

BR

Your trust is our strength

DEVELOPMENT, MANUFACTURE, AND RECONDITIONING OF INDUSTRIAL COMPONENTS

Established in 2009 in southeast France, BMR is a company specialising in the development, supply and reconditioning of standard and specific GLASS and PET industrial components. In 2023, BMR expended its offices to North-America, with new headquarters in Miami (FL) USA.



Contact us

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Our commitment to RSE

PARCOURS PERFORMANT ET RESPONSABLE EN PACA

UNE GAMME D'OUTILS
POUR ACCOMPAGNER
VOTRE DÉMARCHE RSE

BMR maintains its role of helping its customers through significant industry, economic and environmental changes and commits to being their ideal partner.

BMR is one of the leaders of French industry. We partner with our customers, and we want to constantly improve our relationship with them by offering high quality products and services, better meeting their needs. The components developed and recommended by our teams are maintained and repaired in our workshops in order to ensure an almost perfect circular economy process.

Creation of



2009

Creation of the
Company at Sainte
Gemme, Western
France

Creation of



2012

Moved to new premises
measuring 100m2
in South-West France
and change
of management

2014

Creation of the
WORKSHOP

Start of specialisation
in the glass industry

2010

Creation of
Internal Servicing

2013

Creation of
R&D Department
Opened up to the PET
industry. Started export-
ing in GLASS and PET

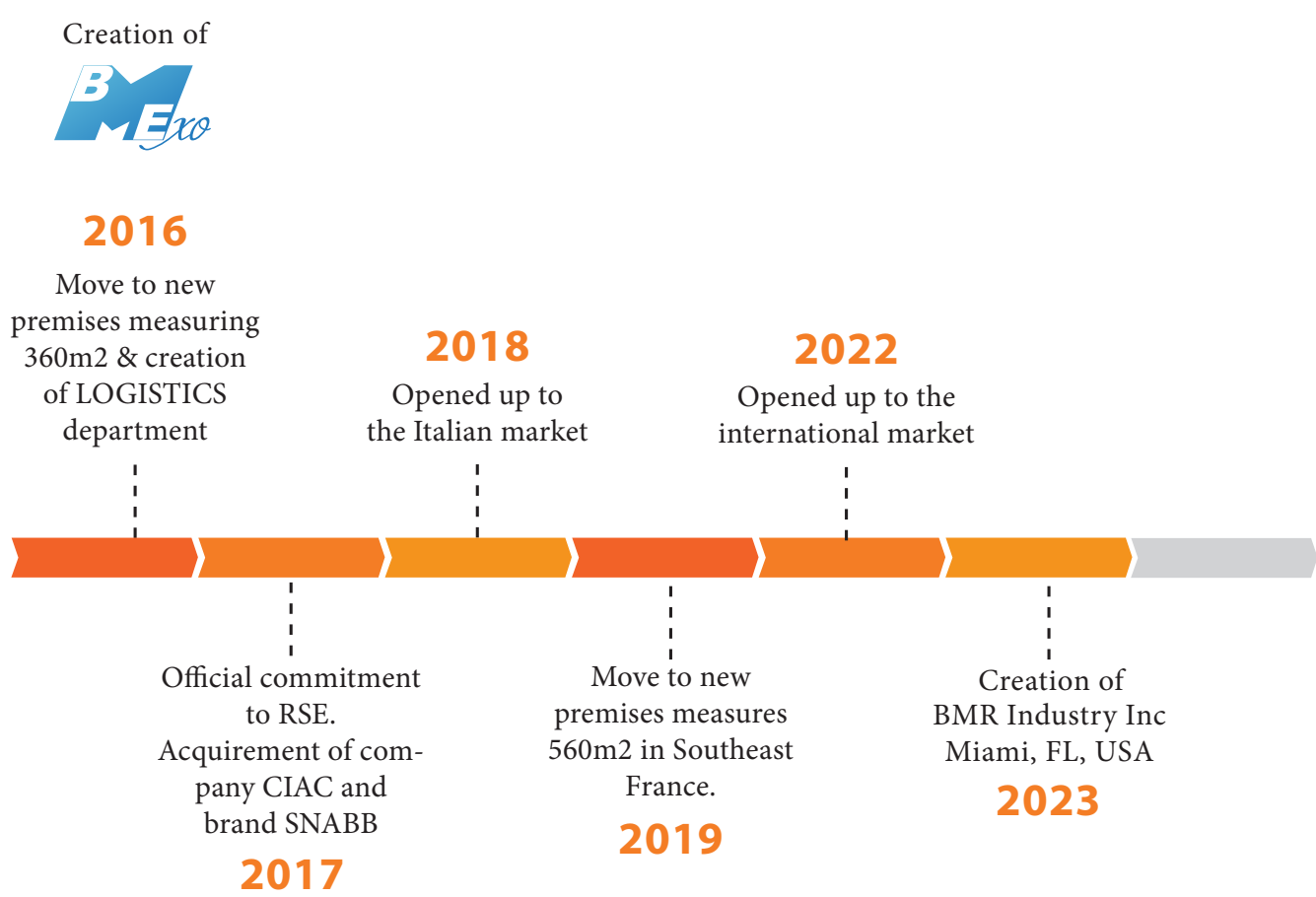
2015

PRESENTATION

BMR's industrial excellence model places its social and environmental commitments at the heart of its strategy. BMR is proud of its ambitions and its values, so it maintains its role of helping its customers through significant industry, economic and environmental changes and commits to acting as a high quality, conscientious, transparent, innovative and proactive partner at every stage of its value chain and towards all parties involved. BMR operates sustainably and responsibly every day: by developing and protecting its human workforce, growing its contribution to the economic and social development of local communities, while implementing circular economy.



Our history





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* BMR is not an approved company by AEROQUIP, BDF, GENERALMATIC, GRAPHOIDAL, MAC VALVES, O-I, PARKER, nor an official vendor.

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BMR SERVICES



On site maintenance

Reconditioning :

**Solenoid valves / Actuators / Dampers /
LINCOLN injectors / Grease nipples /
All IS machine parts / Cracking systems**

Installation of light curtains

Engraved bars, labels...



INTERVENTION SERVICE

Your Partner for Seamless Glass Production



At BMR, we are committed to ensuring the performance and durability of your glass container production machines, whether it's for tableware, jars, bottles, or flacons of all sizes. With our recognized expertise, we intervene at every level of the production machine to meet your specific needs and guarantee optimal efficiency of your equipment.

Comprehensive Coverage, Wherever You Are

We offer a full range of on-site maintenance services in France, Europe, and worldwide. Whether you need urgent repairs or system optimization, our experienced teams are ready to intervene quickly and efficiently.

ADVANTAGES :

+ Adaptation to your environment:

Our teams adjust to your specific needs and industrial constraints, ensuring tailored services.

+ On-site responsiveness:

With our fast intervention, we minimize your machine downtime.

+ Less machine downtime:

Our interventions help reduce production interruptions and improve the continuity of your operations.

+ Safety enhancements:

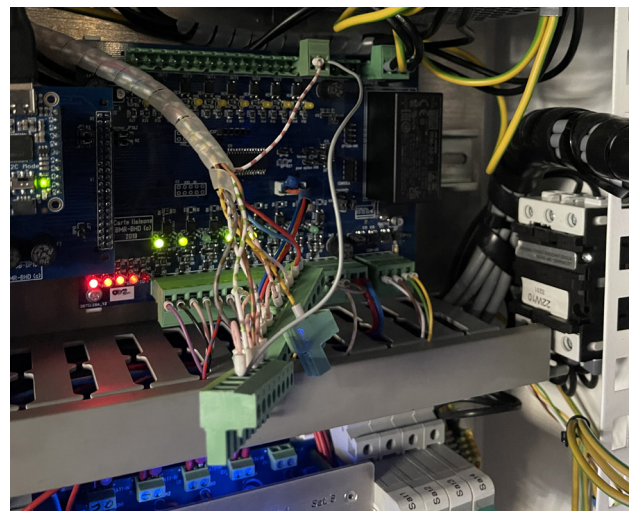
We install safety systems, including light curtains, and replace worn-out machine signage with engraved pictogram bars for clearer and more durable communication.

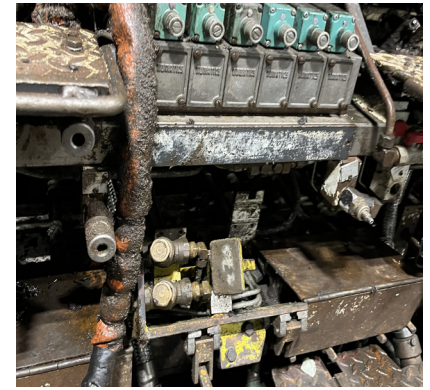
+ International mobility:

We intervene globally.

TYPES OF INTERVENTIONS

- **Comprehensive diagnostics:**
Problem identification, air flow optimization, after-sales service, and issue resolution on your machines.
- **Reconditioning and modification:**
Replacement or reconditioning of filters, valves, and SNABB components for enhanced performance.
- **Assembly and installation:**
Implementation of new components and systems to modernize your machines and improve efficiency.
- **Customized training:**
Training your teams on-site or via video for fast and effective knowledge transfer.





- BMR's touch :**
- + Personalized diagnostic
 - + Reduced machine downtime
 - + Integration of new technologies
 - + International expertise

Your Performance is Our Priority

Through our tailored intervention service, we help you optimize your production lines by ensuring increased responsiveness, well-functioning machines, and customized training. Our BMR teams are ready to step in to maximize your productivity and ensure the longevity of your equipment.

Maximize the productivity of your machines with our intervention and maintenance solutions. Contact us today to learn more about our intervention solutions and discover how we can assist you in continuously improving your glass container production lines on a global scale.





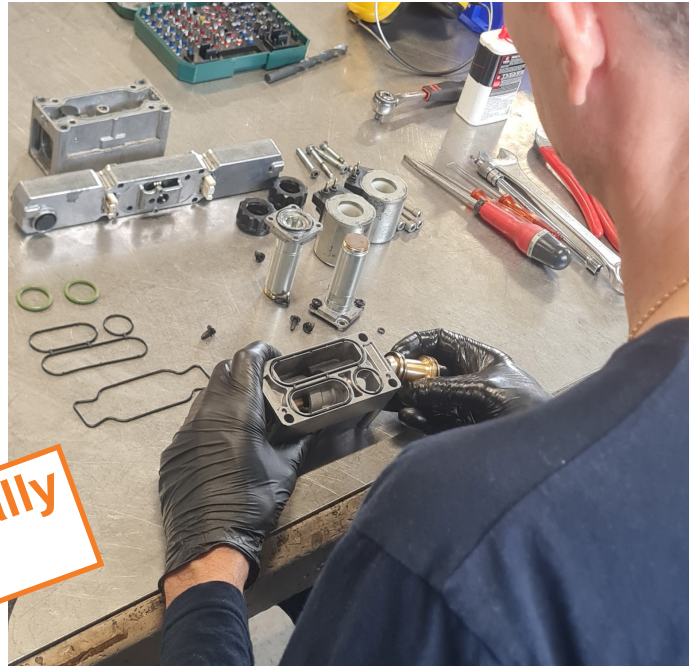
RECONDITIONING SOLENOID VALVES

Reconditioning of the whole set of solenoid Valves used in glassworks

- Numatics (mk8, mk15 et i34)
- Ross
- Generalmatic
- Bosch
- Emhart*
- Bottero*...

ADVANTAGES :

- + Reduction in purchasing costs
- + Operating costs are reduced
- + Fewer random breakdown with traceability
- + Fewer machine stoppages



+ Economical

+ Environmentally friendly

REDUCTION IN PURCHASING COSTS

As BMR manufactures or has access to all spare parts of various manufacturers, reconditioning a solenoid valve can be much cheaper.

CONTROL OVER COMPONENT MAINTENANCE

Our package includes:

- Delivery
- Inspection and testing
- Initial exterior cleaning
- Tracking engraving
- Disassembly
- Second cleaning of all components
- Replacement of all wear parts
- Reassembly
- Pneumatic test at low and high pressure (switch test and leak test)
- Electrical test (with measurement for voltage, excitation, and de-excitation intensity)
- Written report of any remarks with tracking file

REDUCTION IN MACHINE STOPPAGES

Some solenoid valves or pilots have lead times that can go sometimes of up to 10 weeks. This, as well as the fact that many factories use the same solenoid valve or pilot references may lead to challenging situations with a section that has shut down.

Our experience allows us to recondition over 60% of "unrepairable" components, enabling the shutdown section(s) to be restarted or avoid stoppage due to lack of spare parts.

CONTROL OVER RANDOM BREAKDOWNS

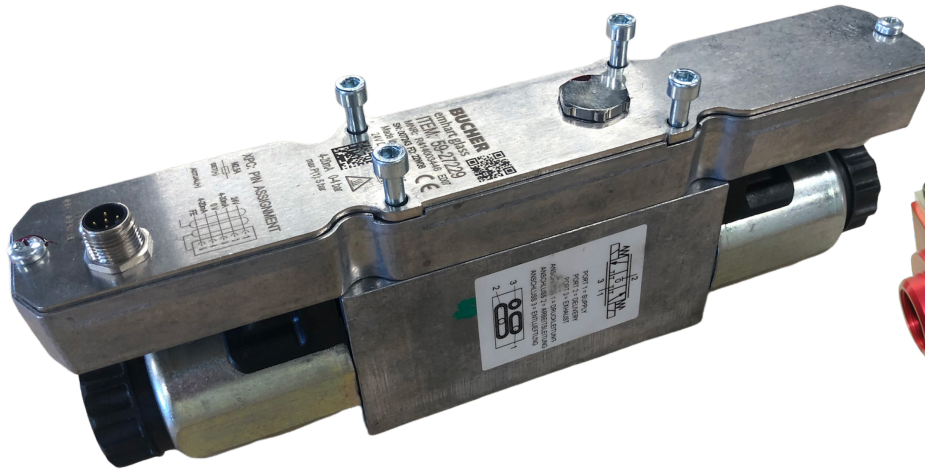
When reconditioning, the solenoid valves that go through our workshops are individually engraved with two letters corresponding to the factory that they came from, followed by the number of the repaired solenoid valve. All the references, remarks before and after the reconditioning, customer figures and data (customer summary sheet detailing the exact installation location of the solenoid valve, the date, time, team that changed the valve and the reason, etc.) are stored in an Excel file. This file is supplied with the delivery note for the reconditioned solenoid valves as well as in digital format by email.

Our most common overhauls for IS machines ::

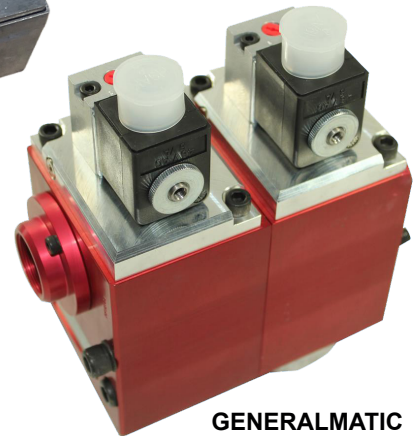
- Ross W7456A8332, D2173A5949, etc.
- EMHART* proportional valves
- BOTTERO* proportional valves
- ROSS proportional valves
- Numatics I34, I23, MK8, MK15 valves
- BV26 valves



BV26 Valves



EMHART* proportional valve



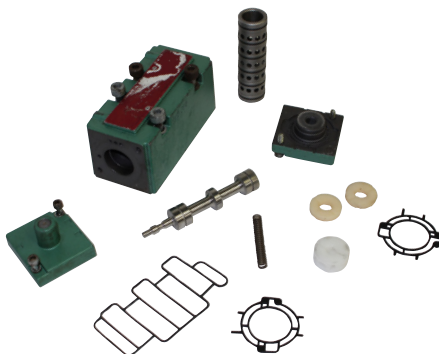
GENERALMATIC High pressure solenoid valve

BMR can also supply you with all spare parts, either standard or improved by our team:

- High temperature adhesive Socket seals specific for glassworks
- Bespoke draws/kits
- Pistons for ROSS valves
- Components/kits for I34RS made of brass
- Kits for BV26
- Kits for ROSS D2173A5949 (+ more economical)



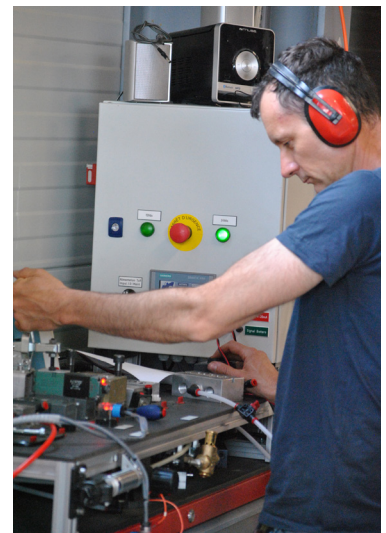
SP160524 I34RS piston



Repair kit for I34



BMRE-160427 BV26 kit



*BMR is not a company approved by brands BOTTERO and EMHART, nor an official vendor



ACTUATOR RECONDITIONING

Reconditioning of all actuators used in glassworks:

- Numatics
- Norgren
- BDF*
- Bimba
- Emhart*
- Martonair

ADVANTAGES :

- + Reduction in purchasing costs
- + Reduced operating costs
- + Fast lead time



DAMPER RECONDITIONING

Reconditioning of all dampers used in glassworks:

ADVANTAGES :

- + Reduction in purchasing costs
- + Operating costs reduced
- + Fast lead time

Mainly ex BSN and ENIDINE
(SP22287, ex. SP5695)



**BMR is not a company approved by brands EMHART and BDF, nor an official vendor*

INJECTORS RECONDITIONING



Mainly SL-42 and SL-44

Kits and spare parts on request

BMR also reconditions injector blocks

GREASE PUMPS RECONDITIONING



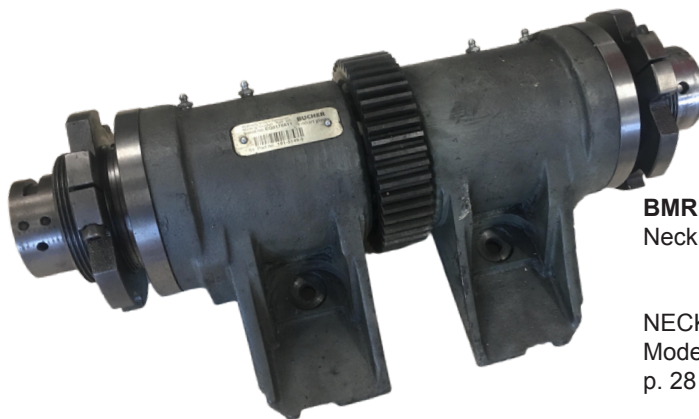
Mainly LINCOLN and GRACO

HYDRAULIC CARTRIDGES RECONDITIONING



BMRO-CART.GRAISSAGE:
S(4 SEALS, 1 SPRING, 1 SEGMENT)
OIS-14-770

ALL IS MACHINE PARTS RECONDITIONING



BMRE-191-5149-9
Neck Ring mechanism

NECKRING
Modernization and options are available
p. 28

**+ Supply of all reconditioning parts
(depending on availability and on request)**





ENGRAVED BARS, LABELS...

BMR manufactures engraved aluminum bars with symbols specifically designed for glass production machines. Unlike painted bars, our engraved bars are built to withstand the demanding environments of glass container manufacturing plants:

- Maximum Durability:

In glass production plants where temperatures are high and dirt (grease, dust) is prevalent, our engraved aluminum bars do not degrade like painted ones. The engraved symbols remain visible, ensuring that machine buttons and controls are always legible, even after years of use.

- Enhanced Safety:

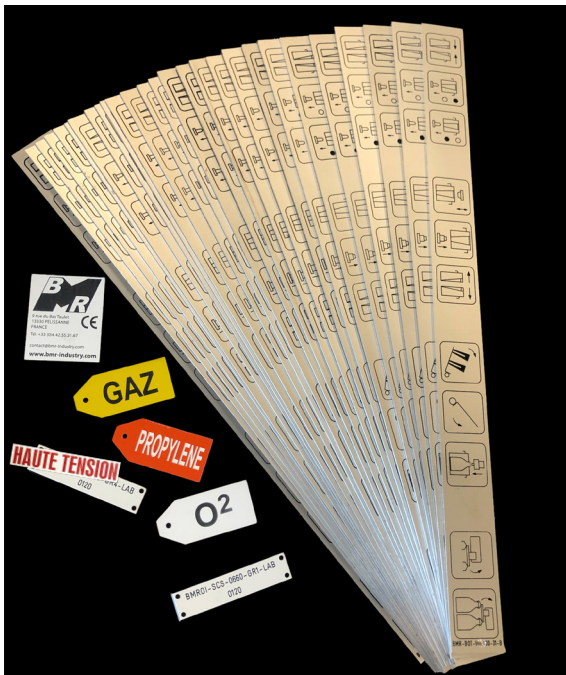
Engraved bars are essential safety elements. They allow operators to always know exactly what action each button corresponds to, reducing the risk of errors that could lead to accidents or machine breakdowns.

- Complete Customization:

We engrave custom symbols for each machine according to your specific needs. Whether for complex systems or simpler setups, our bars are tailored to meet your requirements.

- On-Site Installation:

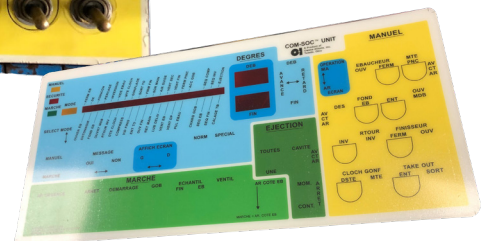
Our teams can also install these engraved bars directly in your plants, ensuring optimal placement and quick compliance.



engraved and painted plates for IS machines.



For more complex equipment, we also offer durable laminated panels, providing a long-lasting solution for machines requiring more detailed signage.



Engraving does not deteriorate over time

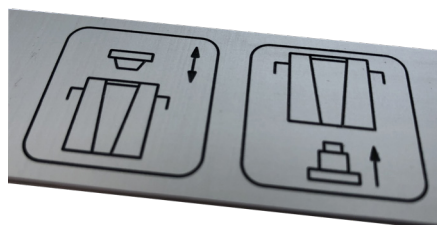


Engraving bars for bloc valves

Engraving on demand with YOUR pictograms

ADVANTAGES :

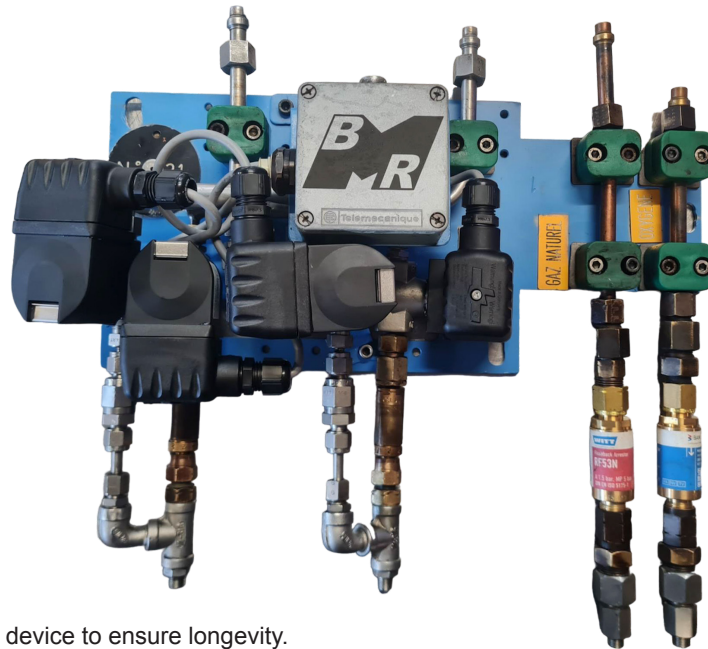
- + Superior longevity in extreme conditions
- + Permanent legibility of controls
- + Resistant to heat and harsh environments
- + Essential safety element for operators



Durable Solution for Glass Production Machines



RECONDITIONNING CRACKING SYSTEM



Reconditioning your device to ensure longevity.
Keeping the specific safety of the system :

- degreasing valves
- electrical checks
- leaks tested under pressure

**The BMR Touch :
TESTING LEAKS**

INSTALLATION OF LIGHT CURTAINS

Installation and configuration of light curtains

ADVANTAGES :

- + Adaptation onto existing electrical cabinets
- + Compliance with standards
- + Prior visit to site to design the best light curtain for the application



FULL SYSTEMS



Tilt table

Charpy impact machine

Test bench for standard and proportionnal valves

Proportional valve control cabinet

DCX V2 counting, filling and alignment system

Bespoke burner control cabinet

Greasing table



TILT TABLE



The BMR slide table is an easy-to-use device allowing operators to measure the release angle when items slide between themselves. This incline angle for containers made of glass, plastic, or metal enables the coefficient of friction to be calculated between the items.

Our device is unique thanks to its electric actuator and the precision of the laser sensor. The laser sensor features a diode and enables items to be placed closer and to detect the exact moment that the item starts to slide even with small and light objects.



TECHNICAL SPECIFICATIONS

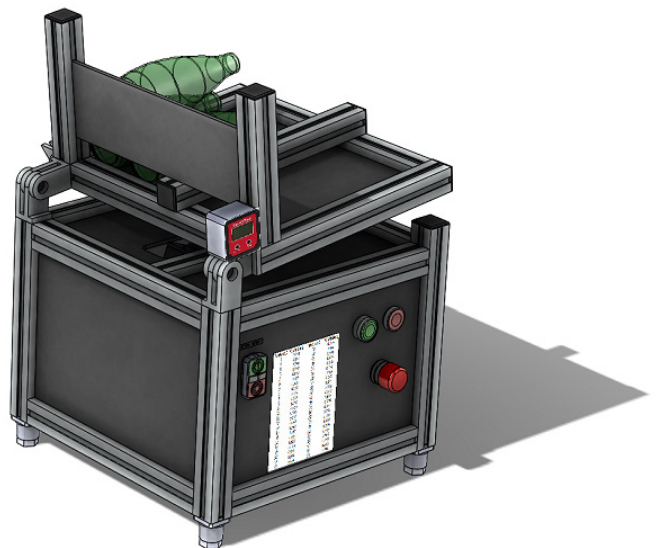
Container size: Standard plate fits diameters between 20 and 140mm. Any other dimension can be requested.

Speed: 3 actuator speeds – 1.9, 4 or 10mm/s or speeds going from 3 to 10 degrees per second.

Table base dimensions: 350x350mm

Weight: 10kg

Specific developments on request



CHARPY IMPACT MACHINE

Test the resistance of a glass bottle by striking it with a pendulum hammer.

ADVANTAGES :

- + Accurate thanks to its graduated wheel
- + Magnet-locking hammer
- + Economical
- + Easy to use



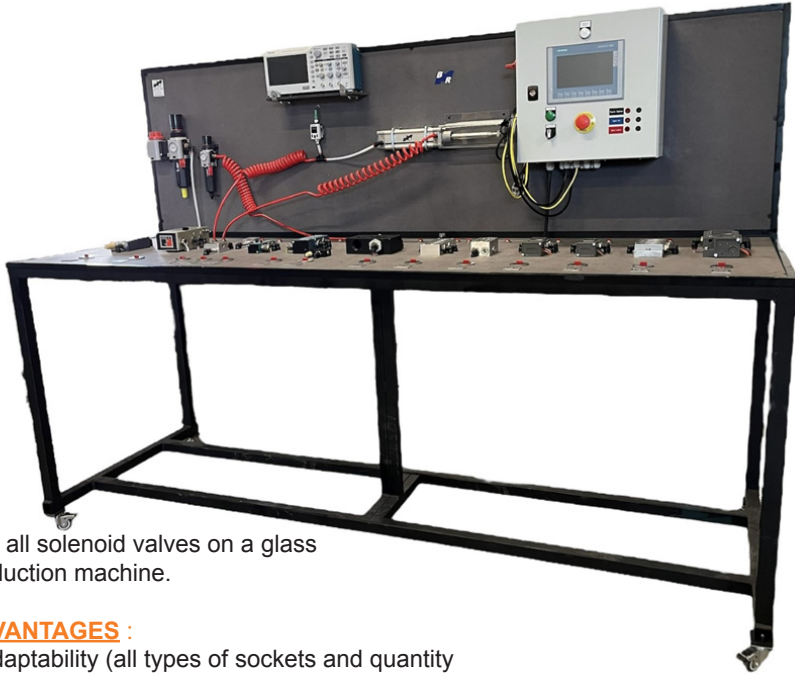
TECHNICAL SPECIFICATIONS

- Position adjustment for the height of the container being tested
- Impact speed adjustment with the strike angle
- Lockable in strike position

Specific developments on request



TEST BENCH FOR STANDARD AND PROPORTIONAL VALVES



Test all solenoid valves on a glass production machine.

