

Mould making

Hot runner systems



AVAILABLE
IMMEDIATELY



Save time and costs with our components

- › Single nozzle smartFILL
- › Single valve gate nozzle smartFILL
- › Wear insert smartFILL

www.meusburger.com

Everything at a glance



Hot runner nozzles

The smartFILL nozzle series is easy to maintain and guarantees an optimal, homogeneous melt flow for your projects.

Page 8–9



Open hot runner nozzles

The smartFILL nozzle series offers great versatility for diverse applications and materials.

Page 10–11



Standardised hot runner systems

A wide range of standardised hot runner systems in defined geometries is available for quick mould design.

Page 12–15



FH – Hot runner mould

With our innovative configurator, you can create standardised hot runner systems including mould bases and accessories in no time at all.

Page 16–23



Valve gate nozzles

Our hot runner nozzle smartFILL in the valve gate version achieves highest surface and part quality.

Page 24–25



Valve gate operating units

Matching our smartFILL nozzle range, we offer you operating units in different designs and with high-precision adjustment of the pin position.

Page 26–33



Customised complete systems

Based on standardised hot runner components, you receive hot runner systems or hot halves that are ready to use and connect.

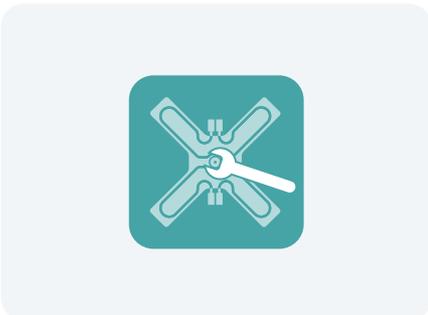
Page 34–35



Hot runner control

The profITEMP+ hot runner controller features innovative technology and space-saving design.

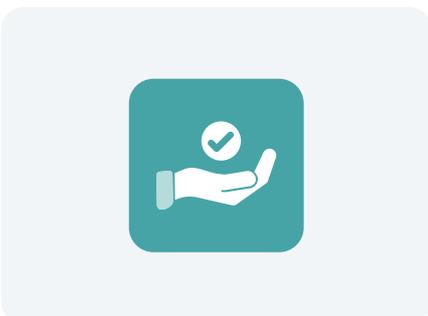
Page 36–39



Customer service & technical support

We are your partner for all enquiries and offer you worldwide service on site.

Page 40–41



Full-range supplier

Benefit from the advantages of Meusburger's comprehensive product range for mould and die making.

Page 42–43



Hot runner and control systems

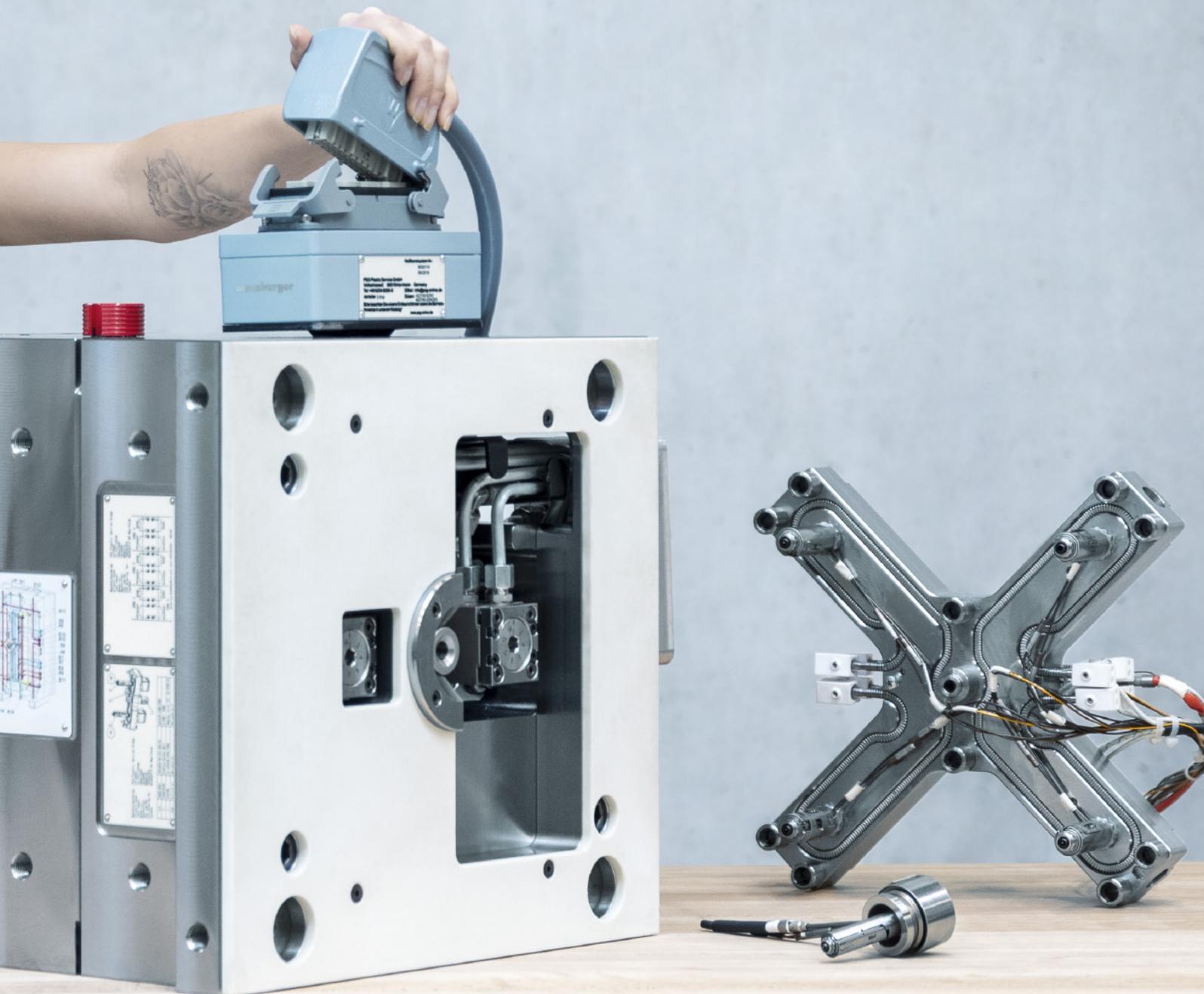
Standard meets custom

We offer a wide range of standardised and customised hot runner solutions. The modular design concept of our hot runner products stands for a flexible mould design and standardisation of components. Short lead times, cost savings on spare parts and consistent project support are your advantages.



You can find more information here:

www.meusburger.com/hot-runner-systems





Hot runner systems

Your product idea – our solution

Since 1962, our hot runner systems have met the requirements of demanding applications in terms of physical properties, materials, functional integration, surface quality and special designs. You will find the right hot runner solution with us.



Packaging

- › Attractive product designs
- › Sustainability



Automotive

- › Functionally integrated surfaces
- › Highest design requirements



Consumer goods and household appliances

- › Perfect surface quality
- › Material combinations



Technical components

- › Wide range of functions
- › Good mechanical and/or electrical properties



Transport

- › Complex geometries
- › High load capacity



Medical technology

- › Precision & dimensional accuracy
- › Biocompatibility

Standardised and customised hot runner systems

- › Individual and innovative solutions for every application and industry
- › Hot runner systems with a comprehensive nozzle range and customisable manifold geometries
- › The right solutions for diverse types of plastic
- › Maintenance-friendly hot runner system design
- › Standardised hot runner components
- › In-house development department and technical department for specific solutions
- › Personal consultation and online configurators
- › Intelligent hot runner control



Hot runner nozzles

smartFILL nozzle series

With our smartFILL nozzle series, we offer several innovations that help you meet the requirements of your injection moulded parts.

The smartFILL concept offers a wide range of application areas. For shot weights from 0.5 to 2500 g per nozzle, everything is possible with smartFILL — from easy-to-process polyolefins to demanding high-temperature plastics.



More information in our film:

www.meusburger.com/smartfill-en

The different gate types offer the suitable selection for the respective requirements of the injection moulded part and the mould design. The position of the gate vestige remains constant so that it is easy to switch between types.

smartFILL technology

The new heating technology features independent heating zones in one heater and integrated thermocouples with a measuring point directly on the nozzle body. This enables homogeneous temperature distribution along the entire nozzle length.

The intelligent clamping mechanism makes the heaters safe, reliable and very easy to maintain. The nozzle is highly wear, rust and acid resistant. All parts subject to wear are of the highest quality and can be easily replaced if necessary.

How you benefit: standard spare parts are available within 24 hours.

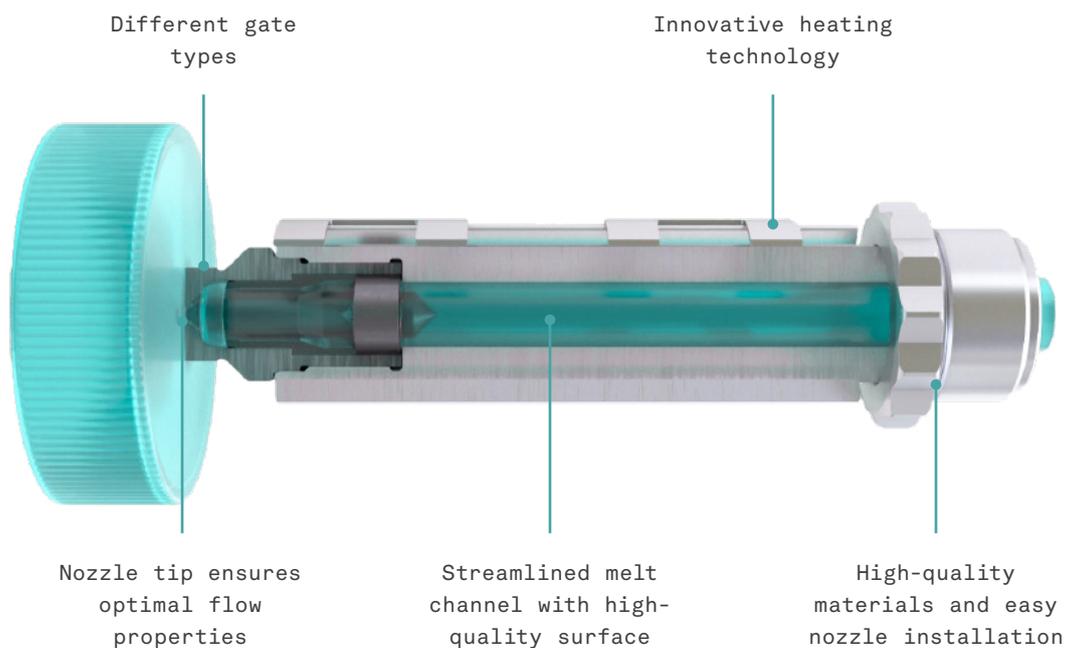


KLAUS DIETER

KAPP

Product development Hot runner systems

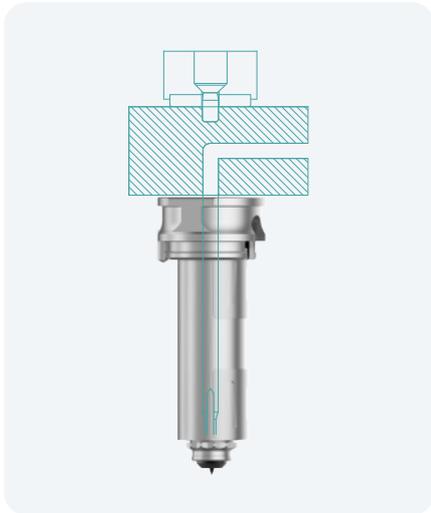
'The hot runner products of Meusburger's smartFILL nozzle series are reliable, highly efficient, variable and easy to maintain. The nozzles and gates can be configured according to the respective application.'



Characteristics:

- › Service-friendly installation and removal of all nozzle parts (cost savings in maintenance)
- › Optimal melt flow
- › Gate installation without heating
- › High gating temperatures for processing engineering plastics
- › Homogeneous temperature profile
- › Temperature measurement on the nozzle body
- › Optimised heating concept with wedge lock or spiral clamping
- › Multi-zone heating systems with one heating output
- › Rust- and acid-resistant design

Open hot runner nozzles



Nozzle smartFILL, slide seal EH 4150

The smartFILL principle of the slide-seal nozzles enables you to use short nozzles with large spaces between the nozzles.

Characteristics:

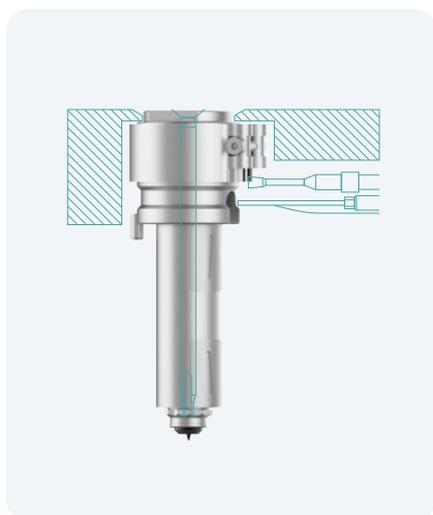
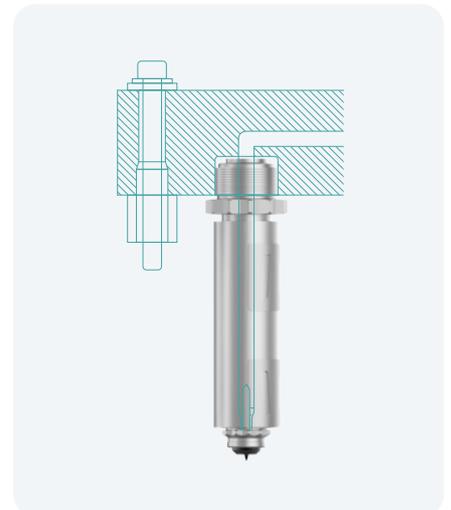
- › Nozzle housing centred in the cavity plate
- › Anti-rotation protection possible
- › Nozzle housing is supported flat on the cavity plate
- › Short nozzle length regardless of hole pattern

Nozzle smartFILL, screw-in type EH 4100

This smartFILL hot runner nozzle is screwed into the hot runner manifold to form a unit. This guarantees easy installation into the injection mould. Our smartFILL hot runner nozzles, screw-in type, are available in variable lengths as standard.

