



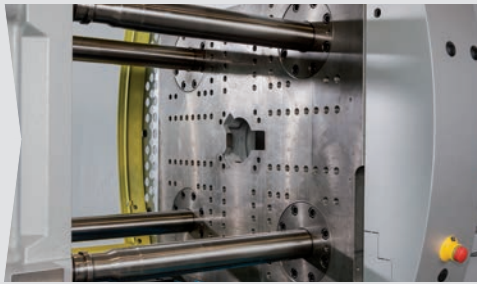
Spritzgiessautomaten

## Innovative into the Future – BOY-Injectioneering

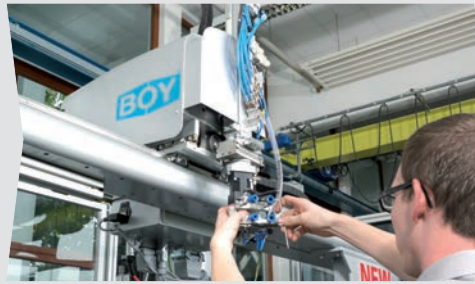


---

Injection moulding machine **BOY 125 E**



Tie bar distances enlarged to 470 mm x 430 mm



Simplest possibilities to integrate a four-axis industrial robot



Electrically driven material hopper / feeder for an easier refilling / assembly

- Fully controlled
- Four-tie bar, two-platen clamping unit with a max. platen distance of 825 mm
- Patented pressure intensifier with **integrated valve function**
- Most exact positioning of the moving platen via proportional valve and servo drive technology
- Divided safety gate for 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 energy-efficient and high wear-resistant **EconPlast** unit

Significantly stronger, larger and more powerful, were the requirements for the development of BOY 125 E. In addition to the larger tie bar distance of 470 mm and a maximum platen distance of 825 mm, the new BOY top model offers a clamping force increase of 25%. **1,250 kN clamping force** characterizes now the new machine upper limit at BOY.

Given the easy handling of the machine, the users of the BOY 125 E 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 mould, which entails short set-up times and a rapid start of production.