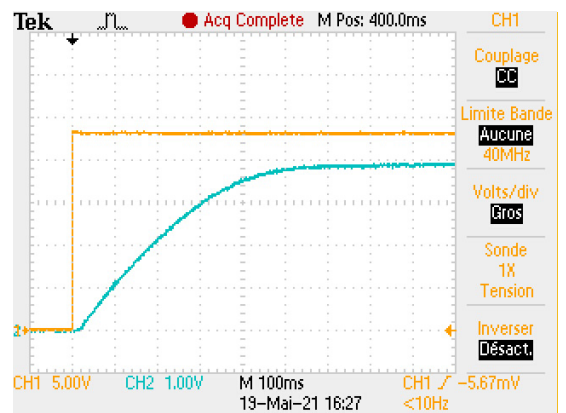
ADVANTAGES :

- + Adaptability (all types of sockets and quantity desired)
- + 2 modes: manual and automatic to cycle through the valves
- + Capacity to connect an oscilloscope to obtain response times and flow rates

**The BMR touch :
ADAPTATION TO YOUR NEEDS**

TECHNICAL SPECIFICATIONS

- Switch test
- Automatic cycling function
- Test for solenoid valves: standard 12 VDC / 24 VDC, proportional 4-20 mA / 0-10 Vdc and BOTTERO*
- Bespoke manufacturing available on request
- **Specific development on request**



PROPORTIONAL VALVE CONTROL CABINET WITH OR WITHOUT EXHAUST SOLENOID VALVE



USAGE AND CONFIGURATION

The system allows an all or nothing pneumatic control system to be turned into a proportional controlled system.

Specific developments on request



The cycle screen displays the cycle status in real time.

The Tempo and Pressure allow for the respective values to be adjusted of time in seconds with a decimal (e.g. 1.2s or 8.7s) and pressure in bars with a decimal (e.g. 0.1 bar or 3.6 bars).

The settings are adjusted by pressing the box showing the value with your finger.



DCX V2 – COUNTING, FILLING AND ALIGNMENT SYSTEM

This new version of our item counting system is using an updated technology thanks to its infrared camera control system that gives you full control over counting as well as complete control of alignment on the conveyor.

As the system is interconnected to your IS machine, it will automatically eject any item that is unaligned, touching another item or lying flat on the conveyor.

The new control interface provides an easier overview to optimally adjust your system and direct access to data using the ethernet connection, preferably, and Wi-Fi. The software is also one click away on your smartphone, tablet and computer.



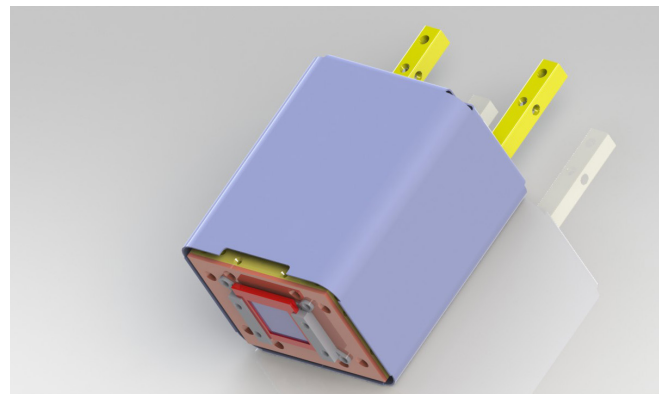
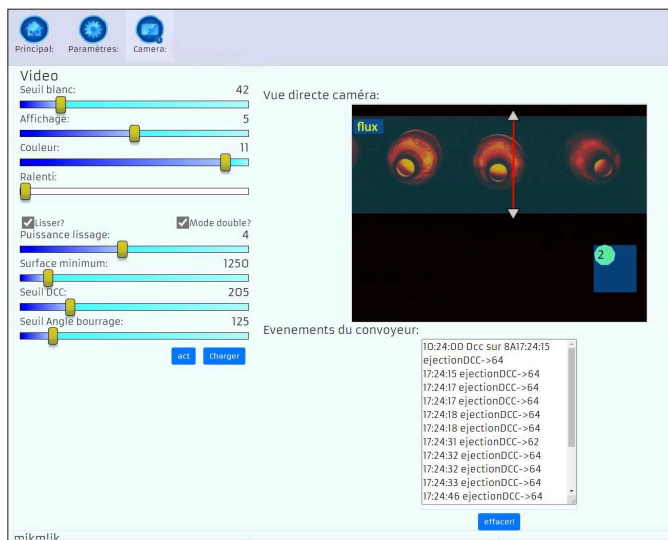
FEATURES

- Item counter
- Ejects articles that are stuck/lying flat
- Ejects articles that are unaligned
- Connectivity with IS machines
- Small dimensions: 200x200x100mm

FUNCTION AND USAGE

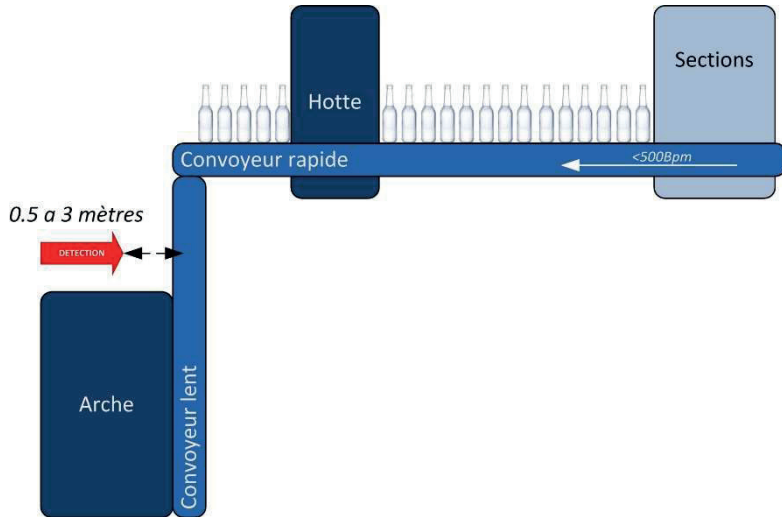
The system has been developed in order to adapt to any needs of our customers. Our version features water cooling, which allows it to be installed in harsh locations. Our air-cooled or non-cooled versions provide considerable ease of use in certain conditions. An ease of use that, even when far from the conveyor belt, this system will provide thanks to easy installation and user-friendly interface.

Only the settings integral to manufacture need to be adjusted by yours during production changes. Adjustments during manufacture will be able to be carried out during operation. Data are available on all devices at any moment. A connection to a global site monitoring system is also possible.



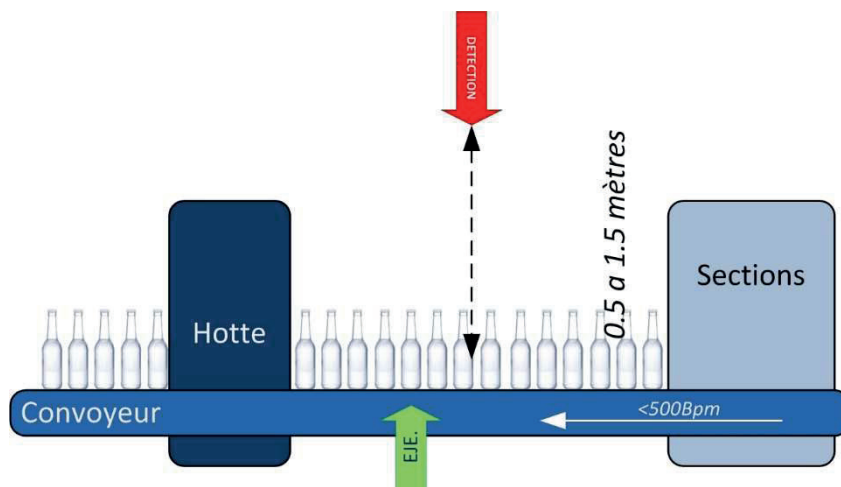
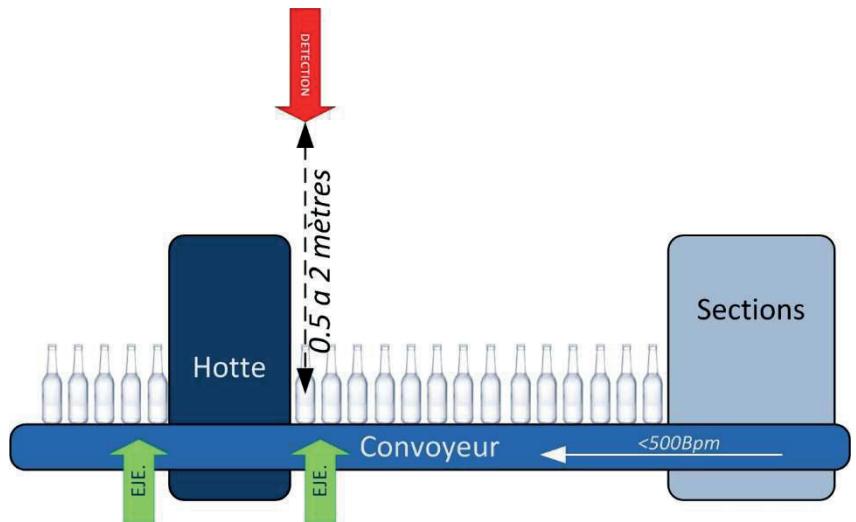
USES

Here are some examples of system usage:



Counting : The unit is placed just at the entrance to the arch, and here the bottles can be counted immediately on leaving, there is no precise distance, in this case we can place the unit quite far away, against the arch. We could count the bottle just when they exit the last section, marking the ejected counts as pressing errors or similar.

Filling : We can place the unit just in front of the hood, in filling mode, and it could trigger a magnetic controller or Solenoid valve, or even two. Filling is halted and the bottles are ejected to avoid the risk of over-filling. We can use this mode by placing the sensor at the end of the machine, or even on the conveyor and as such detect partial or global conveyor filling.



DCC Detection : As the name implies, this mode is used for ejected bottles that are stuck together or lying down, and is the most resource-intensive mode that requires the most accurate configuration. The unit must be closer to the conveyor. And the optical configuration must be set very precisely. But it will work even with cycles specific to machines that produce small, light articles (beer).

Usage is not limited to these three modes, the equipment presented can be applied in all detection/ejection application.

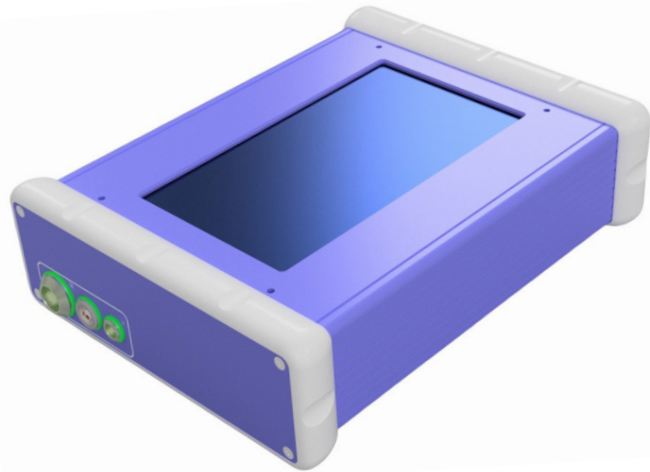


MULTISENSE



The MULTISENSE SENSOR-TESTER NGV2024 is a portable and user-friendly device designed to test sensors used in process control equipment. It can be used at the machine side or in the workshop and is suitable for non-electricians, simplifying the validation of sensor performance.

This self-powered, electrically insulated device provides clear visual feedback on sensor operations and includes built-in protection against short circuits to prevent internal damage.



ADVANTAGES :

- + Simplifies sensor validation for non-specialist users
- + Robust protection against short circuits to ensure device longevity
- + Quick analysis and visual feedback on sensor conditions
- + Customizable parameters to accommodate different sensor types
- + Ability to store and recall previous sensor tests for comparison

TECHNICAL SPECIFICATIONS

Power Source: 18650 Li-ion battery, rechargeable via USB-C

Charging Input: USB-C PD with included adapter

Measurement Range: 0R to 470R

Display Options: Continuous ("freerun") or triggered display mode

Memory: Three slots for recording and replaying sensor data

Connectivity: Wi-Fi for remote access

Operating Temperature: Standard workshop conditions

DIMENSIONS

Size: Approximately 63 × 179 × 52 mm (2.5 × 7.1 × 2.1 in)

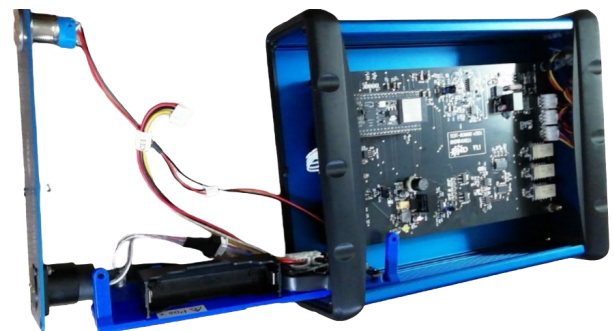
Weight: Compact and lightweight for handheld use

USES

Validation of sensors in glass production equipment (e.g., O-I, Heye)

Detecting shorts, impedance issues, and ground leaks in sensor lines

On-site diagnostics and workshop testing of plunger cartridges and other control components



Replaceable 18650 Li-ion battery for extended operation

FEATURES

Handheld, portable design for use in workshops or directly at machines



Easy-to-use interface requiring minimal technical expertise



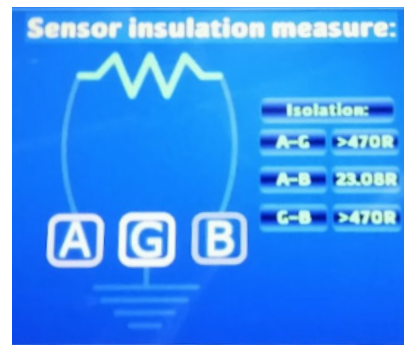
Adjustable settings for offset, attenuation, and filtering



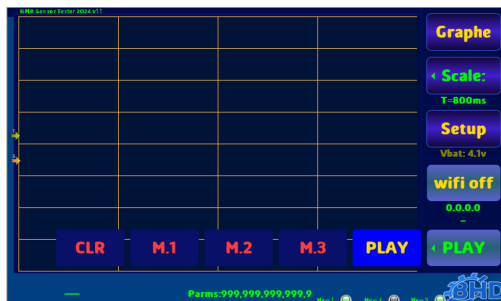
Real-time display of sensor curves with customizable trigger settings



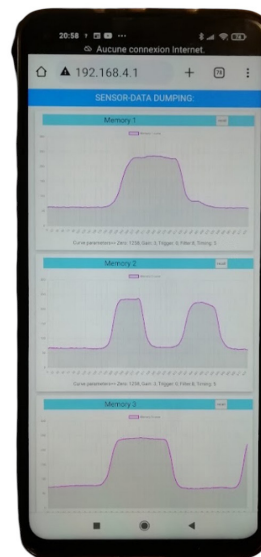
USB-C PD charging port with battery status indicators (75% and 100%)



Internal measurement mode to detect impedance and short-to-ground conditions



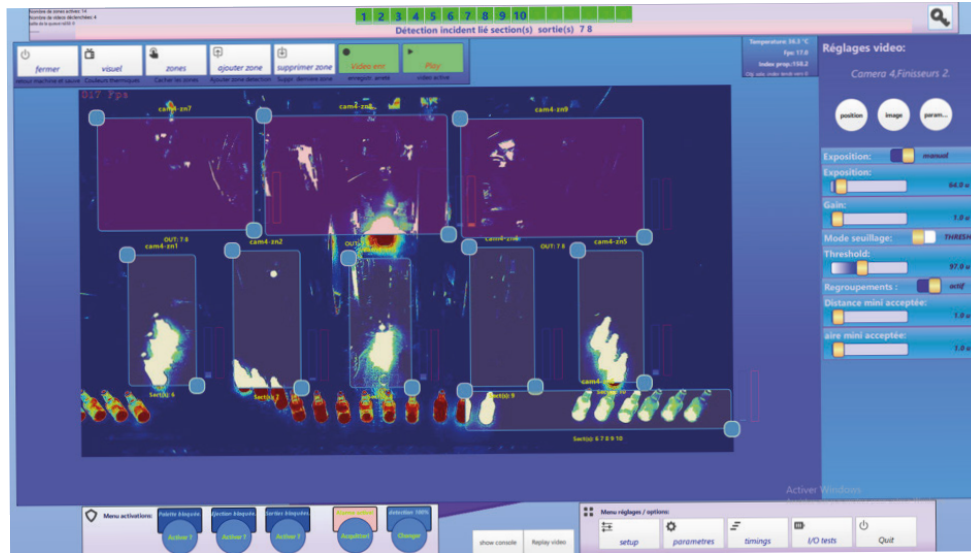
Three memory slots for recording and recalling sensor curves



Wi-Fi connectivity for remote viewing and data transfer to computers/mobile devices



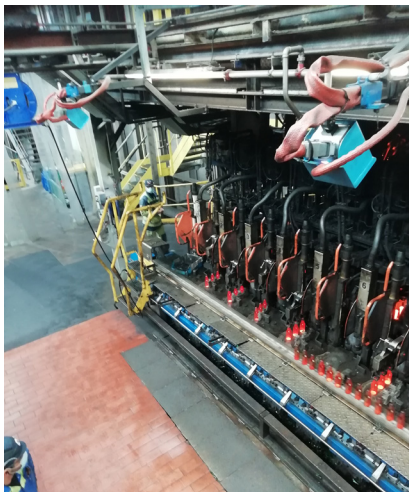
Sentinellis® SYSTEM : Complete monitoring solution for glass manufacturing



The Sentinellis® System is a safety-focused monitoring solution designed to protect glassmaking processes and their environments from potential hazards, such as fire and mechanical failures. It continuously oversees operations, detects abnormal situations, and triggers rapid protective actions. By integrating advanced camera units and a centralized control base, the Sentinellis® minimizes the need for human intervention, ensuring equipment safety and operational continuity.

ADVANTAGES :

- + **Enhanced safety:** Detects and responds to hazards before they escalate, reducing downtime and equipment damage
- + **Minimal human intervention:** Automated responses ensure a quick reaction to critical incidents
- + **Versatile application:** Can monitor multiple areas like the furnace floor, gob delivery, and conveyor sections
- + **User-friendly interface:** Simplified setup and operation through the touch screen display
- + **Scalable:** Supports integration with additional units and networked systems for site-wide safety coverage



USES

- Gob delivery and chute monitoring: Ensures smooth glass flow and triggers safety actions if blockages occur
- Conveyor and section monitoring: Detects jams and controls section shutdowns to prevent hazardous build-ups

TECHNICAL SPECIFICATIONS

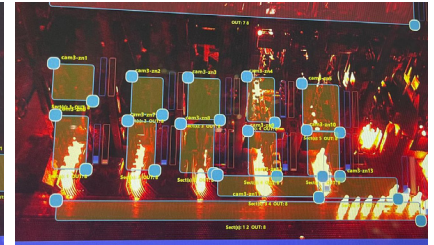
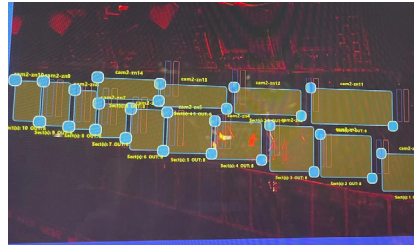
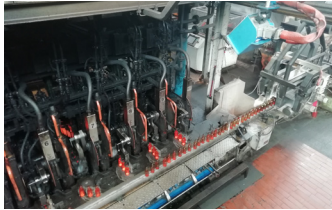
- Monitoring capacity: Up to 5 cameras, each with 15 independent detection zones
- Control base: 22-inch touch screen with remote cabinet for centralized operation
- Camera specifications: NIR technology for accurate detection under challenging conditions
- Frame rate: 120 fps for rapid detection and stop-motion analysis
- Alert system: Visual and audible alarms, machine cutoff, and optional water deluge activation

DIMENSIONS

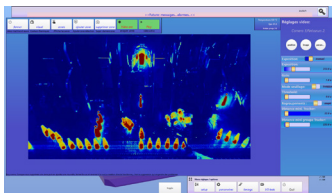
- Camera unit: 200 × 200 × 120 mm (aluminum housing)
- Control cabinet: 500 × 500 mm

FEATURES

120 frames-per-second capture rate for high-speed anomaly detection
Compatibility with a wide range of industrial glassmaking machinery
Integrated response triggers including audible alarms and machine shutdowns



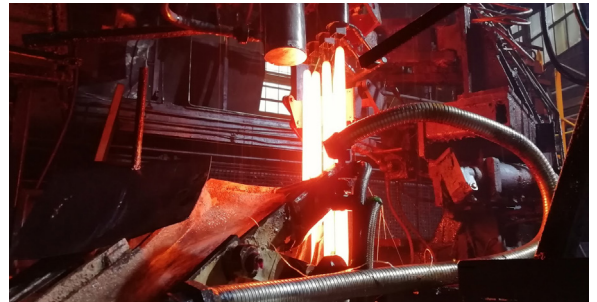
Configurable detection zones for precise control and targeted monitoring



Continuous monitoring of up to 5 sections per camera for maximum process oversight



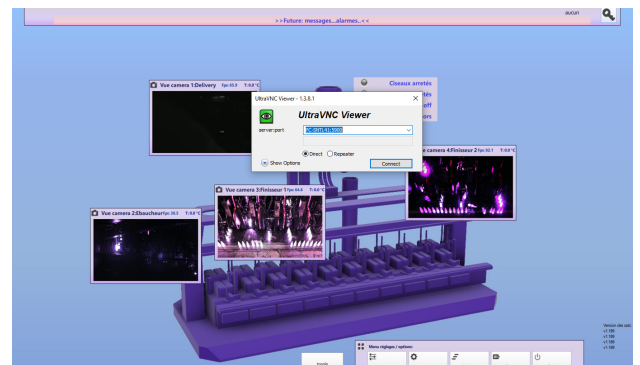
Equipped with Near-Infrared (NIR) cameras for early fire detection and mechanical jam alerts



Automatic response capabilities, such as cutting glass flow, activating alarms, and initiating safety measure



Touch-screen operator interface with a 22-inch display for easy system setup and management



Ability to connect multiple Sentinels® units across the site for coordinated safety actions



Centralized system with a remote cabinet for efficient data management



The Sentinels® System is an essential tool for modern glass manufacturing, combining proactive safety measures with advanced monitoring technology to safeguard your processes and maintain operational efficiency.



BESPOKE BURNER CONTROL CABINET

Development and manufacture of a control system for oxygen, gas and acetylene on request.

The base service includes:

- Development
- Valves, tensioners, manometers, flowmeters, control boxes, regulator, filters, tubes, etc.
- Manufacture and testing in our workshop



COMPACT GREASING TABLE



This compact greasing table is designed for preparing lubricants for the hot end of glass production lines.

ADVANTAGES :

- + Robust and Mobile:**
Built with durability in mind, this unit is easy to move and transport.
- + Easy to Clean:**
Made from stainless steel, the table is easy to maintain and clean.
- + Two Grease Separation:**
Allows for the handling and separation of two different types of grease.
- + Brush Drying Function:**
Equipped with a brush drying system for greater convenience.
- + Ergonomic Design:**
Offers improved usability and comfort during operation.



TECHNICAL SPECIFICATIONS

- 2 Grease Collection Trays: Holds 2 grease pots with a diameter of 140mm.
- 1 Brush Drying Tray
- Compact Size: Mounted on wheels for easy mobility.

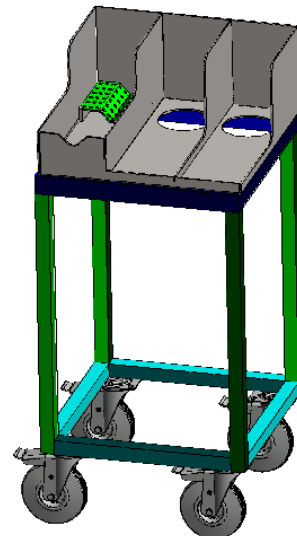
MATERIALS

Stainless Steel (Inox)

DIMENSIONS

Width: 45 cm
Depth: 45 cm
Table Height: 80 cm

**The BMR touch :
CUSTOM DESIGNS**
available upon request to meet specific needs.



MECHANICAL PARTS



Shock absorbers

Ripper

Feeder

Mold

Scissors

Gob guide

Funnel holder

Ventilation

Leaf springs

Plates

Spraying

Scoop

Stacker

Miscellaneous



SPRAYING PLATES

Upon request

THE MOST COMMONLY USED ON IS MACHINES :

BMR160913

Spraying plate SE24235

BMR160913D

Modified right spraying plate

BMR160913G

Modified left spraying plate

BMR1802261D

Modified right spraying plate with 5° angle

BMR1802261G

Modified left spraying plate with 5° angle



SPRAYING FEEDER SUPPORTS FOR SCISSORS

Upon request

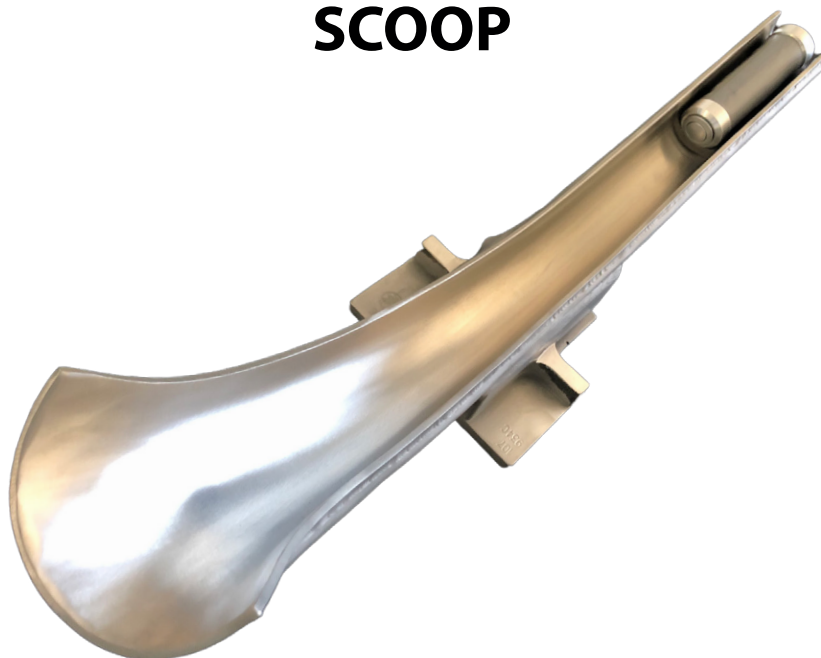


GRAPHOIDAL EQUIVALENT SPRAYER Right and Left



BMRG-SE24502-3

SCOOP



Code	Libellé	Image
BMRBDF-523-5135	Scoop 523-513	
BMRE-535-1175	SCOOP HOLDER-LOWER	
BMRE-535-1176	SCOOP HOLDER-UPPER	

*BMR is not an approved GRAPHOIDAL brand company, nor an official dealer



SPRINGS AND LEAF SPRINGS



All types and shapes can be custom made

THE MOST COMMONLY USED ON IS MACHINES :

BMR-1911834

Leaf spring 112.7mm ring mould arm SG
diam 63mm



BMRE-23-5527

Leaf spring 106mm ring mould arm DG
compatible ref Emhart* 23-5527 (+ economical)



BMRE-23-5527-A

Leaf spring 106mm ring mould arm DG
ref Emhart* 23-5527 (identical standard version)



BMRE-23-5527R

Leaf spring 106mm ring mould arm DG
Stiffer ref Emhart* 23-5527 Bottero* A223-5527X



BMRE-235681

Leaf spring 128mm



BMRE-236661

Leaf spring 134mm ring mould arm
diam 83mm



BMRE-236885

Leaf spring 122mm



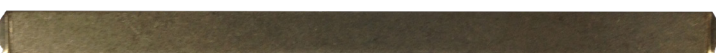
BMROI-16797A

Leaf spring for transfert arm 135mm reinforced



BMROI-16798

Leaf spring for transfert arm 158mm



Sale by the roll possible on request by 10 meters (Ref. BMR-L-10.55-10M-0.8)

**BMR is not an approved EMHART or BOTTERO brand company, nor an official dealer*

ENIDINE - ADJUSTABLE SHOCK ABSORBER



TECHNICAL SPECIFICATION

Ref.	OEM	Replacing	
SP22287	OEM2.0X2-PD-3010320	SP5695	OIS-19-976-C
SP2288	OEM2.0X2-PD-3010320		OIS-19-996-C
SP2289	OEM2.0X2-PD-3010320	SP9281K / SP9281-1	

MORE...