Characteristics:

- › Leak-proof, as the nozzle is screwed into the manifold
- › Reduced heat loss due to a small number of contact points with the mould
- › Perfect for ready-to-connect complete systems



Single nozzle smartFILL EH 4000

The single nozzle smartFILL offers you an easy and cost-effective solution without hot runner manifold. The plastic melt is transferred directly from the machine nozzle to the single nozzle and then flows to your injection moulded part with all the benefits of smartFILL.

Characteristics:

- › Single nozzle available in standardised lengths
- › Two individual control zones for nozzle body and sprue bush
- › Standardised radii according to the machine nozzle



smartFILL – the choice is yours

We have applied the successful smartFILL concept to all nozzle sizes, so they are available for almost all sizes and weights of the injection moulded parts.

EH 4100 screw-in type

Series	Nozzle length [mm]
19	60–180
27	
37	
47	100–250
57	100–630

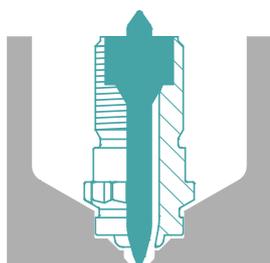


EH 4150 slide seal

Series	Nozzle length [mm]
19	60–180
27	
37	

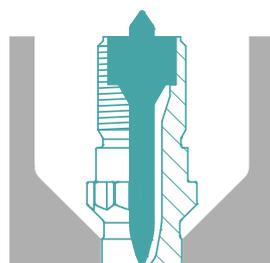


EH 4200
RT



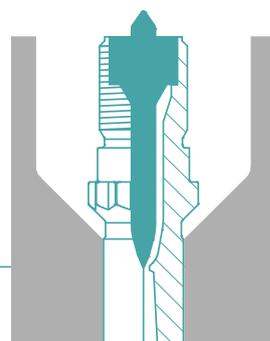
- › Ante-chamber in the mould
- › For direct gating or gating on cold runner

EH 4240
RT-D



- › Plunging nozzle head
- › For direct gating or gating on cold runner

EH 4245
RT-DL

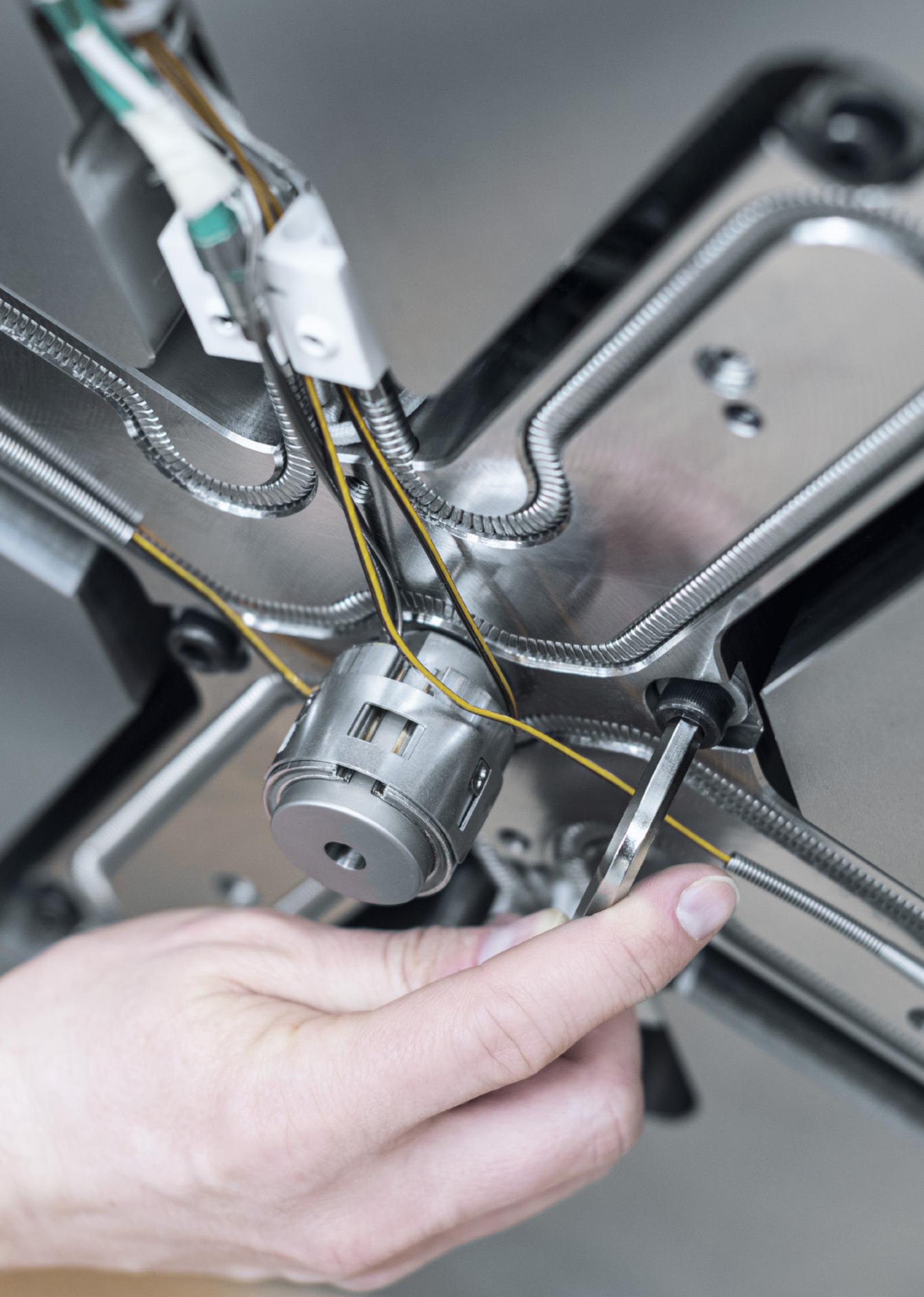


- › Plunging nozzle head with extension
- › Gating to free-form surfaces
- › Gating with scrap cone

EH 4250
RT-DC



- › Plunging nozzle head with calotte
- › Sprue scrap remains recessed in the calotte
- › For direct gating



varioLINE hot runner systems

High-quality standard

Our standardised hot runner systems come in defined geometries and are quick and easy to configure. The 3D data is immediately available in various data formats, and the pre-assembled hot runner systems are delivered quickly at attractive prices.



You can find more information here:

www.meusburger.com/hot-runner-systems

Characteristics:

- › Naturally balanced and pre-assembled hot runner systems
- › Application possibilities with all plastic materials
- › Low-stress processing of the melt possible thanks to optimal channel routing
- › Heating of the hot runner manifold with flexible pipe heaters
- › Compact design and easily interchangeable components for quick service
- › Savings in cost for replacement parts through standardisation

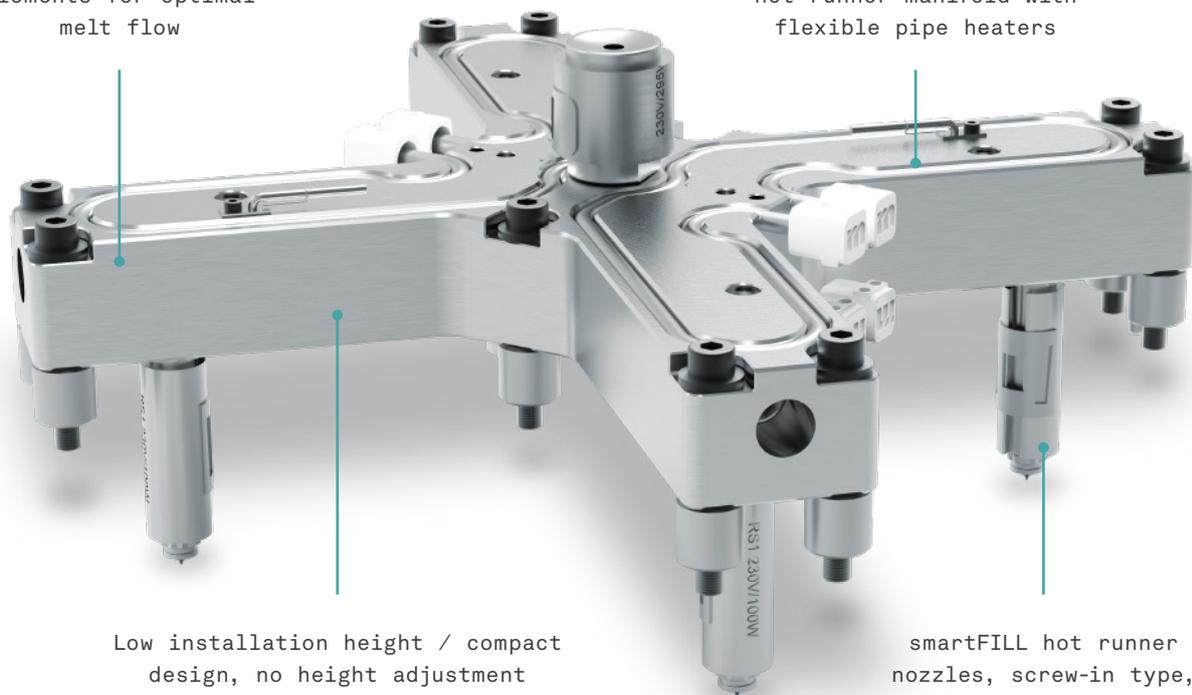
Advantages of varioLINE

Easy to service & modular:

Compact design and easily interchangeable components

Various deflection elements for optimal melt flow

Double-sided heating of the hot runner manifold with flexible pipe heaters



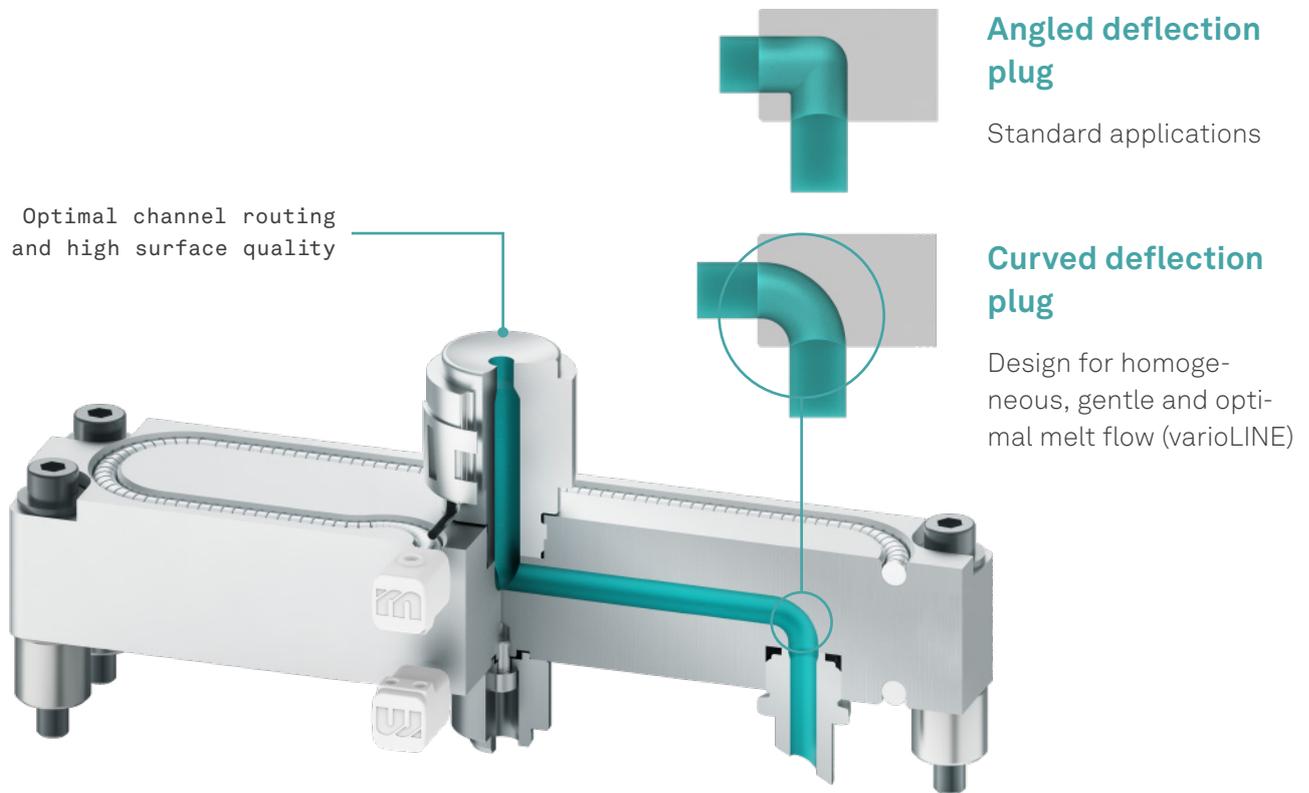
Low installation height / compact design, no height adjustment necessary, reduced heat loss

smartFILL hot runner nozzles, screw-in type, with individual lengths; hole pattern of the nozzles symmetrically freely selectable

Homogeneous & optimal melt flow

Flow-optimised deflection elements

For a homogeneous, low-stress and optimal melt flow without corners or sharp edges we offer you flow-optimised deflection elements.



