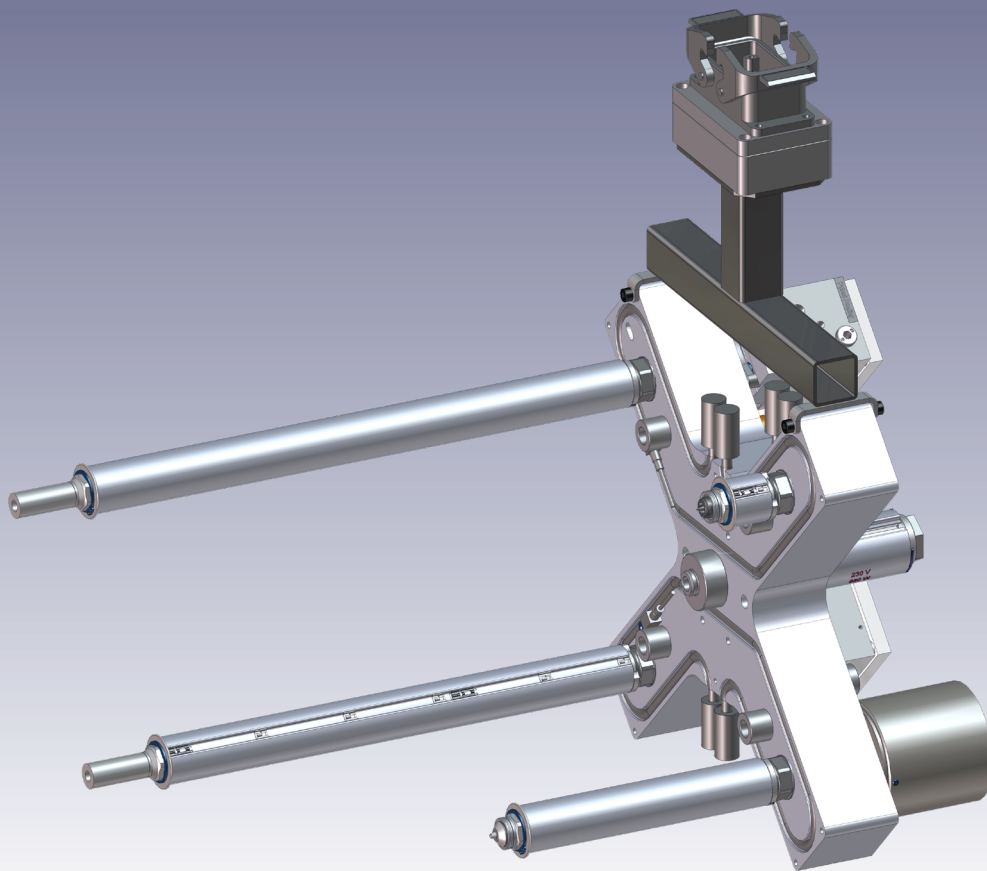


09E Product Catalog

Th r e a d e d N o z z l e s H o t R u n n e r S e r i e s

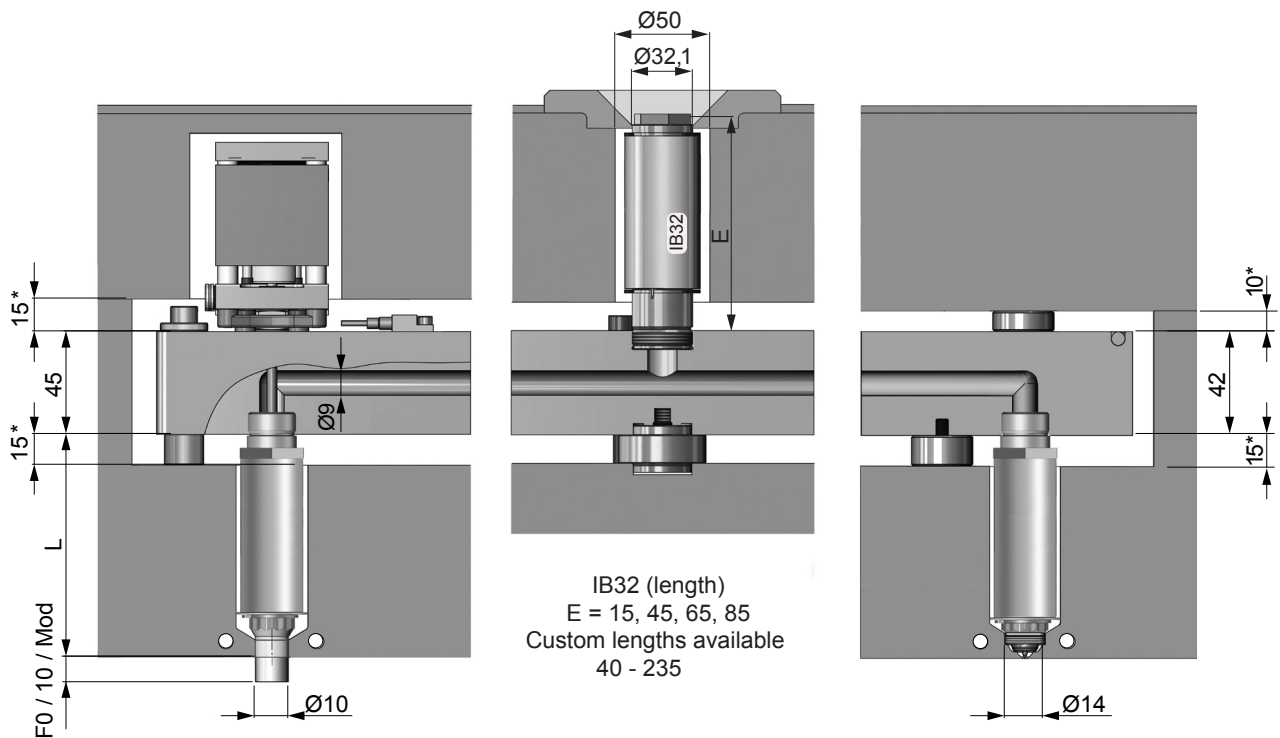


Stabilize your Process _____



Hot Runner System - Thrust Pad / Bolt Down Manifold

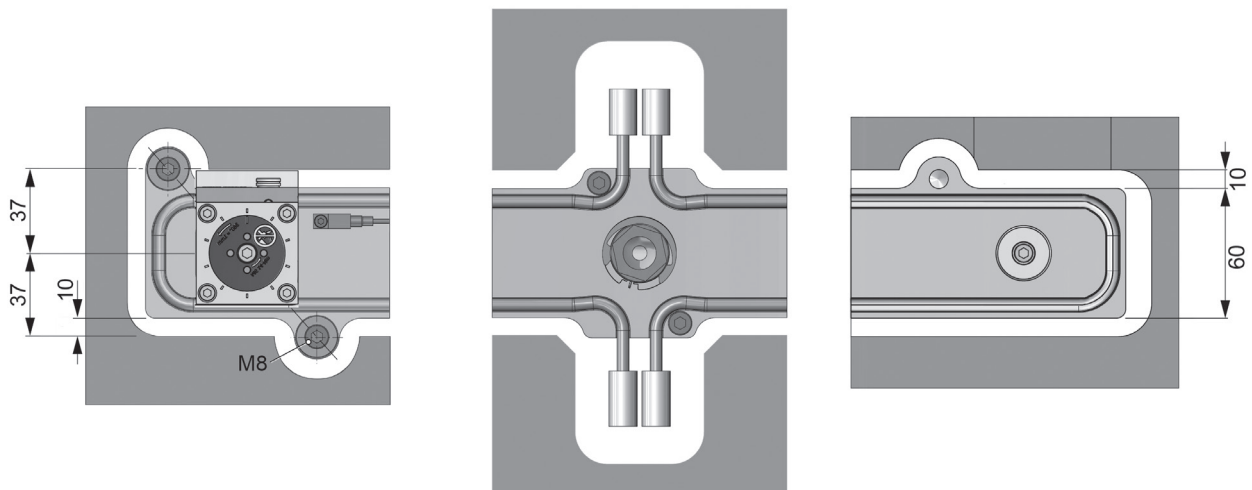
