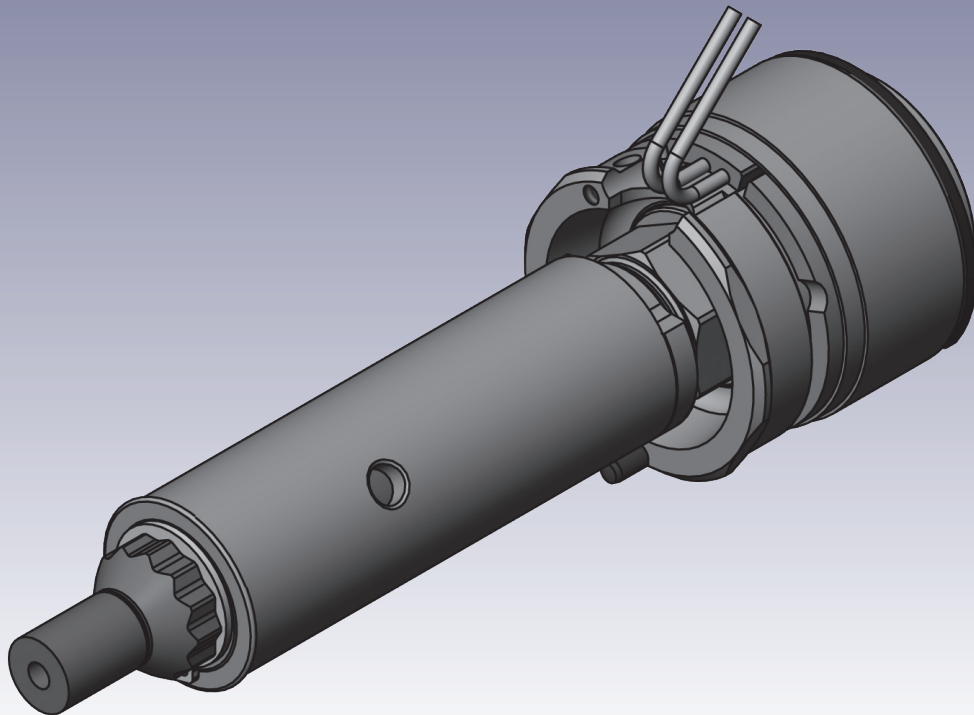


09S Product Catalog

S p r u e B u s h i n g s



Stabilize your Process _____

Synventive[™]
molding solutions
A business of BARNES



09S Sprue Bushing, open

Product Type

Hot runner nozzles in the 09 S range;

→ Nozzle size 09: Flow bore - Ø 9 mm

→ Nozzle style S: Sprue bushing

Different gate options can be implemented, see table

Application

For all usual thermoplastics Max. shot weight per noz

→ 250 (open, low viscosity)

Heating 09S

→ externally heated, 230 V AC

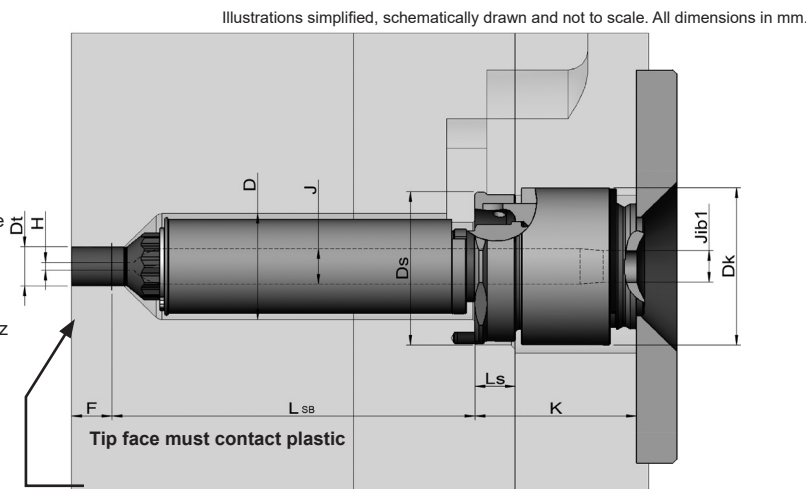
→ replaceable heater & thermocouple

→ Nozzle heater zones, 150...510 W

→ Head heater, 450 W
Thermocouples, EN 60584

Fe-CuNi 0 = Typ J;

