



Spritzgiessautomaten

## Innovative into the Future – BOY-Injectioneering

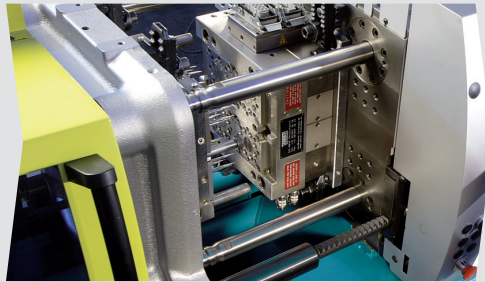


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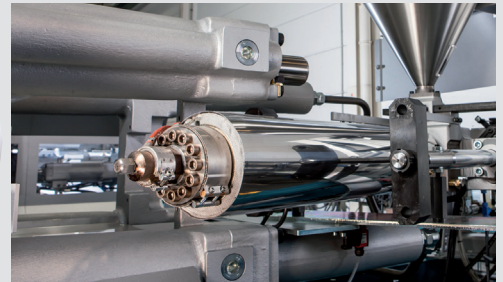
Injection molding machine BOY 90 E PRO



Production cell with CE-compliant safety housing



Great distances between tie bars and platens for mounting larger molds



Optional EconPlast technology from screw diameter 24 mm

- Fully controlled
- Four-tie bar, cantilevered **two-platen clamping system**
- Patented pressure intensifier with **integrated valve function**
- Most exact positioning of the moving platen via proportional valve and servo drive technology
- Two-part safety gate of the clamping unit
- Easily accessible ejector
- Optimum L/D ratio of the screw
- **Different injection units** for thermoplastic, thermoset, LSR, and elastomer processing
- **Lateral swivel-out** injection unit
- Robust machine frame with integrated oil tank
- Optional with high wear-resistant and energy-efficient **EconPlast** unit

The **BOY 90 E PRO** provides 101.16 US Tons clamping force and is equipped with the SP 400 injection unit. With this plasticizing unit, stroke volumes of up to 280.5 cm<sup>3</sup> are possible.

A greater daylight between tie bars (430 x 360 mm) and larger platen distances of 725 mm assures the assembly of larger molds.

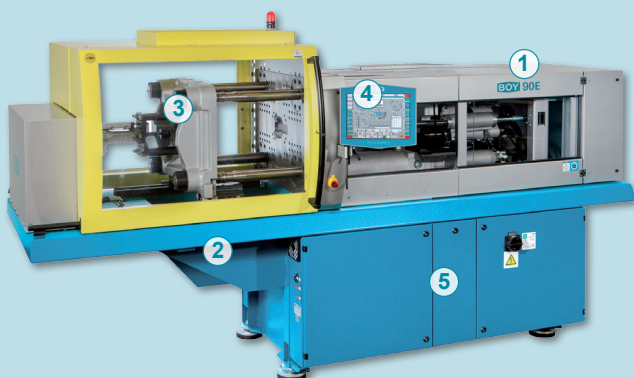
Given the easy handling of the machine, the users of the BOY 90 E **PRO** enjoy maximum **flexibility**. All components - from the injection unit to the four-tie bar clamping system - **are easily accessible**. The divided safety gate of the clamping unit is easy to open and offers **optimum accessibility** of the mold, which entails short set-up times and a rapid start of production.

Powerful software applications of the **Procan** series can be chosen for the control of the injection molding machine. Clearly designed menu structures offer **maximum ease of operation** with optimum results.

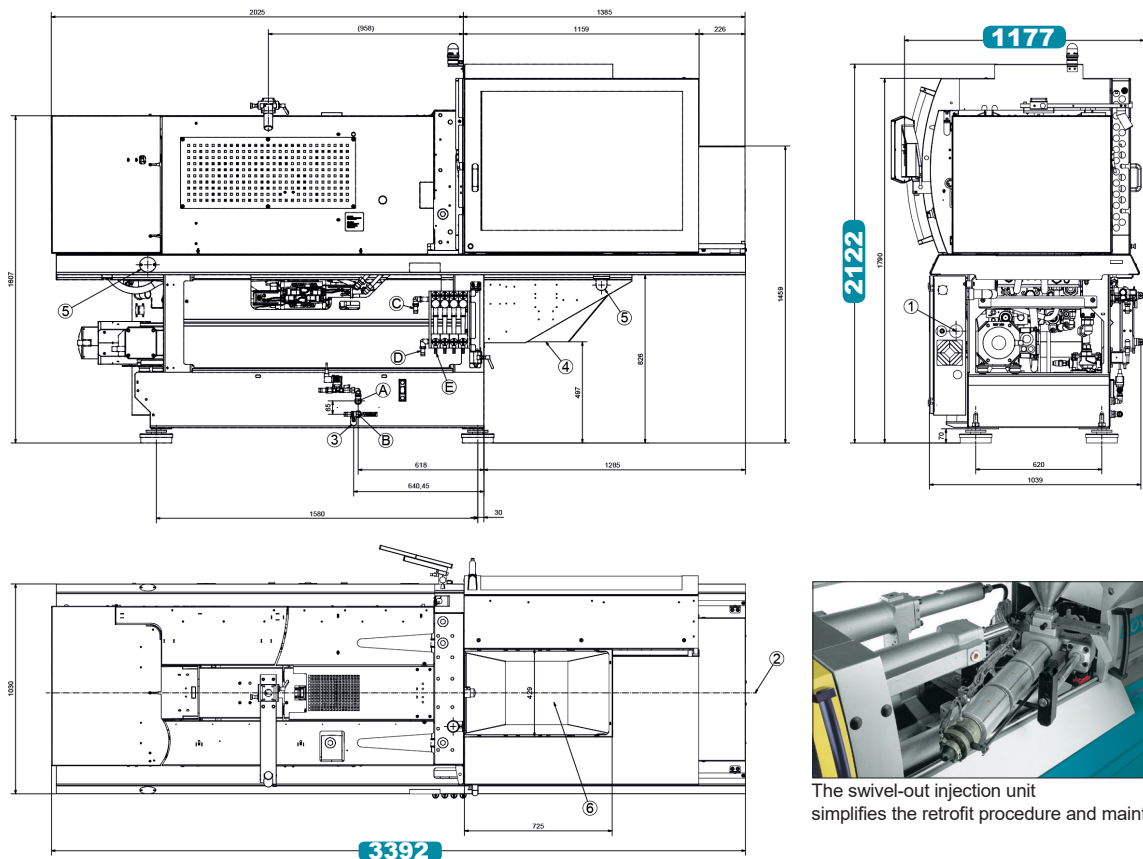
A multitude of **thermoplastics, elastomers, silicones** and **thermosets** as well as **metals** and **ceramics** (PIM-Technology) can be processed trouble-free with the BOY 90 E **PRO**.

