

Innovative into the Future – BOY-Injectioneering









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.

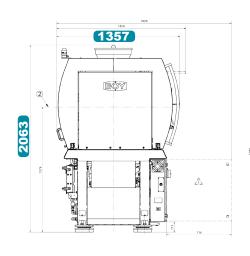
Powerful software applications of the **Procan** series can be chosen for the control of the injection moulding machine. Clearly designed menu structures offer **maximum ease of operation** with optimum results. A multitude of **thermoplastics**, **elastomers**, **silicones** and **thermosets** as well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

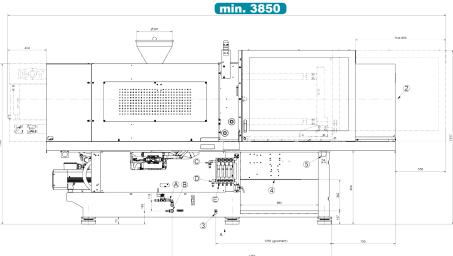
Despite the many intelligent, balanced components and a multitude of optional equipment, the injection moulding machine from BOY makes do with **little floor space** (just under 5.22 square metres).

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.



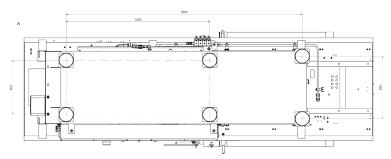
- 1 The machine design features the best ergonomics and efficient operation.
- 2 For an easier refilling the material hopper / -conveying device are electrically driven.
- 3 Precise support for large / heavy moulds up to 680 kg on the moving locking side.
- 4 Optimum control technology with intuitive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





SP 420 (Standard)

42



mm



Technical Data – standard version¹⁾

Injection unit for processing thermoplastics

Screw diameter

BOY 125 E

48

Screw- L/D-ratio		23	20	17	16
Max. stroke volume (theoretical)	cm ³	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		20	63	
Injection volume flow	cm³/s	213.8	290.9	380.0	446.0
Max. spec. injection pressure	bar	2584	1899	1454	1239
Max. screw stroke	mm		160		
Nozzle force / contact pressure	kN		65		
Nozzle retraction stroke	mm	243			
Screw torque	Nm	500 ² / 530 ³			
Screw speed (infinitely variable)	U / min.	280 ² / 250 ³			
Screw pulback force	kN	53			
Heating power (nozzle + cylinder)	W	11250			
Hopper capacity	litre	20			
Injection speed	mm/s	210			
Clamping unit					
Clamping force	kN		12	250	
Distance between tie bars	mm (h x v)	470 x 430			
Max. daylight between platen	mm		82	25	
Max. opening stroke (adjustable)	mm	525			
Min. mould height	mm		30	00	

36

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

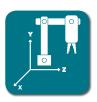
Zjester reres pasimig / paining	144.4	20.17 10.0 (12.17 00.0)
General		
Installed driving power / total power	kW	22.5 / 33.8 (400 V)
Duration of the dry cycle (EUROMAP 6)	s – mm	2.5 – 329
Hydraulic system pressure	bar	192
Oil tank capacity	litre	220
Dimensiones and weights		
Dimensions (LxWxH) / Footprint	mm / m²	3850 x 1357 x 2063 / 5.22

- mineriorie de distribuir de Santo		
Dimensions (LxWxH) / Footprint	mm / m²	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















ency classification is achievable depending on the respective ma-

■(□) - (-)

ı.

•

chine equipment.

Servo-Drive

Control

Injection Unit

Automation

Multi Component

USB interface for access and data exchange

Electronics

OPC interface

E-Drive

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 / 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	-

or o interiore	
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 $^{\sim}$ / 3 x 230 V $^{\sim}$ switched (separate feed line require	ed)
Energy distributor with four fixed connections, up to $5 \times 400 \text{ V}$ CEE + 3×230 (sockets can be switched off optionally). Standard supply $125 \text{ A} / 5 \times 50 \text{ mm}^2$	
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 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 temperatur gauge / Controlled oil cooling / Oil level indicator	

Interface kit: Serial/Temperature device, USB/Printer and Ethernet

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 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	Clamping unit	
Moving platen support to improve the precision when using large moulds Number of set points of mould closing speed / opening speed 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)	Clamping unit	
Number of set points of mould closing speed / opening speed 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)	Reduced mould height by 50 mm	
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)	Moving platen support to improve the precision when using large moulds	-
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)	Number of set points of mould closing speed / opening speed	8/8
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)	Number of reopening attempts after mould closing	-
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)	Hydr. ejector with dig. adjustable pressure, speed, position + no. of strokes, intermediate stop position	-
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)	Hydraulic ejector with adjustable stroke 80 mm (for XS = 50 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 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)	Hydraulic ejector with adjustable stroke 130 mm	-
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)	Hydraulic ejector with adjustable stroke 150 mm and 42,7 kN force	•
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)	Hydraulic unscrewing device, one or two directions of rotation with intermediate stop	
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)	Hydraulic unscrewing device, two directions, proportional valve and pulse generator	
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)	Core pull control with 4/3 way directional control valve and freely selectable operational programmes	
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)	Injection compression (coining) and breathing with mould degassing control	
Safety gate for handling devices Electronically operated safety gate Selection flap Air ejection Mould lifting crane Simultaneous ejector movement (with double pump)	Hydraulic guard safety device	-
Electronically operated safety gate Selection flap Air ejection Mould lifting crane Simultaneous ejector movement (with double pump)	Self adjusting mechanical drop bar safety system with electronic monitor	
Selection flap Air ejection Mould lifting crane Simultaneous ejector movement (with double pump)	Safety gate for handling devices	-
Air ejection Mould lifting crane Simultaneous ejector movement (with double pump)	Electronically operated safety gate	-
Mould lifting crane - Simultaneous ejector movement (with double pump)	Selection flap	•
Simultaneous ejector movement (with double pump)	Air ejection	
, , , , ,	Mould lifting crane	-
Integrated sprue picker -	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	
Anti-vibration mounts	

alternatively

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-Fernthal

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



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

