



NPM GROUP

- **PLASTIC METAL SPA**
Injection Moulding Systems



- **F.LLI VIRGINIO Srl**
Automation & Conveyor belts



PLASTIC METAL SPA

- With more than 60 years of experience, Plastic Metal Spa is the protagonist of a continuous innovation and technological growth
- Over 6,000 thermoplastic injection moulding machines manufactured in Italy for many sectors



- Headquarters and factory in Italy – Vicenza (North East Packaging district)

PLASTIC METAL SPA



- Production of Injection Moulding Machines - Range from 50 to 3200 T.
- Wide range of solutions: Full-Hydraulic, Full-Electric and Hybrid Machines
- Lead supplier for turn key projects
- Research, development and testing department

PLASTIC METAL

**Injection Moulding Machines
Range from 50 to 3200 Tons.**

The main series of IMM machines are:

- **MULTIPOWER SP** – Full Hydraulic Machine with Servopump
- **MULTIPOWER H** and **HE** - Hybrid Machines
- **ELETTRYKA** – Full Electric Machine

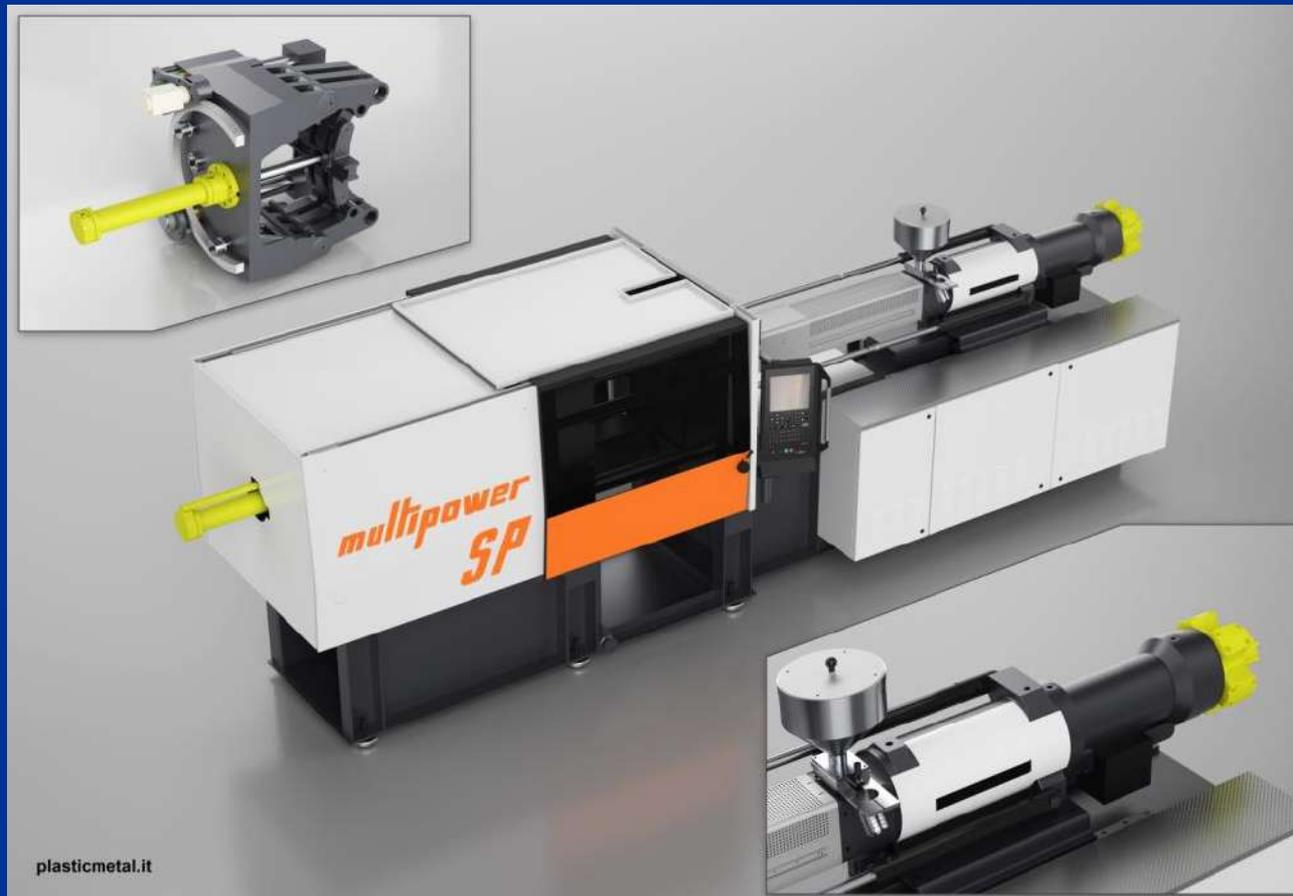
- **MULTIPOWER DUO** - Two Platen Machine
- **MULTIPOWER CL** – Long Stroke Machine
- **MULTIPOWER PET**- machine for Production of PET Preforms
- **MULTIPOWER MULTI-INJECTION**

PLASTIC METAL

MULTIPOWER SP - Servopump

Range from 50 to 800 Tons.