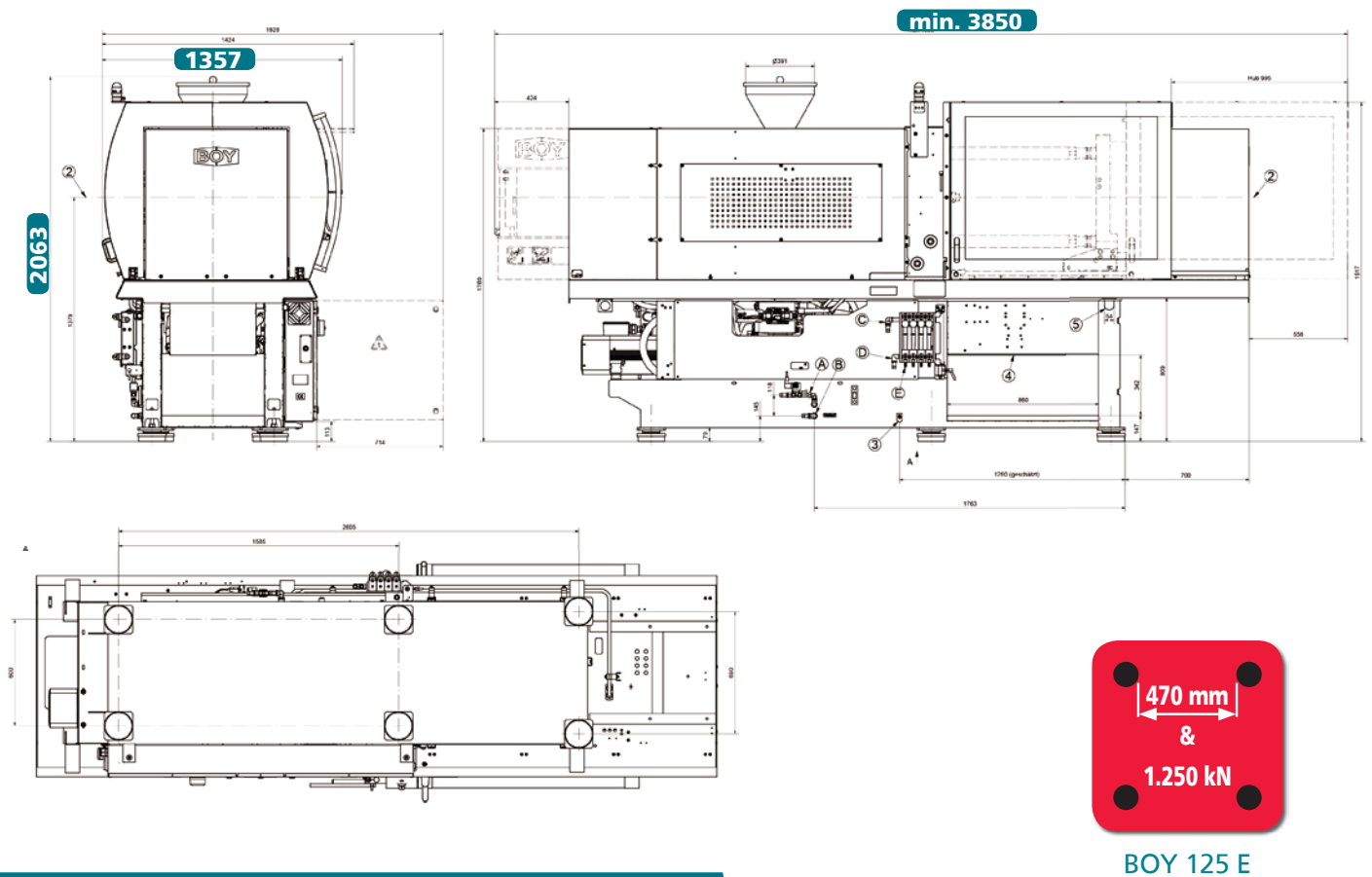
Powerful software applications of the **Procan** series can be chosen for the control of the injection moulding machine. Clearly designed menu structures offer **maximum ease of operation** with optimum results. A multitude of **thermo-plastics, elastomers, silicones** and **thermosets** as well as **metals** and **ceramics** (PIM-Technologie) can be processed trouble-free.

Despite the many intelligent, balanced components and a multitude of optional equipment, the injection moulding machine from BOY makes do with **little floor space** (just under 5.22 square metres).

It also stands for **efficiency** and an unparalleled price/performance ratio. Compared to the competitors, the **material throughput** of the BOY 125 E is markedly higher than that of comparable machines. Available options include controls for handling devices, picker as well as brush units, unscrewing devices, core pulls, and integrated hot runner controls.



- 1 The machine design features the best ergonomics and efficient operation.
- 2 For an easier refilling the material hopper / -conveying device are electrically driven.
- 3 Precise support for large / heavy moulds up to 680 kg on the moving locking side.
- 4 Optimum control technology with intuitive operation concept.
- 5 Stable machine design with integrated oil tank.



BOY 125 E

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

### Injection unit for processing thermoplastics

### SP 420 (Standard)

	mm	36	42	48	52
Screw diameter	mm	36	42	48	52
Screw- L/D-ratio		23	20	17	16
Max. stroke volume (theoretical)	cm <sup>3</sup>	162.8	221.6	289.5	339.8
Max. shot weight in PS (theoretical)	g	148.1	201.7	263.4	309.2
Injection force	kN	263	263	263	263
Injection flow (theoretical)	g/s	194.4	264.7	345.7	407.3
Max. spec. injection pressure	bar	2584	1899	1454	1239
Max. screw stroke	mm	160	160	160	160
Nozzle force / contact pressure	kN	65	65	65	65
Nozzle retraction stroke	mm	243	243	243	243
Screw torque	Nm	500 <sup>2</sup> / 530 <sup>3</sup>	500 <sup>2</sup> / 530 <sup>3</sup>	500 <sup>2</sup> / 530 <sup>3</sup>	500 <sup>2</sup> / 530 <sup>3</sup>
Screw speed (infinitely variable)	U / min.	280 <sup>2</sup> / 250 <sup>3</sup>	280 <sup>2</sup> / 250 <sup>3</sup>	280 <sup>2</sup> / 250 <sup>3</sup>	280 <sup>2</sup> / 250 <sup>3</sup>
Screw pulback force	kN	53	53	53	53
Heating power (nozzle + cylinder)	W	11250	11250	11250	11250
Hopper capacity	litre	20	20	20	20

