Servo–Drive | Procan ALPHA® | Technology | 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 / 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	■
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 (on BOY XXS not in conjunction with Euromap 67)	□

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 unit?

Data and Equipment (complete overview)

Competence brochure

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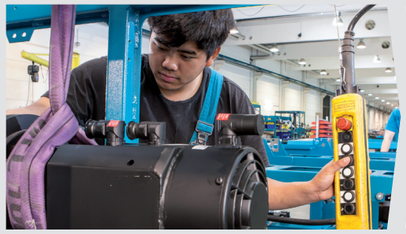
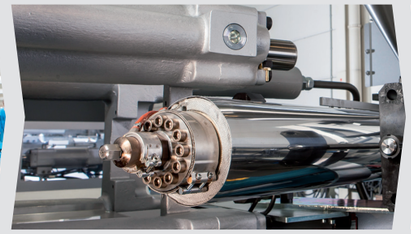
Spritzgiessautomaten

Innovative into the Future – BOY-Injectioneering

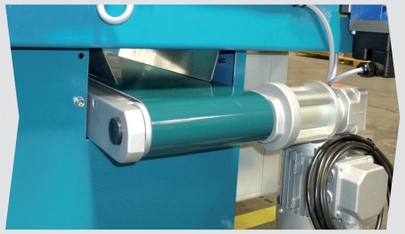
Injection moulding machines **BOY 25 E**
BOY 22 E HV



Most efficient technology with servo-motor pump drive



Optional EconPlast technology from screw diameter 18 mm



Optional sorting conveyor belt – integrated in the trip chute of the BOY 25 E

- Attractive price/performance ratio
- Robust, well thought-out design with **cantilevered** two-platen clamping unit
- High efficiency through low machine hour rates
- Generous tie bar and platen distances
- Optionally with high wear-resistant **EconPlast** technology (only with SP 82)

The BOY 25 E is based on a well proven design. Since 1968, more than 25,000 machines of this series have been delivered.

Significant innovation is the increase to 250 kN clamping force and the possibility of a **differential injection**, which provides increased injection speeds. With further optimizations such as the use of high speed pistons and an hydraulic pump with 10 % more conveying volume, a clear increase of the machine speeds, **improved dynamics** and a shorter dry cycle time could be achieved.

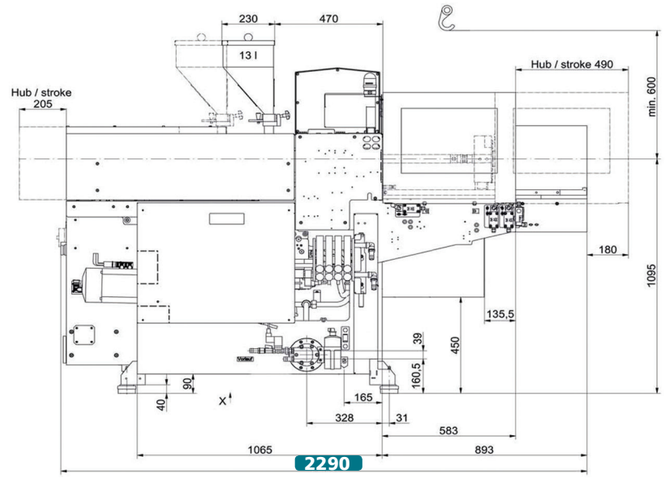
The BOY 25 E is characterized by **highest precision** and reliability. With a footprint of 1.8 m², the extremely compact injection moulding machine is simple, clear and ergonomically designed. The cantilevered clamping unit features easy access and room for numerous options including automated systems. Six different sized injection units combined with seven different screw diameters offer a wide range of individual equipment options.

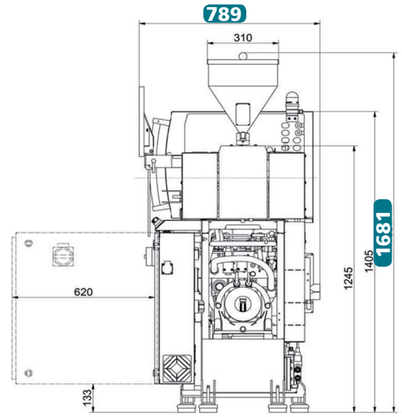
Thus, **higher injection speeds** are possible by differential injection with the 250-11, 250-16, and the 250-39 units.