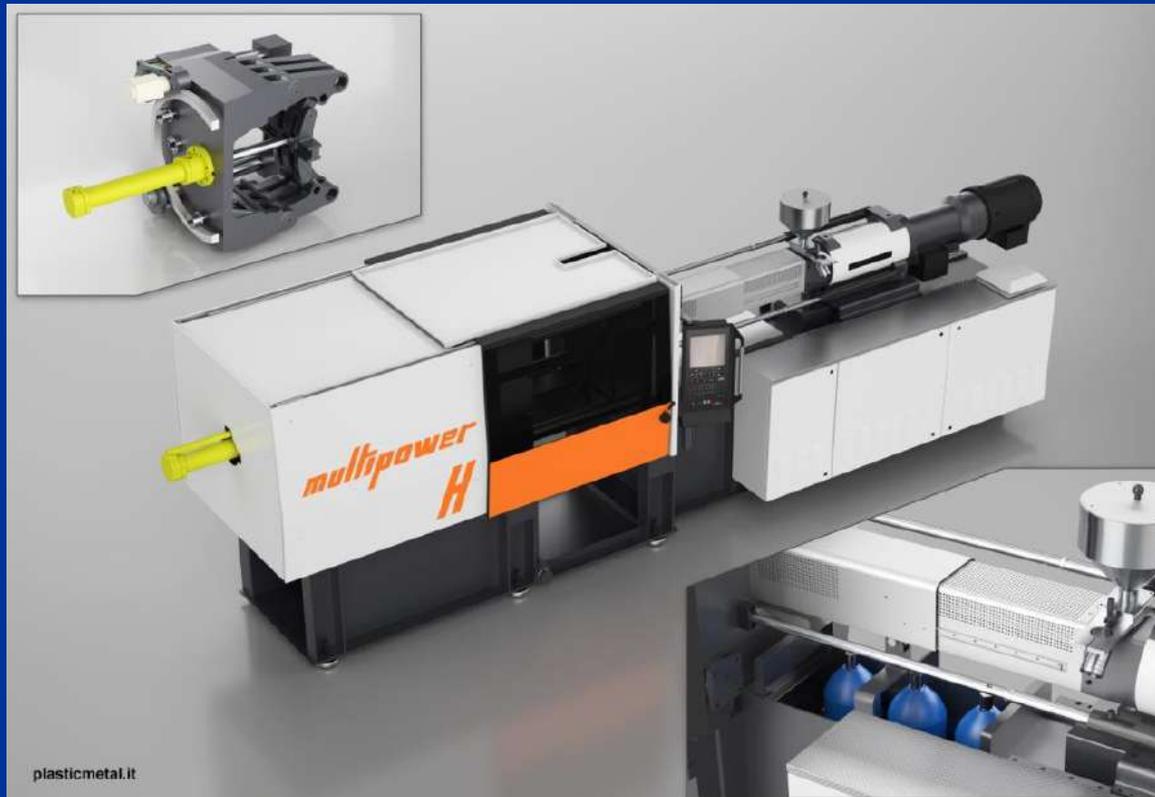
Full Hydraulic Machine with Servopump and Inverter
for Energy Saving



PLASTIC METAL

MULTIPOWER H – Hybrid machine Range from 50 to 3200 Tons.

Screw rotation: Electrically operated
Clamp closing/opening: Hydraulically operated
Injection operated through accumulators for energy saving
Overlapping of all the movements



PLASTIC METAL

MULTIPOWER HE – Hybrid machine

Range from 50 to 800 Tons.

