

HPS III-MH

The versatile multi tip solution

Direct side gating without cold slug

Compact valve gating

Side gating with open flow channel



The user-friendly concept

No matter if the application requires a solution for efficient side gating or for compact valve gating of parts – with the HPS III-MH product line EWIKON provides a powerful and versatile multi tip concept for injection moulders and mould makers. All nozzle versions offer a unique ease of maintenance. Especially the version for direct side gating has set new standards here and is successfully used in many demanding applications in the medical and packaging industry. The results: reduced cycle times, enhanced productivity and cost-efficient mould design.

Fields of application

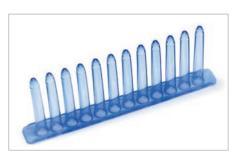
Medical. Packaging. Technical Parts.



Side gating

- Part geometries without possibility of standard gating, for example long slim tube shaped parts such as syringes, pipettes or sample bulbs in the medical industry.
- Side gating on visible surfaces. Demoulding mostly takes place in a 90° angle to the gating direction. The shear action is used to achieve a good gating point quality.
- Multi point internal gating of rotationsymmetric parts, for example in spouts of screw caps in the packaging industry.





Compact valve gating

Multi point gating of parts, gating on horizontal surfaces close to vertical part contours, for example onto handle plates of syringes or flanges of analysis tubes.

Content

HPS III-MH nozzle for direct side gating without cold slug	4
HPS III-MH nozzle for valve gating	6
Suitable materials / Gating options / Nozzle versions	8
HPS III-MH nozzle for side gating with open flow channel	. 10
Technical data for all nozzle versions	11

The benchmark for direct side gating

Its unique tip exchange technology makes the HPS III-MH nozzle the most maintenance-friendly solution for direct side gating worldwide. Depending on shot weight and application several versions are available. The tip inserts are installed from the parting line of the mould in the last assembly step after the nozzle body has been installed. Thus, they can be exchanged easily without having to dismantle the mould. Since only standard mould inserts are required a cost-efficient and compact mould design can be realised. Alternatively a linear or radial arrangement of parts is possible.



Scan QR code and view technology video.

Product features + Benefits

- Exceptional gating point quality due to direct gating on part surface

 Demoulding in a 90° angle to the gating direction. Shear action used to achieve a good gating point quality.

 No cold slug.
- Very even temperature profile

 Problem-free processing of technical resins and thermally sensitive materials (e.g. POM).
- Reduced mould costs

 Since only standard mould inserts are required a higher mould stability is achieved and the cooling layout is simplified. The design of multi-cavity moulds is facilitated.
- Unmatched ease of maintenance, minimised downtimes

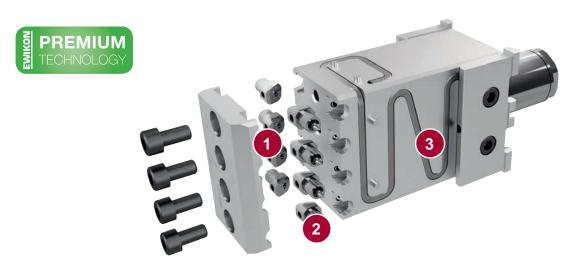
 Easy replacement of tip inserts from the parting line. No dismantling of mould required.
- Broad range of application
 Shot weights up to 40 g.
- Reduced residence time and pressure loss

 Balanced melt distribution in the nozzle body requires minimum space and reduces the complexity of the main manifold system. Thus, minimised flow path lengths are achieved even for systems with an extremely high number of cavities.



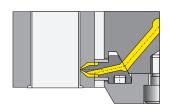


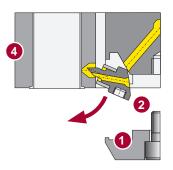




Tip insert exchange made easy

Its innovative tip exchange technology makes the HPS III-MH nozzle the most maintenance-friendly solution for direct side gating. The tip inserts 2 are inserted from the parting line of the mould in the last assembly step after installing the nozzle body 3 and can be exchanged just as easily in case of maintenance without dismantling the mould. After removing the clamping cover 1 the tip insert lifts out of the mould insert 4 and is replaced.





Ultra-compact valve gating

The HPS III-MH valve gate technology features a lateral melt feed. The gate is positioned in demoulding direction (0°). A special characteristic is the position of the valve pin guides and seals in the cooled mould insert. This ensures leakproof operation of the system. The concept allows ultra compact valve gating with a minimum distance between cavities of only 6 mm. Furthermore, gating points can be positioned in hard-to-reach areas such as horizontal surfaces close to vertical contours, for example onto handle plates of syringes or flanges of analysis tubes.

Product features + Benefits

- Very compact moulds
 - Minimum distance between cavities 6 mm.
- Advanced options for positioning of gating points

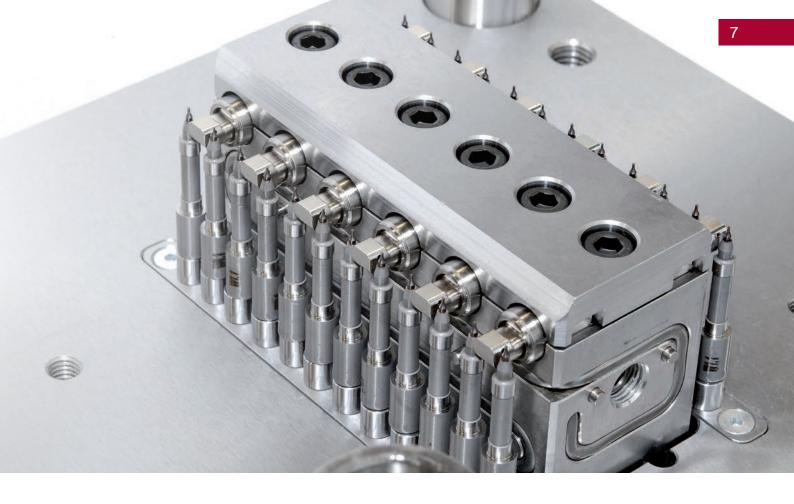
 Problem-free positioning of gating points in hard-to-reach areas,
 e. g. on horizontal surfaces close to vertical contours.
- Stable moulds, reduced mould costs

 Only standard mould inserts are required. Thus, the mould stability is enhanced and the cooling is simplified. Easy design of multi-cavity moulds.
- Unique valve pin sealing technology

 Cold valve pin seal integrated into the cooled mould insert. Ideally suitable for the processing of thermally sensitive materials (e.g. POM homopolymer). Leakproof operation.
- Reduced residence time and pressure loss

 Balanced melt distribution in the nozzle body requires minimum space and reduces the complexity of the main manifold system. Thus, minimised flow path lengths are achieved even for systems with an extremely high number of cavities.



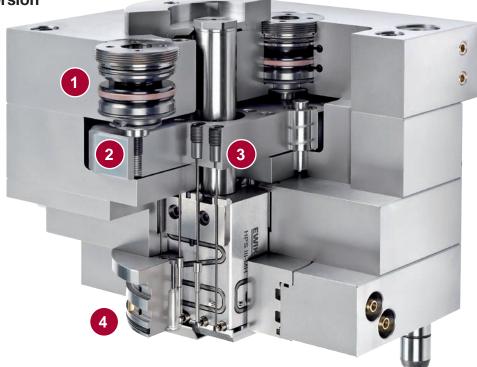


Technology of the valve gate version

- 1 Pneumatic drive unit
- 2 Synchronous plate
- 3 Holder for valve pin
- 4 Standard mould insert







The combined valve pin guides and seals 5 are installed in the cooled standard mould insert. This guarantees a leakage-free operation. Special heat conductive elements 6 embrace the valve pin contactless near the gate and ensure a homogeneous temperature profile in the gate area. The valve pin guide and seal is positioned close to the gate leaving a free valve pin length of only 5 mm.

Suitable materials*

PE	PP	РОМ
ABS	PS	TPE
SAN	PMMA	PA
PET	PC	

(*) Only materials without fillers to be used for valve gating (gating option NV).



Gating options



90° gating



60° gating

Advantage: The gating point can be positioned closer to the location of the inner core. Thus, a core deflection caused by the melt pressure can be avoided when moulding slim, thin-walled tubular parts.



0° valve gating

Advantage: The gating point can be placed in direct proximity to the part's vertical contours, for example on flanges.

Nozzle versions

HPS III-MH100

- Maximum processing temperature 350 °C
- Maximum shot weight per gate: low viscosity materials: 10 g high viscosity materials: 2 g
- Available gating options:







for HPS III-MHL



Linear version HPS III-MHL100



Radial version HPS III-MHR100

HPS III-MH111

- Maximum processing temperature 350 °C
- Maximum shot weight per gate: low viscosity materials: 10 g high viscosity materials: 2 g
- · Available gating options:





Radial version HPS III-MHR111

For use with adapter nozzle

HPS III-MH112 / 122

- Maximum processing temperature 350 °C
- Maximum shot weight per gate: low viscosity materials: 10 g high viscosity materials: 2 g
- · Available gating options:







Radial version HPS III-MHR112 / 122

HPS III-MHR112: for use with adapter nozzle

HPS III-MHR122: for use directly under the manifold

HPS III-MH200

- Maximum processing temperature 350 °C
- Maximum shot weight per gate: low viscosity materials: 40 g high viscosity materials: 8 g
- · Available gating options:







on request



Linear version HPS III-MHL200



Radial version HPS III-MHR200

HPS III-MH1 – the basic version for side gating

The HPS III-MH1 nozzle is designed for particularly cost-efficient use in standard mould inserts. Due to the open flow channel layout quick colour changes are possible.



Product features + Benefits

- Quick colour changes
 Open flow channel, Ø 3.5 mm.
- Use as system nozzle or single nozzle

 Available with 1 to 4 tips.
- Front installation version for easy maintenance or replacement
- Broad range of application
 Shot weights up to 30 g, maximum processing temperature 300 °C.

Nozzle versions



90° angle, open

Standard configuration for processing of PE, PP and POM (copolymer).

90° angle with additional heated tip behind the gate

For optimised gate opening when processing ABS, PS, PMMA and TPE.

90° angle, open, with angled inserts

Allows to position the gate close to the bottom of the mould insert. Suitable for processing of PE, PP and POM (copolymer).

Suitable materials*

PE	PP
POM (CP)	ABS
PS	PMMA
TPE	

(*) without fillers



HPS III-MH nozzle for direct side gating

0	HPS III-MHL100 linear version Dimensions and tip versions for single nozzle and system nozzle	
MH100	Details of gating geometries for all versions	22
Ŧ	HPS III-MHR100 radial version	
~	Dimensions and tip versions for single nozzle and system nozzle	
	Assembly examples for single nozzle and system nozzle	
	Details of gating geometries for all versions	28
_	Overview	30
MH111	HPS III-MHR111 radial version for use with adapter nozzle	
Ŧ	Dimensions, tip versions, installation	
2	Details of gating geometries for all versions	35
2	Overview	36
MH11	HPS III-MHR112 radial version for use with adapter nozzle	
Ŧ	Dimensions, tip versions, installation	
~	Details of gating geometries for all versions	41
	Adapter nozzle for HPS III-MH systems	
	Adapter nozzle for use as single nozzle, locating ring	
	Adapter nozzle for use as system nozzle, assembly examples	46
22	HPS III-MHR122 radial version for use as system nozzle directly under the manifold	
MH122	Dimensions, tip versions, installation	
≢	Details of gating geometries for all versions	
	Assembly example	58
	LDC III MUI 200 linear version	
	HPS III-MHL200 linear version	
	Dimensions and tip versions for single nozzle and system nozzle	
00	Dimensions and tip versions for single nozzle and system nozzle	62
1200	Dimensions and tip versions for single nozzle and system nozzle. Assembly examples for single nozzle and system nozzle. Details of gating geometries for all versions.	62
MH200	Dimensions and tip versions for single nozzle and system nozzle. Assembly examples for single nozzle and system nozzle. Details of gating geometries for all versions. HPS III-MHR200 radial version	62 66
MH200	Dimensions and tip versions for single nozzle and system nozzle. Assembly examples for single nozzle and system nozzle. Details of gating geometries for all versions. HPS III-MHR200 radial version Dimensions and tip versions for single nozzle and system nozzle.	62 66
MH200	Dimensions and tip versions for single nozzle and system nozzle. Assembly examples for single nozzle and system nozzle. Details of gating geometries for all versions. HPS III-MHR200 radial version Dimensions and tip versions for single nozzle and system nozzle. Assembly examples for single nozzle and system nozzle.	
MH200	Dimensions and tip versions for single nozzle and system nozzle. Assembly examples for single nozzle and system nozzle. Details of gating geometries for all versions. HPS III-MHR200 radial version Dimensions and tip versions for single nozzle and system nozzle.	
MH200	Dimensions and tip versions for single nozzle and system nozzle. Assembly examples for single nozzle and system nozzle. Details of gating geometries for all versions. HPS III-MHR200 radial version Dimensions and tip versions for single nozzle and system nozzle. Assembly examples for single nozzle and system nozzle.	
	Dimensions and tip versions for single nozzle and system nozzle. Assembly examples for single nozzle and system nozzle. Details of gating geometries for all versions. HPS III-MHR200 radial version Dimensions and tip versions for single nozzle and system nozzle. Assembly examples for single nozzle and system nozzle.	
HPS II	Dimensions and tip versions for single nozzle and system nozzle	62 66 68 70 72
HPS II	Dimensions and tip versions for single nozzle and system nozzle	
HPS II Syste	Dimensions and tip versions for single nozzle and system nozzle	62 66 70 72

Single nozzle and system nozzle

Dimensions and tip versions

Version	System nozzle				Single	nozzle	
Machine radius (Dim. R)		0	15	15.5	40	1/2" (13.2)	3/4" (19.5)
Dim. T		0	2	2	0.8	2	1.8
Locating ring			Diam			er 50456) / .125 / .160 /	/ .175

Width of nozzle block (Dim. B)	42	62			
Number of tips	4	4	8		
Distance between cavities (Dim. S1, Dim. S2)	S1 =16 or S1 =28	S1 =30 or S1 =48	S1 =12 (S2 =36) or S1 =16 (S2 =48)		
Nozzle length (Dim. G) ⁽¹⁾	129, 138, 148, 168				
Positions of bars	A (on nozzle side with tips) B (on nozzle side without tips)				

Tip versions	90°	60°	NV (valve gate)
Distance between cavity rows (Dim. Y)	60	60	56
Dim. X	60	63	64.5
Recommended gate diameters	0.5 - 1.2	0.9 - 1.5	0.8 - 1.2