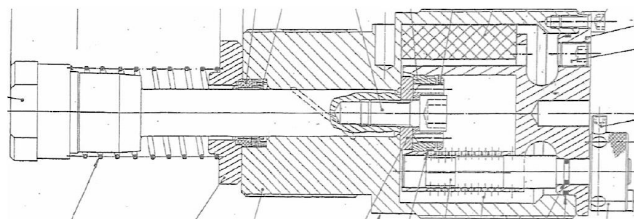
BMR-BTAM-1

Test bench for shock absorber

REP-AMORT-2

Shock absorber reconditioning
see p.10

O-I / BSN - Shock Absorber L303-010323 GR 2 DECELERATOR ref OI: 6034198





MODERNIZED NECK RING



Enhance performance and durability of your glass production equipments with the modernization of the Neckring mechanisms, an essential component in the production of containers such as bottles, jars, and flasks:

This solution replaces the traditional simple Neckring with a modern ring that incorporates bearings, ensuring smoother and more efficient operations. This improvement eliminates the need for blocking levers, reducing wear and tear, and significantly extending the service life of the mechanisms

ADVANTAGES :

+ Enhanced Durability:

The integration of bearings significantly increases the longevity of the Neckring mechanism, reducing maintenance needs and machine downtime.

+ Smoother Operation:

By removing the blocking levers, our new Neckring system enables a more fluid and efficient glass forming process, improving overall production efficiency.

+ Reduced Wear and Tear:

The absence of traditional blocking levers means fewer mechanical failures and longer periods between necessary servicing.

+Improved Machine Reliability:

By upgrading to a bearing-based Neckring system, you ensure that your machines run more reliably, minimizing the risk of costly production halts.

**Modernization
with Bearing Rings**



NECKRING MECHANISM SPACING SHIM

The spacing shim for the neckring mechanism is designed to facilitate adjustments in the mold spacing according to the specific neckring being produced on the machine.

ADVANTAGES :

+ Simplifies a Tedious Process:

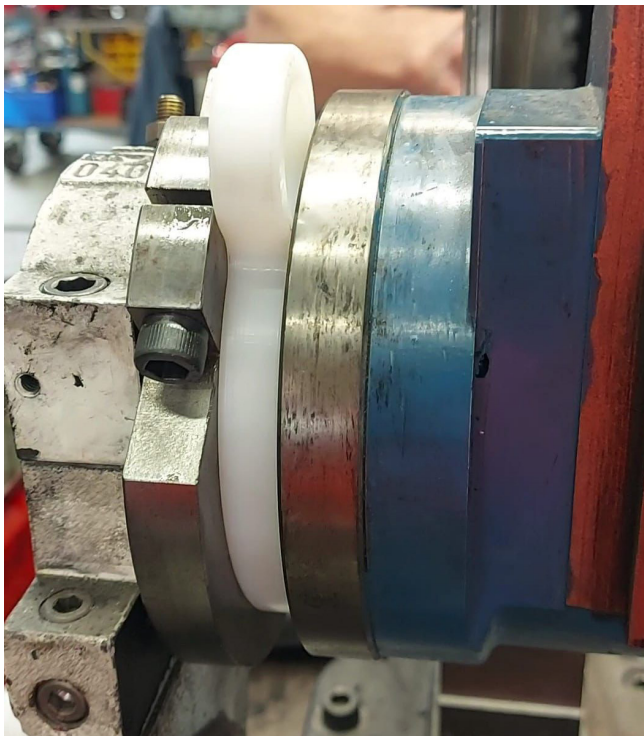
The conventional method involves two opposing screws with specific torque requirements, which can loosen over time, and may lead to broken screws.

+Significant Time Savings:

This solution is approximately 10 times faster than the original mounting process, significantly reducing setup time.

+ Durable and Reliable:

Minimizes the risk of screw damage and loosening during operation.



MODELS

Thickness (mm)	BMR Ref.	Color
8mm	BMR-EMDB-EP08	Blanc
11mm	BMR-EMDB-EP11	Brun rouge
13mm	BMR-EMDB-EP13	Bleu
14mm	BMR-EMDB-EP14	Blanc
15mm	BMR-EMDB-EP15	Jaune
16mm	BMR-EMDB-EP16	Rouge
18mm	BMR-EMDB-EP18	Vert
19mm	BMR-EMDB-EP19	Gris
20mm	BMR-EMDB-EP20	Noir



SETTING SYSTEM FOR NECK RING MECHANISM

BMR-MDB-SYST

System allowing to adjust the neck ring mechanism setting

ADVANTAGES :

- + adaptable to any device on IS MACHINE
- + less time to adjust neck ring mechanism
- + less job change time

Ask us for your own size



TECHNICAL SPECIFICATION

Size: about 98mm - 3" 7/8

Setting : 5/16 CHC Key

Data may be changed without warning

MATERIALS

Steel S H

NECK RING ANGLE MEASUREMENT

This system allows to measure the angle of the neck ring mechanism and allows to know the position of the mechanism

ADVANTAGES :

- + easy to use
- + adaptable to all mechanism



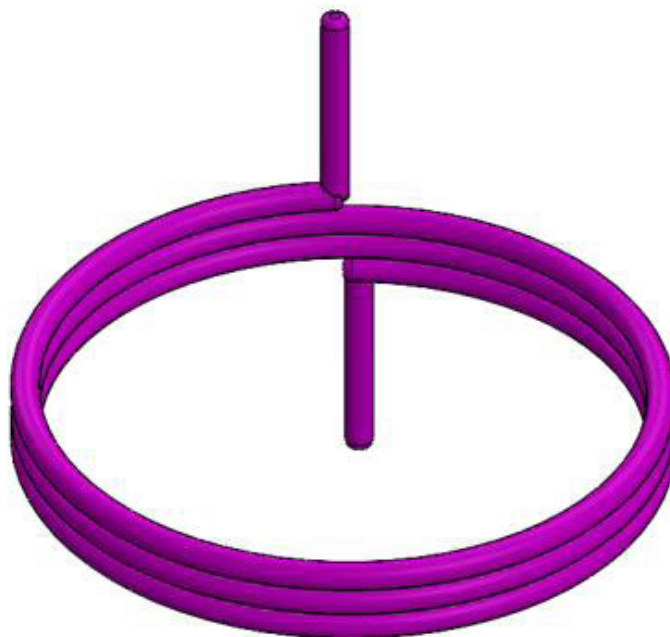
Available in plastic and steel

SPRING FOR ABL CRACKING SYSTEM

BMR-RES32-10:
Steel torsion spring facing ABL
diam 75mm

ADVANTAGES :

- + More resistant
- + Longer lifespan



TECHNICAL SPECIFICATION

Characteristics: Tension, compression or torsion spring which are subjected to high static tension or slightly dynamic tensions

Data may be changed without warning

MATERIALS

Steel S H





ASSEMBLY TAKE-OUT TONG HOLDER



BMRE-191-9535-2

BDF* CYLINDER BASE SEALS

BMRBDF-E-19-276



BMRBDF-E-19-2765



MECHANICAL PARTS

COOLING PLATES

Plates made on request

ADVANTAGES :

- + Improved airflow
- + Easy to install

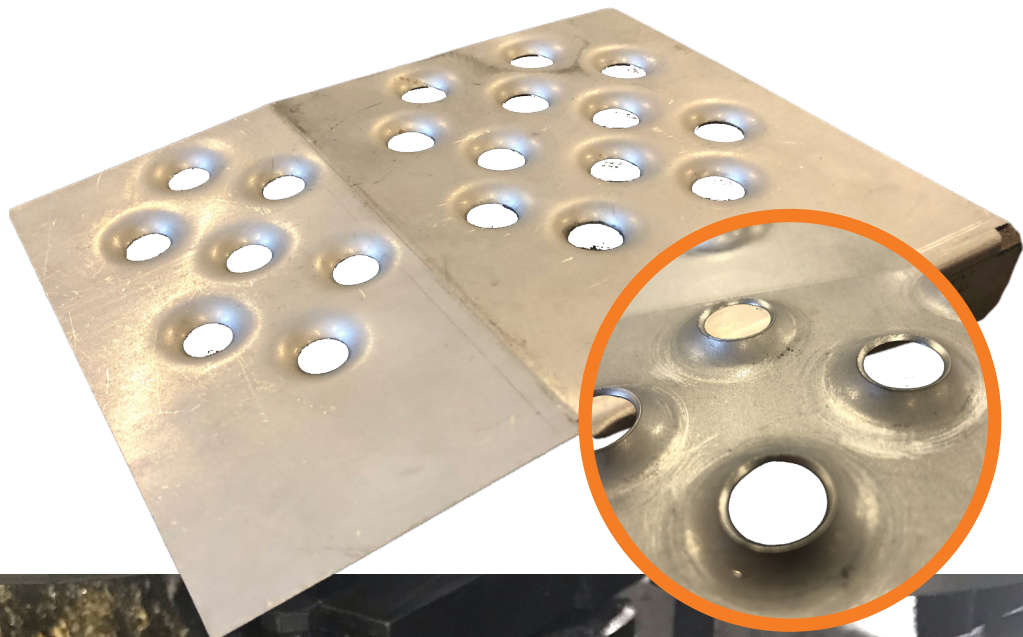
MOST COMMONLY USED ON IS MACHINES :

SP211124-D

Straight cooling plate for IS machine blank side mold

SP211124-G

Left cooling plate for IS machine blank side mold





VARIABLE EQUIPMENT SPARES



INSERTS



MECHANICAL PARTS

ASSEMBLY UPPER CC



ASSEMBLY LOWER CC



ASS. INSERT HOLDER



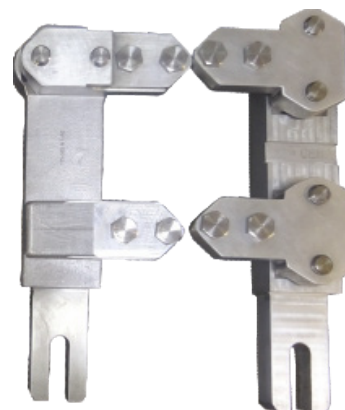
**QUICK CHANGE
CARTRIDGE**



ADJUSTING PLATE

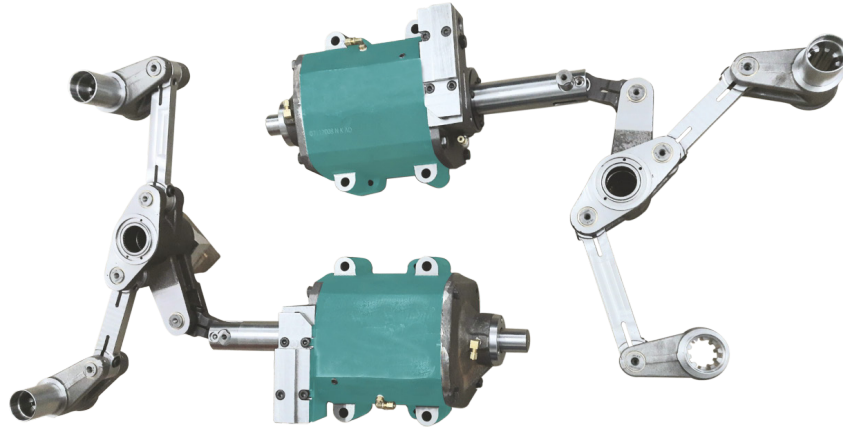


SHEAR BLADE

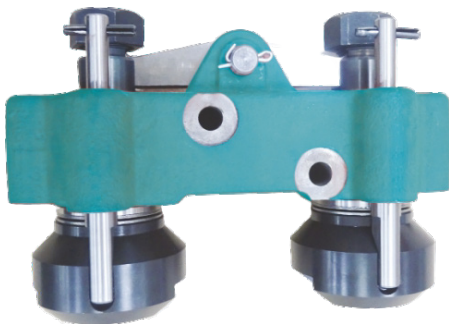




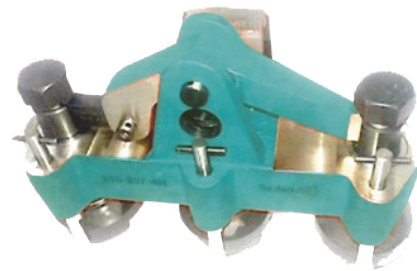
MOC LINKAGE



BAFFLE ARM

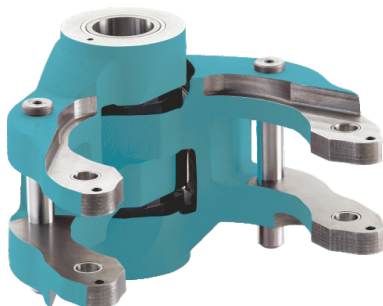


DG



TG

BLANK MOLD HOLDER



DG



TG

MECHANICAL PARTS

FUNNEL ARM



DG

TG



NECK RING HOLDERS



DG

TG



BLOW MOLD HOLDER



DG

TG





TAKE OUT TONG HEAD



DG



TG

MECHANISM



Baffle
Mechanism



Funnel
Mechanism



Blow head
Mechanism



Invert
Mechanism

REPAIR KITS



ELECTRICAL COMPONENTS



Reinforced electrical bundles
O-I Solenoid valve control board
Emergency stop button
Metal button
Switches
Bundles



REINFORCED ELECTRICAL BUNDLES SPECIAL CRACKING / HIGH VOLTAGE

ADVANTAGES:

- + Resistant
- + Reliable through time
- + Lifespan
- + On-site EMHART* replacement



ADVANTAGES:

- + Resistant
- + Reliable through time
- + Lifespan
- + On-site LINDE* replacement



THE MOST COMMONLY USED:

BMR-CPHT-F-3-5

ABL connector high voltage female for refractory washing with cable length 3m PCS-3-761

BMR-CPHT-F-3-5-SP1

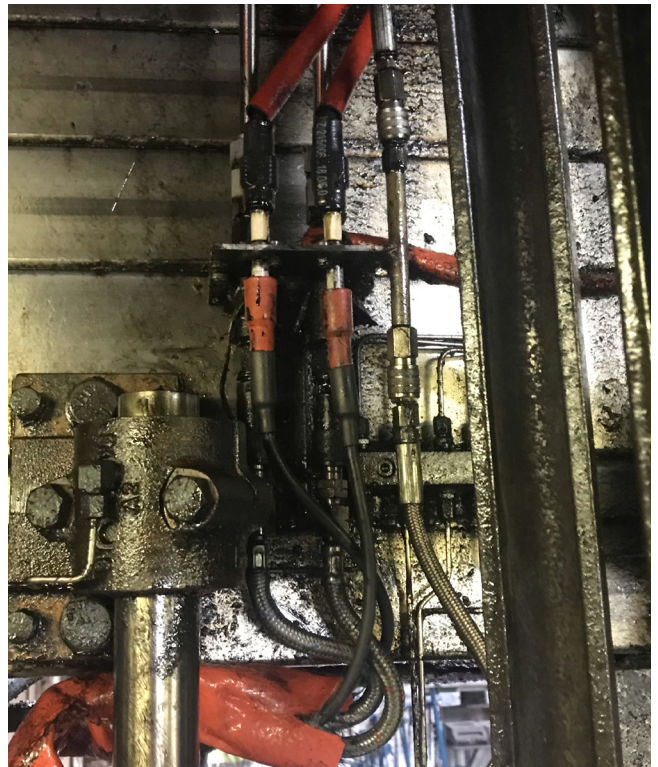
ABL connector high voltage female for refractory washing STRAIGHT with cable length 3m PCS-3-761

BMR-CPHT-M-1.5-5

ABL 5mm cable high voltage for refractory washing male connector Lg 1.5m reinforced PCS-3-763 reinforced

BMR-CPHT-M-1.5-5-SP1

ABL 5mm cable high voltage for refractory washing male STRAIGHT Lg 1.5m reinforced PCS-3-763



Breaking
of the original cable



THE MOST COMMONLY USED:

SP220511

High voltage bundle 1.2m with straight connector – elbow connector

SP220512

High voltage bundle with 6m cable and straight connector

*BMR is not a company approved by brands EMHART and LINDE, nor an official vendor

ELECTRICAL COMPONENTS

THE MOST COMMONLY USED ON-SITE FROM EMHART:

SP1312171

Bundle with 10 pin connectors, pivot cable slip arm

SP10081A

Specific bundle with Harting connector for moulding block

BMROI-SCS-051-XXX

Master resolver bundle SCS-051 reinforced (XXX= length)

BMROI-SCS-0652

Drop bundle scoop cut

BMROI-SCS-0653

Drop bundle scoop cut. High temperature resolver cable

BMROI-SCS-0659

Bundle with 2x 10 pin connectors and two square solenoid valve heads

BMROI-SCS-0660

Power bundle with 2 straight 4-pin connectors, 1.4m minimum reinforced

BMROI-601-5056-0120

Valve supply bundle 1.2 m

BMROI-CS2-0220-GR16

Reinforced solenoid valve control bundle length 5.5m

BMROI-PCS-0204

Bundle for plunger sensor

BMROI-PCS-028

Reinforce funnel bundle with high temperature cable and reinforced insulated shielding



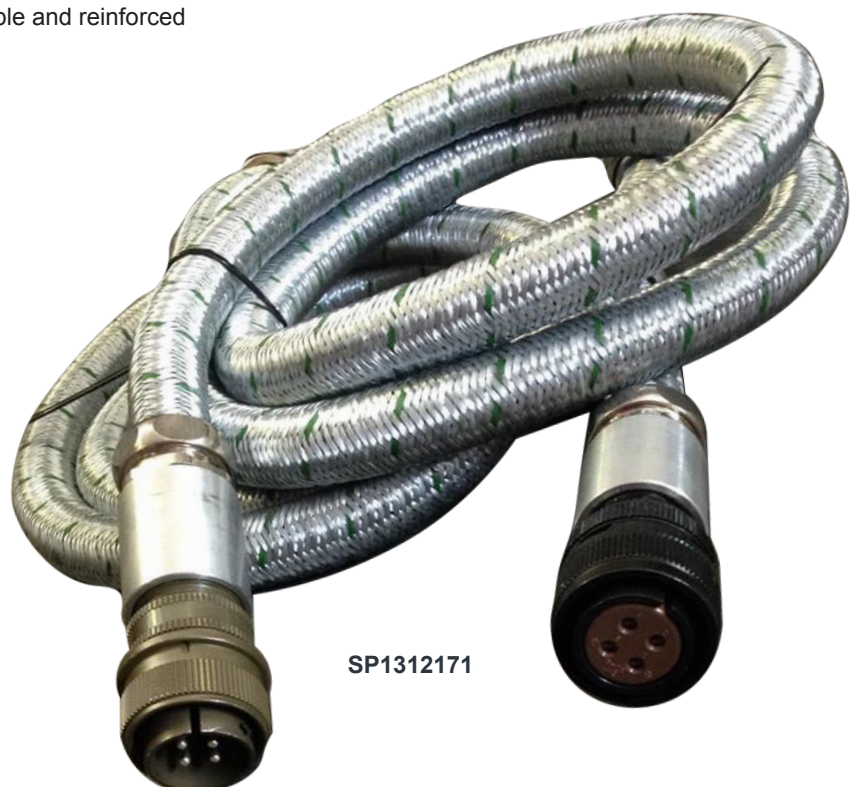
BMROI-SCS-0659



BMROI-PCS-028



SP10081A



SP1312171

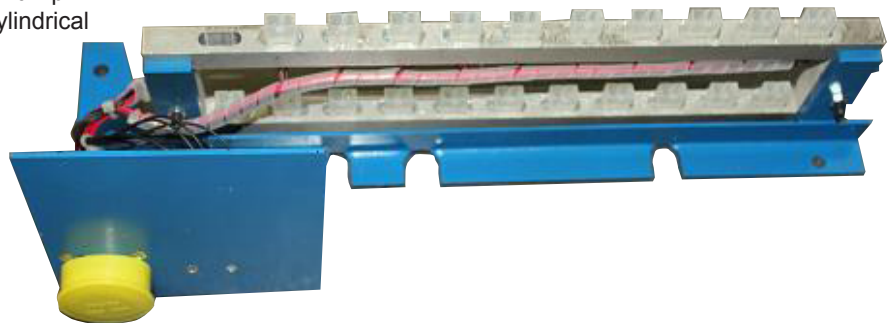


SOLENOID VALVE CONTROL BOARD FOR IS MACHINE BMR SP12069

The board is used for splitting the connection in order to connect several cables with cylindrical connectors to solenoid valve heads. Originally with a printed circuit, micro-solder and mini connectors, We replace the ensemble with more resistant 2-pin connectors directly connected to a single cylindrical connector.

ADVANTAGES :

- + More robust
- + Removal of connectors
- + Higher temperature resistance
- + Removal of false contacts



Board features exactly the same setup as L905004 with round socket

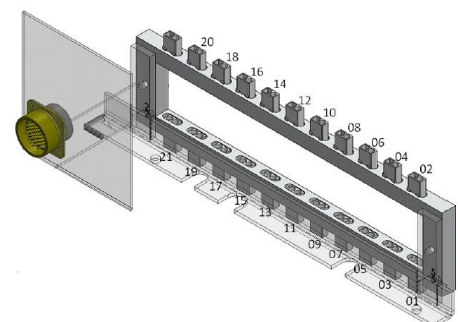
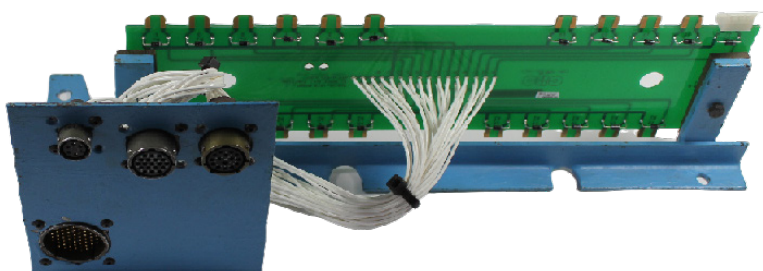
Specifications may change without warning

MATERIALS

Chassis made of folded steel with high temperature resistant blue paint
Connector support made of aluminium to lighten the structure.
High temperature wiring

REPLACES BOARD REF L905004 FROM
I-O MACHINES

DIAGRAM



ELECTRICAL COMPONENTS

BMR PANEL BUTTONS FOR EMHART* MACHINES



RECURRENT PROBLEM

Buttons "burnt" by clips or bottles

BMR SOLUTION

Replace the plastic button head by an aluminium one

ADVANTAGES:

- + Lifespan
- + Reduction in machine stoppages
- + On-site installation with original GE P9MSM button



SP150511

Aluminium button head for GE P9MSM Emhart* finisher panel



SP160516

Aluminium button for finisher panel Emhart* one to be installed on GE P9MSM

PUSH BUTTONS EQUIVALENTS

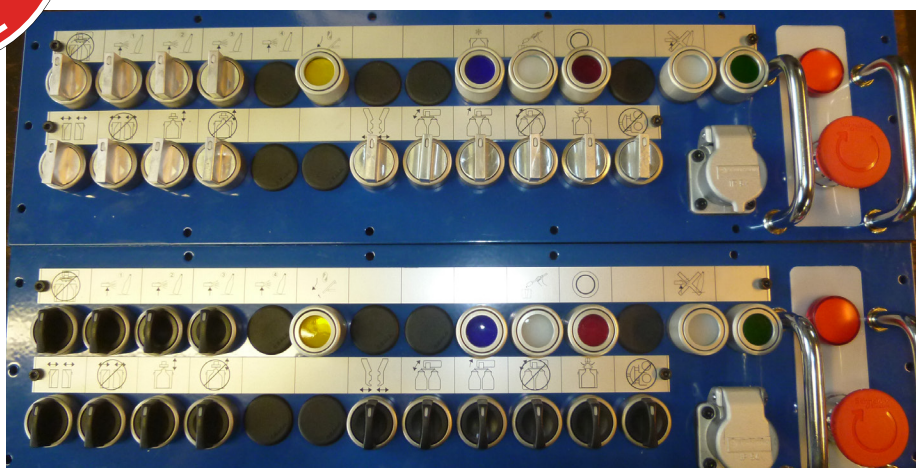
BMR Reference	Color	Light
P9MPLBGD	white	✓
P9MPLGGD	Yellow	✓
P9MPLLGD	Blue	✓
P9MPLRGD	Red	✓
P9MPLVGD	Green	✓
P9MPNVS	Green	X
P9MPLIGD	Trans-parent	✓

FOR LIGHT BUTTONS



GE187013
NO contact P9B10FN

P9PDNF0
Light block



**The BMR touch:
The aluminium stem replaces
the plastic and does not melt**

*BMR is not a company approved by brand EMHART, nor an official vendor



IMPROVED ELECTRICAL BUTTON END

Improved electrical button end
for bloc valves functions.