Screw rotation: Electrically operated

Clamp closing/opening: Electrically operated

simultaneous movements of screw rotation, ejection and clamp opening

Injection operated through accumulators for energy saving

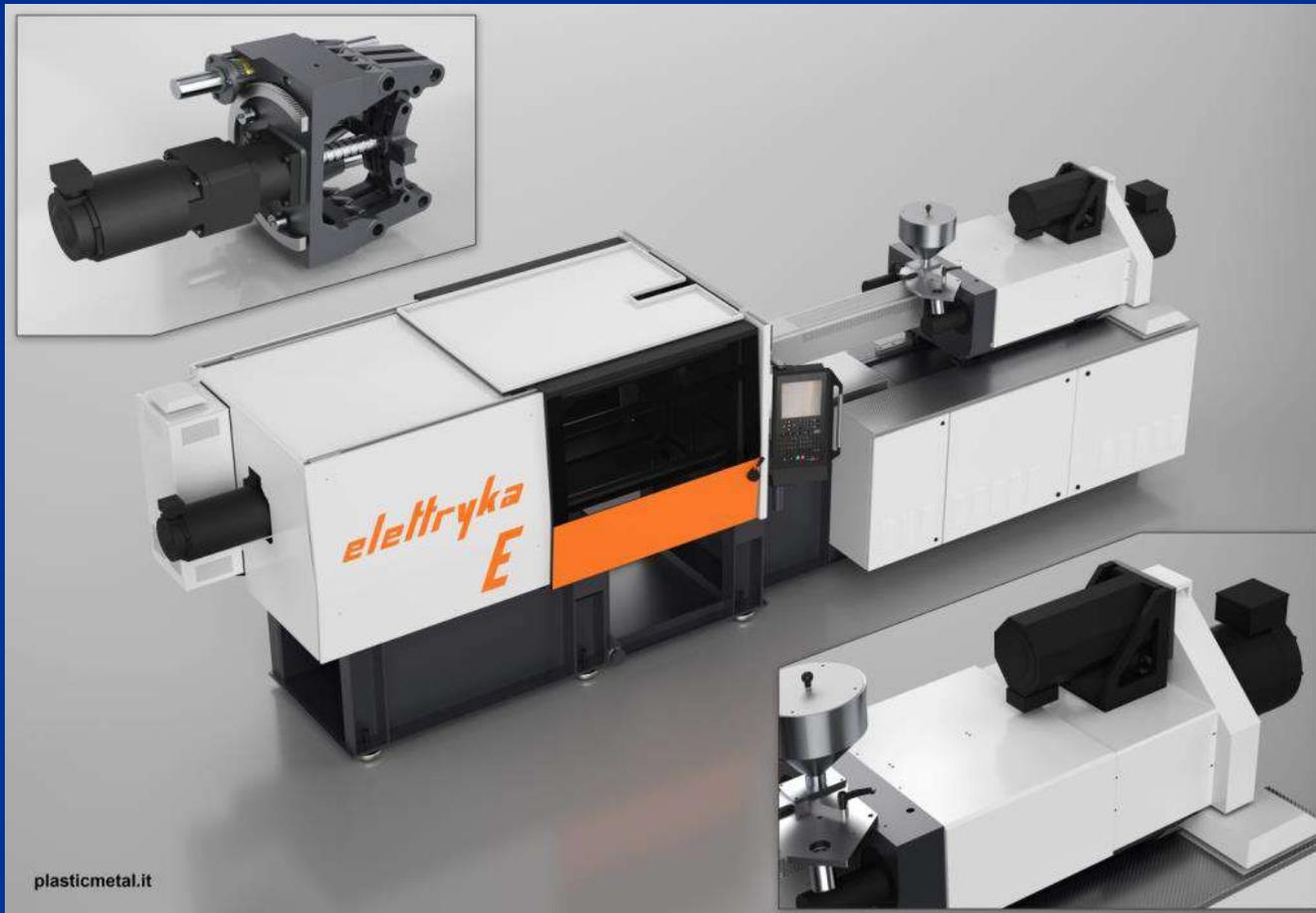


PLASTIC METAL

ELETTRYKA

Range from 50 to 350 Tons.

Full Electric Machine



Multipower Target

Maximum Efficiency

- To assure the highest quality level in moulding performance
- To assure the operator maximum flexibility and reliability
- To assure a real energy saving
- To simplify maintenance and make service operations cheaper
- To assist the operator through an easy and intuitive utilisation language

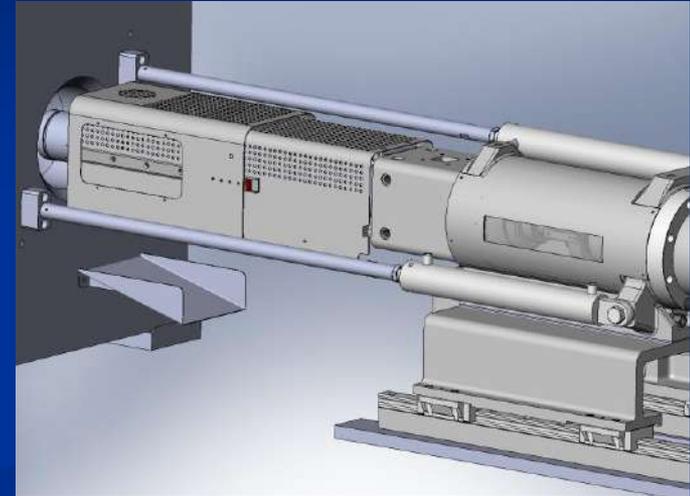
ENERGY SAVING: the role of Accumulators

- The accumulators assure high speed performances and a precise and adjustable control of hold-on pressure, otherwise not possible during injection phase.
