meusburger

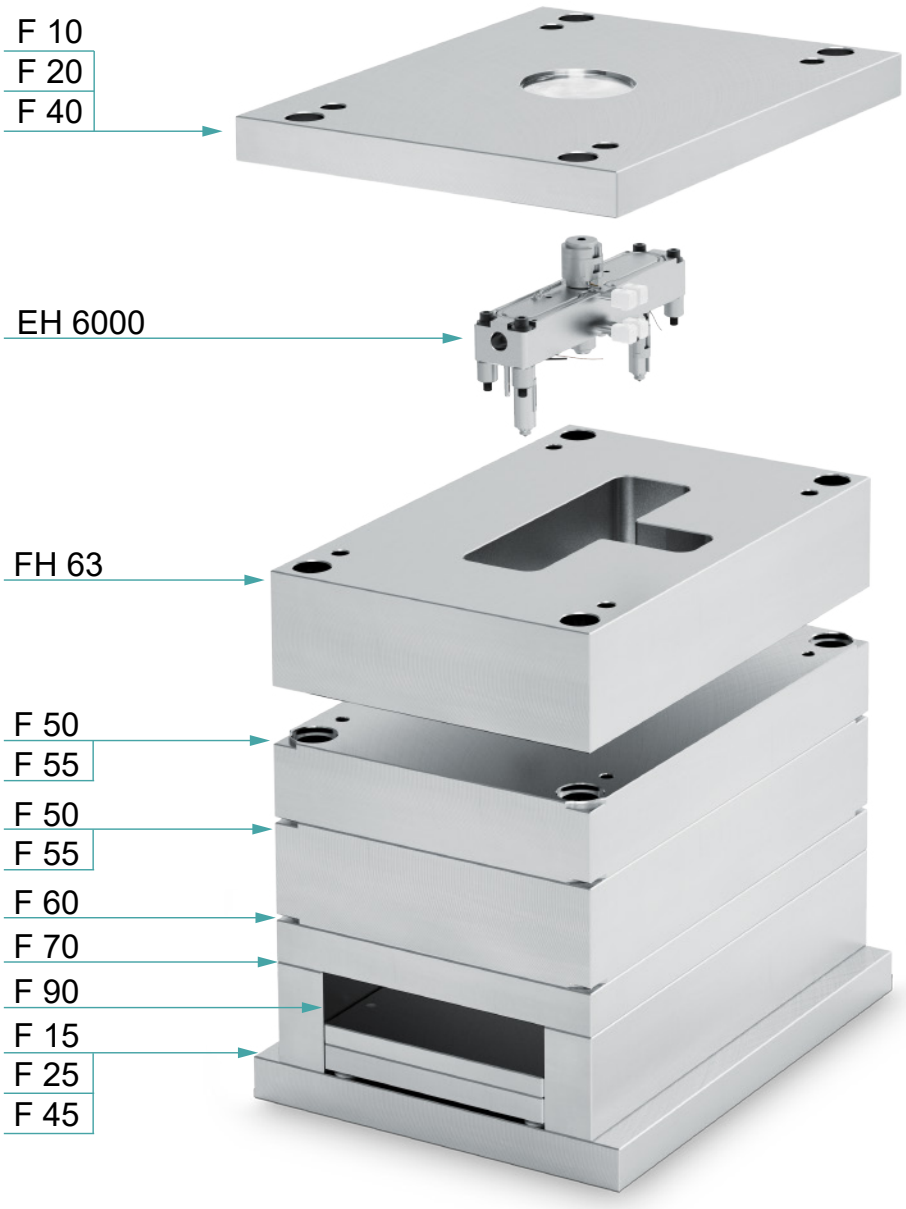
Standards for your success.

HOT RUNNER MOULDS

EASILY CONFIGURED, QUICKLY DELIVERED

A HOT RUNNER MOULD IN JUST 5 MINUTES

The configurator for hot runner moulds from Meusburger offers numerous advantages that not only save time but also reduce costs. The complete mould base including hot runner system can be customised with just a few clicks and shipped shortly thereafter in just one order.

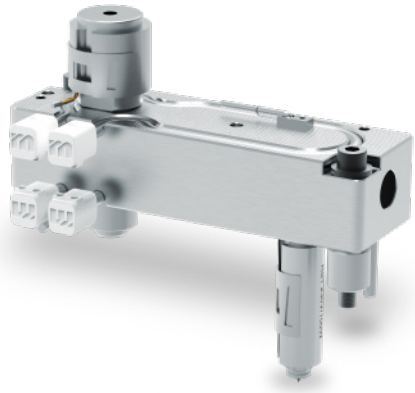


Find more details on our FH hot runner mould at:
www.meusburger.com/hot-runner-moulds

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

4 VARIATIONS – MAXIMUM FLEXIBILITY

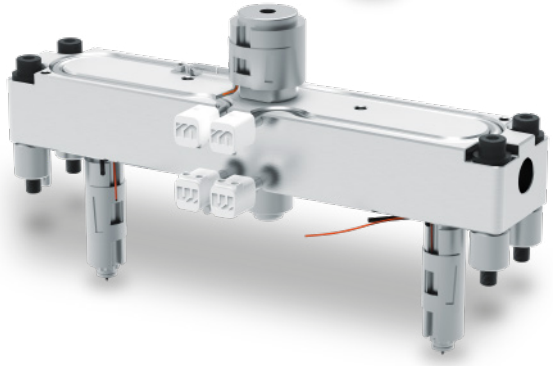
For our standardised hot runner moulds, you have the choice between four different manifold types. With the offered manifold sizes, the variable nozzle positions and the large nozzle selection you can configure the right hot runner solution for your project quickly and reliably.



