



BARNES™
MOLDING SOLUTIONS

HOT RUNNER TECHNOLOGY

M08

Performance Line

Product Catalog

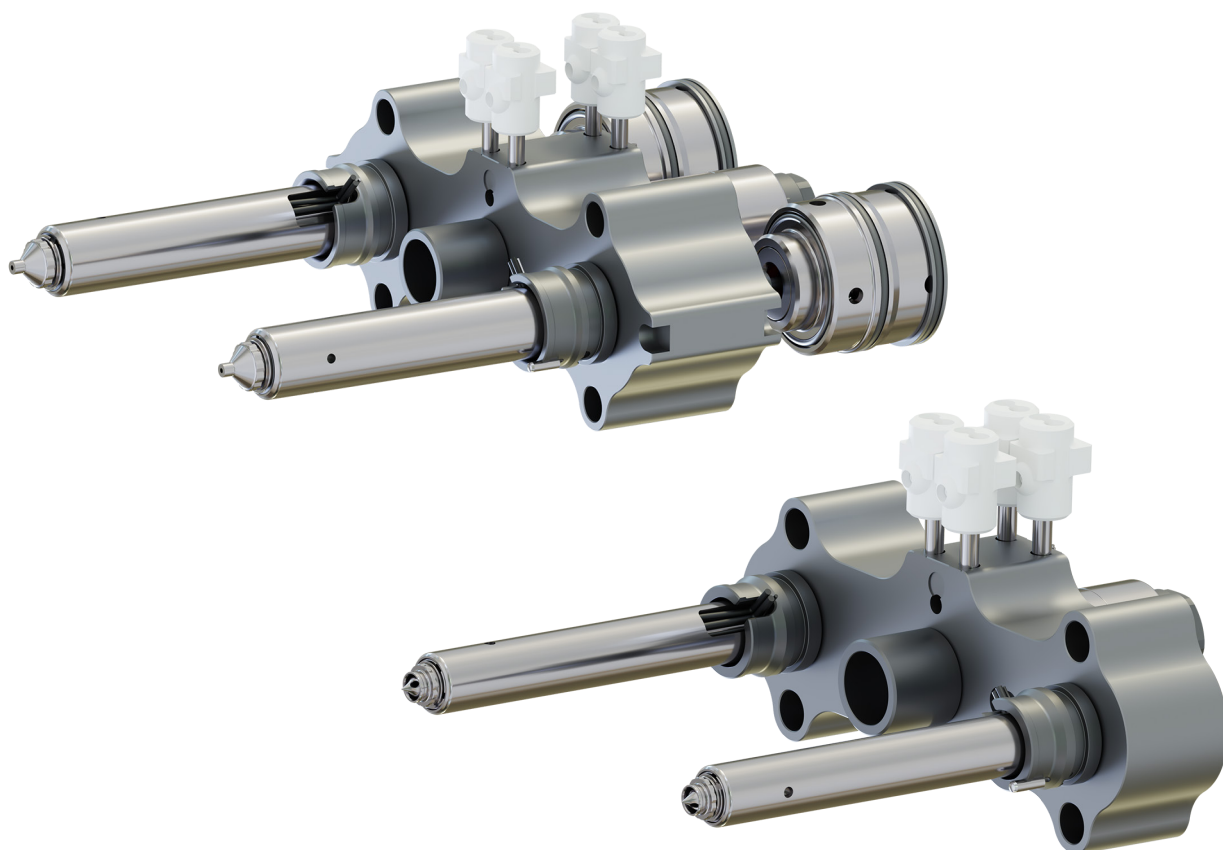




Table of Contents

Hot Runner Technology	3
General Description of the Nozzle	3
General Description of MPN-08	3
Target Group	3
Applied Standards and Norms	3
Tolerances and Customer Graphics	3
Bolt Down Manifold	4
Minimum Distance between Nozzle Centers	5
Technical Data TS8, TX8 and TXX8	6
Nozzle Tip Styles TS8, TX8 and TXX8	7
Nozzle Tip Cutout Dimensions TS8	8
Nozzle Tip Cutout Dimensions TX8	8
Nozzle Tip Cutout Dimensions TXX8	9
Technical Data VS8, VSA8, VX8 and VP3	10
Nozzle Tip Styles VS8, VSA8, VX8 and VP3	11
Nozzle Tip Cutout Dimensions VS8 and VSA8	12
Nozzle Tip Cutout Dimensions VX8	12
Nozzle Tip Cutout Dimensions VP3	13
Options	14
Heater with integrated Thermocouple	15
Maintenance Kit	16
Resin - Tip suitability	17
Tip performance & Suitability overview	18
Maximum shot weight	19
Contact	20
Copyright	20
Patents	20



Hot Runner Technology

This catalog gives an overview of the latest product, including descriptions, dimensions and technical data. The text next to the graphics gives additional instructions on the use of the product.