NiCr-Ni = Typ K



Major Dimensions (mm)

J	Flow bore Ø	Ø 9 ¹⁾	K	Head height	40
Jib1	Flow bore Ø inlet bushing	Ø 5, Ø 8	Dk	Head Ø	Ø40
Lsb	Nozzle length	50...390 ²⁾	Ls	Depth of head centering	10
F	Tip Extension	see page 4	Ds	Diameter of head centering	Ø40
D	Cutout Ø	Ø27	R	Nozzle contact radius	0...40
Dt	Tip Ø	see page 4	AD	Nozzle contact angle	90°...120°
H	Gate Orifice	see page 4			

¹⁾ Standard flow bore value = Ø9

²⁾ Standard lengths shown, consult Synventive for custom lengths.

09S Nozzle Lengths

One control area (thermocouple)			Two control areas (thermocouple)				Head
LSB (mm)		Heater zone power (Watt)	LSB (mm)		Heater zone power ¹⁾ (Watt)		
Standard lengths	Custom lengths		Standard lengths	Custom lengths	Power 1	Power 2	
50	>50-<60	150 W	-	=>160-<170	150 W	130 W	450 W
60	>60-<70	180 W	170	>170-<180	150 W	140 W	450 W
70	>70-<80	210 W	-	=>180-<190	150 W	150 W	450 W
80	>80-<90	215 W	190	>190-<200	150 W	160 W	450 W
90	>90-<100	220 W	-	=>200-<210	150 W	170 W	450 W
100	>100-<110	225 W	210	>210-<220	150 W	180 W	450 W
110	>110-<120	230 W	-	=>220-<230	150 W	190 W	450 W
120	>120-<130	235 W	230	>230-<240	150 W	200 W	450 W
130	>130-<140	250 W	-	=>240-<250	150 W	210 W	450 W
-	=>140-<150	255 W	250	>250 -<260	150 W	220 W	450 W
150	>150-<160	260 W	-	=>260 -<270	150 W	230 W	450 W
			270	>270-<280	150 W	240 W	450 W
			-	=>280-<290	150 W	250 W	450 W
			290	>290-<300	150 W	260 W	450 W
			-	=>300-<310	150 W	270 W	450 W
			310	>310-<320	150 W	280 W	450 W
			-	=>320-<330	150 W	290 W	450 W
			330	>330-<340	150 W	300 W	450 W
			-	=>340-<350	150 W	310 W	450 W
			350	>350-<360	150 W	320 W	450 W
			-	=>360-<370	150 W	330 W	450 W
			370	>370-<380	150 W	340 W	450 W
			-	=>380-<390	150 W	350 W	450 W
			390	-	150 W	360 W	450 W