Characteristics:

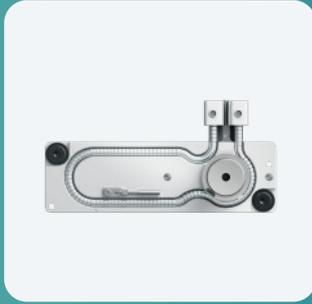
- › Uniform temperature distribution and optimised melt channel
- › Naturally balanced melt flow for an even fill of the cavity
- › Reduced shear stress on the material due to polished channel cross-sections
- › Minimal installation spaces improve mould stability

Rheologically favourable melt channel

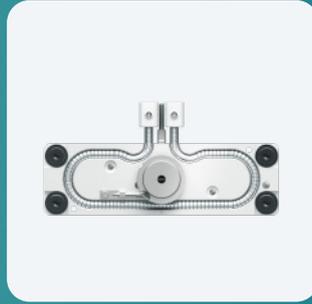
Meusburger also offers you diffusion-welded hot runner manifolds. The plug-free manifold closing technology prevents clogging and creates an even more material-friendly channel flow. The milled channel routing enables best

flow properties and prevents material deposits in the melt channel. This manufacturing process is particularly advantageous for frequent colour changes when using crystal-clear plastics.

varioLINE STANDARD VARIANTS



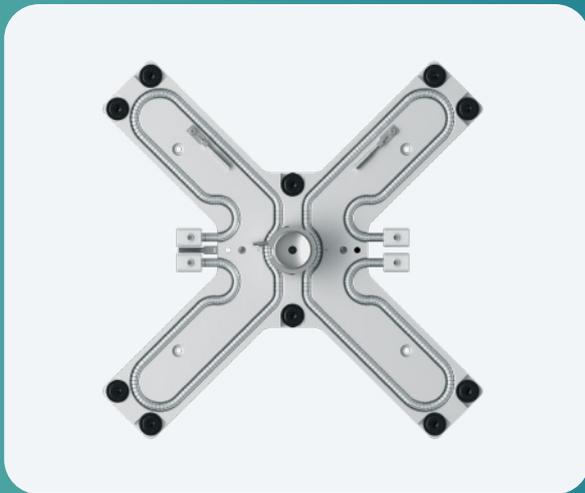
Deflection
manifold IMT1*



In-line manifold
IMT2*



In-line manifold
IMT4



Cross manifold
CMT4*



H manifold
HMT4*

* available directly in the shop via the configurator



Directly to the shop:

www.meusburger.com/fh-configurator



EH 4830 / RT
EH 4835 / NZ

Ante-chamber bush cooled, RT/NZ

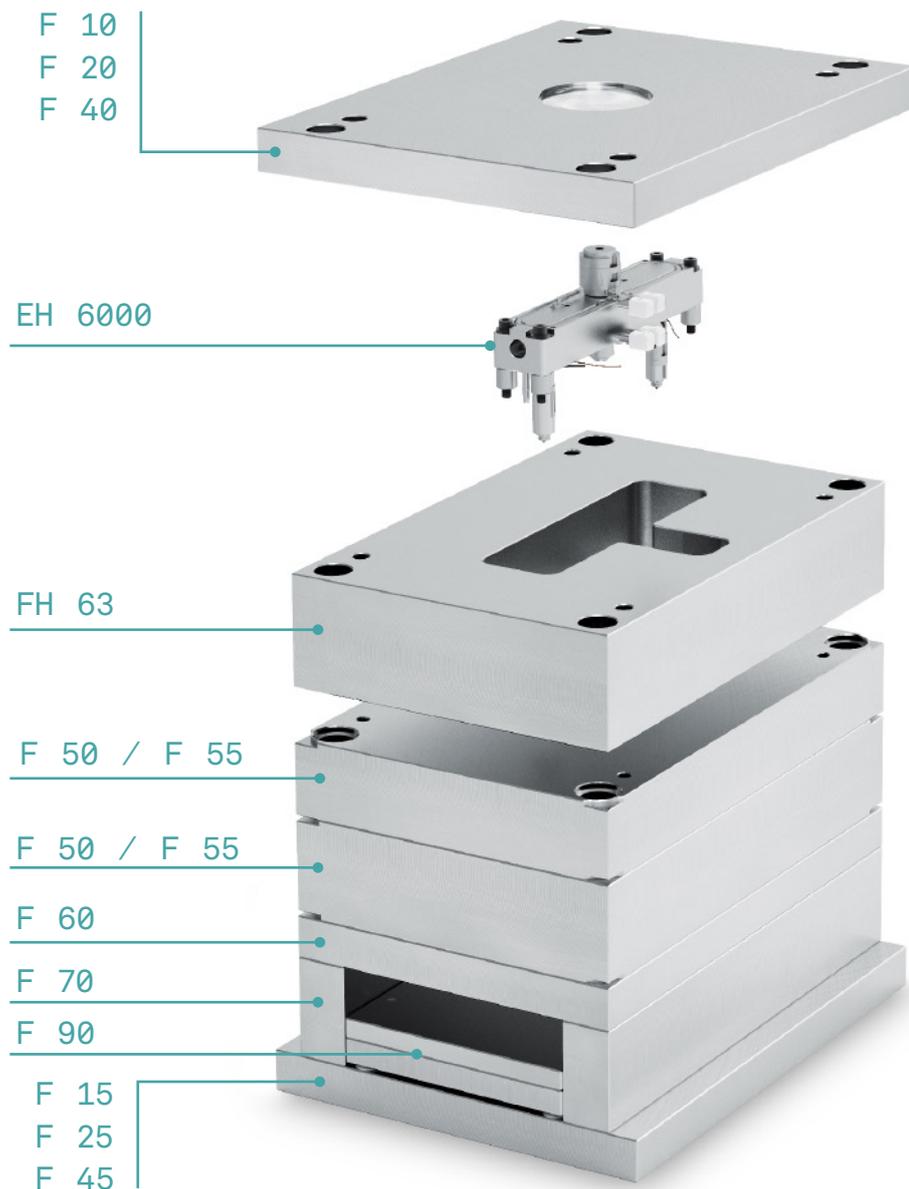
- › Continuous cooling near the gate
- › Optimal control of the gate temperature
- › Easy installation/removal and cleaning
- › Includes allowance for the introduction of a mould contour



FH – Hot runner mould

A hot runner mould in just 5 minutes

With the help of our innovative configurator, a hot runner mould can be configured and ordered in no time at all. You can choose between four standardised varioLINE manifold types. We also offer the matching manifold plate with milled recess for the configured hot runner system as well as optionally integrated temperature regulation.



Find more details on our hot runner mould at:

www.meusburger.com/hot-runner-moulds

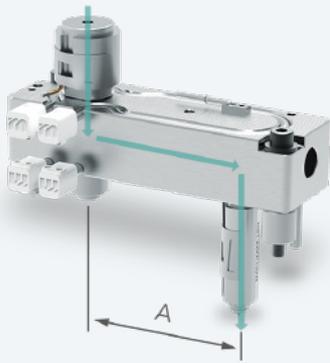
Full-range provider for mould making

Hot runner system EH 6000: delivered completely machined and assembled
Manifold plate FH 63: delivered including milled recesses for the manifold
Standard label E 19100/70 43/1/2: delivered including system-relevant data

varioLINE hot runner system

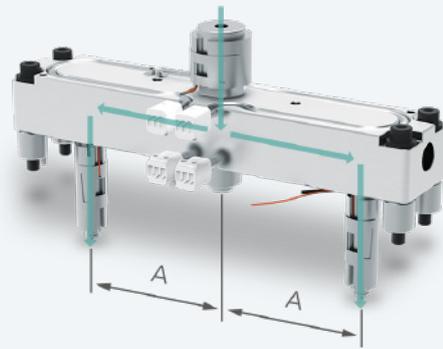
4 variations – the choice is yours

For our standardised hot runner moulds, you can choose between four different manifold types. With the offered manifold sizes, the variable nozzle positions and the large nozzle selection you can configure the right hot runner solution for your project quickly and reliably.



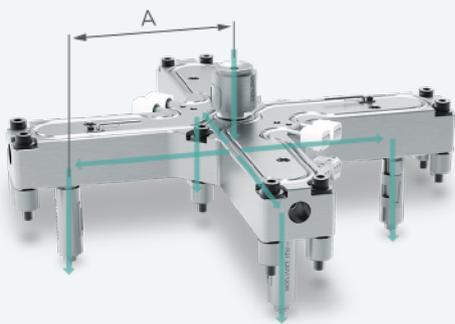
Deflection manifold IMT1 with 1 nozzle

Possible hole patterns:
A: 37.5 – 206.25 mm



In-line manifold IMT2 with 2 nozzles

Possible hole patterns:
A: 25.0 – 206.25 mm



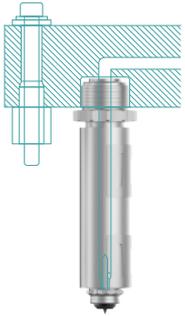
Cross manifold CMT4 with 4 nozzles

Possible hole patterns:
A: 35.5 – 220.5 mm



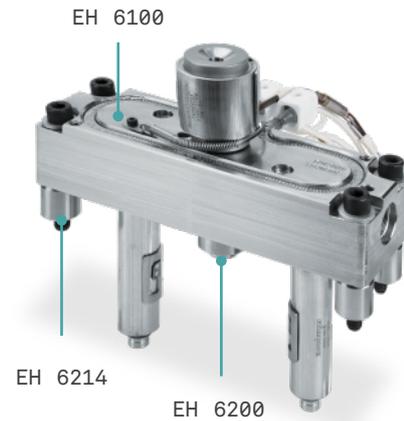
H manifold HMT4 with 4 nozzles

Possible hole patterns:
L1: 40.0 – 210.0 mm
L2: 25.0 – 206.25 mm



Hot runner system EH 6000

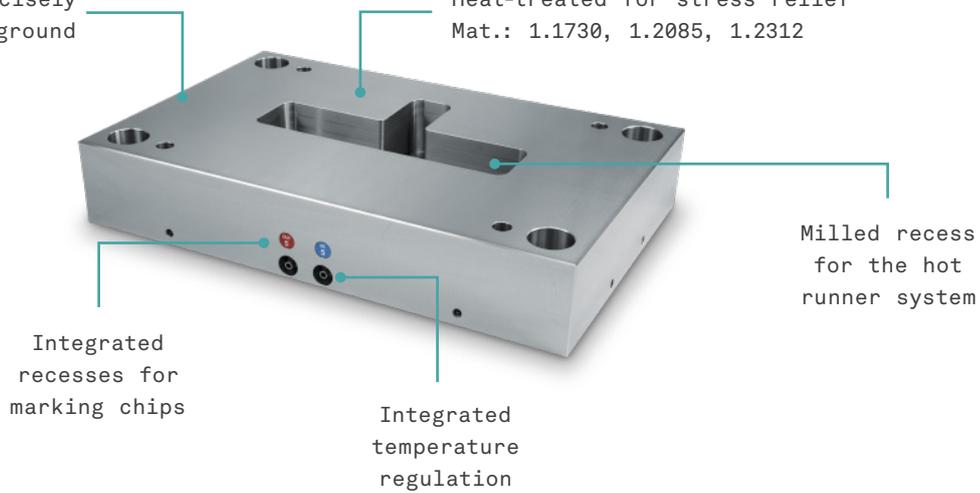
Benefit from innumerable combination possibilities with standardised hot runner components for your customised hot runner solution that is adapted to your mould project.



Manifold plate FH 63

Thickness precisely ground

Heat-treated for stress relief
Mat.: 1.1730, 1.2085, 1.2312



Configurator for hot runner mould

- › Easy and fast configuration of the hot runner mould
- › Live display of the hot runner manifold and 3D data immediately available
- › Selection of a suitable mould base including accessories
- › Transparent costs due to immediate price display

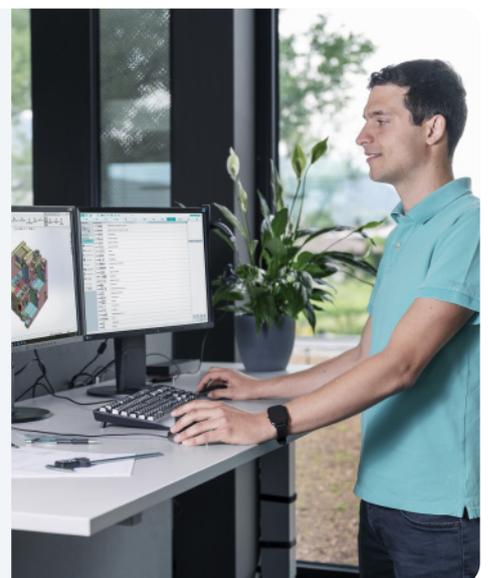
Technical inspection

Use our service and send your configuration to our experts for technical inspection with just a few clicks.

Technical enquiry

Of course, we can also realise your custom projects. Please use the enquiry form on our homepage.

