



Spritzgiessautomaten

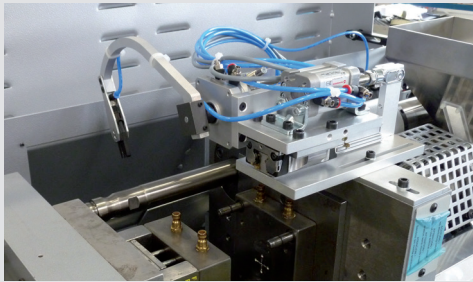
Innovative into the Future – BOY Injectioneering



Video BOY XS E



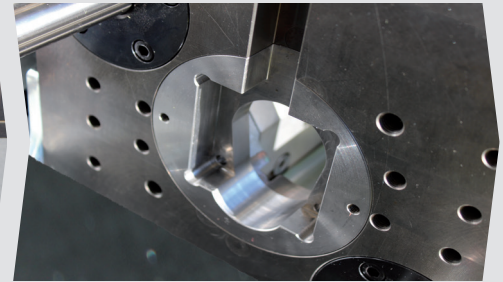
Injection molding machine BOY XS E



Sprue picker integrated under the protective safety cover



Compact parts removal handling unit with conveyor belt on the back side of the machine



Optional Injection unit height-adjustable by 25 mm for a decentralized gating

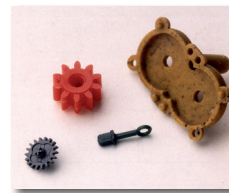
- **Maximum performance** in the **smallest area**
- Designed for continuous **industrial operation**
- More precise, most economical, extremely compact
- **Intuitively** operable and precise Procan ALPHA® 6 control
- Selectable **two-platen configurations**
- **Injection unit** that is **height-adjustable** by 25 mm (Option) guarantees a **decentral** gating
- Maximum energy efficiency
- Easily adaptable to **automated** processes and interface options for Industry 4.0

The **BOY XS E** is the successor model to the highly successful BOY XS. The differences to the predecessor model are the very **energy-efficient servo pump drive**, the **Procan ALPHA® 6** control with its revised design and the significantly improved accessibility of the machine components.

The **cantilevered two-platen clamping unit** of the BOY XS E with diagonal configuration of the tie bars makes the plasticizing unit, the mold space and the ejector easily accessible and facilitates the integration of automation equipment. A special mold holder for **micro molds** of many well-known standard mold manufacturers is optionally available for the BOY XS E.

With a clamping force of 100 kN on a floor space of 1.02 m², the BOY XS E offers a wide range of applications in the **micro and sprueless small part injection molding** with innovative and proven technologies.