If available, options are explained with pictures and text.

All available accessories for this product are specified. Where necessary, a separate chapter gives the information and important technical data.

General Description of the Nozzle

Hot runner nozzles are the connection to the cavity. They either gate directly into the part or into a sub runner which will feed into the cavity.

General Description of MPN-08

MPN-08 series nozzles have an enlarged flow bore to optimize injection and reduce pressure loss.

The nozzles have a patented heating system and are made of special steel. Different lengths are available.

The nozzles are suitable for the most commonly used polymers.

MPN-08 series nozzles are the ideal combination with Bolt Down Manifolds.

Target Group

The target groups of this product catalog are mold designers, toolmakers, molders and service technicians. They will find the needed information in the relevant chapters.

Applied Standards and Norms

- DIN EN IEC/IEEE 82079-1 Edition 2 Creation of usage information for products
- Standard and norms for Technical drawings

Tolerances and Customer Graphics

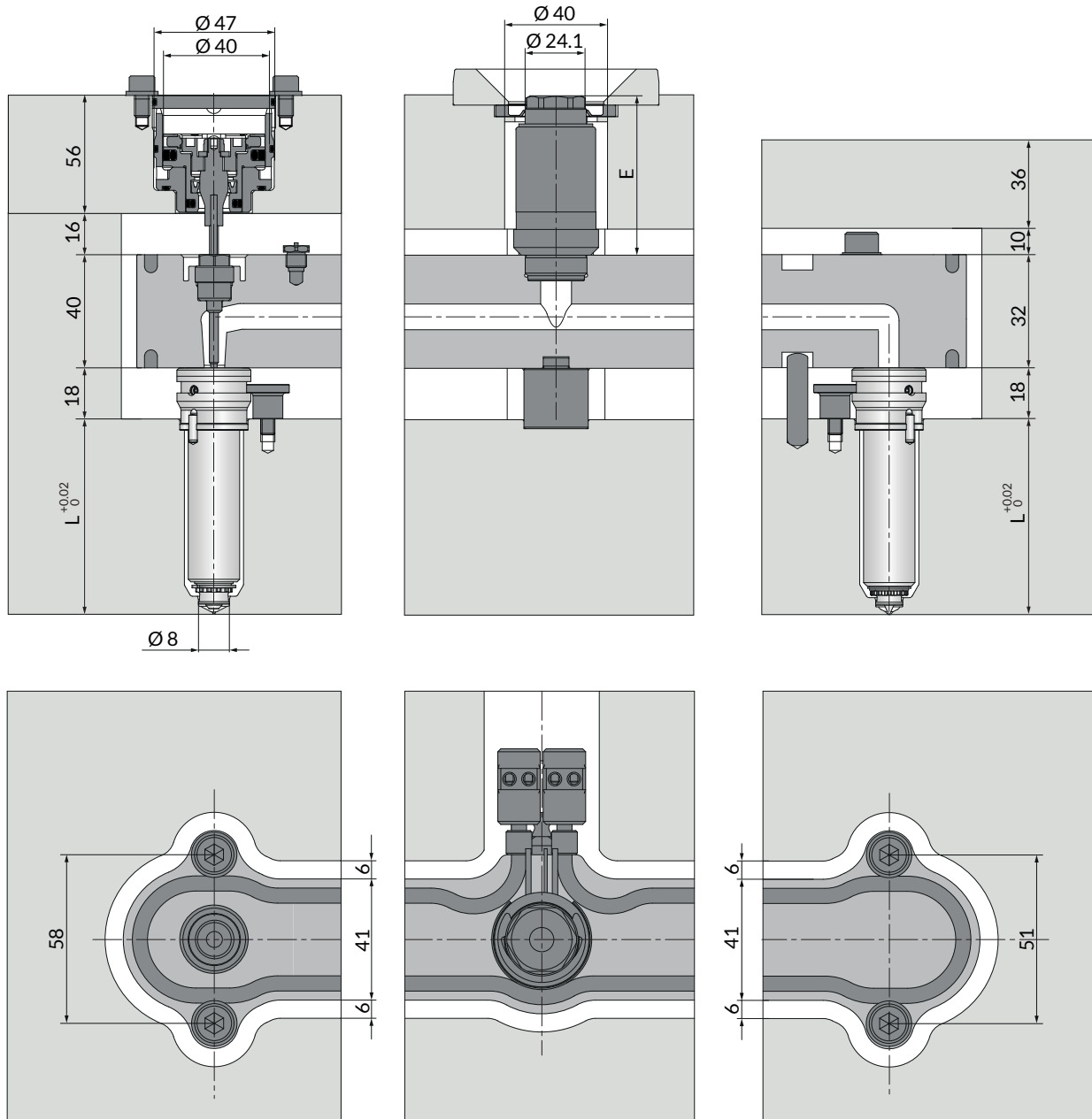
The product catalog gives a general information about the product. For tolerances and other details, use the customer drawings. There you find the detailed information.