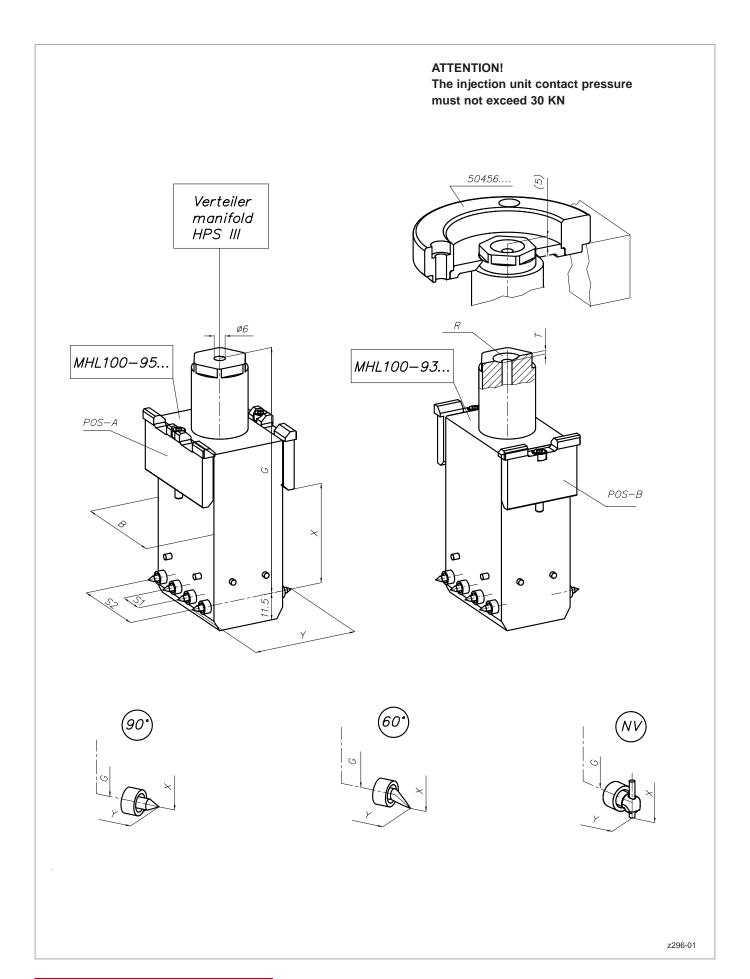
⁽¹⁾ Other nozzle lengths available on request

Item numbers:

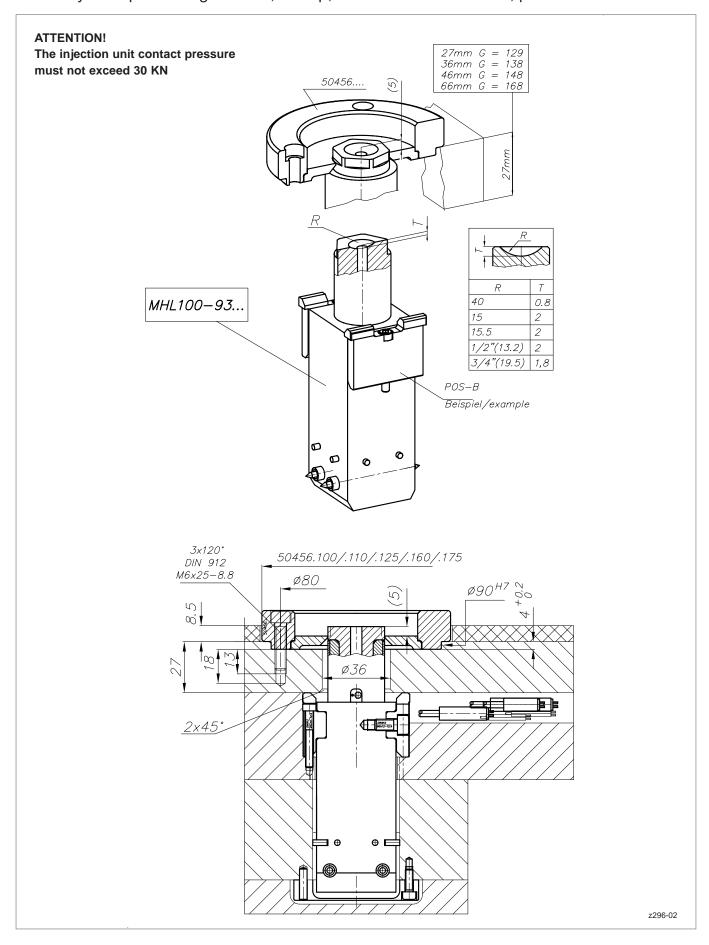
System nozzle: MHL100-95...

Single nozzle: MHL100-93...

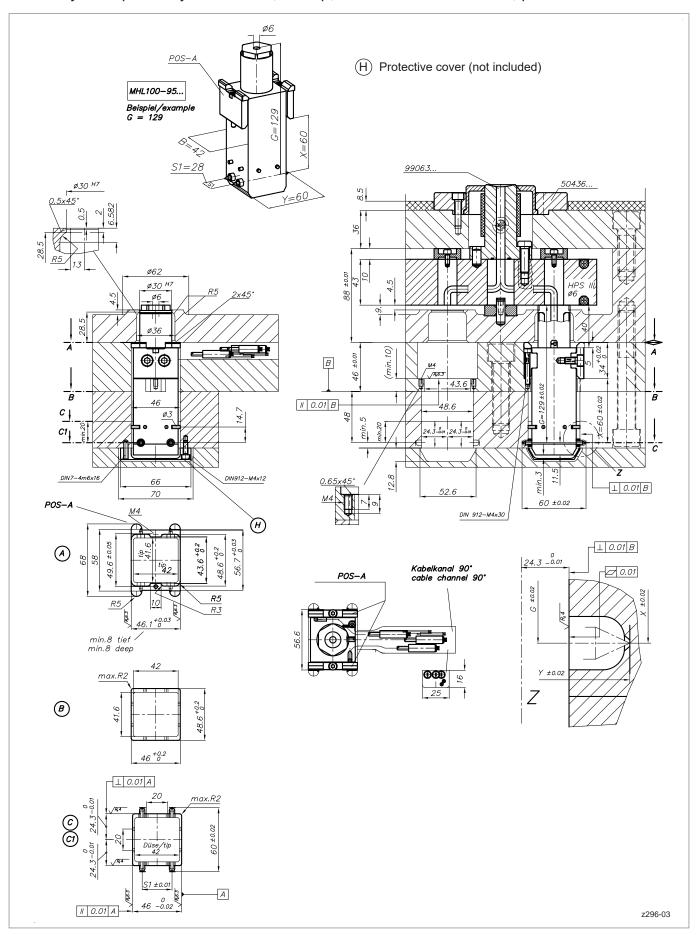
Each nozzle will be configured individually to suit your application requirements. Please contact us!



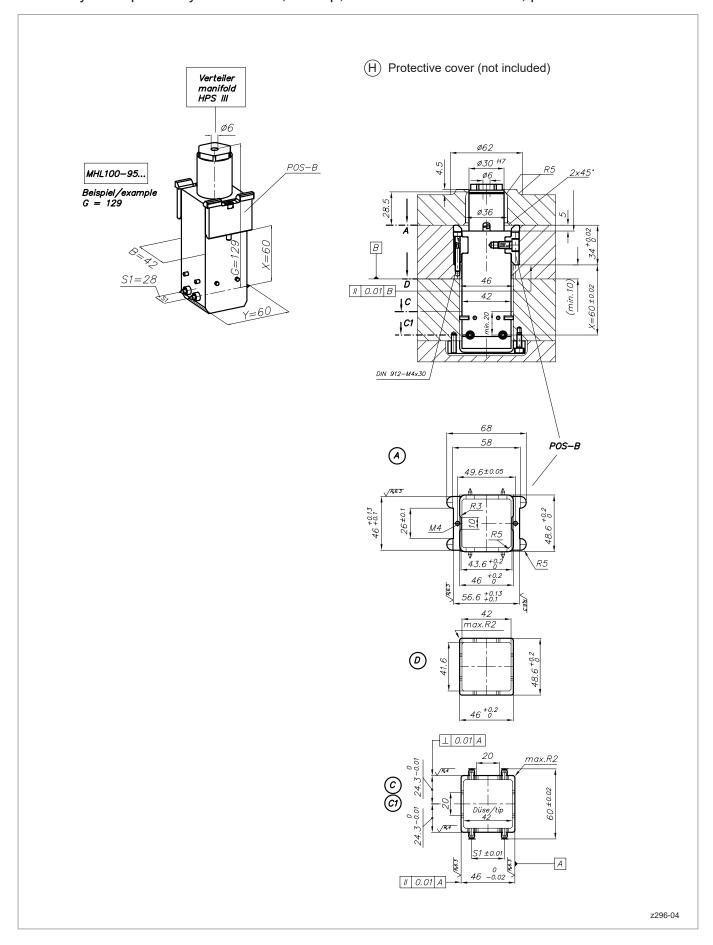
Assembly example for single nozzle, 4-drop, width of nozzle block 42, position of bars B



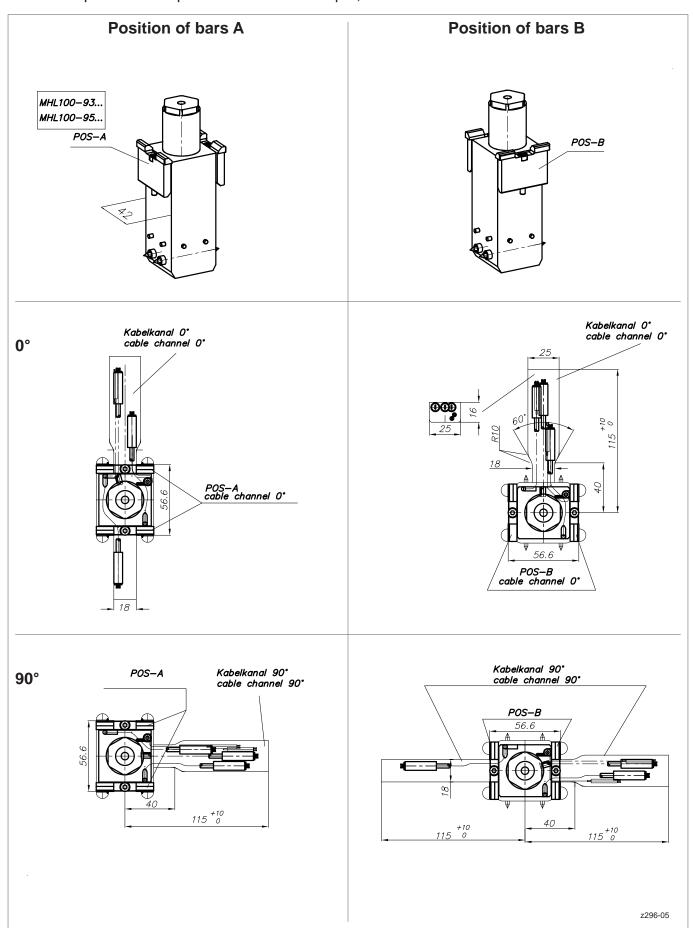
Assembly example for system nozzle, 4-drop, width of nozzle block 42, position of bars A



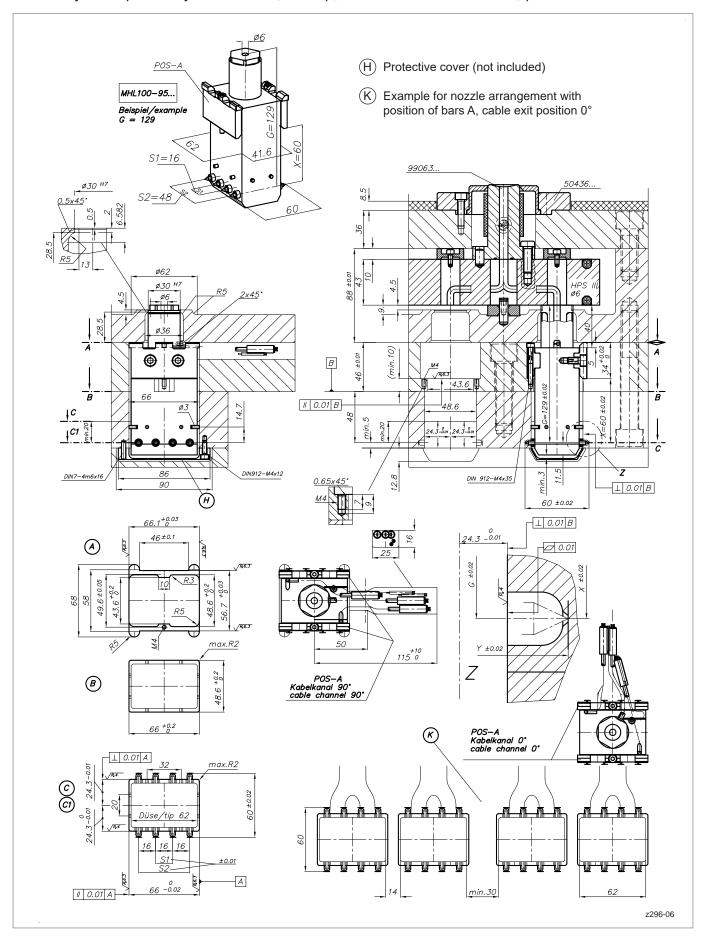
Assembly example for system nozzle, 4-drop, width of nozzle block 42, position of bars B



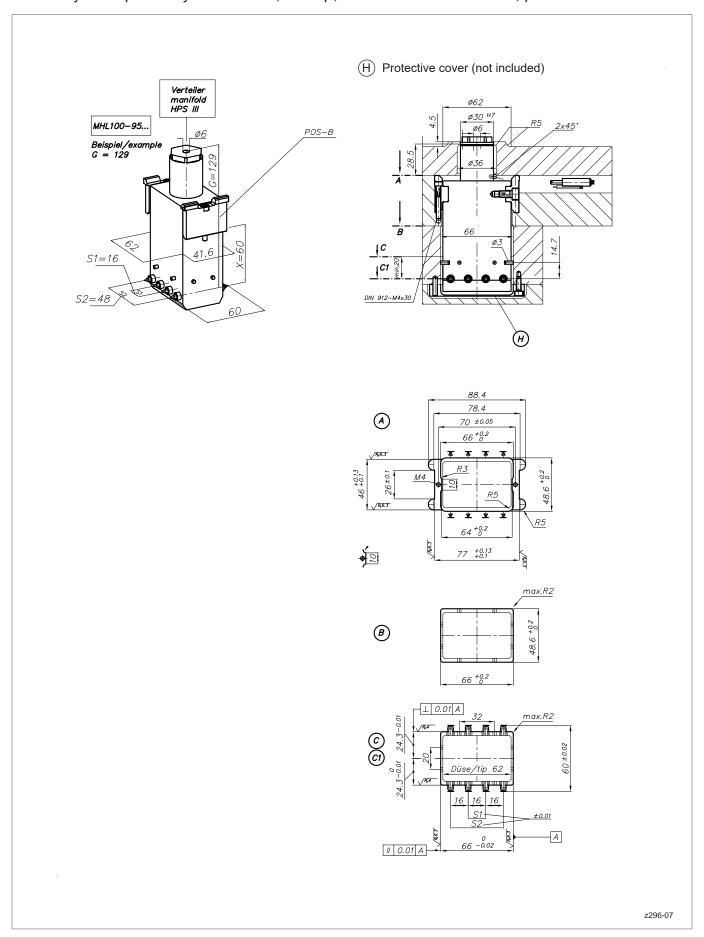
Cable exit positions for power and thermocouple, width of nozzle block 42