IMT1

DEFLECTION MANIFOLD WITH 1 NOZZLE

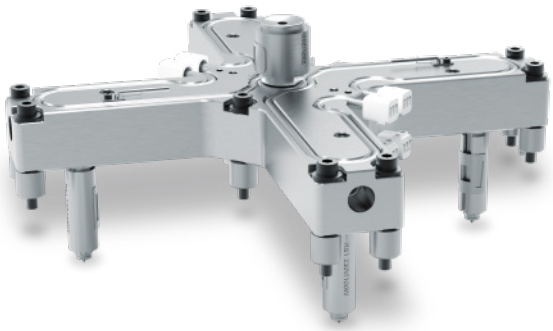
Possible spacing:
A: 37.5 – 206.25 mm



IMT2

IN-LINE MANIFOLD WITH 2 NOZZLES

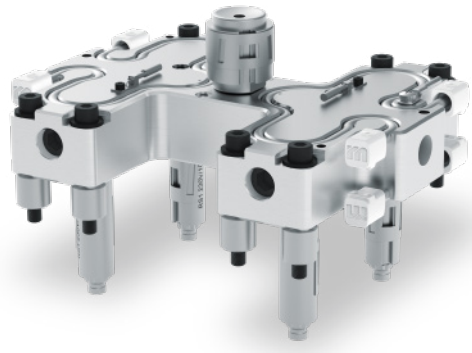
Possible spacing:
A: 25.0 – 206.25 mm



CMT4

CROSS MANIFOLD WITH 4 NOZZLES

Possible spacing:
A: 35.5 – 220.5 mm

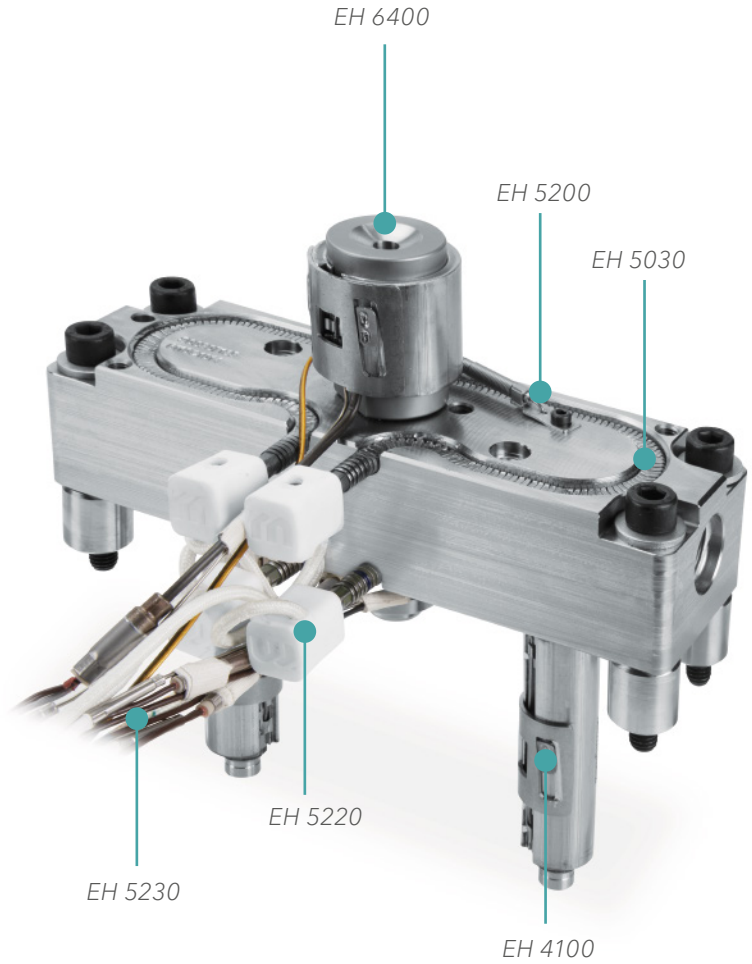


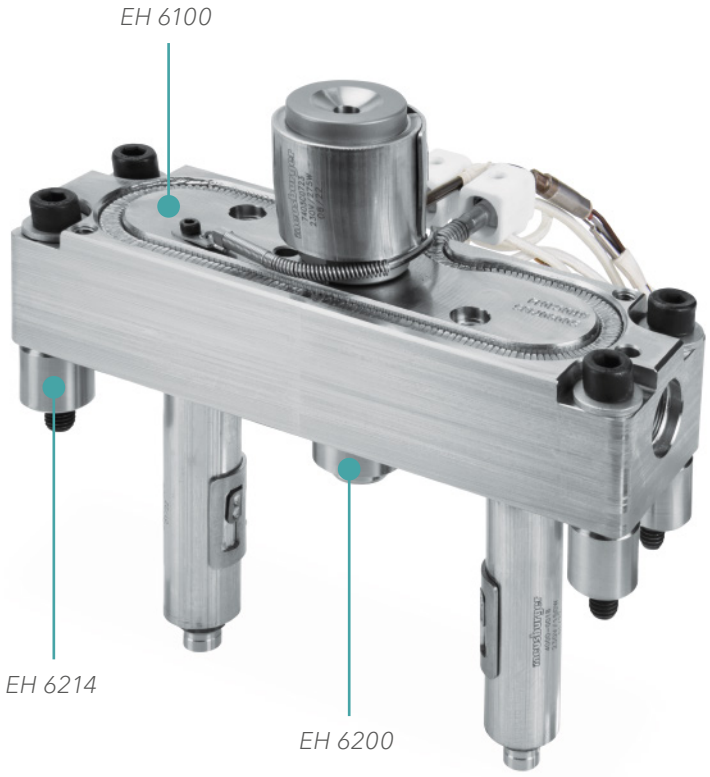
HMT 4

H MANIFOLD WITH 4 NOZZLES

Possible spacing:
L1: 40 – 210 mm
L2: 25 – 206.25 mm

DESIGN OF EH 6000 HOT RUNNER SYSTEM





THE COMPONENTS IN DETAIL

EH 4100: **smartFILL HOT RUNNER NOZZLE, SCREW-IN TYPE**

» Includes gate assembly in 4 variants
» Heater with 230 V, cable length 2,000 mm
» With integrated thermocouple Fe-CuNi (type J), DIN 43710, black+/white-
» Max. injection pressure: 1,800 bar

EH 5030: **FLEXIBLE HEATER**

» Power: 700 – 2,800 W, depending on manifold size

EH 5200: **90° BENT THERMOCOUPLE**

» Fe-CuNi (type J)
» Thermocouple with kink protection spring
» Connector length 5,000 mm

EH 5220: **HEATER CONNECTION, COMPLETE**

CONNECTOR CLAMP

» Allows a screwable connection of the electrical supply lines to any flexible heater
» Two clamping options are provided on each connector clamp, so that by attaching a 'bridge' the flexible heater can be connected in parallel directly at the heating outlet