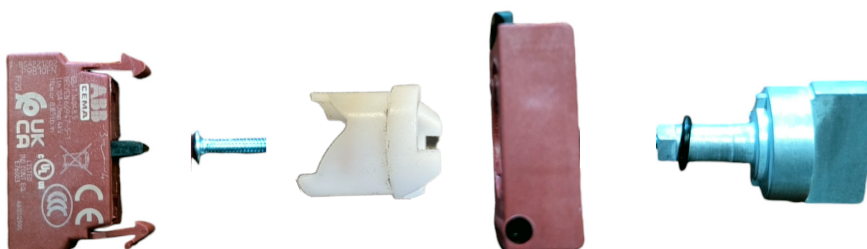
ADVANTAGES :

- + More robust
- + Higher temperature resistance



MODELS

BMR Reference	Series	Positions
SP24-1467-01	A	Fix-Return-Fix
SP24-1467-02	B	Fix-Fix
SP24-1465-01	A	Fix-Return-Fix



ELECTRICAL COMPONENTS

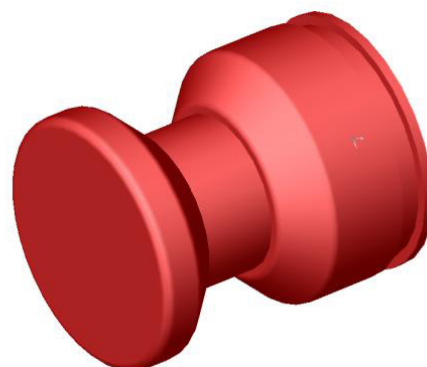
3-POSITION EMERGENCY STOP BUTTONS (2 fixed, 1 mountable)

FUNCTION	CONTACTS	POSITION ON FLANGE		
		2	3	1
2	2 x Standard	-	X	X
3	2 x Standard	X	X	-

TECHNICAL SPECIFICATIONS

Standard button equipped with a 40mm red push button

Available as an option is an ergonomically designed 26mm button made of red anodised aluminium
On request: reference SP12042



TO ORDER

Function 2 or 3
Specific flange reference + standard button: SP12041 Rev A

Standard NC contact: **187012**



TOOLS



**Hinge lifter
Setting key for block Valves
IS machine-specific**



LASER GUIDE

BMR-LA-25.4x100

The laser guide was designed to align the various guidance elements of the gob.



TECHNICAL SPECIFICATIONS

Diameter: 25mm
Length: 93mm
Wavelength: 634nm (red)
Target point at 10m: <10mm
ON/OFF button
Comes assembled with one CR123A battery

Specific developments on request

MATERIALS

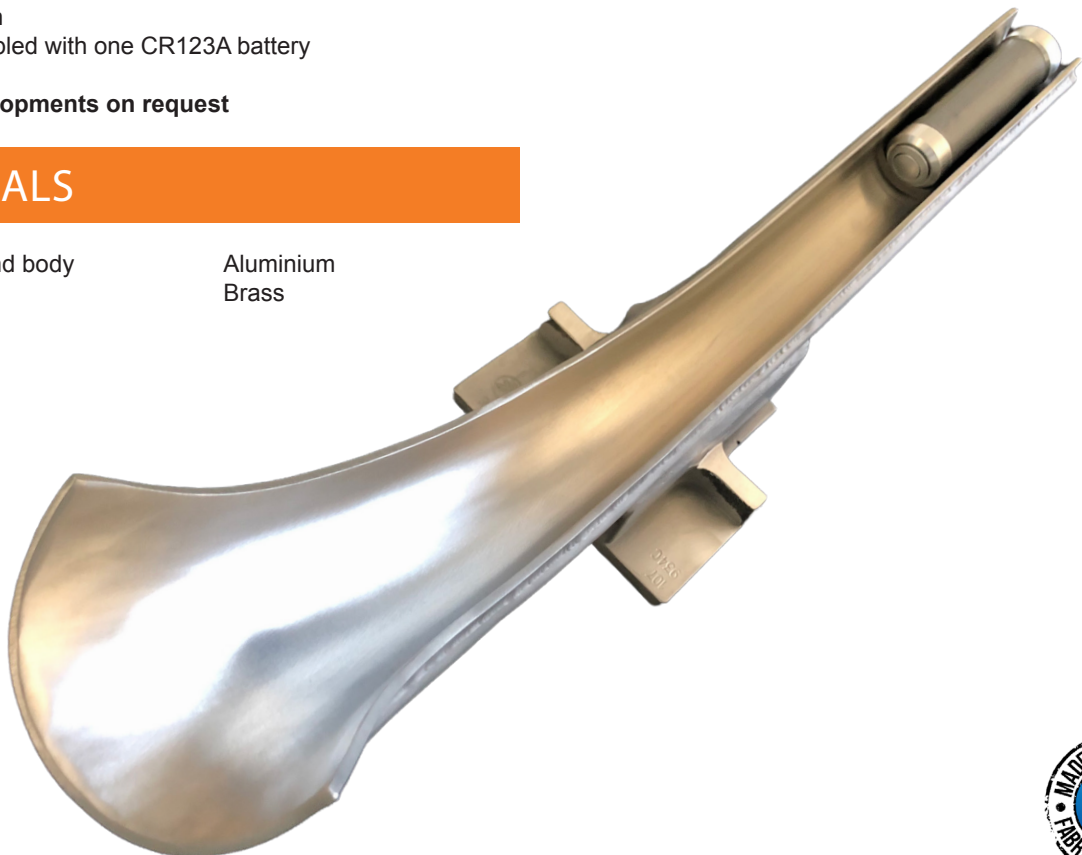
Button head and body
Laser diode

Aluminium
Brass

OPTIONS

Case with variable diameter shim

Diameter and lengths to order



HINGE LIFTER

Specific tool for lifting hinges

ADVANTAGES:

- + Robust
- + Possibility to produce bespoke versions
- + Secure locking



TECHNICAL SPECIFICATIONS

developed for 22 and 25mm rings
Any other version possible on request

Specific developments on request

MATERIALS

Steel

DIMENSIONS

Réf.	Ø ring.	Max load
BMR190622-22	22.22 mm	60 kg
BMR190622-25	25.4 mm	60 kg

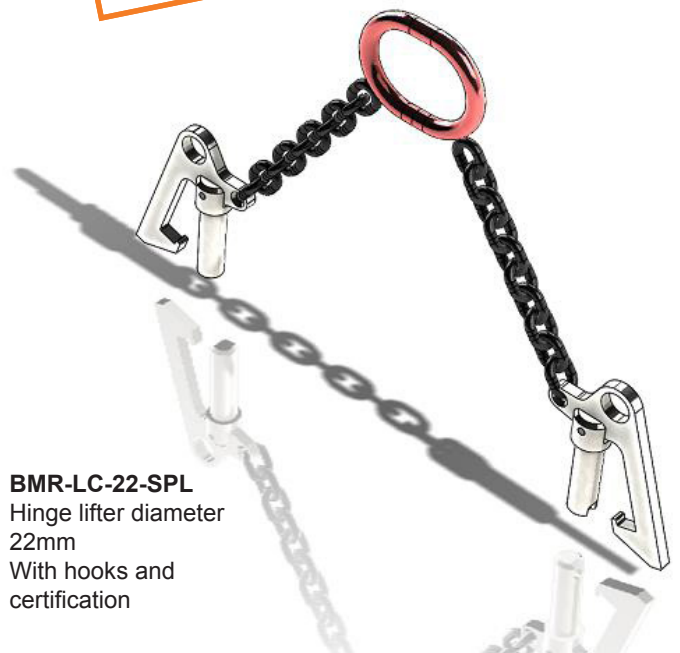
For different specifications, contact us.

OPTIONS

- Locking handle
- Certification
- Hooks



**The BMR touch:
SECURE LOCKING**



BMR-LC-22-SPL
Hinge lifter diameter
22mm
With hooks and
certification



SETTING KEY FOR BLOCK VALVES

Specific tool for block valves, it allows to adjust mechanical movements

ADVANTAGES:

- + Robust
- + Safer for users
- + All-in-one tool :
Unlock-Adjust-Relock



TECHNICAL SPECIFICATIONS

Specific developments on request

MATERIALS

Steel

The BMR touch:
ERGONOMY

MANUFACTURE OF ALL SPECIFIC TOOLS FOR IS MACHINES AND COOL TIP ON REQUEST

THE MOST COMMONLY USED:



SP171007
Glass removal tongs moulding station side CLE10 new version



SP210312
Glass gripping tongs on cool end



SP171214
Solenoid insert mounting key



OUTCLECAL
Set of adjustment shims for transfer arm



OUTCLE007
Transfer arm key



OUTCLE004
Clef pour réglage bloc poinçon -BF-



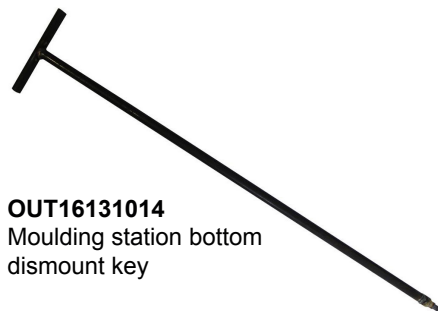
BMR-CA-1.5-0.5-2
Set of stainless-steel transfer arm adjustable shims 1.5, 0.5 and 2mm



CI346
Tube bending tool diameters 1/8" 3/16" and 1/4" (3.4 and 6mm)



OUTCLE010
Ring mould opening key



OUT16131014
Moulding station bottom dismount key

LUBRIFICATION



Greases
Oils
Degreasers
Degrippers
Injectors
Accessories



SERIES SL-42 METERING DEVICES

The SL-42 metering devices are built for single-line lubrication systems, dispensing oil or fluid grease with adjustable lubricant output. These carbon steel devices feature a visual indicator pin for monitoring operation and are available with nitrile or fluoroelastomer packings for heat resistance.

ADVANTAGES :

- + Adjustable lubricant output (0.016-0.049 cm³)
- + Visual indicator for easy monitoring
- + Suitable for manifolds with up to 15 lubrication points
- + Compatible with SL-41, SL-43, and SL-44 series
- + Easy removal for inspection or replacement
- + Heat resistant up to +176°C



TECHNICAL SPECIFICATION

Operating temperature: -6 to +93°C - Heat resistant up to 176°C

Pressure: 52-70 bar

Material: Carbon steel, nitrile or fluoroelastomer packings

Data may be changed without warning

MODELS

Part number	Designation	Number of metering devices	OEM equivalent
83311-1 <i>Up to 15</i>	SL-42 standard with nitrile packings	1, mounted in a manifold	
84428-1	SL-42 heat resistant with fluoroelastomer packings	1, mounted in a manifold	OIS43555
84428-2	SL-42 heat resistant with fluoroelastomer packings	2, mounted in a manifold	OIS43556
84428-3	SL-42 heat resistant with fluoroelastomer packings	3, mounted in a manifold	OIS43557
84428-4	SL-42 heat resistant with fluoroelastomer packings	4, mounted in a manifold	OIS43485
84428-5	SL-42 heat resistant with fluoroelastomer packings	5, mounted in a manifold	GPS 01661175 - Emhart 2010-42549
84428-6	SL-42 heat resistant with fluoroelastomer packings	6, mounted in a manifold	GPS 01661186 - Emhart 2010-42535
84428-10	SL-42 heat resistant with fluoroelastomer packings	10, mounted in a manifold	OIS43558
84428-15	SL-42 heat resistant with fluoroelastomer packings	15, mounted in a manifold	GPS 01661102 - Emhart 2010-42556

ACCESSORIES

83535

standard single metering device/no manifold, 1 outlet, 1/8 NPTF (M) inlet

83313

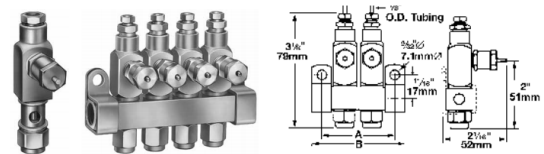
metering device for standard manifold

84048

metering device for heat-resistant manifold
Equivalent to Emhart 2010-42531

249649

metric replacement injector



*BMR is not an approved company by EMHART, GPS, or OI, nor an official vendor

SERIES SL-43 METERING DEVICES

The SL-43 metering devices are designed for single-line lubrication systems, dispensing oil or fluid grease with adjustable lubricant output. Their compact design includes a visual indicator pin to monitor performance. Available in carbon steel, they feature either nitrile or fluoroelastomer packings for heat resistance.

ADVANTAGES :

- + Adjustable lubricant output (0.016-0.131 cm³)
- + Visual indicator for easy monitoring
- + Compatible with SL-41, SL-42, and SL-44 series
- + Suitable for manifolds with up to four lubrication points
- + Heat resistance up to +176°C



TECHNICAL SPECIFICATION

Operating temperature: -26 to +93°C - Heat resistant up to 176°C

Pressure: 52-70 bar

Material: Carbon steel, nitrile or fluoroelastomer packings

Data may be changed without warning

MODELS

Part number	Designation	Number of metering devices	OEM
83661-1	SL-43 standard with nitrile packings	1, mounted in a manifold	
83661-2	SL-43 standard with nitrile packings	2, mounted in a manifold	
83661-3	SL-43 standard with nitrile packings	3, mounted in a manifold	
83661-4	SL-43 standard with nitrile packings	4, mounted in a manifold	
84429-1	SL-43 heat resistant with fluoroelastomer packings	1, mounted in a manifold	OIS43486
84429-2	SL-43 heat resistant with fluoroelastomer packings	2, mounted in a manifold	
84429-3	SL-43 heat resistant with fluoroelastomer packings	3, mounted in a manifold	
84429-4	SL-43 heat resistant with fluoroelastomer packings	4, mounted in a manifold	

ACCESSORIES

83662

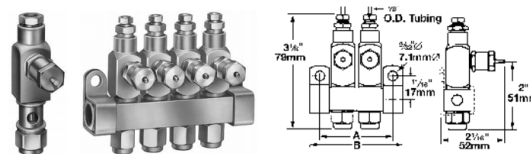
standard single metering device/no manifold, 1 outlet, 1/8 NPTF (M) inlet

83660

metering device for standard manifold

84110

metering device for heat-resistant manifold



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SERIES SL-44 METERING DEVICES

The SL-44 metering devices are designed for single-line, centralized lubrication systems dispensing fluid or semi-fluid lubricants. These durable carbon steel devices come with externally adjustable output and a visual indicator pin for easy operation monitoring. They are equipped with heat-resistant fluoroelastomer packings.

ADVANTAGES :

- + Adjustable lubricant output (0.016-1.31 cm³)
- + Visual indicator pin for easy operation checks
- + Supports manifolds with up to 5 lubrication points
- + Compatible with SL-41, SL-42, and SL-43 series
- + Simple removal for inspection or replacement
- + Heat resistant up to +176°C



TECHNICAL SPECIFICATION

Operating temperature: -26 to +93°C - Heat resistant up to 176°C

Pressure: 52-70 bar

Material: Carbon steel, FKM packings

Data may be changed without warning

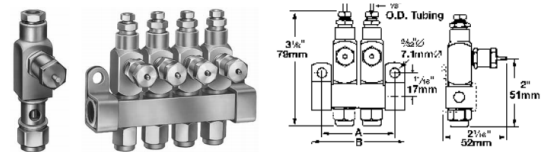
MODELS

Part number	Designation	Number of metering devices
83749-1	SL-44 heat resistant with fluoroelastomer packings	1, mounted in a manifold
83749-2	SL-44 heat resistant with fluoroelastomer packings	2, mounted in a manifold
83749-3	SL-44 heat resistant with fluoroelastomer packings	3, mounted in a manifold
83749-4	SL-44 heat resistant with fluoroelastomer packings	4, mounted in a manifold
83749-5	SL-44 heat resistant with fluoroelastomer packings	5, mounted in a manifold

ACCESSORIES

83748

metering device for manifold NPTF (F)



GLASSMOLD 3 H

Glassmold 3 H is a greasing compound formulated with highly refined base oils, synthetic graphite, sulfur and additives.

Glassmold 3 H grease has been developed primarily for roughing molds, but can be used in all molding parts, including those on the finishing mold side. It can also be used in tableware production.

Glassmod 3 H is recommended for food jars, containers for pharmaceutical products, beverages and sauces, as well as for large containers in general.

Its low viscosity and reduced graphite content make it an excellent lubricating compound in productions that require cleanliness, but also need more lubrication to facilitate parison loading, as is typical in blow-molding.

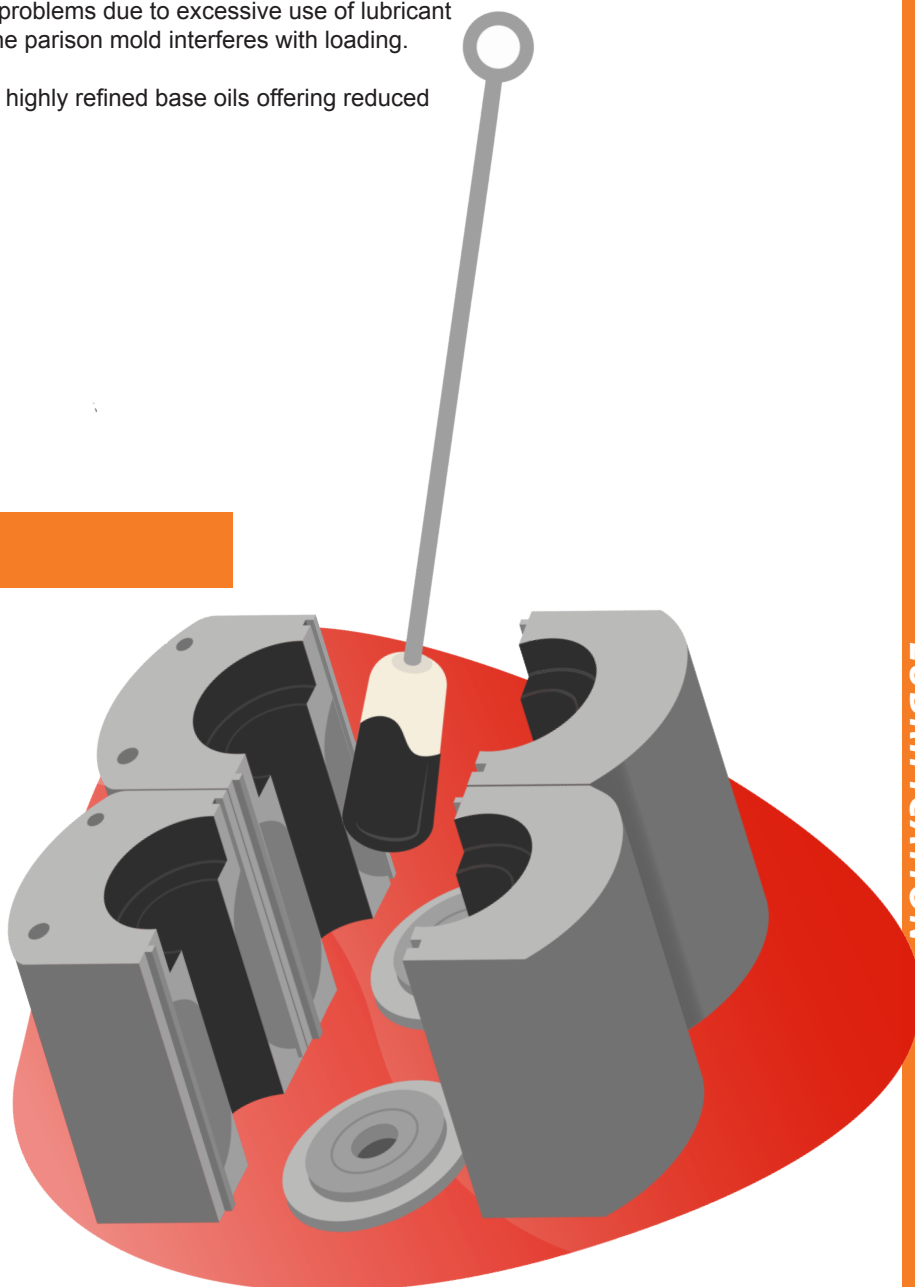
It is particularly useful when you encounter problems due to excessive use of lubricant by operators, and also when the profile of the parison mold interferes with loading.

The Glassmod 3 H range is formulated with highly refined base oils offering reduced carbon residues.

BENEFITS

- Cleaner operation
- Optimum gob loading
- Optimum glass distribution
- Improved appearance
- Optimized lubrication effect
- Reduces 'orange peel' effect

For other characteristics, please contact us





INJECTOR BLOCK

BMRE-59-11081

Injector block EMHART 59-11081 Equivalent

ADVANTAGES :

- + Plug and Play
- + Less expensive



**BMR is not an approved company by EMHART, nor an official vendor*

AIR PREPARATION



Flowmeters
Filters
Regulator filters
Regulator lubricator filters
Pressure gauges
Flow regulators
Pressure regulators
Separators
Silencers
Valves
Shut-off valves



THUMBWHEEL-CONTROLLED AIR FLOW LIMITORS FOR IS MACHINES

ADVANTAGES :

- + On-line installation
- + Impossible to lose the valve
- + Spring-lockable setting
- + Brass and aluminium construction



TECHNICAL SPECIFICATIONS

Fluid: Compressed air, filtered, lubricated/unlubricated
Operating pressure: 0.3 to 16 bar
Room temperature: -20°C to +80°C
 (other models up to +150°C)

For different specifications, contact us

MATERIALS

Body, setting button and lock ring: brass
 Seals: Nitrile

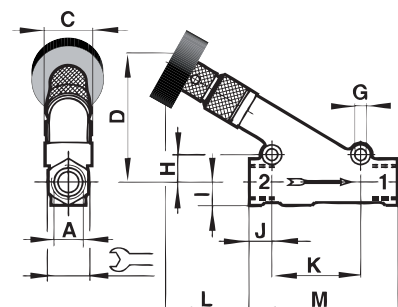
DIMENSIONS

Models	A	D max.	ø G	H	I	J	K	L	M	
SP110318	G1/8	38	5,1	8,5	8	5	24,5	27,5 max.	46	13
SP110314	G1/4	37,5	5,2	11	9,5	6	41	25 max.	60	17
SP110338	G3/8	80	8,3	17	14	-2	57	68 max.	80	25
SP110312	G1/2	80	8,3	17	16	13	57	53 max.	95	28
SP110334	G3/4	104	8,3	21,5	17,5	20,5	76	66 max.	118	32
SP110310	G1	147	13	26	24	23	90	107 max.	150	48

All specifications
 (sizes, fittings, etc.)
 are available on request

MODELS

RACC, BSPP	Function	Fitting	Max regulated flow		Flow factor	
Model			C*	CV	C*	CV
SP110318		G1/8	0,7	0,17	2,1	0,6
SP110314		G1/4	2	0,49	4,3	1
SP110338		G3/8	12	2,9	17	4,1
SP110312		G1/2	12	2,9	17	4,1
SP110334		G3/4	18	4,4	38	9,3
SP110310		G1	36	8,8	45	11



AIR PREPARATION

AIR FLOW LIMITATORS

AIR PREPARATION

ADVANTAGES :

- + In-line mounting
- + Captive needle
- + Adjustment locked by locknut
- + Brass and aluminum body.



TECHNICAL SPECIFICATIONS

Fluid: Compressed, filtered, lubricated or unlubricated air
 Operating pressure: 0.3 to 16 bar
 Ambient temperature : -20°C to +80°C
 (other models up to +150°C)

For different specifications, contact us

MATERIALS

S/836, M/837, M/839, SP11011
 Body, adjusting knob and locking ring :
 brass
 M/840, M/855
 Body, adjusting knob and locking ring :
 Aluminum
 Seals: nitrile

All specifications
 (sizes, fittings, etc.)
 are available on request

MODELS

Models	Diam.	OEM
KITBMRM837	G1/4	BOTTERO PR3005901
M/839	G1/2	
M/840	G3/4	
M/855	G1	
S/836	G1/8	
SP11011	G3/8	

Models	Diam.	OEM
SP170530	G1/2	
SPF77	G3/8	
TM839	G1/2	
TM840	G3/4	
TS836	G1/8	

*BMR is not an approved company by BOTTERO, nor an official vendor



KITS FOR PRESSURE REGULATORS

AT THE BEST PRICES



Models	A	Max. Pressure	OEM
11-204-004	G1/4	7bar	BOTTERO PR303054 2
11400-2G-PC103	G1/4	2bar	
11400-2G-PE100	G1/4	4bar	
11400-2G-PE103	G1/4	4bar	
11400-2G-PG103	G1/4	7bar	
11-818-944	G1/4	65Psi	
20AG-X4G-PD100	G1/2	3,5 bar	
20AG-X4G-PH100	G1/2	8bar	
20AG-X4G-PH102	G1/2	8bar	
20AG-X6G-PH100	G3/4	8 bar / 406Psi	
20AG-X8G-PD100	G1	3,5bar	

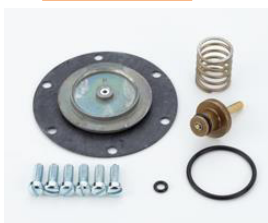
Refurbishing : RNOR2

Models	A	Max. Pressure	OEM
11-808-960	G3/4		BOTTERO PR303054 9

Refurbishing : REC11-808-960 / RNOR1



REPAIR KITS



20AG-8-100



20AG-X4-100 (IS-012)

Models	A	Max. Pressure	OEM
R18-B00-RNXG	G1 1/2	17bar	
R18-B12-RNXG	G1 1/2	17bar	
R18-C00-NNXG	G2		
R18-C00-RNXG	G2	17bar	BOTTERO PR3030518

Refurbishing : RNOR3



11-400-100-20AL



R18-100 R (IS-013)
R18-100 V - R18-100V1
with viton seals



11-908-100



11-204-100

Contact us

*BMR is not an approved company by BOTTERO, nor an official vendor

VALVES



Bottero*
Cartridges
Emhart*
Generalmatic
Joucomatic
Norgren
Numatics
Butterfly valves
Ross
Snabb
Blow Gun
Accessories



SNABB Seaman



Gate valve

Patented without government guarantee



SN Standard version



SFA Automatic close version

For compressed air, pressurised water and other gas or fluid systems

ADVANTAGES:

- Ease of use – low maintenance
- Easy manipulation even at low temperatures up to 15 bars
- Safety system – small size – economical
- Direct and instant fluid flow

TECHNICAL SPECIFICATIONS

- Certified brass material
- Perbunan O-rings
- Special fittings on request (Viton, nitrile, ethylene, etc.)
- Standardised thread 1/4", 3/8", 1/2", 1" (not gas)
- In "purge" version, enables evacuation of air built up in front of the valve

ADVANTAGES:

Useful device for pressure tests and quickly purging systems, tanks, actuators, pistons and other pneumatic systems.

STANDARD VERSION

STANDARD



Function 2/2
Orif.

