



Spritzgiessautomaten



**GREAT MACHINES —  
compactly designed**

# “efficient and sustainable”

- Buzzwords you often hear today.
- Features nearly everyone claims for themselves.

**For BOY, efficiency and sustainability are not modern marketing phrases but leading principles. Our machines are proof, as they offer more in every respect.**

**What exactly? Read on!**

# Advantages of the BOY E-Series with servo-motor pump drive



More precise



Faster and more dynamic



More energy saving



Quieter

## More Precision

The concept of the BOY E-series follows the state-of-the-art principles in mechanical engineering, material science and hydraulics. This allows you to achieve the highest, reproducible quality level possible.

The dynamic of our drives has been enhanced significantly. All positions can be approached accurately and dynamically. This allows for optimal results in positioning precision.

Our highly productive Procan ALPHA® control contributes significantly to the precision and quality control.

Further enhancements in quality and cycle time reduction can be achieved with the servo-electric screw drive option.



More precise

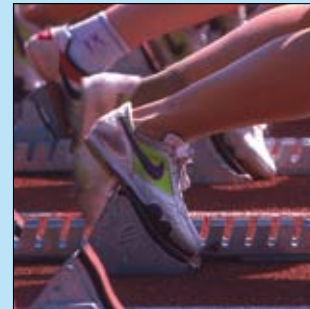
## More Economical

Due to the reduced energy consumption alone, significant economic advantages can be achieved as well as a faster amortisation compared to other systems.

Less energy input means less heat generation. Often oil cooling is not needed.

The dynamic movement reduces the cycle time. Also, other factors like footprint, service and maintenance costs, which are included in the machine hourly rate, prove to be extremely favourable.

Finally, BOY machines have a high resale value should you decide after some years to exchange your machine for one that features the newest technology.



Faster and more dynamic

## More for the Environment

Ecologically speaking, the BOY E-series is unbeatable. Up to 75% of energy is saved and depending on the application, an even lower consumption than electro-mechanical machines – this speaks for itself. During continuous operation the CO<sub>2</sub> emissions incurring during electricity generation are being reduced by 56.000 kg annually.

Due to the integrated compact design the footprint is nearly 30% smaller than for conventional machines. By using a BOY machine, you will use less space for the same output. Respectively low is the land usage.

Minimal use of raw material and longevity of the machines conserve valuable resources.



More energy saving

## More for the Senses

The clear and harmonic design and colouring of the BOY E-series injection moulding machines is impressive.

The integrated design with the cantilevered clamping unit makes for an aesthetic overall picture. Automation and other peripheral equipment can usually be placed within the machine footprint.

The control is simple and intuitive thanks to its well arranged touchscreen colour display. Further features include its quietness, harmonic noise frequency, and the harmonic machine movement.

You will see: Working with the BOY E-series is a pleasure.



Quieter

# 1 Servo-motor pump drive

The heart of the system is a synchronous servo motor with gear pump. The control of the motor is done by an electronically controlled converter.

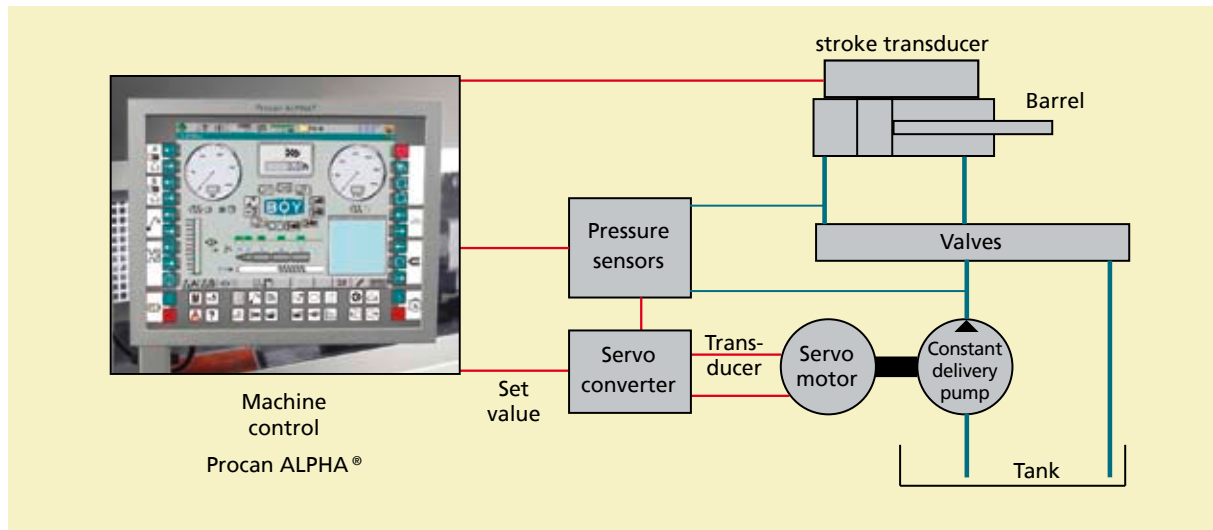
The pressure and quantity target values are specified by the machine control. Also the actual values are being measured and controlled by closed loop.