Illustrations simplified, schematically drawn and not to scale. All dimensions in mm.

Bolt Down Manifold

The following picture shows the standard design, components and dimensions.
Pin adjustment ± 0.75 with step ± 0.05 .



E (length)

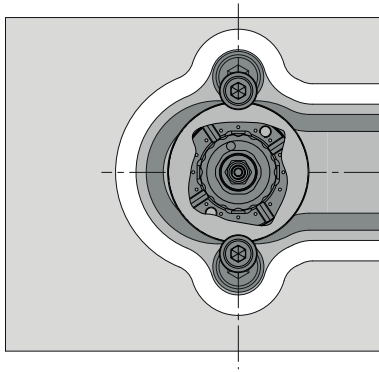
E = 45, 65, 85



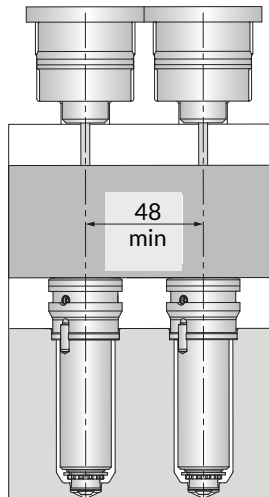
Illustrations simplified, schematically drawn and not to scale. All dimensions in mm.

Minimum Distance between Nozzle Centers

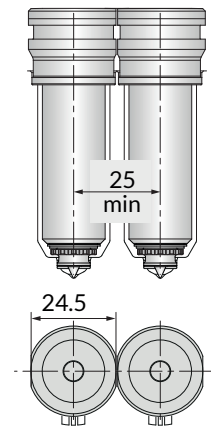
In this graphic the minimum distance between the nozzle centers is drawn, as example.
Other minimum distance between nozzles centers are available on request.



Valve Gate



Open Gate



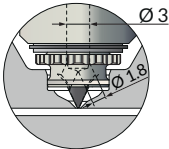


Illustrations simplified, schematically drawn and not to scale. All dimensions in mm.

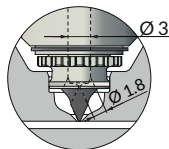
Nozzle Tip Styles TS8, TX8 and TXX8

The following nozzle tip styles are available.

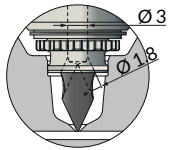
Thermal gate - Torpedo - Blind

Tip Style with Description	Tip Group Code	Picture	Gate diameter
TS8 Standard	MS00153		Ø 0.6 min - Ø 1.2 max

Thermal gate - Torpedo - Blind - Extended tip

Tip Style with Description	Tip Group Code	Picture	Gate diameter
TX8 Extended 1.5 mm	MS00167		Ø 0.6 min - Ø 1.2 max

Thermal gate - Torpedo - Blind - Extended tip

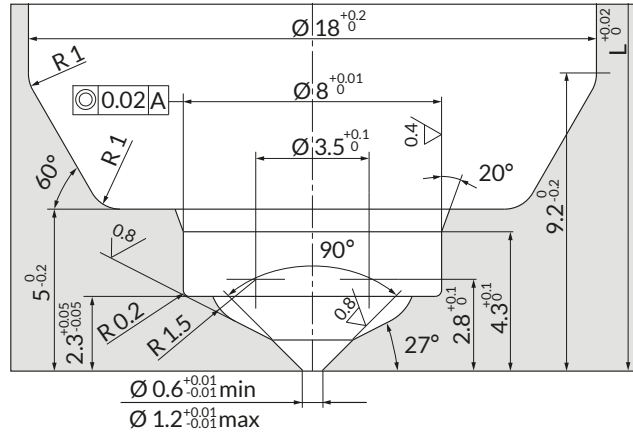
Tip Style with Description	Tip Group Code	Picture	Gate diameter
TXX8 Extended 5 mm	MS00154		Ø 0.6 min - Ø 1.2 max



