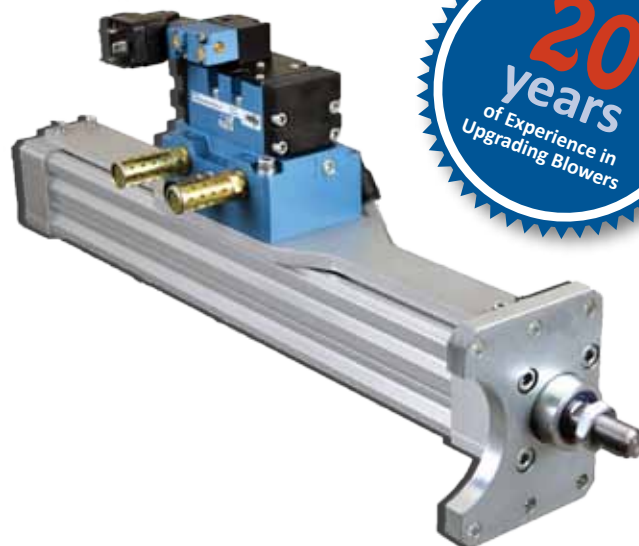


HIGHLY ENGINEERED SOLUTIONS FOR SOLENOID VALVES ON INJECTION STRETCH BLOW MOULDERS

MAC Valves, Inc. has developed 100% drop-in solutions to replace OEM supplied solenoid valves installed on injection stretch blow moulders



Example of solution: Mac Valves ISO2 on PHD Inc. BCK stretch rod cylinder

21 DAYS TO BRAU BEVIALE 2015

BrauBeviale2015

Raw Materials | Technologies | Logistics | Marketing

We will be pleased to welcome you during *Brau Beviale 2015* in *Nurnberg* from *Nov 10th to Nov 12th 2015*.

Hall 5 - Stand 448

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MAC Valves, Inc. Europe, Inc., Rue Marie Curie 12, 4431 Loncin (Liège), Belgium • Tel: +32 4 239 68 68 – Fax: +32 4 263 19 42 – E-Mail: vincent.flagothier@macvalves.be



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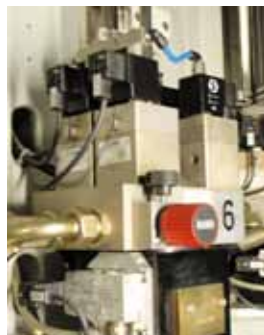


REQUIREMENT FROM THE FIELD

MAC Valves, Inc. has taken the specific needs of users into consideration to develop highly engineered 1:1 replacement solutions integrating all MAC Valves features and technology.

The main challenges met by users around the world are :

- ***Unreliable original solenoid valves generating downtimes***
- ***Poor repeatability creating low quality of products***
- ***Slow response time and low flow on stretch rod cylinders***



OEM supplied solutions (from left to right): Blow nozzle valve, high pressure pilots, stretch rod cylinder valve

MAC Valves, Inc. has carefully analyzed the requests of users and understood their needs for developing a range of drop-in solutions to upgrade existing machinery.

MAC Valves' main concern is to put on the market innovative products that provide:

- ***Increased production due to less downtime***
- ***Higher flow capacity in order to ensure fast retract of the stretching cam***
- ***Increased repeatability in order to guarantee the quality of the products***

MAC VALVES FEATURES

MAC valves is known on the market to have a very specific and patented design. This specific feature allow us to propose very reliable valves with high shifting forces, which means shorter response time and higher flow for same envelop size.

Best example is ISO valves. Comparing ISO 2 valves used on the stretch rod cylinders on a wide majority of PET injection stretch blow moulding machines, figures are as following:

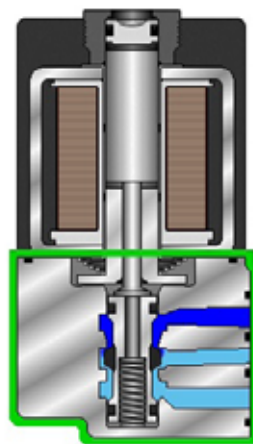
Manufacturer's published flows (NI/min):

	MAC	Typical OEM supplied ISO 2 valve
ISO 2	3500	2500

MAC Technology provides **40%** more flow with identical ISO2 footprint and envelop size

This specific features give the following advantages to MAC users:

- ***Insensitivity to contamination***
- ***Reliability and longer lifetime.***
- ***Fast, consistent and repeatable response times all over the lifetime of the valve.***
- ***Insensitivity to pressure variations***
- ***High flow capacity of the valve***
- ***Compact package***



SOLENOID
HIGH SHIFTING FORCE
(ENERGIZE)
SHORT STROKE

VALVE
MINIMIZE RESISTANCE
TO SHIFTING FORCES
BALANCE
WIPING
MINIMAL FRICTION

SPRING
HIGH SHIFTING FORCE
(DE-ENERGIZE)
STRONG RETURN
SPRING

MAC BENEFITS

All these specificities provide numerous benefits to the users of blowers.

■ *Reduction of maintenance*

Longer lifetime allows extending the time between maintenance with less downtime due to valves failure. In addition, the time during which your machine runs flawlessly is extended, thus providing your maintenance team more time to take care of other things. Of course, less downtime thanks to maintenance means also increase of the production.

■ *Reduction of scrapped bottle rate due to quality issues*

Better repeatability on high pressure pilots and fast retract of the stretching cam guarantee a better quality of PET bottles, which reduce the costs of scrapping rate.

■ *Reduction of replacement parts*

Longer lifetime allows reducing the number of parts in stock and thus lower inventory.



MAC CUSTOMER PROFIT REINFORCEMENT (CPR®).



CPR® is a proprietary ROI process utilized by MAC and the MDN (MAC Distributor Network) to maximize customer profitability. The CPR® process has been utilized with hundreds of customers to propose over \$150 million in real bottom line savings (implementing \$105 million) since 2010.

All MDN members are able to support you by calculating and providing you with a document detailing the financial benefits of using MAC Valves on your filler, with your own figures. Don't wait, contact your MDN support to build your own CPR®.



FOR 20 YEARS NOW, MAC VALVES AND ITS EXPERIENCED MDN DISTRIBUTORS HAVE SUCCESSFULLY UPGRADED INJECTION STRETCH BLOW MOULDING EQUIPMENT FROM MAJOR MANUFACTURERS IN :

Australia, Belgium, Brazil, the Czech Republic, Greece, France, Japan, Germany, Italy, Mexico, the Netherlands, New Zealand, Poland, PR of China, Romania, Russia, Slovakia, Spain, Switzerland, Turkey, Taiwan, the United Kingdom, the USA, Chile, Canada.

Customers who made the decision to equip their blowers with in our solenoid valve technology, and utilize our network's skills and expertise in the industry are involved in the production of: plastic containers, mineral water, dairy products, edible oils, beer, alcohols, soft and energy drinks, detergents, fruit and vegetable juices.

We would like to thank them for their trusting **MAC Valves** highly engineered solutions and in our valuable **MDN Distributors**.

20
years
of Experience in
Upgrading Blowers

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