Headquarters

Otto Männer GmbH
Unter Gereuth 9–11
79353 Bahlingen
Germany
Phone +49 (0) 7663 609-0
Fax +49 (0) 7663 609-299
info@maenner-group.com

Europe

Otto Männer GmbH
Unter Gereuth 9–11
79353 Bahlingen
Germany
Phone +49 (0) 7663 609-0
Fax +49 (0) 7663 609-299
sales@maenner-group.com

France, Switzerland (French speaking)
männer Solutions for Plastics
Espace Entreprises
Immeuble le Saint Amour
71000 Macon Loché
France
Phone +33 (0) 3 85 32 65 32
Fax +33 (0) 3 85 32 65 33
sales@maenner-group.com

United Kingdom/Ireland
Jeremy Pingstone
38 Lawley Way
Droitwich
Worcestershire
WR9 8FB, UK
Phone +44 1905 770 868
Fax +44 1905 797 166
jeremy.pingstone@maenner-group.com

Italy
Sverital S. p. A.
Via S. Maria 108
20093 Cologno Monzese, Mi
Italy
Phone +39 (02) 25 15 61
Fax +39 (02) 25 39 10 55
sverital@sverital.it

Denmark/Sweden
H. Saxe Hansen A/S
Walgerholm 17
3500 Værløse
Denmark
Phone +45 (44) 977022
Fax +45 (44) 975055
info@hsh.as

www.maenner-group.com

North America

Manner USA, Inc.
1105 Progress Industrial Blvd.
Lawrenceville, GA 30043
USA
Phone +1 770 449 1820
Fax +1 770 449 1821
sales-usa@maenner-group.com

Asia

Hong Kong
Manner Hong Kong Ltd.
Suite No. 8B, 11/F, Tower 1
China Hong Kong City, 33 Canton Road
Tsim Sha Tsui, Kowloon, Hong Kong
Phone +852 2345 12 81 / 2345 12 87
Fax +852 2345 12 91
sales-hongkong@maenner-group.com

Shanghai
männer Solutions for Plastics (Shanghai) with Asia Solution Corporation
Suite 2806 Hyundai Plaza,
369 Xian Xia Rd.
Changning District Shanghai,
China, PC: 200336
Phone +86 21 5217 7225
Fax +86 21 5217 9434
sales-shanghai@maenner-group.com

Japan
Männer Japan Co., Ltd.
30–8, Sumiyoshi-cho, Mito, Ibaraki
310-0844 Japan
Phone +81 29 212 33 41
Fax +81 29 212 33 19
sales-japan@maenner-group.com

05/15 Technical specifications subject to change. Actual colors may differ.

männer
SOLUTIONS FOR PLASTICS
A business of BARNES GROUP INC

Valve Gate Hot Runner Systems

Hot runner technology has a crucial impact on the cost-effectiveness and part quality in injection molding. As a pioneer in hot runner technology, we focus on the development and manufacture of Cylindrical Valve Gate Systems – recognized as the best hot runner solution for achieving impeccable surface quality, part-to-part consistency, and process reliability. All valve gate systems are custom tailored and designed to meet the specific needs of our customers.