The **BOY XS E** 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



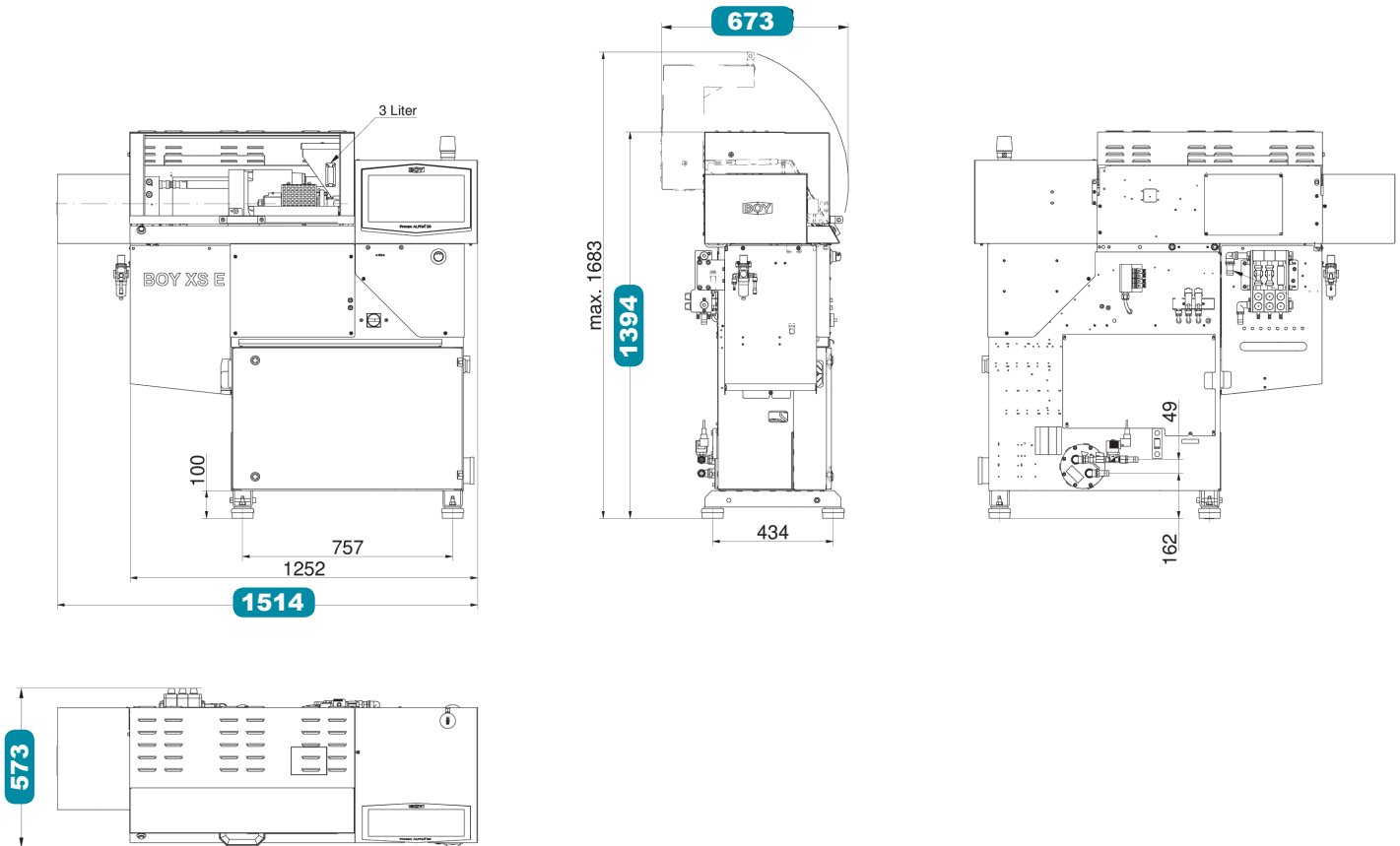
out“ principal and with a specific injection pressures up to 3128 bar. The intelligent design is ideally suited for the requirements of micro injection molding.

The smallest injection unit of the BOY XS E with **screw diameter of 8 mm** 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 molding parameters.

Not only the screen format of the intuitive Procan ALPHA® 6 control has been changed to 16:9, but the more modern visualisation with new symbols and added functions ensure an absolute precision and repeatability with **easy operability**.



- 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 molded parts.
- 3 Easy handling and flexibility with regard to additional equipment due to the cantilevered clamping system.
- 4 State of the Art control technology with intuitive operating concept.
- 5 A strong design with integrated service/cleaning drawer.



Technical Date – standard version

Injection unit for processing thermoplastics		SP 3 ¹		SP 14		SP 23
Screw diameter	mm / in	8 / 0.31	12 / 0.47	14 / 0.55	16 / 0.63	18 ⁴ / 0.71 ⁴
Screw- L/D-ratio		22	19.7	16.9	14.7	16
Max. stroke volume (theoretical)	in ³	0.06	0.28	0.38	0.49	0.93
Max. shot weight in PS (theoretical)	oz	0.03	0.15	0.2	0.26	0.49
Injection force	US Tons	1.43		3.95		4.38
Injection volume flow	in ³ / sec	0.5	1.4	1.9	2.5	3.1
Max. spec. injection pressure	psi	36753	45368	33330	25527	21988
Max. screw stroke	mm / in	20 / 0.79		40 / 1.57		60 / 2.36
Nozzle force / contact pressure	US Tons	1.12			2.25	
Nozzle retraction stroke	mm / in			120 / 4.72		
Screw torque	ft / lbf	9.22 (363 psi)	36.88 (1088 psi)	55.32 (1668 psi)		73.76 (2176 psi)
Screw speed (infinitely variable)	rpm			340 (3.05 in ³)		
Screw pullback force	US Tons			0.56 (435 psi)		
Heating power (Nozzle, socket + cylinder)	W	1325			1825	
Hopper capacity	Us gal.			0.79		
Injection speed	in / sec	5.91			7.87	