### Clamping unit

	kN	1250	1250	1250	1250
Clamping force	kN	1250	1250	1250	1250
Distance between tie bars	mm (h x v)	470 x 430	470 x 430	470 x 430	470 x 430
Max. daylight between platen	mm	825	825	825	825
Max. opening stroke (adjustable)	mm	525	525	525	525
Min. mould height	mm	300	300	300	300
Max. mould weight on moveable clamping side	kg	680	680	680	680
Mould opening force	kN	48.5	48.5	48.5	48.5
Mould closing force	kN	49.2	49.2	49.2	49.2
Ejector stroke (max.)	mm	130 (150)	130 (150)	130 (150)	130 (150)
Ejector force pushing / pulling	kN		20.4 / 13.5	(42.7 / 30.0)	

### General

	kW	22.5 / 33.8 (400 V)	22.5 / 33.8 (400 V)	22.5 / 33.8 (400 V)	22.5 / 33.8 (400 V)
Installed driving power / total power	kW	22.5 / 33.8 (400 V)	22.5 / 33.8 (400 V)	22.5 / 33.8 (400 V)	22.5 / 33.8 (400 V)
Duration of the dry cycle (EUROMAP 6)	s – mm	2.5 – 329	2.5 – 329	2.5 – 329	2.5 – 329
Hydraulic system pressure	bar	192	192	192	192
Oil tank capacity	litre	220	220	220	220

### Dimensiones and weights

	mm / m <sup>2</sup>	3850 x 1357 x 2063 / 5.22
Dimensions (LxWxH) / Footprint	mm / m <sup>2</sup>	3850 x 1357 x 2063 / 5.22
Total weight net (without oil)	kg	4700
Total weight gross (pallet & foil / wooden case)	kg	4920 / 5370
Transport dimensions / case (LxWxH) approx.	m	3.93 x 1.60 x 2.17 / 4.0 x 1.60 x 2.17

1) more injection units see Technical Data and Equipment

 2) using a hydraulic motor with 300 cm<sup>3</sup> stroke volume

 3) using a hydraulic motor with 348 cm<sup>3</sup> stroke volume



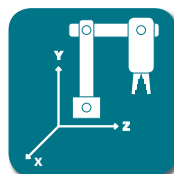
Servo-Drive



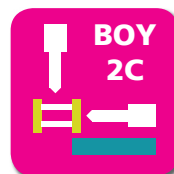
Procan ALPHA®



Technology



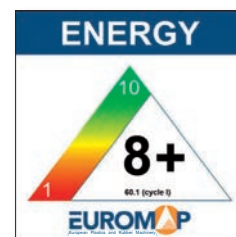
Automation



Multi Component



Servo-Plast



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	■
Hydraulically actuated needle shut-off nozzle (pneumatic for XS-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	-

### Clamping unit

Reduced mould height by 50 mm	□
Moving platen support to improve the precision when using large moulds	■
Number of set points of mould closing speed / opening speed	8/8
Number of reopening attempts after mould closing	■
Hydr. ejector with dig. adjustable pressure, speed, position + no. of strokes, intermediate stop position	■
Hydraulic ejector with adjustable stroke 80 mm (for XS = 50 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/Printer 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 can be switched off)	■(□)
CEE socket outlet 400 V ~ / 16 A (alternatively can be switched off)	- (-)
Socket distributor 3 x 400 V ~ / 3 x 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 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	□
Anti-vibration mounts	■

■ standard ● alternatively □ optional - not available

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



Data and Equipment (complete overview)



Competence brochure



Dr. Boy GmbH & Co. KG

Industriegebiet Neustadt / Wied  
Neschener Str. 6  
53577 Neustadt-Ferndal  
Germany

Phone: +49 (0)2683 307-0  
Fax: +49 (0)2683 307-4555  
E-Mail: info@dr-boy.de  
Internet: www.dr-boy.de



BOY-APP  
free of charge at  
http://app.dr-boy.de

