

## Innovative into the Future – BOY Injectionneering



BOY 20 E PRO



BOY 90 E PRO

## BOY 20 E PRO

**Clamping Force: 200 kN**

**Distance between tie bars: 254 mm**

**Max. stroke volume: 64.3 cm<sup>3</sup>**

**Injection Unit: SP 11, 15, 52**

**Screw-Ø: 12, 14, 18, 22, 24, 28, 32**

**Footprint: 1.8 m<sup>2</sup>**

- High technology - Low price
- State of the art control
- Entry into energy-efficient servo motor pump drives
- New Design
- 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 20 E **PRO** is a ruggedly designed injection moulding machine constructed for industrial continuous operation and longevity.

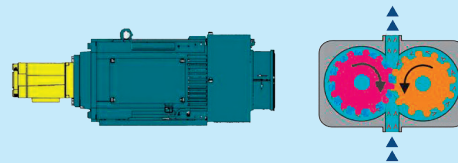
The very compact injection moulding machine (merely 1.8 m<sup>2</sup>) features a cantilevered clamping unit which offers optimal accessibility and parts removal.

Equipped with 200 kN clamping force and an energy-saving, electronically controlled variable displacement pump as well as the multipatented Procan ALPHA screen control, the BOY 20 E **PRO** delivers efficient production in a compact space. Even in comparison to older machine generations, the BOY 20 E **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 20 E **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.

### Servo – Drive

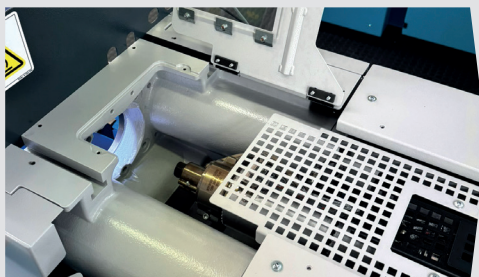


Constant flow volume per revolution. The control is performed via change in speed. In less than 70 ms, the maximum flow rate is achieved from standstill.

Higher dynamics of the servo drive without startup losses for optimal positioning accuracy.

When no pump capacity is required, the servo motor switches itself off and consumes no energy.

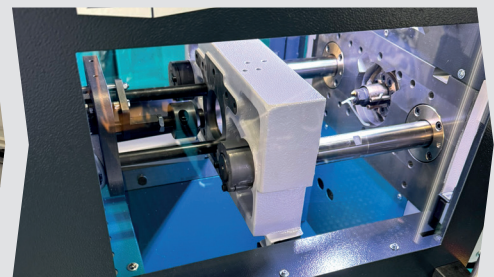
Energy savings up to 50 % are possible with the servo drive. Less energy supply means less heat generation. Oil cooling is mostly not needed.



**Good accessibility of the cylinder**



**Intuitive Procan ALPHA® 4 control system**



**Easily accessible tool installation area**

## BOY 90 E PRO

**Clamping Force: 900 kN**

**Distance between tie bars: 430 x 360 mm**

**Max. stroke volume: 280.5 cm<sup>3</sup>**

**Injection Unit: SP 370**

**Screw-Ø: 36, 42, 48**

**Footprint: 4.00 m<sup>2</sup>**

- Fully regulated
- Four-bar, freely protruding two-platen locking system
- Patented pressure intensifier with integrated valve function
- Extremely precise positioning of the clamping plate thanks to proportional valve
- Two-part protective cover of the clamping unit
- Optimum L/D ratio of the screw
- Injection unit can be swivelled out to the side



The BOY 90 E PRO has a clamping force of 900 kN and is equipped with the SP 370 injection unit. With this plasticising unit, stroke volumes of up to 280.5 cm<sup>3</sup> are possible.

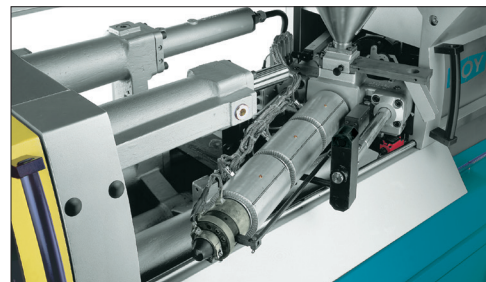
Largest tie-bar spacing (430x360mm) and platen spacing of 725 mm (optional 900 mm) ensure that larger moulds can be accommodated.

Users of the BOY 90 E PRO gain maximum flexibility thanks to the easy handling of the machine. All components - from the injection unit to the four-bar clamping system - are freely accessible. The two-part protective cover of the clamping unit enables easy opening and offers optimum accessibility to the mould. This results in short set-up times and fast production start-ups.

Powerful software applications from the Procan series are available for controlling the injection moulding machine. Clear and well-organised menu structures offer maximum ease of use with optimum results.

A wide range of thermoplastics, elastomers, silicones and thermosets as well as metals and ceramics (PIM technology) can be easily processed with the BOY 90 E PRO. Many options such as handling devices, pickers, brush and unscrewing controls, core pulls and integrated hot runner controls are available.

