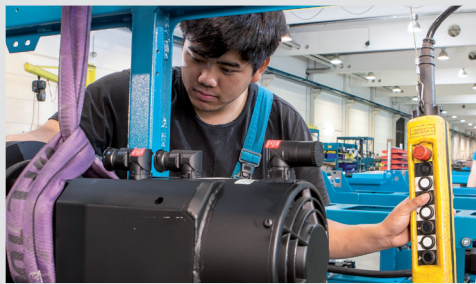


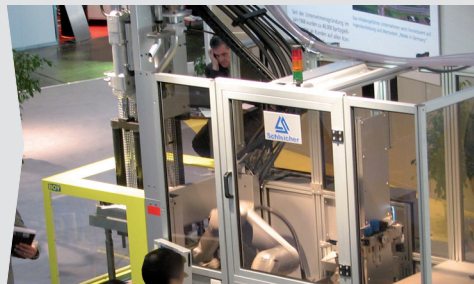
Innovative into the Future – BOY-Injectioneering



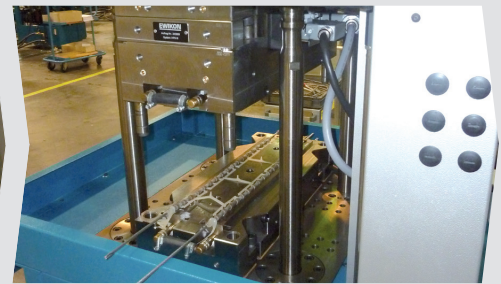
Insert moulding machine BOY 60 E VV



“Heart” of the insert moulding machine:
The efficient servo-motor pump drive



Six-axis articulated robot integrated
space-saving on the machine table



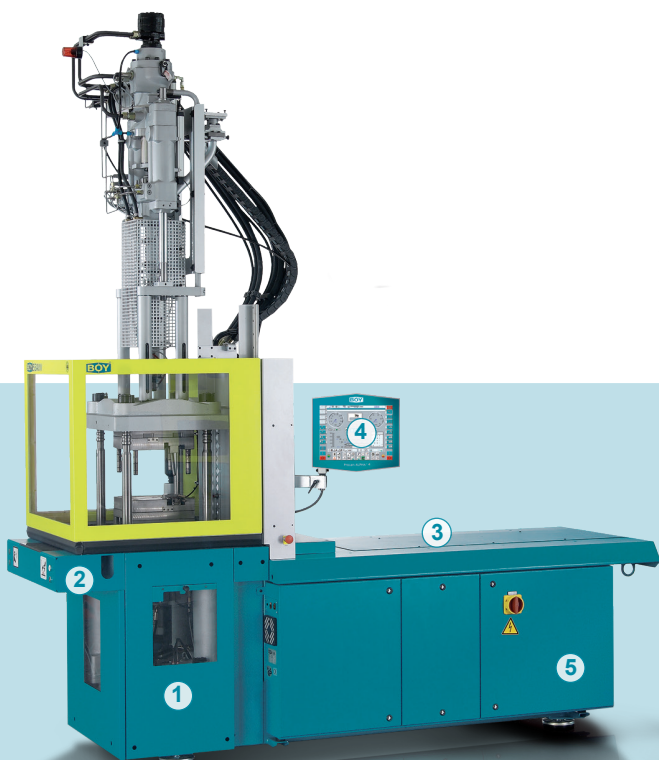
“Collar” around the fixed platen for end-
less production of distance pieces

- Largest, four-tie bar insert moulding machine
- Ergonomically favourable table height of 975 mm
- **Optimum accessibility** to the mould area from all four sides
- Favourable machine hour rates
- Energy-efficient **servo-motor pump drive**
- Optionally with high wear-resistant and energy-efficient **EconPlast** technology