- The accumulators system recharge is operated by a gear pump driven by a reduced electric motor that automatically turns off when the energy required by the moulding process is achieved, reducing the energy consumption to zero.
Switch-on/off is controlled by Inverter.
- Equal performances with an electric system without accumulators, would require 5 times the energy used by this system.



INJECTION

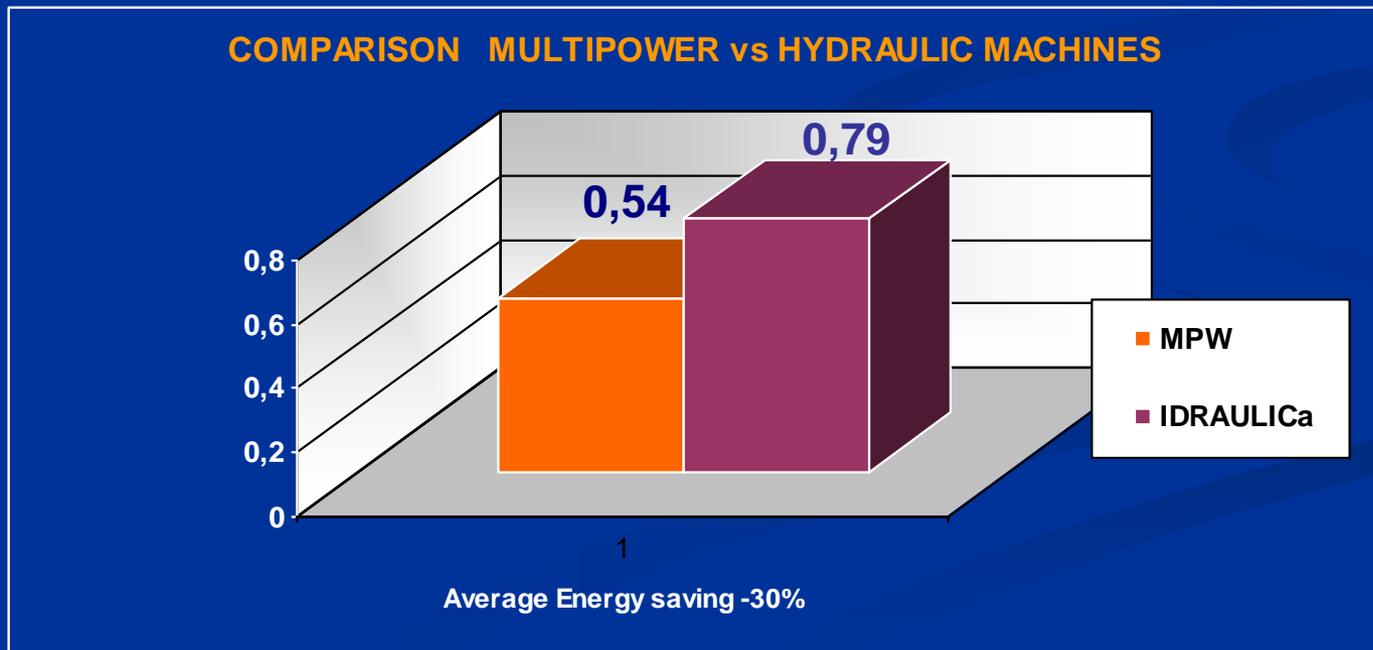
- This movement determines the quality of the final product: must be fast, precise and powerful, so the use of a hydraulic shutter offers the necessary performance (350 mm/sec.) and reliability.
- The axis control is entrusted to a closed loop MOOG servo-valve for velocity, pressure and counter-pressure.
- The holding pressure control is accurate and adjustable, based upon the moulded product, with energy saving at the same time.