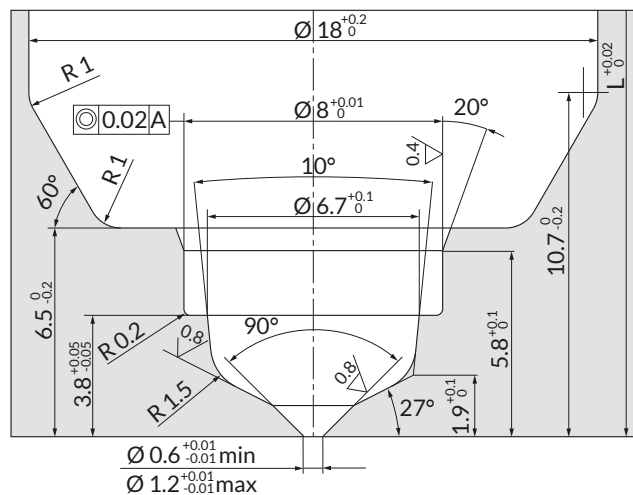
Illustrations simplified, schematically drawn and not to scale. All dimensions in mm.
Dimensions for reference only. Reference system drawing for complete dimensions prior to machining gate detail in mold.

Nozzle Tip Cutout Dimensions TS8

The following picture shows the nozzle tip cutout dimensions for this nozzle.



Nozzle Tip Cutout Dimensions TX8





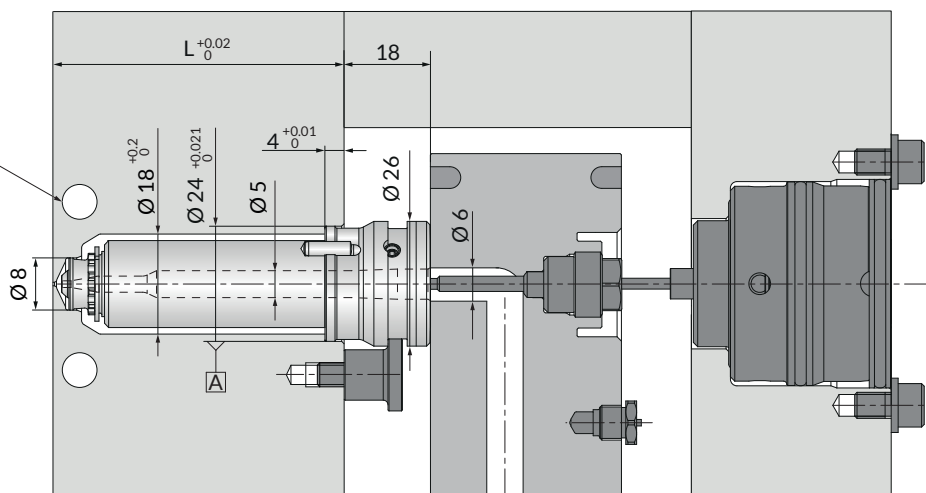
Illustrations simplified, schematically drawn and not to scale. All dimensions in mm.

Technical Data VS8, VSA8, VX8 and VP3

There are slight differences in the length range of different tip types.

E18757 Bi-hex Ø 10 Tightening torque 18 Nm.

Gate cooling
required



L [mm]	Code	Watt [W]
46	MPN-08-24-...-046	200
56	MPN-08-24-...-056	200
66	MPN-08-24-...-066	200
76	MPN-08-24-...-076	200
86	MPN-08-24-...-086	220
96	MPN-08-24-...-096	220
106	MPN-08-24-...-106	220
116	MPN-08-24-...-116	220
126	MPN-08-24-...-126	220
136	MPN-08-24-...-136	240
146	MPN-08-24-...-146	240
156	MPN-08-24-...-156	240
166	MPN-08-24-...-166	240
176	MPN-08-24-...-176	260
186	MPN-08-24-...-186	260
196	MPN-08-24-...-196	260
206	MPN-08-24-...-206	260

Example nozzle code: MPN-08-24 - VS8 - 206

Tip style ————
Nozzle length ————

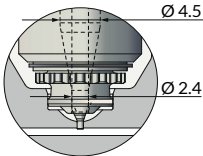


Illustrations simplified, schematically drawn and not to scale. All dimensions in mm.

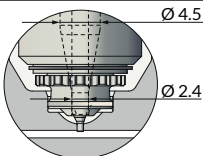
Nozzle Tip Styles VS8, VSA8, VX8 and VP3

The following nozzle tip styles are available.