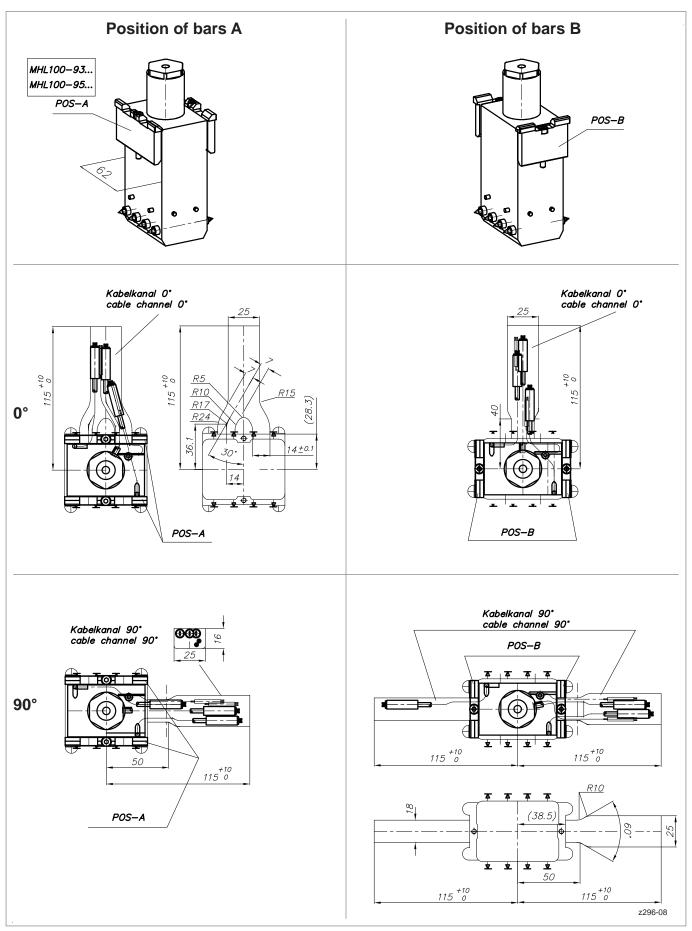
Assembly example for system nozzle, 8-drop, width of nozzle block 62, position of bars A



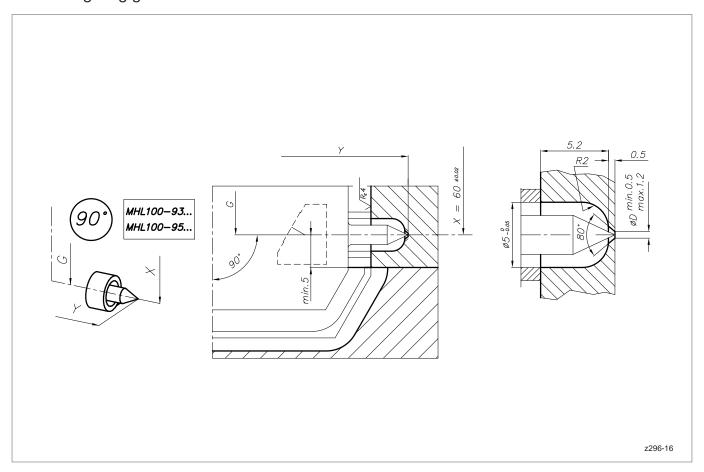
Assembly example for system nozzle, 8-drop, width of nozzle block 62, position of bars B

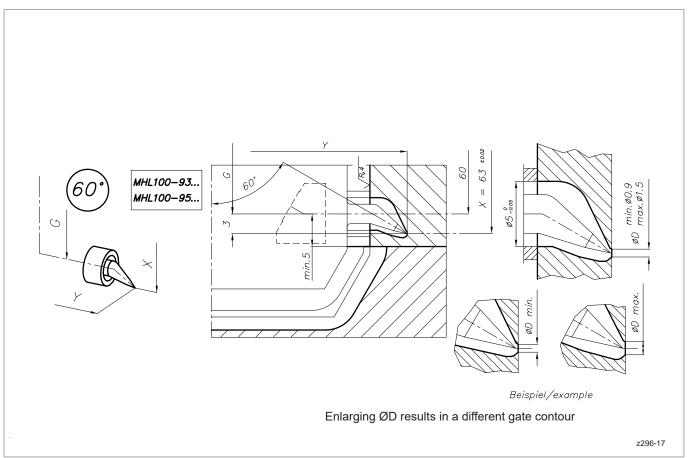


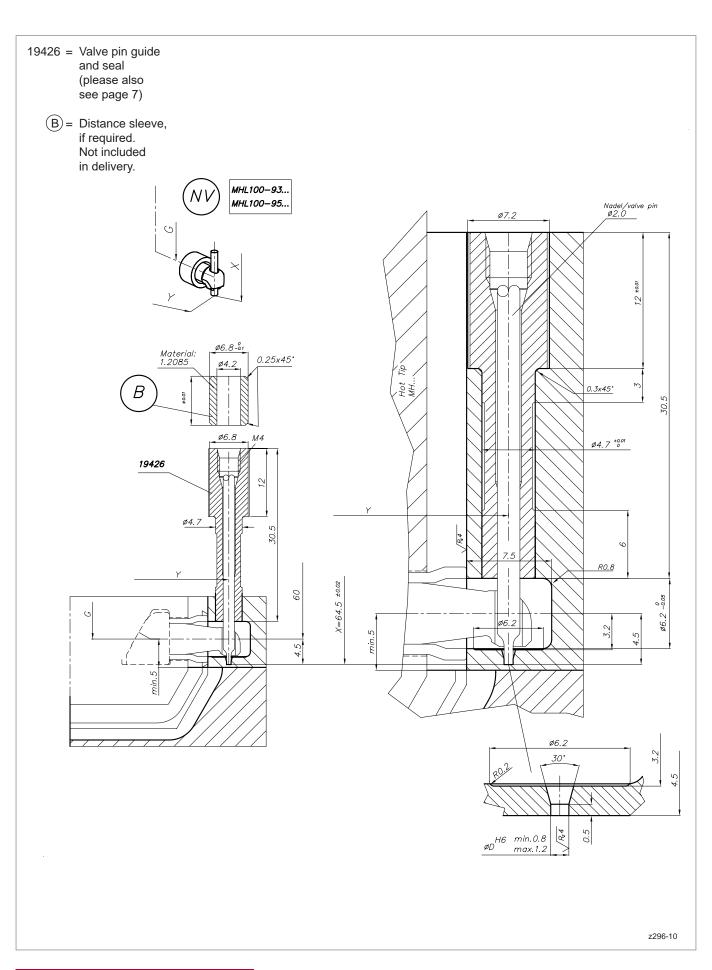
Cable exit positions for power and thermocouple, width of nozzle block 62



Details of gating geometries







Single nozzle and system nozzle

Dimensions and tip versions

Version	System nozzle			Single	nozzle		
Machine radius (Dim. R)		0	15	15.5	40	1/2" (13.2)	3/4" (19.5)
Dim. T		0	2	2	0.8	2	1.8
Locating ring					er 50456 0 / .125 / .1		

Number of tips ⁽¹⁾		2, 4, 8	
Nozzle length (Dim. G) ⁽²⁾	105	114	144
Height of nozzle holder for system nozzle (Dim. N)	15	15 - 24	15 - 54

Tip versions	90°	60°
Pitch diameter (Dim. Y)	58	58
Dim. X	60	63
Recommended gate diameters	0.5 - 1.2	0.9 - 1.5

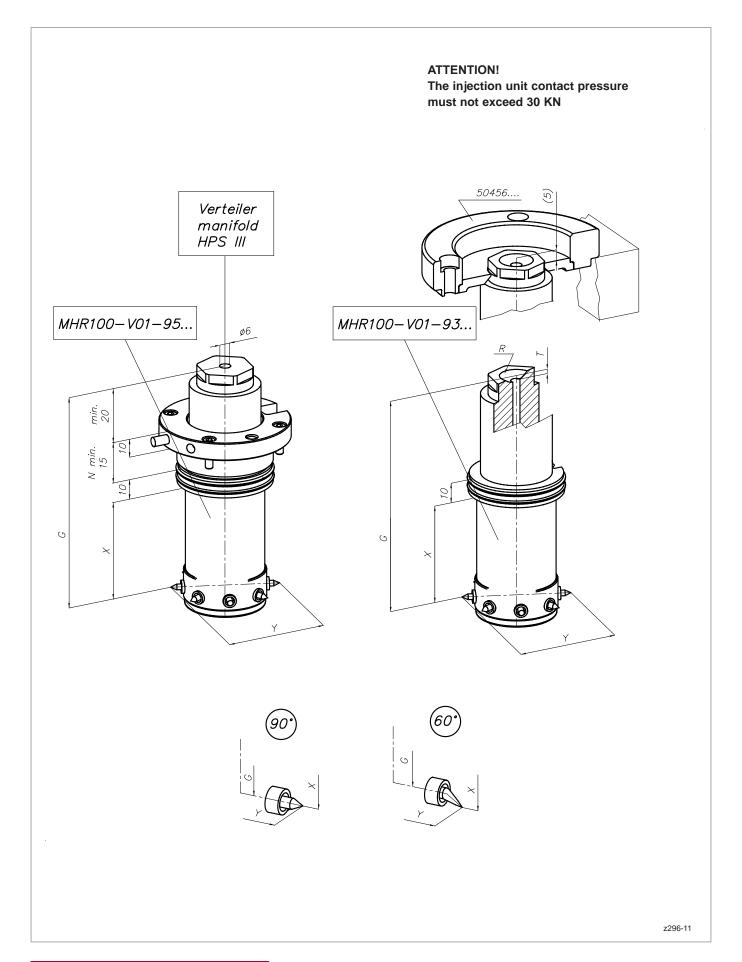
- (1) Other number of tips available on request
- (2) Other nozzle lengths available on request

Item numbers:

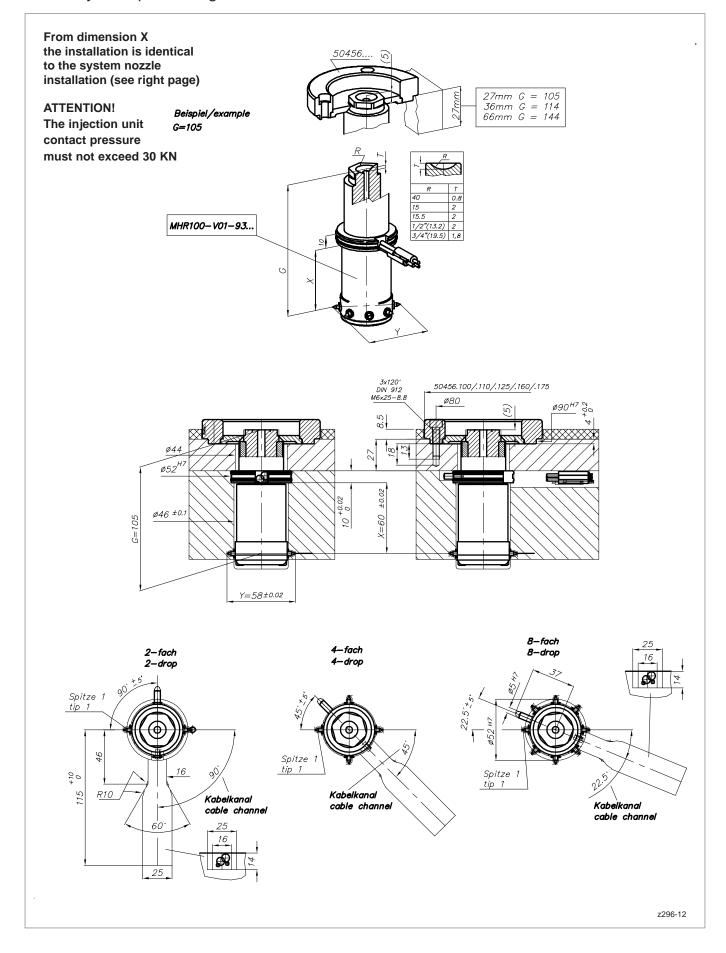
System nozzle: MHR100-V01-95...

Single nozzle: MHR100-V01-93...

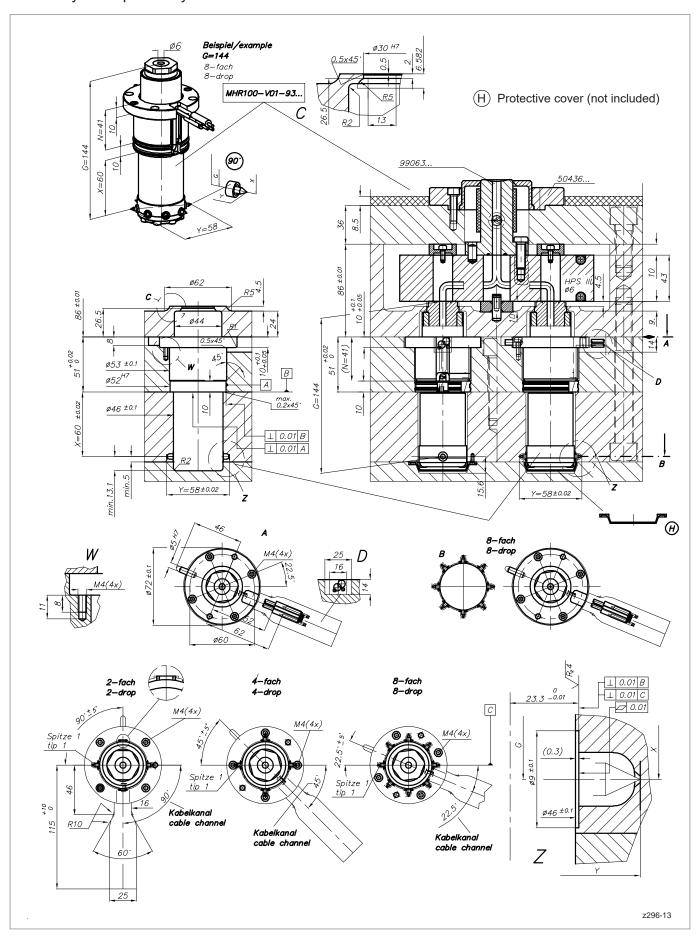
Each nozzle will be configured individually to suit your application requirements. Please contact us!