Costs Analysis: the Energy Saving

- Tests carried out on MULTIPOWER certify an average consumption between 0,4 and 0,6 watt/gr.
- The same item produced with a traditional hydraulic machine, under the same process conditions, shows an average consumption between 0,8 and 1,1 watt/gr.

AVERAGE ENERGY SAVING 30% ÷ 50%



ENERGY CONSUMPTION TEST

Caratteristiche dell'articolo	
Characteristics of the product	
Prodotto	Tappo per acqua liscia
Product	Closure for still water
Materiale	HDPE
material	
dimensioni mm	cr-cap® 29/25 mm.
dimensions mm	
peso pezzo g.	1.36
piece weight g.	



PROVA EFFETTUATA SU MULTIPOWER H 350 - HYBRID

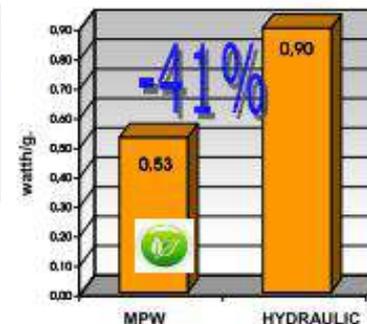
Tested on Multipower H 350 - Hybrid

	Cavità stampo	n.	72
	Mould cavities	no.	
	Tempo Ciclo	sec.	2,90
	Cycle time	sec.	
	Cicli ora	n.	1,241
	Cycle per hour	no.	
	Peso Stampata	g	97,9
Shot weight	g		
Produzione Oraria	pz.	89,352	
Hourly production	pc.		

Consumo $\frac{\text{Consumo orario}}{\text{Peso pezzo} \cdot \text{Produzione oraria}}$

Consumption $\frac{\text{Hourly consumption}}{\text{Piece weight} \cdot \text{Hourly production}}$

CONFRONTO dei CONSUMI		MPW-H	hydraulic
Consumptions comparison		350	machine
Consumo energia Orario	kWh	64,0	109,0
Hourly energy consumption			
Consumo Watt*grammo	Wh/g	0,53	0,90
Consumption W/g			



ENERGY CONSUMPTION TEST

Caratteristiche dell'articolo	
Characteristics of the product	
Prodotto	contenitore gelato IML
Product	ice cream container IML
Materiale	pp
material	
dimensioni mm	4 litri/ 4 liters
dimensione mm	
peso pezzo g.	107
piece weight g.	



PROVA EFFETTUATA SU MULTIPOWER 500 - HYBRID

Tested on Multipower 500 - Hybrid



Cavità stampo	n.	2
Mould cavities	no.	
Tempo Ciclo	sec.	8,08
Cycle time	sec.	
Cicli ora	n.	446
Cycle per hour	no.	
Peso Stampata	g	214
Shot weight	g	
Produzione Oraria	pz.	892
Hourly production	pc.	

Consumo $\frac{\text{Consumo orario}}{\text{Peso pezzo} \cdot \text{Produzione oraria}}$

Consumption $\frac{\text{Hourly consumption}}{\text{Piece weight} \cdot \text{Hourly production}}$