A multitude of **thermoplastics**, **elastomers**, **silicones** and **thermosets** as well as **metals** and **ceramics** (PIM-Technology) can be processed trouble-free on the BOY 25 E.

Injection into the parting line with the BOY 22 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 and expensiv 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.





Technical Data – standard version[1)]

Injection unit for processing thermoplastics		SP 69	SP 82 resp. SP 52 by BOY 22 E HV		
Screw diameter	mm	22	24	28	32
Screw- L/D-ratio		17.5	22	18.6	16.3
Max. stroke volume (theoretical)	cm³	30.4	43 / 36.2[4]	58.5 / 49.3[4]	76.5 / 64.3[4]
Max. shot weight in PS (theoretical)	g	27.7	39.1 / 32.8[4]	53.2 / 44.6[4]	69.5 / 58.2[4]
Injection force	kN	87	87 / 65.8[4]	87 / 65.8[4]	87 / 65.8[4]
Injection flow (theoretical)	g/s	52.6	62.6 / 67.7[4]	85.1 / 92.0[4]	111.2 / 120.0[4]
Max. spec. injection pressure	bar	2277	1913 / 1455[4]	1405 / 1069[4]	1076 / 818[4]
Max. screw stroke	mm	80	95 / 80[4]	95 / 80[4]	95 / 80[4]
Nozzle force / contact pressure	kN	48	48	48	48
Nozzle retraction stroke	mm	205	205 / 180[4]	205 / 180[4]	205 / 180[4]
Screw torque	Nm	180 (130 bar)	180[2] / 290[3]	180[2] / 290[3]	180[2] / 290[3]
Screw speed (infinitely variable)	U / min.	400	400[2] / 250[3]	400[2] / 250[3]	400[2] / 250[3]
Screw pulback force	kN	38	38 / 45.7[4]	38 / 45.7[4]	38 / 45.7[4]
Heating power (nozzle + cylinder)	W	3550	5800	5800	5800
Hopper capacity	litre	13	13	13	13
Clamping unit					
Clamping force	kN	250	250 / 220[4]	250 / 220[4]	250 / 220[4]
Distance between tie bars	mm (h x v)	254	254	254	254
Max. daylight between platen	mm	400	400	400	400
Max. opening stroke (adjustable)	mm	200	200	200	200
Min. mould height	mm	200	200	200	200
Max. mould weight on moveable clamping side	kg	150	150	150	150
Mould opening force	kN	17.6	17.6 / 40[4]	17.6 / 40[4]	17.6 / 40[4]
Mould closing force	kN	17.6	17.6	17.6	17.6
Ejector stroke (max.)	mm	80	80	80	80
Ejector force pushing / pulling	kN	18.1 / 12	18.1 / 12	18.1 / 12	18.1 / 12
General					
Installed driving power / total power	kW	7.4 / 10.95 (400 V)	7.4 / 13.2 (5.5 / 11.3)[4]	7.4 / 13.2 (5.5 / 11.3)[4]	7.4 / 13.2 (5.5 / 11.3)[4]
Duration of the dry cycle (EUROMAP 6)	s – mm	1.24 – 178	1.24 / 1.6[4] – 178	1.24 / 1.6[4] – 178	1.24 / 1.6[4] – 178
Hydraulic system pressure (clamping / injection / 22 EHV)	bar	185 / 180	185 / 180 / 160[4]	185 / 180 / 160[4]	185 / 180 / 160[4]
Oil tank capacity	litre	65	65 / 115[4]	65 / 115[4]	65 / 115[4]
Dimensiones and weights		**BOY 25 E**		**BOY 22 E HV**	
Dimensions (LxWxH) / Footprint	mm / m²	2290 x 789 x 1681 / 1.80		2511 x 1085 x 2330[5] / 2.72	
Total weight net (without oil)	kg	750		900	
Total weight gross (pallet & foil / wooden case)	kg	815 / 1000		990 / 1200	
Transport dimensions / case (LxWxH) approx.	m	2.3 x 1.06 x 2.1 / 2.3 x 1.05 x 1.8		2.6 x 1.2 x 2.2 / 2.6 x 1.2 x 1.9	

1) more injection units see Technical Data and Equipment 2) stroke volume 100 cm³ / 130 bar 3) stroke volume 160 cm³ / 130 bar 4) HV-machine 5) max. 2790 mm