Illustrations simplified, schematically drawn and not to scale. All dimensions in mm.



Thrust pad selection

Inlet bushing

Bolt down selection



*min.10¹⁾ For a specific application, please consult Synventive

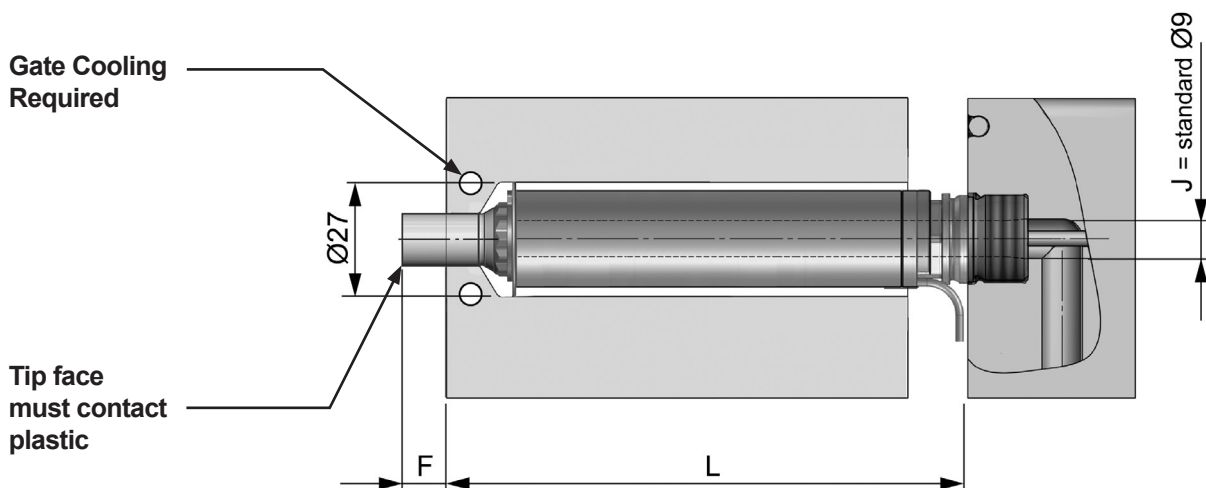
Shown is a hot runner system to support actuators, consist of V-45 Manifold and IB 32 Inlet bushing.