Orif. BSP	Réf.	Ref. OEM
F 1/4"	SN 0813 ST	
F 3/8"	SN 1217 ST	
F 1/2"	SN 1521 ST	Emhart 3340-1707

PURGE

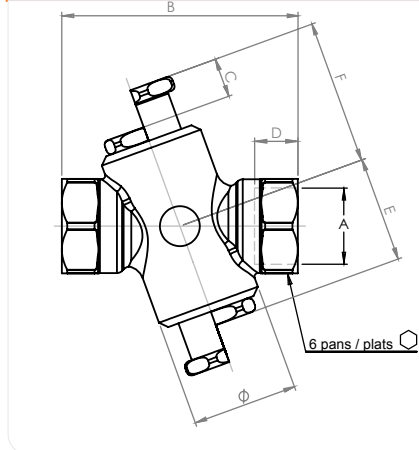


Function 3/2

F 1/4"	SN 0813 PU	
F 3/8"	SN 1217 PU	Bottero PV125505 2
F 1/2"	SN 1521 PU	Emhart 3340-1043

MOST USED ON IS MACHINES

SN - STANDARD



ST - PU TYPE

AUTOMATIC CLOSE VERSION

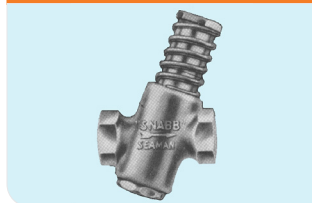
STANDARD



Function 2/2

Orif. BSP	Réf.
F 1/4"	SFA 0813 ST
F 3/8"	SFA 1217 ST
F 1/2"	SFA 1521 ST

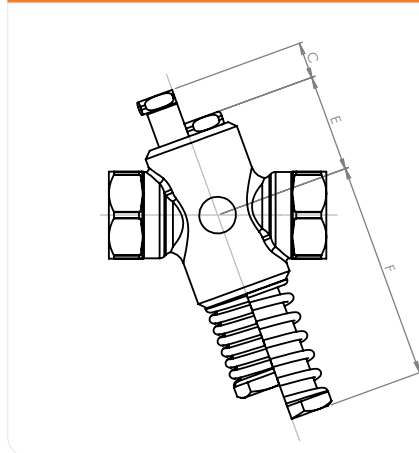
PURGE



Function 3/2

F 1/4"	SFA 0813 PU
F 3/8"	SFA 1217 PU
F 1/2"	SFA 1521 PU

SFA - AUTOMATIC CLOSE VERSION



TYPE ST - PU

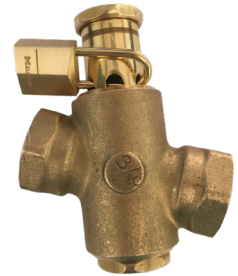
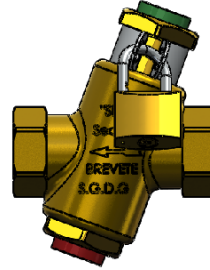
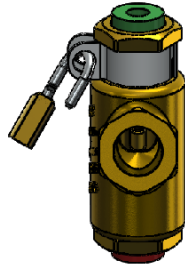
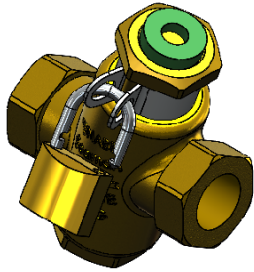
DIMENSIONS

A	B	C		D	E	F				Ø	⊠
		ST	PU			ST	PU	ST	PU		
1/4" 8 x 13	57	12	23	7	29	40	51	65	76	30	26
3/8" 12 x 17	61	12	23	8.5	29	40	51	65	76	30	26
1/2" 15 x 21	65	12	23	9	29	40	51	65	76	30	26
		ST	PU	ST+PU	ST	PU	ST	PU			
		SN + SFA				SN		SFA			

*BMR is not an approved company by EMHART, nor an official vendor



NEW OPTION: PADLOCKABLE



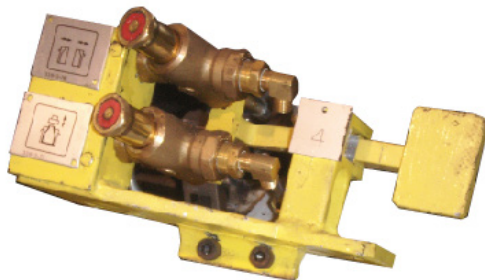
Position lock and clamp using padlock : ZSJ9SPG1901

Padlock straight through orifices



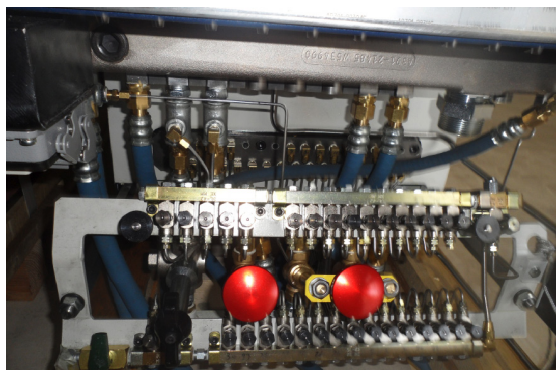
SP1511-1/2 - SP1511-1/4 - SP1511-3/8
Complete valve with locking tab

NEW OPTION: IDENTIFICATION



Add engraved symbols for specific function identification

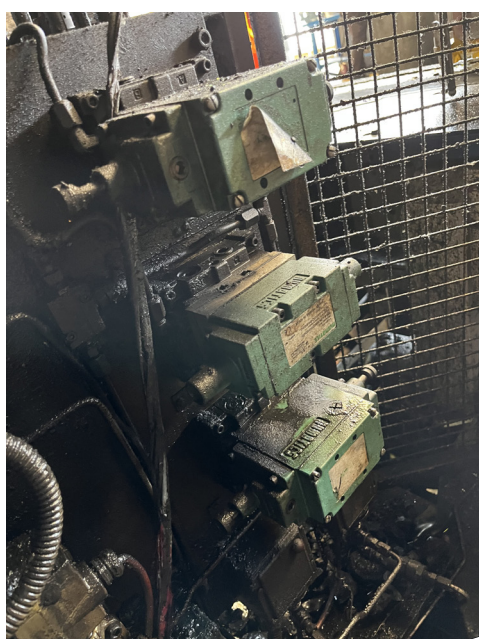
OPTION: ALUMINIUM BUTTON



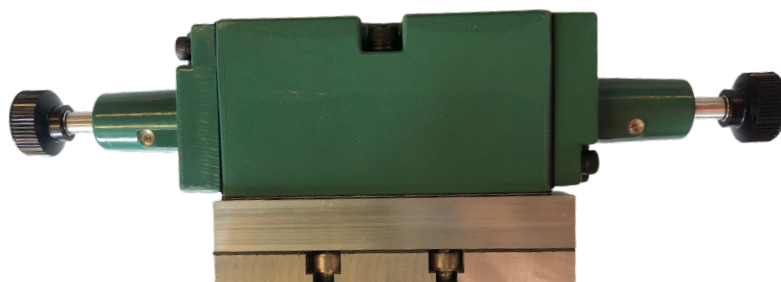
SAFETY VALVE REPLACEMENT NUMATICS 34JDR4430011C00

BENEFITS:

+ Replacement in place



Current setups



34JDR4430011C00

Pneumatically piloted valve,
PA40 replaced by Numatics 55 with BMR adaptation



SP210606

MK55 valve with BMR-specific
BMR-specific manual override



The BMR +
Identical manual safety
safety controls



HIGH PRESSURE STRONG AND LIGHTWEIGHT COMPRESSED AIR-BLOWER

Main applications GLASSWORKS:
Replacement for existing MOULD BLOWING SYSTEMS

Can be installed on site for existing systems

ADVANTAGES :

- + Effective
- + Strong
- + Lightweight
- + Easy to hold down
- + Economical
- + Ergonomally designed



SAFETY FEATURE: SHUTS OFF WHEN THE HANDLE IS RELEASED



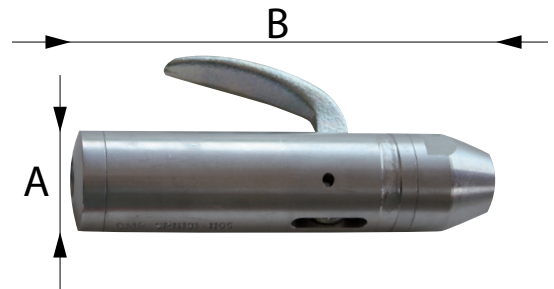
TECHNICAL SPECIFICATIONS

Fluid: Compressed air or water
Maximum pressure: 12 bar
Temperature: -20°C to +100°C

Specific developments on request

MATERIALS

Aluminium



DIMENSIONS

Models	IN	Out	A (mm)	B (mm)	∅ Inside (mm)	Weight (g)
SO1818	1/8	1/8	22	85	3	100
SO1418	1/4	1/8	22	85	3	100
SO1414	1/4	1/4	22	85	3	100
SO3814	3/8	1/4	35	145	12	315
SO3838	3/8	3/8	35	145	12	315
SO1238	1/2	3/8	35	145	12	315
SO1212	1/2	1/2	35	145	12	315
SO1212HF	1/2	1/2	35	145	14,5	315
SO3412LF	3/4	1/2	35	145	14,5	315
SO3412	3/4	1/2	42	145	18	407
SO3434LF	3/4	3/4	35	145	14,5	315
SO3434	3/4	3/4	42	145	18	407
SO134	1	3/4	42	145	18	407
SO11	1	1	42	145	18	407

 Most used by IS machines

OPTIONS

Extended handle : -P



Steel tip : -ACS



BMR TOUCH : DESIGN AND INSTALLATION OF A COMPLETE MACHINE BLOWING SYSTEM

The service includes:

- A clarinet for connecting several systems
- 1/2 -> 1/2» solenoid valve
- 1 meter of threaded pipe for valve outlet
- All fittings required for system installation
- Pole or barrier bracket
- Complete installation





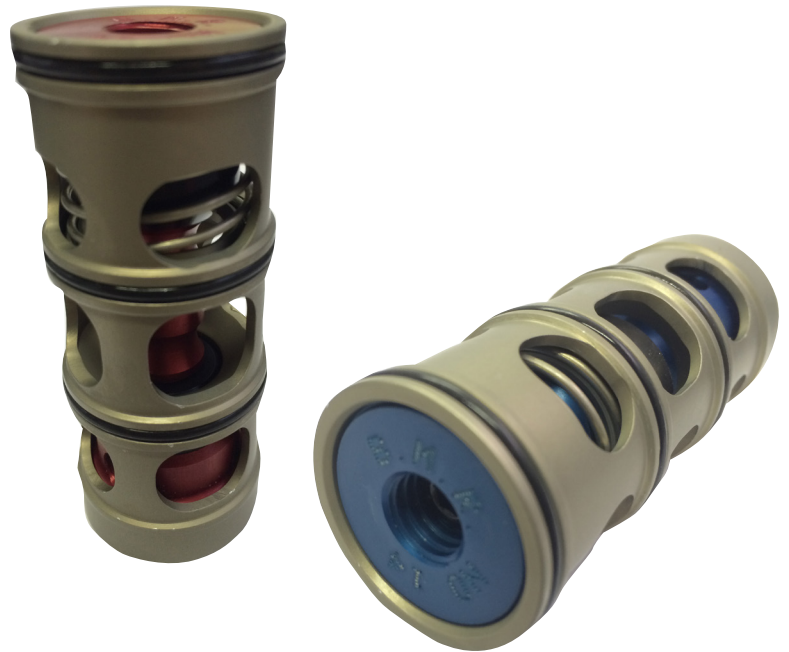
CARTRIDGES FOR 21 AND 26-WAY VALVE BLOCK

Valve block cartridges with valve system
Easy to assemble and disassemble

ADVANTAGES :

- + Can be installed on site
- + Effective
- + Reliable
- + Strong
- + Economical, cheaper

Less sensitive to contamination



TECHNICAL SPECIFICATION

Cartridge: Normally open or normally closed

Colour: Red ou blue

Data may be changed without warning

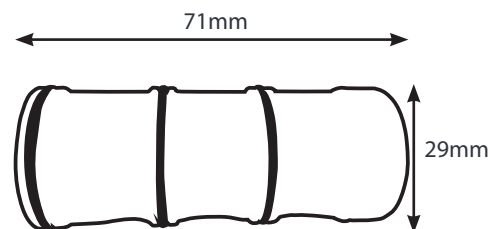
MATERIALS

Anodised aluminium

MODELS

BMR Reference	Inverted colour	Colour	Normally open	Normally closed	EMHART* equivalent reference
BMR022014	✓	Red		✓	59-27241 191-7705 191-8274 59-27677
BMR012014	✓	Blue	✓		59-27242 191-7704 191-8273 59-27616
SP14NFB		Blue		✓	191-7705-1 191-8274 59-27241 59-27617
SP14NOR		Red	✓		59-27616 191-7704-1 59-27242-A 191-8273

DIMENSIONS



*BMR is not an approved company by EMHART, nor an official vendor

O-I* CARTRIDGES



ADVANTAGES :

- + Long lifespan
- + High flow
- + Viton fittings

Blocker available on request

MODELS

BMR Reference	Orif. BSP	Way	Normally open	Normally closed	Options
BMRO-21-4088	1'	3		✓	
BMRO-21-4076	1' 3/8"	3		✓	
BMRO-21-4076-HPS	1' 3/8"	3		✓	HIGH FLOW
BMRO-SG250-RV	1'	3			
BMRO-250-IN-NO	1'	3	✓		
BMRO-500-IN-NO	1' 3/8"	3	✓		

BOTTERO* CARTRIDGES



REFERENCES :

BMRBOT-A338-3-CA3
Normally Open Cartridge

BMRBOT-A338-3-C4
Normally Closed Cartridge

BMRBOT-338-3-208
Normally Closed 3-way Cartridge

BMRBOT-338-3-209
Normally Open 3-way Cartridge

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BDF* CARTRIDGES

REFERENCES :

BMRBDF-P-05-BVE-NC3
NC 3-way Cartridge

BMRBDF-P-05-BVE-NA3
NO 3-way Cartridge



HEYE* CARTRIDGES

REFERENCES :

2101049100
NC Cartridge

2101049400
NO Cartridge



**BMR is not an approved company by BDF or Heye, nor an official vendor*

PROPORTIONAL VALVE

BMRE-59-27229

Proportional valve 0-4 bars

ADVANTAGES :

- + Equivalent to the Emhart* Proportional Valve 59-27229
- + Less expensive
- + On stock

TECHNICAL SPECIFICATION

Tension : 4-20mA

Pression : 0-4bar



SKINNER PARKER ELECTROVALVE

BMRE-59-90024

ADVANTAGES :

- + Less expensive
- + on stock

TECHNICAL SPECIFICATION

Tension : 24VFC



*BMR is not an approved company by EMHART, nor an official vendor



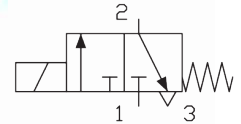
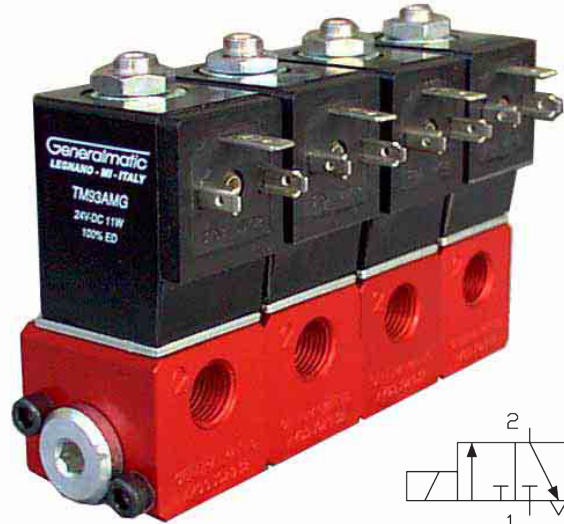
AMG SERIES VALVES

DIRECTLY ACTUATED POPPET VALVES
Direct solenoid operated

TECHNICAL SPECIFICATION

3/2 NC Valve
Thread : G 1/4"
Temperature : -15°C to +120°C
Flow : 180NL/min

Data may be changed without warning



MODELS

BMR Reference	Way	Normally closed	Elec	DN (mm)	Size
AMG9302.932.24DC	3	✓	24VDC	3	G1/4"

MULTIPLE ASSEMBLY

Quantity
2
3
4
5
6
7
8
9
10

TP9302-XX

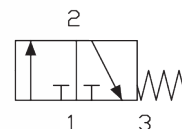
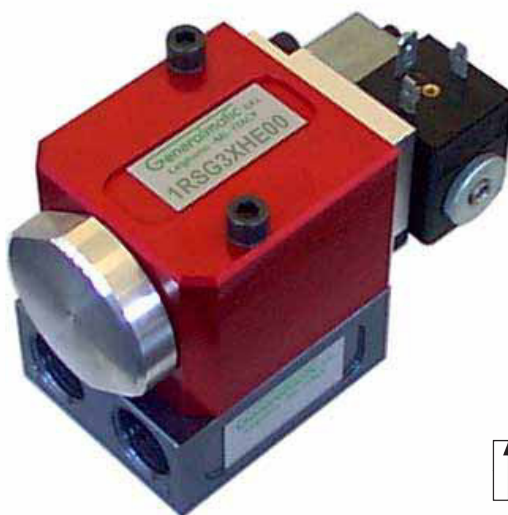
1RSG SERIES VALVES

POPPET VALVES FLOW 1/2"
Solenoid and air pilot operated

TECHNICAL SPECIFICATION

3/2 NC NO Valve
Thread : G 1/2" - Vacuum Opt
Temperature : -35°C to +160°C
Flow : 5000NL/min

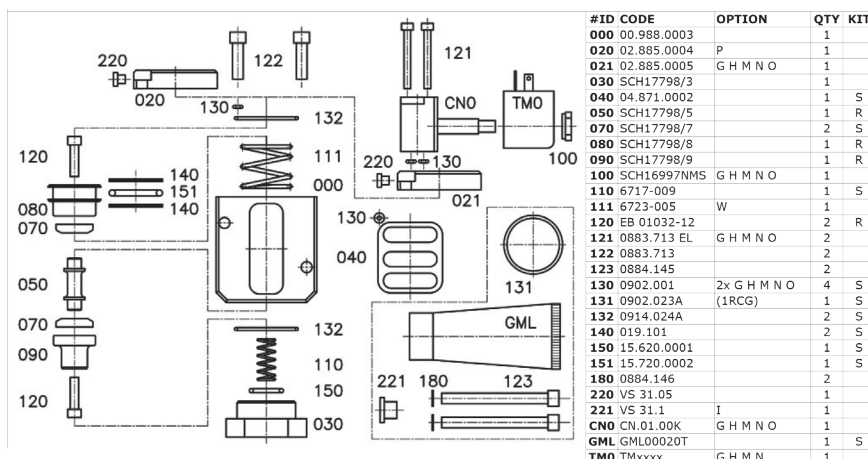
Data may be changed without warning



MODELS

BMR Reference	Series	Normally closed	Way	Position	Seals	operated	Pilot	Other
1RSG3XHE00	1/2"G	✓	3	2	Special standards	48V AC 24V DC	External	
1RSG3XHE0W	1/2"G	✓	3	2	Special standards	48V AC 24V DC	External	Vacuum service
1RSG3XPE00	1/2"G	✓	3	2	Special standards	pneumatic	External	
1RSG3XPE0W	1/2"G	✓	3	2	Special standards	pneumatic	External	Vacuum service

SPARE PARTS



SERVICE KITS

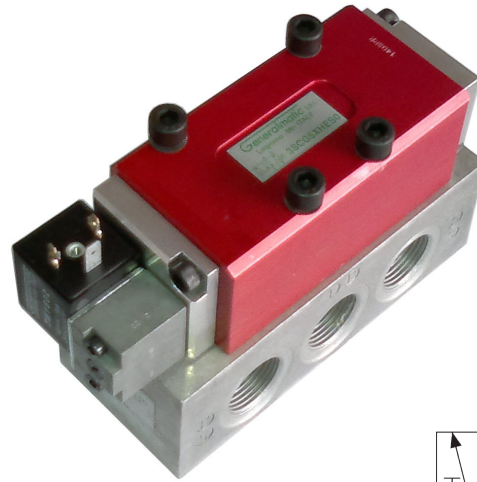
SEALS : KS1RSGX00
REPAIR : KR1RSG000

SINGLE SUB-BASE : FP801900



3SCG SERIES VALVES

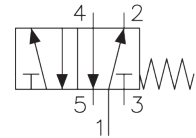
POPPET VALVES ISO3 FLOW 3/4"
Solenoid and air pilot operated



TECHNICAL SPECIFICATION

5/2 Valve
Thread : G 1/2" - G3/4" - ISO 3
Temperature : -35°C to +160°C
Flow : 5300NL/min

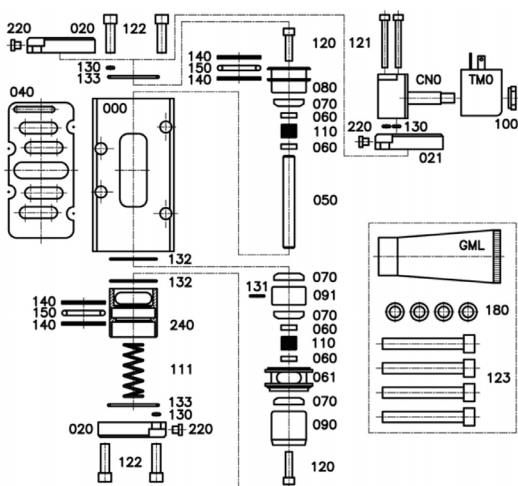
Data may be changed without warning



MODELS

BMR Reference	Thread	Way	Position	operated	Other
3SCG5XHES0	ISO3	5	2	24V DC	
3SCG5XPES0	ISO3	5	2	pneumatic	
3SCG5XPES0	ISO3	5	2	pneumatic	Interface SH070405 mount on numatics 203-3258

SPARE PARTS



#ID CODE	OPTION	QTY	KIT
000	00.A88.0003	1	
020	02.885.0004	1x P	2
021	02.885.0005	G H M N O	1
040	04.A80.0003		1 S
050	SCH18998/5		1 R
060	SCH18998/14		4 R
061	SCH18998/13		1 R
070	SCH17798/7		4 S
080	SCH17798/8		1 R
090	SCH18998/9		1 R
091	SCH18998/12		1 R
100	SCH16997NMS	G H M N O	1
110	11.553.0001		2 S
111	6601-002		1 S
120	EB 01032-12		2 R
121	0883.713 EL	G H M N O	2
122	0883.713		4
123	0884.860		4
130	0902.001	2x G H M N O	4 S
131	0903.010		1 S
132	0902.023A		2 S
133	0914.024A		2 S
140	019.101		4 S
150	15.720.0002		2 S
180	0884.346		4
220	VS 31.05		2
240	24.777.0002		1
CNO	CN.01.00K	G H M N O	1
GML	GML0020T		1 S
TMO	TMxxxx	G H M N	1

SERVICE KITS

SEALS : KS3SCGX00
REPAIR : KR3SCG000

2CBG SERIES VALVES

POPPET VALVES FLOW 3/4" for COUNTER BLC
 High - Low pressure
 Solenoid and air pilot operated



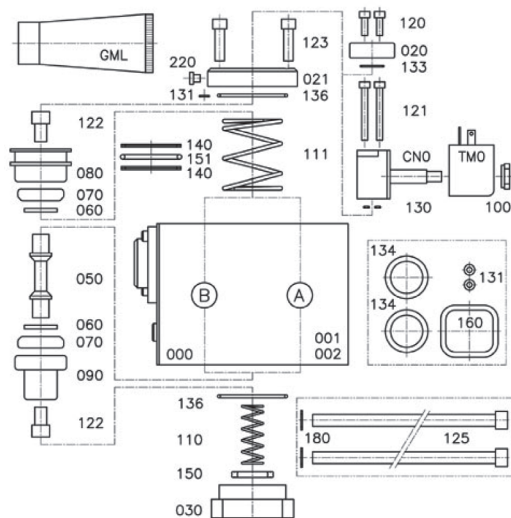
TECHNICAL SPECIFICATION

4/3 Valve
 Thread : G 3/4" - Vacuum Opt
 High - low pressure and counter blow
 Temperature : -35°C to +160°C
 Flow : 8000NL/min
 Special standards seals
Data may be changed without warning

MODELS

BMR Reference	Ways	Operators	Normally closed	Mount	Series	operated	Pilot	Other
2CBG4XHE000	4	2	✓	sub-base	G3/4"	48V AC - 24V DC	External	
2CBG4XHE0WA	4	2	✓	sub-base	G3/4"	48V AC - 24V DC	External	Vacuum service on valve A
2CBG4XHE0WB	4	2	✓	sub-base	G3/4"	48V AC - 24V DC	External	Vacuum service on valve B
2CBG4XPE000	4	2	✓	sub-base	G3/4"	pneumatic	External	
2CBG4XPE0WA	4	2	✓	sub-base	G3/4"	pneumatic	External	Vacuum service on valve A
2CBG4XPE0WB	4	2	✓	sub-base	G3/4"	pneumatic	External	Vacuum service on valve B

SPARE PARTS



#ID CODE	OPTION	QTY	KIT
000	00 999.0002	1	
001	00 999.0003	1	
002	00 999.0004	1	
020	SCH14096/10	2	
021	02.985.0004	2	
030	03.867.0002	2	
050	SCH14096/5	2	R
060	SCH14096/6	4	R S
070	SCH14096/7	4	S
080	08.846.0002	2	R
090	SCH14096/9	2	R
100	SCH16997NMS	2	G H M N O
110	6601-002	2	S
111	6602-001	1	
120	0883.713.1A	6	
121	0883.713 EL	4x P	
122	0849.204	4	R
123	0883.713	4	
124	0884.345	2	
125	12.4A7.0001	2	
130	0902.001	4	S
131	1136 RCG	4	S
132	13.410.0003	1	
133	PN ECN 01	2	S
134	0902.017	2	S
135	0902.017V	1	
136	0914.032	4	S
140	0902.101	4	S
150	15.720.0001	2	S
151	0903.025	2	S
160	SCH14096/4	1	S
161	16.820.0002	1	
180	0884.346	2	
220	VS 31.05	2	
230	SCH13195A	2	
400	40.866.0001	1	
CNO	CN.01.00K	2	G H M N O
GML	GML00020T	1	S
TM0	TMxxxx	2	G H M N

SERVICE KITS

SEALS : KS2CBGX00
 REPAIR : KR2CBG000

CAP : FU3700
 SINGLE SUB-BASE : FP372500
 SUB-BASE FOR MULTIPLE GOBS : BP3700

BMR REFURBISHING

RGEN2



2RSG SERIES VALVES

POPPET VALVES FLOW 1"
Solenoid and air pilot operated



TECHNICAL SPECIFICATION

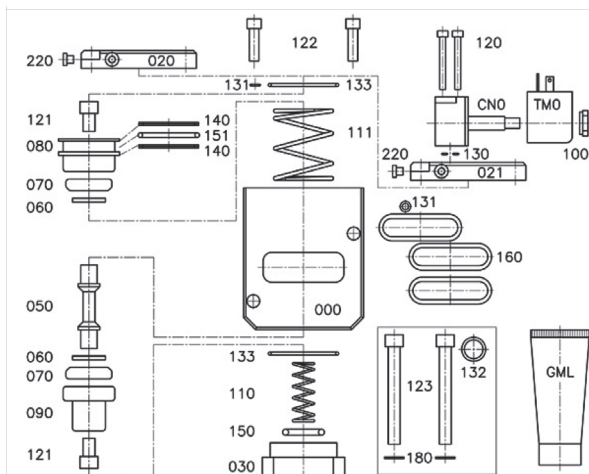
3/2 NC NO Valve
Thread : G 3/4" G1" - Vacuum Opt
Temperature : -35°C to +160°C
Flow : 13 000NL/min

Data may be changed without warning

MODELS

BMR Reference	Series	Normally closed	Way	Position	Seals	operated	Pilot	Other
2RSG3XHE00	1"G	✓	3	2	Special standards	48V AC 24V DC	External	
2RSG3XHE0W	1"G	✓	3	2	Special standards	48V AC 24V DC	External	Vacuum service
2RSG3XPE00	1"G	✓	3	2	Special standards	pneumatic	External	
2RSG3XPE0W	1"G	✓	3	2	Special standards	pneumatic	External	Vacuum service

SPARE PARTS



#ID	CODE	OPTION	QTY	KIT
000	00.998.0001		1	
020	02.985.0002	P	1	
021	02.985.0004	G H M N O	1	
030	03.867.0002		1	
050	SCH14096/5		1	R
060	SCH14096/6		2	R
070	SCH14096/7		2	S
080	08.846.0002		1	R
090	SCH14096/9		1	R
100	SCH16997NMS	G H M N O	1	
110	6601-002		1	S
111	6602-001	W	1	
120	0883.713 EL	G H M N O	2	
121	0849.204		2	R
122	0883.713		2	
123	0884.345		2	
130	0902.001	G H M N O	2	S
131	1136 RCG		2	S
132	PN.ECN.01	P (2RCG)	1	S
133	0914.032		2	S
140	0902.101		2	S
150	15.720.0001		1	S
151	0903.025		1	S
160	SCH14096/4		3	S
180	0884.346		2	
220	VS 31.05		1	
CNO	CN.01.00K	G H M N O	1	
GML	GML00020T		1	S
TMO	TMxxxx	G H M N	1	

SERVICE KITS

SEALS : KS2RSGX00
REPAIR : KR2RSG000
INTERFACE : FU2RCSG.00
SINGLE SUB-BASE : FP802500 (standard)
FP803000 (special)
DOUBLE SUB-BASE : BPA803-02SP
BY PASS CAP : FU8025.000