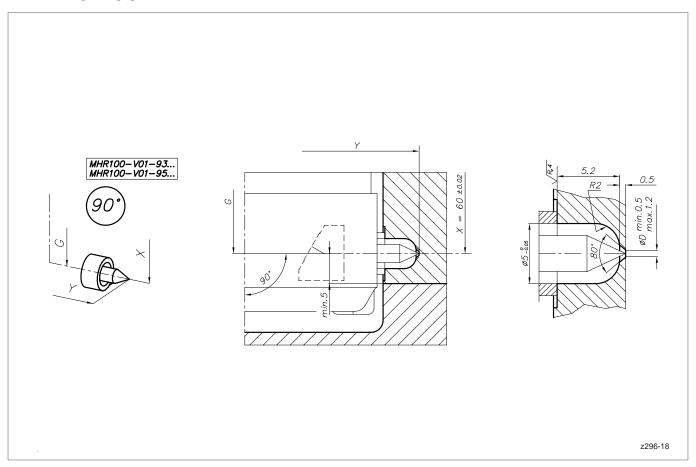
Assembly example for single nozzle

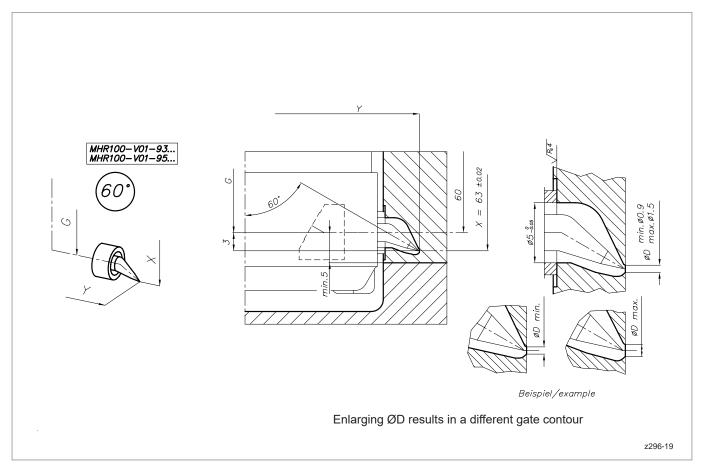


Assembly example for system nozzle



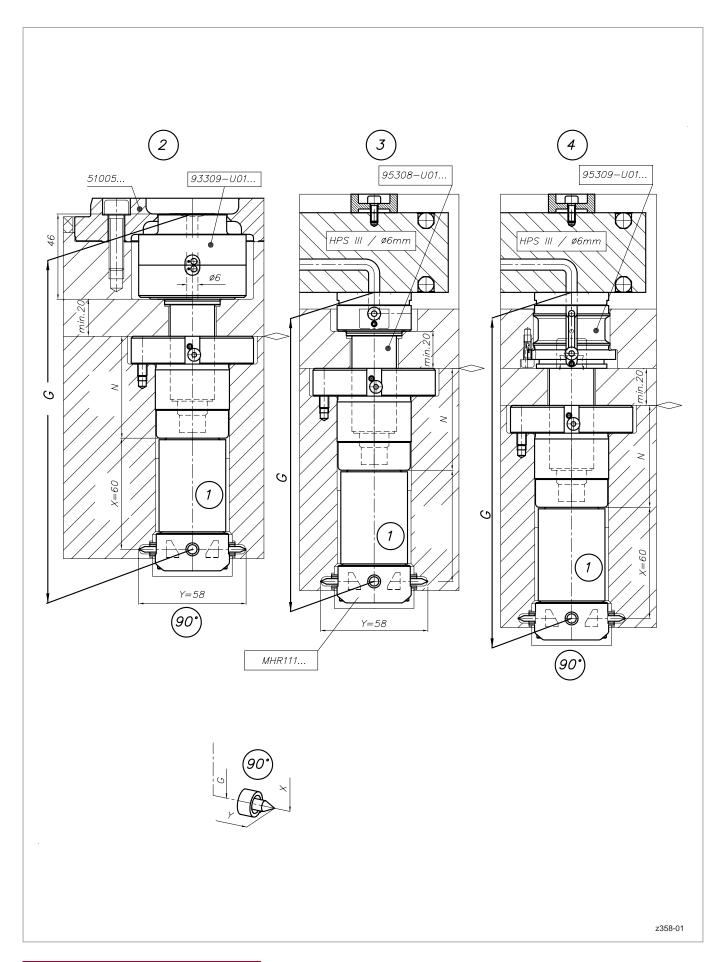
Details of gating geometries





Overview

- 1 HPS III-MHR111 radial version for use with adapter nozzle
- Adapter nozzle 93309-U01... for use as single nozzle
- Adapter nozzle 95308-U01...
 Standard installation for use as system nozzle
- Adapter nozzle 95309-U01...
 Front installation for use as system nozzle



for use with adapter nozzle

Dimensions and tip versions

Number of tips	2, 4, 8											
Version		With adapter nozzle as single nozzle			With adapter nozzle as system nozzle for standard installation			for	With adapter nozzle as system nozzle for front installation			
Nozzle length (Dim. G) (1)	181	201	221	241	156	176	196	216	176	196	216	236
Height of nozzle holder (Dim. N)	55	75	95	115	55	75	95	115	55	75	95	115

Tip versions	90°
Pitch diameter (Dim. Y)	58
Dim. X	60
Recommended gate diameters	0,5 - 1,2

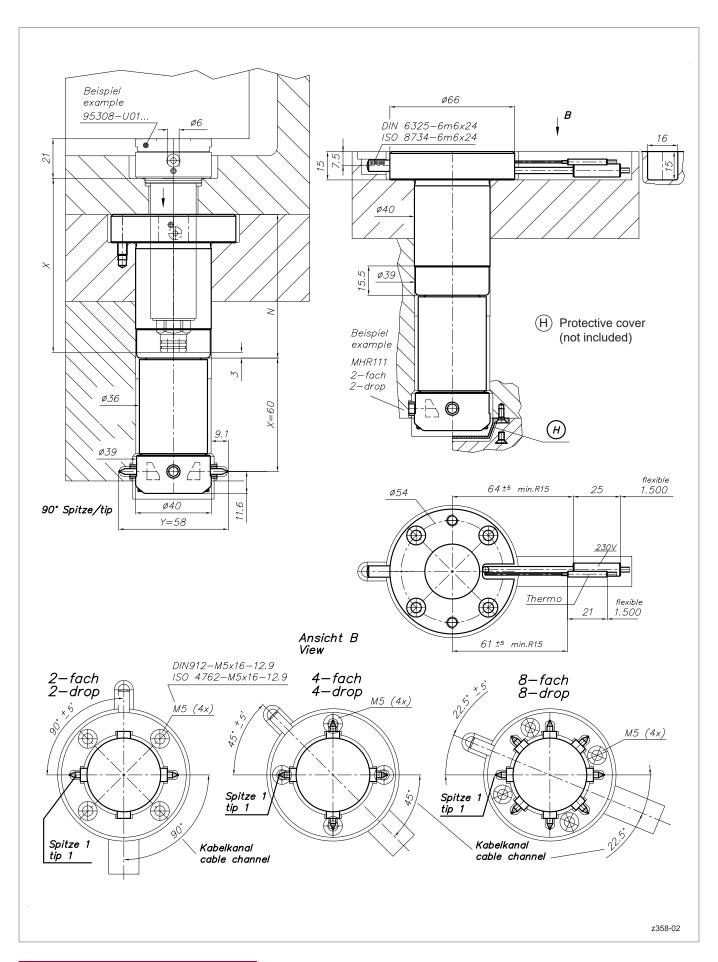
(1) Other nozzle lengths available on request

Item numbers:

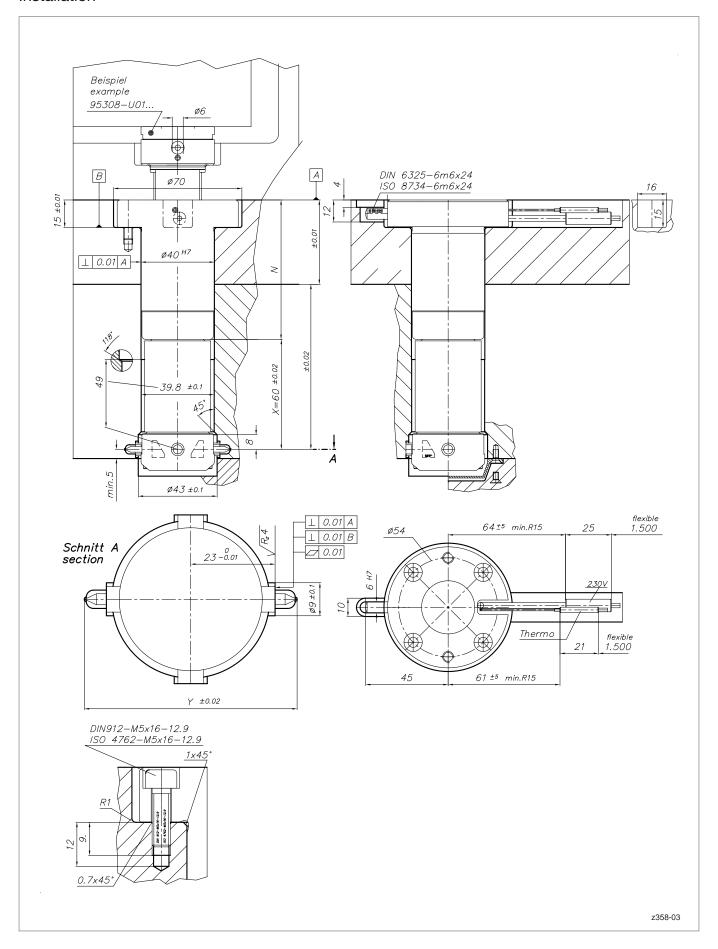
For use with adapter nozzle as system nozzle: MHR111-95...

For use with adapter nozzle as single nozzle: MHR111-93...

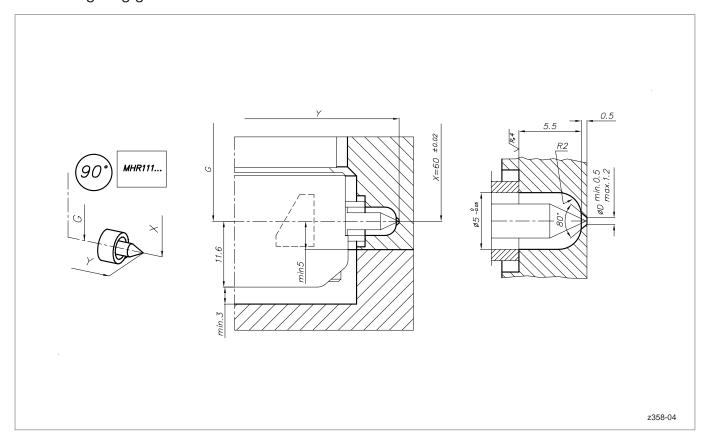
Each nozzle will be configured individually to suit your application requirements. Please contact us!



Installation

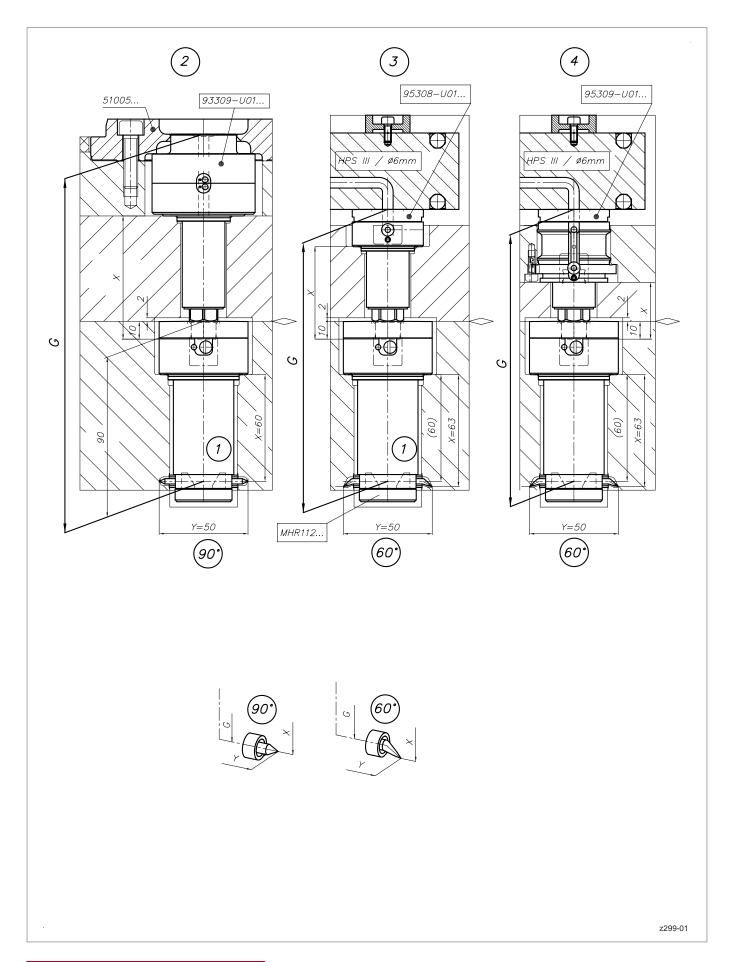


Details of gating geometries



Overview

- 1 HPS III-MHR112 radial version for use with adapter nozzle
- Adapter nozzle 93309-U01... for use as single nozzle
- Adapter nozzle 95308-U01...
 Standard installation for use as system nozzle
- Adapter nozzle 95309-U01...
 Front installation for use as system nozzle



for use with adapter nozzle

Dimensions and tip versions

Number of tips		1, 2	
Version	With adapter nozzle as single nozzle	With adapter nozzle as system nozzle for standard installation	With adapter nozzle as system nozzle for front installation
Nozzle length (Dim. G) ⁽¹⁾	178, 198, 218, 238, 258, 278	153, 173, 193, 213, 233, 253, 273	173, 193, 213, 233, 253, 273

Tip versions	90°	60°
Pitch diameter (Dim. Y)	50	50
Dim. X	60	63
Recommended gate diameters	0.5 - 1.2	0.9 - 1.5

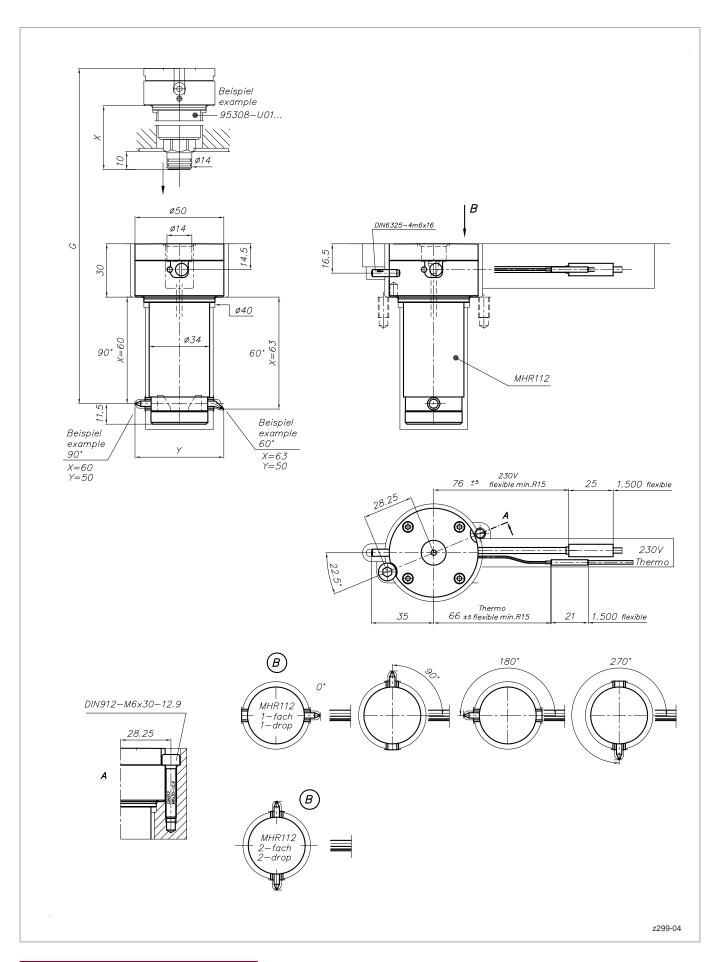
⁽¹⁾ Other nozzle lengths available on request

Item numbers:

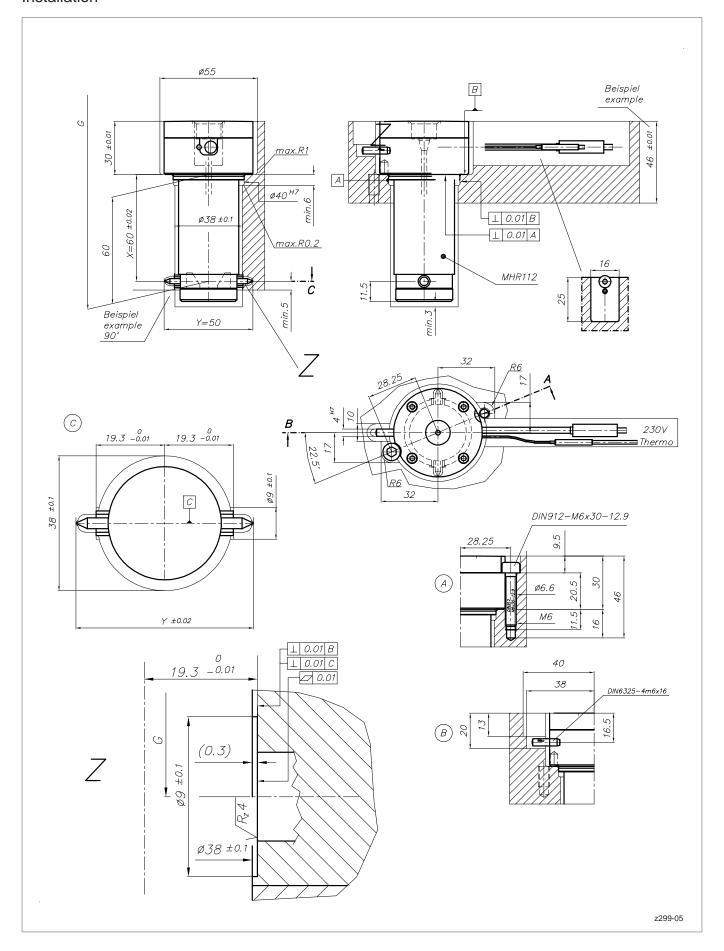
For use with adapter nozzle as system nozzle: MHR112-95...