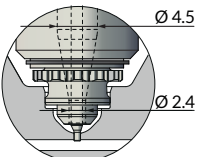
Valve gate - Straight pin - Blind

Tip Style with Description	Tip Group Code	Picture	Gate diameter
VS8 Standard	MS00160		Ø 0.8 min - Ø 1.8 max

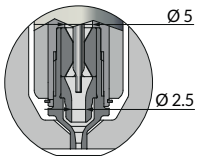
Valve gate - Straight pin - Blind

Tip Style with Description	Tip Group Code	Picture	Gate diameter
VSA8 Standard - Advanced	MS00229		Ø 0.8 min - Ø 1.8 max

Valve gate - Straight pin - Blind - Extended tip

Tip Style with Description	Tip Group Code	Picture	Gate diameter
VX8 Standard - Extended 1.5 mm	MS00173		Ø 0.8 min - Ø 1.8 max

Valve gate - Straight pin - Plunged Through

Tip Style with Description	Tip Group Code	Picture	Gate diameter
VP3 Plunged Through	MS00164		Ø 1.2 max

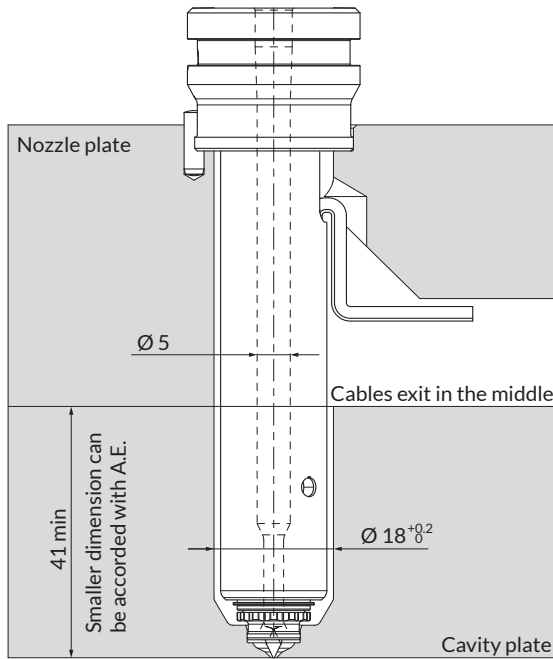


Illustrations simplified, schematically drawn and not to scale. All dimensions in mm.

Options

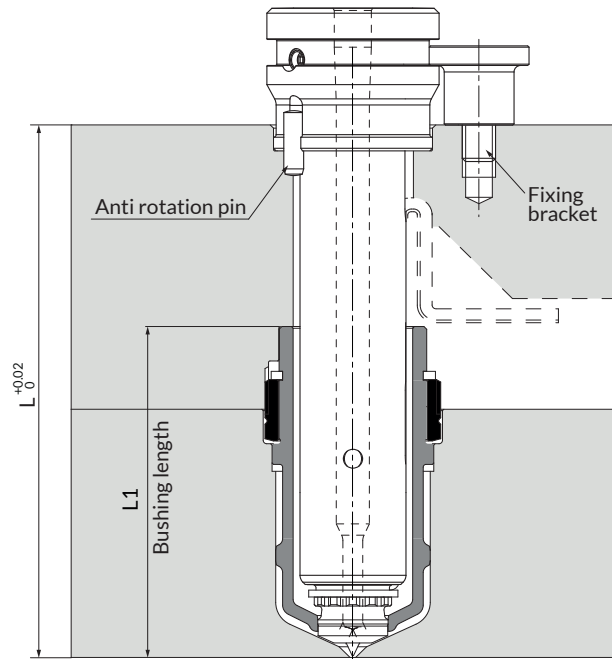
This following options are available for this product.

Optional cables exit in the middle



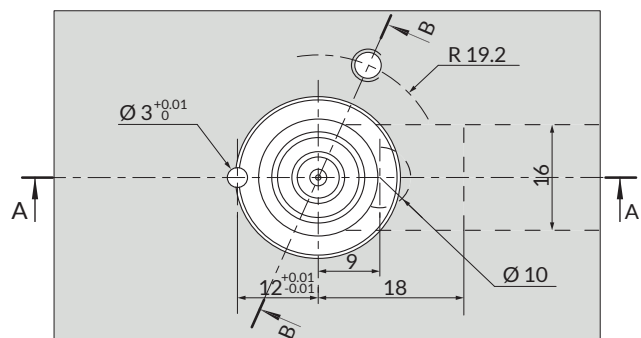
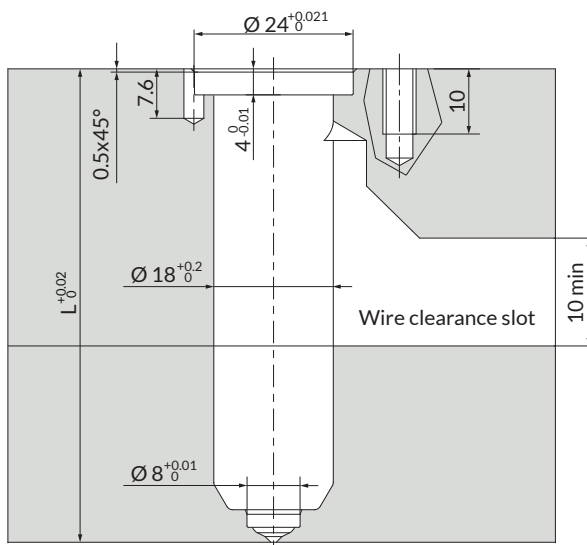
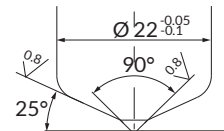
sez A-A

