

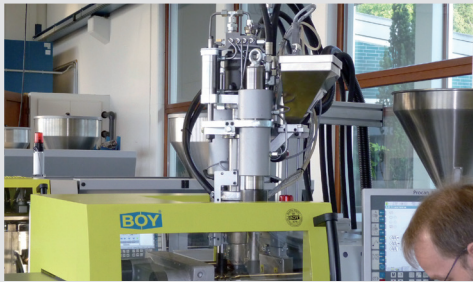


Spritzgiessautomaten

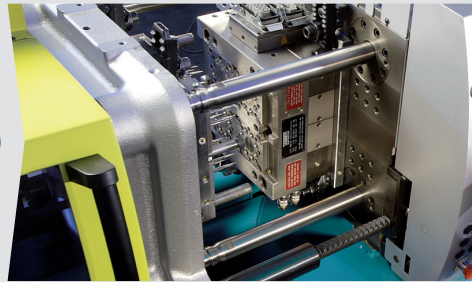
Innovative into the Future – BOY-Injectioneering



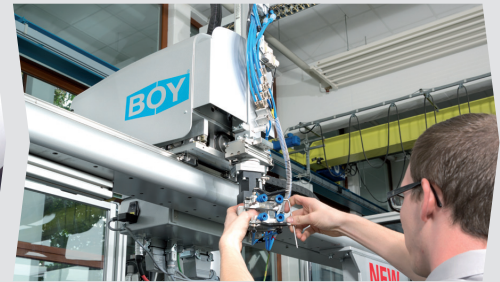
Injection molding machines BOY 35 E
BOY 35 E HV



Two component injection molding with vertically integrated injection unit



Great distances between tie bars and platens for mounting larger molds



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 16 & SP 45 (higher injection speed)
- Only 2.0 m² of floor space needed

The BOY 35 E is a **four-tie bar**, fully hydraulic reciprocating screw injection molding 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.

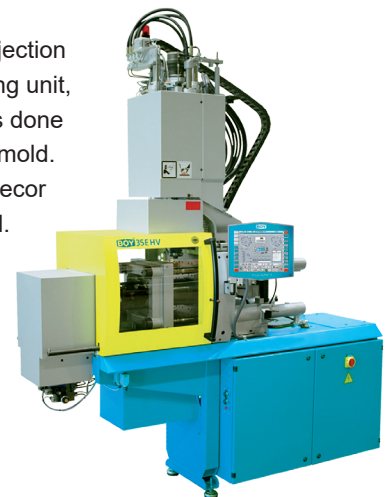
With its torsion resistant clamping system and the high efficiency of the injection unit, the well-proven injection molding machine is ideally suited for the production of **precision parts** within a narrow tolerance range.

Five different-sized injection units with screw diameters from 14 mm to 32 mm guarantee the precise production of injection molded 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.

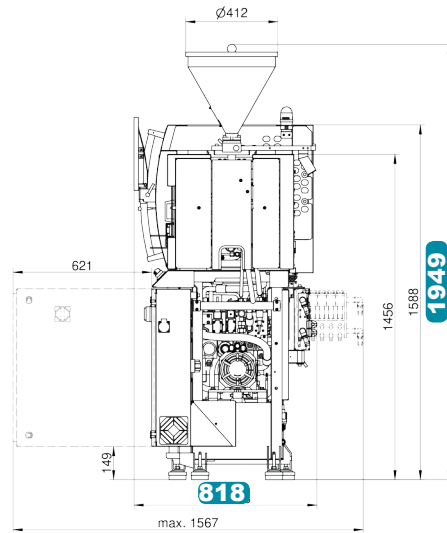
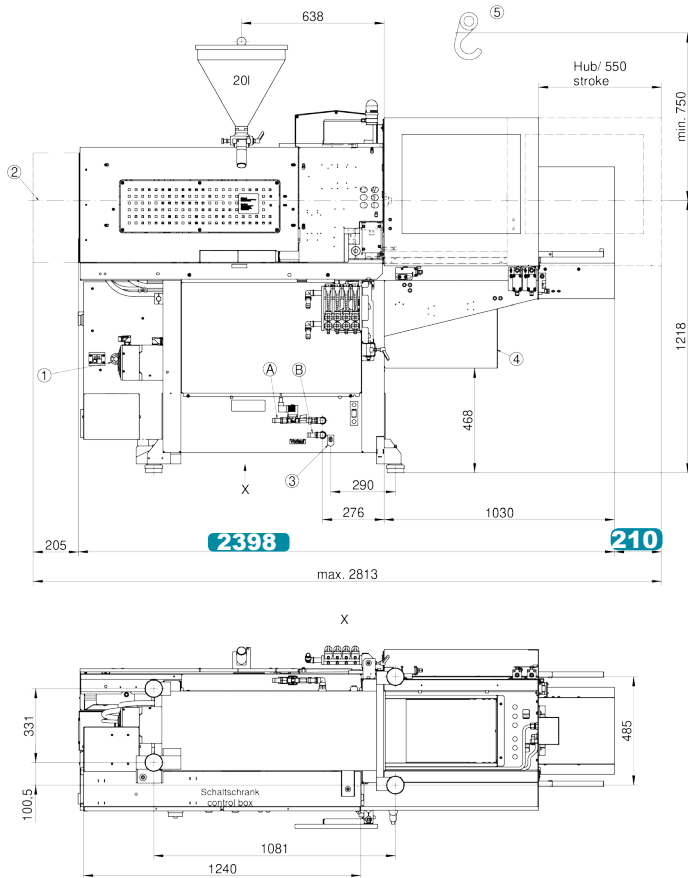
With injection unit SP 45, clearly **higher injection speeds** can be achieved. Especially thin-walled parts with long flow paths can often be produced precisely only with the **differential injection technology**.