CONNECTING CABLE

» 2.5 mm^2 pure nickel cable, with glass fibre insulation, 4-fold up to 300°C

EH 5230: **PROTECTIVE CONDUCTOR**

» Connector length 2,500 mm

EH 6100: **MANIFOLD**

» Available in material grades 1.2311 / 1.2316 depending on the plastic used

EH 6200: **CENTRING PIECE**

» Positions the manifold in the mould centre opposite the sprue bush

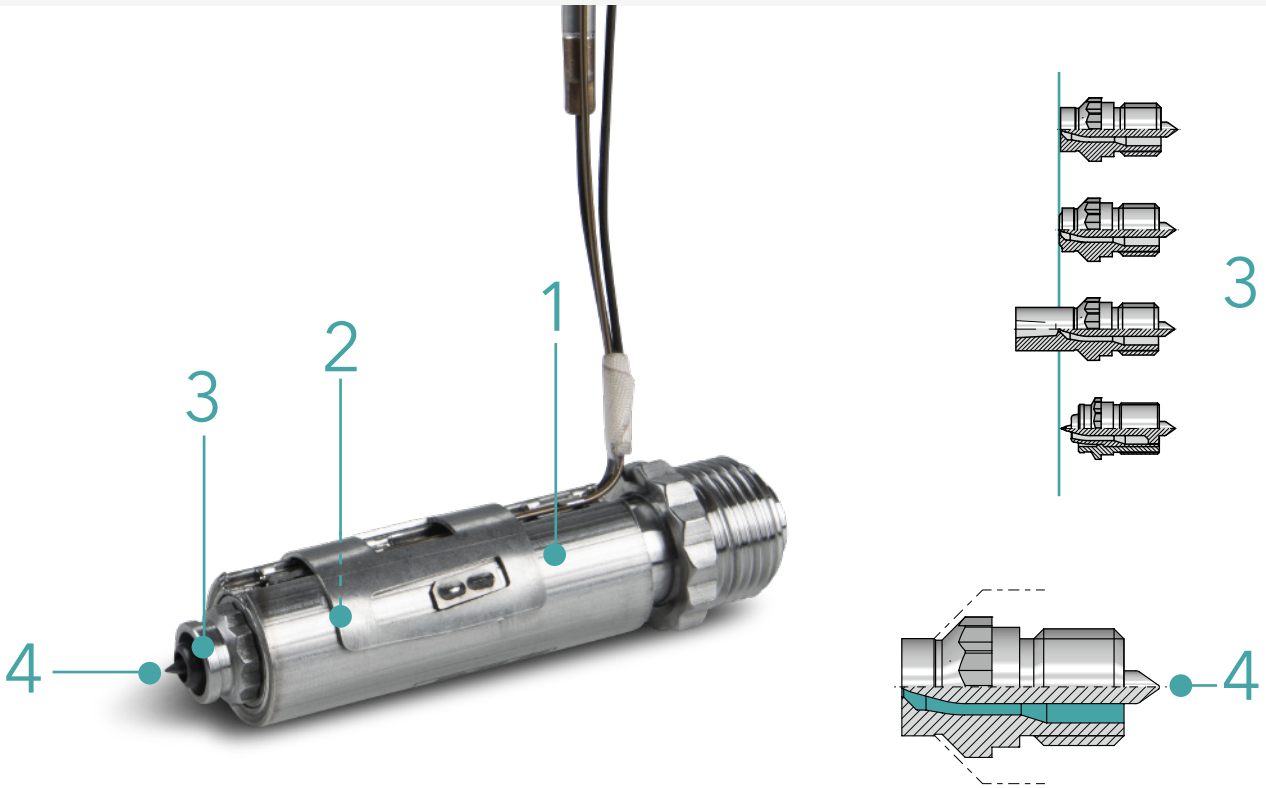
EH 6214: **SPACER AND SCREW SET**

» For the correct position and for screwing in the manifold

EH 6400: **SPRUE BUSH FOR HOT RUNNER MANIFOLD**

» With integrated thermocouple Fe-CuNi (type J), DIN 43710, black+/white-
» Heater with 230 V, cable length 2,000 mm

PRODUCT FEATURES OF THE EH 4100
smartFILL HOT RUNNER NOZZLE, SCREW-IN TYPE



1 INNOVATIVE HEATING TECHNOLOGY

» Optimal heat transfer into the plastic used
» Homogeneous temperature profile on the entire nozzle length through differentiated power distribution
» Easy and fast change of heater and thermocouple due to intelligent clip lock

2 STREAMLINED MELT CHANNEL WITH HIGH-QUALITY SURFACE

» Optimal melt exchange since there are no dead spots
» Low shear stress of the melt
» Good colour changing qualities

3 DIFFERENT GATE TYPES

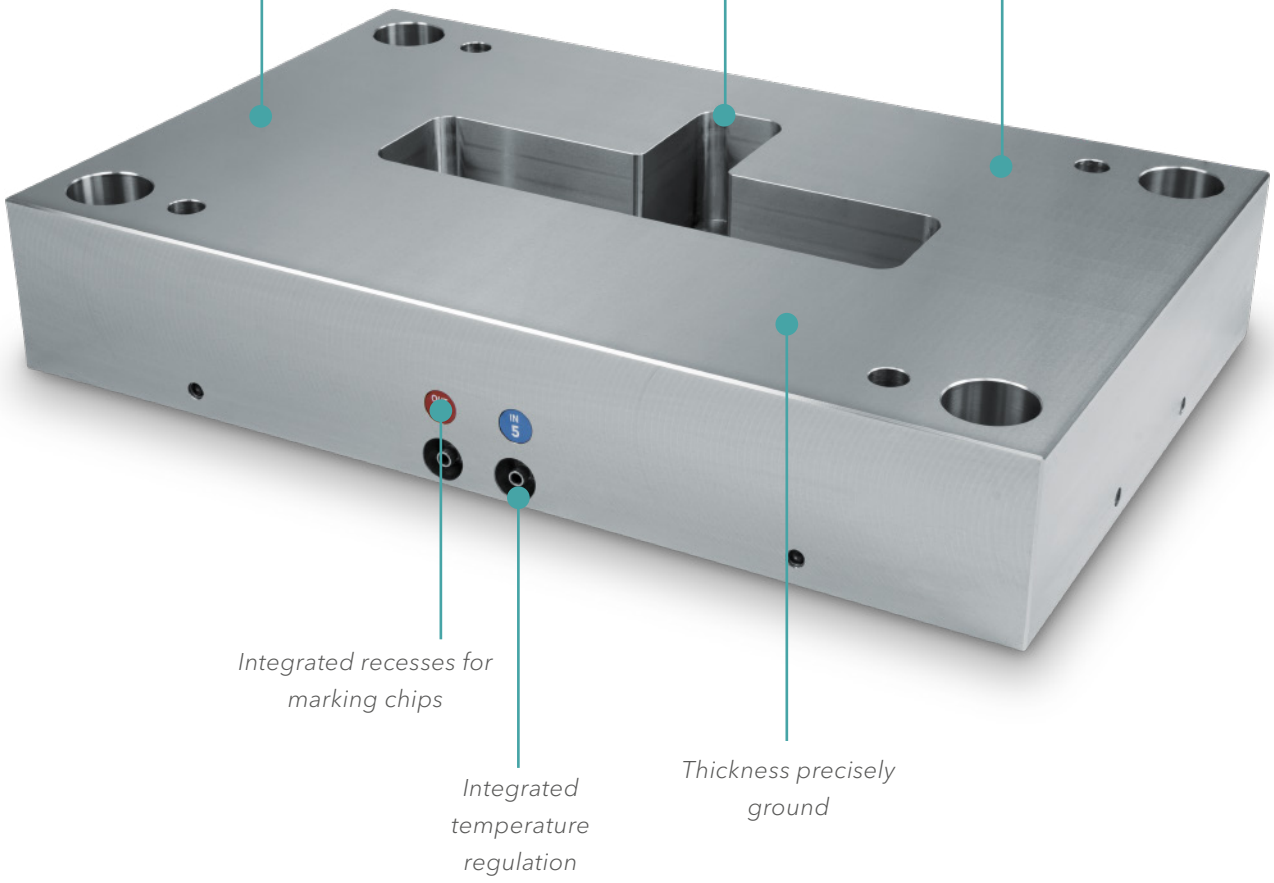
» Flexible adjustment of the hot runner nozzles to different applications and materials
» Easily exchangeable, highly wear-resistant gate assemblies
» Consistent nozzle lengths (l dimension) for different types of gates

4 NOZZLE TIP FOR OPTIMAL FLOW PROPERTIES

» The partitioning and re-merging of the melt take place in the hot area of the nozzle
» Reduces the development of flow lines
» Improves the optical and mechanical quality of the part

PRODUCT FEATURES OF THE FH 63 MANIFOLD PLATE

The FH 63 manifold plate is automatically created by entering the parameters in the configurator. Width and length can be selected by the user, the thickness is generated automatically. Mould sizes from 216 246 – 796 1196 can be selected. The 3D model already has the appropriate recesses for the hot runner system. Furthermore, three different material grades are available.