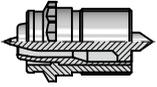
www.meusburger.com/technical-enquiry



4 different gate assemblies

EH 4200 / RT

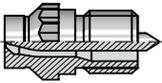
Gate assembly, smartFILL ring gate



- › Good thermal separation from the mould by plastic isolation
- › For direct gating or gating on cold runner
- › Suitable for all thermoplastics with a medium to narrow processing window, including filler material and reinforcing fillers
- › Nozzle tip and centring head are highly wear-resistant and replaceable

EH 4240 / RT-D

Gate assembly, smartFILL ring gate, plunging



- › For direct gating or gating on cold runner
- › Suitable for all thermoplastics with a medium to narrow processing window, including filler material and reinforcing fillers
- › Nozzle tip and centring head are highly wear-resistant and replaceable

EH 4245 / RT-DL

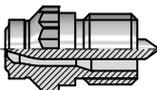
Gate assembly, smartFILL ring gate, plunging with extension



- › With extension on the centring head
- › Gating to free-form surfaces
- › Adjustment to the product's geometry
- › Sprue scrap with scrap cone
- › Suitable for all thermoplastics with a medium to narrow processing window, including filler material and reinforcing fillers
- › Nozzle tip and centring head are highly wear-resistant and replaceable

EH 4250 / RT-DC

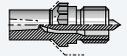
Gate assembly, smartFILL ring gate, plunging with calotte



- › Sprue scrap remains recessed 1 mm in the calotte
- › For direct gating or gating on cold runner
- › Suitable for all thermoplastics with a medium to narrow processing window, including filler material and reinforcing fillers
- › Nozzle tip and centring head are highly wear-resistant and replaceable

All of the subsequent data is general recommendations based on our calculations and many years of experience. We do not guarantee the accuracy of the information, as our products are only one part of the production process. For unclear or difficult cases, please contact us.

Selection of the correct gate type

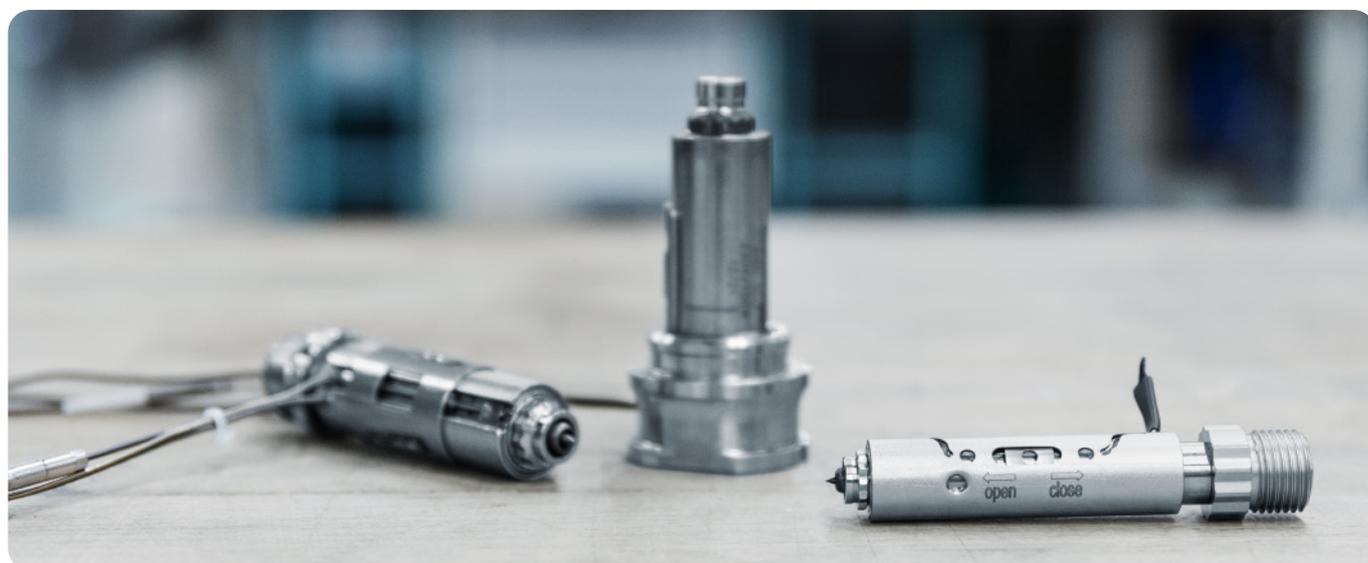
Gate types		EH 4200 / RT			EH 4240 / RT-D			EH 4245 / RT-DL			EH 4250 / RT-DC		
													
		A	B(5)	C(5)	A	B(5)	C(5)	A	B(5)	C(5)	A	B(5)	C(5)
Semi crystalline	PE	++	++	+	+	++	+	+	++	+	+	++	+
	PP	++	++	+	+	++	+	+	++	+	+	++	+
	PPS	++	++	+	++	++	+	++	++	+	++	++	+
	PET (1)	++	++	+	++	++	+	++	++	+	++	++	+
	PBT (1)	++	++	+	++	++	+	++	++	+	++	++	+
	PPO (4)	++	++	+	++	++	+	++	++	+	++	++	+
	PA6	++	++	+	++	++	+	++	++	+	++	++	+
	PA6.6 (1)	++	++	+	++	++	+	++	++	+	++	++	+
	POM-Co	++	++	+	+	++	+	+	++	+	+	++	+
	POM-H (5)	++	++	+	+	++	+	+	++	+	+	++	+
Amorphous	PMMA (5)	++	++	+	+	++	+	+	++	+	+	++	+
	ABS	++	++	+	+	++	+	+	++	+	+	++	+
	ASA	++	++	+	+	++	+	+	++	+	+	++	+
	SAN	++	++	+	+	++	+	+	++	+	+	++	+
	PS (SB)	++	++	+	+	++	+	+	++	+	+	++	+
	PC (5)	++	++	+	+	++	+	+	++	+	+	++	+
	PES	++	++	+	+	++	+	+	++	+	+	++	+
	PSU	++	++	+	+	++	+	+	++	+	+	++	+
	PEI	++	++	+	+	++	+	+	++	+	+	++	+
	PVC soft (5)	++	++	+	+	++	+	+	++	+	+	++	+
Blend	PC/ABS	++	++	+	+	++	+	+	++	+	+	++	+
	PC/PBT	++	++	+	++	++	+	++	++	+	++	++	+
Elastomers	PP-EPDM	++	++	+	+	++	+	+	++	+	+	++	+
	TPE-A (5)	+	+	+	-	+	+	-	+	+	-	+	+
	TPE-C (5)	+	+	+	-	+	+	-	+	+	-	+	+
	TPE-U (5)	+	+	+	+	+	+	+	+	+	+	+	+
	TPE-O (5)	+	+	+	-	+	+	-	+	+	-	+	+
	TPE-S (5)	+	+	+	-	+	+	-	+	+	-	+	+

Material suitability:

++	well suited
+	suited
-	not suited

Material additives:

A	without additives	(1)	recommended minimum gate diameter = 1.2 mm
B	glass fibre	(4)	no Noryl GTX
C	flame retardant	(5)	insulating cap recommended

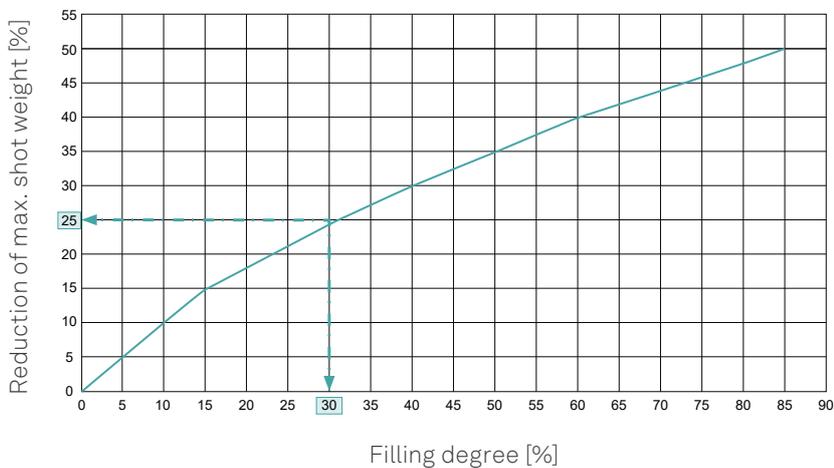


Shot weight per nozzle

Gate types		Low viscosity		Medium viscosity		High viscosity	
		π (Tset/3000 s-1) < 60Pa*s		π (Tset/3000 s-1) = (60-150)Pa*s		π (Tset/3000 s-1) > 150Pa*s	
		PE-HD, PE-LD, PP, PS, SB, TPE-O, TPE-S		ABS, ABS/ASA, ABS/PA, ASA, PA11, PA12, PA4.6, PA6, PA6.10, PA6.12, PA6.6, PBT, PET, PES, POM-C, PPE(PPO), PP/EPDM, PPS, PSU, SAN, TPE-A, TPE-C, TPE-V		PC, PC/ABS, PC/PBT, PEI, PMMA, POM-Homo, PSU, PVC-soft, TPE-U	
		min. [g]	max. [g]	min. [g]	max. [g]	min. [g]	max. [g]
ø 19	EH 4200 / RT	0.5	30	0.5	15	0.5	8
	EH 4240 / RT-D						
	EH 4250 / RT-DC						
ø 27	EH 4200 / RT	3	70	3	35	3	20
	EH 4240 / RT-D						
	EH 4245 / RT-DL						
	EH 4250 / RT-DC						
ø 37	EH 4200 / RT	15	500	15	300	15	150
	EH 4240 / RT-D						
	EH 4245 / RT-DL						
	EH 4250 / RT-DC						

Reduction of the shot weight per nozzle according to the filling degree

The maximum permissible shot weight for reinforced and filled plastics is reduced as shown in the following diagram:



Example: filling degree 30%, therefore shot weight reduced by 25%

Dimensioning of the gate diameter

Determining the gate diameter:

The vestige quality is influenced by many factors such as: gate diameter, wall thickness, plastic type, volume flow, part weight, temperature regulation / cooling in the gate area. Gate diameters that are too small cause an inadmissibly high shear, high loss of pressure and high frictional heating. If the gate diameters selected are too large, this results in inadmissibly high and poor-quality tear points.

Rule:

Direct gating:

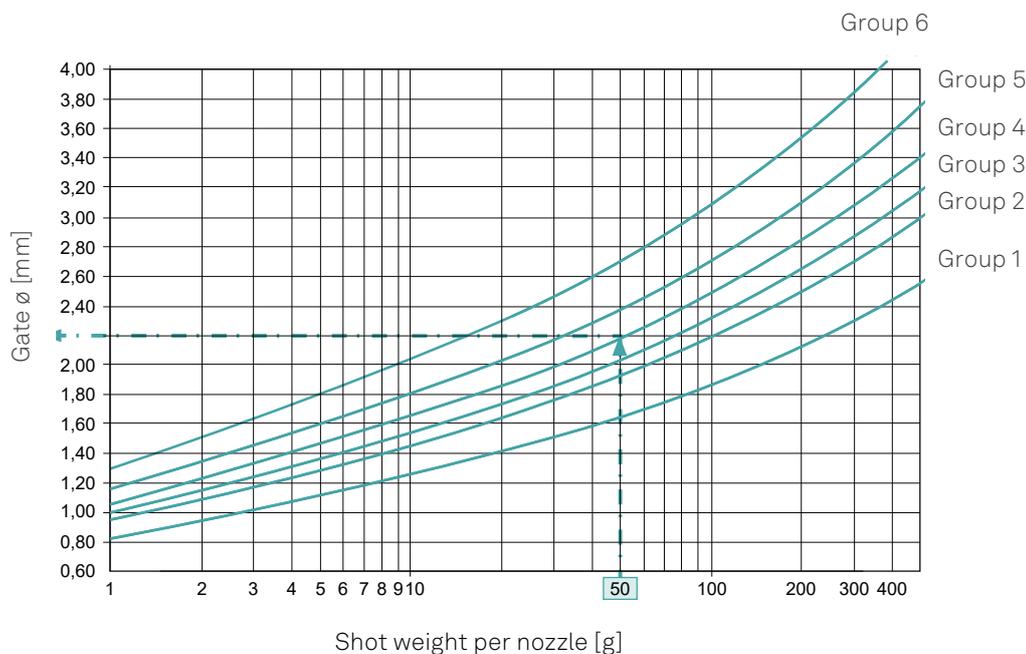
- › Gate selection according to the graphic, taking plastic into consideration

Gating on cold runner via sub-manifold:

- › Gate diameter as large as possible (about 0.5 mm to 1 mm larger; take into consideration stringing and drooling)

The information on the dimensioning of the gate diameter includes only general recommendations, which are based on our calculations and extensive experience. We do not guarantee the accuracy of the information, as our products are only one part of a complex production process. For unclear or difficult cases, please contact us.

Gate diameter: EH 4100/19... EH 4100/27... EH 4100/37...