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 mold. 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 molded 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 / in	24 / 0.94	28 / 1.1	32 / 1.26
Screw- L/D-ratio		22	18.6	16.3
Max. stroke volume (theoretical)	in ³	2.62	3.57	4.66
Max. shot weight in PS (theoretical)	oz	1.38	1.88	2.45
Injection force	US Tons		11.4	
Injection volume flow	in ³ / sec	4.6	6.3	8.2
Max. spec. injection pressure	psi	32358	23772	18202
Max. screw stroke	mm / in		95 / 3.74	
Nozzle force / contact pressure	US Tons		5.4 / 2.7 ²	
Nozzle retraction stroke	mm / in		205 / 8.07	
Screw torque	ft / lbf		132.8 (6.1 in ³ /1885 psi) / 213.9 (9.8 in ³ /1885 psi)	
Screw speed (infinitely variable)	rpm		400 (6.1 in ³) / 250 (9.8 in ³)	
Screw pulback force	US Tons		4.95	
Heating power (nozzle + cylinder)	W		5800	
Hopper capacity	Us gal.		5.28	
Injection speed	in / sec		6.57	

Clamping unit

Clamping force	US Tons	39.34
Distance between tie bars	in (h x v)	11.02 x 10
Max. daylight between platen	mm / in	500 / 19.69
Max. opening stroke (adjustable)	mm / in	300 / 11.81
Min. mold height	mm / in	200 / 7.87
Max. mold weight on moveable clamping side	lb (max)	485.02 / >330.69 ³
Mold opening force	US Tons	3.32
Mold closing force	US Tons	2.41
Ejector stroke (max.)	mm / in	80 / 3.15 / 130 ² / 5.12 ²
Ejector force pushing / pulling	US Tons	2.68 / 1.78

General

Installed driving power / total power	kW	9 / 14.8 (400 V)
Duration of the dry cycle (EUROMAP 6)	s (mm)	1.5 (196)
Hydraulic system pressure	psi	3046
Oil tank capacity	US gal.	17.17

Dimensiones and weights

BOY 35 E

BOY 35 E HV

Dimensions (LxWxH) / Footprint	in / square in	94.41 x 32.2 x 76.73 / 3040	93.27 x 33.31 x 112.99 ⁴ / 3106
Total weight net (without oil)	lb	2635	2481
Total weight gross (pallet & foil / wooden case)	lb	3682 / 4090	4365 / 4905
Transport dimensions / case (LxWxH) approx.	in	90.6 x 41.7 x 82.7 / 90.6 x 41.3 x 70.9	90.6 x 47.2 x 90.6 ⁵ / 90.6 x 47.2 x 88.6 ⁵

1) more injection units see Technical Data 2) HV-machine 3) optional moving platen support recommended 4) max. 124.8 inch 5) with injection unit removed



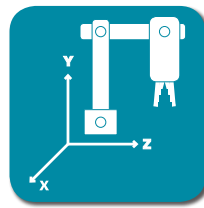
Servo-Drive



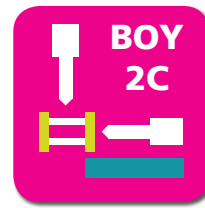
Control



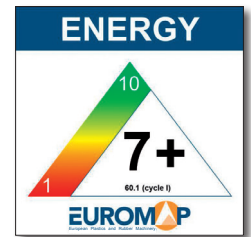
Injection Unit



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	9
Number of set points of injection pressure	9
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	9
Production monitoring at start of holding pressure	■
Closed loop control for the complete injection profile and back pressure	■
Control for intrusion-injection (not for BOY 2C XS)	■
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 (not for BOY 2C XS)	○
Clamping force build-up can be activated parallel to injection	-
Electromechanical injection movement	-

Clamping unit

Reduced mold height by 50 mm	□
Moving platen support to improve the precision when using large molds	□
Number of set points of mold closing / opening speed	9
Number of reopening attempts after mold closing	■
Hydr. ejector with adjustable pressure, speed, position + no. of strokes, intermediate stop position	■
Hydraulic ejector with adjustable stroke 80 mm (for XS E = 50 mm)	■
Hydraulic ejector with adjustable stroke 130 mm	○
Hydraulic ejector with adjustable stroke 150 mm and 42.7 kN force	-
Electromechanical ejector 150 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 programs	□
Injection compression (coining) and breathing with mold 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	□
Mold lifting crane	□
Simultaneous ejector movement (with double pump/Electric)	□
Integrated sprue picker	□
Mold holder 75 x 75 mm	-

Electronics

USB interface for access and data exchange	■
Interface kit: Serial/Temperature device, USB 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 switched)	■(□)
CEE socket outlet 400 V ~ / 16 A (alternatively switched)	□(□)
Socket distributor 400 V ~ switched + 230 V ~ (Standard supply 32 A)	-
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 mold 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	■
Proportional valve with stroke feedback and positioning action for clamp unit	-

General

Cooling water distributor with electric shut-off valve for injection mold	○
Temperature control for feet 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 molding machine?



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



Technical Data and Equipment (complete overview)



Competence brochure