Optional D Bushing



sez B-B

Alternative cutout with D bushing

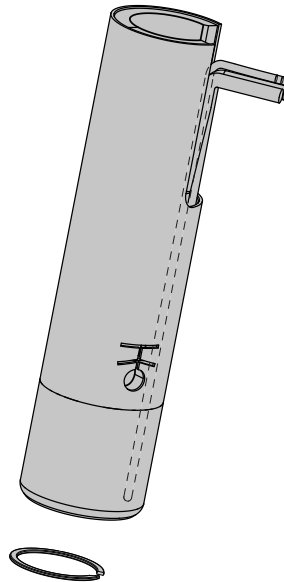




Illustrations simplified, schematically drawn and not to scale. All dimensions in mm.

Heater with integrated Thermocouple

This chapter gives a schematic overview of the Heater including Technical Data.



Example heater code: MSH18 - 206

↑
Nozzle diameter

↑
Length

Description	Code
Heater fixing ring	B02904

Heater group cables		
Heater	Orange / Grey	230 V
Thermocouple	Black	TC+
	White	TC-



Illustrations simplified, schematically drawn and not to scale. All dimensions in mm.

L nozzle length [mm]			Heater group code	Watt [W]
TS8, VS8, VSA8, VP3	TX8, VX8	TXX8		
46	47.5	51	MSH18-046-...	200
56	57.5	61	MSH18-056-...	200
66	67.5	71	MSH18-066-...	200
76	77.5	81	MSH18-076-...	200
86	87.5	91	MSH18-086-...	220
96	97.5	101	MSH18-096-...	220
106	107.5	111	MSH18-106-...	220
116	117.5	121	MSH18-116-...	220
126	127.5	131	MSH18-126-...	220
136	137.5	141	MSH18-136-...	240
146	147.5	151	MSH18-146-...	240
156	157.5	161	MSH18-156-...	240
166	167.5	171	MSH18-166-...	240
176	177.5	181	MSH18-176-...	260
186	187.5	191	MSH18-186-...	260
196	197.5	201	MSH18-196-...	260
206	207.5	211	MSH18-206-...	260

Maintenance Kit

Code	Description
E21889	Maintenance kit for MPN-08 nozzles
E22210	Maintenance kit for MPN-08-TXX08 nozzles

Composed by:

1. Seeger extractor
2. Bi-hexagon socket
3. High temperature grease
4. Brush for cleaning tip hole in the nozzle core
5. Heater extractor
6. Wrench for closing and opening the ring nut
7. Insertion tool for heater



