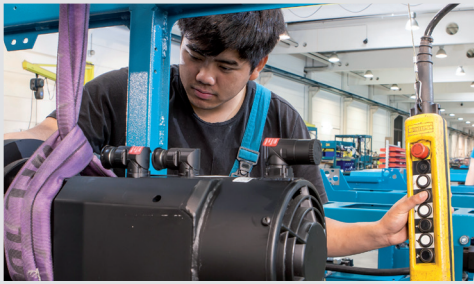


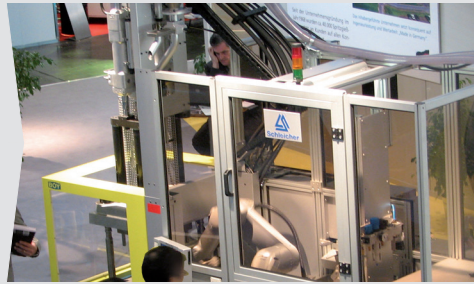
Innovative into the Future – BOY-Injectioneering



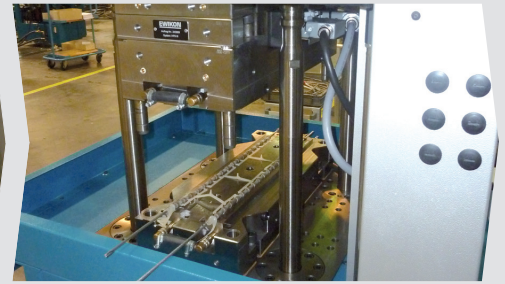
Insert molding machine BOY 60 E VV



“Heart” of the insert molding 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 molding 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

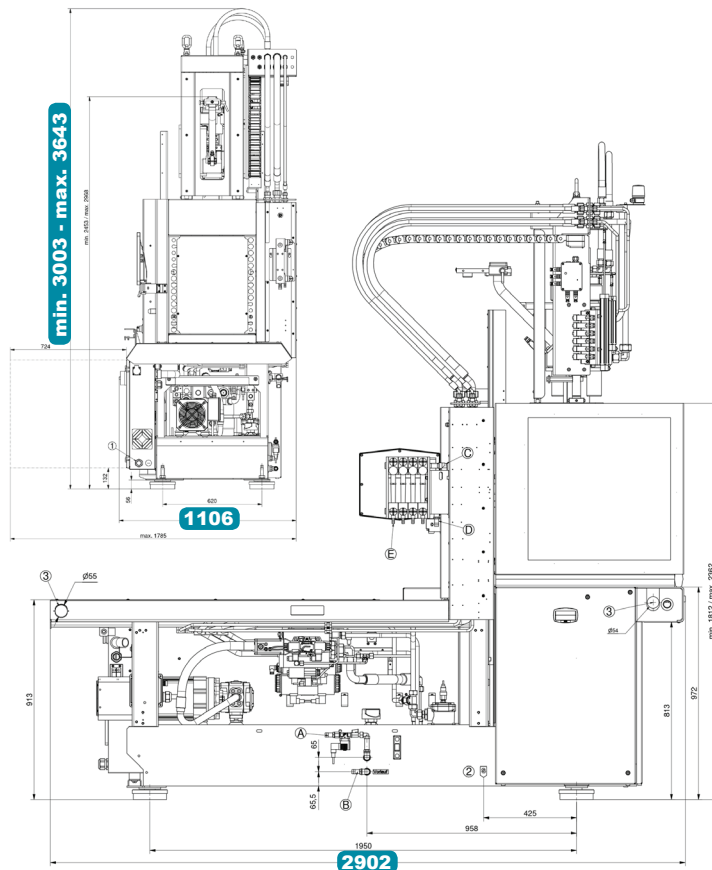
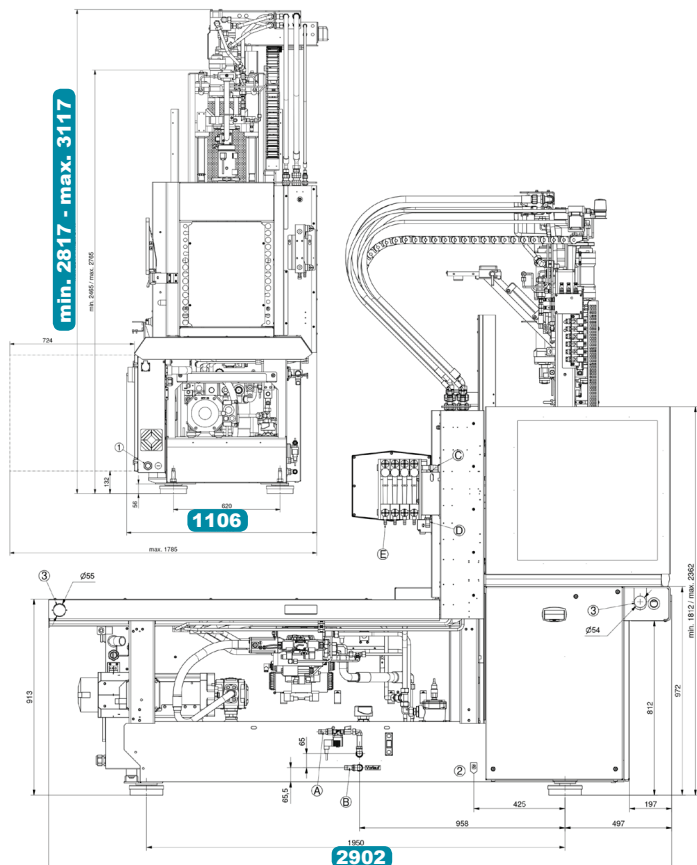
With the development of the BOY 60 E VV insert molding machine, BOY tops off its machine programme with a universal insert molding machine. Compact dimensions and ample space on the machine frame for peripheral and optional equipment ensure optimum integration possibilities for automation systems.