For use with adapter nozzle as single nozzle: MHR112-93...

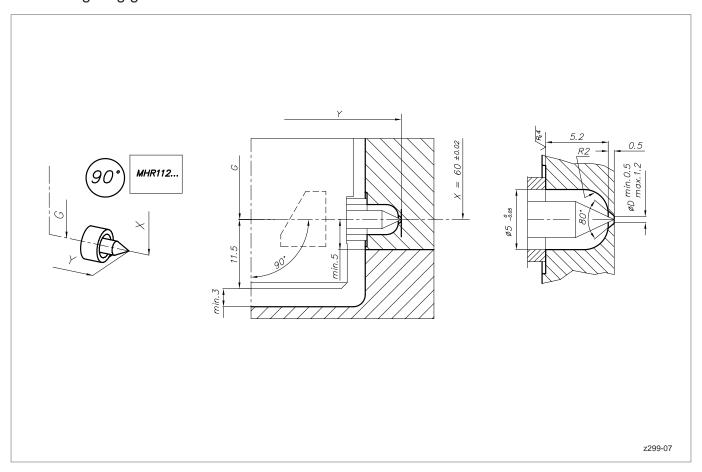
Each nozzle will be configured individually to suit your application requirements. Please contact us!

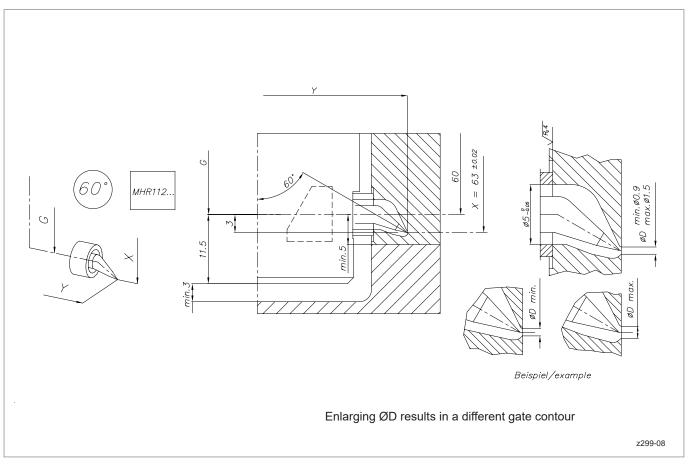


Installation



Details of gating geometries



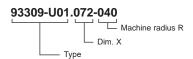


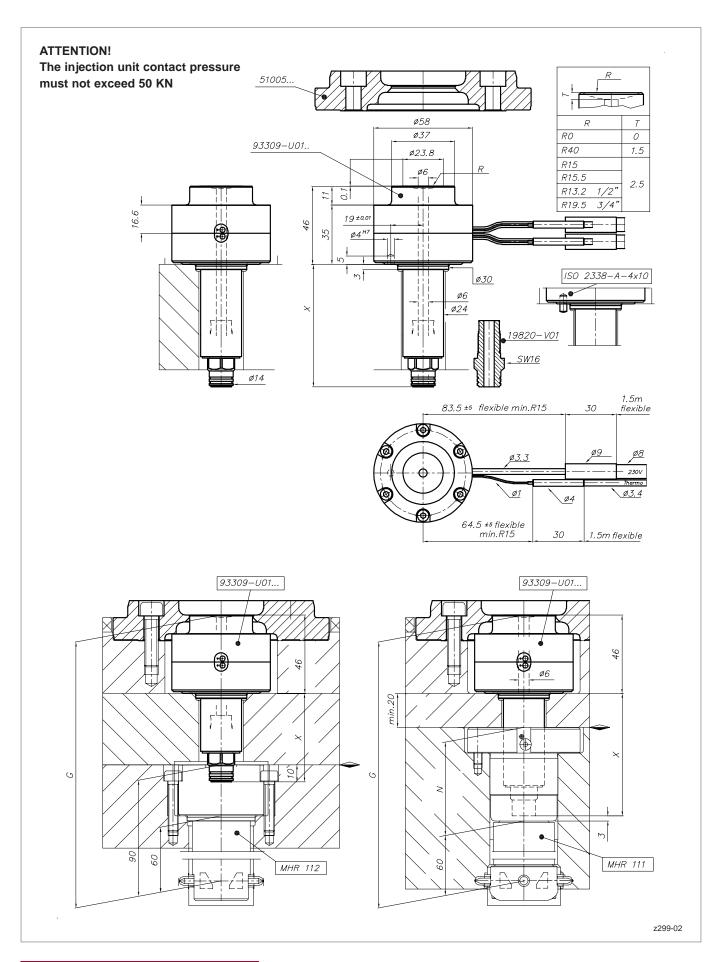
Adapter nozzle 93309-U01...

for use as single nozzle

Dim. X	HPS III-MHR 111	HPS III-MHR 112		
Dilli. X	Results in Dim. G	Results in Dim. G		
52	-	178		
72	181	198		
92	201	218		
112	221	238		
132	241	258		
152	-	278		

Ordering example:





Adapter nozzle 93309-U01...

Locating ring / Assembly note

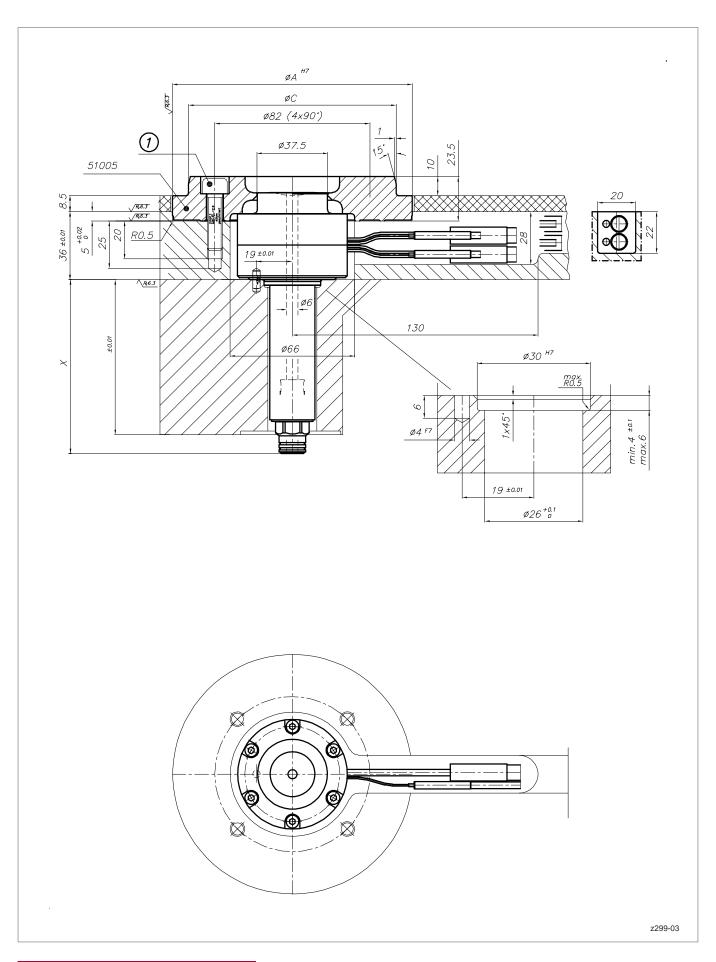
Locating ring 51005 . . .

Plate thickness 36 mm

1 Screws:

4 x DIN 912, M8 x 30-12.9, 45 Nm lubricated

Item number	Ø A	øс
51005.100	117	99.80
51005.000	118	101.34
51005.110	127	109.80
51005.125	142	124.80
51005.160	177	158.80
51005.175	192	174.80



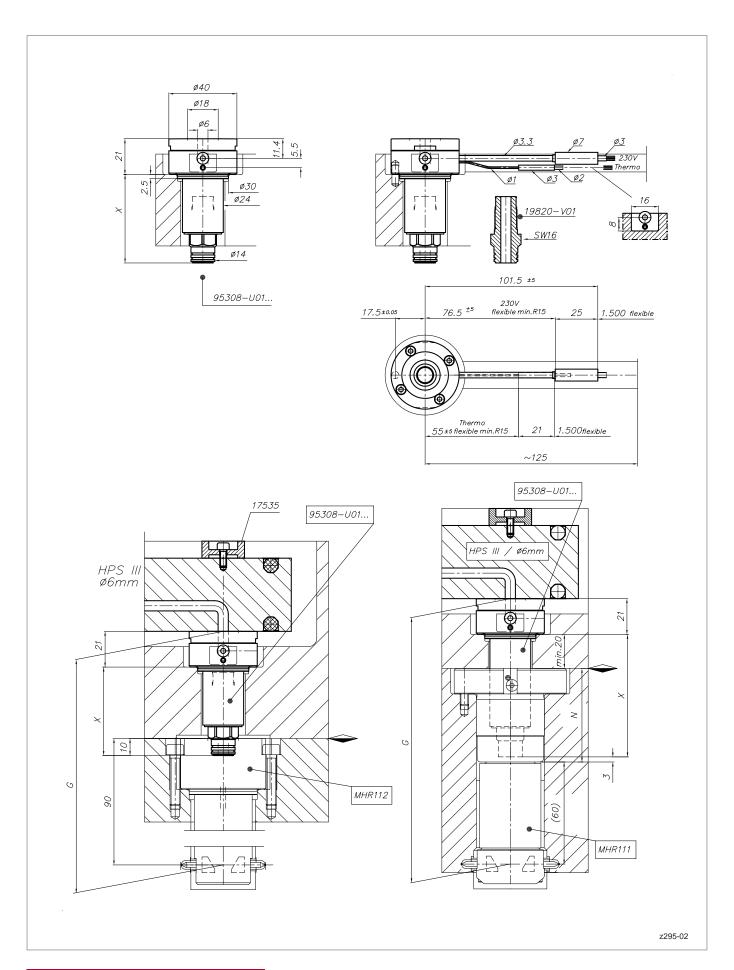
Adapter nozzle 95308-U01...

Standard installation for use as system nozzle

Dim. X	HPS III-MHR 111	HPS III-MHR 112		
Dilli. X	Results in Dim. G	Results in Dim. G		
52	-	153		
72	156	173		
92	176	193		
112	196	213		
132	216	233		
152	-	253		
172	-	273		

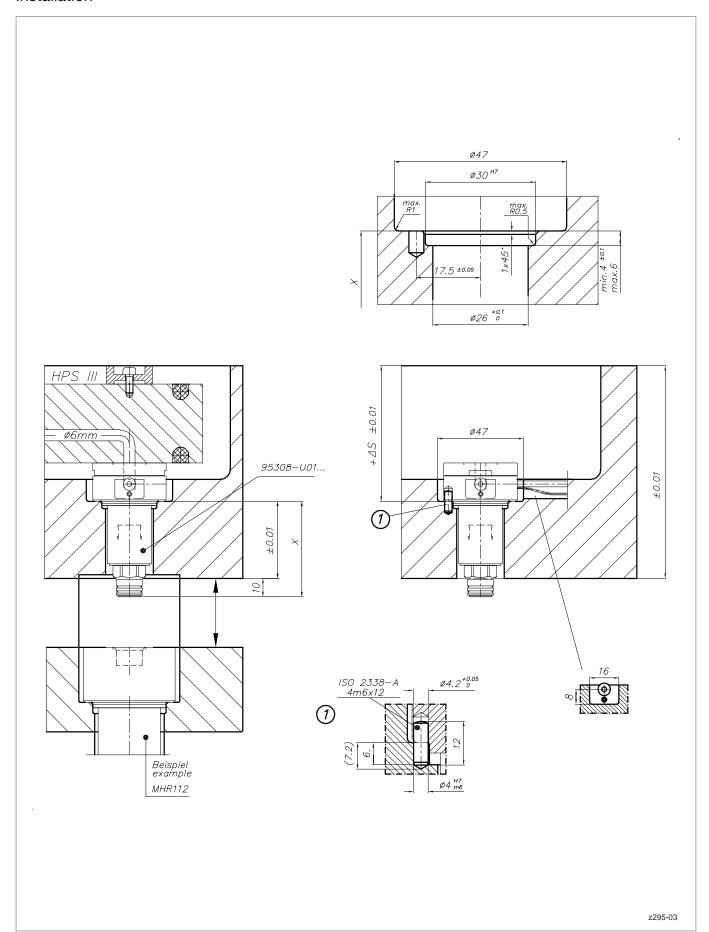
Ordering example:





Adapter nozzle 95308-U01...

Installation



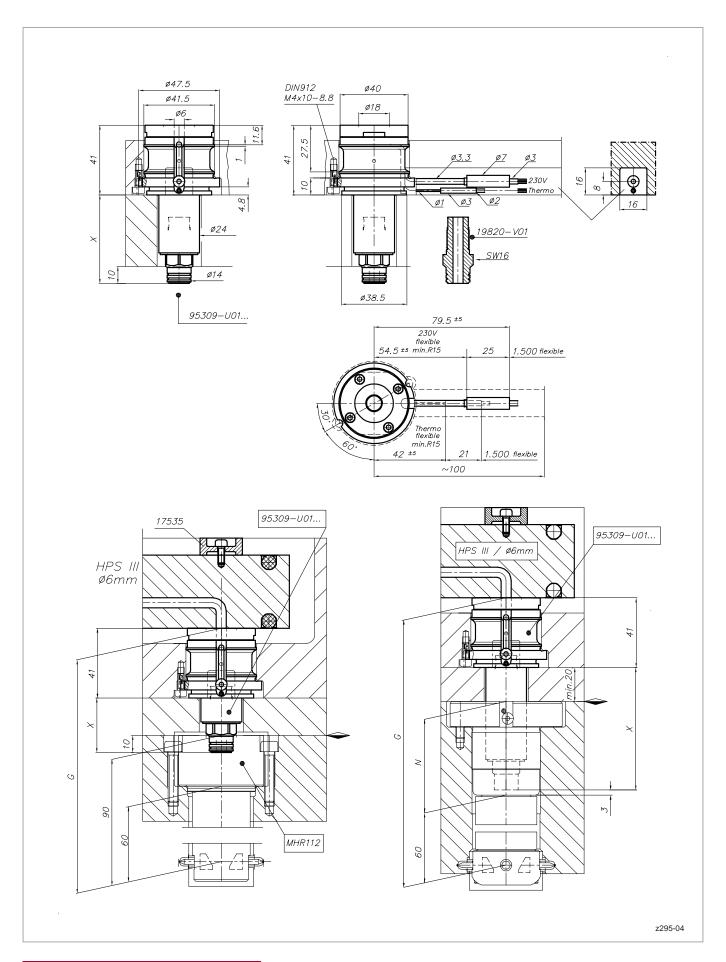
Adapter nozzle 95309-U01...