For hot runner systems with thermal shut-off nozzles, V-42 manifolds and IB 24 inlet bushing are available, for detailed dimensions consult Synventive.



Nozzle Lengths

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



One control area (thermocouple)			Two control areas (thermocouple)				Head
L (mm)		Heater zone power (Watt)	L (mm)		Heater zone power ¹⁾ (Watt)		
Standard lengths	Custom lengths	Power1	Standard lengths	Custom lengths	Power 1	Power 2	
60	>60-<70	150W	-	>170-<180	150W	130W	500W
70	>70-<80	180W	180	=>180-<190	150W	140W	500W
80	>80-<90	210W	-	>190-<200	150W	150W	500W
90	>90-<100	215W	200	=>200-<210	150W	160W	500W
100	>100-<110	220W	-	>210-<220	150W	170W	500W
110	>110-<120	225W	220	=>220-<230	150W	180W	500W
120	>120-<130	230W	-	>230-<240	150W	190W	500W
130	>130-<140	235W	240	=>240-<250	150W	200W	500W
140	=>140-<150	250W	-	>250-<260	150W	210W	500W
-	>150-<160	255W	260	=>260-<270	150W	220W	500W
160	=>160-<170	260W	-	>270-<280	150W	230W	500W
			280-	=>280-<290	150W	240W	500W
			-	>290-<300	150W	250W	500W
			300	=>300-<310	150W	260W	500W
			-	>310-<320	150W	270W	500W
			320	=>320-<330	150W	280W	500W
			-	>330-<340	150W	290W	500W
			340	=>340-<350	150W	300W	500W
			-	>350-<360	150W	310W	500W
			360	=>360-<370	150W	320W	500W
			-	>370-<380	150W	330W	500W
			380	=>380-<390	150W	340W	500W
			-	>390-<400	150W	350W	500W
			400	-	150W	360W	500W

³⁾ The numbering of the heating zones starts at the nozzle tip and ends at the nozzle head

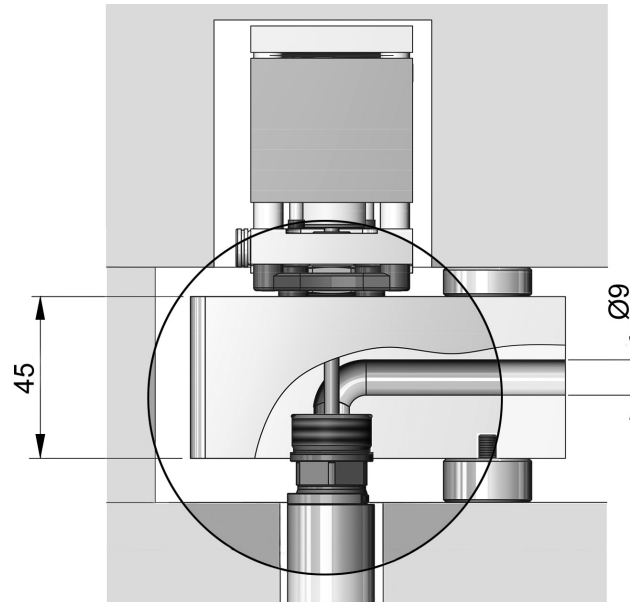
³⁾ The numbering of the heating zones starts at the nozzle tip and ends at the nozzle head



Optional Features

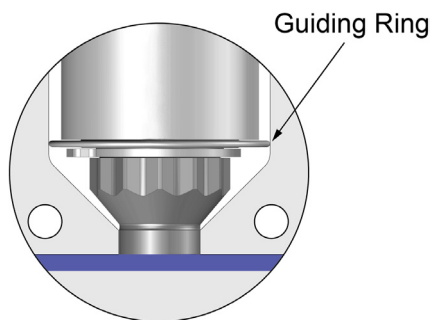
Illustrations simplified, schematically drawn and not to scale. All dimensions in mm.