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



1. Cutout for the nozzle

LSB Nozzle length

General tolerances: DIN ISO 2768-mK

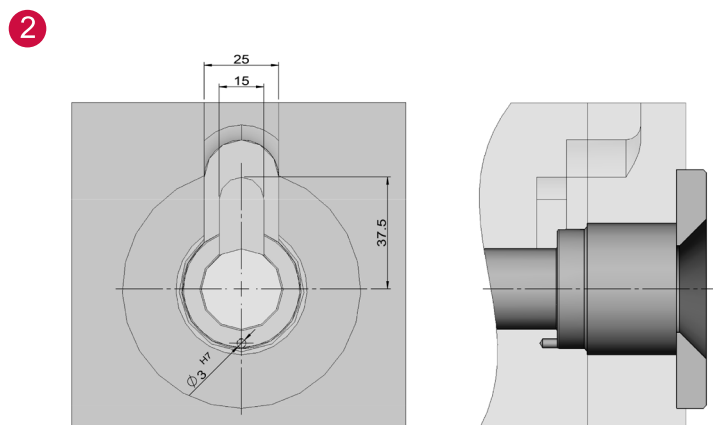
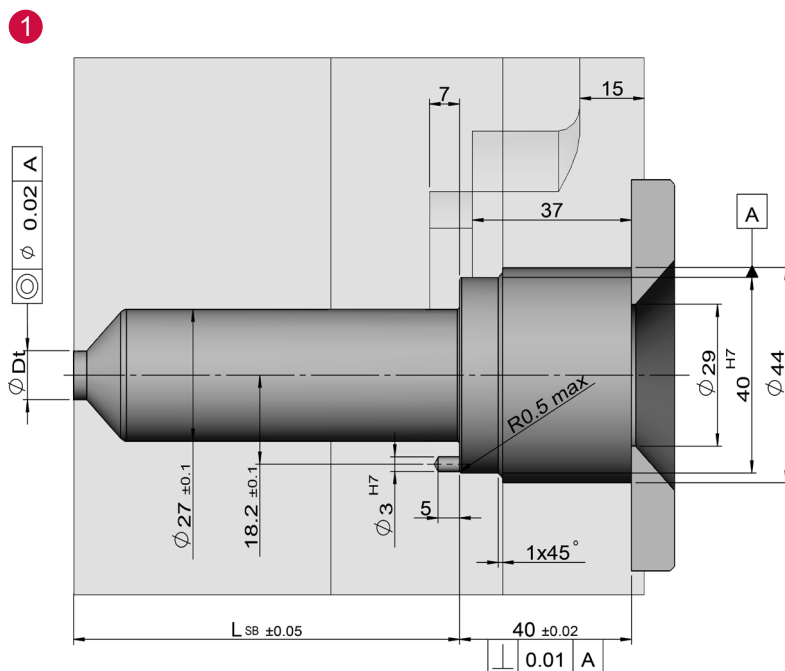
Surfaces: $\sqrt{Ra\ 3.2}$ ($\sqrt{Ra\ 1.6}$ $\sqrt{Ra\ 0.8}$)

Values of the dimension LSB can be found in the data sheet on page 2.

2. Cutout for connections

- Electrical power
- Thermocouple

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



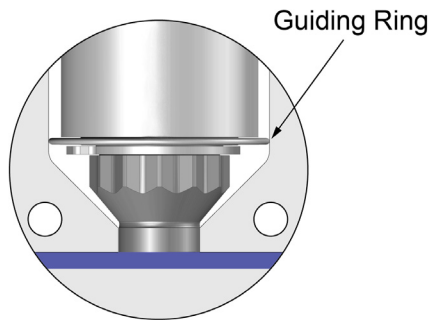


Optional Features

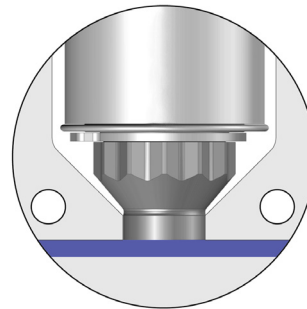
Illustrations simplified, schematically drawn and not to scale. All dimensions in mm.

Nozzle Pre-Guiding

Configuration with Nozzle Pre-Guiding



Configuration without Nozzle Pre-Guiding

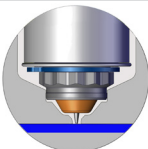




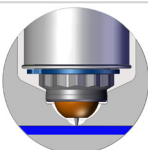
Nozzle Tip Styles

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

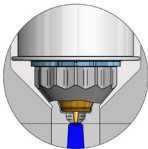
TTW Thermal Gate – Torpedo - Blind

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	✓	✓	✓	✓

TTP Thermal Gate – Torpedo - Plunged Through

Tip Style		Description	Dt = Ø10 F = 10		
			H=1.5	H=2.0	H=2.5
	TTP	Standard	✓	✓	✓

✓ Preferred

(✓) Available

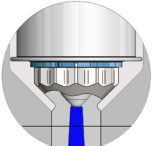
✗ Not Available



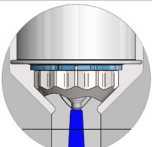
Nozzle Tip Styles

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

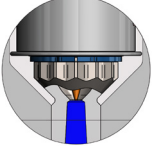
TPK Thermal Gate – Full Flow - Plunged Through