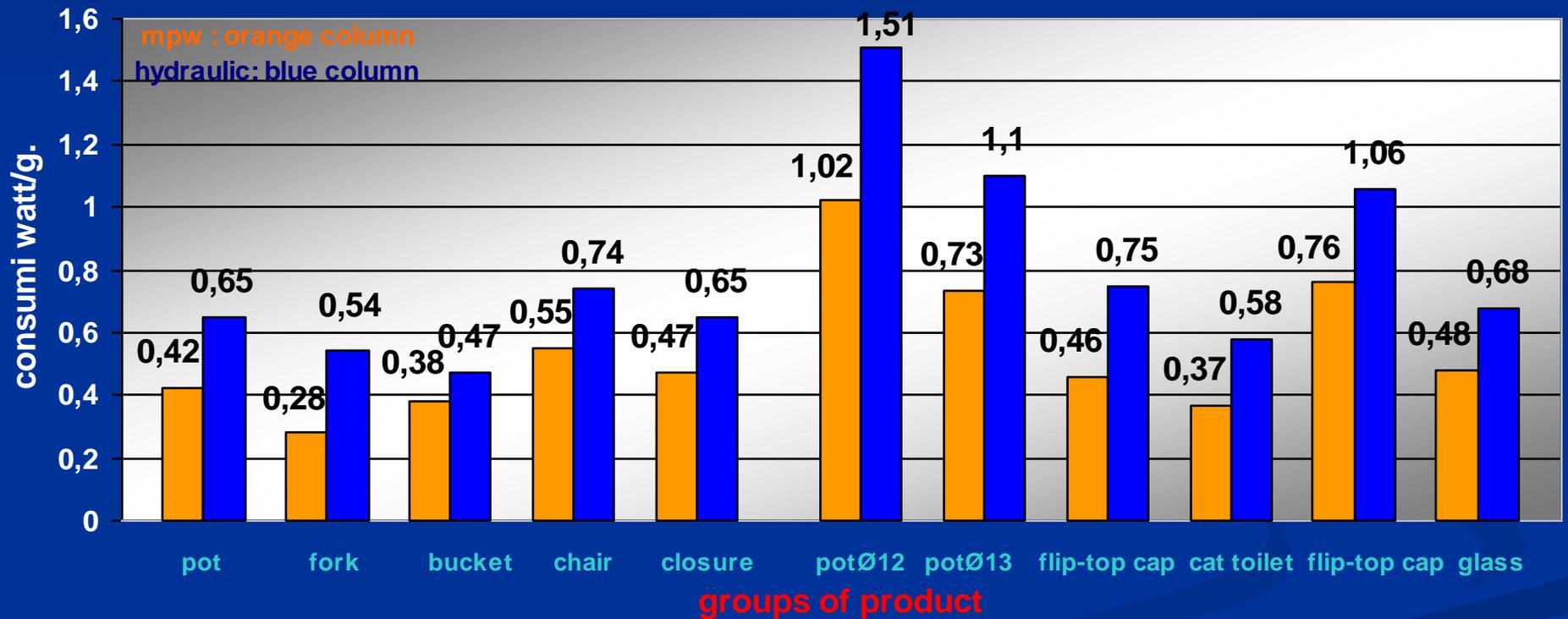
CONFRONTO dei CONSUMI			
Consumptions comparison			
		MPW 500	hydraulic machine
Consumo energia Orario	KWh	30,0	58
Hourly energy consumption			
Consumo Watt*grammo	Wh/g	0,31	0,61
Consumption Whg			
Quantità di olio	l.	250	650
Oil Quantity			

-62%



COMPARISON TEST

MPW energy saving compared to the hydraulic machines



CAPS Systems

Closures for mineral water

HDPE cr-cap® 29/25 and 30/25 mm.



Softdrink caps

1 piece - double seal
HDPE cap





Doy-pack closures

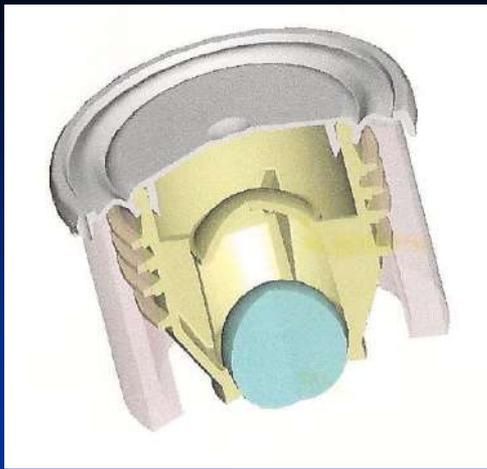
Doy-pack
PE pourer
and
PP cap



Flip-Top closures

PP flip-top closures





Liquor closures

- 2 or 3 components suitable for aluminium cover (+ glass ball)
- In Mould Assembling Technology also available
- Body made of PET

Liquor closures

- Closure design & development
- Complete line for the plastic components
- Assembly
- Decoration



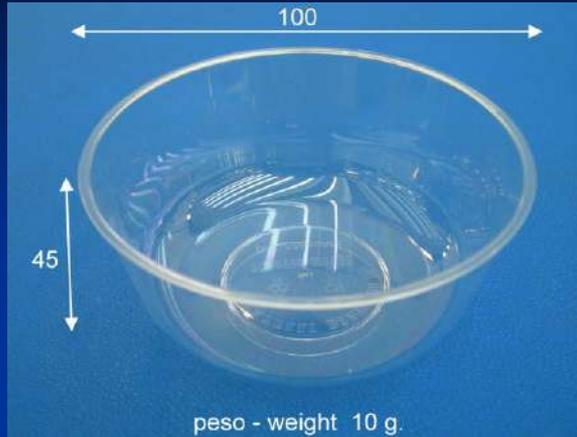
Liquor and Oil closures

- LDPE Cap
- PS doser
- LDPE nipple



Packaging

- Glasses
- Cups
- Food containers



- Spoons
- Forks
- Knives

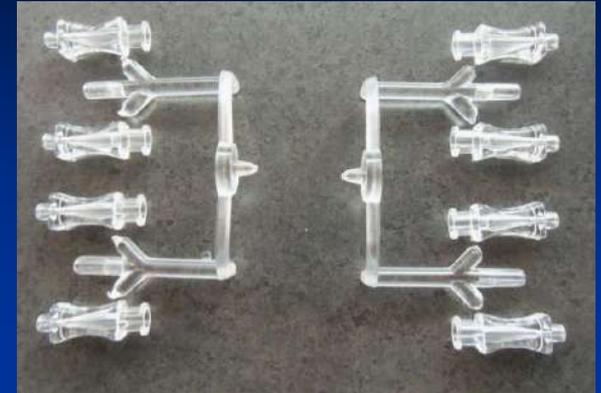
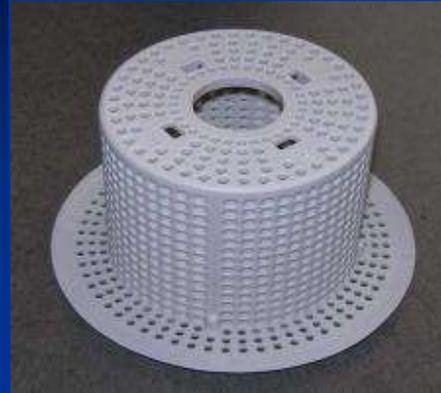
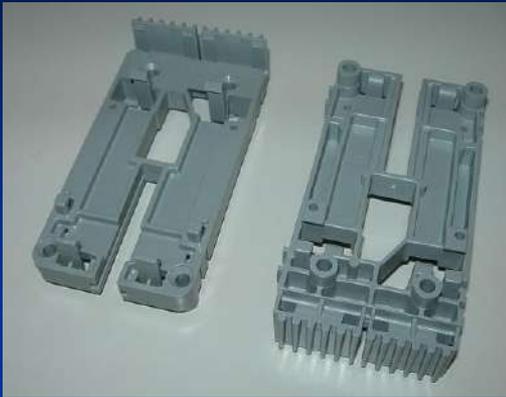
n°64 cavità - cavities
peso pezzo-weight 2.5 g.



