

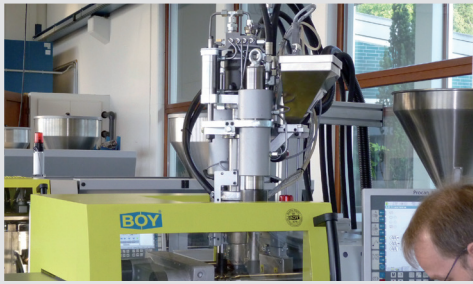


Spritzgiessautomaten

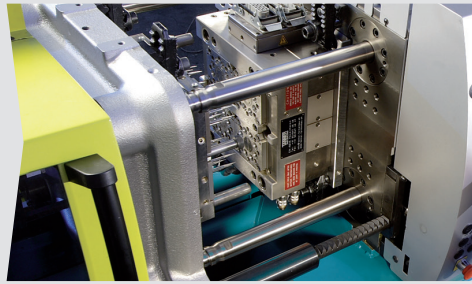
Innovative into the Future – BOY-Injectioneering



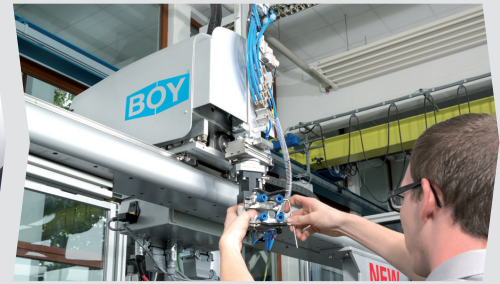
Injection moulding machines BOY 35 E
BOY 35 E HV



Two component injection moulding with vertically integrated injection unit



Great distances between tie bars and platens for mounting larger moulds



Simplest possibilities to integrate a four-axis industrial robot

- **Cantilevered** two-platen clamping system
- **Servo-motor pump drive**
- Optionally with high wear-resistant and energy-efficient **EconPlast** technology
- Large platen dimensions
- Easy access
- Lateral **swivel-out** injection unit
- **Differential injection** at SP 45 (higher injection speed)
- Only 1.9 m² of floor space needed

The BOY 35 E is a **four-tie bar**, fully hydraulic reciprocating screw injection moulding machine with two-platen clamping unit and swivel-out injection unit.

It is more than just the most compact machine of its type; the price/performance ratio, too, is unparalleled. With the indisputably lowest machine hour rates, the BOY 35 E is in no danger of having its top position threatened. With the optionally available **EconPlast** plasticizing unit, the energy consumption of a BOY 35 E is clearly reduced.

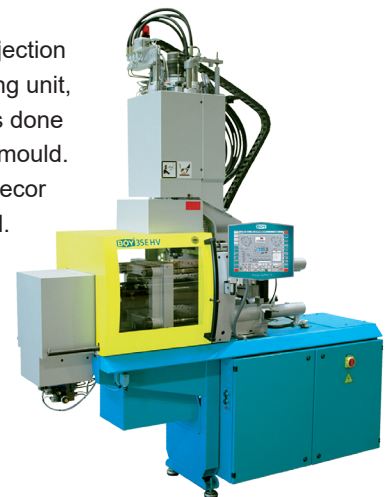
With its torsion resistant clamping system and the high efficiency of the injection unit, the well-proven injection moulding machine is ideally suited for the production of **precision parts** within a narrow tolerance range.

Five different-sized injection units with screw diameters from 14 mm to 32 mm guarantee the precise production of injection moulded parts with a part weight up to 69.5 g (PS). Varied **thermoplastics**, **elastomers**, **silicones** and **thermosets** as well as **metals** and **ceramics** (PIM-Technology) can be processed on the BOY 35 E.