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

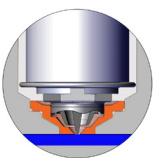
✗ Not Available



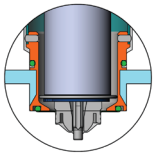
Wear Insert / Cooling Bushing

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

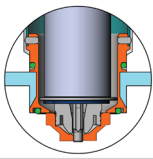
Wear Insert

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

Cooling Bushing

Part	TTW	TTP	TPK	TNK	TTK
	✓	✓	✓	✓	✓
NC Nozzle Cooling Bushing for Nozzle Tips, Blind and Plunged Through					

Wear Insert and Cooling Bushing

Part	TTW
	✓
NC + WI Wear Insert combined with Nozzle Cooling Bushing for Nozzle Tip Blind	



Preferred



Available



Not Available

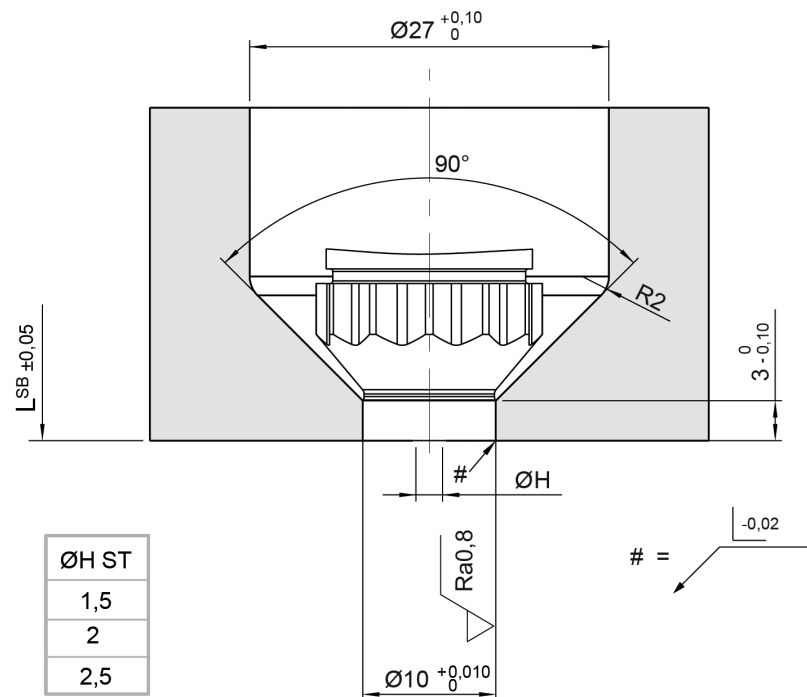


Nozzle Tip Cutout Dimensions

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 Nozzle tip cutout dimensions