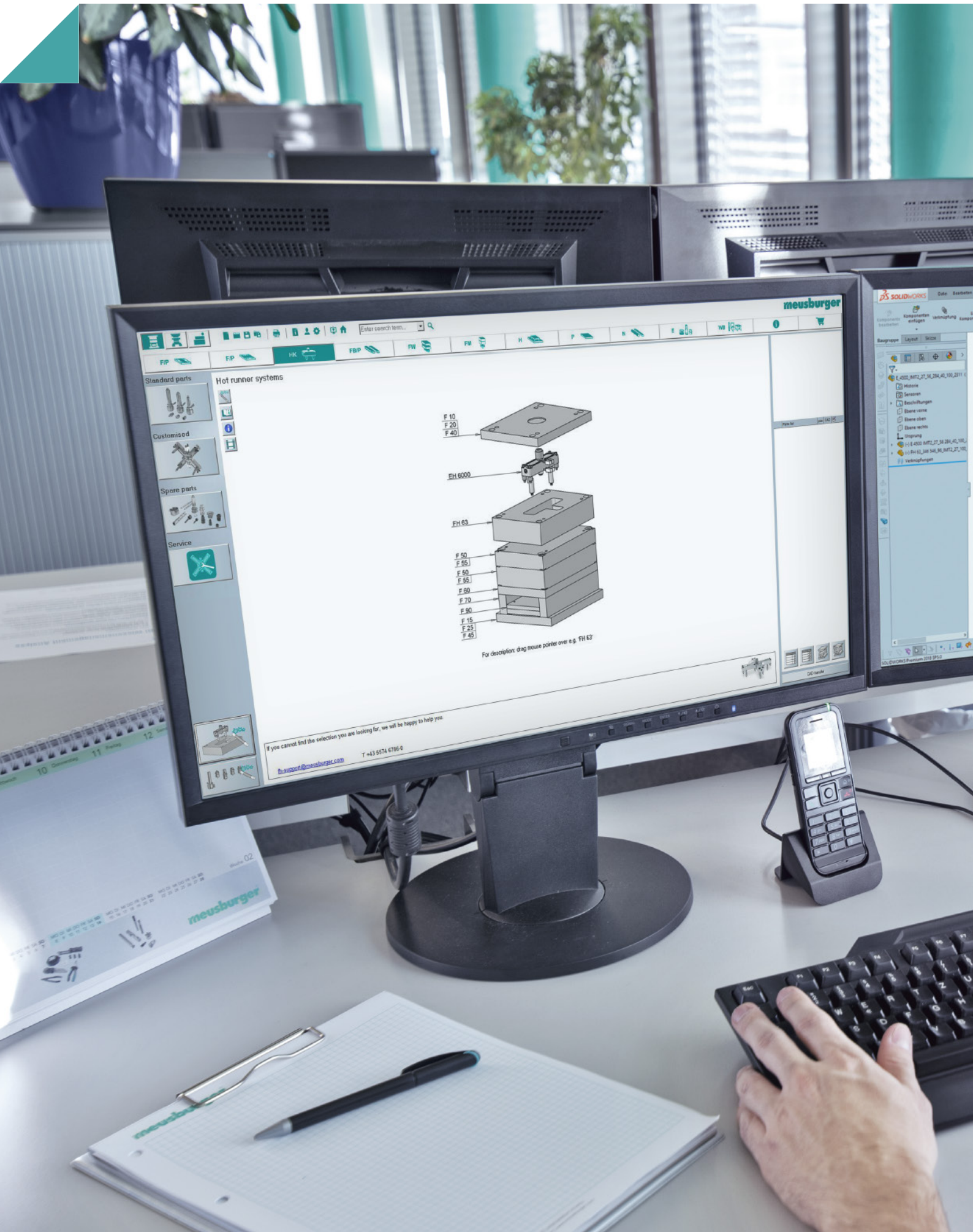


Plastic marking chips can be used for identifying the temperature regulation circuits.

E 2030

E 2030 S
Individually printable

A COMPLETE HOT RUNNER MOULD IN JUST A FEW CLICKS



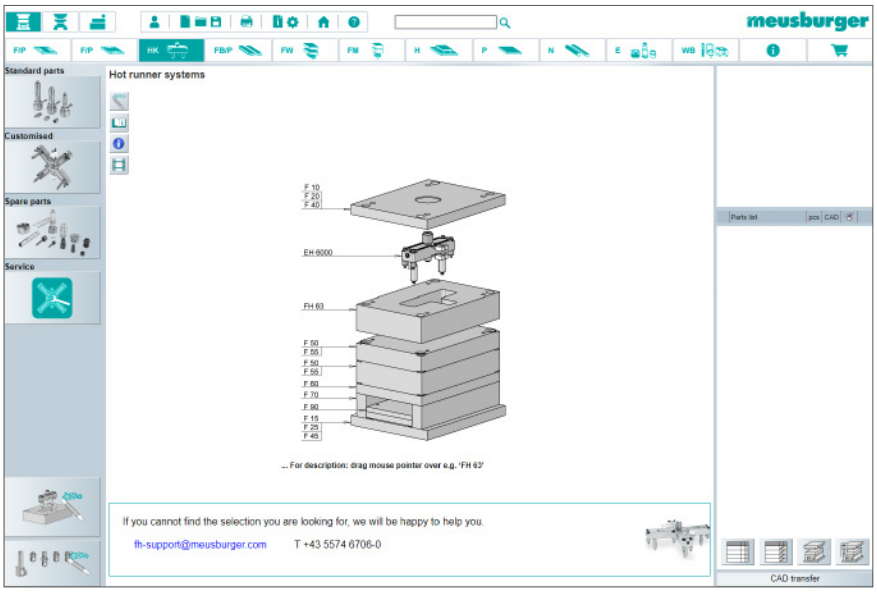
The configurator for hot runner moulds is the optimal tool for all designers. With just a few clicks, you get the complete mould base including the hot runner system in the usual high quality. Of course, the 3D data is available for download as usual. The advantages are plain to see. The designer can concentrate on other matters during the mould design and thus saves valuable time and costs.

