to 2.750 bar. The intelligent design is ideally suited for the requirements of micro injection moulding.

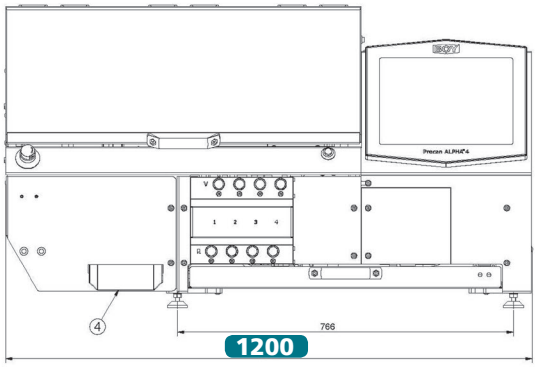


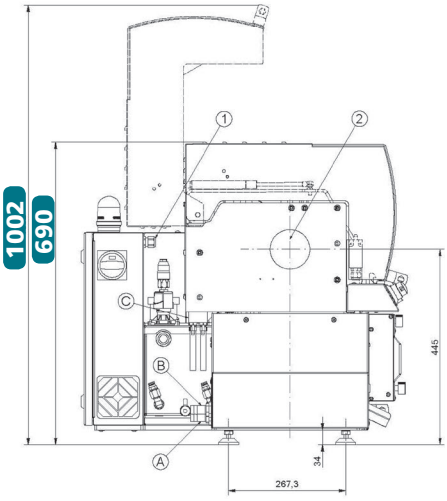
A 8 mm plasticizing unit assures shortest residence times – a great advantage for considerate processing of temperature-sensitive materials. The highly demanding production process with the 8 mm screw - which must always be considered in detail from application to application - requires the attention / compliance of the process-relevant injection moulding parameters.

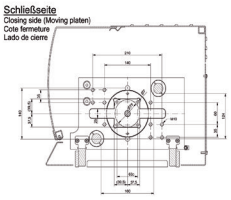
The innovative and **multi-patented** Procan ALPHA ® 4 control provides for absolute precision and repeatability with **easy operability**.

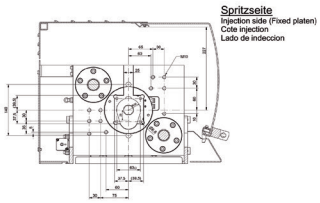
BOY´s well-established, cantilevered two-platen clamping system reduces the space requirement to a minimum. The two **diagonally arranged** tie bars provide optimal access to the plasticizing unit, mould area, and ejector. The mould fixing platens are specially designed to fit standard bolsters plate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

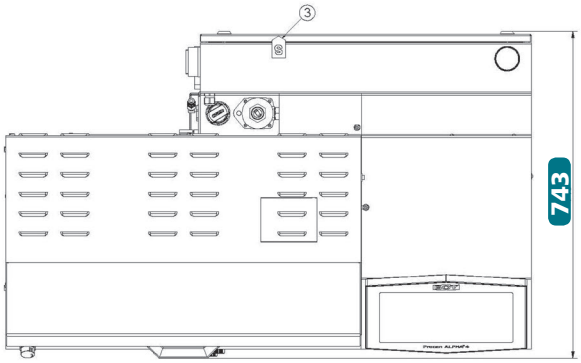
1. The machine design features the best ergonomics and efficient operation.
2. The ejector chute (optional), open on three sides, guarantees optimum removal of the moulded parts.
3. Easy handling and flexibility with regard to additional equipment due to the cantilevered clamping system.
4. Optimum control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

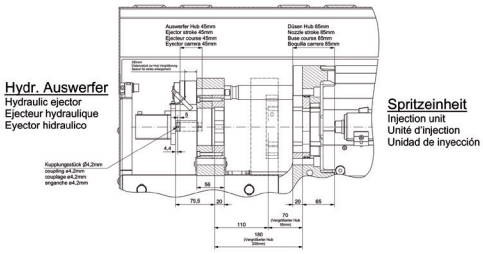












Technical Data – standard version

Injection unit for processing thermoplastics		SP 3[1]	SP 14			SP 23
Screw diameter	mm	8	12	14	16	18
Screw- L/D-ratio		22	19.7	16.9	14.6	16
Max. stroke volume (theoretical)	cm^3	1.0	4.5	6.1	8.0	15.3
Max. shot weight in PS (theoretical)	g	1.14 (POM)	4.1	5.6	7.3	13.9
Injection force	kN	12.7	31	31	31	39
Injection flow (theoretical)	g/s	4.02 (POM)	20.7	28.3	36.8	46.3
Max. spec. injection pressure	bar	2534	2753	2023	1549	1516
Max. screw stroke	mm	20	40	40	40	60
Nozzle force / contact pressure	kN	10	20	20	20	20
Nozzle retraction stroke	mm	85	85	85	85	85
Screw torque	Nm	12.5 (25 bar)	50 (75 bar)	75 (115 bar)	100 (150 bar)	100 (150 bar)
Screw speed (infinitely variable)	U / min.	max. 340	max. 340	max. 340	max. 340	max. 340
Screw pulback force	kN	5	5	5	5	5
Heating power (nozzle + cylinder)	W	1335	1825	1825	1825	1825
Hopper capacity	litre	3	3	3	3	3
Clamping unit						
Clamping force	kN	63	63	63	63	63
Distance between tie bars	mm (h x v)	160 (diagonal 205)	160 (diagonal 205)	160 (diagonal 205)	160 (diagonal 205)	160 (diagonal 205)
Max. daylight between platen	mm	180 / 205	180 / 205	180 / 205	180 / 205	180 / 205
Max. opening stroke (adjustable)	mm	110	110	110	110	110
Min. mould height	mm	70 / 95	70 / 95	70 / 95	70 / 95	70 / 95
Max. mould weight on moveable clamping side	kg	22	22	22	22	22
Mould opening force	kN	12	12	12	12	12
Mould closing force	kN	8	8	8	8	8
Ejector stroke (max.)	mm	45	45	45	45	45
Ejector force pushing / pulling	kN	5 / 2.5	5 / 2.5	5 / 2.5	5 / 2.5	5 / 2.5
General						
Installed driving power / total power	kW	5.6 / 7.0 (400 V)	5.6 / 7.0 (400 V)	5.6 / 7.0 (400 V)	5.6 / 7.0 (400 V)	5.6 / 7.0 (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	bar	220	220	220	220	220
Oil tank capacity	litre	15	15	15	15	15

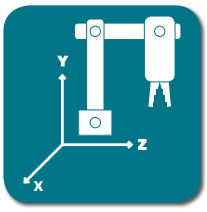
Dimensiones and weights		BOY XXS
Dimensions (LxWxH) / Footprint	mm / m^2	1200 x 743 x 690[2] / 0.89
Total weight net (without oil)	kg	315
Total weight gross (pallet & foil / wooden case)	kg	345 / 380
Transport dimensions / case (LxWxH) approx.	m	- / 1.7 x 1 x 1.75

1) not suitable for all materials; applicability on request 2) max. 1002 mm

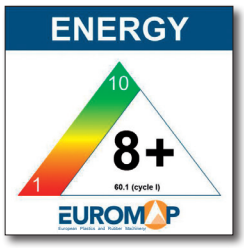
Procan ALPHA®

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 (25/35/55 VV / 35 HV / 2C M / L 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	–

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 ~ switched + 230 V ~ (Standard supply 32 A)	□
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	□

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	□

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

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

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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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