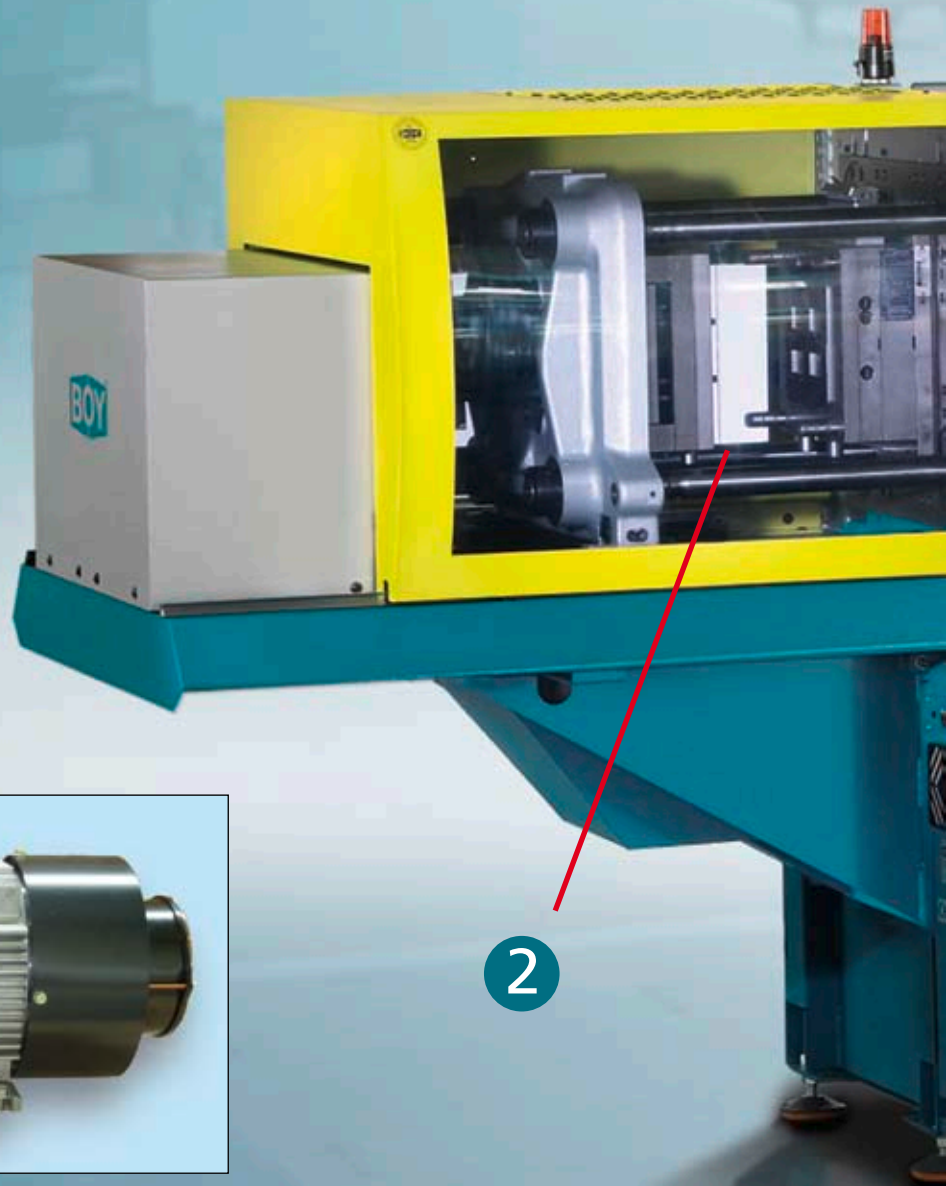
The converter and its special software fulfill perfectly the special and complex requirements of a highly dynamic pressure and speed control.