YOUR BENEFITS AT A GLANCE:

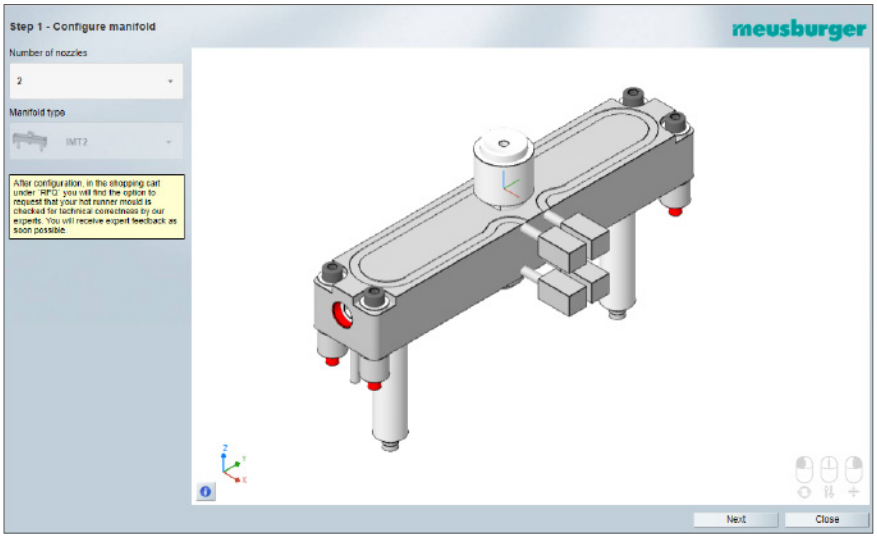
» Easy and fast configuration of the hot runner mould
» High flexibility through individually adjustable nozzle positions
» Live display of the manifold and 3D data immediately available
» Transparent costs due to immediate price display
» Short lead times of the configured components

For detailed information on our FH configurator watch our film:
www.meusburger.com/fh-configurator-video

FH CONFIGURATOR FOR HOT RUNNER MOULDS

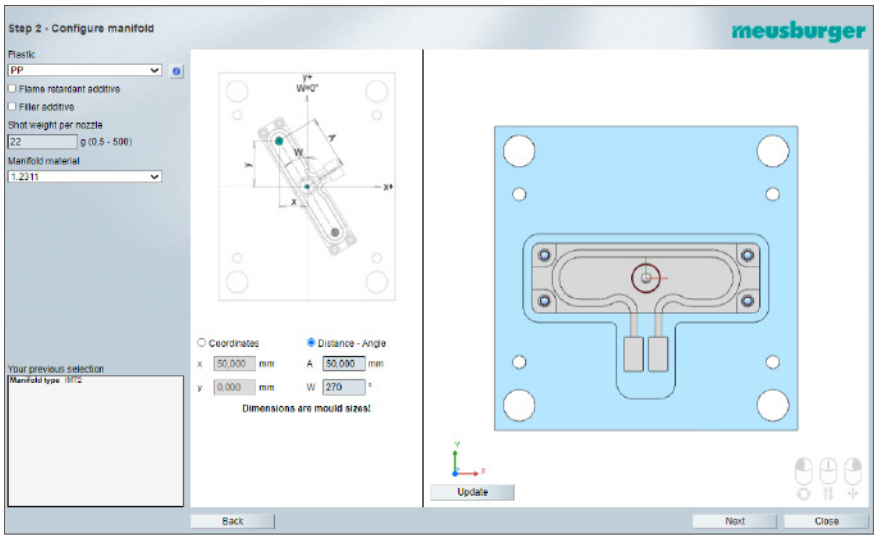


The configurator for hot runner moulds can be easily opened via the 'HK' button in the web shop.



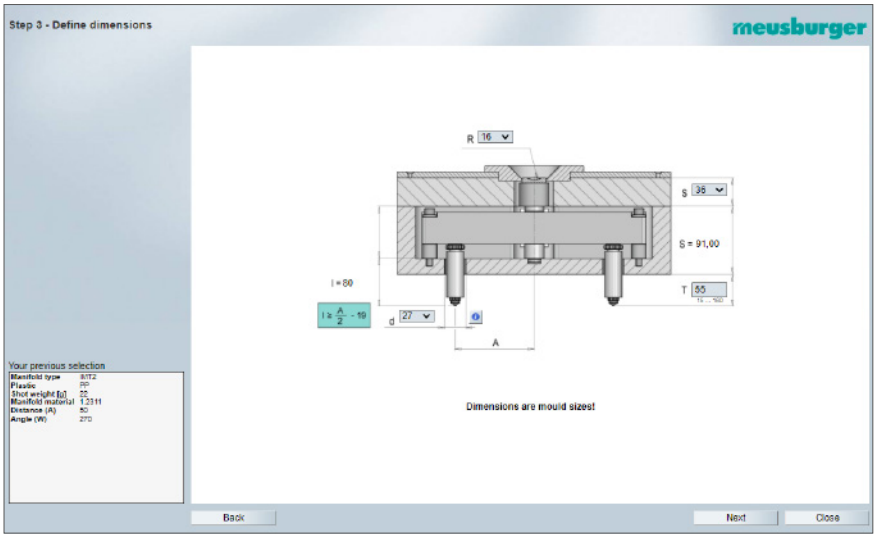
In the first step, the number of nozzles and the manifold type are determined.

FH CONFIGURATOR FOR HOT RUNNER MOULDS



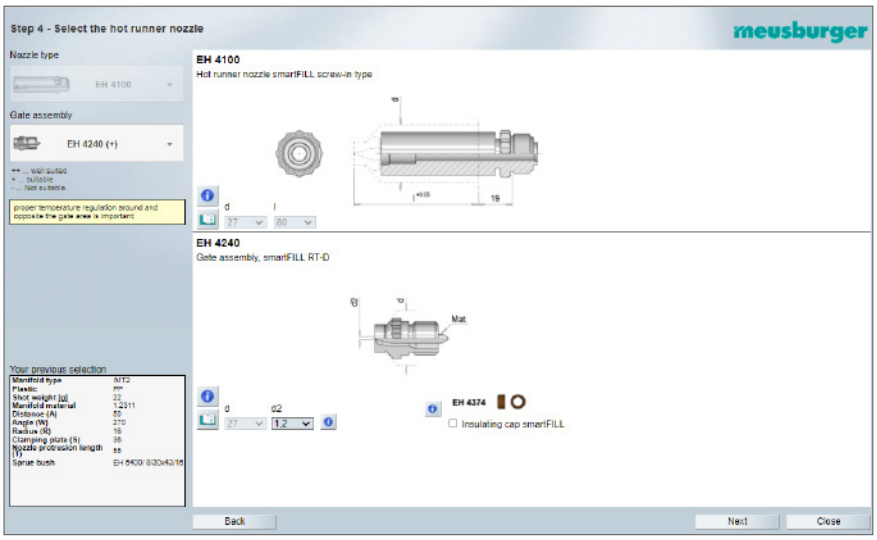
In the next step, the plastic to be processed and the shot weight of the component are entered. Depending on the version, the material for the manifold can be selected.

The position of the manifold in the manifold plate can be defined by entering the X and Y coordinates of the feed point or by entering the nozzle distance and the angle.



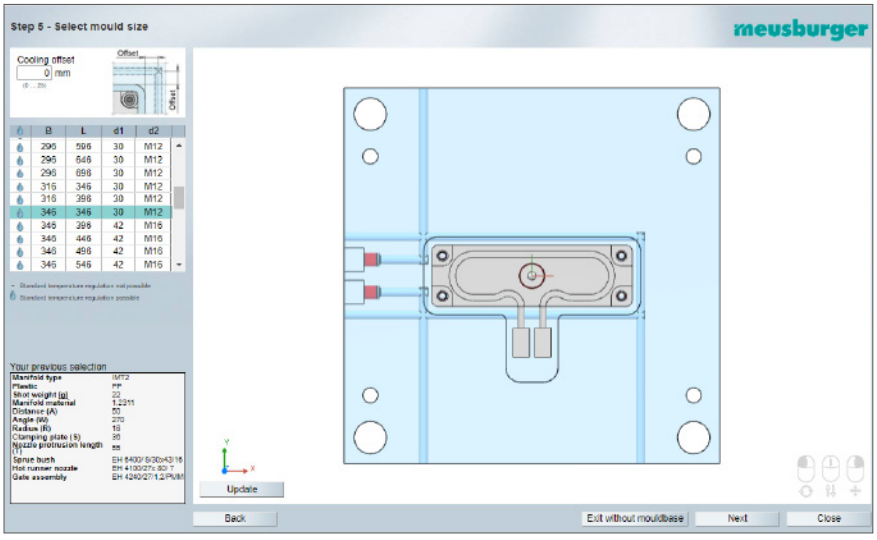
In the third step, various dimensions of the hot runner mould are defined. In addition, the nozzle diameter can be changed. The most suitable nozzle has already been selected here.