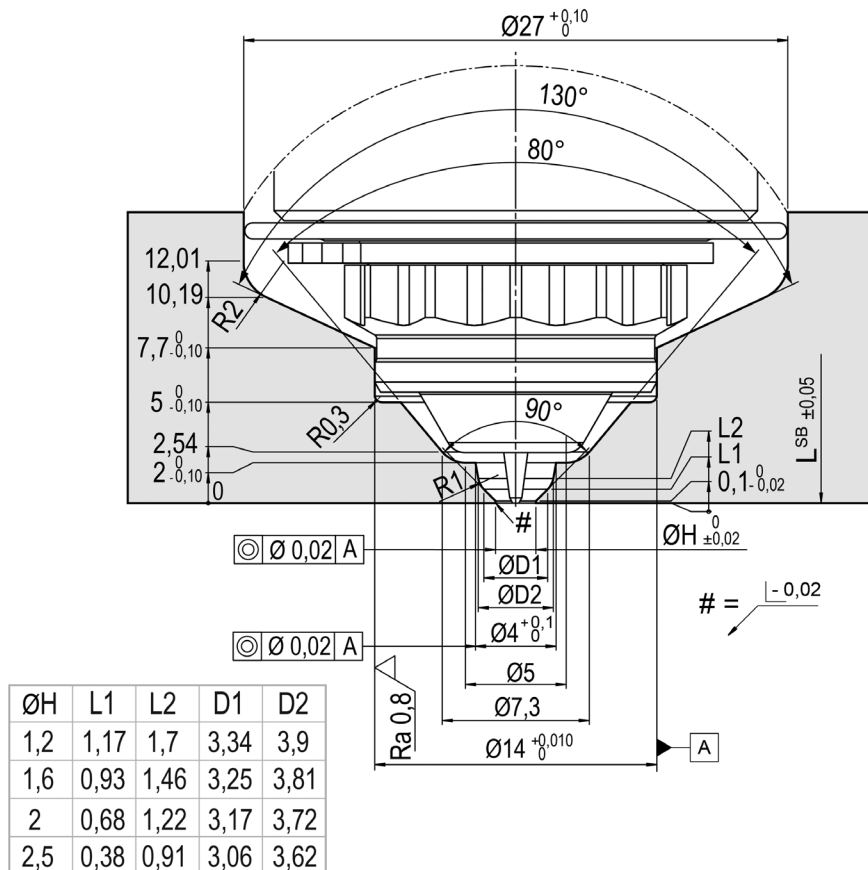


Nozzle Tip Cutout Dimensions

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.

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.

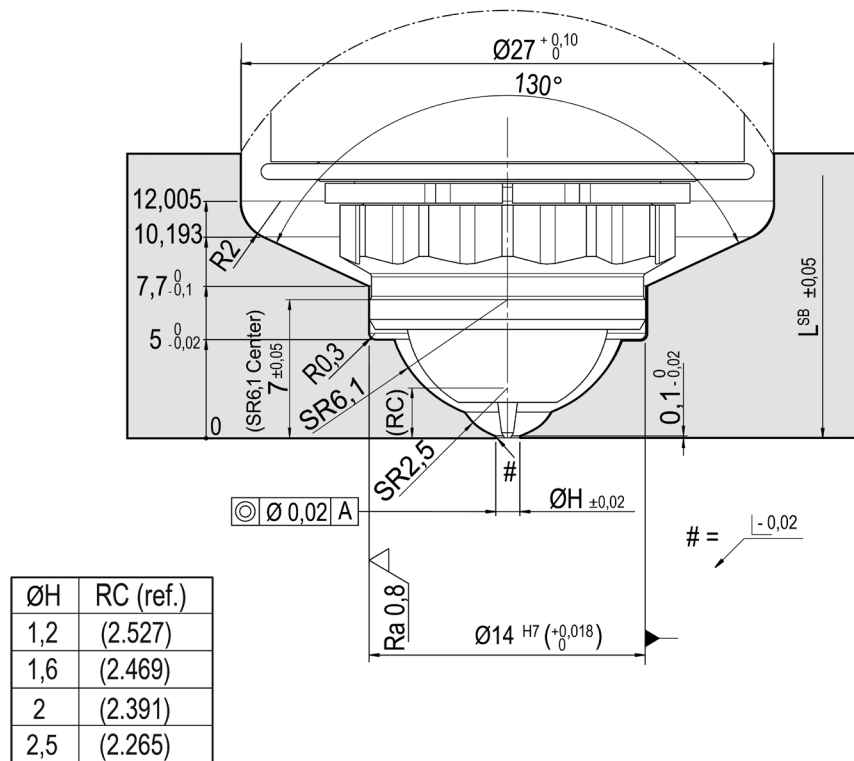
Synventive recommends that the gate area geometry is manufactured by grinding and not EDM with a surface quality of $\sqrt{Ra} 0.8$.



Nozzle Tip Cutout Dimensions

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 +2/-1 HRC) inserts are recommended by Synventive.