The rotational speed of the pump is always adjusted exactly to the requirements of the particular cycle phase.

Between the end of screw recovery and the cooling phase, the motor and pump are idle and use no energy.

The diagram shown below illustrates the interaction of all system components:







3

1

## 2 Two platen clamping system

We introduced the two-platen clamping system in 1968. Nobody has more experience with this system than us.

Besides the space and automation advantages there are solid benefits in precision and clamping force. Due to the transmission of force at the four corners of the closing platen, a symmetrical distribution of the clamping force over the platens is achieved. This leads to a more efficient utilization of the clamping force.

Patented pressure transducer with valve function. The clamping pressure is maintained safely without the additional energy consumption of a pressure holding pump.

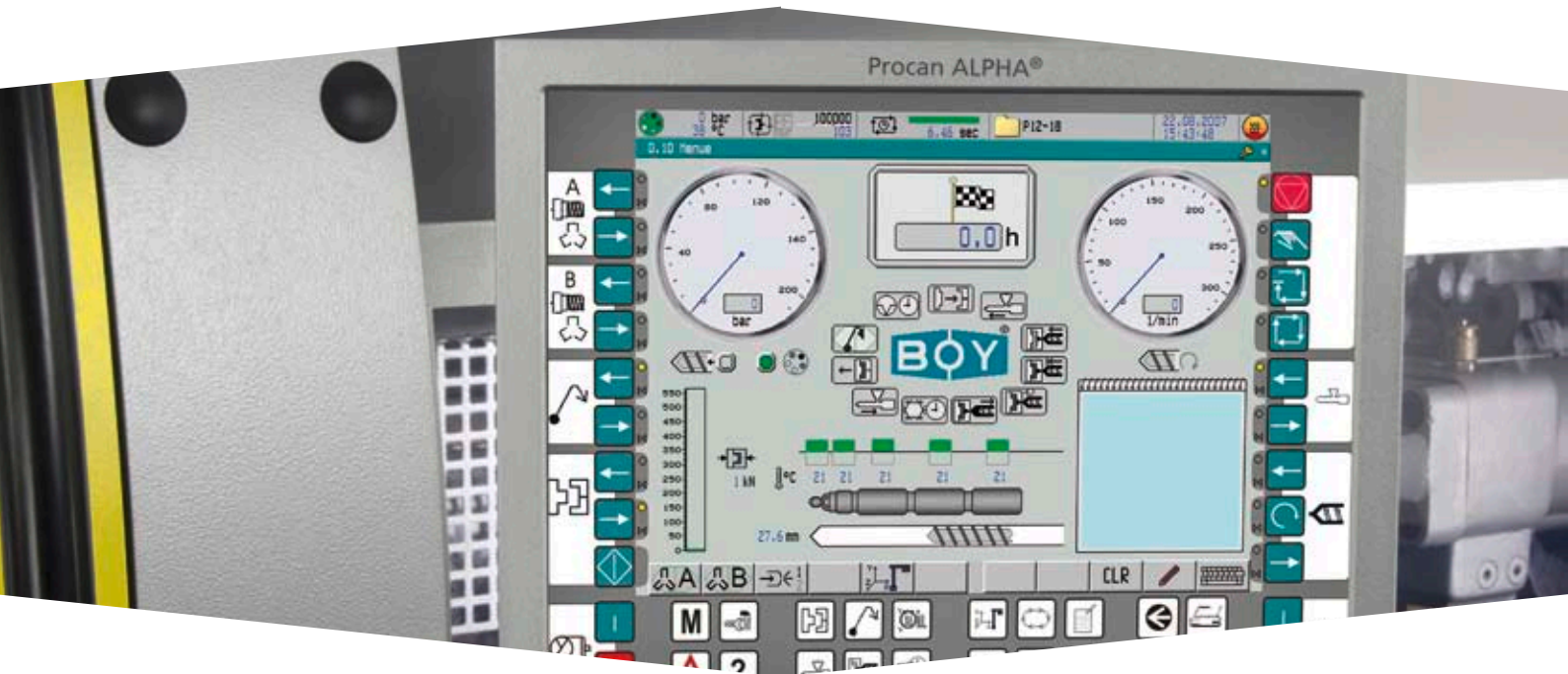
## 3 Procan ALPHA® – Control

Please see more details on page 10

### Technical Data at a glance

	<b>BOY 55 E</b>			<b>BOY 90 E</b>	
EUROMAP:	550-52	550-79	550-205	900-205	900-370
Clamping force in kN / U.S. tons:	550 / 60.5			900 / 99	
Tie bar clearance (h x v) in mm / inch:	360 x 335 / 14.18 x 13.19			430 x 360 / 16.93 x 14.18	
Max. platen daylight in mm / inch:	650 / 25.6			725 / 28.55	
Max. opening stroke in mm / inch:	400 / 15.75			475 / 18.7	
Screw diameter in mm:	18, 22, 24, 28, 32, 38, 42			28, 32, 36, 42, 48	