Smooth Flow

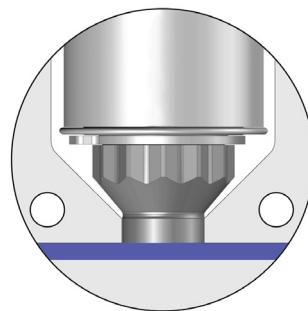


Nozzle Pre-Guiding

Configuration with Nozzle Pre-Guiding



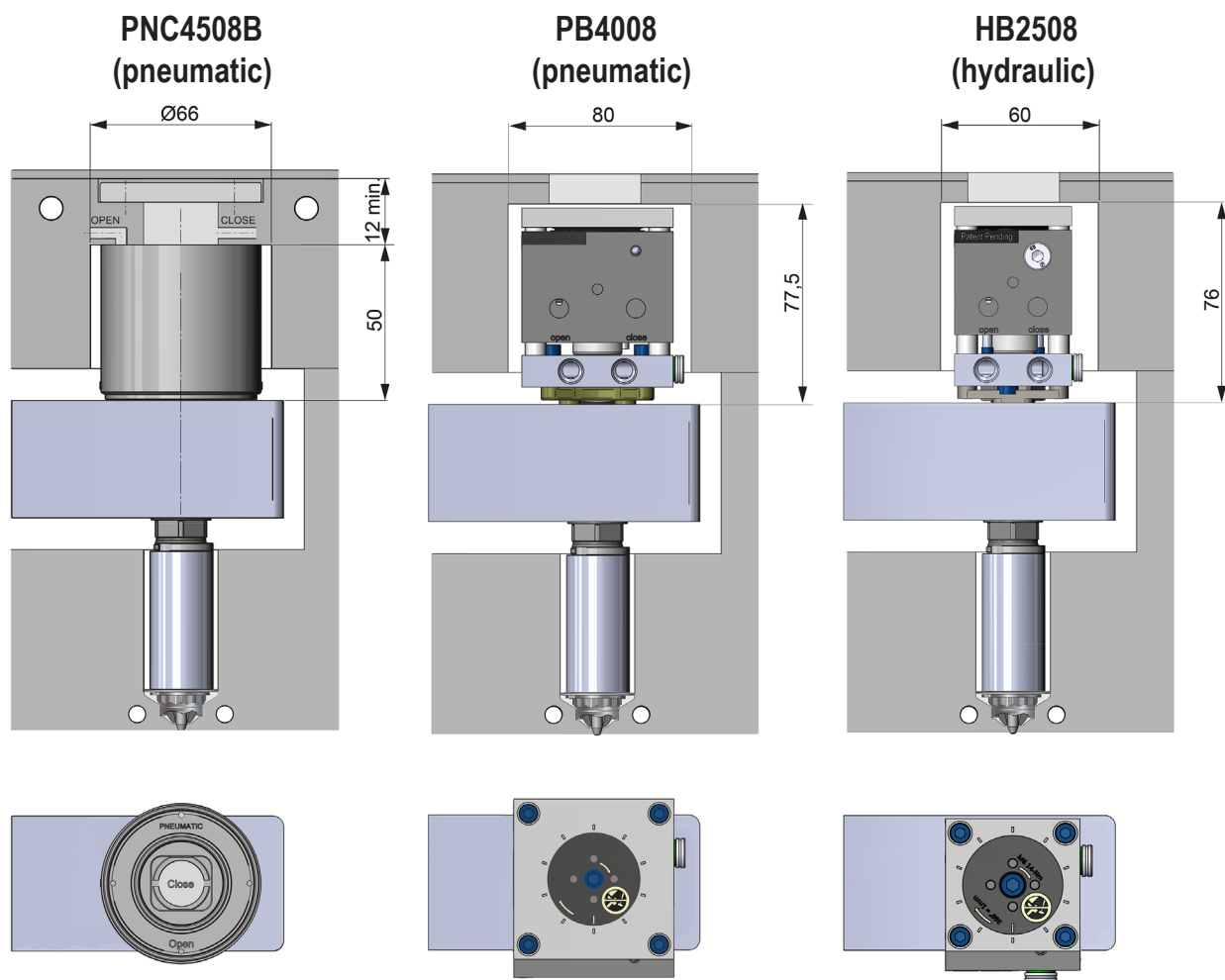
Configuration without Nozzle Pre-Guiding





Available Actuators

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



Pressure range:
6 - 12 bar (87 - 174 psi)
Min/Max Close Forces:
954 N / 1908 N

Pressure range:
6 - 12 bar (87 - 174 psi)
Min/Max Close Forces:
754 N / 1508 N

Available features:
♦ Position Sensor
♦ SynCool®

Pressure range:
40 - 60 bar (600 - 870 psi)
Min/Max Close Forces:
1963 N / 2945 N

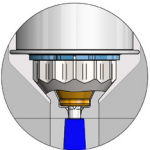
Available features:
♦ Position Sensor
♦ SynCool®



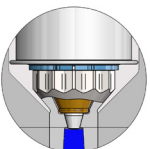
Nozzle Tip Styles

Illustrations simplified, schematically drawn and not to scale. All dimensions in mm.
H = Gate orifice diameter, F = Tip extension, Dt = Tip Diameter, Mod = Modifiable

VSP Valve Gate - Straight Pin - Plunged Through

Tip Style	Description	Dt = Ø10 F10, 0, Mod	
		H=2.5	
	VSP Standard	✓	

VTP Valve Gate - Tapered Pin - Plunged Through

Tip Style	Description	Dt = Ø10 F10, 0, Mod	
		H=2.5	
	VTP Standard	✓	

TTP Thermal Gate – Torpedo - Plunged Through

Tip Style	Description	Dt = Ø10 F10, 0, Mod		
		H=1.5	H=2.0	H=2.5
	TTP Standard	✓	✓	✓

✓ Preferred

(✓) Available

✗ Not Available



Nozzle Tip Styles

Illustrations simplified, schematically drawn and not to scale. All dimensions in mm.
H = Gate orifice diameter, F = Tip extension, Dt = Tip Diameter, Mod = Modifiable