Tailored Valve Gate Systems

MEDICAL/PHARMA

High precision and
part-to-part consistency
Hygienic surface quality

PERSONAL CARE

Impeccable surfaces
Superior gate quality

CAPS AND CLOSURES

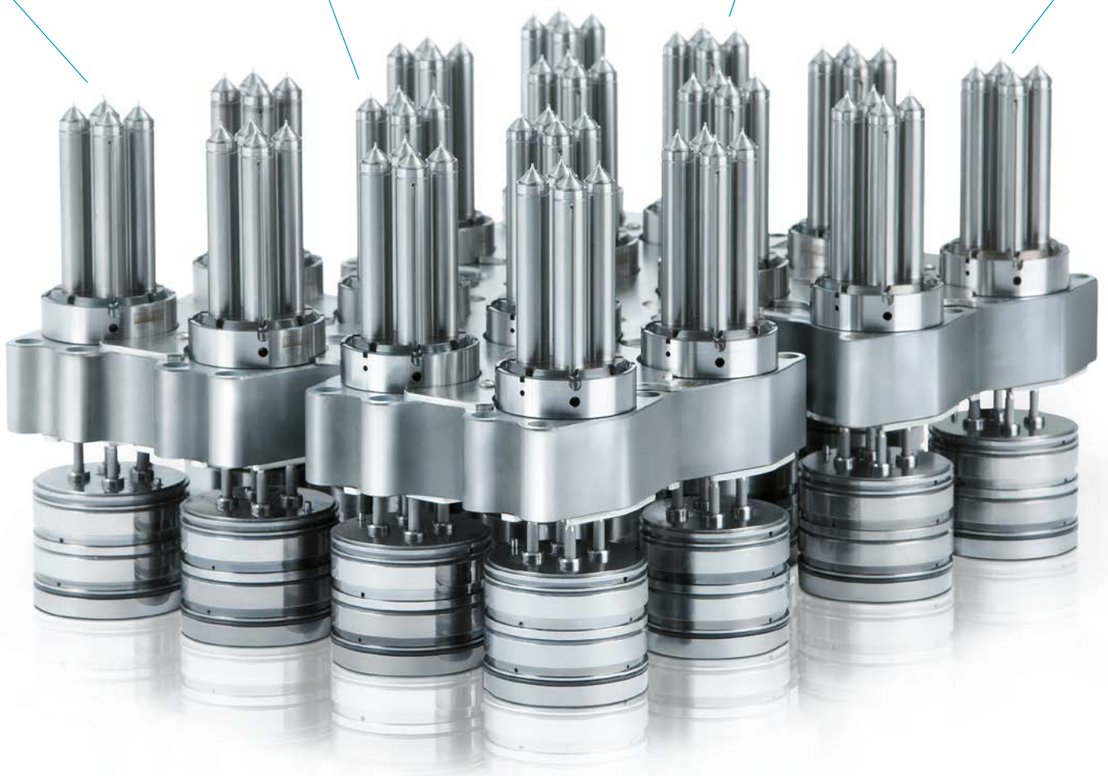
Tightly spaced configurations
High-speed molds

MICROPARTS

Ultrasmall shot weights
Short material dwell time

THIN-WALL PACKAGING

High flow rates
High injection speeds



TECHNICAL PARTS

Technical high-temperature resins
with narrow processing windows

männer Valve Gates.
High Precision and Part-to-Part Consistency Hygienic Surface Quality

Side injection of molded parts made of amorphous cyclic polyolefins (COC/COP).

Due to their tubular geometry, with long, narrow cores and an opening on both sides, syringe barrels require side gating. At the same time, the processability of COC/COP can make designing the molds and hot runners a tricky task. The EDGELINE™ nozzle has been specifically developed to handle the high viscosity and temperature sensitivity of the polymeric materials. The nozzle ensures reliable processing and impeccable surface quality in the production of demanding pharmaceutical packaging.

Medical/Pharmaceutical

When it comes to producing medical devices and disposables, high precision, part-to-part consistency, and cleanliness are vital. männer's original valve gate delivers virtually noncontact injection points for hygienic surface quality and stabile processing – so that you can produce reliably.

Break-open cap

Infusion reservoir

Inhaler mouthpiece

Needle protector

Y-Connector

Inhaler casing

SYSTEM*	NOZZLE DESIGN*
MSS (Singledrop)	STANDARD, SPECIAL, MCN-I
MMS (Multidrop)	STANDARD, SPECIAL
MES (STACK)	STANDARD, SPECIAL
EDGELINE™	

* Recommended systems and nozzle designs

männer Valve Gate.
Impeccable Surfaces
Superior Gate Quality

Personal Care

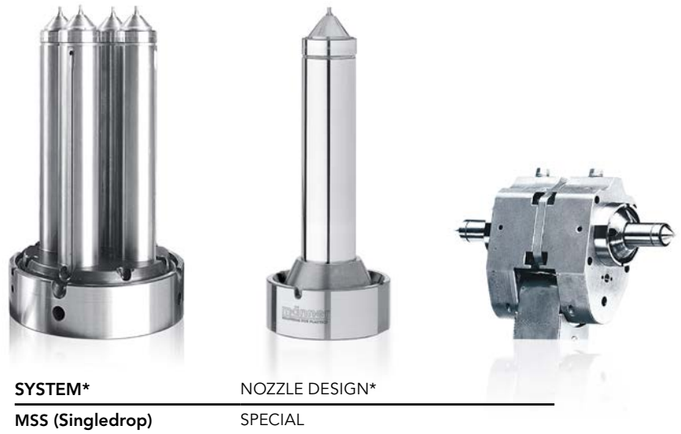
Consumers are picky. Cosmetic and personal care products must have an impeccable look and feel. Meanwhile, the use of resins containing Iriodin is increasing, and frequent color changes are in demand. The plastic parts of these products are generally used every day, which means their functional areas must be able to withstand a high degree of stress. The nozzle design of the Cylindrical Valve Gate facilitates stress-free injection of the melt and enables processing of cutting-edge high-performance resins.