Front installation for use as system nozzle

Dim. V	HPS III-MHR 111	HPS III-MHR 112		
Dim. X	Results in Dim. G	Results in Dim. G		
52	-	173		
72	176	193		
92	196	213		
112	216	233		
132	236	253		
152	-	273		

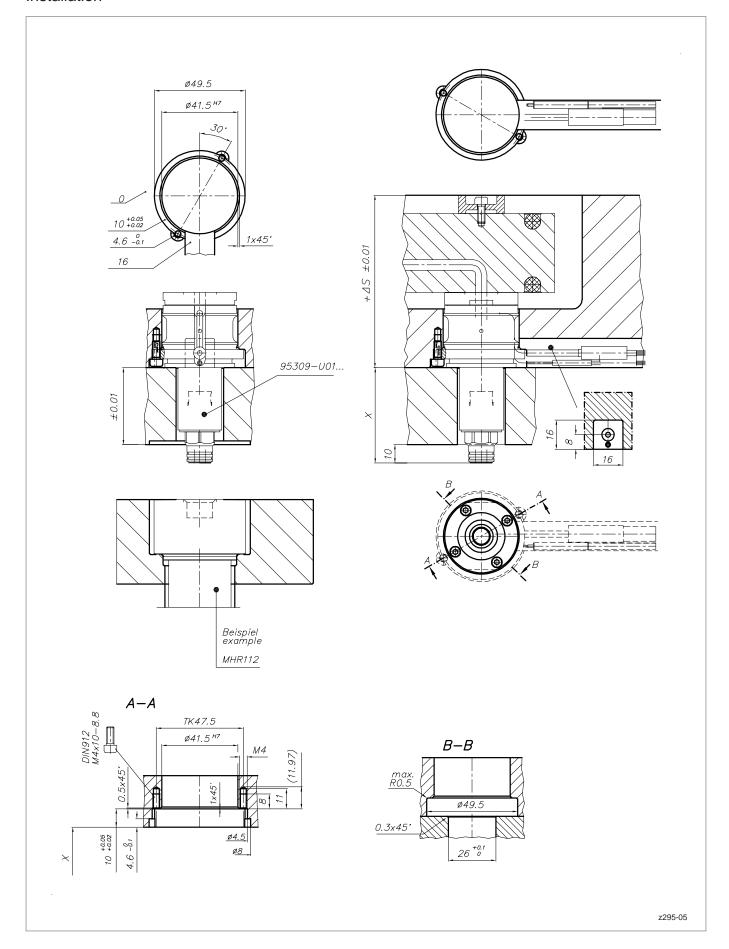
Ordering example:





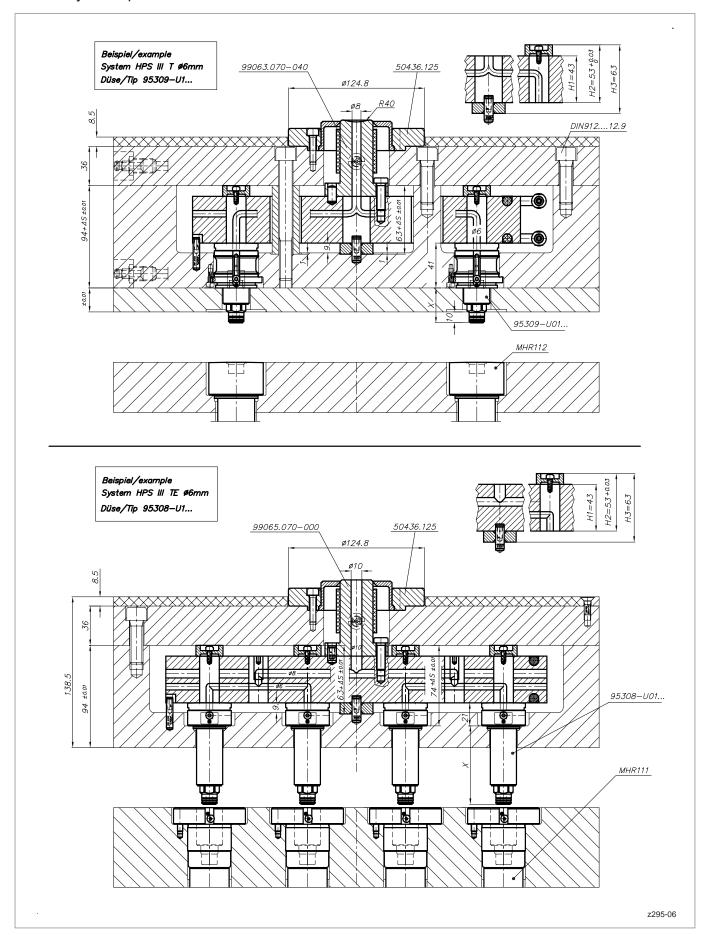
Adapter nozzle 95309-U01...

Installation



Adapter nozzle 95308-U01... / 95309-U01...

Assembly examples



for use as system nozzle directly under the manifold

Dimensions and tip versions

Number of tips	1, 2				
Version	System nozzle for standard installation				
Nozzle length (Dim. G) ⁽¹⁾	90				
Tip versions	90° 60°				
Pitch diameter (Dim. Y)	50 50				
Dim. X	60 63				
Recommended	0.5 - 1.2	0.9 - 1.5			

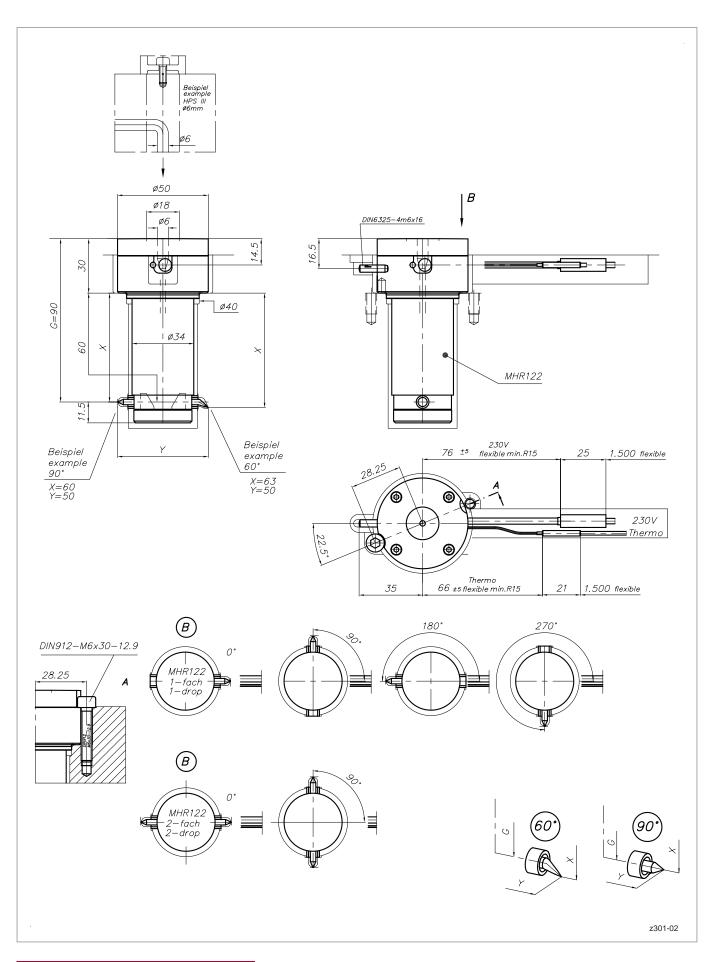
⁽¹⁾ Other nozzle lengths available on request

gate diameters

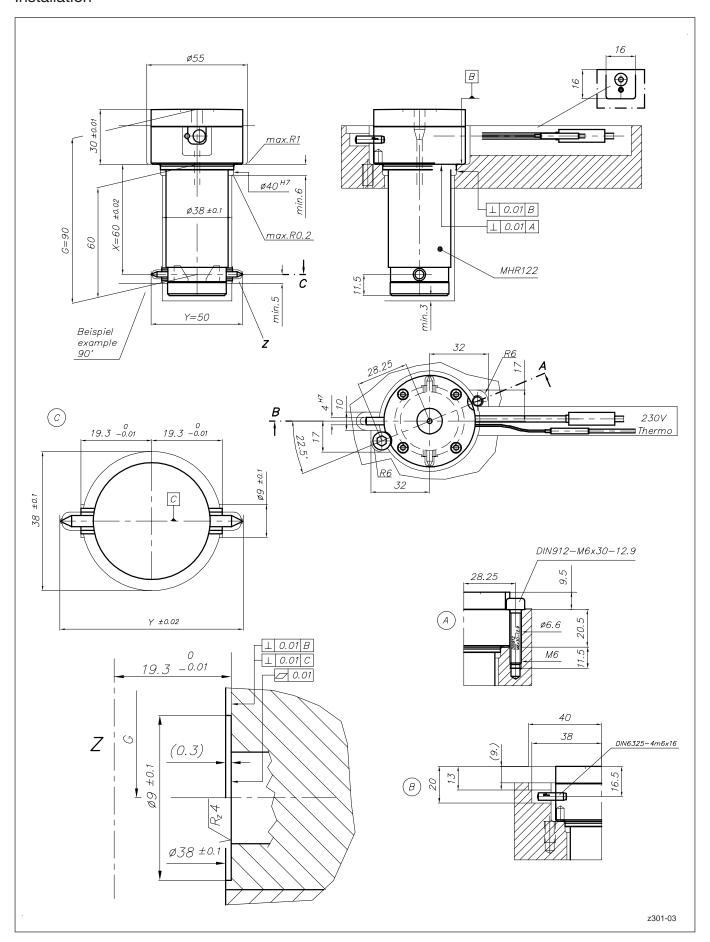
Item number:

System nozzle: MHR122-95...

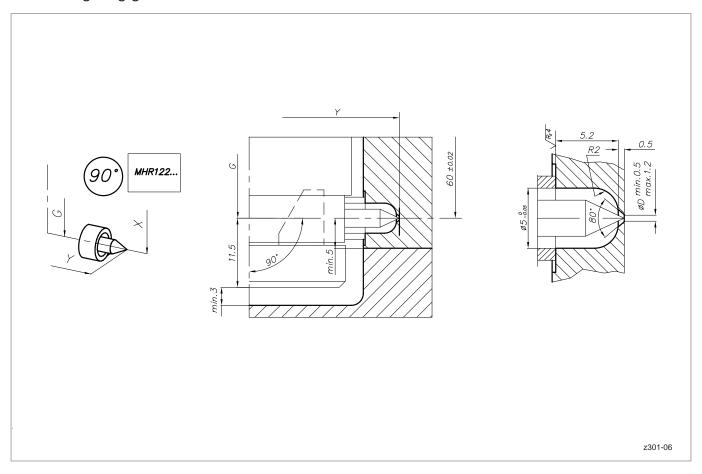
Each nozzle will be configured individually to suit your application requirements. Please contact us!

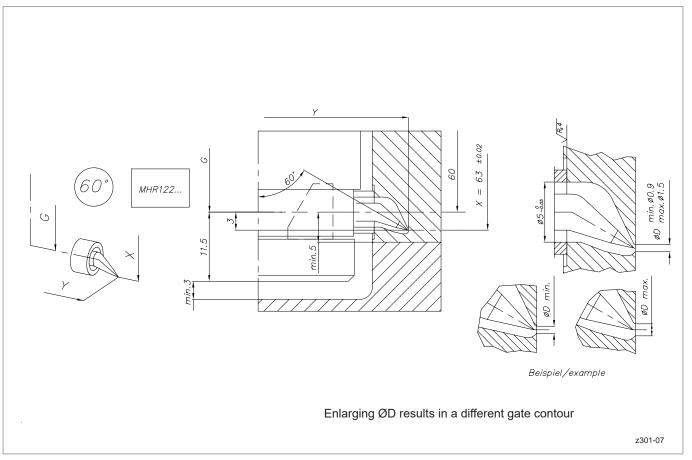


Installation

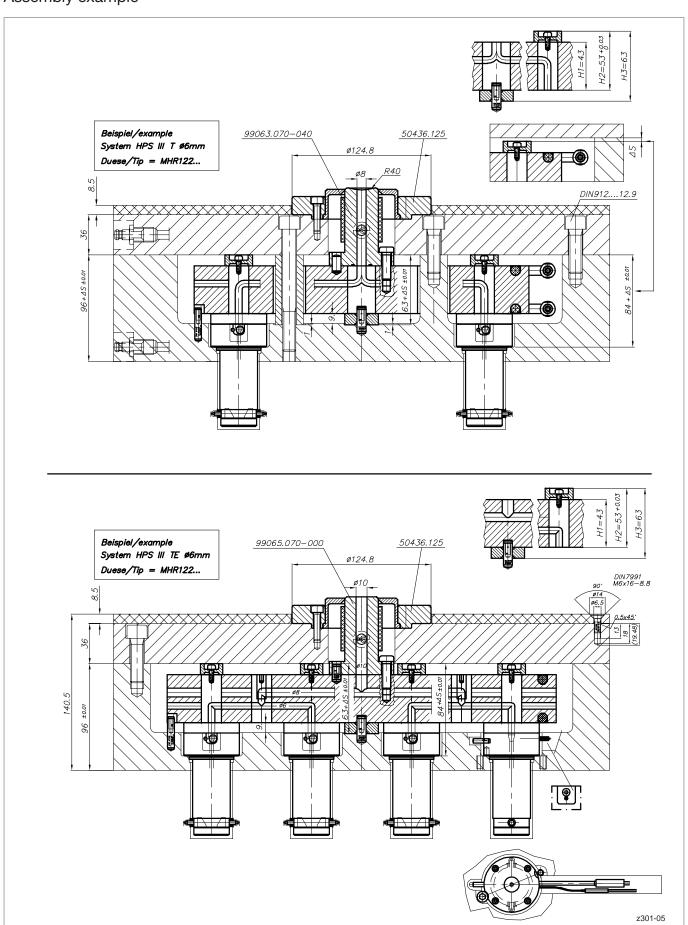


Details of gating geometries





Assembly example



Single nozzle and system nozzle

Dimensions and tip versions

Version	System nozzle	Single nozzle					
Machine radius (Dim. R)		0	15	15.5	40	1/2" (13.2)	3/4" (19.5)
Dim. T		0	2	2	0.8	2	1.8
Locating ring		Item number 50456 Diameter .100 / .110 / .125 / .160 / .175				5	

Width of nozzle block (Dim. B)	62
Number of tips	4
Distance between cavities (Dim. S1)	S1=42
Nozzle length (Dim. G) ⁽¹⁾	129, 138, 148, 168
Positions of bars	A (on nozzle side with tips) B (on nozzle side without tips)

Tip versions	90°	60°
Distance between cavity rows (Dim. Y)	62	62
Dim. X	60	64.5
Recommended gate diameters	0.8 - 1.5	0.8 - 1.5

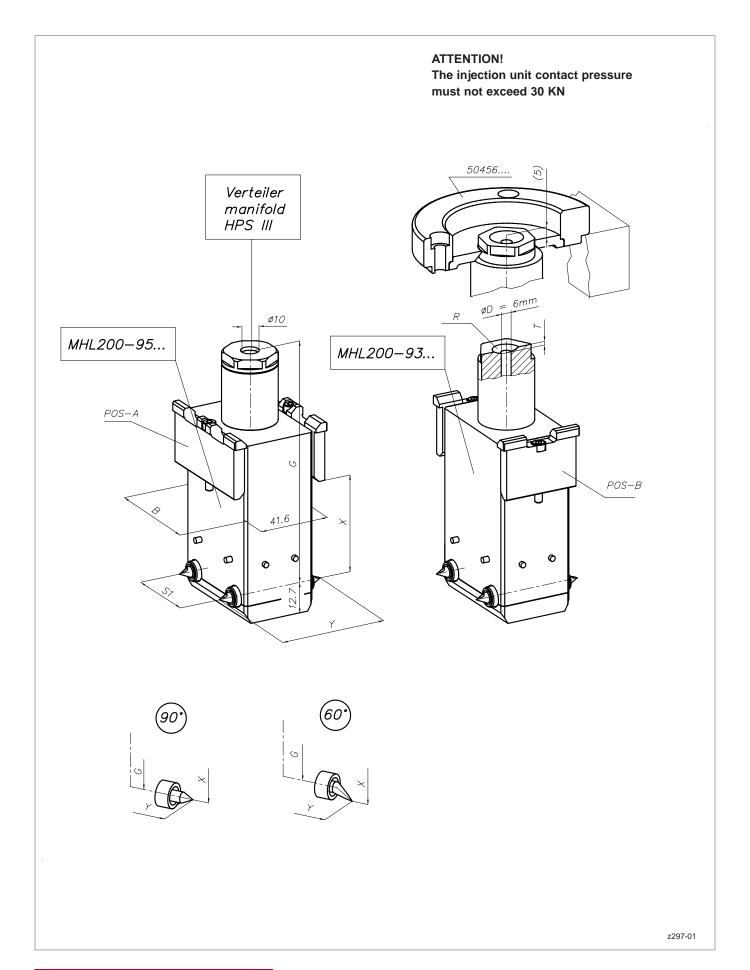
⁽¹⁾ Other nozzle lengths available on request

Item numbers:

System nozzle: MHL200-95...