Clamping unit

Clamping force	US Tons		11.24
Distance between tie bars	in (h x v)		6.3 / 8.07 diagonal
Max. daylight between platen	mm / in		250 / 9.84
Max. opening stroke (adjustable)	mm / in		150 / 5.91
Min. mold height	mm / in		100 / 3.94
Mold weight on moveable side	lb (max)		48.5
Mold opening force	US Tons		1.69
Mold closing force	US Tons		1.12
Ejector stroke (max.)	mm / in		50 / 1.97
Ejector force pushing / pulling	US Tons		0.94 / 0.94

General

Driving power / Total power	kW	3 / 4.33 (400 V)	3 / 4.83 (400 V)
Duration of the dry cycle acc. to EUROMAP 6 (stroke)	s (mm)		1.3 (112)
Hydraulic system pressure	psi		4351
Oil tank capacity	US gal.		7.4

Dimensiones and weights

		BOY XS E
Dimensions (LxWxH) / Footprint	in / square in	59.6 x 26.5 x 54.9 / 1579
Total weight net (without oil)	lb	893
Total weight gross (pallet & foil / wooden crate)	lb	1135 / 1378
Transport dimensions / case (LxWxH)	in	61 x 27.6 x 63 / 67 x 39.4 x 68.9



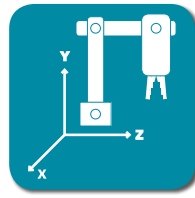
Servo-Drive



Control



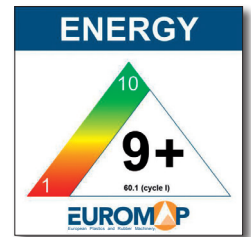
Screw



Automation



Made in Germany



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	9
Number of set points of injection pressure	9
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	9
Production monitoring at start of holding pressure	■
Closed loop control for the complete injection profile and back pressure	■
Control for intrusion-injection (not for BOY 2C XS)	-
PID microprocessor-controlled heating zones for cylinder + nozzle set and temp. display	2+1 □
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 (not for BOY 2C XS)	-
Clamping force build-up can be activated parallel to injection	-
Electromechanical injection movement	-

Clamping unit

Reduced mold height by 50 mm	□
Moving platen support to improve the precision when using large molds	-
Number of set points of mold closing / opening speed	9
Number of reopening attempts after mold closing	■
Hydr. ejector with adjustable pressure, speed, position + no. of strokes, intermediate stop position	■
Hydraulic ejector with adjustable stroke 80 mm (for XS E = 50 mm)	■
Hydraulic ejector with adjustable stroke 130 mm	-
Hydraulic ejector with adjustable stroke 150 mm and 42.7 kN force	-
Electromechanical ejector 150 mm	-
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 programs	□/-
Injection compression (coining) and breathing with mold 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	□
Mold lifting crane	-
Simultaneous ejector movement (with double pump/Electric)	-
Integrated sprue picker	□/-
Mold holder 75 x 75 mm	○

Electronics

USB interface for access and data exchange	■
Interface kit: Serial/Temperature device, USB 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 switched)	■(-)
CEE socket outlet 400 V ~ / 16 A (alternatively switched)	-(-)
Socket distributor 400 V ~ switched + 230 V ~ (Standard supply 32 A)	□
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 mm ²	-
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 mold 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	■
Proportional valve with stroke feedback and positioning action for clamp unit	-

General

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

■ standard ○ alternatively □ optional - not available

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



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Competence brochure

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