- IML
In-Mould
Labelling



Technical articles



Medical and Cosmetic



Automotive

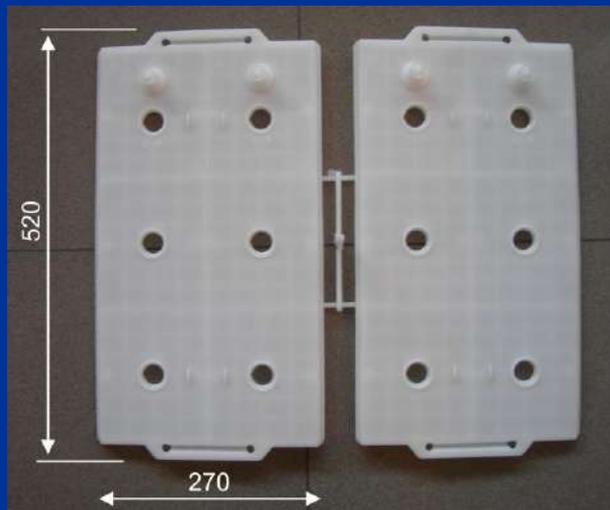
Car Lights



Car bumpers



Battery Covers



Houseware articles

Square and round flowerpots



5 Gallons bucket
Square basket



SPECIAL APPLICATIONS

2-Injection Machines

Flip-top closures

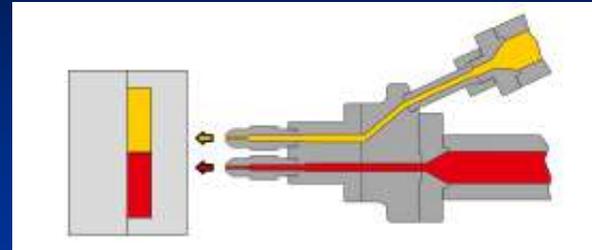
PP flip-top closure - Double colour



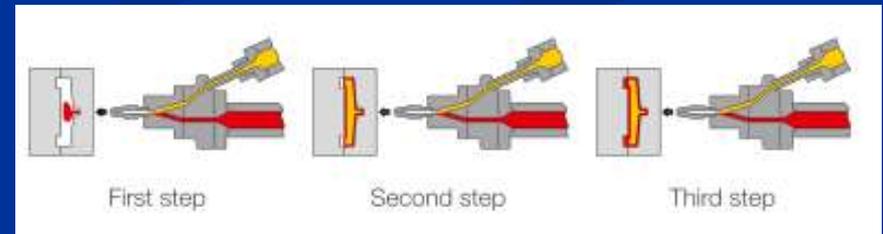
SPECIAL APPLICATIONS

2-Injection Machines

BI-INJECTION



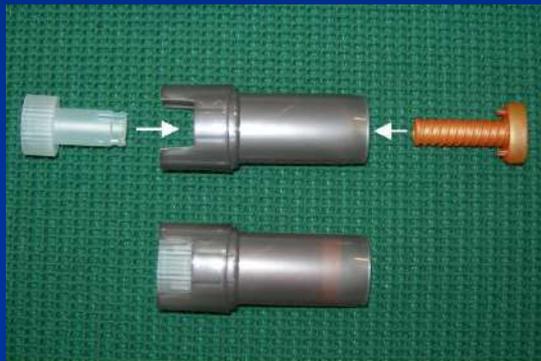
CO-INJECTION



SPECIAL APPLICATIONS

3-Injection Machines

IMA In-Mould Assembling

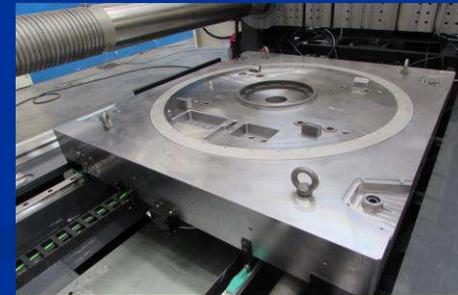
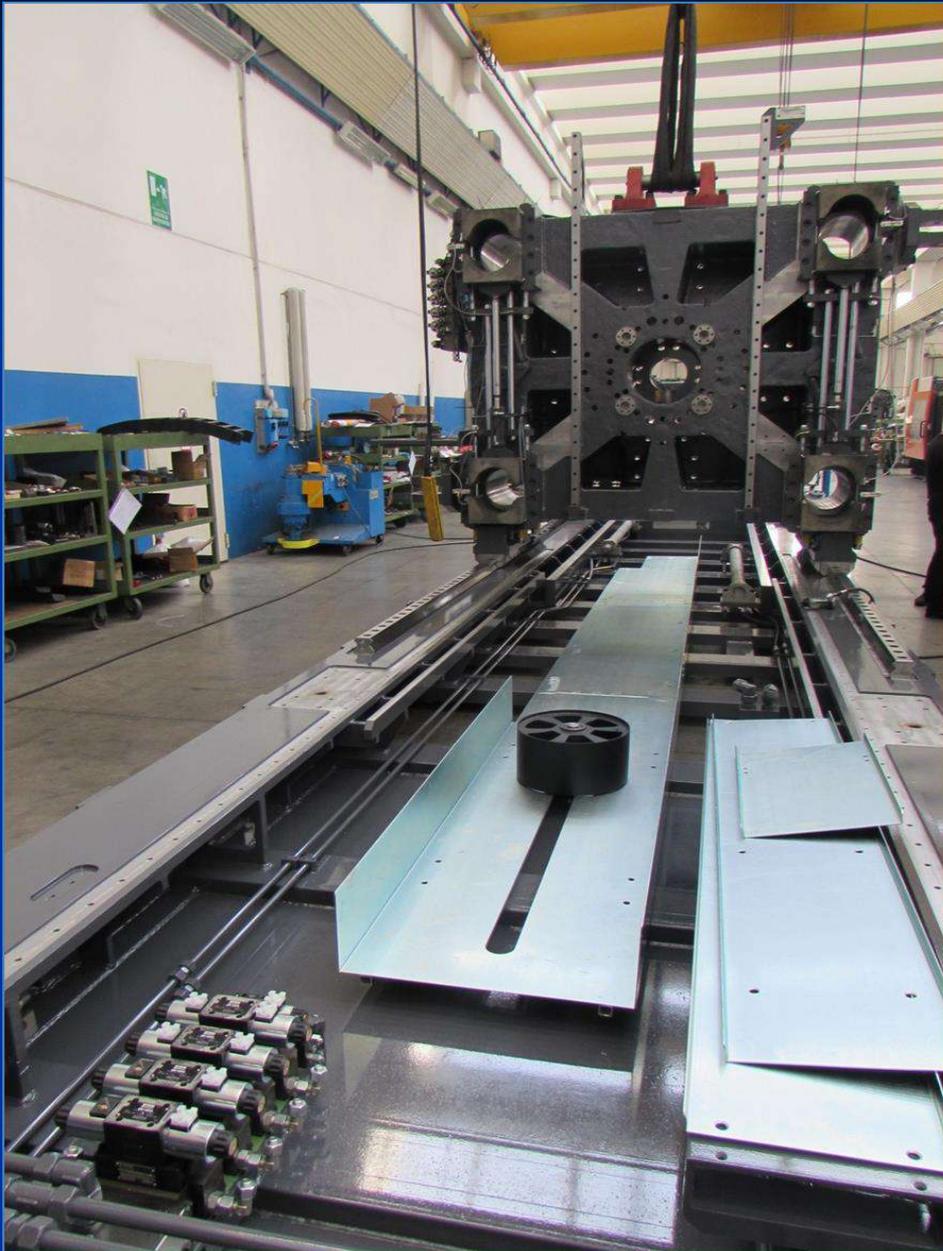