Single nozzle: MHL200-93...

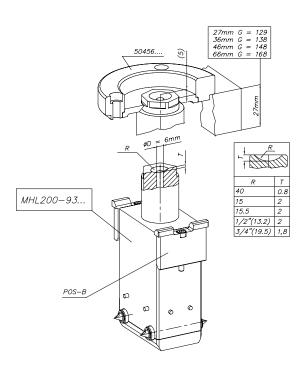
Each nozzle will be configured individually to suit your application requirements. Please contact us!

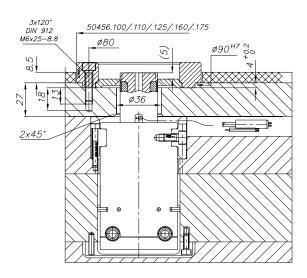


Assembly example for single nozzle, 4-drop, width of nozzle block 62, position of bars B

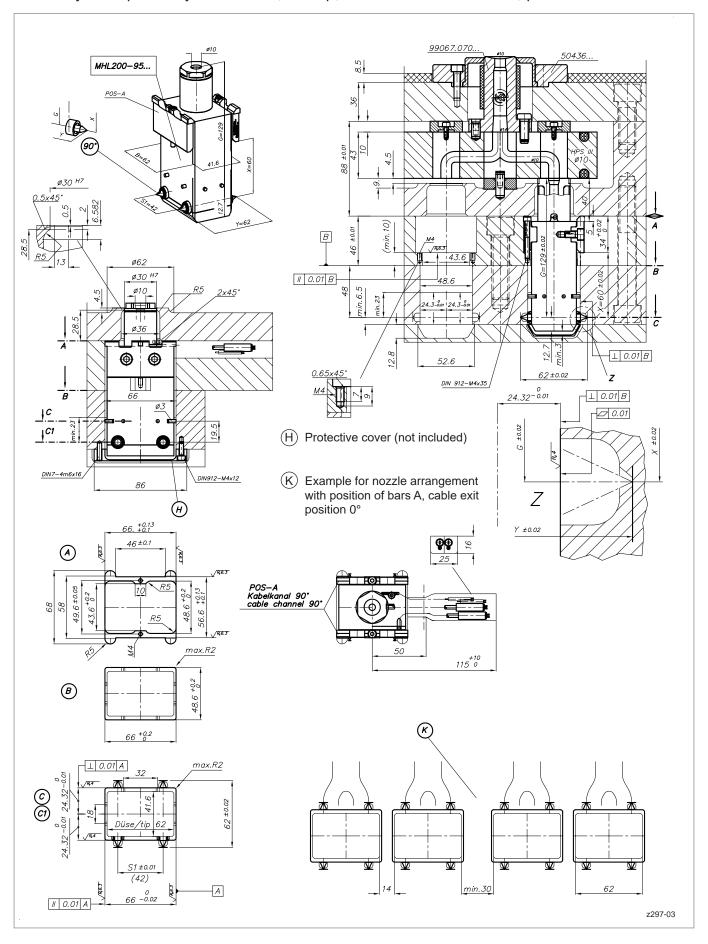
ATTENTION!

The injection unit contact pressure must not exceed 30 KN

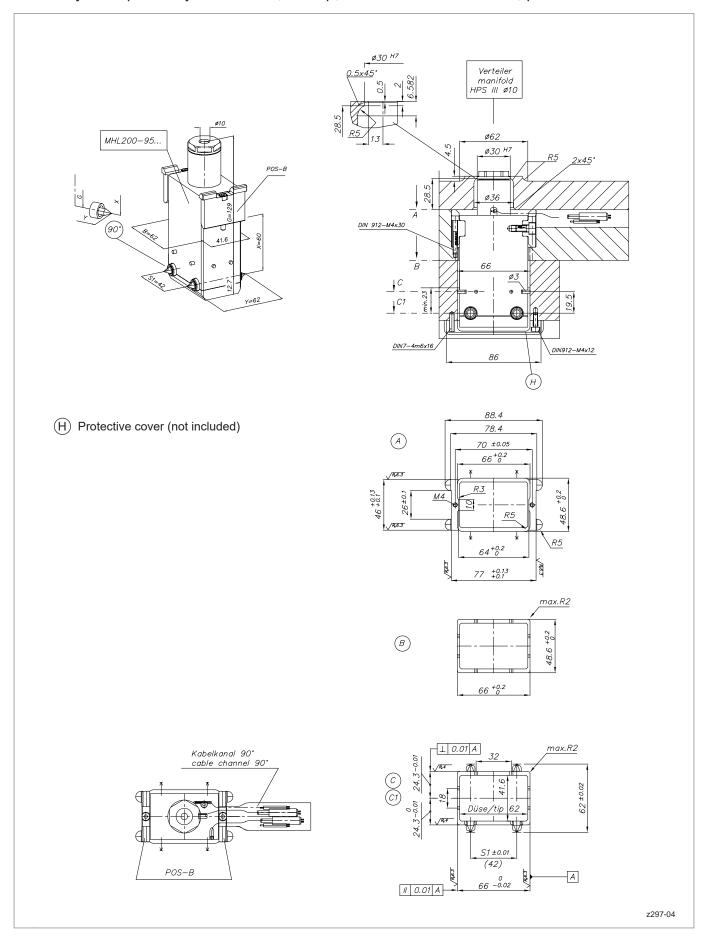




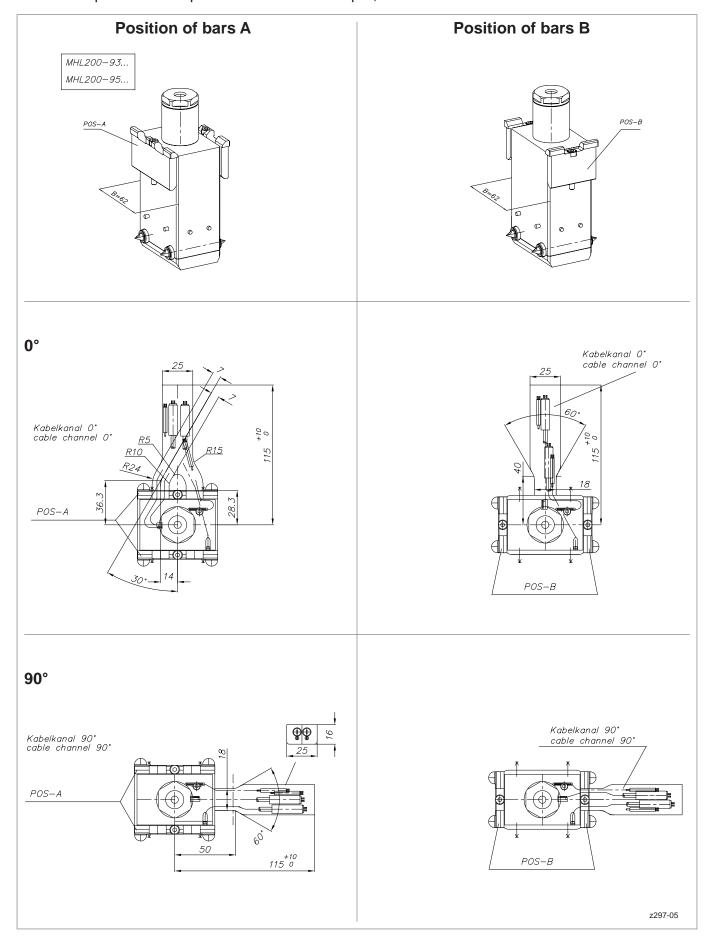
Assembly example for system nozzle, 4-drop, width of nozzle block 62, position of bars A



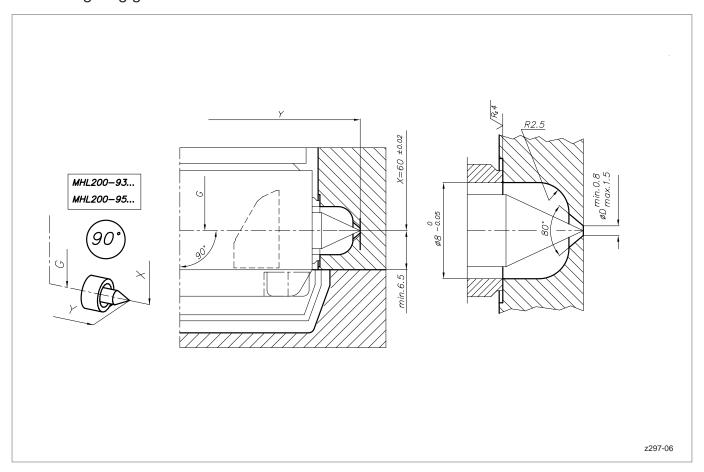
Assembly example for system nozzle, 4-drop, width of nozzle block 62, position of bars B

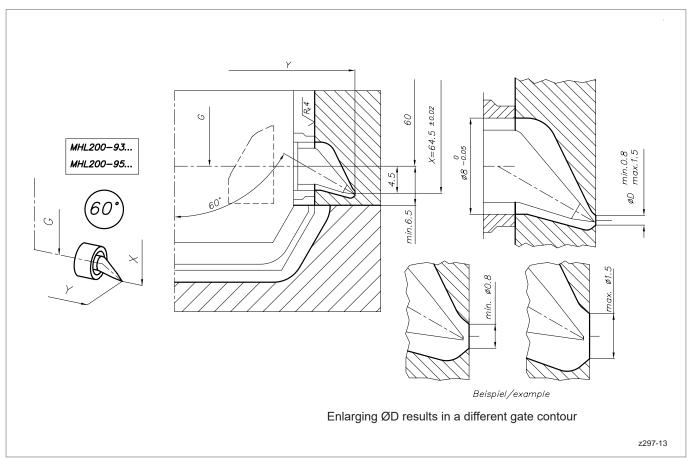


Cable exit positions for power and thermocouple, width of nozzle block 62



Details of gating geometries





Single nozzle and system nozzle

Dimensions and tip versions

Version	System nozzle	Single nozzle					
Machine radius (Dim. R)		0	15	15.5	40	1/2" (13.2)	3/4" (19.5)
Dim. T		0	2	2 0.8 2			
Locating ring		Item number 50456 Diameter .100 / .110 / .125 / .160 / .175					

Number of tips		1, 2, 4	
Nozzle length (Dim. G) ⁽¹⁾	105	114	144
Height of nozzle holder for system nozzle (Dim. N)	15	15 - 24	15 - 54

Tip versions	90°	60°
Pitch diameter (Dim. Y)	60	60
Dim. X	60	64.5
Recommended gate diameters	0.8 - 1.5	0.8 - 1.5

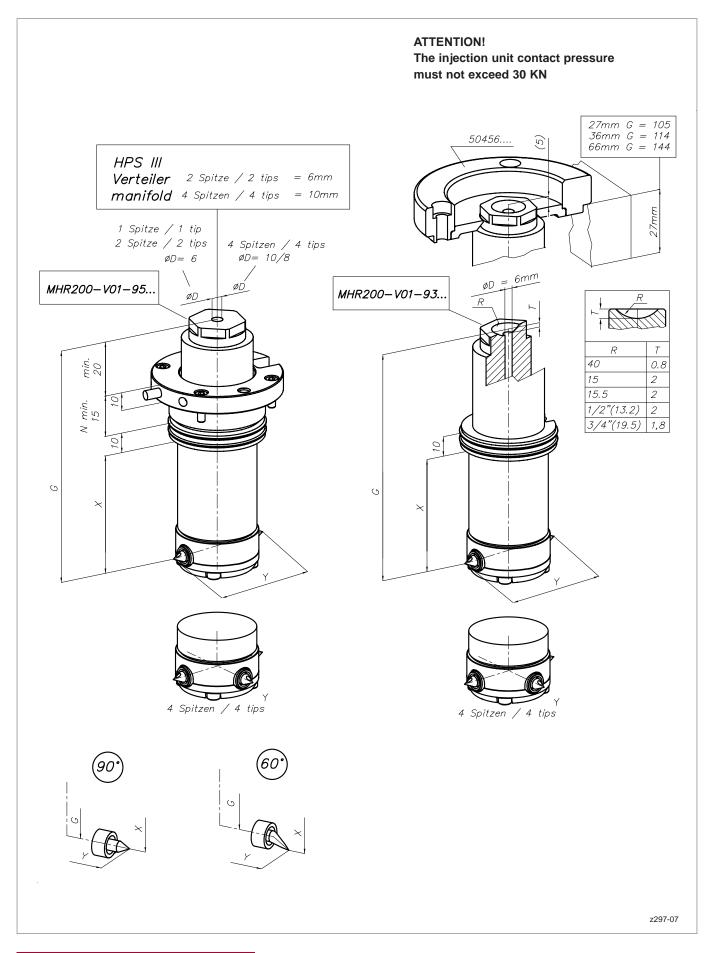
⁽¹⁾ Other nozzle lengths available on request

Item numbers:

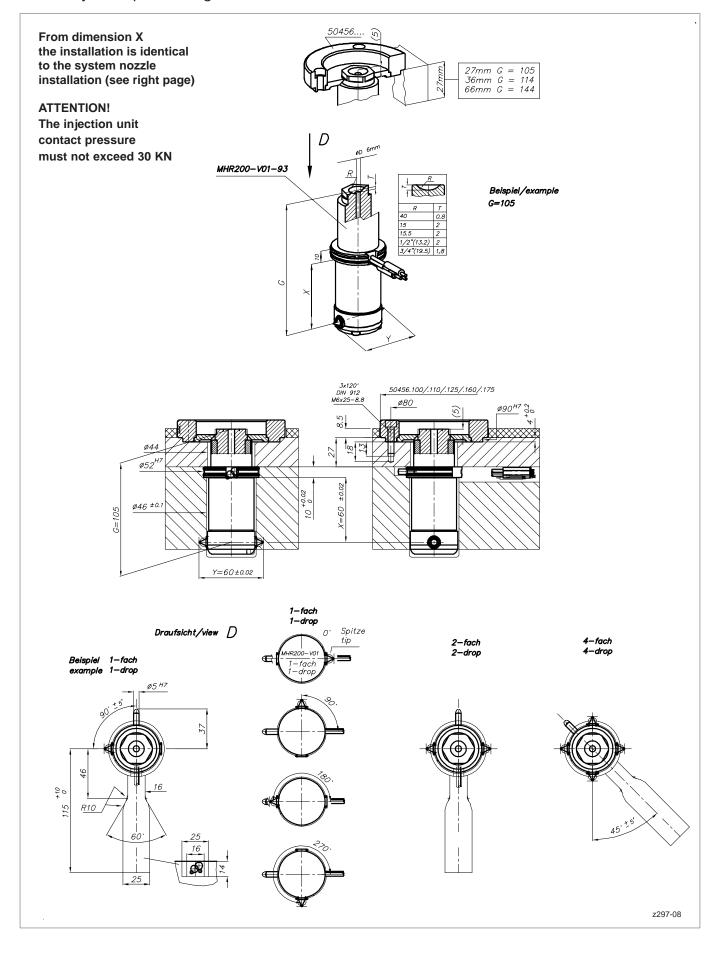
System nozzle: MHR200-V01-95...

