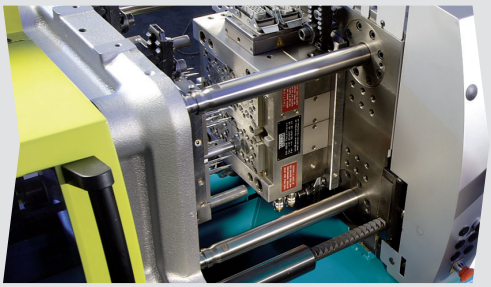
BOY®
Spritzgiessautomaten

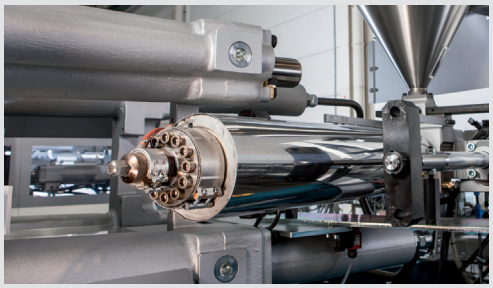
Innovative into the Future – BOY-Injectioneering

Injection moulding machine **BOY 80 E**

Production cell with individual safety housing



Great distances between tie bars and platens for mounting larger moulds



More efficient plasticizing with the optional EconPlast technology

- 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 80 E provides 800 kN clamping force. With the injection unit SP 215 stroke volumes **up to 173.2 cm³** are possible.

A greater daylight between tie bars (430 x 360 mm) and larger platen distances of 725 mm assure the assembly of larger moulds up to max. 500 kg on the moving mould side.

Given the easy handling of the machine, the users of the BOY 80 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.

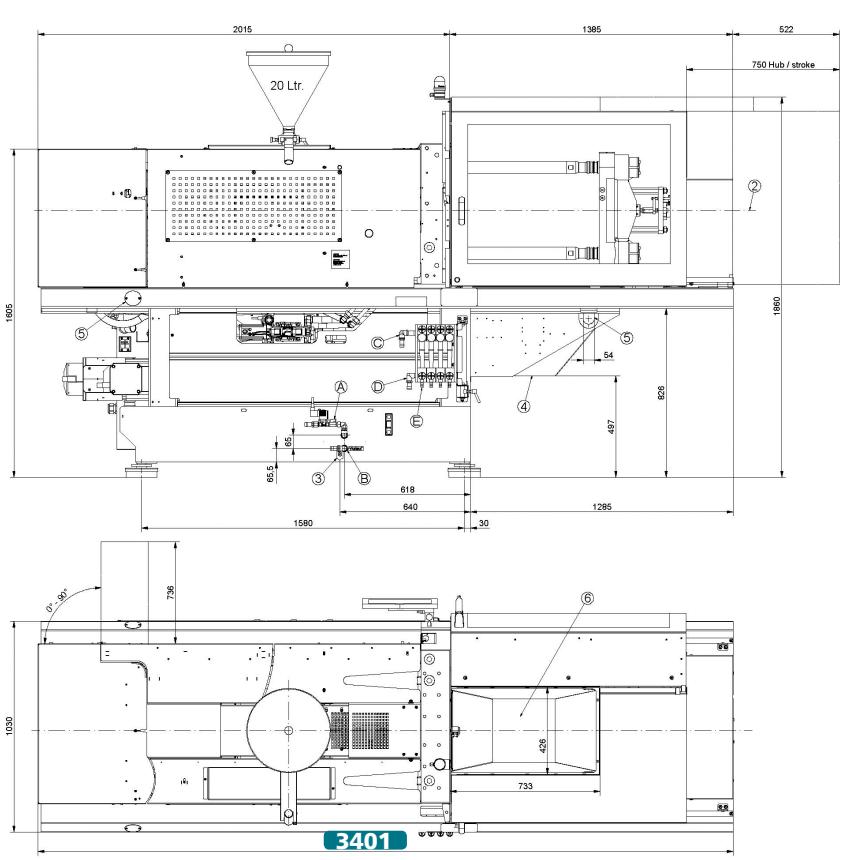
Powerful software applications of the **Procan** series can be chosen for the control of the injection moulding machine. Clearly designed menu structures offer **maximum ease of operation** with optimum results.