Pregnancy testing kit

Nozzle spray head

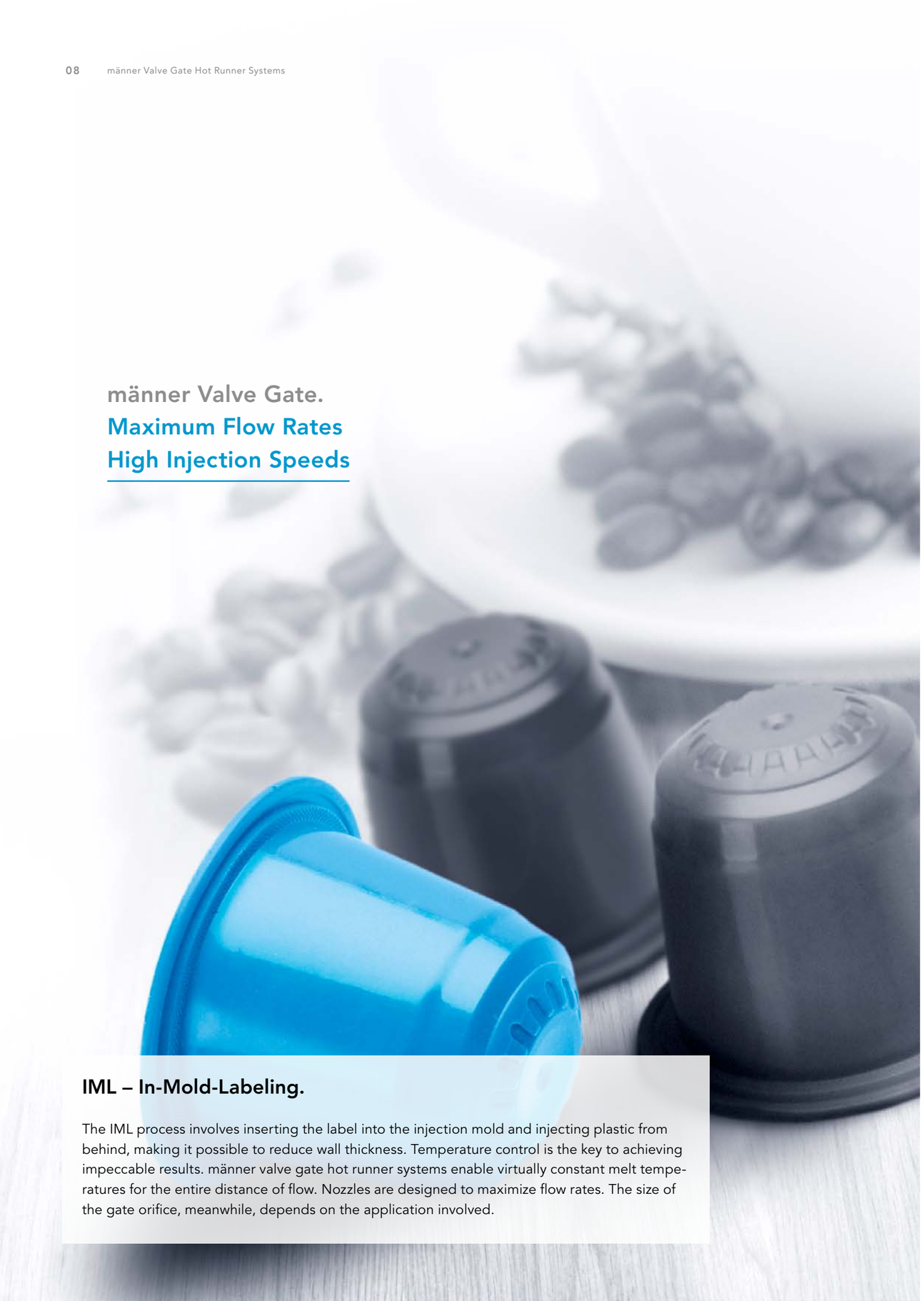
Spray head for deodorant

Contact lens packaging



SYSTEM*	NOZZLE DESIGN*
MSS (Singledrop)	SPECIAL
MMS (Multidrop)	SPECIAL
MES (Stack)	SPECIAL

* Recommended systems and nozzle designs



männer Valve Gate.
Maximum Flow Rates
High Injection Speeds

IML – In-Mold-Labeling.