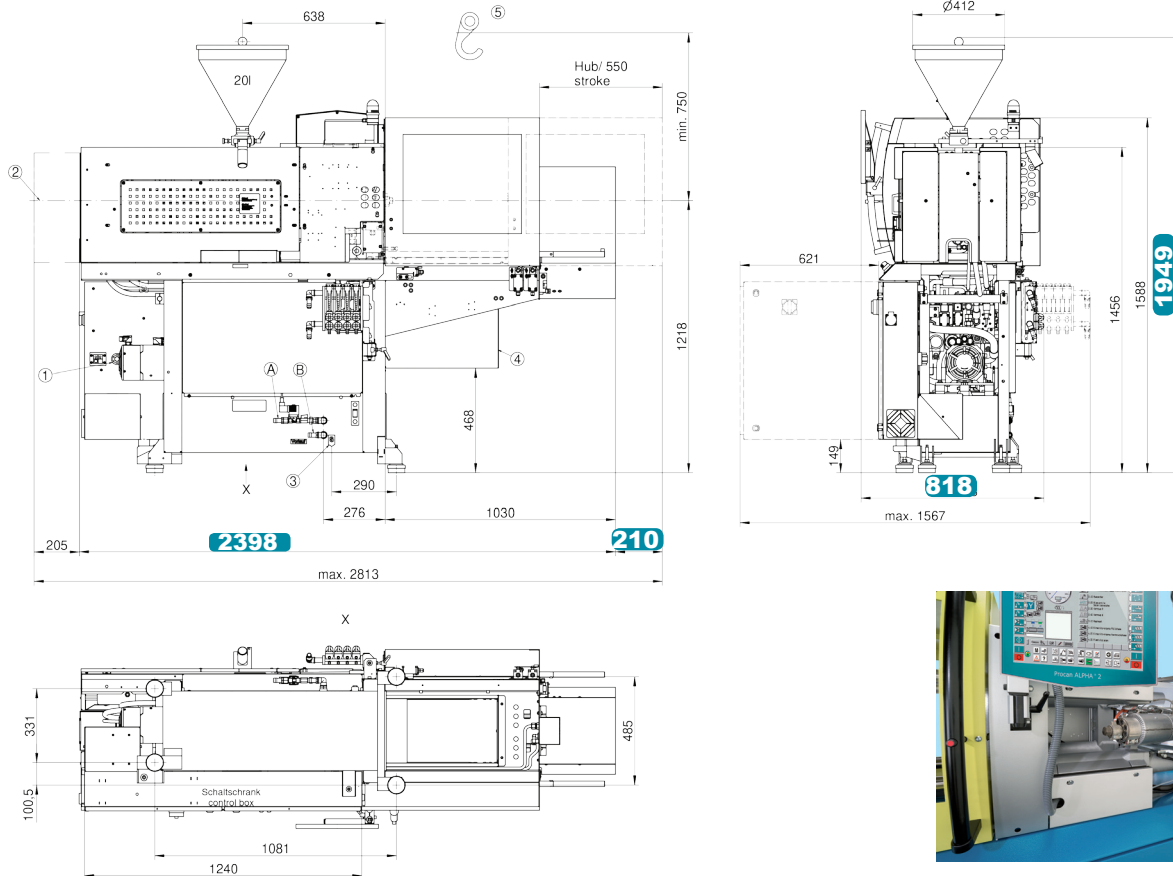
With injection unit SP 45, clearly **higher injection speeds** can be achieved. Especially thin-walled parts with long flow paths can often be produced precisely only with the **differential injection technology**.

Injection into the parting line – no problem with the **BOY 35 E HV**. Especially in this market segment, BOY has worldwide a very big market share.

With vertically arranged injection unit and horizontal clamping unit, injection of the materials is done into the parting line of the mould. Thus, injection points on decor surfaces can be prevented. A complex hot runner technique is not required; the production of sprues can be avoided.



- 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 facilitates alterations and maintenance

Technical Data – standard version¹⁾

Injection unit for processing thermoplastics

SP 96 (Standard)

Screw diameter	mm	24	28	32
Screw- L/D-ratio		22	18.6	16.3
Max. stroke volume (theoretical)	cm ³	43	58.5	76.5
Max. shot weight in PS (theoretical)	g	39.1	53.2	69.5
Injection force	kN		101	
Injection volume flow	cm ³ /s	75.5	102.8	134.3
Max. spec. injection pressure	bar	2231	1639	1255
Max. screw stroke	mm		95	
Nozzle force / contact pressure	kN		48 24 ⁵	
Nozzle retraction stroke	mm		205	
Screw torque	Nm		180 ² / 290 ³	
Screw speed (infinitely variable)	U / min.		10-250 ³ / 10-400 ²	
Screw pulback force	kN		44	
Heating power (nozzle + cylinder)	W		5800	
Hopper capacity	litre		20 / - ⁵	
Injection Speed	mm/s		167	

Clamping unit

Clamping force	kN	350
Distance between tie bars	mm (h x v)	280 x 254
Max. daylight between platen	mm	500
Max. opening stroke (adjustable)	mm	300
Min. mould height	mm	200
Max. mould weight on moveable clamping side	kg	max. 220 / over 150 ⁶
Mould opening force	kN	29.5
Mould closing force	kN	21.4
Ejector stroke (max.)	mm	80 (130)
Ejector force pushing / pulling	kN	23.8 / 15.8

General

Installed driving power / total power	kW	7.4 / 13.2 (400 V)
Duration of the dry cycle (EUROMAP 6)	s – mm	1.5 – 196
Hydraulic system pressure	bar	210
Oil tank capacity	litre	65

Dimensiones and weights

BOY 35 E

BOY 35 E HV

Dimensions (LxWxH) / Footprint	mm / m ²	2398 x 818 x 1949 / 1.96	2369 x 846 x 2870 ⁴ / 2.0
Total weight net (without oil)	kg	1195	1495
Total weight gross (pallet & foil / wooden case)	kg	1260 / 1445	1570 / 1815
Transport dimensions / case (LxWxH) approx.	m	2.3 x 1.06 x 2.1 / 2.3 x 1.05 x 1.8	2.3 x 1.06 x 2.3 / 2.3 x 1.2 x 2.25

1) more injection units see Technical Data 2) stroke volume 100 cm³ / 130 bar 3) stroke volume 160 cm³ / 130 bar 4) max. 3170 mm 5) HV-machine 6) optional moving platen support recommended



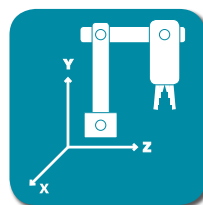
Servo-Drive



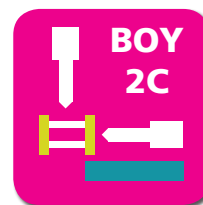
Control



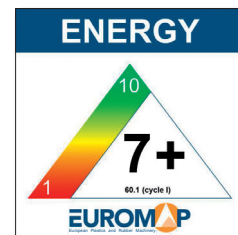
Injection Unit



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	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 / 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	○

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	■
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 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 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 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



Spritzgiessautomaten

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BOY-APP
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