FH CONFIGURATOR FOR HOT RUNNER MOULDS



When selecting the gate type, the EH 4200 / RT is set as default because this is the ideal solution in most cases. But we also offer the possibility to switch to another type.

If the combination of material and gate assembly results in a recommendation for an insulating cap, then this can be preselected and ordered directly.

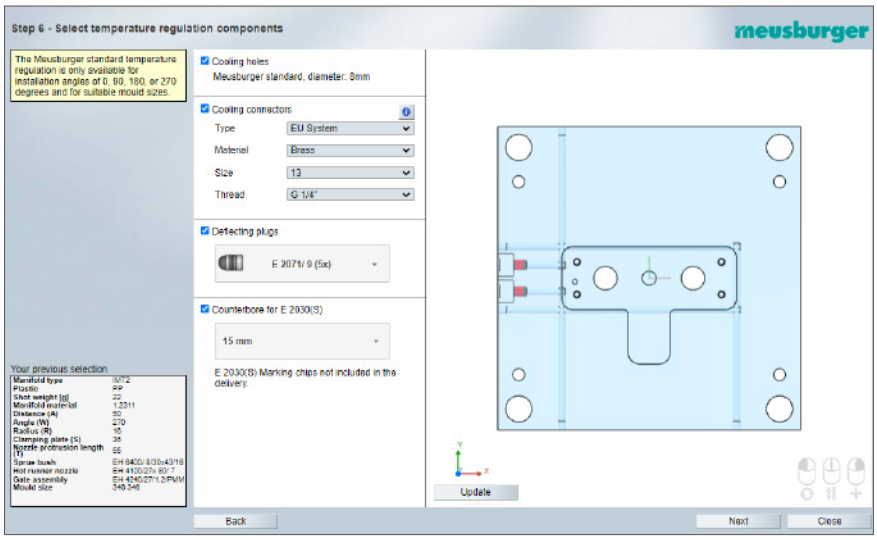


The next step is to select the desired mould size.

The dynamic display of the mould size optimally shows the relationship between the manifold and the manifold plate. In case of doubt, the next larger or smaller mould size can be selected.

The offset of the cooling hole to manifold cutout can be adjusted from 0 to 25 mm should the need for a different mould size arise.

FH CONFIGURATOR FOR HOT RUNNER MOULDS

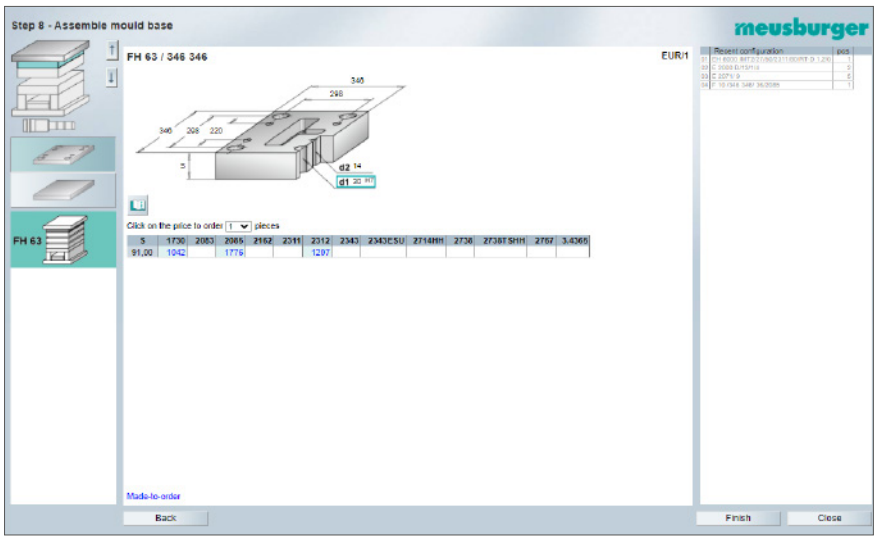


In this step, the temperature regulation system can be configured.

The cooling connectors, sealing plugs, and possible recesses for the E 2030 marking chips can now be selected.

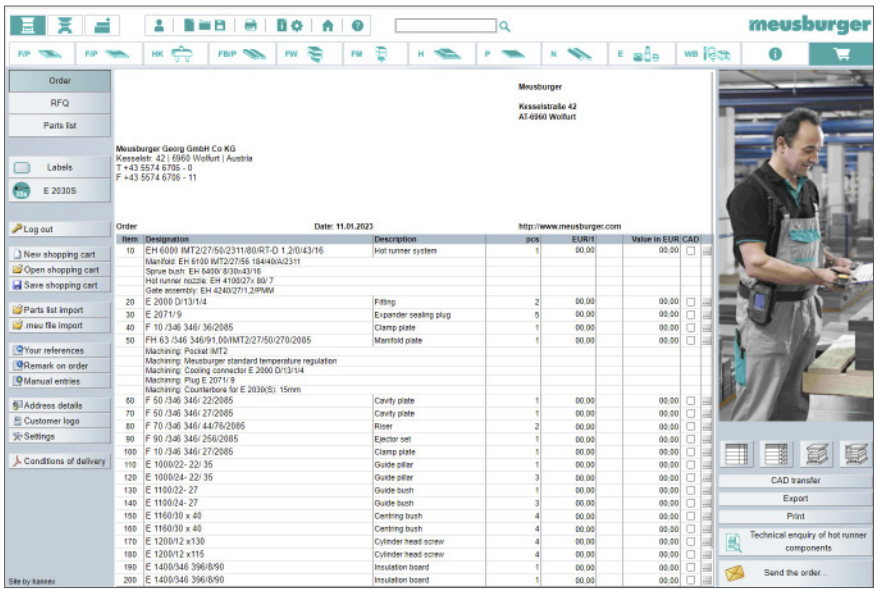
NOTE:

An automatically generated standard temperature regulation system is only possible if the angle (W) entered in step 3 is 0°, 90°, 180° or 270°.



Finally, you get to the familiar mould bases wizard where you can select the material of the manifold plate and the rest of the plates and components required to complete your mould base.