The IML process involves inserting the label into the injection mold and injecting plastic from behind, making it possible to reduce wall thickness. Temperature control is the key to achieving impeccable results. männer valve gate hot runner systems enable virtually constant melt temperatures for the entire distance of flow. Nozzles are designed to maximize flow rates. The size of the gate orifice, meanwhile, depends on the application involved.

Thin-Wall Packaging

With the high flow rates and injection speeds required for rapid-process thin-wall packaging, friction within the nozzle tip and gate orifice is a critical factor. To ensure that the melt reaches the cavity under optimum conditions, we rely on valve gate systems capable of operating within extremely narrow tolerance ranges. At the same time, the geometry of the flow channel within the nozzle greatly impacts results.

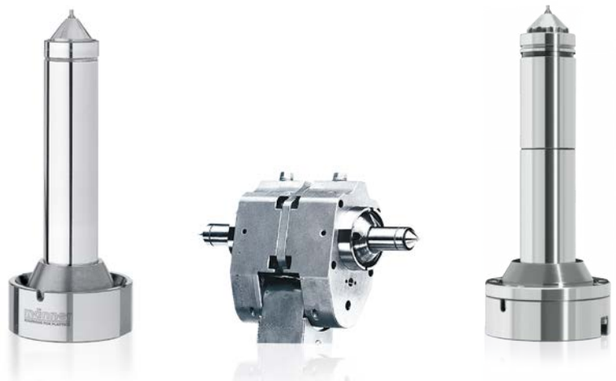
Container (IML)

Thin-wall lid

Ice cream packaging

Yoghurt container (IML)

Lid with safety lock



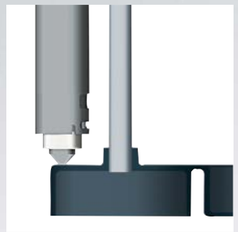
SYSTEM*	NOZZLE DESIGN*
MSS (Singledrop)	STANDARD, WEARPROOF, MCN-P (PACKAGING)
MES (Stack)	STANDARD, WEARPROOF, MCN-P (PACKAGING)

* Recommended systems and nozzle designs

männer Valve Gate.
Tightly Spaced Configurations High-Speed Molds

Difficult spacing conditions.

Compact mold sizes, direct injection close to the core, or inner injection can mean less space for the hot runner system. männer's SLIMLINE is a slender nozzle with minimal space requirements that boasts an optimum temperature profile despite its intricate construction. The svelte nozzle is insulated by special high-tech ceramic, enabling delivery of a homogeneous temperature profile. The use of high-performance materials makes männer's SLIMLINE exceptionally resistant to pressure.



Caps and Closures

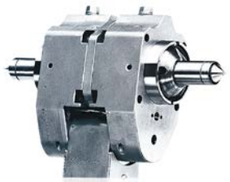
Plastic closures for the food and beverage industry as well as for cosmetics and personal care products are generally produced in high-cavitation, high-speed molds. In cases like these, valve gate systems are vital to achieving very short cycle times. Particularly in the production of flip caps, spacing within the mold can become quite tight. männer's SLIMLINE was designed specifically with these types of applications in mind.

Closures

Tamper-proof cap

Flip cap

Sports Cap



SYSTEM*	NOZZLE DESIGN*
MSS (Singledrop)	SLIMLINE, STANDARD, WEARPROOF
MMS (Multidrop)	WEARPROOF
MES (Stack)	STANDARD, WEARPROOF

* Recommended systems and nozzle designs

männer Valve Gate.
Ultrasmall Shot Weights
Short Material Dwell Time

Microparts

When units are produced in large numbers, designing molds for small injection-molded parts with often demanding geometries can be a real challenge. The construction of compact molds with numerous cavities, core-pulling mechanics, and hot runners is extremely complex – and every millimeter counts. männer's valve gate nozzles are thermally isolated from their working environment to ensure process reliability despite the tight spacing conditions. The design principle helps to shorten material dwell time within the system for gentle processing of the plastic.

Pushbutton

2C gears

Valve cap

SYSTEM*	NOZZLE DESIGN*
MSS (Singledrop)	SLIMLINE, WEARPROOF, SPECIAL, MCN-I
MMS (Multidrop)	SLIMLINE, WEARPROOF, SPECIAL

* Recommended systems and nozzle designs

männer Valve Gate.
Technical High-Temperature Resins with Narrow Processing Windows

Technical Parts

When it comes to processing demanding materials such as filled and abrasive resins or semicrystalline / engineered resins, the use of exceptionally wear-resistant special materials is essential. männer's tailored valve gate systems are designed for worry-free extended operation, even when working with difficult-to-use materials having extremely narrow processing windows.