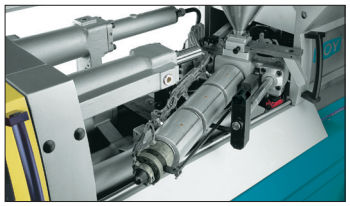
A multitude of **thermoplastics**, **elastomers**, **silicones** and **thermosets** as well as **metals** and **ceramics** (PIM-Technology) can be processed trouble-free with the BOY 80 E.

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

Equipment for the **process automation** can be mounted space saving on the BOY 80 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 moulded 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.





The swivel-out injection unit
simplifies the retrofit procedure and maintenance.

Technical Data – standard version

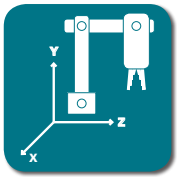
Injection unit for processing thermoplastics		SP 215			
Screw diameter	mm	28	32	38	42
Screw- L/D-ratio		22.7	20	16.7	15
Max. stroke volume (theoretical)	cm^3	76.9	100.5	141.8	173.2
Max. shot weight in PS (theoretical)	g	70	91.4	129.0	157.6
Injection force	kN	172	172	172	172
Injection flow (theoretical)	g/s	148.1	193.4	272.8	333.2
Max. spec. injection pressure	bar	2798	2142	1519	1244
Max. screw stroke	mm	125	125	125	125
Nozzle force / contact pressure	kN	65	65	65	65
Nozzle retraction stroke	mm	215	215	215	215
Screw torque	Nm	280[1] / 350[2]	280[1] / 350[2]	280[1] / 350[2]	280[1] / 350[2]
Screw speed (infinitely variable)	U / min.	325[2] / 410[1]	325[2] / 410[1]	325[2] / 410[1]	325[2] / 410[1]
Screw pulback force	kN	30	30	30	30
Heating power (nozzle + cylinder)	W	7700	7700	7700	7700
Hopper capacity	litre	20	20	20	20
Clamping unit					
Clamping force	kN	800	800	800	800
Distance between tie bars	mm (h x v)	430 x 360	430 x 360	430 x 360	430 x 360
Max. daylight between platen	mm	725	725	725	725
Max. opening stroke (adjustable)	mm	475	475	475	475
Min. mould height	mm	250 (425)	250 (425)	250 (425)	250 (425)
Max. mould weight on moveable clamping side	kg	max. 500 / ab 300	max. 500 / ab 300	max. 500 / ab 300	max. 500 / ab 300
Mould opening force	kN	70	70	70	70
Mould closing force	kN	51.1	51.1	51.1	51.1
Ejector stroke (max.)	mm	130 (150)	130 (150)	130 (150)	130 (150)
Ejector force pushing / pulling	kN	20.4 / 13.5 (20.4 / 13.5) (42.7 / 30)			
General					
Installed driving power / total power	kW	15 / 22.7 (400 V)	15 / 22.7 (400 V)	15 / 22.7 (400 V)	15 / 22.7 (400 V)
Duration of the dry cycle (EUROMAP 6)	s – mm	2.1 – 301	2.1 – 301	2.1 – 301	2.1 – 301
Hydraulic system pressure	bar	180	180	180	180
Oil tank capacity	litre	200	200	200	200
Dimensiones and weights					
Dimensions (LxWxH) / Footprint	mm / m^2	3401 x 1177 x 2117 / 4.00			
Total weight net (without oil)	kg	2865			
Total weight gross (pallet & foil / wooden case)	kg	2985 / 3365			
Transport dimensions / case (LxWxH) approx.	m	3.95 x 1.2 x 2.2 / 3.98 x 1.28 x 2.05			

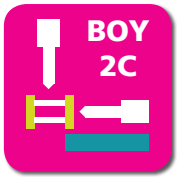
1) hydraulic motor with 162 cm^3 stroke volume 2) hydraulic motor with 204 cm^3 stroke volume


Servo – Drive


Procan ALPHA®

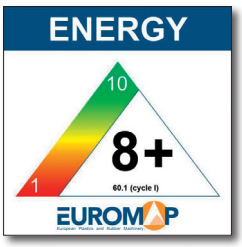
Technologie


Automation



Multi – K – Technik

E – Drive



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	5
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 direction of rotation with intermediate stop	□
Hydraulic unscrewing device, two directions of rotation with intermediate stop and counter	□
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 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	■

■ standard ○ alternatively □ optional – not available

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


Data and Equipment (complete overview)


Competence brochure

BOY® Spritzgiessautomaten

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