BMR REFURBISHING

RGEN1

RPB SERIES VALVES

POPPET PRESSURE REGULATORS FLOW 3/4"
Knob and air pilot operated



TECHNICAL SPECIFICATION

Thread : G 3/4" - relieving - Twin piston
Temperature : -35°C to +160°C
Flow : 8 000 NL/min

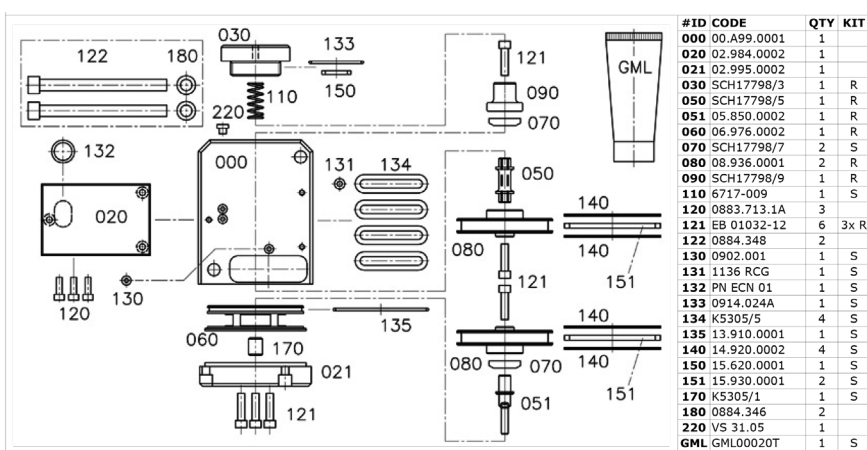
Data may changed without warning

MODELS

BMR Reference	Flow NL/min	Pressure max	Temperature range		Mount	Operator	Pilot
RPB3XPE500	8 000	10 bar	-35°C - +120°C	Relieving	Sub-base	Pilot operated pressure regulator	
RPB3XPE5K0	8 000	10 bar	-20° - + 80°C	Relieving	Sub-base	Knob operated pressure regulator	External inlet

SPARE PARTS

SERVICE KITS



SEALS : KSRPB5X00
REPAIR : KRRPB5000
SINGLE SUB-BASE : FP.RPB.00SP



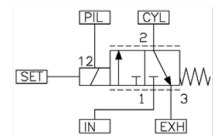
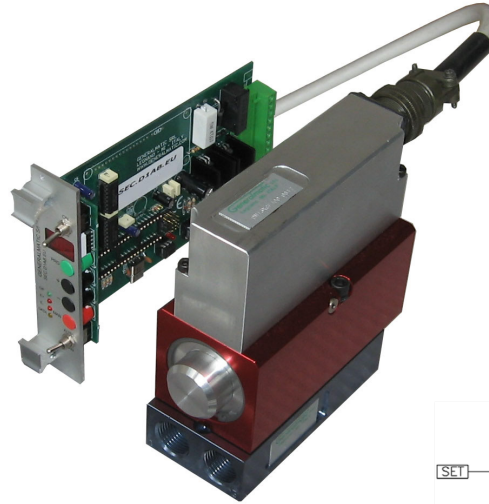
DMT SERIES VALVES

POPPET SERVO-VALVES FLOW 1/2"
Electronic and digital input

TECHNICAL SPECIFICATION

Thread : G 1/2" - DMT BUS ®
Temperature : -25°C to +80°C
Flow : 2 100NL/min

Data may be changed without warning



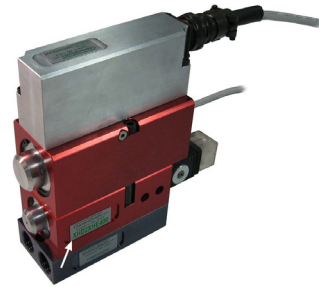
MODELS

BMR Reference	Series	Ways	Sub-base	Flow NL/min
DMT3XGE400	1/2"G	3	FPA81900SP	70 to 2 100

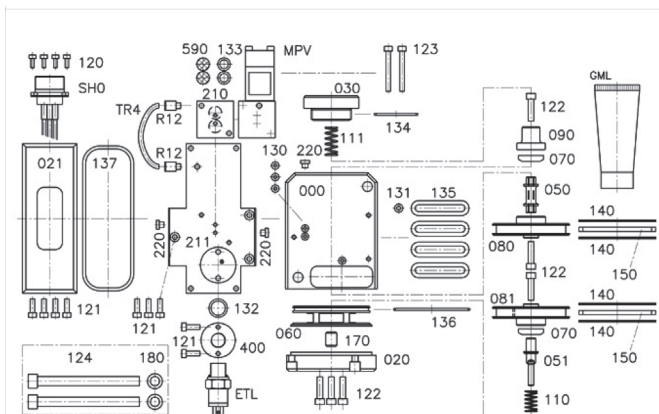
OPTION FOR DMT SERIES

XHD4 SERIES VALVES

EXHAUST VALVES for DMT4 PROPORTIONAL VALVES
Solenoid pilot operated



SPARE PARTS



#ID CODE	QTY	KIT
081 08.936.0003	1	R
090 SCH17798/9	1	R
110 11.570.0001	1	S
111 6717-009	1	S
120 12.244.0001	4	
121 0883.713.1A	9	
122 EB 01032-12	6	3x R
123 0883.713 EL	2	M
124 0884.348	2	
130 0902.001	3	S
131 1136 RCG	1	S
132 PN ECN 01	1	
133 0903.010	2	M
134 0914.024A	1	S
135 K5305/5	4	S
136 13.910.0001	1	S
137 13.A20.0001	1	S
140 14.920.0002	4	S
150 15.930.0001	2	S
170 K5305/1	1	S
180 0884.346	2	
210 21.772.0002	1	M
211 21.A95.0001	1	
220 VS 31.05	3	
400 40.755.0001	1	
590 59.500.0001	2	M
ETL ETLP.661.4.10.B	1	
GML GML00020T	1	S
MPV MPV40F	1	M
R12 R12.04.M5	2	
SHO SH060400F	1	
TR4 TR4x2,7nt011	1	S

#ID CODE	QTY	KIT	#ID CODE	QTY	KIT	#ID CODE	QTY	KIT
000 00.A99.0001	1		030 03.756.0002	1	R	060 06.976.0002	1	R
020 02.995.0002	1		050 SCH17798/5	1	R	070 SCH17798/7	2	S
021 02.A89.0002	1		051 05.850.0002	1	R	080 08.936.0001	1	R

SERVICE KITS

SEALS : KSDMT4X00
REPAIR : KRDMT4000
PILOT VALVE KIT : MPV40FK
PART. SEPARATOR : PSMPV

BMR REFURBISHING

RGEN3

VALVES

DMT SERIES VALVES

POPPET SERVO-VALVES FLOW 3/4"
Electronic and digital input



TECHNICAL SPECIFICATION

Thread : G 3/4" - DMT BUS ®
Temperature : -25°C to +80°C
Flow : 8 100NL/min

Data may be changed without warning

TECHNICAL SPECIFICATION

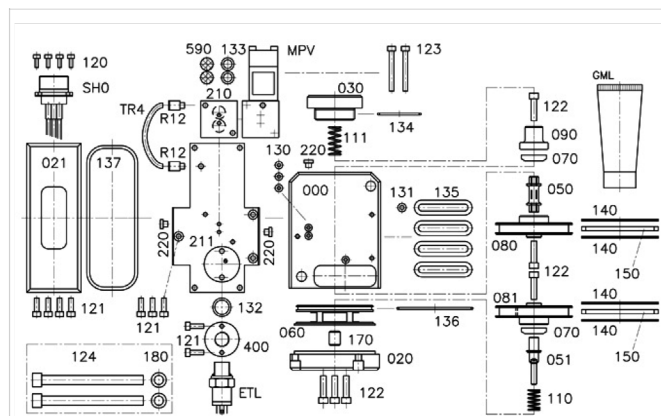
2/2 NO Valve
Thread : G 1/2" - DMT4 enhancement
Quick exhaust valve
Temperature : -35°C to +120°C
Flow : 2 400 NL/min

Data may be changed without warning

BMR Reference	Series	Normally opened
XHD2XHE400	1/2"G	✓

BMR Reference	Series	Ways	Sub-base	Flow NL/min
DMT3XGE500	3/4"G	3	FPA92500SP	8 000

SPARE PARTS



#ID CODE	QTY	KIT
081 08.936.0003	1	R
090 SCH17798/9	1	R
110 11.570.0001	1	S
111 6717-009	1	S
120 12.244.0001	4	S
121 0883.713.1A	9	S
122 EB 01032-12	6	3x R
123 0883.713 EL	2	M
124 0884.348	2	S
130 0902.001	3	S
131 1136 RCCG	1	S
132 PV ECH 01	1	S
133 0903.010	2	M
134 0914.024A	1	S
135 K5305/5	4	S
136 13.910.0001	1	S
137 13.A20.0001	1	S
140 14.920.0002	4	S
150 15.930.0001	2	S
170 K5305/1	1	S
180 0884.348	2	S
210 21.772.0002	1	M
211 21.A95.0001	1	S
220 VS 31.05	3	S
400 40.755.0001	1	S
590 59.500.0001	2	M
ETL ETLP.661.4.10.B	1	S
GML GML00020T	1	S
MPV MPV40F	1	M
R12 R12.04.M5	2	S
SHO SH060400F	1	S
TR4 TR4x2,7n011	1	S

#ID CODE	QTY	KIT	#ID CODE	QTY	KIT	#ID CODE	QTY	KIT
000 00.A99.0001	1		030 03.756.0002	1	R	060 06.976.0002	1	R
020 02.995.0002	1		050 SCH17798/5	1	R	070 SCH17798/7	2	S
021 02.A89.0002	1		051 05.850.0002	1	R	080 08.936.0001	1	R

SERVICE KITS

- SEALS : KSDMT5X00
- REPAIR : KRDMT5000
- SUB-BASE : FPA925.00SP
- COMPTACT-BLOC : DMT + 2RSG
- PART. SEPARATOR : PSDMT
- STRAINER SPARE : KPSDMT (400µm)
- PILOT VALVE : MPV40FK
- PART. SEPARATOR : PSMPV

BMR REFURBISHING

RGEN3





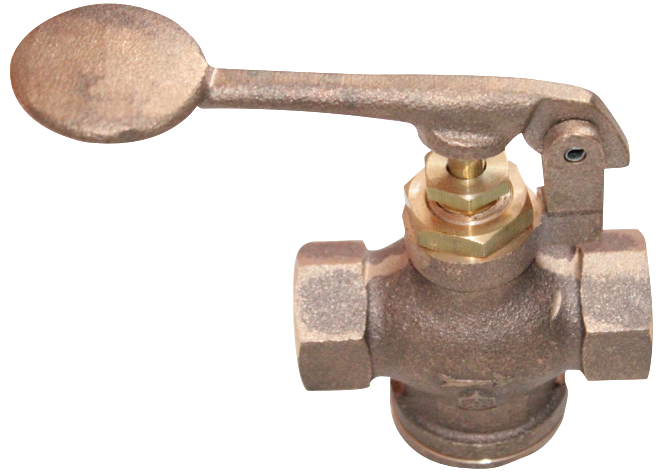
PEDAL VALVE

VP12

TECHNICAL SPECIFICATION

Fluid : Aqueous fluids, seawater, Steam (16b),
Non-toxic gases, Hydrocarbons
Operating pressure: 20 bar at 250°C

OPTIONS :
NPT/API tapping
For other specifications, please consult us



DIMENSIONS

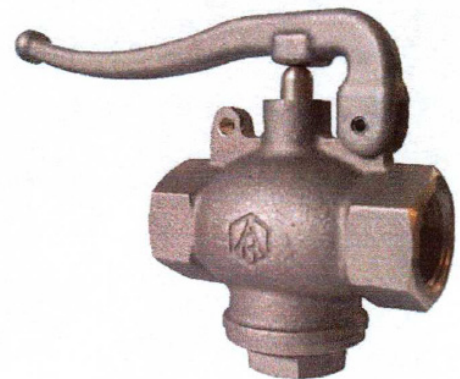
	DN	A	B	C	Poids
1101205	15	72	36,5	77	600gr

MATERIALS

BRONZE CC491K or CC499K,
Material: NF EN 1982 - NF EN 12164 - NF-EN 10272

HAND-OPERATED VALVE

ZSJ9SPG188



MAC VALVES* 54 replacement 3/2 NC SOLENOID VALVE WITH PIL EXT CARTRIDGE 24 VDC

3/2 NC SOLENOID VALVE WITH PIL EXT CARTRIDGE 24 VDC

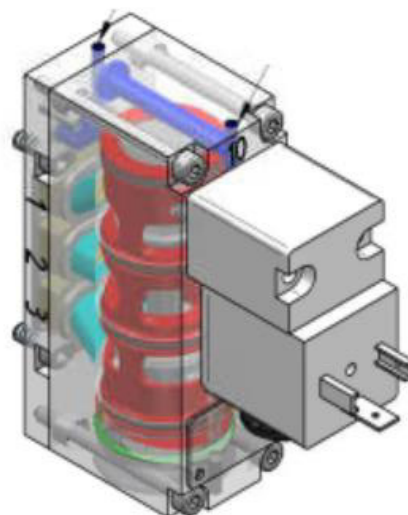
Mac Valves 54 replacement valve

ADVANTAGES :

- + Cartridge technology
- + Easy to maintain
- + Direct replacement
- + Faster delivery time

TECHNICAL SPECIFICATION

Tension : 24VDC





BUTTERFLY VALVE

BMRE-59-90434

Butterfly valve
Replaces EMHART 59-90434

ADVANTAGES :

- + Direct replacement
- + Delivery time
- + Less expensive



ROTARY ACTUATOR

AR01797

Rotary Actuator for 59-90434

ADVANTAGES :

- + Direct replacement
- + Delivery time
- + Less expensive



BUTTERFLY VALVE WITH ACTUATOR

BMRE-59-90434-WA

Butterfly valve with actuator
Replaces EMHART 59-90434

ADVANTAGES :

- + Direct replacement
- + Delivery time
- + Less expensive

Kit for EMHART butterfly valve 59-90434 DN150 PN16: KIT-59-90434



**BMR is not an approved company by EMHART, nor an official vendor*

ACTUATORS



Specific dual rod actuator for pallet ejection

Push handles cylinders

Norgren

Numatics

Rodless cylinders

Accessories

Miscellaneous



SPECIFIC DUAL ROD ACTUATOR FOR PALLET EJECTION

The dual rod actuator pallet ejection specific enables the glass bead to be sent to the basement if maintenance is required on a section

100% interchangeable with the Emhart actuator ref 535-1493 standard Course 125mm

ADVANTAGES:

Rod guidance:

- + Longer
- + Stronger

Piston:

- + Wide

=> Absorbs strong forces and radial impacts

==> Increased lifespan



TECHNICAL SPECIFICATIONS

Diameter: 50mm

Stroke: 125mm

Delivered with polymer damper

Specific developments on request

MATERIALS

Aluminium

Steel

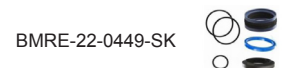
DIMENSIONS

Models	∅ (mm)	Stroke (mm)	Cross rods	Polymer damper	Other options	Equivalence	Extra stroke (mm)
SP121005	50	125	✓	✓	✗	EMHART 535-1493	✗
SP140201	50	155	✓	✓	✗	EMHART 535-1493	30
SP14052	50	150	✓	✓	✗	EMHART 535-1493	25
SP14062	50	125	✓	✓	without front flange	EMHART 535-1493	✗
SP160119	50	125	✗	✗	actuator only	EMHART 535-1493	✗
SPVDHT 50125R	50	125	✗	✓	✗	EMHART 535-1493	✗
BMRE-22-0449	-	-	-	-	-	BDF E-22-0449	-

OPTIONS

- Longer course on request
- Adding of cross rods to absorb strong forces and radial impacts
- Adding the protective cover if using cross rods
- Pallett carrier

ACCESORIES



*BMR is not an approved company by EMHART, nor an official vendor

RODLESS SPRAY CYLINDER ARK OUTLET

ADVANTAGES:

- + Identical forces in 2 directions
- + Direct force transmission, anti-rotation
- + Piston with or without magnet
- + Space-saving design
- + Max. stroke up to 5700mm
- + 3 pneumatic connections
- + Adjustable extreme shock absorbers
- + High speeds and accelerations
- + Various mounting options
- + Operation with or without air lubrication
- + 3-stage damping characteristics for load system protection



TECHNICAL SPECIFICATIONS

Construction: Rodless, double-acting cylinder with direct power transmission

Diam 25-40mm: 100-5700mm, 1mm increments (longer strokes on request)

Diam 16mm: 100-4400mm, 1mm increments

Connections: M5, G1/8", G1/4", G3/8"

Position/mounting: free

Temperatures: -10°C to +80°C (other values on request)

Specific developments on request

MATERIALS

Profile body, cylinder heads, piston pin: High-strength anodized aluminum

Synthetic seals, oil-resistant ($V < 1\text{m/s}$ (NBR)) ($V > 1\text{m/s}$ (VITON))

Sealing strips: Stainless steel

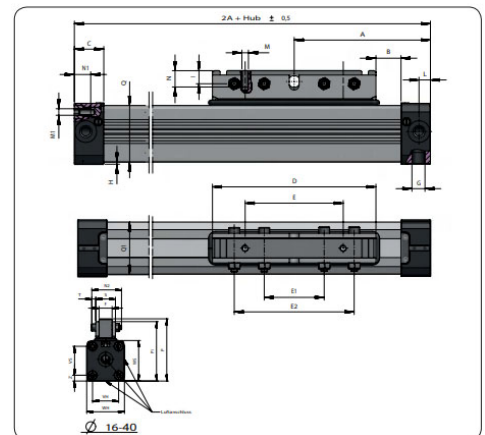
Piston cover: Synthetic wiper

DIMENSIONS

Ø	A	B	C	D	E	E1	F	G	I	L	M	M1	N1	N2	P-P1
16	65	12	15	76	48	32	10	M5	6	5,5	M4	M3	7	27	43,5 - 42,3
16L	90	37	15	76	48	32	10	M5	6	5,5	M4	M3	7	27	43,5 - 42,3
25	100	17	23	120	80	50	15	1/8"	13	8,5	M5	M5	10	35	66-58
25L	150	67	23	120	80	50	15	1/8"	13	8,5	M5	M5	10	35	66-58
32	125	23	27	150	90	55	18	1/4"	12	10,5	M6	M6	14	41	86-82
32L	200	23	27	300	180	120	18	1/4"	12	10,5	M6	M6	14	41	86-82
40	150	45	30	150	90	55	18	1/4"	12	15	M6	M6	17	41	97-93
40L	250	70	30	300	180	120	18	1/4"	12	15	M6	M6	17	41	97-93

Ø	P1	QxQ1	E2	H	S	T	VH	WH	VS	WS	Z
16	37,5	24,5x25	64	1,0	18	4	18	27	18	27	4,5
16L	37,5	24,5x25	64	1,0	18	4	18	27	18	27	4,5
25	53	36x36	100	2	23	5	27	40	27	40	6,5
25L	53	36x36	100	2	23	5	27	40	27	40	6,5
32	74	52x51	110	2	27	6	36	52	40	56	8
32L	74	52x51	240	2	27	6	36	52	40	56	8
40	85	58,5x59	110	7	28	6	54	72	54	69	9
40L	85	58,5x59	240	7	28	6	54	72	54	69	9

OPTIONS



CONTACT PRODUCTS



Push Handles
ATC
Stackers
Stainless steel braids
Felt
Hot Glass handling tools



HIGH-TEMPERATURE HANDLING SOLUTIONS

Our specialized tools are designed for handling glass immediately after it exits the mold, at temperatures exceeding 900°C. These products ensure invisible contact, leaving no marks or traces on the glass surface, even while it is soft and untreated. Precision and durability are at the core of our solutions, providing safe and efficient handling during the critical stages of glass production.



Inox & Aramid-Inox "Friendly Contact" Tools

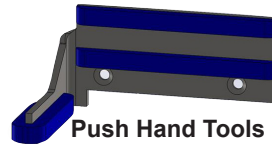
Designed for safe, gentle handling of hot glass without leaving any surface marks

ADVANTAGES :

- + No scratching, marking, or visible traces on soft glass
- + Durability under continuous use

MATERIALS :

Stainless steel and aramid fibers



Push Hand Tools

Gentle pushing and manipulation of glass

ADVANTAGES :

- + Precise, mark-free contact
- + Ergonomic design and replaceable parts for extended use

MATERIALS :

Inox or aramid-inox



Unlocking Clamps for Glass Jam Removal

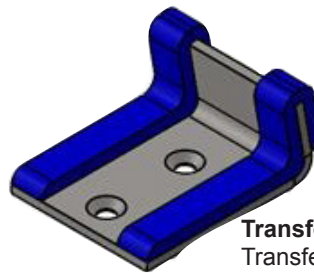
Clears glass jams caused by the accumulation of glass in hollow glass production machines

ADVANTAGES :

- + Optimized for removing glass blockages without damaging the machine
- + Stainless steel & aramid braid ensures long-lasting performance under repeated use
- + Quick clearing of glass jams, reducing downtime and improving productivity

MATERIALS :

Stainless steel and aramid braid



Transfer Wheel

Transfers hot glass between production stages while maintaining an "invisible touch"

ADVANTAGES :

- + Smooth operation with no marks left on the glass
- + Designed for high durability under heat and mechanical stress

MATERIALS :

Stainless steel with heat-treated bearings

FEATURES AND BENEFITS

No Surface Marks: Tools designed for gentle contact to avoid any marks or damage to soft glass.

Durability: High resistance to heat and wear, ensuring long-term performance.

Precision: Engineered for accuracy in glass handling, with minimal risk of breakage or defects.

Efficiency: The unlocking pliers offer fast, safe removal of glass jams, ensuring smooth production flow.

Maintenance: Easy-to-replace components for minimal downtime.

TECHNICAL SPECIFICATIONS

Materials: Inox (stainless steel), Aramid-Inox blend for enhanced heat resistance

Applications: Glass forming, mold handling, transfer to arch systems, jam removal

Customization: Available in multiple sizes to fit specific machine configurations

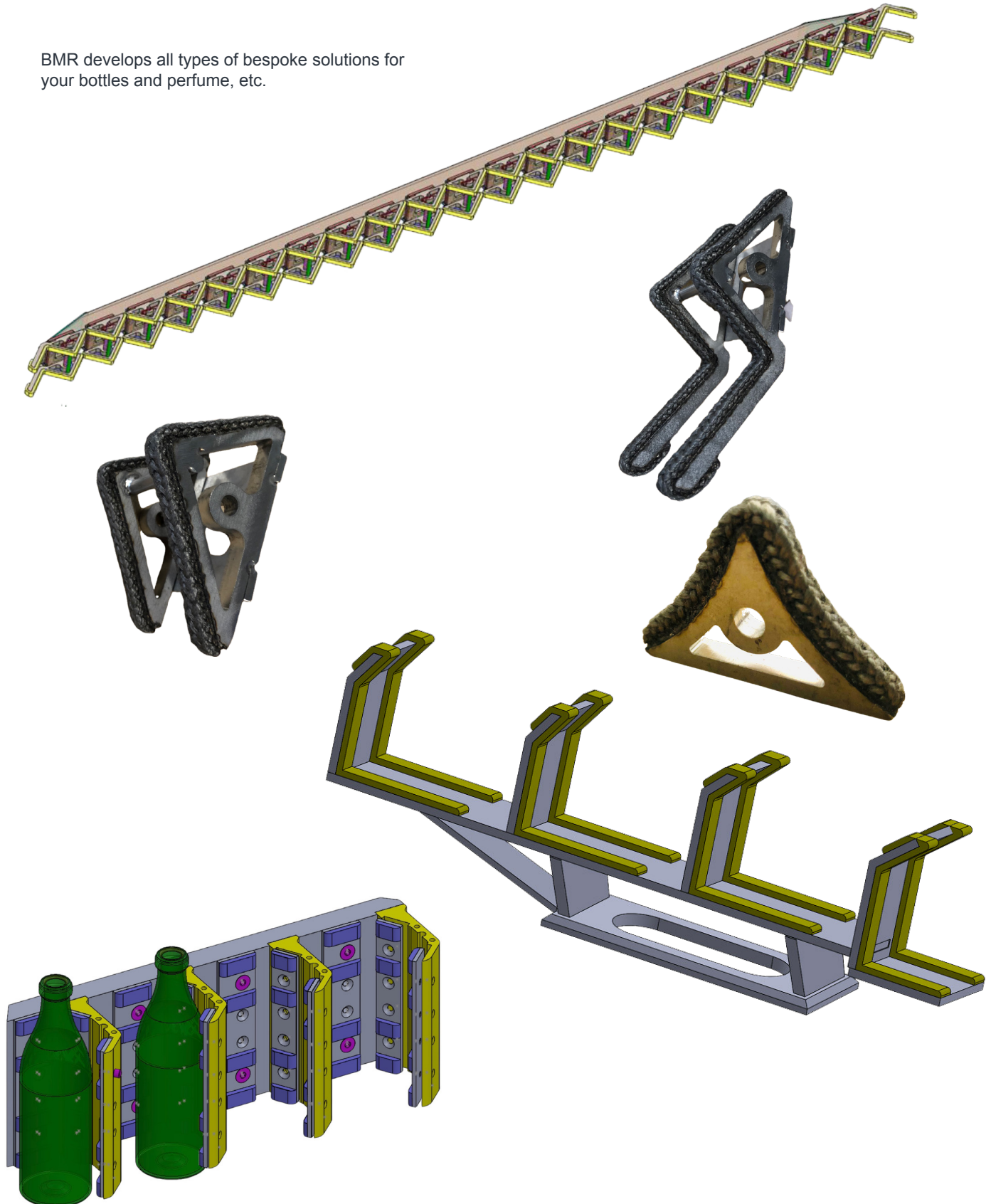
Tailored Solutions for Seamless, Mark-Free Glass Handling

Our products are designed with your production needs in mind, ensuring seamless, mark-free handling and efficient jam clearing, even under extreme conditions.

CONTACT PRODUCTS

STACKER BARS, PUSH HANDLES, BRAIDED DISCS...

BMR develops all types of bespoke solutions for your bottles and perfume, etc.





NON-WOVEN STAINLESS STEEL FELT

FEUTREINOX-30MM

The Non-Woven Stainless Steel Felt is a durable, heat-resistant material designed for handling hot glass up to 600°C. Its non-stick, non-scratch surface ensures flawless glass handling and long-lasting performance in demanding industrial environments.

ADVANTAGES :

- + Withstands temperatures up to 600°C
- + Non-scratch, non-marking, and residue-free
- + Flexible and absorbs shocks to prevent breakage
- + Resistant to chemicals, wear, and corrosion
- + Weldable to stainless steel supports



TECHNICAL SPECIFICATION

Temperature resistance : 600°C

Width : 20 or 30 mm

Material: Non-woven stainless steel

Thickness: 4 mm

Custom Sizes: Available in various widths

APPLICATIONS

- Push hands and transfer wheel fingers
- Conveyor belts and carriers
- Ark systems and heat treatment processes

REVERSE GRIPPER FOR HOT GLASS

BMR-PINC-INVER-46

The Reversed Hot Glass Handling Tongs are specifically designed for the secure handling of hot glass objects during manufacturing and laboratory processes. Featuring an inverted opening mechanism and durable stainless-steel construction, they ensure safe operation at temperatures up to 600°C.

ADVANTAGES :

- + Secure grip on hot glass objects, preventing slips or damage.
- + Reduced operator fatigue during extended use.
- + Customizable jaw sizes to suit various glass objects.