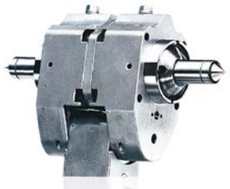
Tube connector

Piston

Pulley

Cartridge component

Plug housing



SYSTEM*	NOZZLE DESIGN*
MSS (Singledrop)	WEARPROOF, SPECIAL, MCN-H
MMS (Multidrop)	WEARPROOF, SPECIAL
MES (Stack)	WEARPROOF, SPECIAL

* Recommended systems and nozzle designs

Nozzle Overview

SYSTEMS

MSS (Singledrop)
- Large selection of nozzle designs for a wide range of applications
- Custom manifold systems with 1 to 128 cavities
- Nozzle designs SLIMLINE, STANDARD, SPECIAL, WEARPROOF, MCN-I, MCN-H

MMS (Multidrop)
Ideal for applications with tightly spaced cavities
For production of parts with low shot weights
2- to 4-point nozzles available with different axis spacing
Custom manifold systems with 2 to 256 cavities
Nozzle designs SLIMLINE, STANDARD, SPECIAL, WEARPROOF

MES (Stack)
- A cost-effective solution for large-volume production
- Opposing injection points lie on a single axis
- Double the output with the same closing force
- Split snorkel enables easy access to parts by handling systems and permits parts to fall freely from the mold
- Two or four parting lines possible
- Nozzle designs STANDARD, SPECIAL, WEARPROOF

MZS (Central)
- Central injection combined with valve gate technology
- For single-cavity molds used in producing parts with large areas
- For pilot / pre-production molds
- Nozzle designs STANDARD, SPECIAL, WEARPROOF, MCN-I, MCN-H

EDGELINE™ (Lateral)
- Side injection with the benefits of a Cylindrical Valve Gate
- Direct side gating (no cold runner gating)
- Ideal for long tubular parts

All systems are also available as hot halves.

NOZZLE DESIGNS

STANDARD
- Available in many different lengths and diameters
- Suitable for processing virtually all commercially available thermoplastics

WEARPROOF
- Specifically designed for processing filled and abrasive resins
- Constructed of special, highly wear-resistant materials for long life and durability
- Ensures reliable, extended operation when processing demanding resins

SLIMLINE
- For close cavity spacing
- Ideal for applications involving tightly spaced configurations such as direct injection close to the core or inner injection
- For high-cavitation molds
- For applications with extremely low part weights
- Minimal space requirements
- Special ceramic insulation for optimum temperature profile

MCN – männer Combi Nozzle Series
Basic body coupled with custom nozzle tip tailored to specific applications.

MCN-I (Insulated)
- Specifically designed for transparent applications requiring superior surface quality and for polyester

MCN-H (High Temperature)
- For processing technical and semi-crystalline resins at high temperatures

MCN-P (Packaging)
- Stabile version for high injection pressures, high injection speeds and short cycle times

SPECIAL (Special execution)
- For processing amorphous as well as semicrystalline resins
- For processing resins with narrow processing windows
- For processing light-weight parts