Despite the many intelligent, balanced components and a multitude of optional equipment, the injection molding machine from BOY makes do with **little floor space** (just 4.0 square metres).

Equipment for the **process automation** can be mounted space saving on the BOY 90 E. Many options for example handling devices, picker as well as brush and unscrewing controls, core pulls and integrated hot runner controls can be chosen.



- 1 The machine design features the best ergonomics and efficient operation.
- 2 The ejector chute, 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 Optimum control technology with intuitive operation concept.
- 5 Robust machine design with integrated oil tank.



**Technical Data – standard version<sup>1)</sup>**

Injection unit for processing thermoplastics		SP 400		
Screw diameter	mm / in	36 / 1.42	42 / 1.65	48 / 1.89
Screw- L/D-ratio		23	20	17
Max. stroke volume (theoretical)	in <sup>3</sup>	9.63	13.1	17.12
Max. shot weight in PS (theoretical)	oz	5.06	6.89	9
Injection force	US Tons		27	
Injection volume flow	in <sup>3</sup> / sec	9.9	13.5	17.7
Max. spec. injection pressure	psi	34040	25005	19145
Max. screw stroke	mm / in		155 / 6.1	
Nozzle force / contact pressure	US Tons		7.31	
Nozzle retraction stroke	mm / in		243 / 9.57	
Screw torque	ft / lbf	368.8 (18.3 in <sup>3</sup> / 1885 psi) / 390.9 (21.2 in <sup>3</sup> / 1885 psi)		
Screw speed (infinitely variable)	rpm	280 (18.3 in <sup>3</sup> / 250 (21.2 in <sup>3</sup> )		
Screw pulback force	US Tons		5.96	
Heating power (nozzle + cylinder)	W		11250	
Hopper capacity	Us gal.		5.28 (Option)	
Injection speed	in / sec		6.3	

Clamping unit		
Clamping force	US Tons	101.16
Distance between tie bars	in (h x v)	16.93 x 14.17
Max. daylight between platen	mm / in	725 / 28.54 (900 / 35.43 Option)
Max. opening stroke (adjustable)	mm / in	475 / 18.7
Min. mold height	mm / in	250 / 9.84 (425 / 16.73 Option)
Max. mold weight on moveable clamping side	lb (max)	1102.31 / (>661.39 <sup>2)</sup>
Mold opening force	US Tons	6.5
Mold closing force	US Tons	4.63
Ejector stroke (max.)	mm / in	130 / 5.12 (150 / 5.91)
Ejector force pushing / pulling	US Tons	2.29 / 1.52 (4.8 / 3.37)

General		
Installed driving power / total power	kW	15 / 26.25 (400 V)
Duration of the dry cycle (EUROMAP 6)	s (mm)	2.1 (301)
Hydraulic system pressure	psi	2640
Oil tank capacity	US gal.	52.83

Dimensiones and weights		
Dimensions (LxWxH) / Footprint	in / square in	133.46 x 46.34 x 83.54 / 6185
Total weight net (without oil)	lb	6316
Total weight gross (pallet & foil / wooden case)	lb	8741 / 9579
Transport dimensions / case (LxWxH) approx.	in	155.5 x 47.2 x 86.6 / 156.7 x 50.4 x 80.7

1) no further injection units available 2) optional moving platen support recommended



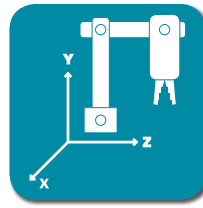
Servo-Drive



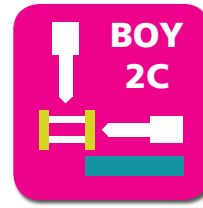
Control



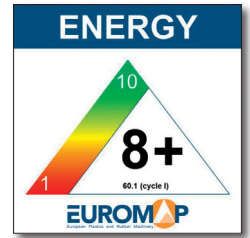
Injection Unit



Automation



Multi Component



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	■
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 <sup>2</sup>	□
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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**Technical Data and Equipment**  
(complete overview)



**Competence brochure**