FH CONFIGURATOR FOR HOT RUNNER MOULDS

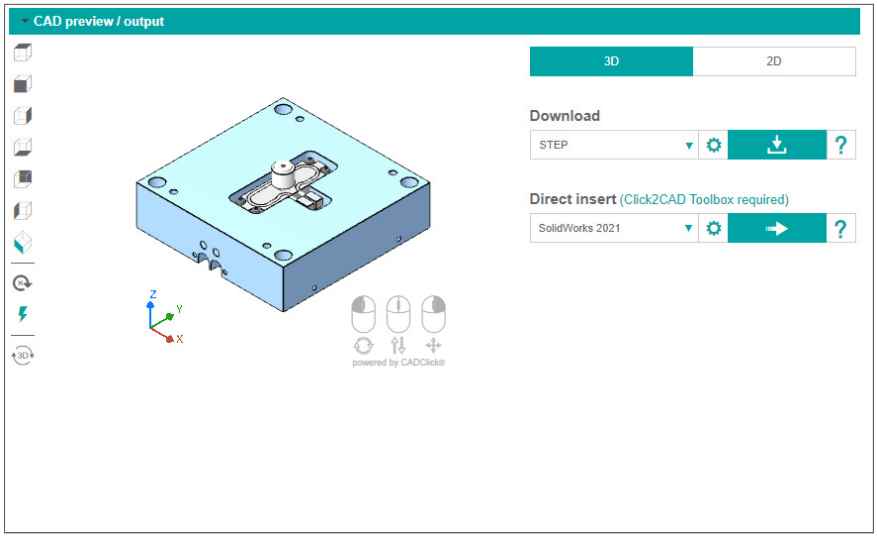


The configuration can be checked by our experts upon request.

To request an inspection, click the 'RFQ' button in the shopping cart view. Then click the button shown below to open the form with the data already filled in. Fill in the rest of the required fields and then click the 'Send' button to send the request.

Technical enquiry of hot runner components

For special solutions, please use the enquiry form on our web site:
www.meusburger.com/technical-enquiry



The CAD data is transferred via CADClick. 3D data for all common CAD systems can be generated.

EVERYTHING FROM A SINGLE SOURCE

GUIDING ELEMENTS

The guiding elements are automatically selected in the appropriate diameters and lengths and are shown in the correct position in the 3D model.

ELECTRICAL COMPONENTS

Suitable electrical components can be directly ordered from the shop. 3D data is also available here. This enables the designer to integrate all components in the design and have a clear overview of the dimensions.

PROFITEMP+ HOT RUNNER CONTROLLER

The profiTEMP+ hot runner controller features both innovative technology and space-saving design. In addition to new intelligent functions like Smart Power Limitation (SPL) and MoldCheck, the tried and trusted features are further developed in the hot runner controller. Due to the clearly designed 7" multi-touch screen, easy and intuitive operation is guaranteed.

More information in our film:
www.meusburger.com/profitempplus-en

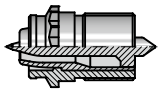
DELIVERY

The hot runner system is completely assembled and tested. The mould base for the hot runner mould is not pre-assembled, as in its standard version. This offers the advantage of saving valuable time by not having to take it apart. The components are then available much faster for subsequent machining.

4 DIFFERENT GATE ASSEMBLIES FOR THE RIGHT GATE TYPE

EH 4200 / RT

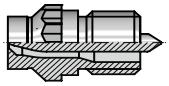
Gate assembly, smartFILL **ring gate**



- 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

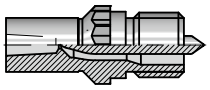
Gate assembly, smartFILL **ring gate, plunging**



- 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

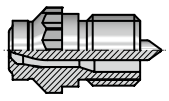
Gate assembly, smartFILL **ring gate, plunging with extension**



- 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**

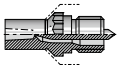


- Sprue scrap remains recessed 1 mm in the calotte
- For direct gating or gating on cold runner
- Suitable for all thermoplastics with a medium to narrow processing window, including filler material and reinforcing fillers
- Nozzle tip and centring head are highly wear-resistant and replaceable

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.

SELECTING THE CORRECT GATE TYPE

GATE TYPES

		EH 4200 / RT			EH 4240 / RT-D			EH 4245 / RT-DL			EH 4250 / RT-DC		
													
		A	B	C (5)	A	B	C (5)	A	B	C (5)	A	B	C (5)
semi crytalline	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
+ suitable
- not suitable

Material additives:

A without additives
B glass fibre
C flame retardant

(1) recommended minimum gate diameter = 1.2 mm
(4) no Noryl GTX
(5) insulating cap recommended

SHOT WEIGHT PER NOZZLE [G]

		low viscosity		medium viscosity		high viscosity	
		η (Tset/3000 s-1) < 60Pa*s		η (Tset/3000 s-1)=(60-150)Pa*s		η (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	
gate types		min. [g]	max. [g]	min. [g]	max. [g]	min. [g]	max. [g]
Ø19	EH 4200 / RT	0.5	30	0.5	15	0.5	8
	EH 4240 / RT-D	0.5	30	0.5	15	0.5	8
	EH 4245 / RT-DL	0.5	30	0.5	15	0.5	8
	EH 4250 / RT-DC	0.5	30	0.5	15	0.5	8
Ø27	EH 4200 / RT	3	70	3	35	3	20
	EH 4240 / RT-D	3	70	3	35	3	20
	EH 4245 / RT-DL	3	70	3	35	3	20
	EH 4250 / RT-DC	3	70	3	35	3	20
Ø37	EH 4200 / RT	12	500 / 400[1)]	12	300 / 200[1)]	12	150 / 90[1)]
	EH 4240 / RT-D	12	500 / 400[1)]	12	300 / 200[1)]	12	150 / 90[1)]
	EH 4245 / RT-DL	12	500 / 400[1)]	12	300 / 200[1)]	12	150 / 90[1)]
	EH 4250 / RT-DC	12	500 / 400[1)]	12	300 / 200[1)]	12	150 / 90[1)]

1) Maximum shot weights for manifold types CMT4 and HMT4

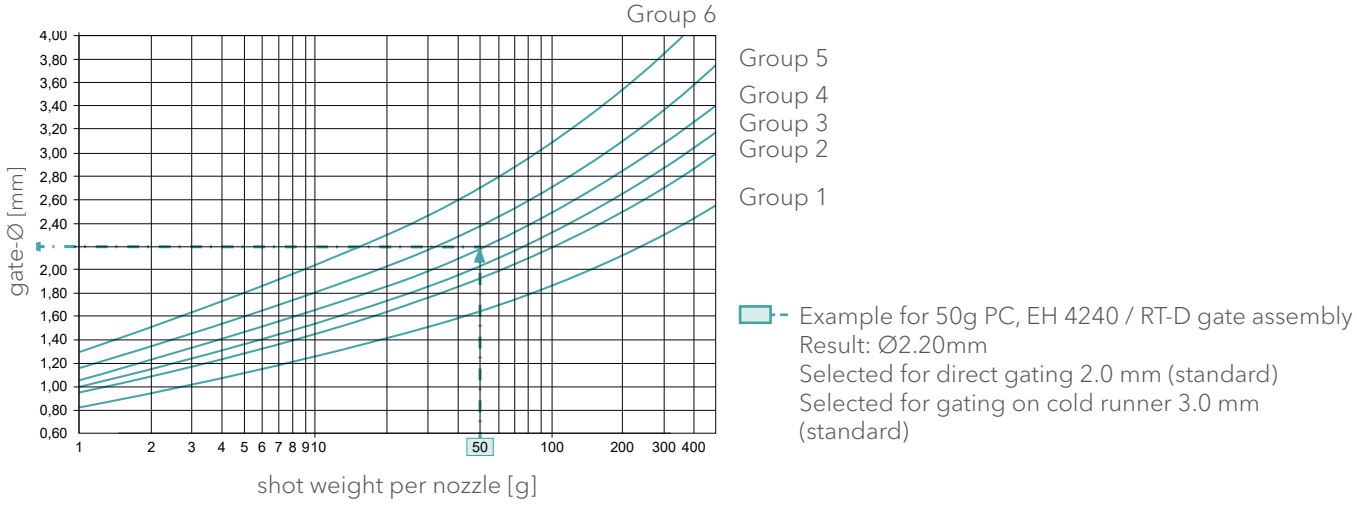
The maximum shot weight is reduced by about 20% for reinforced and filled plastics with more than 20% filler content.