VSW Valve Gate - Straight Pin - Blind

Tip Style	Description	Dt = Ø14			
		H=1.5	H=2.0	H=2.5	H=3.0
	VSW Standard	✓	✓	✓	✓


VTW Valve Gate - Tapered Pin - Blind

Tip Style	Description	Dt = Ø14		
		H=1.5	H=2.0	H=2.5
	VTW Standard	✓	✓	✓

TTW Thermal Gate – Torpedo - Blind

Tip Style	Description	Dt = Ø14			
		H=1.2	H=1.6	H=2.0	H=2.5
	TTW Standard	✓	✓	✓	✓

TTW-C Thermal Gate – Torpedo - Blind

Tip Style	Description	Dt = Ø14			
		H=1.2	H=1.6	H=2.0	H=2.5
	TTW-C Standard	✓	✓	✓	✓



Preferred



Available



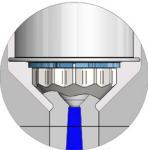
Not Available



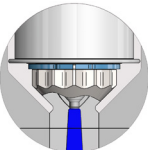
Nozzle Tip Styles

Illustrations simplified, schematically drawn and not to scale. All dimensions in mm.
H = Gate orifice diameter, F = Tip extension, Dt = Tip Diameter, Mod = Modifiable

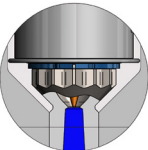
TPK Thermal Gate – Full Flow - Plunged Through

Tip Style		Description	Dt = Ø10 F = 10	
			H=2.0	H=2.5
	TPK	Standard	✓	✓

TNK Thermal Gate – Full Flow - Plunged Through

Tip Style		Description	Dt = Ø10 F = 10	
			H=2.0	H=2.5
	TNK	Standard Cold Runner	✓	✓

TTK Thermal Gate – Torpedo - Plunged Through

Tip Style		Description	Dt = Ø10 F = 10	
			H=2.0	H=2.5
	TTK	Standard Cold Runner	✓	✓

✓ Preferred

(✓) Available

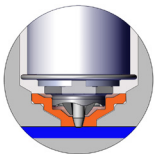
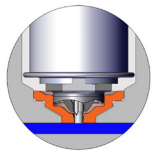
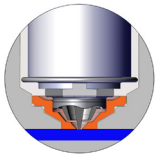
✗ Not Available



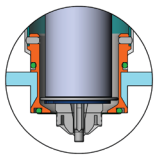
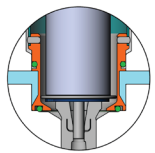
Wear Inserts / Cooling Bushings

Illustrations simplified, schematically drawn and not to scale. All dimensions in mm.
H = Gate orifice diameter, F = Tip extension, Dt = Tip Diameter, Mod = Modifiable

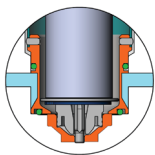
Wear Inserts

Part	Description	F = 0, 10, Mod					
		H=1.2	H=1.5	H=1.6	H=2.0	H=2.5	H=3.0
	WI-VTW Wear Insert for VTW Nozzle tips	✗	✓	✗	✓	✓	✗
	WI-VSW Wear Insert for VSW Nozzle tips	✗	✓	✗	✓	✓	✓
	WI-TTW Wear Insert for TTW Nozzle tips	✓	✗	✓	✓	✓	✗

Cooling Bushings

Part	TTW	VSW	VTW	TTP	VSP	VTP	TPK	TNK	TTK
	✓	✓	✓	✓	✓	✓	✓	✓	✓
									

Wear Insert and Cooling Bushing

Part	TTW	VSW	VTW
	✓	✓	✓



Preferred



Available



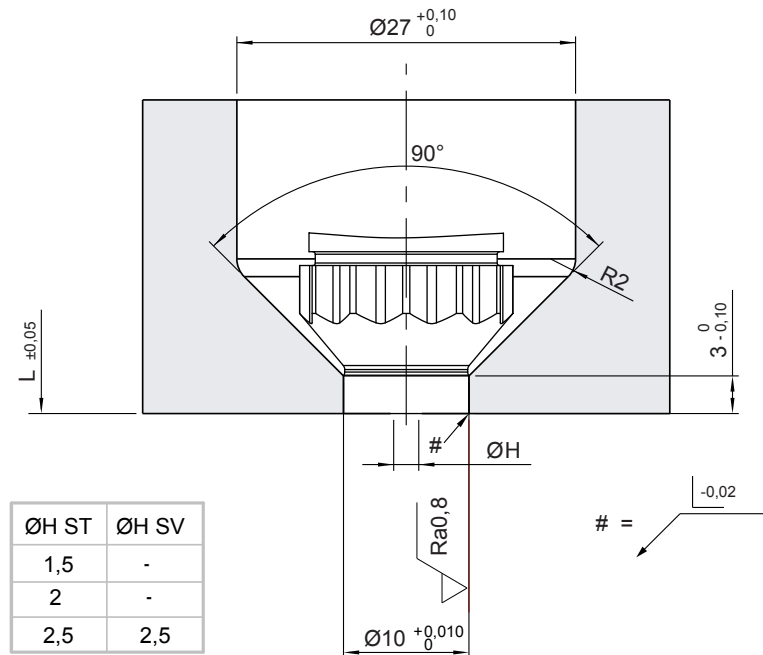
Not Available



Nozzle Tip Cutout Dimensions

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.