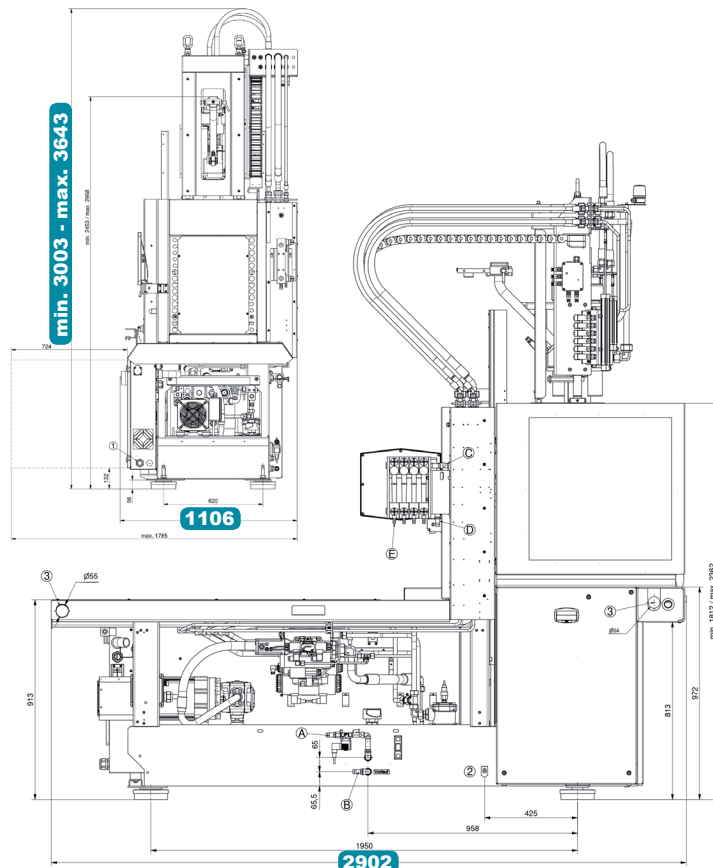
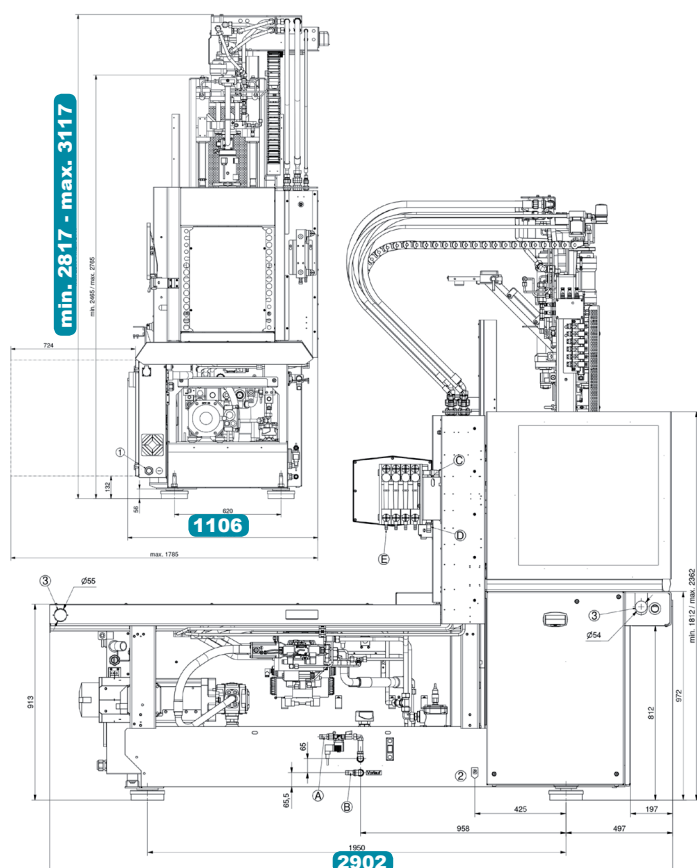
With the development of the BOY 60 E VV insert moulding machine, BOY tops off its machine programme with a universal insert moulding machine. Compact dimensions and ample space on the machine frame for peripheral and optional equipment ensure optimum integration possibilities for automation systems.



Generous distances between tie bars furthermore offer enough space for mounting large and multi-cavity moulds. Large-volume insert mouldings with total seven different screw diameters are therefore possible without any problems.