Resin - Tip suitability

Nozzle Series	Thermal Gate			Valve Gate			
	TS	TX	TXX	VS	VX	VSA	VP
MPN-08 / MPN-10 Sliding							
Polyolefine							
PE, HDPE, LDPE, LLDPE	✓	✓	✓	✓	✓	✓	✓
PP, PP/PE, PP+Talc	✓	✓	✓	✓	✓	✓	✓
Polyolefin ≤GF35	✓	✓		✗	✗		
TPE							
TPE-O/S/V, PP/EPDM	✗	✗		✓	✓	✓	✓
TPE-U	✗			✓	✓	✓	✓
Semi-Crystalline							
PBT	✓	✓		✓	✓	✓	✓
PBT≤35GF	✓	✓		✗	✗	✓	✓
PA6	✓	✓	✗	✓	✓	✓	✓
PA6 ≤35GF	✓	✓	✗	✗	✗	✓	✓
PA6.6	✓	✓		✓	✓	✓	✓
PA6.6≤35GF	✓	✓		✗	✗	✓	✓
PA4.6	✗	✗				✗	✗
PPA	✓	✓		✓	✓	✓	✓
PPA≤35GF	✓	✓		✗	✗	✓	✓
POM	✓	✓		✓	✓	✓	✓
PET				✓	✓	✓	✓
PET≤35GF	✓	✓		✗	✗	✓	✓
Amorphous							
PMMA	✓	✓		✓	✓	✓	✓
ABS	✓	✓	✓	✓	✓	✓	✓
ASA	✓	✓	✓	✓	✓	✓	✓
SAN	✓	✓	✗	✓	✓	✓	✓
SMA	✓	✓		✓	✓	✓	✓
PS (HIPS, PS clear)	✓	✓	✓	✓	✓	✓	✓
PC	✓	✓		✓	✓	✓	✓
PC ≤35GF	✓	✓		✓	✓	✓	✓
PPE/PS	✓	✓		✓	✓	✓	✓
PPE/PA (Noryl GTX)	✓	✓		✓	✓	✓	✓
Blends							
PC/ABS	✓	✓	✗	✓	✓	✓	✓
PC/ABS ≤GF35	✓	✓		✓	✓	✓	✓
PC/ASA	✓	✓	✗	✓	✓	✓	✓
PC/ASA ≤GF35	✓	✓		✓	✓	✓	✓
PC/PBT	✓	✓	✗	✓	✓	✓	✓
PC/PBT ≤GF35	✓	✓		✓	✓	✓	✓
PC/PET	✓	✓		✓	✓	✓	✓
PC/PET ≤GF35	✓	✓		✓	✓	✓	✓
PA/ABS	✓	✓		✓	✓	✓	✓
PA/ABS ≤GF35	✓	✓		✓	✓	✓	✓
High Temperature							
PEEK	✗			✗	✗	✗	✗
PPS	✗			✗	✗	✗	✗
PES	✗			✗	✗	✗	✗
PSU	✗			✗	✗	✗	✗
PEI	✗			✗	✗	✗	✗
Special							
PET Clear	✗			✗	✗	✗	✗
PETG	✗			✓	✓	✓	✓
PCTG	✗			✓	✓	✓	✓
COC, COP	✗			✓	✓	✓	✓
LCP	✗			✓	✓	✓	✓
PVC soft							
PVC rigid							

✗ Requires review



Tip performance & Suitability overview

THERMAL GATE			VALVE GATE		
TS	Resin group Suitability		VS	Resin group Suitability	
	Polyolefine	■		Polyolefine	■
	Amorphous	■		Amorphous	■
	Semi-Crystalline	■		Semi-Crystalline	■
TX	Resin group Suitability		VX	Resin group Suitability	
	Polyolefine	■		Polyolefine	■
	Amorphous	■		Amorphous	■
	Semi-Crystalline	■		Semi-Crystalline	■
TXX	Resin group Suitability		VSA	Resin group Suitability	
	Polyolefine	■		Polyolefine	■
	Amorphous	■		Amorphous	■
	Semi-Crystalline	■		Semi-Crystalline	■
VP	Resin group Suitability		VP	Resin group Suitability	
	Polyolefine	■		Polyolefine	■
	Amorphous	■		Amorphous	■
	Semi-Crystalline	■		Semi-Crystalline	■
TS	Feature Performance		VS	Feature Performance	
	Processing window	■		Processing window	■
	Wear resistance	■		Wear resistance	■
	Color change	■		Color change	■
TX	Feature Performance		VX	Feature Performance	
	Processing window	■		Processing window	■
	Wear resistance	■		Wear resistance	■
	Color change	■		Color change	■
TXX	Feature Performance		VSA	Feature Performance	
	Processing window	■		Processing window	■
	Wear resistance	■		Wear resistance	■
	Color change	■		Color change	■
VP	Feature Performance		VP	Feature Performance	
	Processing window	■		Processing window	■
	Wear resistance	■		Wear resistance	■
	Color change	■		Color change	■
TS	Cosmetic gating		VS	Cosmetic gating	
	Cosmetic gating	■		Cosmetic gating	■
TX	Cosmetic gating		VX	Cosmetic gating	
	Cosmetic gating	■		Cosmetic gating	■
TXX	Cosmetic gating		VSA	Cosmetic gating	
	Cosmetic gating	■		Cosmetic gating	■
VP	Cosmetic gating		VP	Cosmetic gating	
	Cosmetic gating	■		Cosmetic gating	■