- Example for 50 g PC,
gate assembly EH 4240 / RT-D
Result: \varnothing 2.20 mm
Selected for direct gating 2.0 mm (standard)
Selected for gating on cold runner 3.0 mm (standard)



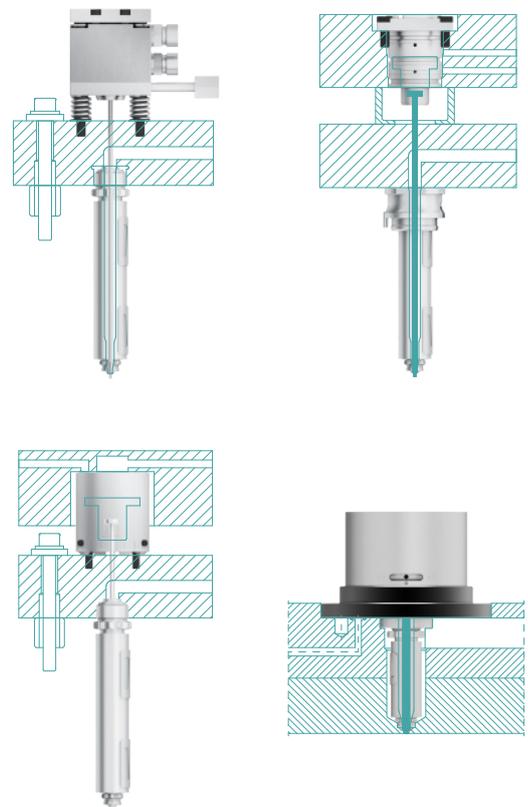
Valve gate nozzles

The smartFILL series as valve gate version

The smartFILL hot runner nozzle with valve gate ensures the best surface results on the moulded part. Relatively large gate diameters reduce the melt load and are cleanly sealed by the pin at the end of the injection process. This prevents sprue residue or stringing on the moulded part.

Characteristics:

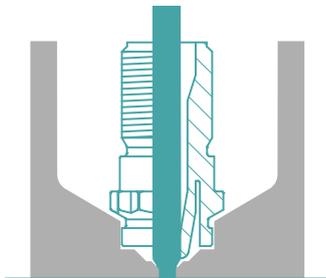
- › Reproducible injection moulding process through precise opening and closing
- › Cylindrical sealing pins as standard version
- › Low wear and high durability
- › Low shear stress in the gate
- › High-quality optical results of the gate
- › Short cycle times



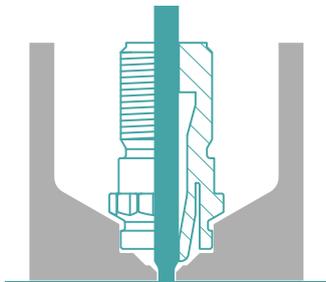
Valve gating technology – the choice is yours

The valve gate nozzles are available in 7 main gate types:

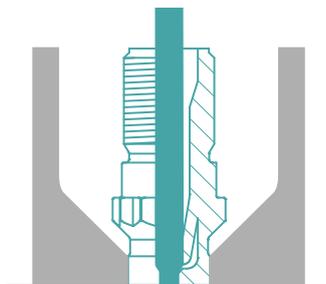
Cylindrical gates:



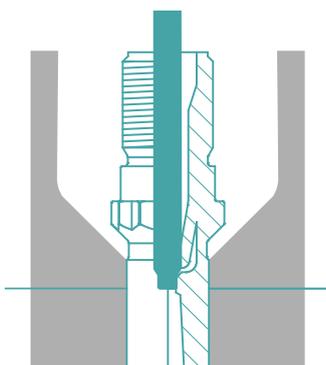
EH 4500
NZ



EH 4504
NZ-F



EH 4540
NZ-D



EH 4545
NZ-DL

Conical gates:

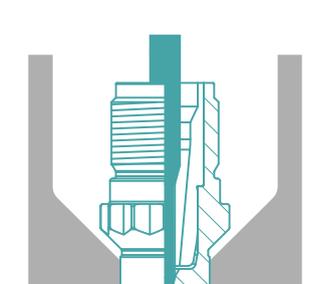


EH 4506
NK

- › Ante-chamber in the mould
- › For direct gating or gating on cold runner

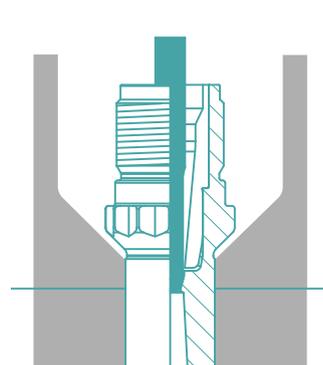


- › Ante-chamber in the mould
- › For direct gating or gating on cold runner
- › Permanent pin guide for increased precision



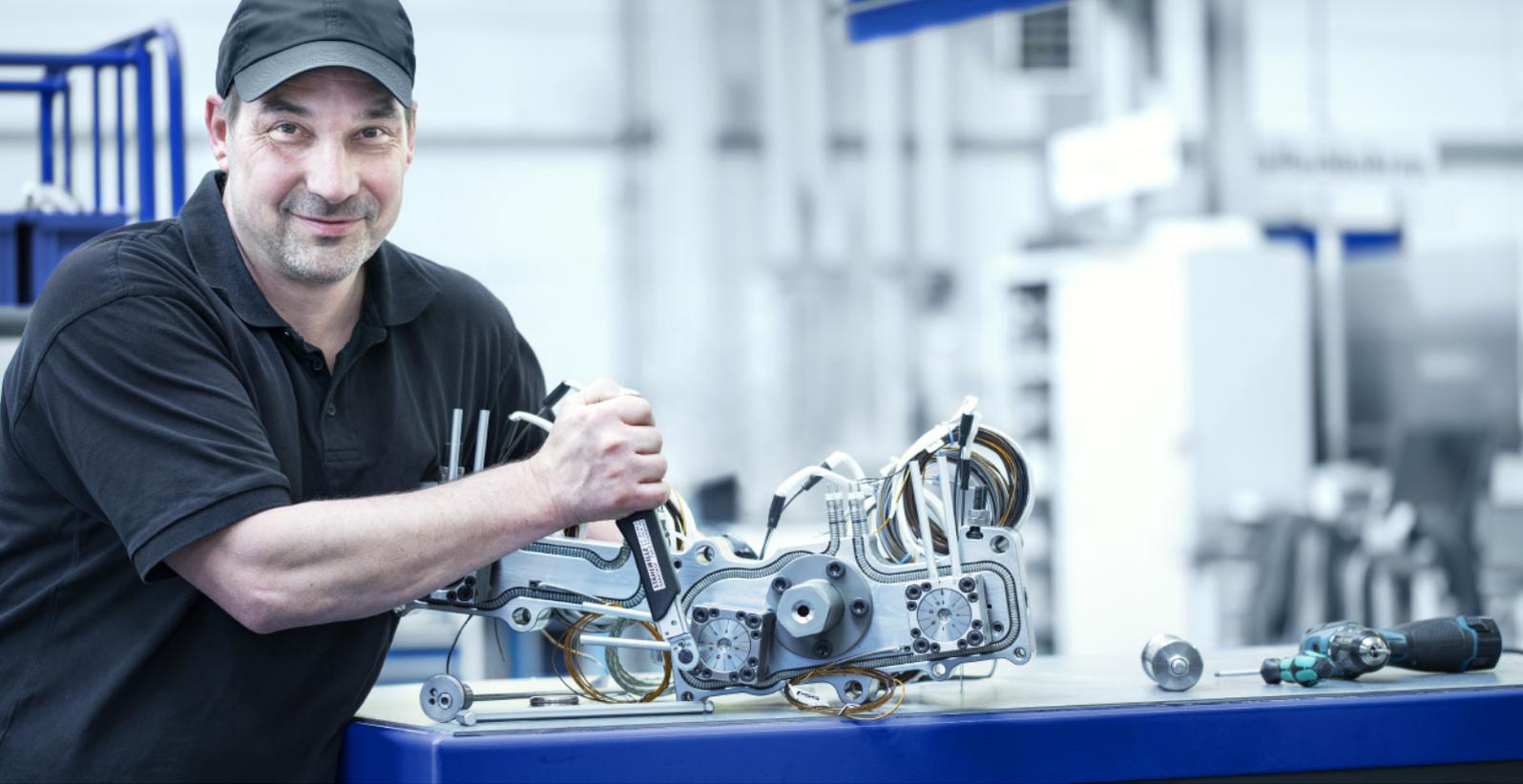
EH 4550
NK-D

- › Plunging nozzle head
- › For direct gating or gating on cold runner



EH 4555
NK-DL

- › Plunging nozzle head
- › For direct gating or gating on cold runner
- › Gating with scrap cone



Valve gate operating units

Matching our smartFILL nozzle range, we offer you operating units in different designs and sizes. The hydraulically or pneumatically operated units feature high-precision adjustment of the pin position without changing the pin stroke. How you benefit: the pin can be easily disconnected and can stay in the hot runner system when removing the operating unit. This reduces adjustment and installation times.

Characteristics:

- › Precise pin positioning adjustable via a vernier scale as standard
- › Pin position adjustment without opening the piston chamber
- › Constant pin stroke and high closing force
- › Compact installation space
- › Cascaded control for multiple systems



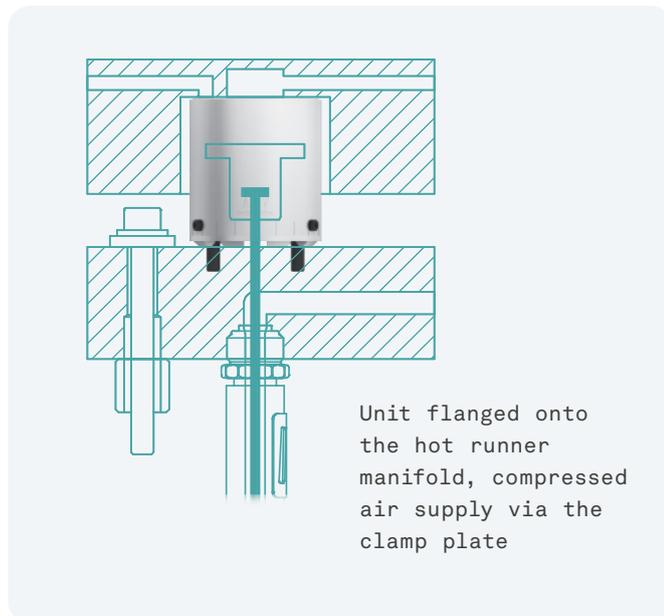
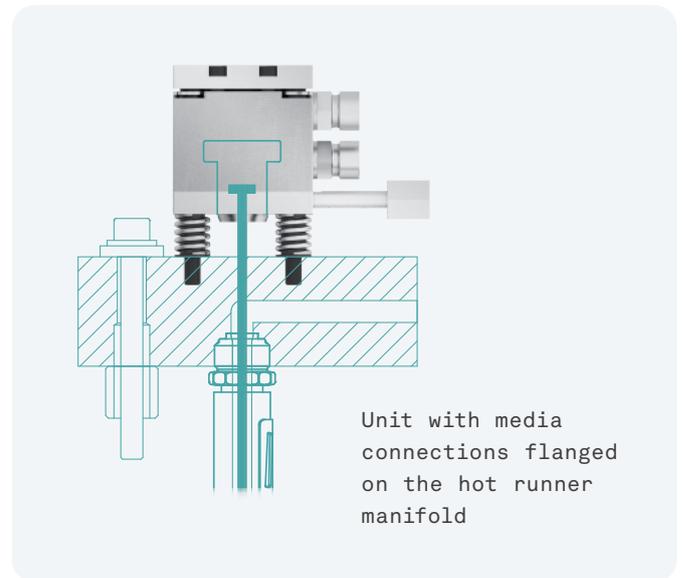
You can find more information here:

www.meusburger.com/EH4050-en

Standard variants of operating units

Cooled operating unit EH 6500

- › Ideal for ready-to-use complete systems with screw-in nozzles
- › Optimal isolation to the hot runner manifold
- › Separate cooling plate with cooling pipe
- › Cooling of the clamp plate after production ends not necessary
- › Detachable version available as standard
- › Double sealing between piston and housing
- › Anti-rotation pin protection without additional costs

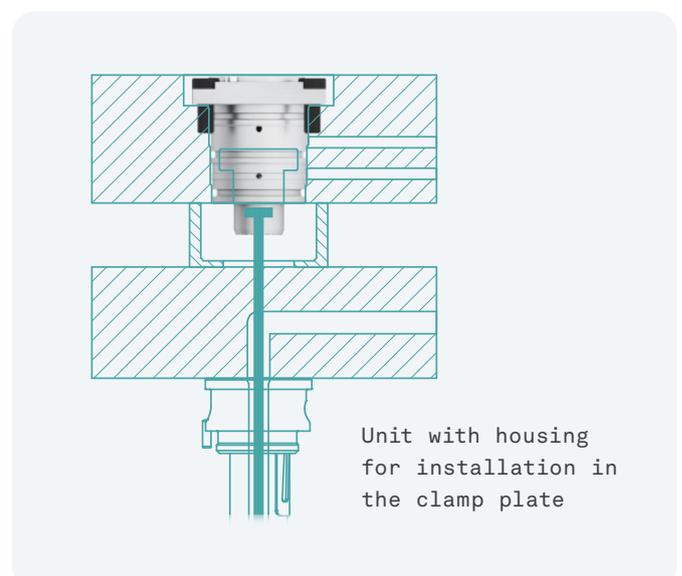


Pneumatic operating unit EH 6510

- › Compressed air is supplied via the clamp plate
- › No separate cooling of the unit required
- › Reduced installation space due to the compact design and elimination of air and water pipes

Operating unit in clamping plate EH 6520

- › Operating unit installed in clamping plate
- › Double sealing between piston and housing
- › Thermally separated from the hot runner manifold
- › Cooling of the clamp plate after production ends not necessary





Single nozzle with valve gate

Single valve gate nozzle smartFILL EH 4050

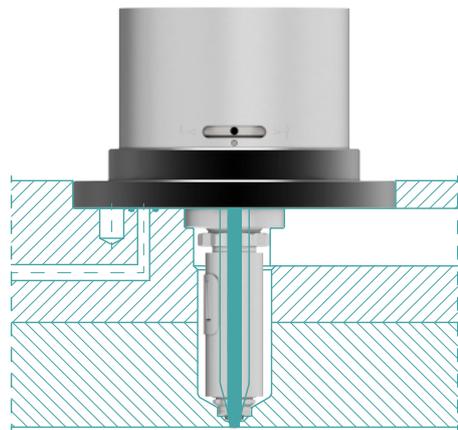
The single valve gate nozzle EH 4050 is the stand-alone solution without a hot runner manifold. It permits central gating of the moulded part in the mould with its valve gate in direct extension to the machine nozzle.