TTP, VSP, VTP Nozzle tip cutout dimensions

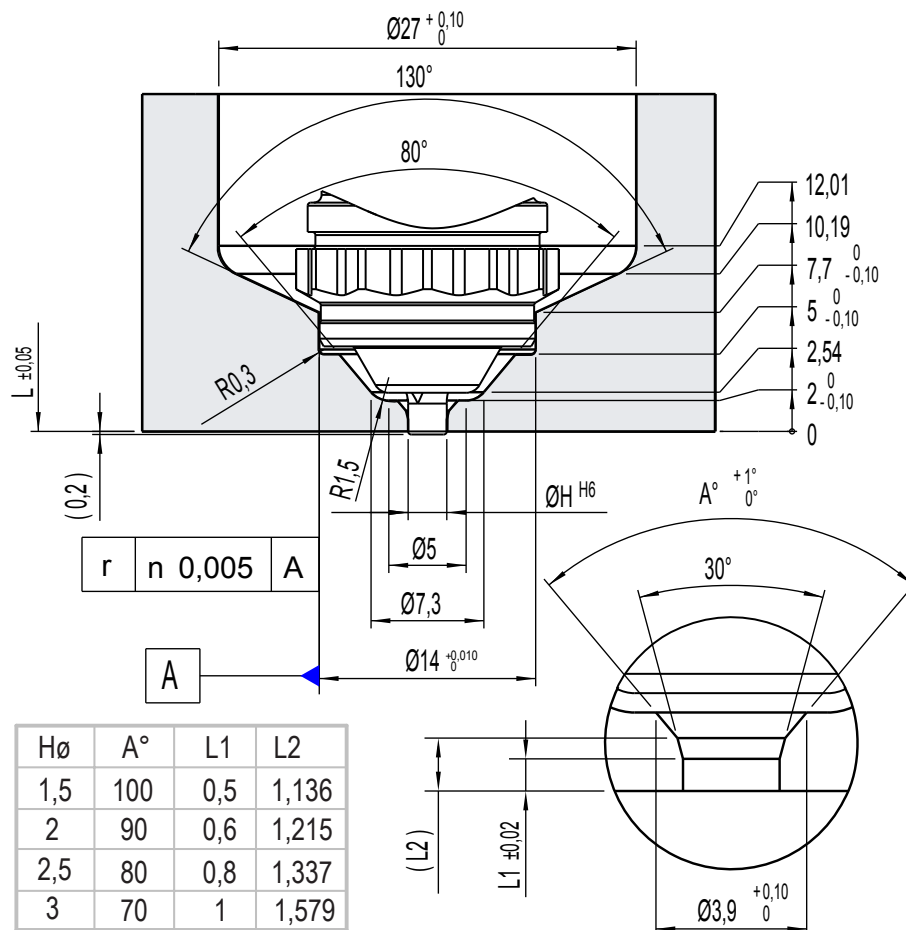




Nozzle Tip Cutout Dimensions

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.

VSW - Nozzle tip cutout dimensions



Notes:

- Cooling required around the nozzle tip, opposite to the nozzle tip
- The front of the nozzle tip must always be against plastic.

General tolerances according to DIN ISO 2768-mK

At the area of the nozzle gate replaceable, hardened (52 +2/-1 HRC) inserts are recommended by Synventive.

Radius / chamfer at the front of the valve pin shall not be removed.

Synventive recommends that the gate area geometry is manufactured by grinding and not EDM with a surface quality of $\sqrt{Ra\ 0.8}$.

To avoid a deformation at the gate the space to move freely has to be checked at hot condition.

For angled surface the valve pin may not be adjusted toward cavity.

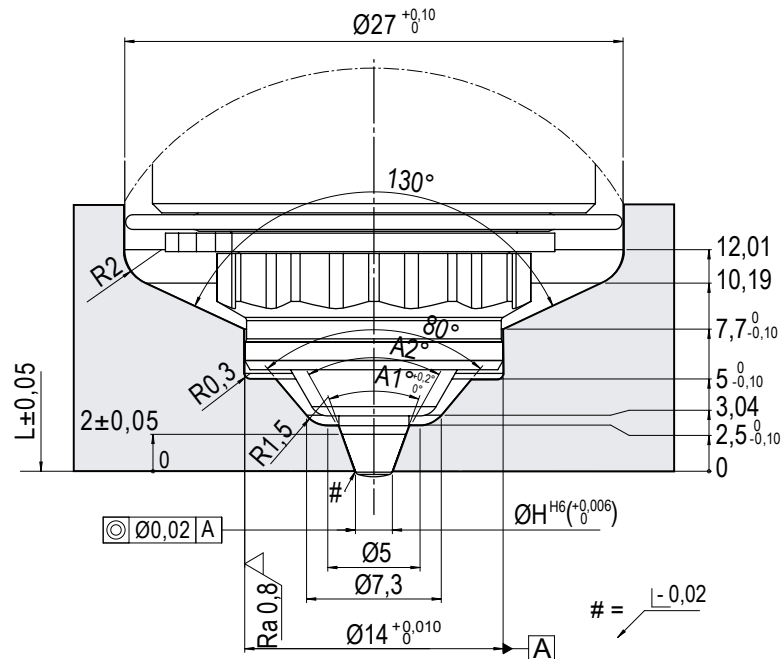
Ensure 0.5 mm sealing surface is maintained.