GATE DIAMETER DIMENSIONING

THERMOPLASTICS GROUPS

Group 1	PP	Polypropylene
Group 2	PA4.6	Polyamide 4.6
	PA6	Polyamide 6
	PA6.6	Polyamide 6.6
	PA6.10	Polyamide 6.10
	PA6.12	Polyamide 6.12
	PA11	Polyamide 11
	PA12	Polyamide 12
	TPE-O (TPO)	Thermoplastic elastomers olefin basis
	TPE-S	Styrene-based thermoplastic elastomers
	TPE-V	Thermoplastic vulcanizates / cross-linked olefin-based thermoplastic elastomers
Group 3	PBT	Polybutylene terephthalate
	PET	Polyethylene terephthalate
	PES	Polyethersulfone
	PSU	Polysulfone
	ABS	Acrylonitrile butadiene styrene copolymer
	ABS+PA	Acrylonitrile butadiene styrene + polyamide (blend)
	PS	Polystyrene
	PE-HD	High-density polyethylene
	PE-LD	Low-density polyethylene
	PP+EPDM	Polypropylene-ethylene propylene diene blend
Group 4	PC	Polycarbonate
	PC+PBT	Polycarbonate/polybutylene terephthalate blend
	PC+ABS	Polycarbonate/acrylonitrile butadiene styrene blend
	ABS+ASA	Acrylonitrile butadiene styrene + acrylic-styrene-acrylonitrile (blend)
	SMA	Styrene maleic acid anhydride
	TPE-A	Thermoplastic polyamides
	TPE-C	Thermoplastic copolyester
	PMMA	Polymethyl methacrylate
	PEI	Polyetherimide
	SAN	Styrene-acrylonitrile
	ASA	Acrylic-styrene-acrylonitrile
	PPS	Polyphenylene sulphide
	PPE (PPO)	Polyphenylene ether
	PPA	Polyphthalamide
Group 5	POM-C	Polyoxymethylene copolymer
Group 6	POM-H	Polyoxymethylene homopolymer
	TPE-U (TPU)	Thermoplastic elastomers urethane basis
	PVC-soft	Polyvinyl chloride, soft

GATE DIAMETER: EH 4100/19... EH 4100/27... EH 4100/37...



GATE DIAMETER DIMENSIONING

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 vestige.

RULE:

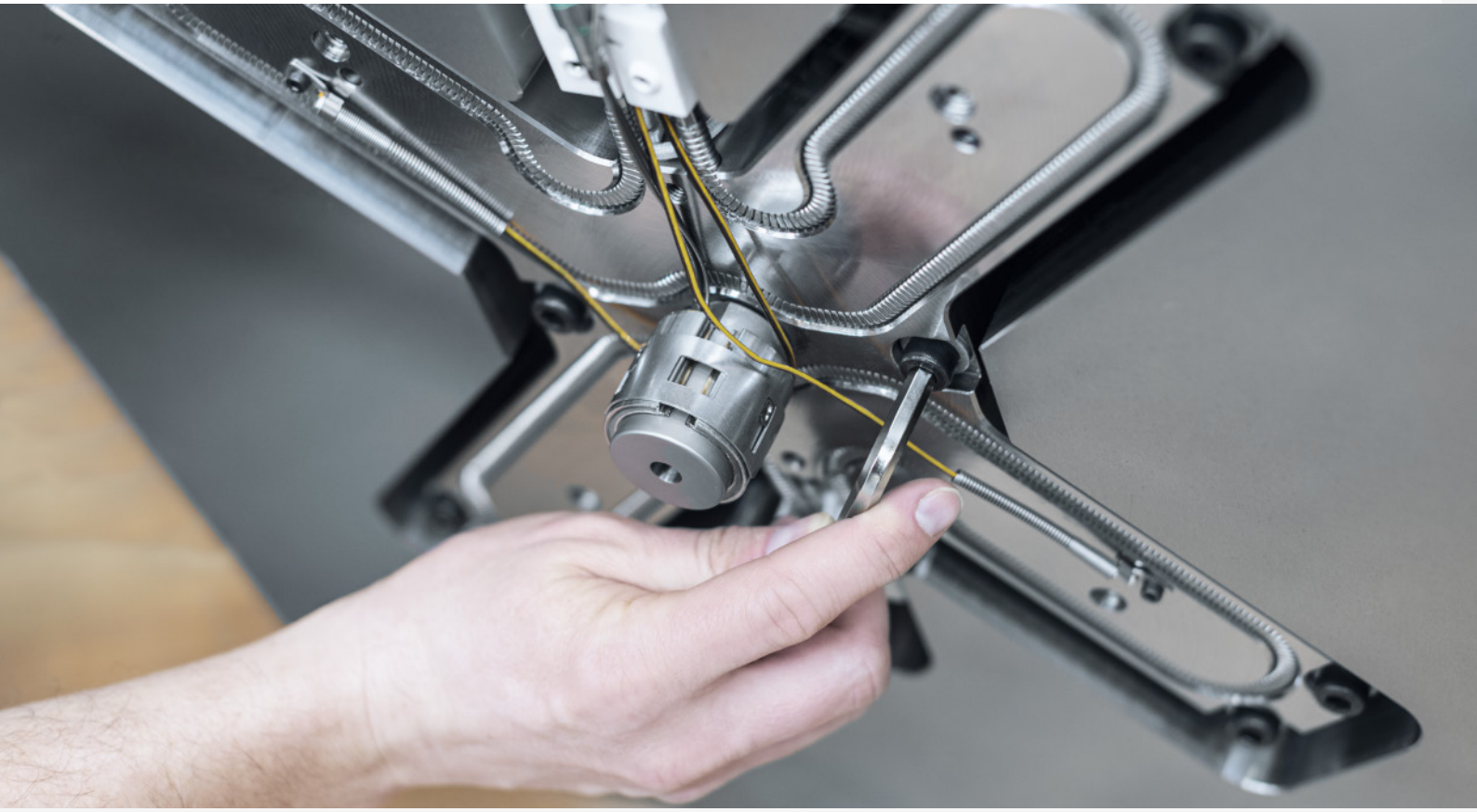
DIRECT GATING:

» Gate selection according to the graphic, taking the plastic type into consideration

GATING ON THE COLD RUNNER:

» Gate diameter as large as possible (about 0.5 mm to 1 mm lager; 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.



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