TECHNICAL SPECIFICATION

Temperature resistance : 600°C

Width : 20 or 30 mm

Material: Non-woven stainless steel

Thickness: 4 mm

Custom Sizes: Available in various widths

APPLICATIONS

- Push hands and transfer wheel fingers
- Conveyor belts and carriers
- Ark systems and heat treatment processes

CONTACT PRODUCTS

STAINLESS STEEL & ARAMID SLEEVE

BMR-GIA-ØxMM-25 meters

The stainless steel and aramid composite sleeve is designed for extreme environments, offering superior protection against high temperatures, abrasion, and mechanical wear. Its flexible yet robust construction makes it ideal for use in hot glass handling, cable protection, and industrial settings requiring enhanced durability and heat resistance.

ADVANTAGES :

- + High Temperature Resistance: Withstands extreme heat, protecting components from thermal damage.
- + Abrasion Resistance: Durable aramid fibers (e.g., Kevlar) ensure longevity in harsh conditions.
- + Flexibility: Easily installed on cables and pipes while maintaining structural integrity.
- + Corrosion Resistance: Protects against rust and degradation in humid or greasy environments.
- + Safe Hot Glass Contact: Prevents sticking or marking when handling hot glass objects.



TECHNICAL SPECIFICATION

- Material: Stainless steel and aramid composite
- Temperature Resistance: High tolerance for extreme heat
- Diameter Range: 3 mm to 20 mm (customizable)
- Length: Standard roll of 25 meters

APPLICATIONS

- Hot Glass Handling:** Used as a protective contact material for safe handling of hot glass objects.
- Cable and Flexible Hose Protection:** Shields against heat, abrasion, and debris in engines and hydraulic systems.
- Electrical Systems:** Protects wiring and circuits in high-stress environments like trains and industrial machinery.
- Corrosive Environments:** Ideal for use in humid, greasy, or chemically exposed areas.



STAINLESS STEEL BRAIDS AND BANDS

Stainless steel braids and bands are especially used for contact with hot glass on push handles, stackers and bars.

ADVANTAGES:

- + All types of developments and shapes possible
- + Very resistant to heat
- + Long lifespan
- + Avoids glazing
- + No slippage
- + Does not emit harmful dust



TECHNICAL SPECIFICATIONS

Stainless steel braids and bands
Resistant up to several hundred degrees

Specific developments on request

MATERIALS

Stainless steel
Braid 100% 3D stainless steel
Band 100% stainless steel

STAINLESS STEEL BRAIDS

Ref.	Length	Width	Thickness
BMR-TI4X4	25 m	4 mm	4 mm
BMR-TI5X5	25 m	5 mm	5 mm
BMR-TI6X3	25 m	6 mm	3 mm
BMR-TI6X6	25 m	6 mm	6 mm
BMR-TI8X8	25 m	8 mm	8 mm
BMR-TI10X10	25 m	10 mm	10 mm

For different specifications, contact us.

STAINLESS STEEL BANDS

Ref.	Length	Width	Thickness
BMR-TI25X2	100 m	25 mm	2 mm
BMR-TI30x2	50 m	30 mm	2 mm
BMR-TI40X2	50 m	40 mm	2 mm
BMR-TI50X2	25 m	50 mm	2 mm
BMR-TI60X2	25 m	60 mm	2 mm

For different specifications, contact us.

OPTIONS

All models can be made bespoke with or without support.

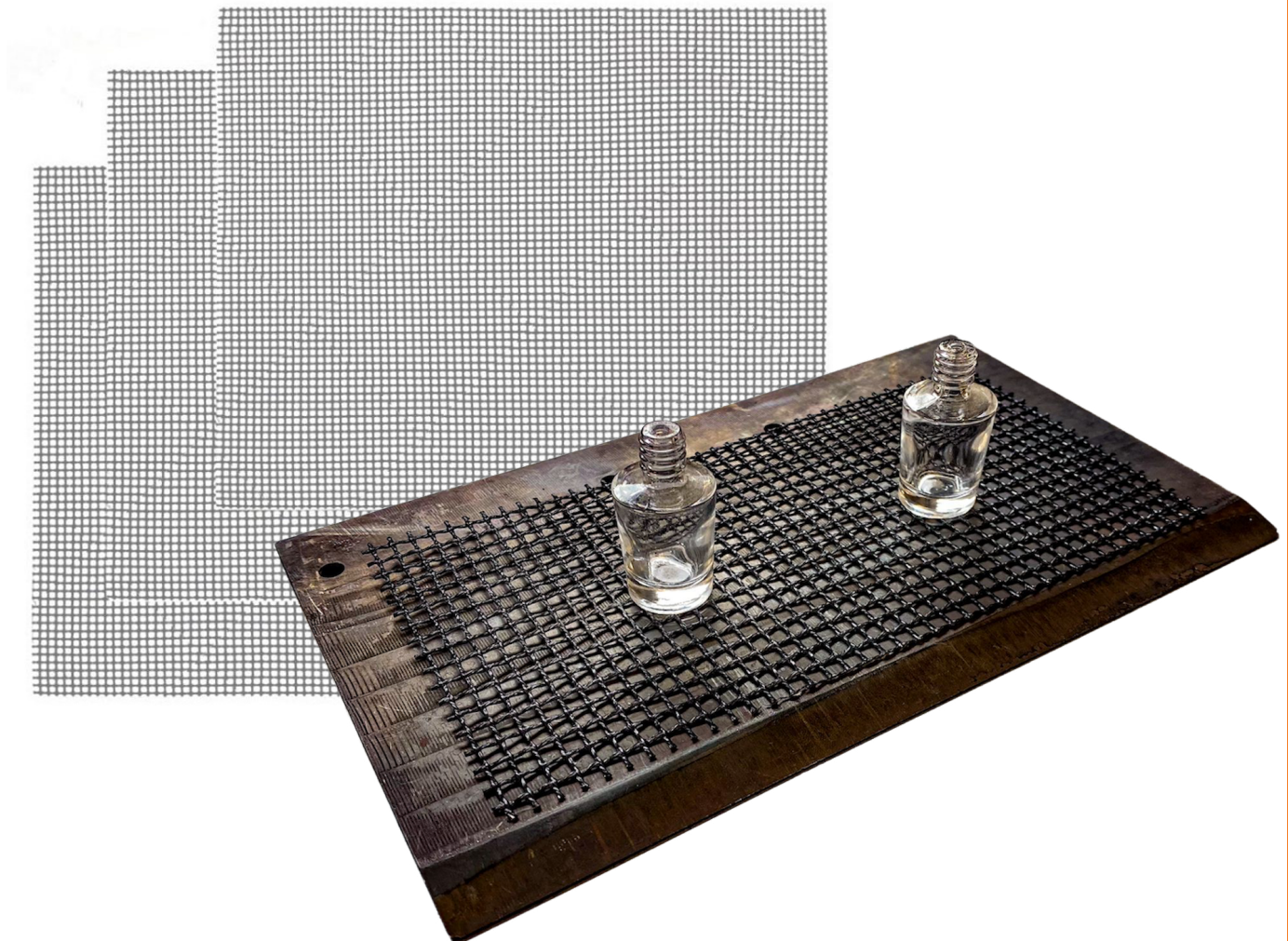
GRAPHITE-REINFORCE MESH FOR LOADING PLATE

Mesh composite covered with graphite that can be used as a contact material on any equipment.

- Loading or transfer plate
- Slide arm
- Transfer wheel rods
- Stacker

ADVANTAGES:

- + Complete absence of glazing when in contact with items (conclusive test at 800°C)
- + Adaptation to all supports (the material can be cut with scissors and can be folded like a fabric)
- + Low cost
- + Resistant to high temperatures
- + Very low wear because of its very high thermal dissipation capacity
- + Super-fast on-site change



Wasted time is a source of increased costs for any glassworks. This product can adapt to all applications and reduces the number of items in the warehouse, reduces the restocking time and time spent changing. Several standard versions enable it to be produced in large quantities and as such to offer a very attractive price that will ensure savings for our customers.

Standard dimensions: 30x30cm and 10x10cm (contact us for other dimensions)

HOSES AND DUCTS

Aeroquip
Fireproof sleeving
Silicone sleeving
Cracking
Ring cooling
Spraying
Scoop
Blowing
Take out
Tube
Ventilation
Finisher vacuum



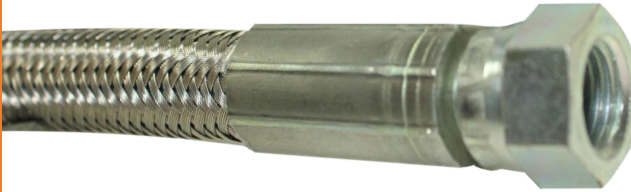


PIPES AND HOSES SPECIFIC FOR IS MACHINES

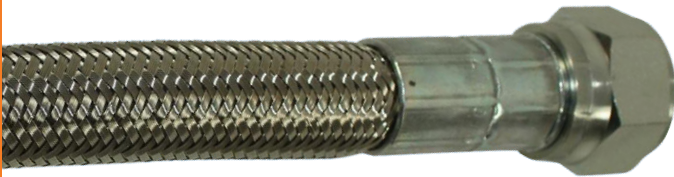
THE MOST COMMONLY USED ON IS MACHINES:



P98510
Blower hose with stainless LHT1400 steel braid



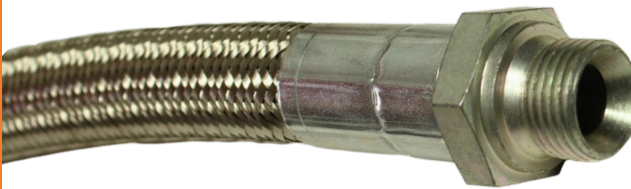
P68270
Hose with acetylene stainless steel braid – 150°C pipe + LG 720mm ¼" fitting, fitted with ¼" FB



P35778
TDS LHT 900mm fitted blower head hose



P60788
DN12 800mm hose for passing electrical cables with rotating fitting for refractory wash



P436571
Blower head/blower cooling hose stainless steel DN16mm LG 1100mm



P66977
Hose for acetylene – 150°C pipe + LG 720mm ¼" fitting, fitted with ¼" FB

P42124C
Tef Conv FDV reinforced hose DN16 lg 780mm FJ 1"1/16

SP15102-3M-F-ST
Take out/inversion 3m hose + fame-retardant shielding

2TE19X29R
Reinforced hose (the BMR touch – does not get pinched when cooling/blowing)

HOSES AND DUCTS

VACUUM HOSES

Specific hose manufacturing
for finishing machine vacuum

ADVANTAGES:

- + Able to reuse the tips
- + Bespoke design
- + Plug and play
- + Economical, cheaper

The BMR touch:
More economical,
able to reuse tips



HOSES AND DUCTS

TECHNICAL SPECIFICATIONS

Stainless steel hose covered with shielding and featuring tips
specific for vacuum finisher

Specific developments on request

MATERIALS

Stainless steel

DIMENSIONS

Réf.	DN.	Length
BMR-FVxx	25	xx

TO ORDER

BMR-FVxx
└───┬───┘
Length in dm

Example:
BMT-FV14 = vacuum hose length 1400mm



AEROQUIP 2807 HOSE



MATERIALS

Extruded PTFE tube with stainless steel single wire braid.

TEMPERATURE RANGE

Operating Temperature Range : -73°C to +260°C)

MODELS

Models	IN (mm)	Out (mm)	Max operating pressure (bar)
2807-3	3.6	6.4	210
2807-4	4.8	7.6	210
2807-5	6.6	9.4	210
2807-6	8.1	10.9	175
2807-8	10.7	13.7	140
2807-10	13	16	105
2807-12	16.3	19.3	84
2807-16	22.4	26.2	70
2807-20	28.4	32.8	43

AEROQUIP 2556 HOSE



MATERIALS

Synthetic rubber tube, textile, braid reinforcement, synthetic rubber cover.

TEMPERATURE RANGE

Operating Temperature Range : -40°C to +100°C - Water not to exceed +66°C, air not to exceed +160°C

MODELS

Models	IN (mm)	Out (mm)	Max operating pressure (bar)
2556-4	6.4	12.4.30	25
2556-6	9.7	15.7	21
2556-8	12.7	19.1	21
2556-10	16	23.1	17
2556-12	19.1	26.2	17

HIGH-TEMPERATURE SILICONE PROTECTION TUBE



High-temperature GVES protective sheath made of woven or braided glass fibers coated with a red silicone rubber. The red color comes from the high content of $Fe^{2}O^{3}$

APPLICATIONS

- High-temperature protection for cables, wires and pipes
- Protection against burns
- Insulation of pipes against heat loss

TEMPERATURE RANGE

- Continuous operating temperature: 260°C
- Temporarily up to + 1000°C

MATERIALS

Silicone

MODELS

Models	Ø (mm)	Rolls (m)
MS1230349999009515	9,5	15
MS1230349999011115	11,1	15
MS1230349999012715	12,7	15
MS1230349999015915	15,9	15
MS1230349999019015	19	15
MS1230349999022015	22	15
MS1230349999025415	25,4	15
MS1230349999028615	28,6	15
MS1230349999031815	31,8	15
MS1230349999034915	34,9	15
MS1230349999038115	38,10	15
MS1230349999041315	41,3	15
MS1230349999044415	44,4	15
MS1230349999048015	48	15
MS1230349999050815	50,8	15
MS1230349999057215	57,2	15
MS1230349999060015	60	15
MS1230349999063515	63,5	15
MS1230349999069815	69,8	15
MS1230349999076215	76,2	15
MS1230349999082315	82,3	15
MS1230349999089015	89	15
MS1230349999095215	95,2	15
MS1230349999102015	102	15
MS1230349999114015	114	15

Consult us for other dimensions



BMR-M0 - M0 CERTIFIED SHEATHING



High temperature-resistant suction and ventilation hose; silicone, super light, ultra-flexible + compressible, diameter up to 1,000mm (up to 260°C)

APPLICATIONS

- For applications where non-flammable hoses are required
- For solid materials like dust, powders and fibres
- For aggressive gas environments such as vapours and fumes
- For installations performing dust removal, suction, fume suction, oven exhaust and soldering fume removal
- As a blower and compensator

SPECIFICATIONS

- Highly heat resistant
- Ultra-flexible + compressible 4:1
- Protection against abrasion using external clamping profile
- Hose wall clip in the friction resistant clamping profile
- Able to create very tight corners
- Resistant to being pierced by folding
- Lightweight
- Inflammable up to: DIN 4102-B1 – RoHS compliant

MOST USED IN GLASSWORKS:

BMR-M0-265

Silicone shielding 265mm M0

BMR-M0-275

Silicone shielding 275mm M0

BMR-M0-315

Silicone shielding 315mm M0

BMR-M0-330

Silicone shielding 330mm M0

MATERIALS

Construction

1. Spiral support clamping profile: made entirely of stainless steel
2. Double wall; Wall: glass fibre material covered in silicone

TEMPERATURE RANGE

- -70°C to +260°C
- Temporarily up to +280°C

VARIANTS

- Other measurements and lengths available on request
- Stainless steel clamping profile
- Dual layer

TO ORDER

BMR-M0-xx

└─ Internal diameter in mm

Example :
BMR-M0-315 = M0 shielding with int. diam. of 315mm

HOSES AND DUCTS

DOUBLE LAYERED HIGH-TEMPERATURE HOSE



ADVANTAGES:

- very good resistance to flying sparks and welding sparks
- abrasion protection via external clamp profile
- secure clamping of the wall within the clamp profile
- very good heat resistance
- conforms to RoHS guideline
- REACH according to --> Technolog

APPLICATIONS

- flexible hose/ ducting for hot and cold gases
- vehicle/ car gas exhaust system, gas extraction: hose reel, slotted floor channel, underfloor extraction system
- engine test bench, exhaust gas measurement
- high temperature extraction: oven, foundry, furnace, smelting, ceramics industry, glass industry, steel plant, aluminium mill
- bellows, compensators

MODELS

Models	In Ø (mm)	Outer Ø (mm)	Vaccum (bar)	Bending radius (mm)	weight (kg/m)	Dimensions in stock (m)
N481-0075-0000	75-76	89	0.290	43	1.85	6
N481-0080-0000	80	94	0.250	45	1.93	6
N481-0090-0000	89-90	104	0.180	49	2.19	6
N481-0100-0000	100-102	114	0.150	53	2.10	6
N481-0110-0000	110	124	0.130	57	2.30	3 6
N481-0115-0000	114-115	129	0.120	59	1.82	3 6
N481-0120-0000	120	134	0.110	61	2.5	3 6
N481-0125-0000	125-127	139	0.1	63	2.60	3 6
N481-0130-0000	130	144	0.095	65	2.69	3 6
N481-0140-0000	140	154	0.075	69	2.89	3 6
N481-0150-0000	150-152	164	0.06	73	2.11	3 6
N481-0160-0000	160	174	0,055	77	2,25	3 6
N481-0165-0000	165	179	0,050	79	2,32	3 6
N481-0170-0000	170	184	0,050	81	2,38	3 6
N481-0175-0000	175	189	0,050	83	2,45	3 6
N481-0180-0000	178-180	194	0,050	85	2,52	3 6
N481-0200-0000	200-203	214	0,040	93	2,79	3 6
N481-0225-0000	225	239	0,030	103	3,13	3 6
N481-0250-0000	250	264	0,030	113	3,47	3 6
N481-0254-0000	254	268	0,025	115	3,53	3 6
N481-0275-0000	275	289	0,025	123	3,81	3 6
N481-0280-0000	280	294	0,020	125	3,88	3 6
N481-0300-0000	300	314	0,020	133	4,14	3 6
N481-0350-0000	350	364	0,015	153	4,82	3 6
N481-0400-0000	400	414	0,015	173	5,5	3 6
N481-0406-0000	405-406	420	0,010	176	5,58	3 6
N481-0450-0000	450	464	0,010	193	6,17	3 6
N481-0500-0000	500	514	0,005	213	6,85	3 6
N481-0600-0000	600	614	0,005	253	8,21	3
N481-0610-0000	610	624	0,005	257	8,35	3
N481-0712-0000	712	726	0,005	298	9,73	3
N481-0800-0000	800	814	0,002	333	10,91	3

TEMPERATURE RANGE

- -60°C à 600°C
- Temporarily up to + 700°C

MOST USED ACCESSORIES



2130100000
Quick change
clamping collar



21201350000
Screw clamping collar



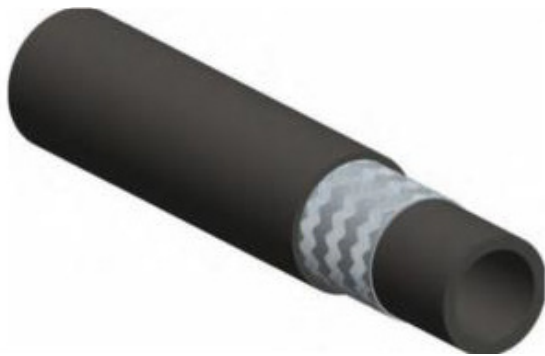
CRACKING



SPRAYING



RING COOLING



SCOOP



BLOWING



TAKE-OUT



TUBES



FITTINGS

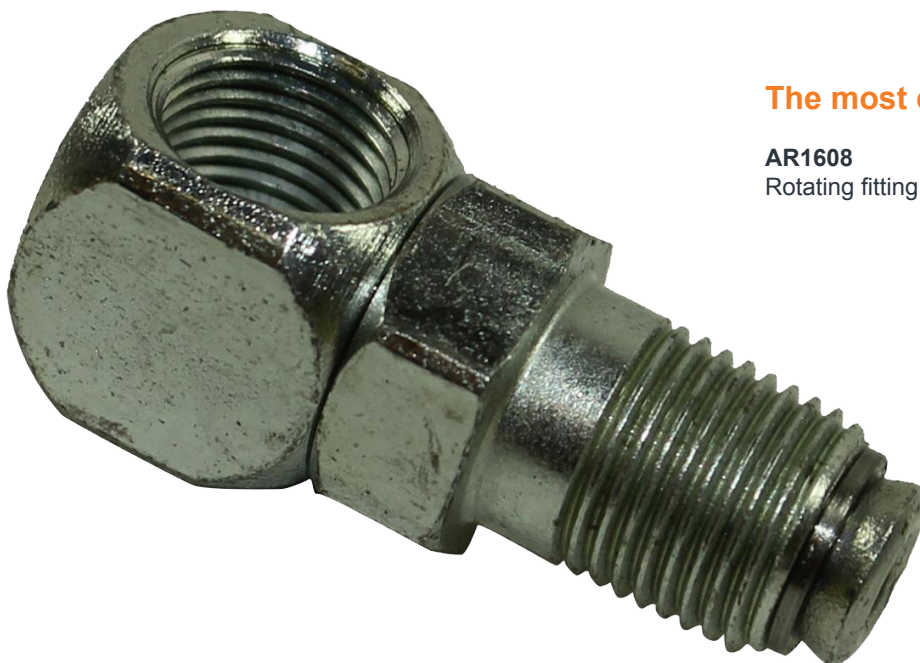


Aeroquip
Check valves
IS machine specific
Couplings
Rotating
Miscellaneous



HIGH TEMPERATURE ROTATING FITTINGS

All types of high temperature rotating fittings, with or without ball bearings are available on request. Contact us.



The most commonly used:

AR1608
Rotating fitting B5776 GAZ 1/8G 90D

COUPLERS

THE MOST COMMONLY USED FOR REFRACTORY WASHING:

BMR-CM-MG38-OX

Male coupler - MG3/8 RH for oxygen

BMR-CF-MG38-OX

Female coupler - MG3/8 RH for oxygen

BMR-CM-MG38-GAZ

Male coupler - MG3/8 LH for gas

BMR-CF-MG38-GAZ

Female coupler - MG3/8 LH for gas

BMR-CM-MG14-OXY

Male coupler - MG1/4 RH for oxygen

BMR-CF-FG14-OXY

Female coupler - FG1/4 RH for oxygen

BMR-CM-MG14-GAZ

Male coupler - MG1/4 LH for gas

BMR-CF-MG38-GAZ

Female coupler - MG3/8 LH for gas



ON IS MACHINES:



P380471

Male coupler 3/4
Equivalent Bottero* PI70105896



P380472

Female coupler 3/4
Equivalent Bottero* PI70105895

*BMR is not a company approved by brand BOTTERO, nor an official vendor

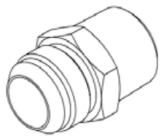


STRAIGHT ADAPTER MALE JIC X MALE GAZ CONICAL

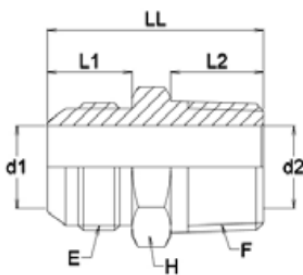


Straight adapter male jic x male gaz conical

MODELS



DIMENSIONS



Dimensions and operating pressures are given as a guide only.

Models	JIC (E)	R (F)	L1	L2	LL	d1	d2	H
1CA12050	5/16 - 24f	R1/8-28f	11,4	10	27,5	1,6	4,5	12
1CA12100	3/8-24f	R1/8-28f	12,2	10	28	3,2	4,5	12
1CA14060	3/8-24f	R1/4-19f	12,2	14	33	3,2	7	14
1CA12060	7/16-20f	R1/8-28f	14	10	30	4,5	4,5	12
1CA14070	7/16-20f	R1/4-19f	14	14	35	4,4	7	14
1CA17120	7/16-20f	R3/8-19f	14	15	36	4,4	10	17
1CA22158	7/16-20f	R1/2-14f	14	19	41	4,4	13	22
1CA14080	1/2-20f	R1/8-28f	14	10	31	6	4,5	14
1CA14090	1/2-20f	R1/4-19f	14	14	35	6	7	14
1CA17130	1/2-20f	R3/8-19f	14	15	36	6	10	17
1CA14100	9/16-18f	R1/8-28f	14,1	10	31	7,5	4,5	17
1CA16100	9/16-18f	R1/4-19f	14,1	14	35	7,5	7,5	17
1CA17140	9/16-18f	R3/8-19f	14,1	15	36	7,5	10	17
1CA22160	9/16-18f	R1/2-14f	14,1	19	41	7,5	13	22
1CA27170	9/16-18f	R3/4-14f	14,1	20	43	7,5	18	27
1CA19110	3/4-16f	R1/4-19f	16,7	14	38,5	9,9	7	19
1CA19150	3/4-16f	R3/8-19f	16,7	15	39,5	9,9	9,9	19
1CA22180	3/4-16f	R1/2-14f	16,7	19	43,5	9,9	13	22
1CA27200	3/4-16f	R3/4-14f	16,7	20	45,5	9,9	18	27
1CA34205	3/4-16f	R1"-11f	16,7	24	50,5	9,9	24	36
1CA22190	7/8-14f	R3/8-19f	19,3	15	42,5	12,3	10	24
1CA22200	7/8-14f	R1/2-14f	19,3	19	46,5	12,3	12,3	24
1CA24220	7/8-14f	R5/8-14f	19,3	19	46,5	12,3	12,3	24
1CA27210	7/8-14f	R3/4-14f	19,3	20	48,5	12,3	18	27
1CA34208	7/8-14f	R1"-11f	19,3	24	53,5	12,3	24	36
1CA27230	1"1/16-12f	R3/8-19f	21,9	15	46	15,5	10	27
1CA27240	1"1/16-12f	R1/2-14f	21,9	19	50	15,5	13	27
1CA27250	1"1/16-12f	R3/4-14f	21,9	20	51	15,5	15,5	27
1CA34260	1"1/16-12f	R1"-11f	21,9	24	56	15,5	24	36
1CA45270	1"1/16-12f	R1"1/4-11f	21,9	25	59	15,5	31	46
1CA32255	1"3/16-12f	R3/4-14f	22,6	20	51,5	18	18	32
1CA34275	1"5/16-12f	R1/2-14f	23,1	19	52	21,5	13	36
1CA34280	1"5/16-12f	R3/4-14f	23,1	20	53	21,5	18	36
1CA34290	1"5/16-12f	R1"-11f	23,1	24	57	21,5	21,5	36
1CA45310	1"5/16-12f	R1"1/4-11f	23,1	25	60	21,5	31	46
1CA50325	1"5/16-12f	R1"1/2-11f	23,1	25	60	21,5	38	50
1CA42270	1"5/8-12f	R3/4-14f	24,3	20	56,5	27,5	18	46
1CA42300	1"5/8-12f	R1"-11f	24,3	24	60	27,5	24	46
1CA45320	1"5/8-12f	R1"1/4-11f	24,3	25	61,5	27,5	31	46
1CA50335	1"7/8-12f	R1"1/4-11f	27,5	25	64,5	33	31	50
1CA50330	1"5/8-12f	R1"1/2-11f	24,3	25	62	27,5	38	50
1CA50340	1"7/8-12f	R1"1/2-11f	27,5	25	64,5	33	33	50
1CA65110	2"1/2-12f	R1"1/2-11f	33,9	25	74	45	38	65
1CA65350	2"1/2-12f	R2"-11f	33,9	30	79	45	45	65
1CA77360	3"-12f	R2"1/2-11f	39	36	99	58	58	77
1CA95380	3"1/2-12f	R3"-11f	45	40	115	70	70	90

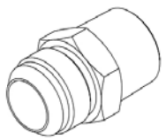
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EQUIVALENT AEROQUIP 2021