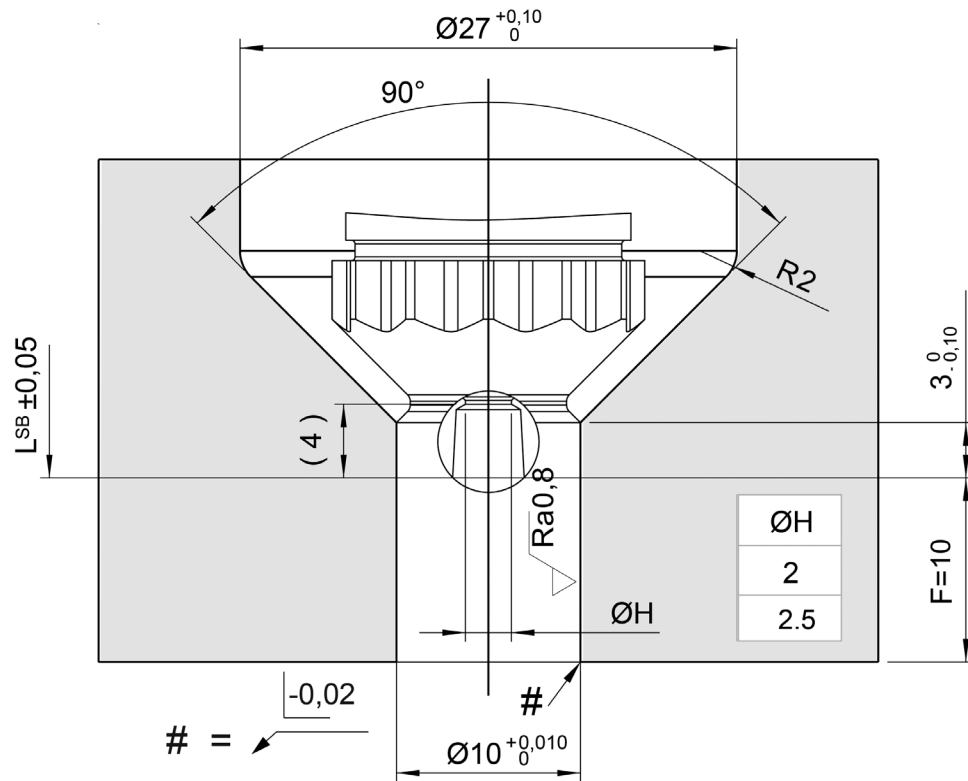
Synventive recommends that the gate area geometry is manufactured by grinding and not EDM with a surface quality of $\sqrt{Ra 0.8}$.

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.

KP, KN, KT Series - 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.