Nozzle Tip Cutout Dimensions

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.

VTW - Nozzle tip cutout dimensions



Hø	A1°	A2°
1,5	40	95
2	40	58
2,5	30	50

Notes:

- Cooling required around the nozzle tip, opposite to the nozzle tip
- The front of the nozzle tip must always be against plastic.

General tolerances according to DIN ISO 2768-mK

At the area of the nozzle gate replaceable, hardened (52 +2/-1 HRC) inserts are recommended by Synventive.

Radius / chamfer at the front of the valve pin shall not be removed.

Synventive recommends that the gate area geometry is manufactured by grinding and not EDM with a surface quality of $\nabla \sqrt{Ra 0,8}$.

To avoid a deformation at the gate the space to move freely has to be checked at hot condition.

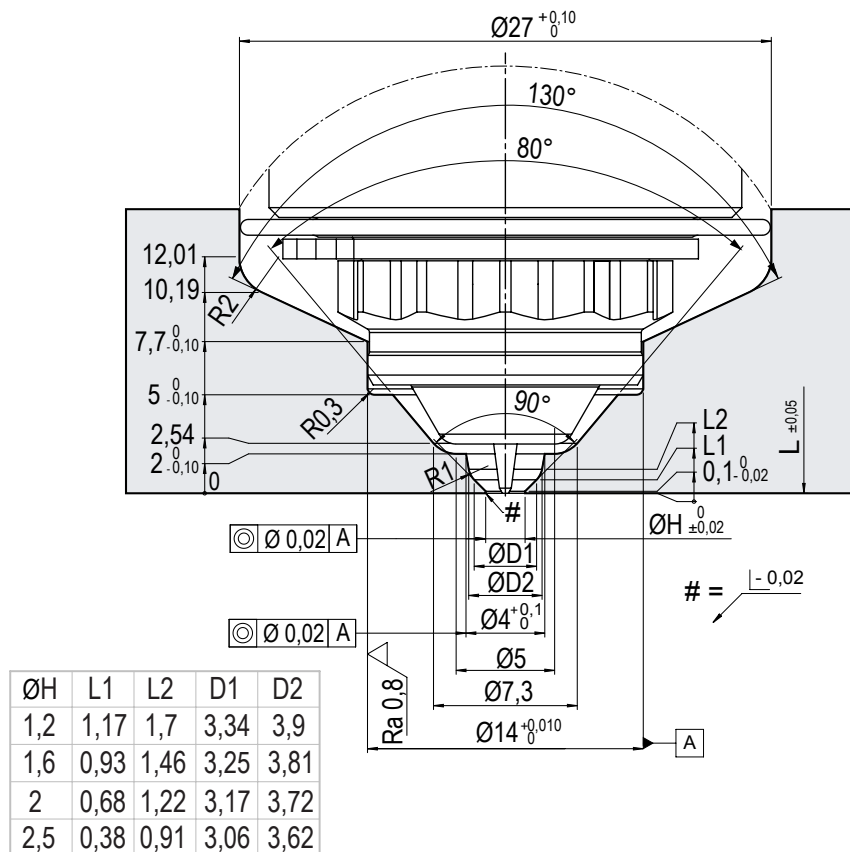
For angled surface the valve pin may not be adjusted toward cavity.

Ensure 0.5 mm sealing surface is maintained.

Nozzle Tip Cutout Dimensions

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.

TTW - Nozzle tip cutout dimensions



Notes:

- Cooling required around the nozzle tip, opposite to the nozzle tip
- The front of the nozzle tip must always be against plastic.

General tolerances according to DIN ISO 2768-mK

At the area of the nozzle gate replaceable, hardened (52 +2/-1 HRC) inserts are recommended by Synventive.