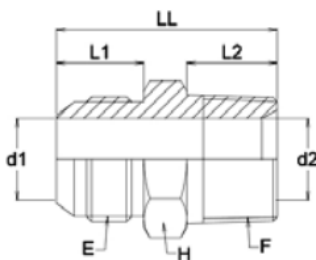


Straight adapter Male JIC X Male NPT

MODELS



DIMENSIONS



Models	JIC (E)	R (F)	L1	L2	LL	d1	d2	H	AEROQUIP equivalent	OEM
1CB12051	5/16-24f	1/8-27f	11.4	9,7	28,2	1,6	4,5	11		
1CB12060	3/8-24f	1/8-27f	12.2	9,7	29	3,2	4,5	11		
1CB12070	7/16-20f	1/8-27f	14	9,7	31	4,4	4,4	12	2021-2-4S	
1CB14080	7/16-20f	1/4-18f	14	14,2	36	4,4	6	14	2021-4-4S	
1CB19130	7/16-20f	3/8-18f	14	14,2	36,1	4,4	9	19		
1CB22180	7/16-20f	1/2-14f	14	19	42,7	4,4	12	22	2021-8-4S	
1CB14100	1/2-20f	1/8-27f	14	9,7	31	6	4,5	14		
1CB14110	1/2-20f	1/4-18f	14	14,2	36	6	6	14		
1CB19140	1/2-20f	3/8-18f	14	14,2	36,1	6	9	19		
1CB22190	1/2-20f	1/2-14f	14	19	42,7	6	12	22		
1CB16090	9/16-18f	1/8-27f	14.1	9,7	31,5	7,5	4,5	17		
1CB16120	9/16-18f	1/4-18f	14.1	14,2	36,3	7,5	6	17	2021-4-6S	
1CB19150	9/16-18f	3/8-18f	14.1	14,2	36,4	7,5	9	19	2021-6-6S	
1CB22200	9/16-18f	1/2-14f	14.1	19	42,9	7,5	12	22	2021-8-6S	
1CB27220	9/16-18f	3/4-14f	14.1	19	44,4	7,5	16,5	27		
1CB19160	3/4-16f	1/4-18f	16.7	14,2	38,9	9,9	6	19	2021-4-8S	
1CB19170	3/4-16f	3/8-18f	16.7	14,2	38,9	9,9	9,9	19	2021-6-8S	
1CB22210	3/4-16f	1/2-14f	16.7	19	45,5	9,9	9,9	22	2021-8-8S	
1CB27230	3/4-16f	3/4-14f	16.7	19	47	9,9	16,5	27		
1CB22220	7/8-14f	3/8-18f	19.3	14,2	43,2	12,3	9	24	2021-6-10S	
1CB22230	7/8-14f	1/2-14f	19.3	19	48	12,3	12,3	24	2021-8-10S	
1CB27240	7/8-14f	3/4-14f	19.3	19	49,5	12,3	16,5	27	2021-12-10S	
1CB27250	1"1/16-12f	1/2-14f	21.9	19	52,3	15,5	12	27	2021-8-12S	
1CB27260	1"1/16-12f	3/4-14f	21.9	19	52,3	15,5	15,5	27	2021-12-12S	OIS-103-182
1CB34280	1"1/16-12f	1"-11,5f	21.9	23,9	57,1	15,5	21,5	36		
1CB32270	1"3/16-12f	3/4-14f	22.6	19	53,1	18	16,5	32		
1CB34290	1"5/16-12f	3/4-14f	23.1	19	53,6	21,5	16,5	36		
1CB34300	1"5/16-12f	1"-11,5f	23.1	23,9	58,4	21,5	21,5	36		
1CB45320	1"5/16-12f	1"1/4-11,5f	23.1	24,6	60,9	21,5	28,5	46		
1CB42310	1"5/8-12f	1"-11,5f	24.3	23,9	61,4	27,5	21,5	46		
1CB50345	1"5/8-12f	1"1/2-11,5f	24.3	25,4	64,8	27,5	35	50		
1CB45330	1"5/8-12f	1"1/4-11,5f	24.3	24,6	62,2	27,5	27,5	46		
1CB50315	1"7/8-12f	1"-11,5f	27.5	23,9	66,6	33	21,5	50		
1CB50340	1"7/8-12f	1"1/4-11,5f	27.5	24,6	67,3	33	28,5	50		
1CB50350	1"7/8-12f	1"1/2-11,5f	27.5	25,4	68,1	33	33	50	2021-24-24S	
1CB65357	1"7/8-12f	2"-11,5f	27.5	26,2	72,6	33	46	65		
1CB65355	2"1/2-12f	1"1/2-11,5f	33.9	25,4	78,2	45	35	65		
1CB65360	2"1/2-12f	2"-11,5f	33.9	26,2	79	45	45	65		
1CB77370	3"-12f	2"1/2-8f	39	38,5	101,5	58	56	80		
1CB90390	3"1/2-12f	3"-8f	45	40	115	70	78,5	90		

Dimensions and operating pressures are given as a guide only.



EQUIVALENT AEROQUIP 2027



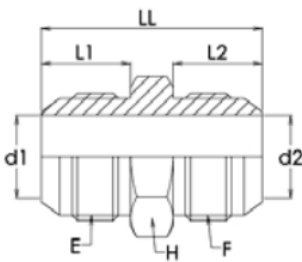
Straight adapter Male JIC X Male JIC

Increased pressure with JIC female

MODELS



DIMENSIONS



Models	JIC (E)	JIC (F)	L1	L2	LL	d1	d2	H	AEROQUIP equivalent
1CC11050	3/8-24f	3/8-24f	12.2	12,2	31,2	3,2	3,2	11	
1CC12040	7/16-20f	5/16-24f	14	11.4	32.3	4.4	1.6	12	
1CC12050	7/16-20f	3/8-24f	14	12,2	33	4,4	3,2	12	
1CC12060	7/16-20f	7/16-20f	14	14	34,8	4,4	4,4	12	
1CC14070	7/16-20f	1/2-20f	14	14	34,8	4,4	6	14	
1CC14080	1/2-20f	1/2-20f	14	14	34,8	6	6	14	
1CC16090	9/16-18f	7/16-20f	14.1	14	35,5	7,5	4,4	17	
1CC16080	9/16-18f	1/2-20f	14.1	14	35,5	7,5	6	17	
1CC16110	9/16-18f	9/16-18f	14.1	14,1	35,8	7,5	7,5	17	2027-6-6S
1CC19120	9/16-18f	3/4-16f	14.1	16,7	38,6	7,5	9,9	19	
1CC19096	3/4-16f	7/16-20f	16.7	14	38,3	9,9	4,4	19	
1CC19130	3/4-16f	1/2-20f	16.7	14	38,3	9,9	6	19	
1CC19140	3/4-16f	3/4-16f	16.7	16,7	41,1	9,9	9,9	19	
1CC22110	3/4-16f	3/4-16f	16.7	16,7	41,1	9,9	9,9	22	
1CC24128	7/8-14f	1/2-20f	19.3	14	42,5	12,3	6	24	
1CC24130	7/8-14f	9/16-18f	19.3	14,1	42,7	12,3	7,5	24	
1CC22150	7/8-14f	3/4-16f	19.3	16,7	45,3	12,3	9,9	24	
1CC22160	7/8-14f	7/8-14f	19.3	19,3	47,8	12,3	12,3	24	2027-10-10S
1CC27170	1"1/16-12f	3/4-16f	21.9	16,7	49,6	15,5	9,9	27	
1CC27180	1"1/16-12f	7/8-14f	21.9	19,3	52,1	15,5	12,3	27	
1CC27190	1"1/16-12f	1"1/16-12f	21.9	21,9	54,9	15,5	15,5	27	
1CC32195	1"3/16-12f	1"1/16-12f	22.6	21,9	55,3	18	15,5	32	
1CC32200	1"3/16-12f	1"3/16-12f	22.6	22,6	56,1	18	18	32	
1CC34186	1"5/16-12f	3/4-16f	23.1	16,7	50,8	21,5	9,9	36	
1CC34190	1"5/16-12f	7/8-14f	23.1	19,3	53,4	21,5	12,3	36	
1CC34200	1"5/16-12f	1"1/16-12f	23.1	21,9	55,9	21,5	15,5	36	
1CC34210	1"5/16-12f	1"5/16-12f	23.1	23,1	57,2	21,5	21,5	36	
1CC42215	1"5/8-12f	1"5/16-12f	24.3	23,1	60,4	27,5	21,5	46	
1CC42220	1"5/8-12f	1"5/8-12f	24.3	24,3	61,7	27,5	27,5	46	
1CC46210	1"5/8-12f	1"1/16-12f	24.3	21,9	59,4	27,5	15,5	46	
1CC50223	1"7/8-12f	1"5/16-12f	27.5	23,1	65,5	33	21,5	50	
1CC50225	1"7/8-12f	1"5/8-12f	27.5	24,3	66,5	33	27,5	50	
1CC50230	1"7/8-12f	1"7/8-12f	27.5	27,5	69,8	33	33	50	
1CC65240	2"1/2-12f	2"1/2-12f	33.9	33,9	86,4	45	45	65	
1CC77250	3"-12f	3"-12f	39	39	98	58	58	77	
1CC90260	3"1/2-12f	3"1/2-12f	45	45	120	70	70	90	

Dimensions and operating pressures are given as a guide only.

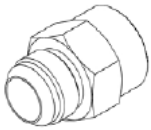
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EQUIVALENT AEROQUIP 2022

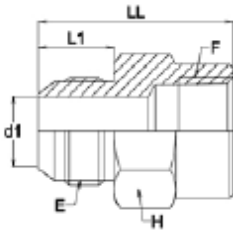


Straight adapter Male JIC X Male JIC

MODELS



DIMENSIONS



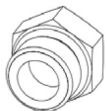
Models	JIC (E)	JIC (F)	L1	L2	d1	H	AEROQUIP equivalent
1CR16050	7/16-20f	1/8-27f	14	30,2	4,4	16	2022-2-4S
1CR19060	7/16-20f	1/4-18f	14	35,3	4,4	19	2022-4-4S
1CR22060	7/16-20f	3/8-18f	14	36,8	4,4	22	
1CR14055	1/2-20f	1/8-27f	14	29,7	6	16	
1CR19070	1/2-20f	1/4-18f	14	35,3	6	19	2022-4-5S
1CR19080	9/16-18f	1/4-18f	14,1	35,6	7,5	19	2022-4-6S
1CR24090	9/16-18f	3/8-18f	14,1	37,1	7,5	22	2022-6-6S
1CR30100	9/16-18f	1/2-14f	14,1	42,9	7,5	29	
1CR19095	3/4-16f	1/4-18f	16,7	39,3	9,9	19	
1CR24100	3/4-16f	3/8-18f	16,7	39,6	9,9	22	2022-6-8S
1CR29110	3/4-16f	1/2-14f	16,7	45,5	9,9	29	2022-8-8S
1CR24105	7/8-14f	3/8-18f	19,3	42,4	12,3	24	
1CR29120	7/8-14f	1/2-14f	19,3	48	12,3	30	
1CR36130	1"1/16-12f	3/4-14f	21,9	52,3	15,5	36	2022-12-12S
1CR36150	1"5/16-12f	3/4-14f	23,1	53,9	21,5	36	
1CR46140	1"5/16-12f	1"-11,5f	23,1	59,7	21,5	41	2022-16-16S
1CR54150	1"5/8-12f	1"1/4-11,5f	24,3	63,2	27,5	50	
1CR63160	1"7/8-12f	1"1/2-11,5f	27,5	66,5	33	60	
1CR77170	2"1/2-12f	2"-11,5f	33,9	75,4	45	75	
1CR29120							2022-8-10S

EQUIVALENT AEROQUIP 210292

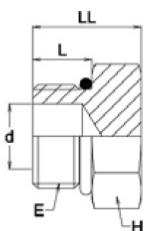


Male SAE plug Hexagonal head + O-ring

MODELS



DIMENSIONS



Models	SAE (E)	L	LL	d	H	AEROQUIP equivalent
1RZ12060	3/8-24f	7,54	15,2	3,2	12	
1RZ14060	7/16-20f	9,14	17	5,2	14	
1RZ16065	1/2-20f	9,14	17	5,9	17	
1RZ17070	9/16-18f	9,93	18,5	7,5	17	
1RZ22075	3/4-16f	11,13	20,3	10,7	22	
1RZ26135	7/8-14f	12,7	23,6	12,7	27	
1RZ32190	1"1/16-12f	15,09	27,7	16,7	32	
1RZ34195	1"3/16-12f	15,09	27,7	18,2	36	
1RZ38200	1"5/16-12f	15,09	28,4	22,2	41	
1RZ50210	1"5/8-12f	15,09	30,5	27,8	50	
1RZ54215	1"7/8-12f	15,09	32,3	34,1	55	
1RZ71220	2"1/2-12f	15,09	36,3	46,1	70	
1RZ19215						210292-4S
1RZ24250						210292-8S
1RZ27315						210292-10S

Dimensions and operating pressures are given as a guide only.

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EQUIVALENT AEROQUIP 2083

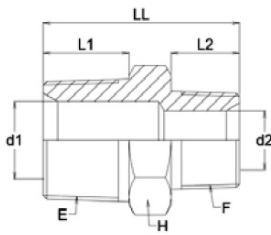


Straight adapter Male NPT X Male NPT

MODELS



DIMENSIONS

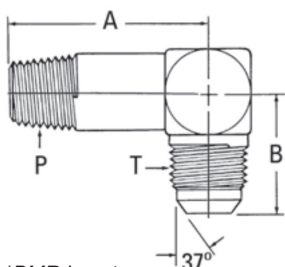


Models	NPT (E)	NPT (F)	L1	L2	LL	d1	d2	H	AEROQUIP equivalent
1HH12050	1/8-27f	1/8-27f	9,7	9,7	26,9	4,5	4,5	11	2083-6-6S
1HH14060	1/4-18f	1/8-27f	14,2	9,7	32	6	4,5	14	
1HH14070	1/4-18f	1/4-18f	14,2	14,2	36,8	6	6	14	
1HH19080	3/8-18f	1/8-27f	14,2	9,7	32	9	4,5	19	
1HH19090	3/8-18f	1/4-18f	14,2	14,2	36,8	9	6	19	
1HH19100	3/8-18f	3/8-18f	14,2	14,2	36,8	9	9	19	
1HH22110	1/2-14f	1/4-18f	19	14,2	43,2	12	6	22	
1HH22120	1/2-14f	3/8-18f	19	14,2	43,2	12	9	22	
1HH22130	1/2-14f	1/2-14f	19	19	48	12	12	22	
1HH27140	3/4-14f	1/4-18f	19	14,2	45	16,5	6	27	
1HH27150	3/4-14f	3/8-18f	19	14,2	45	16,5	9	27	
1HH27160	3/4-14f	1/2-14f	19	19	49,8	16,5	12	27	
1HH27170	3/4-14f	3/4-14f	19	19	49,8	16,5	16,5	27	
1HH34180	1"-11,5f	1/2-14f	23,9	19	54,5	21,5	12	36	
1HH34190	1"-11,5f	3/4-14f	23,9	19	54,6	21,5	16,5	36	
1HH34200	1"-11,5f	1"-11,5f	23,9	23,9	59,4	21,5	21,5	36	
1HH45210	1"1/4-11,5f	1"-11,5f	24,6	23,9	62,2	28,5	21,5	46	
1HH45220	1"1/4-11,5f	1"1/4-11,5f	24,6	24,6	63	28,5	28,5	46	
1HH50216	1"1/2-11,5f	1/2-14f	25,4	19	59,9	35	12	50	
1HH50220	1"1/2-11,5f	1"-11,5f	25,4	23,9	64,8	35	21,5	50	
1HH50230	1"1/2-11,5f	1"1/4-11,5f	25,4	24,6	65,5	35	28,5	50	
1HH50240	1"1/2-11,5f	1"1/2-11,5f	25,4	25,4	66,3	35	35	50	
1HH63250	2"-11,5f	1"1/2-11,5f	26,2	25,4	70,8	46	35	65	
1HH63260	2"-11,5f	2"-11,5f	26,2	26,2	71,6	46	46	65	
1HH77270	2"1/2-8f	2"1/2-8f	38,5	38,5	95	56	56	75	

EQUIVALENT AEROQUIP 202411

Elbow 90°

DIMENSIONS



Models	TUBE O.D. (E)	THREAD P	THREAD T	A (mm)	B (mm)	AEROQUIP equivalent
20241124S	6,3	1/8-27	7/16-20	29,7	22,6	202411-2-4S
	7,9	1/8-27	1/2-20	29,7	24,1	202411-2-5S
	6,3	1/4-18	7/16-20	40,1	26,7	202411-4-4S
20241146S	9,6	1/4-18	9/16-18	40,1	26,9	202411-4-6S
20241168S	12,7	3/8-18	3/4-16	46,2	31,8	202411-6-8S
	12,7	1/2-14	3/4-16	55,2	33,8	202411-8-8S
202411-8-10S	16,0	1/2-14	7/8-14	55,2	36,8	202411-8-10S
	16,0	3/4-14	7/8-14	62,0	39,1	202411-12-10S
	19,0	3/4-14	11/16-12	62,0	42,2	202411-12-12S
	25,4	3/4-14	15/16-12	71,6	46,0	202411-12-16S
	25,4	1-11/2	15/16-12	76,4	46,0	202411-16-16S
	31,7	11/4-11/2	15/8-12	91,2	52,3	202411-20-20S

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EQUIVALENT AEROQUIP 2024

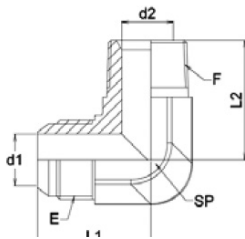


90° Elbow Male JIC X Male NPT

MODELS



DIMENSIONS



Models	JIC (E)	JIC (F)	L1	L2	d1	d2	SP	AEROQUIP equivalent
1SA99048	5/16-24f	1/8-27f	19.6	18.3	1,6	4,5	11	
1SA99097	3/8-24f	3/8-18f	26.5	31	3,2	9	19	
1SA99050	7/16-20f	1/8-27f	22.6	19,8	4,4	4,5	11	20242-4S
1SA99070	7/16-20f	1/4-18f	26.6	27,7	4,4	6	14	20244-4S
1SA99100	7/16-20f	3/8-18f	28.5	31	4,4	9	19	
1SA99145	7/16-20f	1/2-14f	30.7	37.3	4,4	12	22	
1SA99060	1/2-20f	1/8-27f	24.1	19,8	6	4,5	13	
1SA99080	1/2-20f	1/4-18f	26.6	27,7	6	6	14	
1SA99120	1/2-20f	3/8-18f	28.5	31	6	9	19	
1SA99147	1/2-20f	1/2-14f	30.7	37.3	6	12	22	
1SA99065	9/16-18f	1/8-27f	26.9	22.9	7,5	4,5	14	20242-6S
1SA99090	9/16-18f	1/4-18f	26.9	27,7	7,5	6	14	20244-6S
1SA99110	9/16-18f	3/8-18f	29	31	7,5	9	19	20246-6S
1SA99150	9/16-18f	1/2-14f	31	37,3	7,5	12	22	
1SA99185	9/16-18f	3/4-14f	33.3	40,4	7,5	16,5	27	
1SA99095	3/4-16f	1/4-18f	31.8	31	9,9	6	19	
1SA99130	3/4-16f	3/8-18f	31.8	31	9,9	9	19	2024-6-8S
1SA99160	3/4-16f	1/2-14f	33.8	37,3	9,9	12	22	2024-8-8S
1SA99190	3/4-16f	3/4-14f	36.1	40,4	9,9	16,5	27	
1SA99140	7/8-14f	3/8-18f	36.8	32,5	12,3	9	22	2024-6-10S
1SA99170	7/8-14f	1/2-14f	36.8	37,3	12,3	12	22	20248-10S
1SA99200	7/8-14f	3/4-14f	39.2	40,4	12,3	16,5	27	
1SA99180	1"1/16-12f	1/2-14f	42.2	40,4	15,5	12	27	2024-8-12S
1SA99210	1"1/16-12f	3/4-14f	42.2	40,4	15,5	16,5	27	2024-12-12S
1SA99225	1"1/16-12f	1"-11,5f	44.7	50	15,5	21,5	33	
1SA99220	1"5/16-12f	3/4-14f	46	45,2	21,5	16,5	33	
1SA99230	1"5/16-12f	1"-11,5f	46	50	21,5	21,5	33	
1SA99240	1"5/16-12f	1"1/4-11,5f	51	60,5	21,5	28,5	41	
1SA99235	1"5/8-12f	1"-11,5f	52.3	59,7	27,5	21,5	41	
1SA99245	1"5/8-12f	1"1/4-11,5f	52.3	60,5	27,5	28,5	41	
1SA99255	1"5/8-12f	1"1/2-11,5f	55.9	67,1	27,5	35	48	
1SA99250	1"7/8-12f	1"1/4-11,5f	59.2	66,3	33	28,5	48	
1SA99260	1"7/8-12f	1"1/2-11,5f	59.2	67,1	33	35	48	
1SA99290	2"1/2-12f	2"-11,5f	77.7	76,2	45	46	65	
1SA99300	3"-12f	2"1/2-11,5f	96	94	58	56	80	

Dimensions and operating pressures are given as a guide only.



EQUIVALENT AEROQUIP 2023

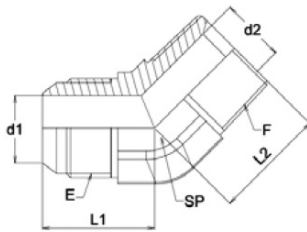


Elbow 45° Male JIC X Male NPT

MODELS



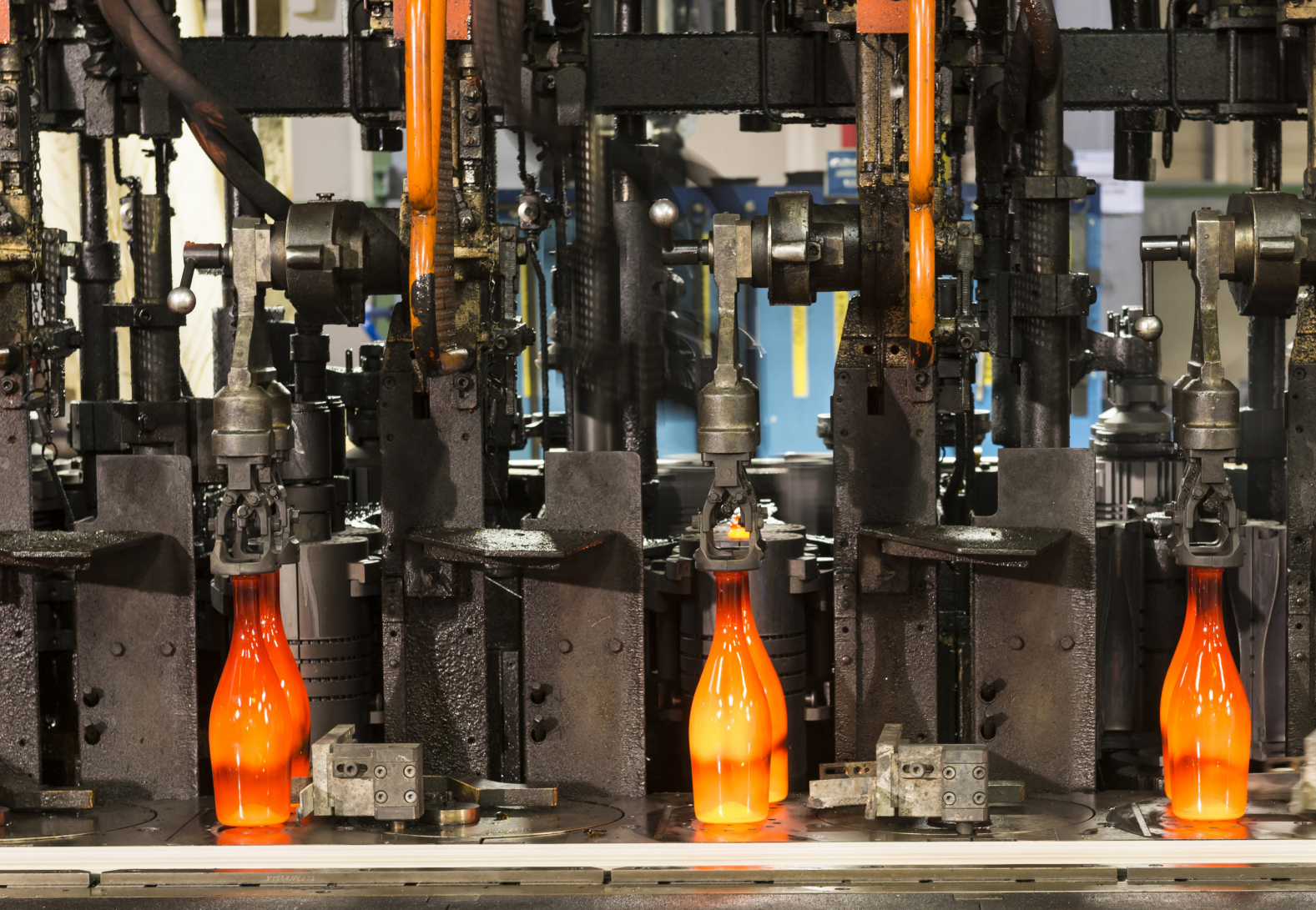
DIMENSIONS



Models	JIC (E)	NPT (F)	L1	L2	d1	d2	SP	AEROQUIP equivalent
1SD99048	3/8-24f	1/8-27f	19	17	3,2	4,4	11	
1SD99066	3/8-24f	1/4-18f	22	24	3,2	8	16	
1SD99096	3/8-24f	3/8-18f	24,5	26,2	3,2	11,4	21	
1SD99122	3/8-24f	1/2-14f	30,7	28	3,2	14,3	24	
1SD99050	7/16-20f	1/8-27f	17	21,5	4,4	4,4	11	2023-2-4S
1SD99070	7/16-20f	1/4-18f	21	22,3	4,4	6	14	2023-4-4S
1SD99060	1/2-20f	1/8-27f	18	22,3	6	4,4	14	
1SD99080	1/2-20f	1/4-18f	21	22,3	6	6	14	
1SD99064	9/16-18f	1/8-27f	17,3	22,8	7,5	5,3	14	
1SD99090	9/16-18f	1/4-18f	21,1	21,8	7,5	6	14	2023-4-6S
1SD99100	9/16-18f	3/8-18f	24	24	7,5	9	19	2023-6-6S
1SD99125	9/16-18f	1/2-14f	29,5	25	7,5	12	22	
1SD99144	9/16-18f	3/4-14f	23,6	30,5	7,5	16,5	27	
1SD99095 AR01777	3/4-16f	1/4-18f	22	26,8	9,9	7,2	19	2023-4-8S
1SD99110 2023685-STD	3/4-16f	3/8-18f	24,9	24,1	9,9	9	19	2023-6-8S
1SD99130 AR01778	3/4-16f	1/2-14f	29,5	28	9,9	12	22	2023-8-8S
1SD99145	3/4-16f	3/4-14f	26,4	30,5	9,9	16,5	27	
1SD99120 2023610S	7/8-14f	3/8-18f	30	26	12,3	8,5	22	2023-6-10S
1SD99140	7/8-14f	1/2-14f	29,5	31	12,3	12	22	2023-8-10S
1SD99146	7/8-14f	3/4-14f	35	32	12,3	17	27	
1SD99142	1"1/16-12f	1/2-14f	31	35,5	15,5	12	27	
1SD99150 20231212S	1"1/16-12f	3/4-14f	32,5	30,5	15,5	16,5	27	2023-12-12S
1SD99154	1"5/16-12f	3/4-16f	36,5	38,5	21,5	17	33	
1SD99160	1"5/16-12f	1"-11,5f	39	38,5	21,5	22,5	33	
1SD99164	1"5/8-12f	1"-11,5f	42,5	43	27,5	22,5	41	
1SD99170	1"5/8-12f	1"1/4-11,5f	40,4	42,4	27,5	28,5	41	
1SD99180	1"7/8-12f	1"1/2-11,5f	45,2	45	33	35	48	
1SD99210	2"1/2-12f	2"-11,5f	56,4	53,6	45	46	65	

Dimensions and operating pressures are given as a guide only.

*BMR is not a company approved by brand AEROQUIP, nor an official vendor



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