

## Reduced CO<sub>2</sub> emissions in parts production

**More energy-efficient servo drives increase sustainability - change now**

In December 2021, energy measurements were carried out on five BOY injection moulding machines of the BOY E-series with servo-motor pump drive at the BOY Technical Centre. The measured values were compared with the energy measurements already carried out on five injection moulding machines of the same size at the customer's site.

### Servo-drive reduces energy-requirements and CO<sub>2</sub> – emission:

With a three-shift operation of 6,000 h per year, the BOY 60 E saves a total of 21,876 kW per year compared to the customer's existing injection moulding machine.

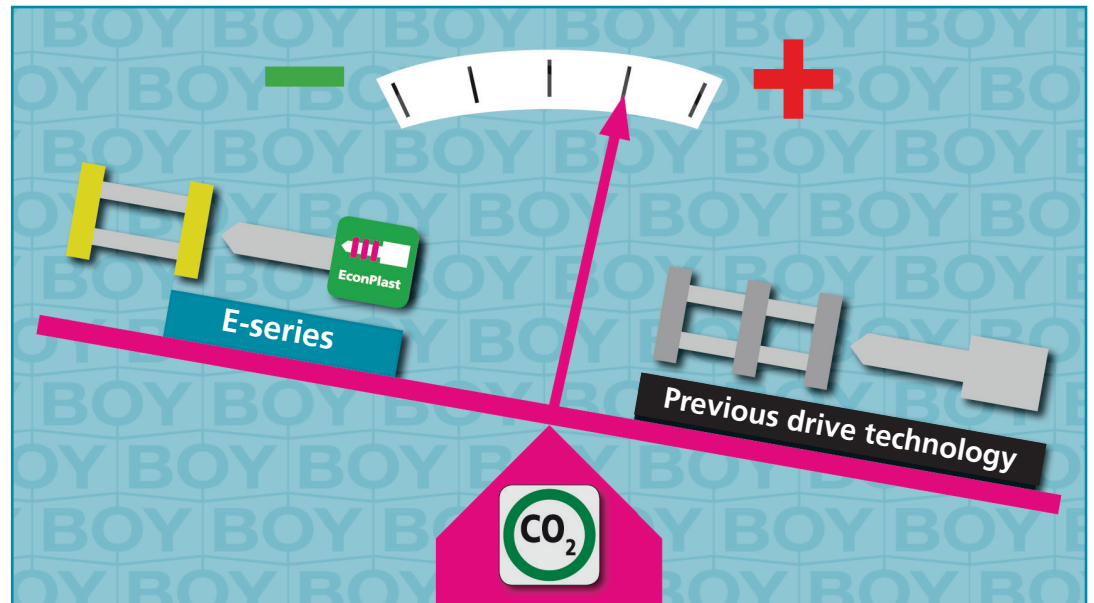


**Servo – Drive**

According to the energy mix available in Germany, this reduced energy consumption corresponds to a CO<sub>2</sub>-saving of more than eight tons. (In 2020 = 0.366 kg CO<sub>2</sub> / kWh).



**Emission**



- ✓ The energy-efficient and dynamic servo drive **saves up to 50% energy costs.**
- ✓ Each kWh saved currently **reduces the CO<sub>2</sub> -emission by 0.366 kg.**
- ✓ With an energy consumption reduced by 3.65 kWh, 6,000 h/year, material flow rate of 5.11 kg/h, this amounts to more than **8 (!) tons per year** (according to the following comparative example 1).
- ✓ Additional savings potential (up to 50%) offers the plasticising-technology **EconPlast.**

The results of the comparative measurements on four different customer moulds listed at the end clearly show the high energetic advantages of the BOY servo-drive-technology compared to previous drives with electronically controlled variable displacement pump (DFE).

### Consequently implemented

The savings potentials achievable highly impressed the customer. Due to the energy benefits and the improved

sustainability an order of eight new injection moulding machines of the E-series was placed.

### Take advantage of government subsidies

In case of new investments in more energy-efficient production equipment Germany provides a range of subsidy options of various kinds and sizes (BAFA, kfW, etc.) for energy-efficient up-gradings and replacement investments. Depending on the respective level of savings, subsidies and / or loans can significantly re-













duce the acquisition costs for more energy-efficient injection moulding machines. The following applies to almost all government subsidies: The application and (pre-)approval of the subsidy must take place prior to the start of measure. Contact your local energy advisor and find out about regional subsidy programmes and current measures.



**New instead of old**

## Energy consumption in comparison

### Advantages of the E series with servo drive technology

<b>Mould 1</b> cap  <b>Shot weight</b> 22.7 g  <b>Cycle time</b> 16.0 s	<b>Energy consumption</b> existing BOY 55 A  6,122 kW / h  	<b>Energy consumption</b> of a BOY 60 E  2,476 kW / h  	<b>Energy- Savings</b> potential  59 %  
<b>Mould 2</b> screw cap  <b>Shot weight</b> 12.4 g  <b>Cycle time</b> 24.9 s	<b>Energy consumption</b> existing BOY 50 A  3,502 kW / h  	<b>Energy consumption</b> of a BOY 60 E  1,884 kW / h  	<b>Energy- Savings</b> potential  46,2 %  
<b>Mould 3</b> plug  <b>Shot weight</b> 31.7 g  <b>Cycle time</b> 13.7 s	<b>Energy consumption</b> existing BOY 50 A  6,824 kW / h  	<b>Energy consumption</b> of a BOY 60 E  3,729 kW / h  	<b>Energy- Savings</b> potential  45,4 %  
<b>Mould 4</b> tray  <b>Shot weight</b> 15.2 g  <b>Cycle time</b> 14.7 s	<b>Energy consumption</b> existing BOY 35 A  4,510 kW / h  	<b>Energy consumption</b> of a BOY 35 E  1,956 kW / h  	<b>Energy- Savings</b> potential  56,6 %  



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