Lipstick

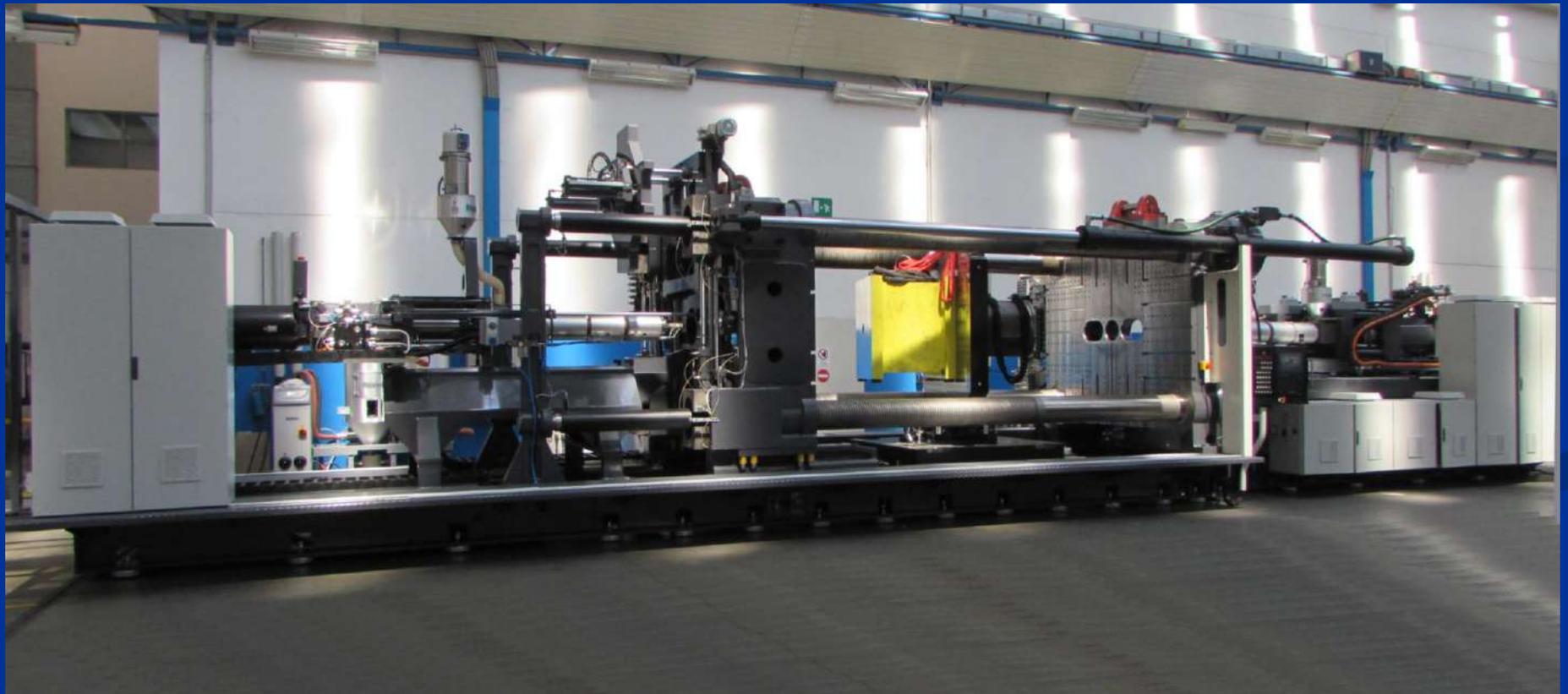


SPECIAL APPLICATIONS

6-Injection Machines



6-Injection Machines for Automotive Industry



SPECIAL APPLICATIONS

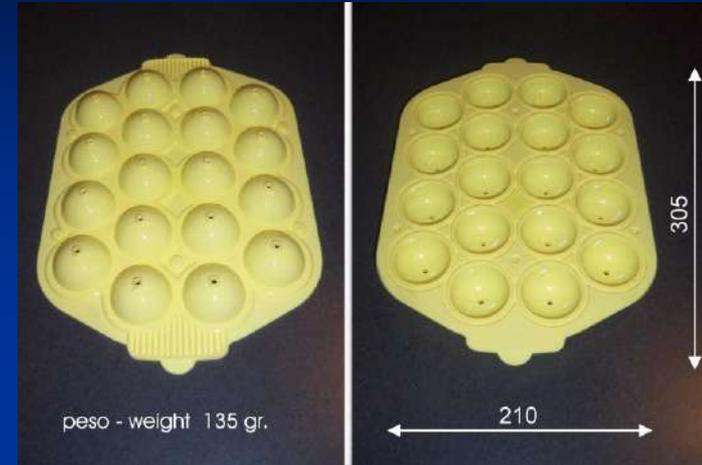


- System for PET Preforms



SPECIAL APPLICATIONS

System for SILICON



EXPORT

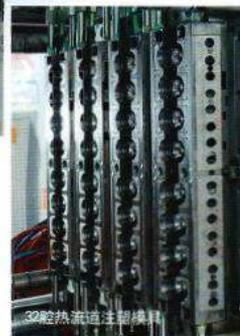
- Our injection systems can be found in many regions including North America, Europe, Brasil, Argentina, Russia, China, Turkey and the Middle East.





进口高速注塑机

中央供料系统 (可有效避免物料污染)



32腔热流道注射机

Brochure
Hicap closures
- China -

Note:
our equipment
is manufactured in
Italy and
exported to China

Russian Company KZPI declares Plastic Metal its official partner for Doy-Pack closures



Казанский Завод Пластмассовых Изделий

Компания «КАЗАНСКИЙ ЗАВОД ПЛАСТМАССОВЫХ ИЗДЕЛИЙ» с момента своего создания в 2005 г. по уровню разработок и качеству выпускаемой продукции является одним из ведущих производителей **УКУПОРЧНЫХ СРЕДСТВ: пробок-дозаторов жидких продуктов** для упаковки типа **Doy-Pack** в России.

Новости

Новинка!

[Новая пробка-дозатор \(флип-топ\) для укупоривания пакетов типа дой-пак](#)

03 | 11 | 2010

[Сертификат ISO 9001:2008](#)

12 | 09 | 2008

[Остерегайтесь подделок!](#)

20 | 06 | 2007

[Публикация о КЗПИ в газете PakkoGraff Express №1 за 2007г.](#)

15 | 05 | 2007

[Публикация о КЗПИ в журнале PakkoGraff №3 за 2007г.](#)

12 | 05 | 2006

[Новый дозатор Star Auger от Компании Weidpack Systems](#)

[Все новости](#)



Мы находимся в состоянии постоянного поиска инновационных решений и возможностей максимально быстро отвечать на нужды наших клиентов. Это и является объяснением того факта, что так много компаний по всей России выбирают нас в качестве надежного и постоянного партнера. Благодаря этому подходу наши клиенты могут позволить себе качество высокого уровня, не обращаясь к зарубежным производителям.



Catalogue Baumüller motors - Germany -


BAUMÜLLER

36-110 motor - 36-110 station

Plastic

Injection - injection moulding - blow moulding - extrusion

Application

Electrical injection-moulding machines

Short cycle times, highest levels of precision and reduction in energy costs

Many leading manufacturers of injection moulding machines are replacing their hydraulic systems with Baumüller direct drive solutions.

As the screw is powered electrically:

- ⊗ the repeatability of the injection process is increased
- ⊗ the waste produced by a machine is reduced and productivity increases as a result
- ⊗ the energy consumption of the machine is significantly reduced

With fully-electric injection moulding machines:

- ⊗ manufacturing is carried out in short cycle times to a higher degree of precision
- ⊗ the energy consumption of the machine is further reduced
- ⊗ the noise produced by the machine is reduced
- ⊗ the maintenance requirement is minimised



Baumüller provides one-stop comprehensive solutions

- ⊗ Peak load converter for high levels of overload
- ⊗ Energy-efficient high-torque motors with hollow shaft
- ⊗ Software templates to assist the control system
- ⊗ Highly dynamic axes for handling
- ⊗ Linear motors for ejector traction
- ⊗ Water and air-cooled motors and converters
- ⊗ Wide spectrum of field bases
- ⊗ Configuration management by ProMaster



Thank you for your interest!