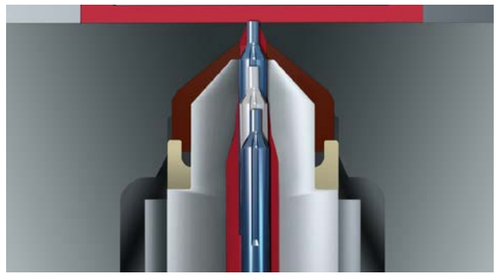
	Nozzle Ø (mm)	Type	Length (mm)	Medical/pharmaceutical	Personal care	Thin-wall packaging	Caps and closures	Microparts	Technical parts
MSS (Singledrop)	8	SLIMLINE	79, 104, 129				•	•	
	16	STANDARD	79, 104, 129	•		•	•		
	19	STANDARD	79, 104, 129, 154	•		•	•		
	22	STANDARD	79, 104, 129, 154, 179, 204, 229, 254	•			•		
	16	WEARPROOF	79, 104, 129			•	•	•	•
	19	WEARPROOF	79, 104, 129, 154			•	•		•
	22	WEARPROOF	79, 104, 129, 154, 179, 204, 229, 254			•	•		•
	16	SPECIAL	79, 104, 129	•	•			•	•
	19	SPECIAL	79, 104, 129, 154	•	•				•
	22	SPECIAL	79, 104, 129, 154	•	•				•
	16	MCN-I	79, 104, 129, 154, 179, 204	•*				•*	
	16	MCN-H	79, 104, 129, 154, 179, 204						•
	22	MCN-H	104, 129, 154, 179, 204						•
	22	MCN-P	79, 104, 129, 154, 179, 204, 229, 254, 279, 304, 329, 354, 379, 404			•			
MMS (Multidrop)	8 M2, 8 M4	SLIMLINE	79, 104, 129					•	
	16 M2, 16 M4	STANDARD	79, 104, 129	•					
	16 M2, 16 M4	WEARPROOF	79, 104, 129				•	•	•
	16 M2, 16 M4	SPECIAL	79, 104, 129	•	•			•	•
MES (Stack)	19, 22	STANDARD	79, 104, 129	•		•			
	19, 22	WEARPROOF	79, 104, 129			•			•
	19, 22	SPECIAL	79, 104, 129, 154	•	•				•
MZS (Central)	16	STANDARD	79, 104, 129	•		•	•		
	19	STANDARD	79, 104, 129, 154	•		•	•		
	22	STANDARD	79, 104, 129, 154, 179, 204	•		•	•		
	28	STANDARD	79, 104, 129, 154, 179, 204, 229, 254			•	•		
	34	STANDARD	79, 104, 129, 154, 179, 204, 229, 254			•	•		
	16	WEARPROOF	79, 104, 129			•	•	•	•
	19	WEARPROOF	79, 104, 129, 154			•	•		•
	22	WEARPROOF	79, 104, 129, 154, 179, 204			•	•		•
	16	SPECIAL	79, 104, 129	•	•			•	•
	19	SPECIAL	79, 104, 129, 154	•	•				•
	22	SPECIAL	79, 104, 129, 154	•	•				•
	16	MCN-I	79, 104, 129, 154, 179, 204	•*				•*	
	16	MCN-H	79, 104, 129, 154, 179, 204						•
	22	MCN-H	104, 129, 154, 179, 204						•
	22	MCN-P	79, 104, 129, 154, 179, 204, 229, 254, 279, 304, 329, 354, 379, 404			•			
EDGELINE™ (Lateral)				•					

*Amorphous resins

Resin examples

Medical	PC, COC, COP, PS, ABS PMMA, POM, PBT, TPE-S, TPE-O, TPE-U, TPE-V
Personal Care	ABS, PC, PC/ABS, SAN, PS, PET, PET-G, PCT-G, TPE-S, TPE-O, TPE-U
Thin-wall	Polyolefins (MFI 40-100), PP, PE, PE-LD, PE-HD
Caps and Closures	Polyolefins (MFI 5-80), PP, PE, PE-LD, PE-HD, PET, PET-G, PCT-G
Microparts	Polyolefine PP, PE (verstärkt/unverstärkt), POM, PBT, PA (PA6, PA66, usw.), ABS, PS, PC, COC, COP, PMMA, PET, PET-G, PCT-G, TPE-S, TPE-O, TPE-U
Technical parts	Polyolefins PP, PE (reinforced), PMMA, PC, PC/ABS, ABS, PBT, PA (PA6, PA66, PA46, etc.), PPE, PPS, PET, PET-G, PCT-G