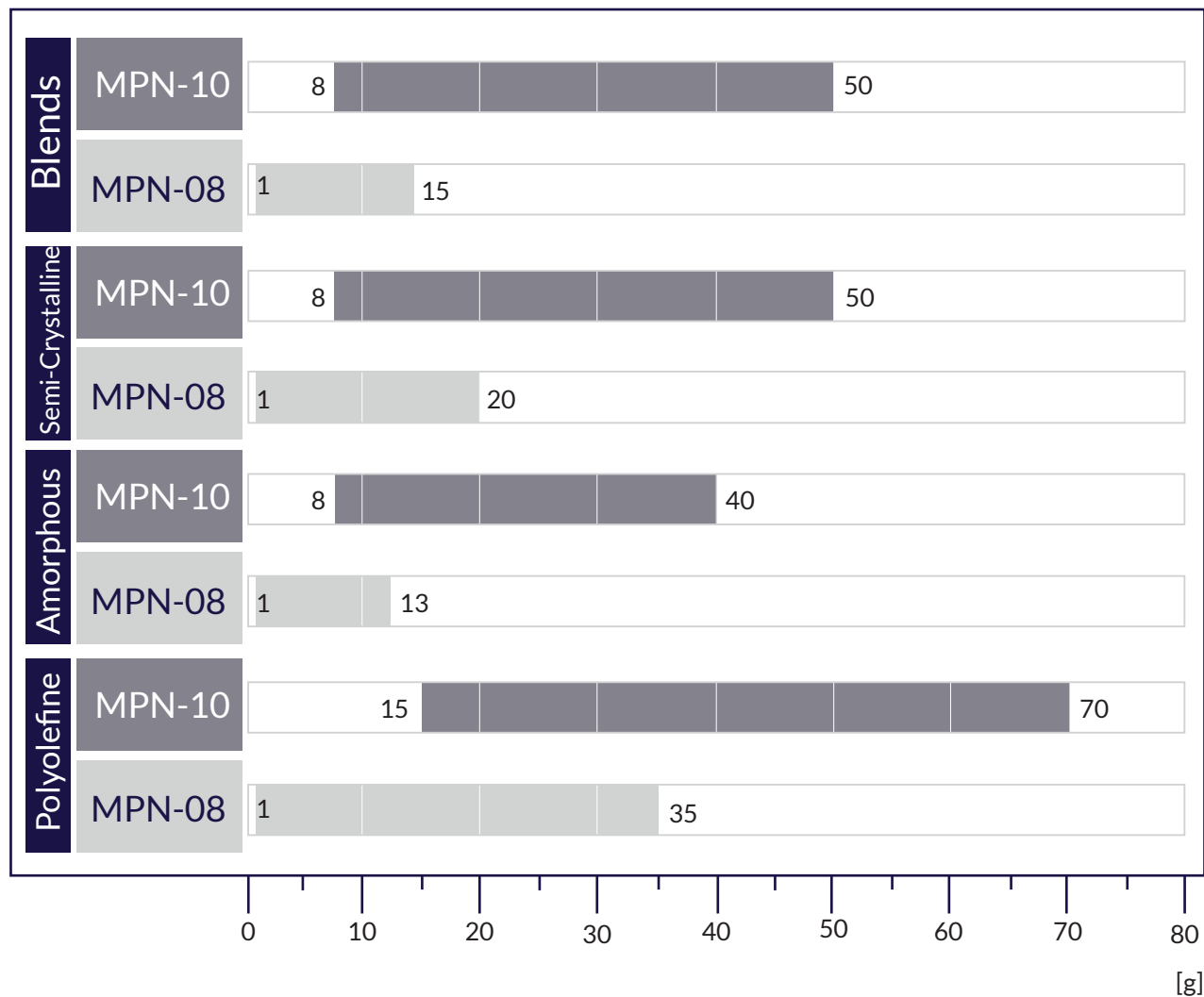
Typical resins

Polyolefine	PE, HDPE, LDPE, LLDPE, PP/EPDM, (TPE *)
Amorphous	PMMA, ABS, SAN, SMA, PS, PC, PPE, PPE/PA
Semi-Crystalline	PBT, PA6, PA6.6, PA4.6, PPA, POM, (TPU *)
Blends	PC/ABS, PC/ASA, PC/PBT, PA/ABS
Specials	PEEK, PPS, PES, PSU, PEI, PET, PETG, PCTG, COC, COP, LCP

* Check for application



Maximum shot weight



The chart shows indicative values of the max shot weight by nozzle series.
For more accurate shot weights, the exact material grade and a complete application data set are needed.

Typical resins

Polyolefine	PE, HDPE, LDPE, LLDPE
Amorphous	PMMA, ABS, SAN, SMA, PS, OC, PPE, PPE/PA
Semi-Crystalline	PBT, PA6, PA6.6, PA4.6, PPA, POM, PET
Blends	PC/ABS, PC/ASA, PC/PBT, PA/ABS



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