Thanks to the integrated valve gate, the EH 4050 achieves the best surface results on the moulded part. The pin operation is carried out by an annular piston and transverse bar so there are no lateral forces on the pin.



Characteristics:

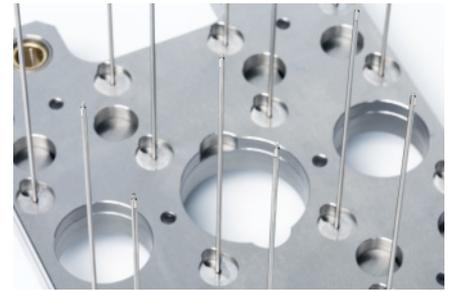
- › Compact and ready-to-use assembly
- › Pneumatic or hydraulic operation
- › Media is supplied through the clamping plate
- › Pin positioning possible when installed
- › All cylindrical gate types can be used
- › Compatible with ante-chamber bushes and wear inserts
- › Integrated cooling of the operating unit
- › Easy installation and maintenance



Pin actuation options with lifting plate

Valve gate operation with lifting plate

A lifting plate is essential for the precise and simultaneous opening of the valve pins. In particular, this type of pin operation enables the injection moulding of small moulded parts with a high number of cavities in a very confined space. Standardised and yet customisable, we provide you with various solutions.



Characteristics:

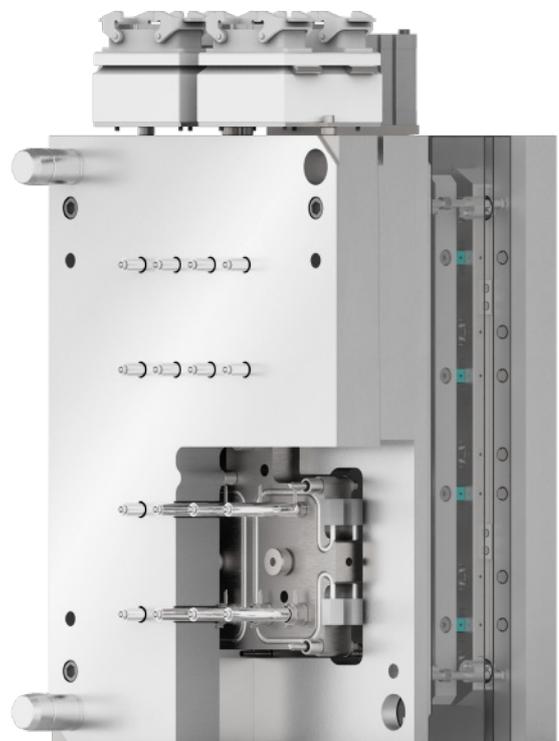
- › Precise and simultaneous opening and closing of the pins
- › Very small cavity distances possible
- › Closure of individual cavities possible
- › Pneumatic or hydraulic operation
- › Pin positions individually adjustable if required
- › Highest process reliability
- › Customised to your application
- › With pneumatic drive unit suitable for cleanroom applications

powerMOVE – the lever-operated lifting plate

Due to its unique mechanism, the lever-operated lifting plate powerMOVE offers decisive additional advantages to the operation via lifting cylinder mentioned above. The integrated lever mounted on roller bearings moves the pin set with an ideal speed profile. The pins plunge slowly with maximum force into the gate and close the cavities.

Characteristics:

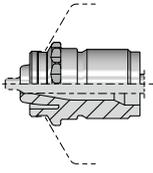
- › Reduced height accumulation
- › Lowest mechanical friction losses
- › Maintenance-free operation, no lubrication
- › Central control via a drive unit
- › Suitable for cleanroom applications



Gate types, smartFILL valve gate

EH 4500 / NZ

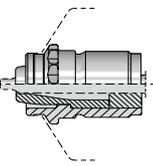
Gate assembly, smartFILL valve gate cylindrical



- › Suitable for all thermoplastics with a narrow to medium processing window, including filler material and reinforcing fillers
- › Good thermal separation from the mould
- › Highly wear-resistant, exchangeable valve pin and centring head
- › For direct gating or gating on cold runner

EH 4504 / NZ-F

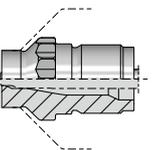
Gate assembly, smartFILL valve gate cylindrical, with permanent pin guide



- › Permanent pin guide for increased precision
- › For direct gating with very high optical requirements at the injection point and / or very high shot counts
- › Good thermal separation from the mould
- › Highly wear-resistant, exchangeable valve pin and centring head

EH 4540 / NZ-D

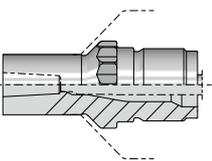
Gate assembly, smartFILL valve gate cylindrical, plunging



- › Suitable for all thermoplastics with a narrow to medium processing window, including filler material and reinforcing fillers
- › Highly wear-resistant, exchangeable valve pin and centring head
- › For direct gating or gating on cold runner

EH 4545 / NZ-DL

Gate assembly, smartFILL valve gate cylindrical, plunging with extension



- › Scope of application like EH 4540 / NZ-D with extension at the nozzle head
- › Highly wear-resistant, exchangeable valve pin and centring head
- › Gating to free-form surfaces
- › Adjustment to item geometry possible
- › Sprue scrap with scrap cone

Selection of the correct gate type

Gate types		EH 4500 / NZ			EH 4504 / NZ-F			EH 4540 / NZ-D			EH 4545 / NZ-DL		
													
		A	B(5)	C(5)	A	B(5)	C(5)	A	B(5)	C(5)	A	B(5)	C(5)
Semi crystalline	PE	++	++	+	++	++	+	+	++	+	+	++	+
	PP	++	++	+	++	++	+	+	++	+	+	++	+
	PPS	++	++	+	++	++	+	+	+	+	+	+	+
	PET (1)	++	++	+	++	++	+	+	++	+	+	++	+
	PBT (1)	++	++	+	++	++	+	+	++	+	+	++	+
	PPO (4)	++	++	+	++	++	+	+	++	+	+	++	+
	PA6	++	++	+	++	++	+	+	++	+	+	++	+
	PA6.6 (1)	++	++	+	++	++	+	+	++	+	+	++	+
	POM-Co	++	+	+	++	+	+	+	++	+	+	++	+
	POM-H (5)	++	+	+	++	+	+	+	++	+	+	++	+
Amorphous	PMMA (5)	++	++	+	++	++	+	+	++	+	+	++	+
	ABS	++	++	+	++	++	+	+	++	+	+	++	+
	ASA	++	++	+	++	++	+	+	++	+	+	++	+
	SAN	++	++	+	++	++	+	+	++	+	+	++	+
	PS (SB)	++	++	+	++	++	+	+	++	+	+	++	+
	PC (5)	++	++	+	++	++	+	+	++	+	+	++	+
	PES	++	++	+	++	++	+	+	++	+	+	++	+
	PSU	++	++	+	++	++	+	+	++	+	+	++	+
	PEI	++	++	+	++	++	+	+	++	+	+	++	+
	PVC soft (5)	++	++	+	++	++	+	+	++	+	+	++	+
Blend	PC/ABS	++	++	+	++	++	+	+	++	+	+	++	+
	PC/PBT	++	++	+	++	++	+	+	++	+	+	++	+
Elastomers	PP-EPDM	++	++	+	++	++	+	+	++	+	+	++	+
	TPE-A (5)	++	+	-	++	+	-	-	+	+	-	+	+
	TPE-C (5)	++	++	+	++	++	+	-	+	+	-	+	+
	TPE-U (5)	++	++	+	++	++	+	+	+	+	+	++	+
	TPE-O (5)	++	++	+	++	++	+	-	+	+	-	+	+
	TPE-S (5)	++	++	+	++	++	+	-	+	+	-	+	+

Material suitability:

++	well suited
+	suited
-	not suited

Material additives:

A	without additives	(1)	recommended minimum gate diameter = 1.2 mm
B	glass fibre	(4)	no Noryl GTX
C	flame retardant	(5)	insulating cap recommended

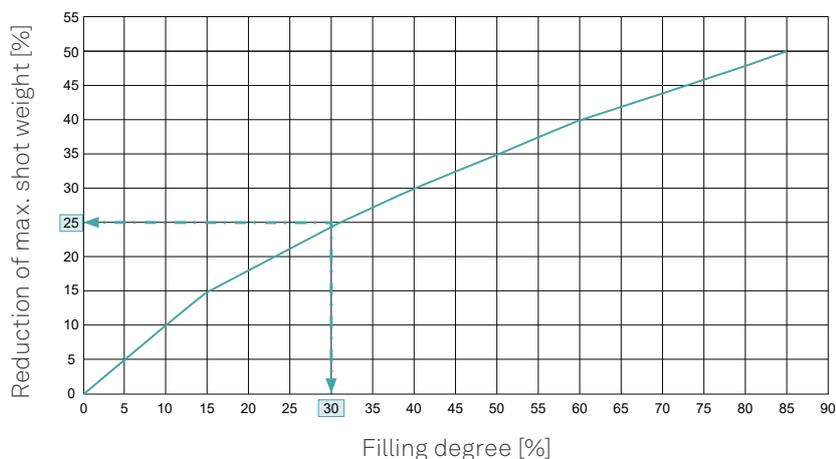


Shot weight per nozzle

Gate types		Low viscosity		Medium viscosity		High viscosity	
		$\pi (T_{set}/3000 \text{ s}^{-1}) < 60 \text{ Pa}\cdot\text{s}$		$\pi (T_{set}/3000 \text{ s}^{-1}) = (60-150) \text{ Pa}\cdot\text{s}$		$\pi (T_{set}/3000 \text{ s}^{-1}) > 150 \text{ Pa}\cdot\text{s}$	
		PE-HD, PE-LD, PP, PS, SB, TPE-O, TPE-S		ABS, ABS/ASA, ABS/PA, ASA, PA11, PA12, PA4.6, PA6, PA6.10, PA6.12, PA6.6, PBT, PET, PES, POM-C, PPE(PPO), PP/EPDM, PPS, PSU, SAN, TPE-A, TPE-C, TPE-V		PC, PC/ABS, PC/PBT, PEI, PMMA, POM-Homo, PSU, PVC-soft, TPE-U	
		min. [g]	max. [g]	min. [g]	max. [g]	min. [g]	max. [g]
ø 19	EH 4500 / NZ	0.5	30	0.5	15	0.5	8
	EH 4504 / NZ-F						
	EH 4540 / NZ-D						
ø 27	EH 4500 / NZ	3	60	3	30	3	15
	EH 4504 / NZ-F						
	EH 4540 / NZ-D						
	EH 4545 / NZ-DL						
ø 37	EH 4500 / NZ	15	400	15	200	15	80
	EH 4504 / NZ-F						
	EH 4540 / NZ-D						
	EH 4545 / NZ-DL						
ø 47	EH 4500 / NZ	150	1500	150	1000	80	500
	EH 4504 / NZ-F						
	EH 4540 / NZ-D						
	EH 4545 / NZ-DL						
ø 57	EH 4500 / NZ	200	2000	200	1500	200	750
	EH 4504 / NZ-F						
	EH 4540 / NZ-D						
	EH 4545 / NZ-DL						

Reduction of shot weight

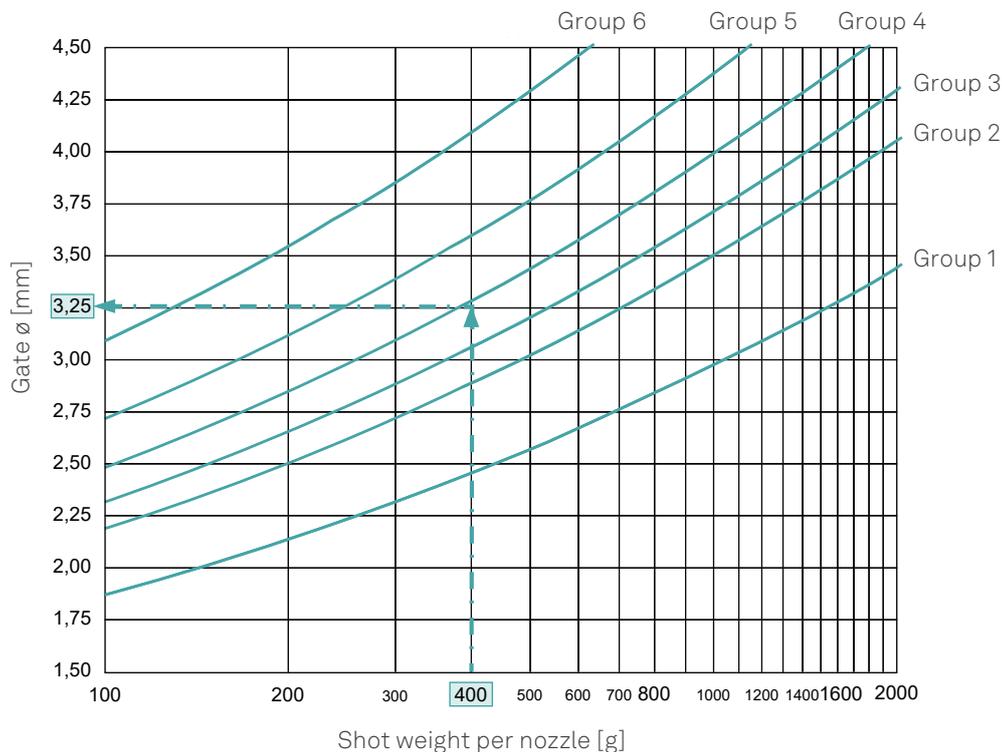
The maximum permissible shot weight for reinforced and filled plastics is reduced as shown in the following diagram:



Example: filling degree 30%, therefore shot weight reduced by 25%

Dimensioning of the gate diameter

Gate diameter



- Example for 400 g PC (group 4), gate assembly EH 4540 / NZ-D
Result: \varnothing 3.25 mm
Selected for direct gating 3.0 mm (standard)
Selected for gating on sub-manifold 4.0 mm (standard)

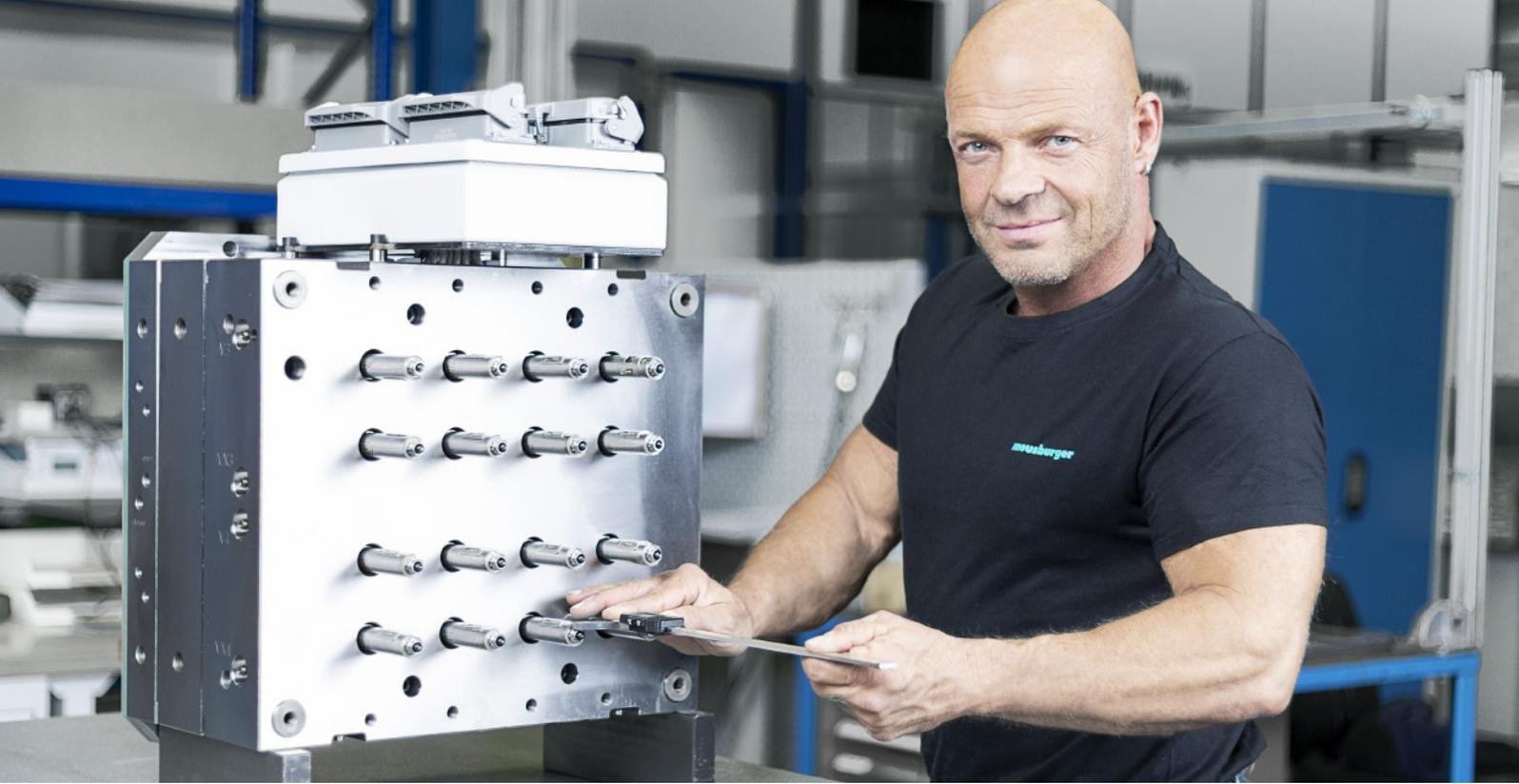
Determining the gate diameter:

Direct gating: gate selection according to the graphic, taking the plastic type into consideration

Gating on sub-manifold: gate diameter as large as possible (about 0.5 mm to 1 mm larger)

For reinforced plastics, enlarge the gate diameter by 20%.

The selection tables include only general recommendations based on our calculations and many years of experience. We do not guarantee the accuracy of this information, as our products are only one part of a complex production process. For a detailed selection with regard to a specific application please consult Meusburger.

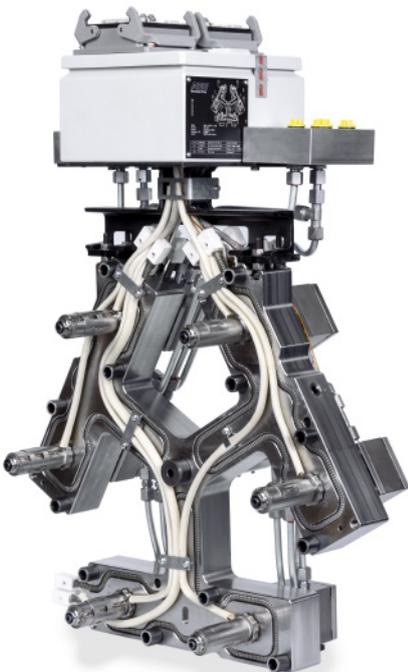


Customised complete systems

Our hot runner systems are as unique as your applications. Based on standardised hot runner components, we complete our hot runner systems so that they are tailored to your needs and requirements. Thus, they are matched to the plastic used, the injection moulding machine, and the peripherals and therefore allow an optimum production process.

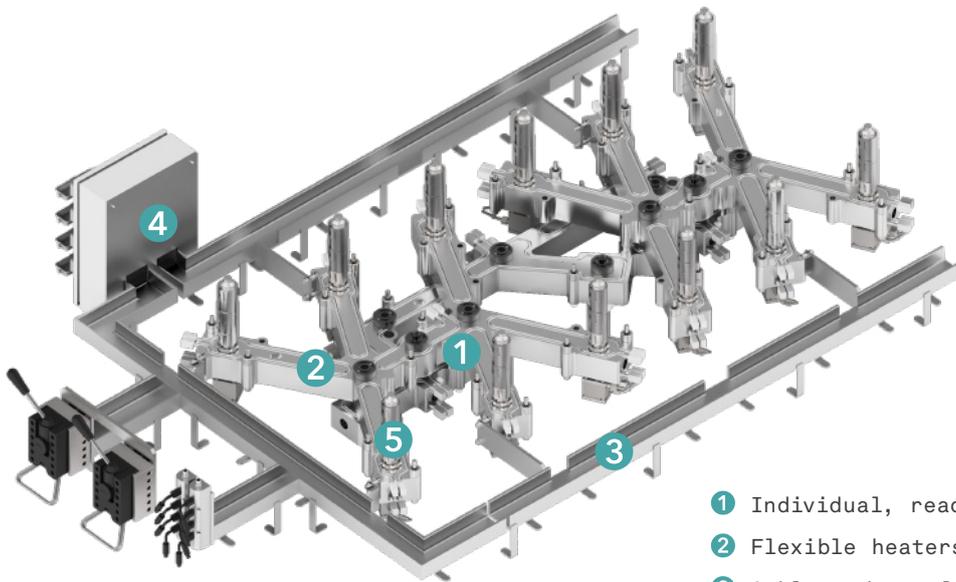
Hot runner system, ready to install and connect

The hot runner system with smartFILL hot runner nozzles, screw-in type, is delivered completely assembled and tested for functionality. The hot runner manifold just has to be inserted into the fixed half of the mould and screwed to the cavity plate. There is no need to adjust the height of the clamp plate because the hot runner nozzle and manifold are screwed together, thus ensuring that the hot runner system is sealed.



Characteristics:

- › Leak-proof hot runner system with screw-in nozzles
- › Stable channel for holding electrical and media lines
- › Connections and plugs designed according to individual customer standards



- ① Individual, ready-to-use hot runner system
- ② Flexible heaters, available from stock
- ③ Cable and supply line channels
- ④ Connection box for electrical connections
- ⑤ smartFILL hot runner nozzles, screw-in type

Hot half

On the fixed half of the mould the only thing missing is the cavity plate with cavities. We supply the customised hot half, either with open hot runner nozzles or as a valve gate system.

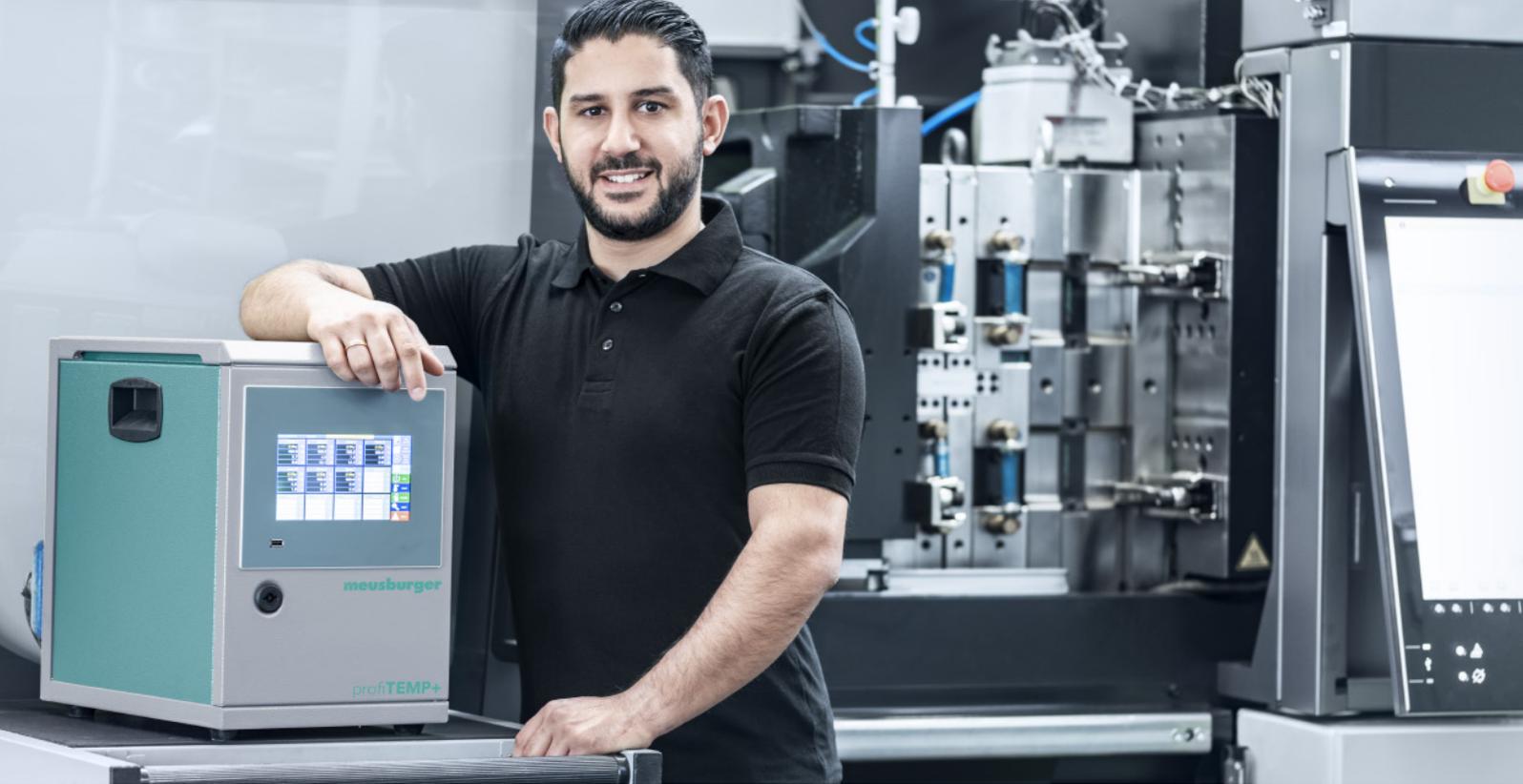
Characteristics:

- › Version with smartFILL nozzle series
- › System adjustment for leakage-free operation
- › Pin operation individually per nozzle or with lifting plate
- › Ready to connect according to customer standard with suitable electrical plugs and media connections
- › Highly convenient project planning, assembly, and production



More convenience

We offer you complete solutions from a single source and give you the assurance that all components are coordinated. This simplifies project planning, shortens the commissioning, and offers service advantages.