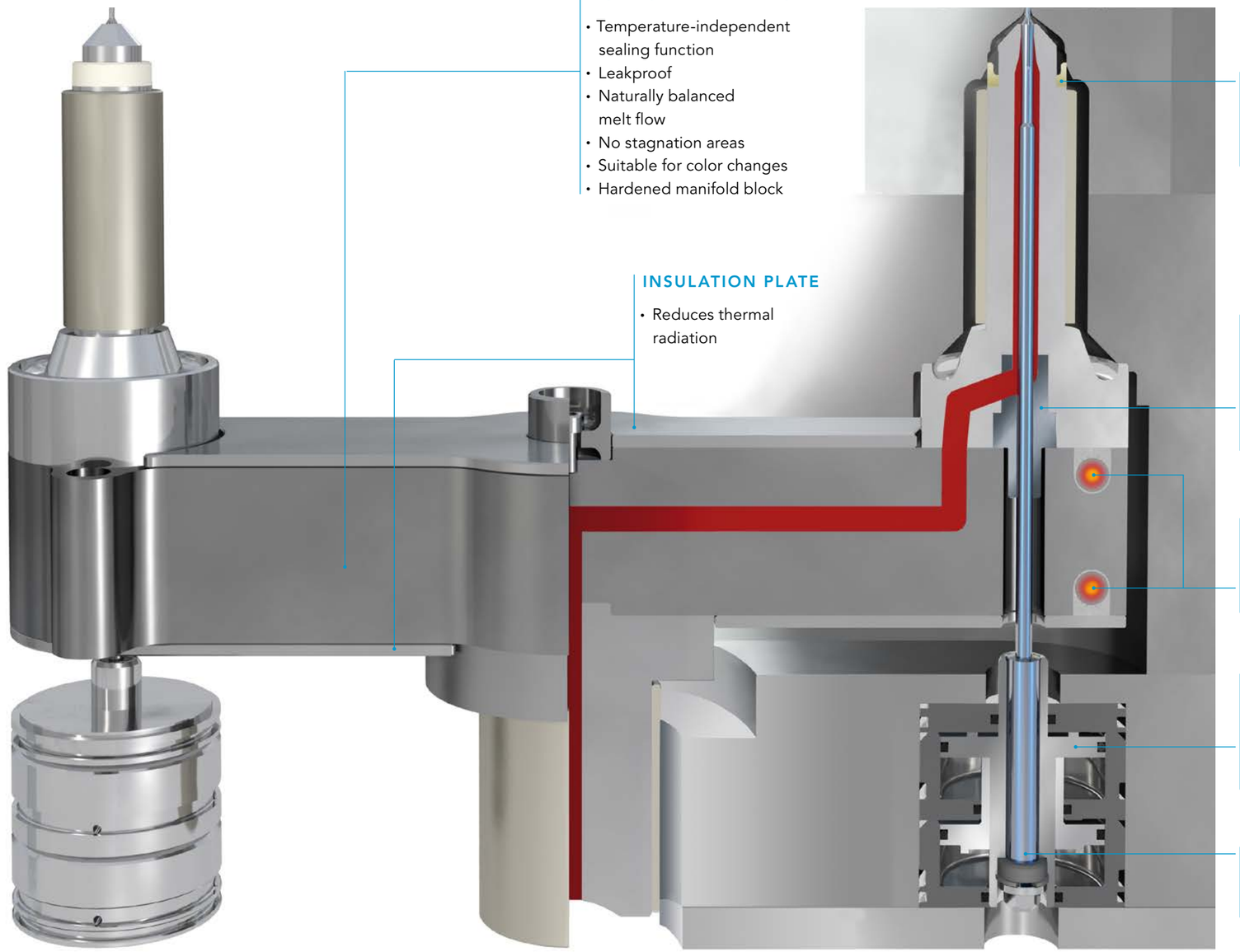
Cylindrical Valve Gate – the Original by männer



Precentered Cylindrical Valve Gate

During the closing movement, the valve pin is first precentered by an angled guide area and then positioned perfectly in the gate orifice by means of a cylindrical guide. Nozzle and valve pin are designed to provide maximum performance and long life.

- Superior gate quality
- Large gate cross section
- Minimal pressure drop
- Low shear rates
- Long life with minimal wear and low maintenance
- Defined opening and closing of the gate orifice
- Processing of demanding materials with narrow processing windows
- Short cycle times
- Individual heating control
- Cascade injection molding possible
- Clean room compatible (pneumatic barrel)



HOT RUNNER MANIFOLD

- Temperature-independent sealing function
- Leakproof
- Naturally balanced melt flow
- No stagnation areas
- Suitable for color changes
- Hardened manifold block

INSULATING RING

- Thermal insulation
- Nozzle centering
- Sealing function

INSULATION PLATE

- Reduces thermal radiation

VALVE PIN BUSHING

- Integration of valve pin bushing into nozzle to prevent bending of pin during thermal expansion of manifold
- Replaceable

