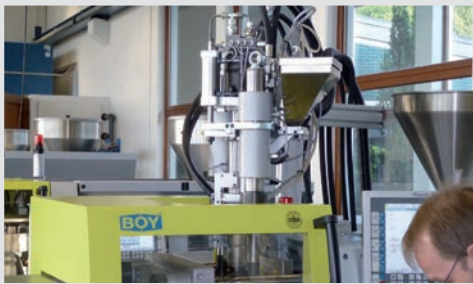


Innovative into the Future – BOY-Injectioneering



Injection moulding machines **BOY 35 E PRO**



Two component injection moulding with vertically integrated injection unit



Most efficient technology with servo-motor pump drive



Simplest possibilities to integrate a four-axis industrial robot

- **Cantilevered** two-platen clamping system
- **Energy-efficient servo-drive**
- **Highly wear-resistant** thermoplastic unit
- Large platen dimensions (280 x 254 mm)
- Good accessibility
- **Swivel-out** injection unit
- Installation option of smaller moulds
- Footprint just 1.96 m²
- Other options are available

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

This machine is not only the most compact one in its clamping force class of 350 kN, the **price-performance ratio** is also unbeatable. The dynamically efficient **servo drive** achieves energy savings which, in terms of calculations, lead to the lowest machine-hour rates.

The **performance classification 7+** according to Euromap 60.1 proves that the BOY 35 E PRO has an energy consumption of **less than 0.49 kWh/kg** material. This also improves the ecological balance sheet of this injection moulding machine, since less energy has to be generated to operate the BOY 35 E PRO.



Footprint

The smaller footprint of an injection moulding machine saves **valuable production space** in a manufacturing hall, which in turn allows to place a larger number of injection moulding machines on the same hall space. With a footprint of **just 1.96 m²**, the BOY 35 E PRO sets special standards and is unbeatably more compact in this clamping force class.



Servo-Drive

In a practical comparative example, the BOY 35 E PRO with **1.06 kWh** consumed significantly less than a comparable machine with a different drive technology (2.51 kWh). With 6,000 operating hours per year, this is 8,700 kWh. The **savings potential** is **€ 2,175,00** per year (with electricity procurement costs of € 0.25 / kWh).



Circular Economy

According to the guidelines of the Kreditanstalt für Wiederaufbau (KfW), every kWh consumed generates 537 g of **CO₂-emissions**.