Generous distances between tie bars furthermore offer enough space for mounting large and multi-cavity molds. Large-volume insert moldings 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 molding 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 version

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)	in ³	1.24	1.86	43	58.5	76.4	77	100.5	141.8	173.2	
Max. shot weight in PS (theoretical)	oz	0.65	0.98	39.1	53.2	69.5	70	91.5	129	157.6	
Injection force	US Tons	9.7			172			172			
Injection volume flow	in ³ / sec	4.3	6.5	126.7	172.4	225.2	92.4	120.6	170.1	207.8	
Max. spec. injection pressure	psi	39726	33011	1913	1405	1076	2798	2142	1519	1244	
Max. screw stroke	mm / in	80 / 3.15			95			125			
Nozzle force / contact pressure	US Tons	5.4			66			66			
Nozzle retraction stroke	mm / in	205 / 8.07			215			215			
Screw torque	ft / lbf	95.9 (1740 psi)	132.8 (6.1 in ³ /1885 psi) / 221.3 (9.8 in ³ /1885 psi)			390 (162 cm ³) / 490 (204 cm ³)			390 (162 cm ³) / 490 (204 cm ³)		
Screw speed (infinitely variable)	rpm	500 (4.9 in ³)	400 (6.1 in ³) / 250 (9.8 in ³)			325 (204 cm ³) / 410 (162 cm ³)			325 (204 cm ³) / 410 (162 cm ³)		
Screw pulback force	US Tons	4.27			29.7			29.7			
Heating power (nozzle + cylinder)	W	3250	3550	5800		7700					
Hopper capacity	Us gal.	-			-			-			
Injection speed	in / sec	11.02			150			150			

Clamping unit

Clamping force	US Tons	67.44
Distance between tie bars	in (h x v)	14.17 x 13.19
Max. daylight between platen	mm / in	550 ¹ / 21.65 ¹
Max. opening stroke (adjustable)	mm / in	400 / 11.81
Min. mold height	mm / in	250 ¹ / 9.84 ¹
Max. mold weight on moveable clamping side	lb (max)	881.85
Mold opening force	US Tons	4.27
Mold closing force	US Tons	2.74
Ejector stroke (max.)	mm / in	80 / 3.15 (130 / 5.12)
Ejector force pushing / pulling	US Tons	2.29 / 1.52

General

Total power	V / Amps / 3 phase	230 V / 60 A / 3 phase	
Duration of the dry cycle (EUROMAP 6)	s (mm)	2.3 (252)	1.9 (252)
Hydraulic system pressure	psi	2828	195
Oil tank capacity	US gal.	52.83	200

Dimensiones and weights

BOY 60 E VV

Dimensions (LxWxH) / Footprint	in / sq in	114.25 x 43.54 x 110.91 ² / 4975	2902 x 1106 x 3003 ² / 3.21
Total weight net (without oil)	lb	5556	
Total weight gross (pallet & foil / wooden case)	lb	7496 / 8201	
Transport dimensions / case (LxWxH) approx.	in	122 x 53.1 x 98.4 / 122 x 53.1 x 88.6	

1) optional 3.94 inch larger 2) max. 122.7 inch



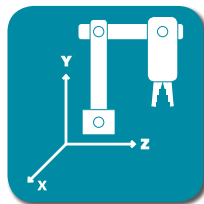
Servo-Drive



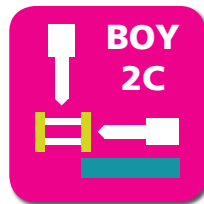
Control



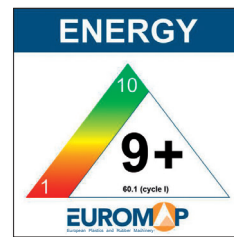
Injection Unit



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?



Technical Data and Equipment (complete overview)



Competence brochure



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