TUBULAR HEATING ELEMENT

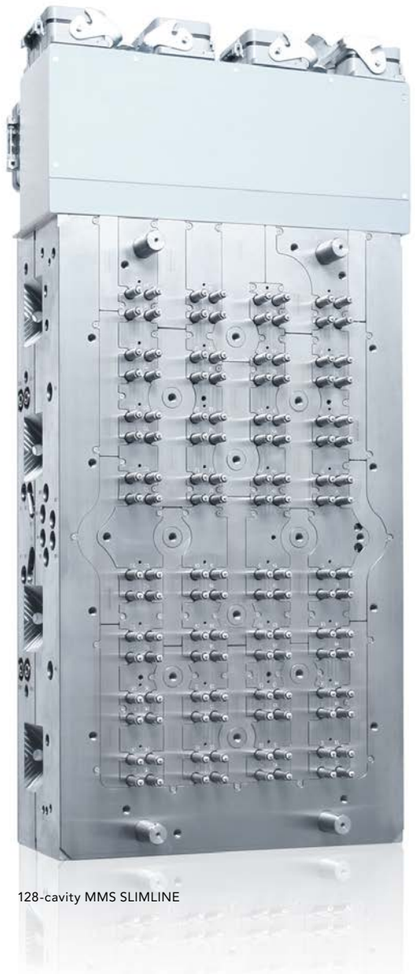
- Tubular heating elements are embedded in heat transfer cement to ensure long life and uniform temperature distribution

PNEUMATIC UNIT

- Tandem cylinder: Small unit size with high closing force
- Clean room compatible

VALVE PIN

- Installation/removal of valve pin possible with system already



128-cavity MMS SLIMLINE

32-cavity MMS SLIMLINE

Valve pin drive: individual or plate-actuated

We deliver your hot half with individually controlled pneumatic units or with a pin actuation plate furnished with a pneumatic or electrical drive depending on the application involved.

Pneumatic individual drive

- Proven and easy to maintain
- High-speed opening of the pins positively impacts the cycle time

Pneumatic plate actuation

- Ideal for synchronized filling of high-cavitation molds

Electrical plate actuation

- Ideal for synchronized filling of high-cavitation molds
- Customizable path profile
- Variable positioning of pins

	Pneumatic individual	Pneumatic plate actuation	Electrical plate actuation
Mold assembly height	+	o	-
Acquisition costs	+	o	-
Maintenance	+	o	o
Procurement of replacement parts	+	o	-
Replacement part costs	+	+	-
Operating costs/electricity	o	o	+
Complexity	+	+	-
Shut-off capabilities	+	-	-
Balance	+	+	+
Opening- and closing profile	-	-	+
Variable pin positioning	o	o	+
Tight nozzle pitch	o	+	+
Cycle time	+	o	o

+ positive o neutral - not optimum

Hot Halves

We offer our customers fully assembled, wired, and tested hot halves, helping to reduce the time required for mold installation and lower costs. Our hot halves can be custom-designed according to customer specifications.

64-cavity MSS Standard System

32-cavity MMS multiple drop system

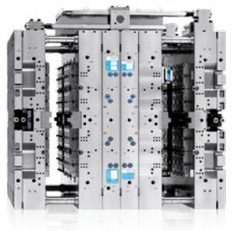
4 + 4-cavity
MES Stack System

2-component
MES Stack System

Your One-Stop Source

Reliability and cost-effectiveness in production:
- Perfectly coordinated components
- Extensive engineering know-how
- Dedicated contact person for your project

High-precision molds



For large-volume production of reproducible injection-molded parts with maximum part-to-part consistency

Extremely durable and easy-to-maintain high-performance molds with optimum temperature control for short cycle times.

Valve gate hot runner systems

Tailored and reliable

Recognized as the superlative hot runner solution for impeccable surface quality, part-to-part consistency, and process reliability.

moldMIND®

The black box of the injection mold

Tamper-proof recording of all process-relevant data, providing factual evidence in the event of disputes and for other uses.

duo-män

Injection molding units for multicomponent applications

Turn one component into two – high-precision dosing of even the smallest injection volumes.

HCS 2 series

Temperature controllers

Easy-to-use control technology with the latest functions such as early recognition of leaks.

micro-män

Production cells for micro injection molding

For both large-volume and small-scale production of precision miniparts and microparts. Can be custom configured for a wide range of production needs.

männer

SOLUTIONS FOR PLASTICS

A business of BARNES GROUP INC

Plant I: High Precision Molds in Bahlingen

Plant II: Hot Runner Systems in Bahlingen

Plant III: in Bahlingen

Plant IV: High Precision Molds in Au, Switzerland

Plant V: Manner USA, Inc.

männer develops high-tech solutions for injection molding applications. We offer high-performance molds, tailored valve gate hot runner technology, and innovative micropart manufacturing systems for the production of plastic parts capable of meeting the most demanding requirements for precision and surface quality.

Founded in 1965, männer is among the industry's leading suppliers, with over 450 employees and production, sales, and service locations in Europe, the USA, and Asia.

Since 2013 männer is part of Barnes Group Inc.
For further information please visit www.BGInc.com

Headquarters in Bahlingen