- 1 The machine design features the best ergonomics and efficient operation.
- 2 The fixed lower platen is characteristic for all BOY insert moulding machines.
- 3 Free machine table for integration of automation equipment. (higher injection speed)
- 4 Optimum control technology with intuitive operation concept.
- 5 Robust machine design with integrated oil tank.



Technical Data – standard version¹⁾

Injection unit for processing thermoplastics		SP 56	SP 69	SP 82			SP 215 (standard)			
Screw diameter	mm	18	22	24	28	32	28	32	38	42
Screw- L/D-ratio		20	17.5	22	18.6	16.3	22.7	20	16.7	15
Max. stroke volume (theoretical)	cm ³	20.4	30.4	43	58.5	76.5	76.9	100.5	141.8	173.2
Max. shot weight in PS (theoretical)	g	18.6	27.7	39.1	53.2	69.5	70.0	91.4	129.0	157.6
Injection force	kN	86.5	86.5	86.5	86.5	86.5	172	172	172	172
Injection volume flow	cm ³ /s	71.3	106.4	126.7	172.4	225.2	92.4	120.6	170.1	207.8
Max. spec. injection pressure	bar	2739	2276	1913	1405	1076	2798	2142	1519	1244
Max. screw stroke	mm	80	80	95			125	125	125	125
Nozzle force / contact pressure	kN				48				66	
Nozzle retraction stroke	mm				205				215	
Screw torque	Nm	130 (120 bar)		180 ¹ / 300 ²			390 ² / 490 ³			
Screw speed (infinitely variable)	U / min.	500		400 ¹ / 250 ²			410 ² / 325 ³			
Screw pulback force	kN				38				29.7	
Heating power (nozzle + cylinder)	W	3250		5800			7700			
Hopper capacity	litre				-				-	
Injection speed	mm/s				280				150	

Clamping unit

Clamping force	kN	600								
Distance between tie bars	mm (h x v)	360 x 335								
Max. daylight between platen	mm	550 ⁴								
Max. opening stroke (adjustable)	mm	300								
Min. mould height	mm	250 ⁴								
Max. mould weight on moveable clamping side	kg	400								
Mould opening force	kN	38								
Mould closing force	kN	24.4								
Ejector stroke (max.)	mm	80 (130)								
Ejector force pushing / pulling	kN	20.4 / 13.5								

General

Installed driving power / total power	kW	11/14.3 (400 V)	11/14.6 (400 V)	11/16.8 (400 V)			11/18.7 (400 V)			
Duration of the dry cycle (EUROMAP 6)	s – mm				2.3 – 252			1.9 – 252		
Hydraulic system pressure	bar				180			195		
Oil tank capacity	litre				200			200		

Dimensions and weights

Dimensions (LxWxH) / Footprint	mm / m²	2902 x 1106 x 2817 ⁵ / 3.21	2902 x 1106 x 3003 ⁵ / 3.21
Total weight net (without oil)	kg	2520	
Total weight gross (pallet & foil / wooden case)	kg	2620 / 2940	
Transport dimensions / case (LxWxH) approx.	m	3.1 x 1.35 x 2.5 / 3.1 x 1.35 x 2.25	

1) more injection units see Technical Data and Equipment

2) hydraulic motor with stroke volume 162 cm³3) hydraulic motor with stroke volume 204 cm³

4) optional 100 mm larger

5) max. 3117 mm



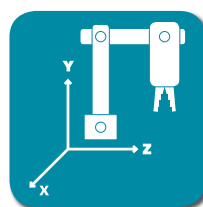
Servo-Drive



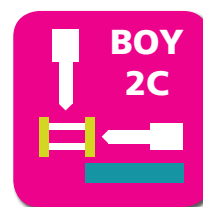
Control



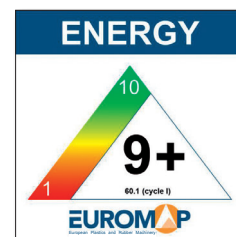
Injection Unit



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

BOY
Spritzgiessautomaten

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