Master Language is English

CAT-01-0080_EN-REV13

For a specific application, please consult Synventive

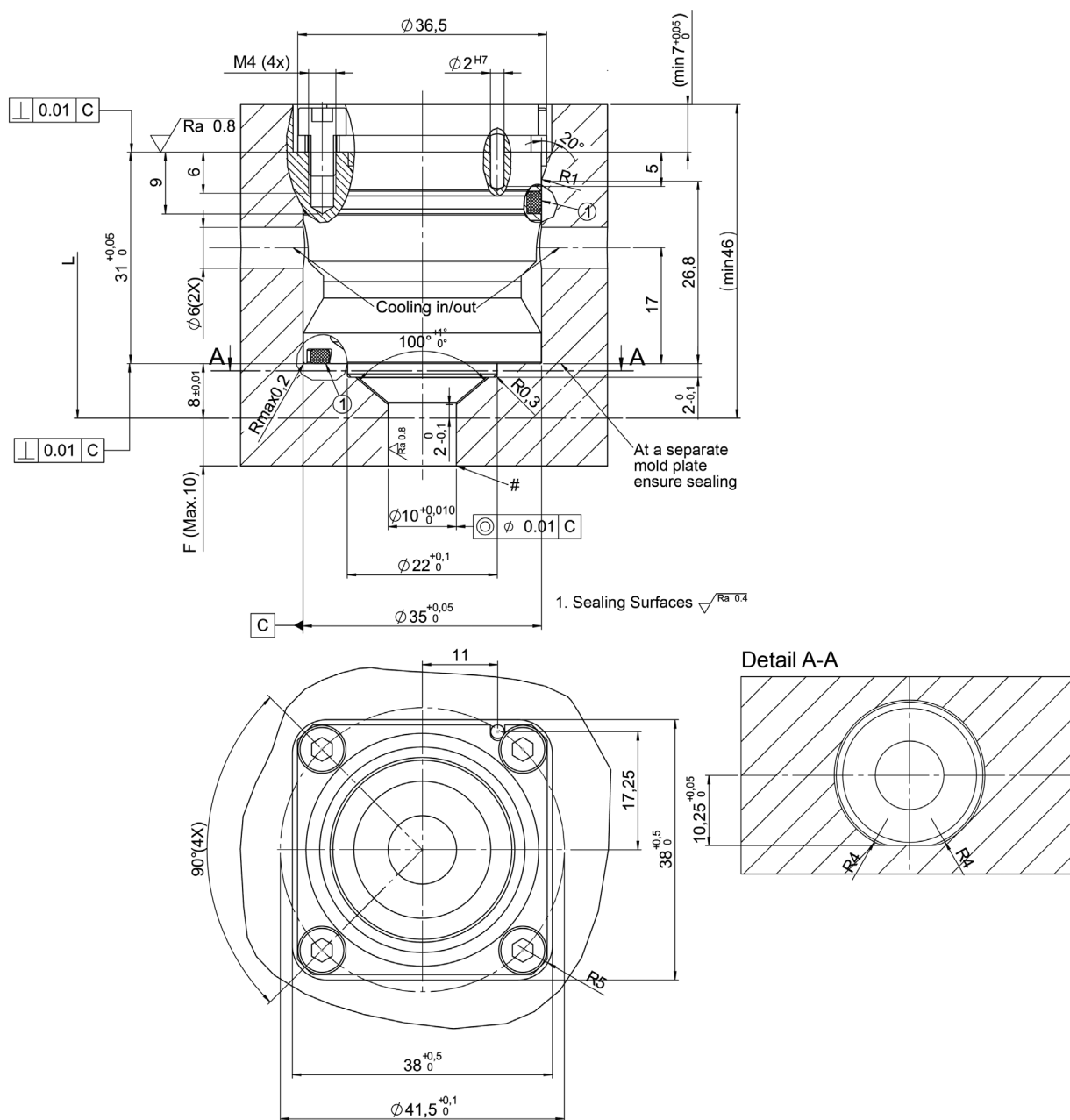


Cooling Bushing with Wear Insert Cutout Dimensions

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 - Cooling Bushing with Wear Insert Cutout Dimensions



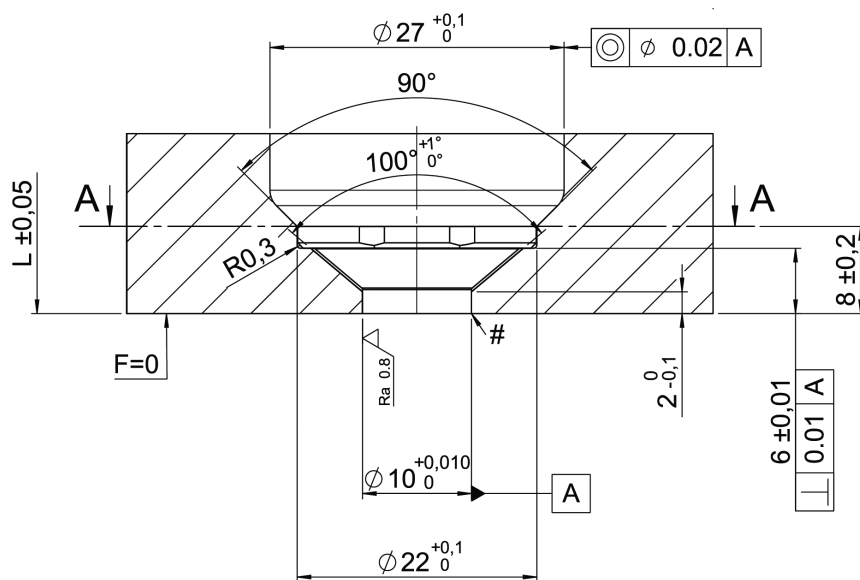


Wear Insert Cutout Dimensions

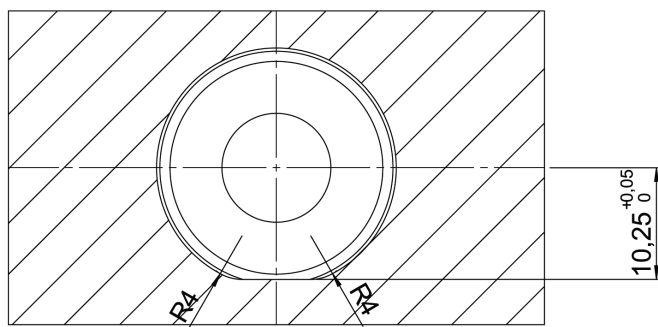
Illustrations simplified, schematically drawn and not to scale. All dimensions in mm.

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

TTW - Wear Insert cutout dimensions



Detail A-A



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