Single nozzle: MHR200-V01-93...

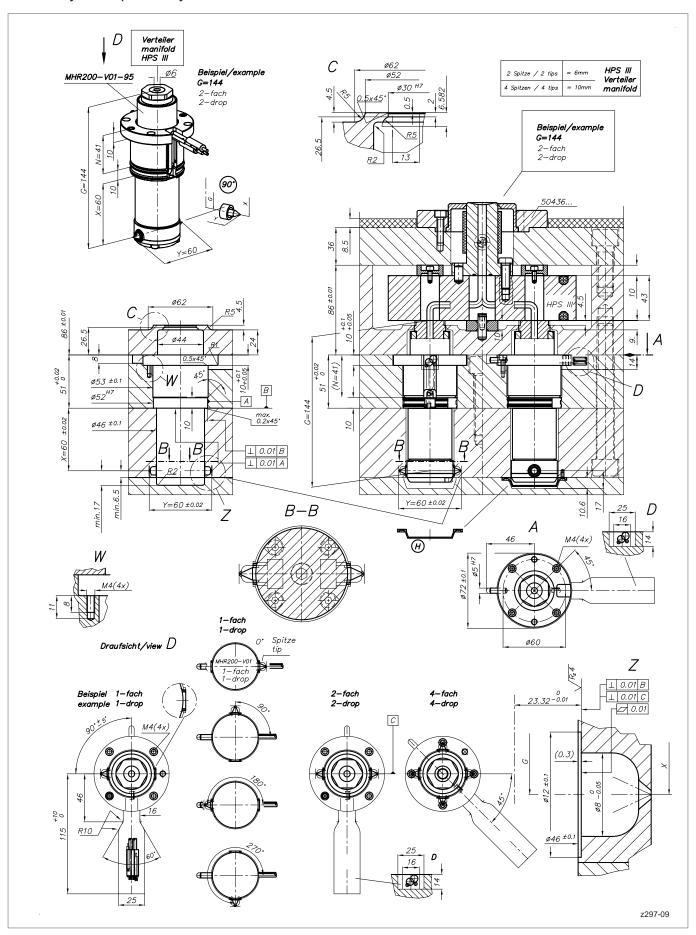
Each nozzle will be configured individually to suit your application requirements. Please contact us!



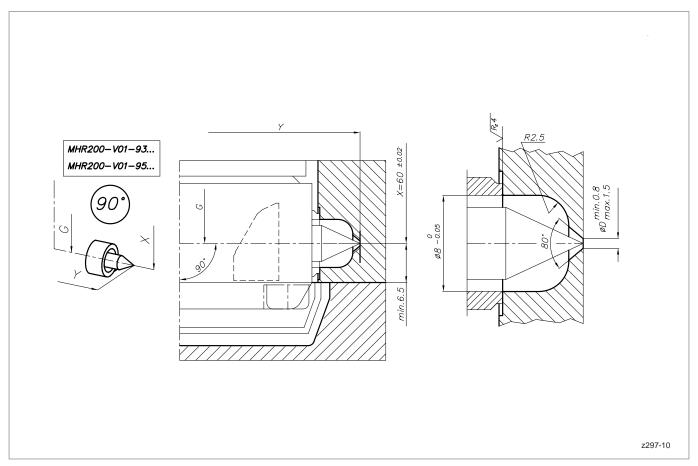
Assembly example for single nozzle

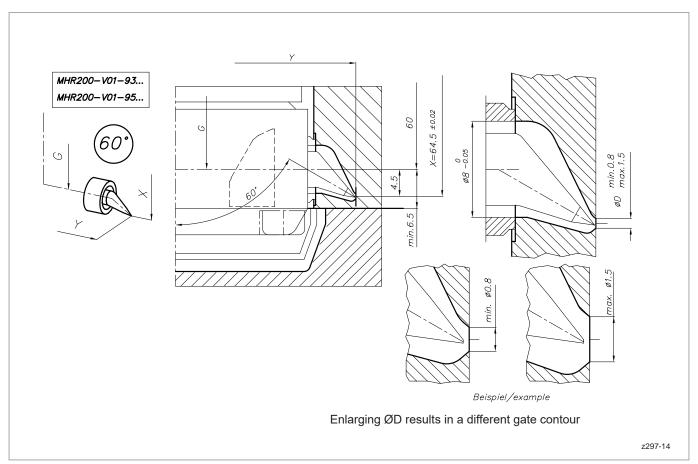


Assembly example for system nozzle



Details of gating geometries

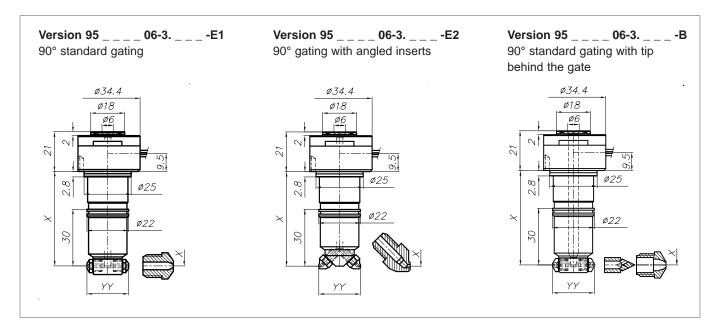




HPS III-MH1 system nozzle

for side gating with open flow channel, dimensions and item numbers

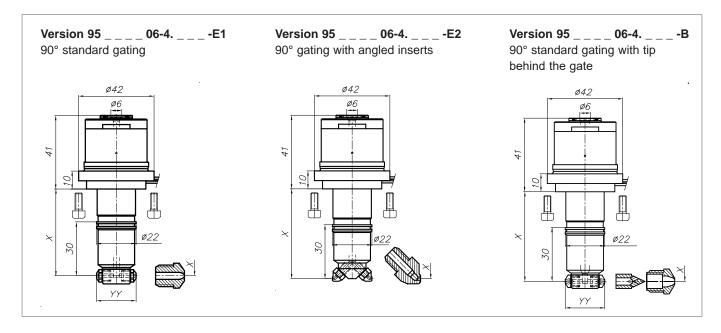
Version for standard installation



Pitch diameter	Dim. X	Ро	ssible nur	nber of ga	tes
(Dim. YY)	Dilli. X	1	2	3	4
22 mm*	50 mm				
	90 mm	•	•	•**	●**
	130 mm				
* other pitch diameters on request					
** not for version E2					

Ordering example: Nozzle 95 _ _ _ 06-3. _ _ - _ 95042206-3.050-E1 — Gating version Dim. X Pitch Ø (Dim. YY) Number of tips Nozzle body

Version for front installation



Pitch diameter	Dim. X	Possible number of gates			
(Dim. YY)	Dilli. A	1	2	3	4
22 mm*	30 mm				
	70 mm	•	•	●**	●**
	110 mm				
* other pitch diameters on request					
** not for version E2					

Ordering example:

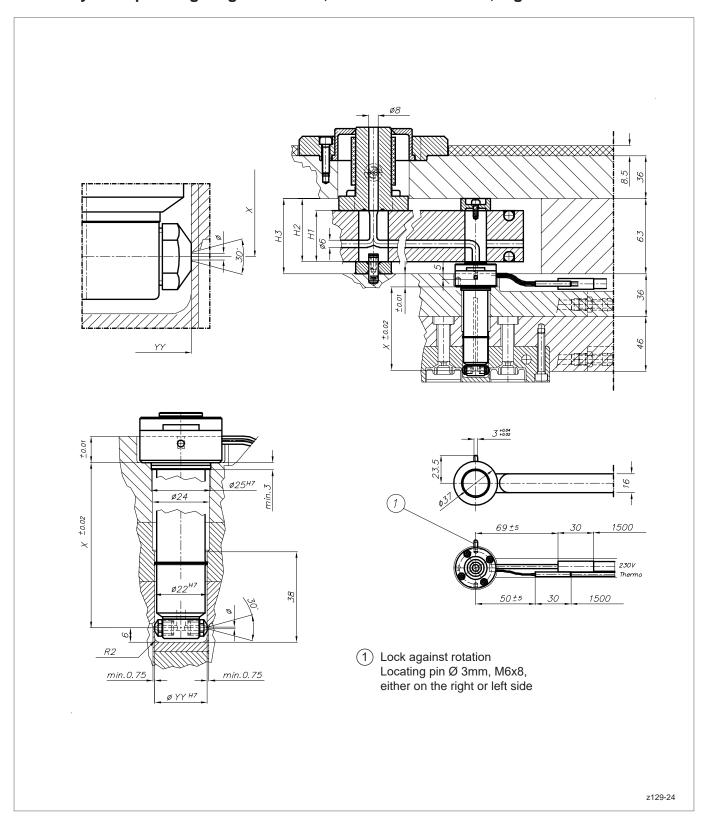
Nozzle 95 _ _ _ 06-4. _ _ -



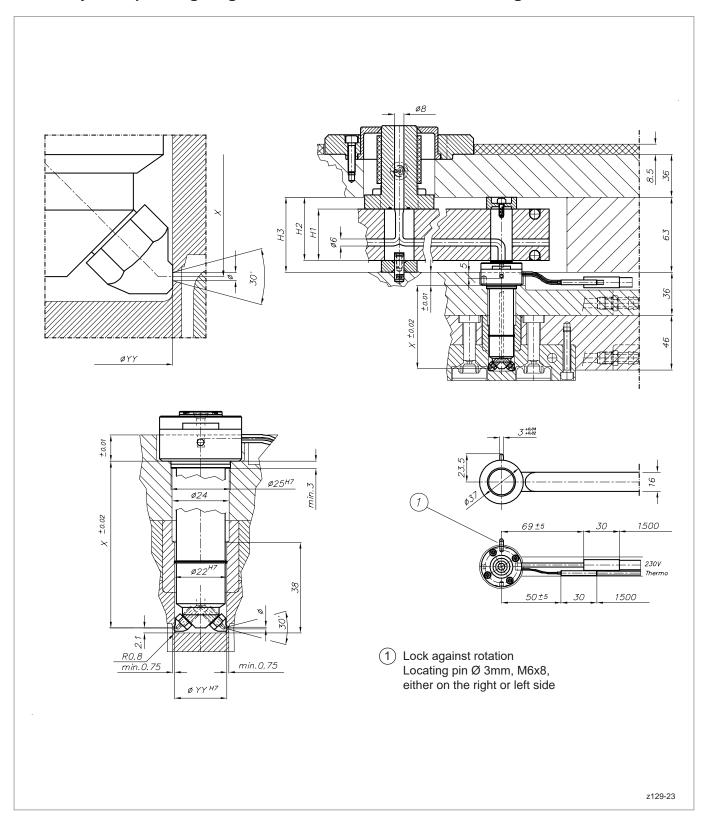
HPS III-MH1 system nozzle

for side gating with open flow channel, assembly examples

Assembly example for gating version E1, standard installation, 2 gates

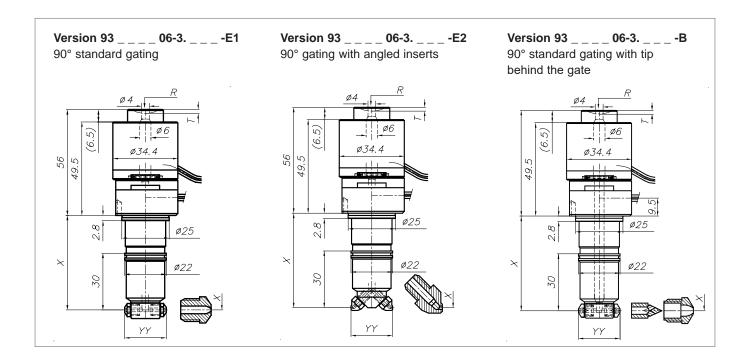


Assembly example for gating version E2, standard installation, 2 gates



HPS III-MH1 single nozzle

for side gating with open flow channel, dimensions and item numbers

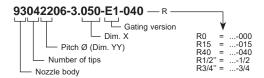


Pitch diameter	Dim. X	Ро	ssible nun	nber of ga	tes
(Dim. YY)	DIIII. X	1	2	3	4
	50 mm				
22 mm*	90 mm	•	•	•**	●**
	130 mm				
* other pitch diameters on request ** not for version E2					

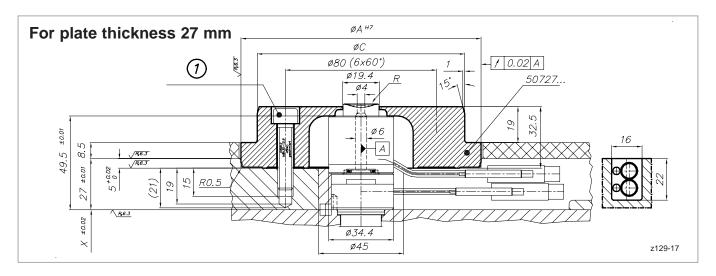
Machine radius R	Dim. T
0	0
15	2
40	1
1/2 " (13.2)	2
3/4" (19.5)	2

Ordering example:

Nozzle 93____06-3.__--_-

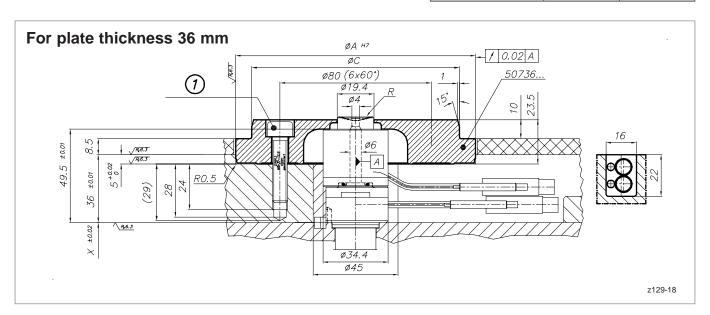


Locating rings for 93____06-3.__--



Pos (1): 6 x DIN912-M8x35-12.9 45 Nm lubricated

Item number	ØA	ØС
50727.100	117	99.8
50727.000	118	101.34
50727.110	127	109.8
50727.125	142	124.8
50727.175	192	174.8



Pos 1: 6 x DIN912-M8x35-12.9 45 Nm lubricated

Item number	ØA	ØС
50736.100	117	99.8
50736.000	118	101.34
50736.110	127	109.8
50736.125	142	124.8
50736.175	192	174.8



Siegener Straße 35 • 35066 Frankenberg / Germany Tel: +49 6451 501-0 • E-Mail: info@ewikon.com www.ewikon.com