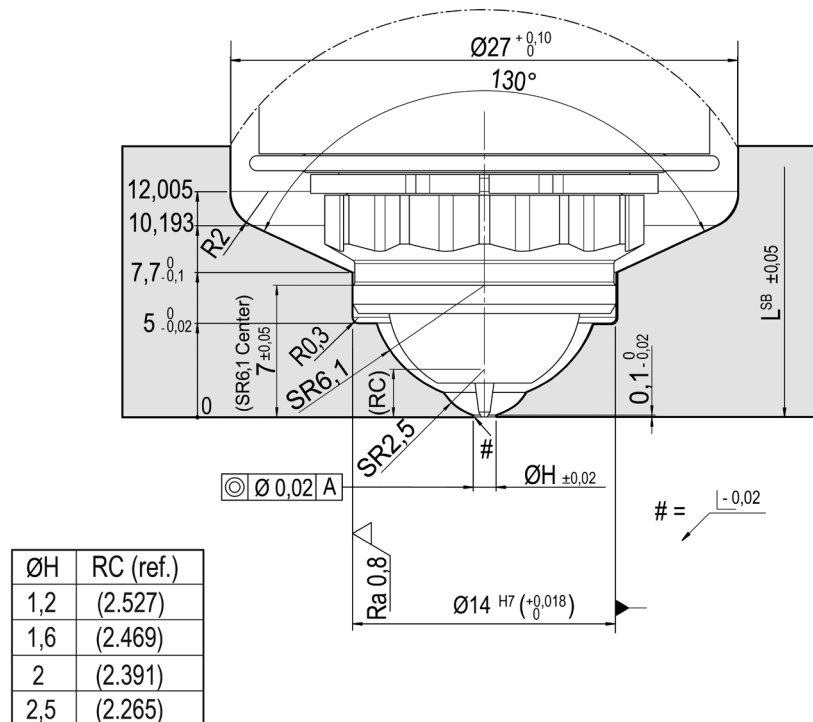
Synventive recommends that the gate area geometry is manufactured by grinding and not EDM with a surface quality of $\sqrt{Ra} 0.8$.



Nozzle Tip Cutout Dimensions

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.

TTW-C - Nozzle tip cutout dimensions



Notes:

- Cooling required around the nozzle tip, opposite to the nozzle tip
- The front of the nozzle tip must always be against plastic.

General tolerances according to DIN ISO 2768-mK

At the area of the nozzle gate replaceable, hardened ($52 \pm 2/-1$ HRC) inserts are recommended by Synventive.

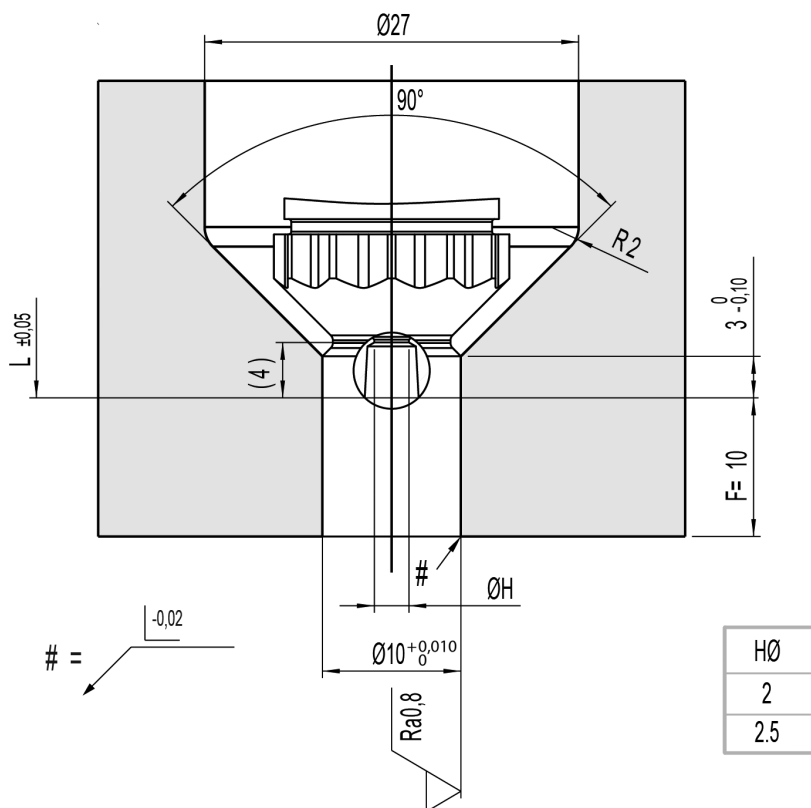
Synventive recommends that the gate area geometry is manufactured by grinding and not EDM with a surface quality of $\nabla \sqrt{Ra 0.8}$.



Nozzle Tip Cutout Dimensions

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.

TPK, TNK, TTK Series - Nozzle tip cutout dimensions



Dimensions for reference only. Reference system drawing for complete dimensions prior to machining gate detail in mold.

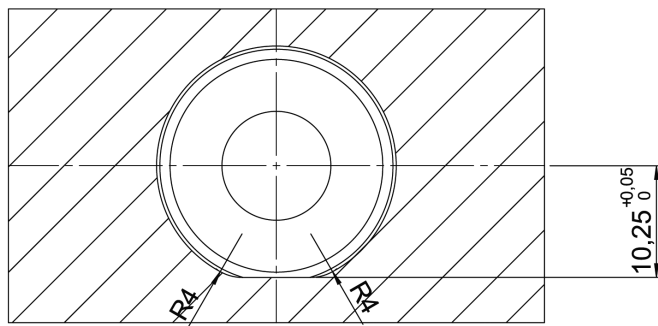
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Dimensions for reference only. Reference system drawing for complete dimensions prior to machining gate detail in mold.

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Dimensions for reference only. Reference system drawing for complete dimensions prior to machining gate detail in mold.

VSW, VTW, TTW - Wear Insert cutout dimensions



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