Max. stroke volume (theoretical) in cm <sup>3</sup> / inch <sup>3</sup> :	166,3 / 10.15			280,5 / 17.11	
Max. shot weight (PS) in g / oz:	158,9 / 5.57			252 / 8.89	

### 3 The Control



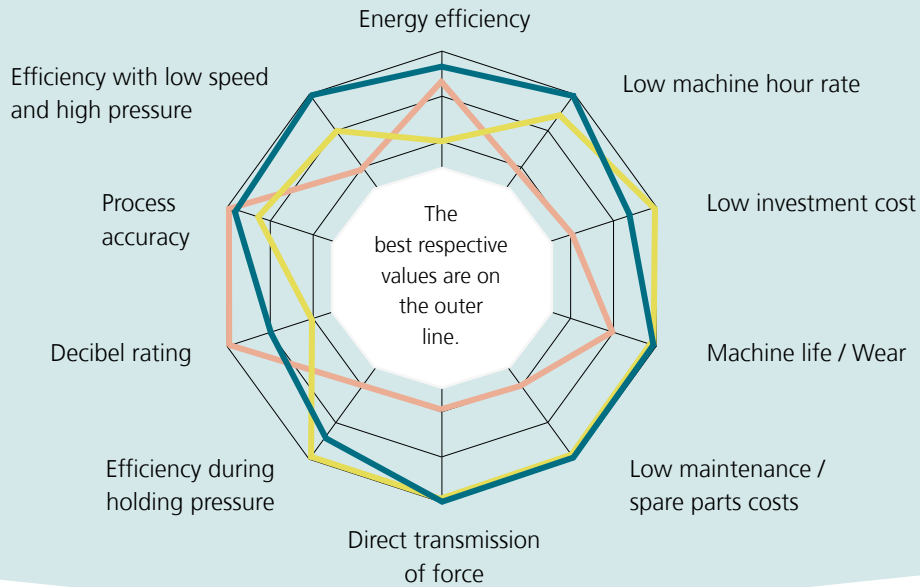
## Procan ALPHA® – Control system of the highest level

The Procan ALPHA® control combines high-performance hardware with unique closed loop and feedback control software. The intuitive system allows for fast reactions and high quality stability.

Optimal process monitoring and information conclude the performance of the control.

Several patents prove the leading technology of the Procan ALPHA®.

# System Advantages in Comparison



■ Servo-motor pump drive

■ Fully hydraulic drive

■ Electro-mechanically drive

The above diagram clearly shows the advantages of the servo-motor pump drive. Using this technology, it was possible to achieve and even surpass the positive features of electro-mechanical machines without its disadvantages.



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## GREAT MACHINES — compactly designed



All BOY horizontal and insert injection moulding machines – from the ultra-compact BOY XS (100 kN clamping force) up to the BOY 90 (900 kN clamping force) – are highly precise and reliable. Low machine hour rates are the basis for cost effective production.

Take profit from this lead, too!

Request more information by the attached form.

**Dr. Boy GmbH & Co. KG**  
Neschener Str. 6  
53577 Neustadt-Fernthal  
Tel.: +49 / 2683 / 307-0

**[www.dr-boy.de](http://www.dr-boy.de)**