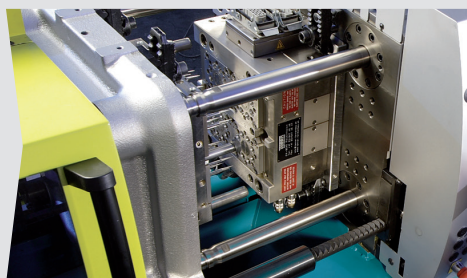
Despite the many intelligent, coordinated components and the numerous expansion options, BOY's largest injection moulding machine has a small footprint of just 4.0 square metres.



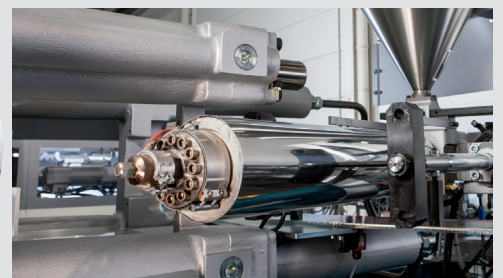
The swivelling injection unit facilitates and maintenance work.



**Production cell with CE-compliant safety housing**



**Great distances between tie bars and platens for mounting larger moulds**



**Optional EconPlast technology from screw diameter 24 mm**



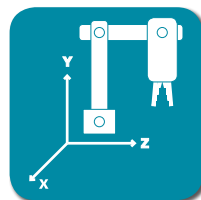
Servo-Drive



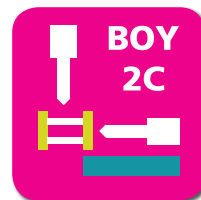
Control



Injection Unit



Automation



Multi Component



Made in Germany

## Technical Data - standard version<sup>1)</sup>

Injection unit for processing thermoplastics		BOY 20 E PRO	BOY 90 E PRO
Screw diameter	mm	22	42
Screw- L/D-ratio		17.5	20
Max. stroke volume (theoretical)	cm <sup>3</sup>	30.4	214.7
Max. shot weight in PS (theoretical)	g	27.7	195.4
Injection force	kN	65.8	240
Injection volume flow	cm <sup>3</sup> /s	54.0	221.7
Max. spec. injection pressure	bar	1732	1724
Max. screw stroke	mm	80	155
Nozzle force / contact pressure	kN	48	65
Nozzle retraction stroke	mm	205	243
Screw torque	Nm	180 <sup>4</sup> / 290 <sup>5</sup>	500 <sup>2</sup> / 530 <sup>3</sup>
Screw speed (infinitely variable)	U/min.	400 <sup>4</sup> / 250 <sup>5</sup>	280 <sup>2</sup> / 250 <sup>3</sup>
Screw pulback force	kN	30.6	53
Heating power (nozzle + cylinder)	W	3550	11250
Hopper capacity	litre	13	20
Injection Speed	mm/s	142	160
Clamping unit			
Clamping force	kN	200	900
Distance between tie bars	mm (h x v)	254	430 x 360
Max. daylight between platen	mm	400	725 (900)
Max. opening stroke (adjustable)	mm	200	475
Min. mould height	mm	200	250 (425)
Max. mould weight on moveable clamping side	kg	150	500 / (>300 <sup>3</sup> )
Mould opening force	kN	40	57.8
Mould closing force	kN	17.6	41.2
Ejector stroke (max.)	mm	80	130 (150)
Ejector force pushing / pulling	kN	18.1 / 12	20.4 / 13.5
General			
Installed driving power / total power	kW	5.5 / 9.05	15 / 26.25 (400 V)
Duration of the dry cycle (EUROMAP 6)	s – mm	1.6 – 178	2.1 – 301
Hydraulic system pressure	bar	145	182
Oil tank capacity	litre	65	200
Dimensiones and weights			
Dimensions (LxWxH) / Footprint	mm / m <sup>2</sup>	2290 x 784 x 1673 / 1.8	3390 x 1177 x 2122 / 4.00
Total weight net (without oil)	kg	770	2865
Total weight gross (pallet & foil / wooden case)	kg	1185 / 1345	3965 / 4345
Transport dimensions	m	2.3 x 1.06 x 2.2	3.95 x 1.2 x 2.2

<sup>1)</sup> Other screw diameters available

<sup>2)</sup> hydraulic motor with 300 cm<sup>3</sup> stroke volume / 130 bar

<sup>4)</sup> hydraulic motor with 100 cm<sup>3</sup> stroke volume / 130 bar

<sup>3)</sup> hydraulic motor with 348 cm<sup>3</sup> stroke volume / 130 bar

<sup>5)</sup> hydraulic motor with 160 cm<sup>3</sup> stroke volume / 130 bar

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



Data and  
Equipment (complete overview)



Competence  
brochure

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Spritzgiessautomaten

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