Hot runner control

We provide you with standardised as well as customised control systems for your hot runner applications. From packaging, caps and closures to automotive and medical technology – with us you will find the right solutions and innovative products across all industries. Through durable and easy-to-maintain products, short lead times and fast support, we guarantee lasting reliability. Whether series products or customised solutions – our field engineers will be happy to assist you personally on site.

profiTEMP+

Highest control performance combined with a high degree of standardisation. The profiTEMP+ hot runner controller features state-of-the-art technology and space-saving design. Thanks to its control mode that is specifically optimised for the purpose of controlling hot runners, the profiTEMP+ can be used even for demanding applications.



Characteristics:

- › Precise control algorithm ensures optimal part quality
- › All process errors are detected by the control unit and displayed as plain text
- › Setup Assistant: define the most important settings of the profiTEMP+ on a new mould in a flash
- › Quick support via remote support

profiTEMP+ series



Desktop
6, 12, 18, 24
zones



Desktop
30, 36, 42, 48
zones



Tower
54 to 120 zones

Tower
54 to 192 zones

6 to 48 control zones in 6-zone grid

- › Housing versions with stable carrying handles
- › Operation via 7" touch screen
- › Immediately available from stock with four of the most widely used mould connection types

54 to 192 control zones in 6-zone grid

- › Rollable housing with handles
- › Operation via 10" or IPC 15" touch screen

profiTEMP+ configurator for customised designs

Enter your specifications in our online configurator and get a quote for your customised profiTEMP+ within one working day. Of course, we are also happy to offer you personal support.



More information in our film:

www.meusburger.com/profitemppplus-en

Hot runner control portfolio

profiTEMP TM RH 1100

Our hot runner diagnosis device RH 1100 is perfectly matched to the requirements of mould makers and maintenance and service departments. Thanks to the easy operation and user interface in 15 languages, a complete and professional diagnosis of the condition of the heaters and thermocouples as well as the wiring of a hot runner can be made.



Characteristics:

- › 12 zones
- › Light weight: the profiTEMP TM can be conveniently transported
- › Operation is via a high-contrast 7" touch screen
- › With the 15 amp heating outputs, almost all nozzles and manifolds can be controlled
- › Especially compact housing dimensions

profiTEMP IM RH 1200

The new compact and powerful hot runner controller offers many possibilities with its five operating modes and four heating variants.



Characteristics:

- › Fast control algorithm shortens the heating phase and increases the operating time
- › Easy maintenance as the zone fuses are accessible from the outside (fuses available as spare parts)
- › Precise temperature control improves and ensures part quality
- › Clear, user-friendly touch screen user interface



Connecting cables and accessories

- › profiTEMP device cart as ideal base for the towers
- › Load and thermocouple cables, combination cables
- › Connector housings and pin inserts
- › Mains plugs for various connecting powers
- › Super-fast fuses to protect the heating circuits



Plug parts

Heater and thermocouple cables



profiTEMP device cart

for profiTEMP IM, profiTEMP TM
and profiTEMP+



Fuses



Fuse holders



Solid state relays



Mains plugs



Customer service & technical support

Comprehensive customer support for every project

From the engineering and design phase to commissioning and maintenance, our team will provide you with comprehensive support. You receive feedback in every project phase within 24 hours. On request, our experts check your projects and ensure that you achieve the optimisation you want in the injection moulding process, different materials and mould concepts.

Our range of services

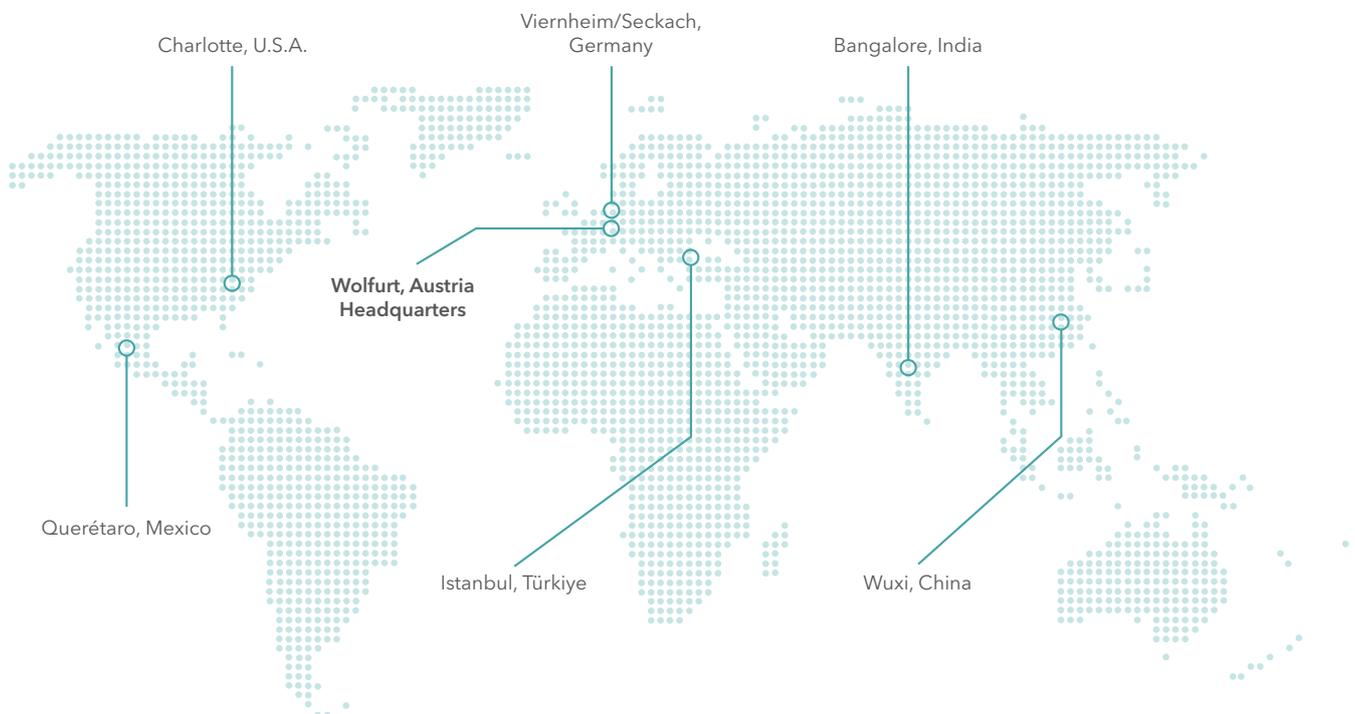
- › Hot runner systems field engineers and technical internal sales for specific customer support on site
- › Specially trained application engineers & designers for technical challenges
- › Fast availability of 3D data
- › Analysis of injection moulding problems and 3D filling analyses
- › Test runs with customer moulds on our own injection moulding machine in our technical centre
- › Sampling of customer materials (plastics)

Worldwide service and consulting on site

Service

We offer you a clear cost estimate. All hot runner systems we receive for repair are tested and returned to you within just a few days along with a service report.

- › Fast responding service team with you on site within 24/48 hours
- › Maintenance, repair and service check at the Viernheim location in Germany or directly at the customer's premises
- › Standardised components / spare parts available from stock
- › Customer training in the handling and operating of hot runner systems, on request
- › Quick support for control systems: technical support via remote maintenance software (TeamViewer)



Your personal consultation

We support you in building a productive and reliable mould. Our hot runner systems are designed to meet the most demanding requirements for your injection moulded parts.

Feel free to contact us. Our team is at your service.



Customer service

+43 5574 6706-0

93,000 products – the choice is yours



Mould bases

A large range of drilled and non-drilled plates in combination with a sophisticated system and convenient product advantages form the basis of precise, high-quality injection moulds.



Standard plates

The largest range of standardised plates – angular or round – in different versions offers maximum flexibility. All plates are manufactured to tight tolerances as standard and the thickness is precisely ground. If you cannot find what you are looking for in our standard range, don't worry: we also offer plates in customised dimensions.



Special-purpose moulds

Challenging projects ahead? Whether sliding core moulds for complex components, change moulds for prototypes and small series or micro moulds for producing the smallest parts – you will find a solution among our special-purpose moulds.



Hot runner moulds

With our configurator for hot runner moulds, a standardised mould base including hot runner manifold and manifold plate can be created with just a few mouse clicks. The variably selectable components of the hot runner mould are delivered promptly and in the usual high quality.



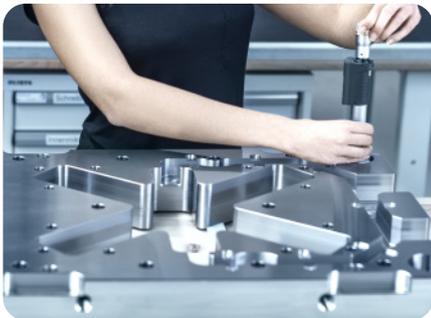
Standard bars

Versatile bars in various shapes, dimensions and material grades are suitable for the production of inserts, mould cores and slides. Save time with already hardened tool steel in the form of blocks for eroding and much more.



Components

Unique components with sophisticated details let you break new ground. From guides and slide systems to electrical, hydraulic and hot runner components – be inspired by our vast selection of components.



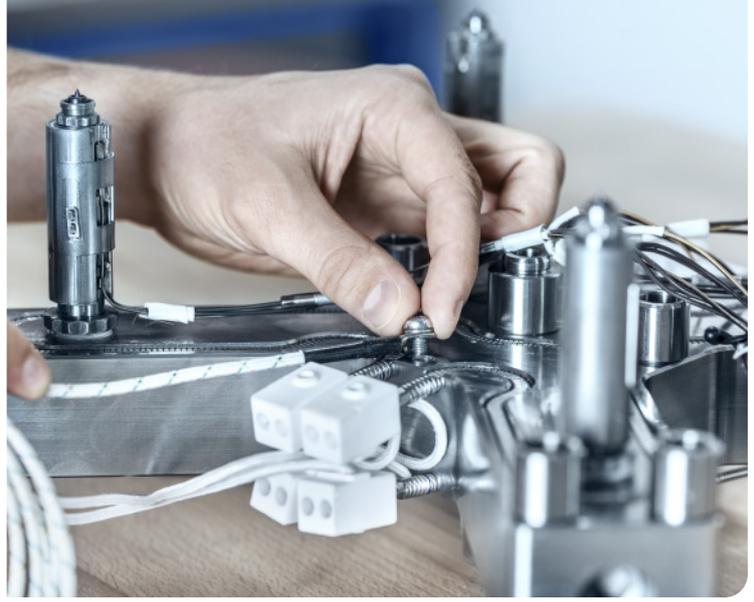
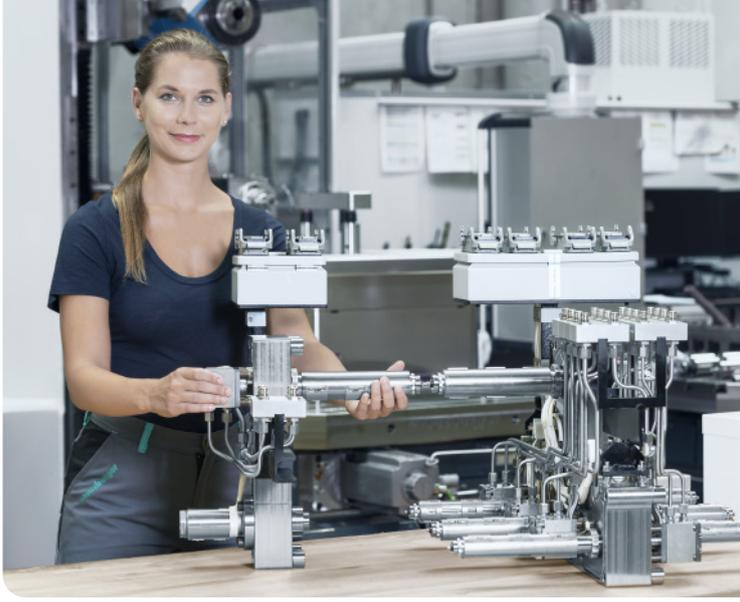
Machining

Whether it is milling, hard milling, deep hole drilling, grinding or flame cutting – we offer short lead times for customised solutions. You can fully rely on our expertise and experience when it comes to special machining.



Workshop equipment

Out of the vast range on the market, we have compiled an ideal selection especially for mould and die making. This allows you to save time and money when you compare, select and order high-quality products for daily use in the workshop and production.



Full-range
supplier



Continuous
availability



Top
quality



Online
service



Personal
support

Ordered today – immediately dispatched



Portal

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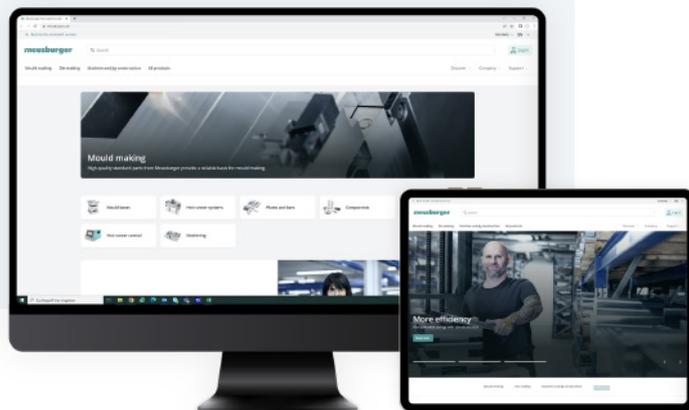
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