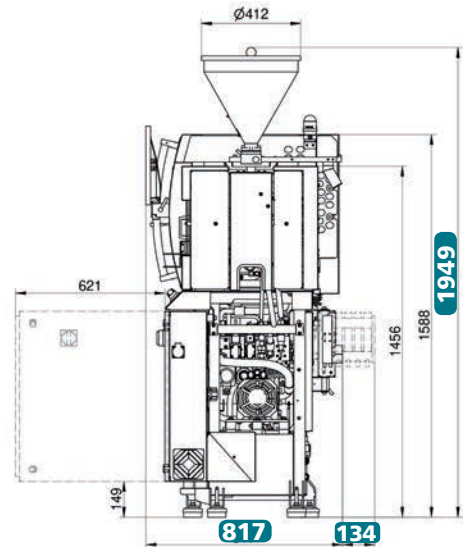
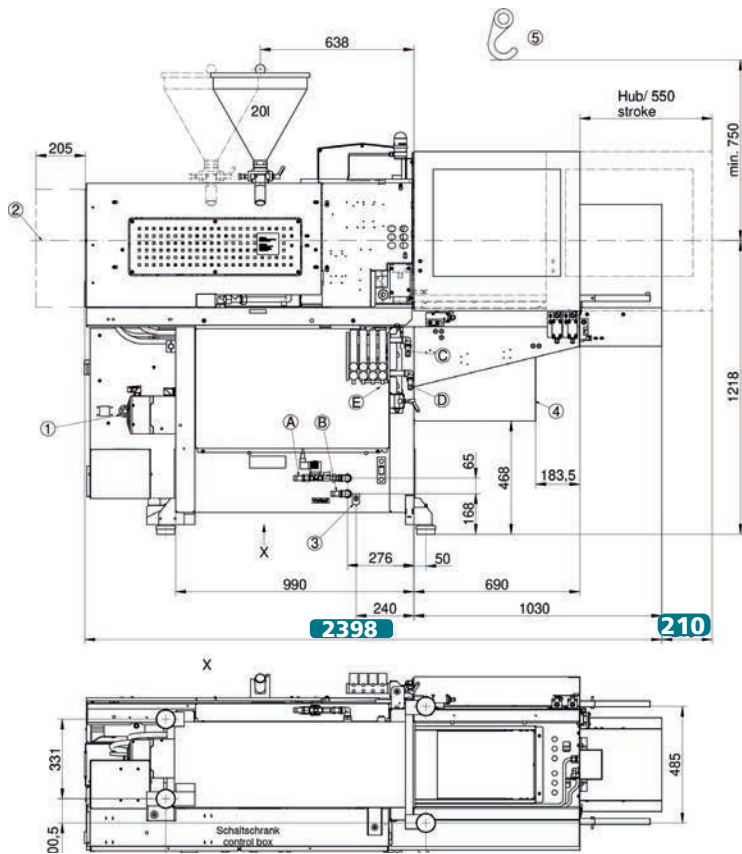
In the comparative example of the BOY 35 E PRO with 8,700 kWh saved, these are impressive **4.67 tons** per year (!).



INCLUSIVE

Basic equipment at no extra charge

- 1 BOY 35 E with highly wear-resistant thermoplastic unit (three different screw diameters can be selected)
- 2 Open nozzle with R 35 mm alternative R 1/2 „ standard
- 3 Mould installation height reduced by 50 mm (150 instead of 200 mm)
- 4 Control Procan ALPHA® 2
- 5 Additional options are available



The swivel-out injection unit facilitates alterations and maintenance

Technical Data – standard version¹⁾

Injection unit for processing thermoplastics

SP 96

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	101	101
Injection flow (theoretical)	g/s	68.7	93.5	122.2
Max. spec. injection pressure	bar	2231	1639	1255
Max. screw stroke	mm	95	95	95
Nozzle force / contact pressure	kN	48	48	48
Nozzle retraction stroke	mm	205	205	205
Screw torque	Nm	180 ²	180 ²	180 ²
Screw speed (infinitely variable)	U / min.	10-400 ²	10-400 ²	10-400 ²
Screw pulback force	kN	44	44	44
Heating power (nozzle + cylinder)	W	5800	5800	5800
Hopper capacity	litre	20	20	20

Clamping unit

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

General

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

Dimensiones and weights

BOY 35 E PRO

Dimensions (LxWxH) / Footprint	mm / m ²	2398 x 817 x 1949 / 1.96
Total weight net (without oil)	kg	1195
Total weight gross (pallet & foil / wooden case)	kg	1260 / 1445
Transport dimensions / case (LxWxH) approx.	m	2.3 x 1.06 x 2.1 / 2.3 x 1.05 x 1.8

1) No further injection units / screw diameters available

2) Hydromotor with 100 cm³ stroke volume / 130 bar



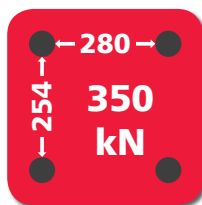
Footprint



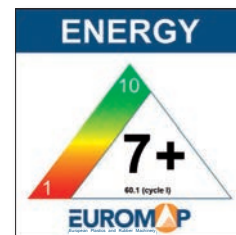
Servo-Drive



Procan ALPHA® 2



Mounting size



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	■
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 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	□
Metering contact	□

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 ○ Alternative □ Zusatz - nicht verfügbar

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



Data and Equipment (complete overview)



Competence brochure



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