.750" Integrally Heated Hot Sprue Bushing Technical Specifications

Sprue Bushing User Guide

All specifications are subject to change without notification.

Integrally Heated Sprue Bushings

The Integrally Heated Sprue Bushing is an exclusive small to medium volume bushing with the ability to process a wide range of resins. The streamlined flow channel terminates in a reverse taper gate, providing minimum pressure loss and allowing for rapid gate freeze. The formation of a small gate stub on the part or runner results in a machine hold-time reduction, with no increase in sink marks on the part.

The superior heat transfer ability of the Heated Sprue Bushing can be attributed to it's integrally heated design. To optimize processing conditions for all thermoplastics, a replaceable thermocouple is strategically located close to the flow channel.

The Integrally Heated Sprue Bushing is available in three flow diameters, two head styles and two gate styles to suit a broad range of applications.

Gating Options for Sprue Bushings

Sprue Gate –

Suitable for most applications, the Sprue gate is provided as standard on the Heated Sprue Bushing. **Please note that this style gate is not intended for machining.** The press fit areas are held to +/- .0005"

Extra Stock Sprue Gate –

The Extra Stock Sprue gate is available for applications requiring machining of the gate area for runner profiles, part contours, or adjustment of the bushing height. The .750" diameter and 1.00" diameter bushings have .500" of extra stock, while the 1.500" diameter bushing has .750" of extra stock. The press fit areas are held to +/- .0005"

Head Options for Sprue Bushings

.500" Radius* –

Provided with a 0.500" radius to mate in 0.500" radius machine nozzles. Reinforced contact area for improved strength and heat transfer.

.750" Radius* –

Provided with a 0.750" radius to mate in 0.750" radius machine nozzles. Reinforced contact area for improved strength and heat transfer.

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.750" Series

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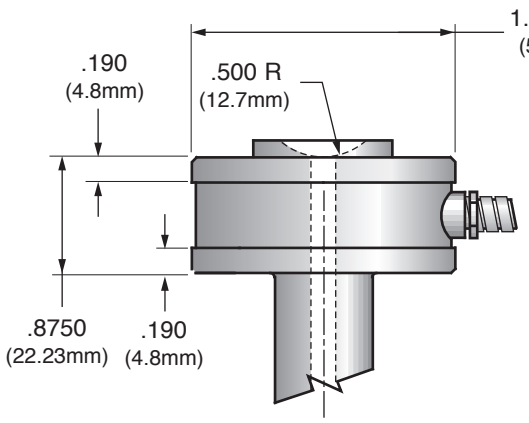
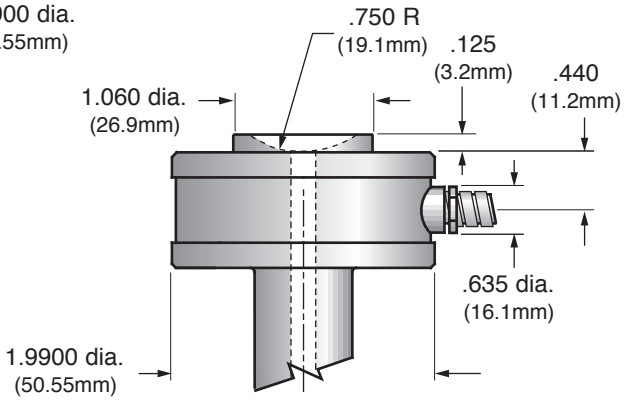
Head Options

.500 Radius Style

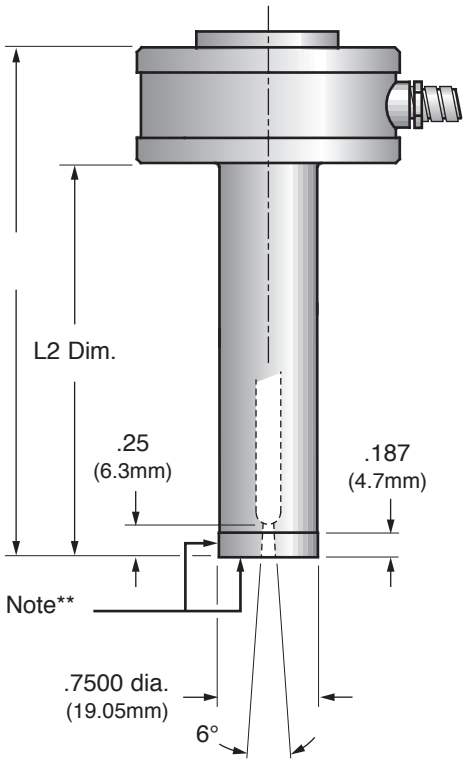


.750 Radius Style

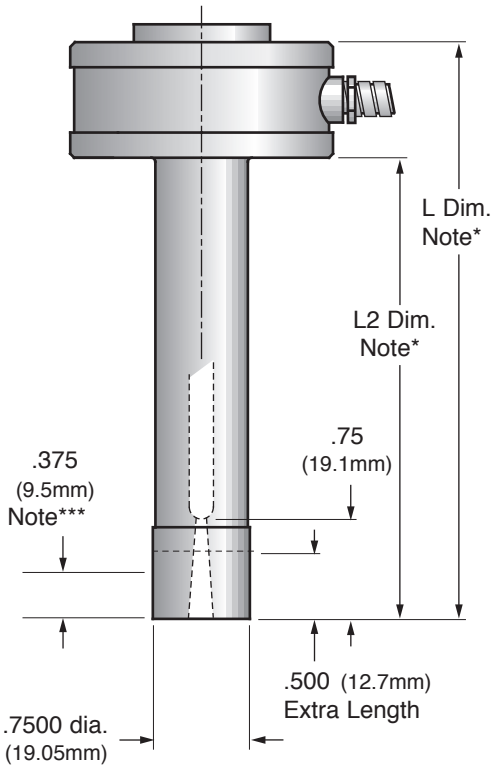


Gating Options / Bushing Dimensions

Sprue Gate



Extra Stock Sprue Gate



* Dimensions include extra length.
** This surface cannot be machined, modified or altered.
*** Maximum machining stock, only this area can be machined.

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.750" Series Ordering Charts

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Chart A


Gate Style	L Dim.		L2 Dim.		.500 Radius Head	.750 Radius Head	Watts	Thermocouple
Sprue 	2.375"	(60.3)	1.500"	(38.1)	SB030000	SB030001	315	MT020020
	2.875"	(73.0)	2.000"	(50.8)	SB030008	SB030009	370	MT020020
	3.375"	(85.7)	2.500"	(63.5)	SB030016	SB030017	425	MT020020
	3.875"	(98.4)	3.000"	(76.2)	SB030024	SB030025	480	MT020020
	4.375"	(111.1)	3.500"	(88.9)	SB030032	SB030033	535	MT020021
Gate Style	L Dim.		L2 Dim.		.500 Radius Head	.750 Radius Head	Watts	Thermocouple
Extra Stock Sprue 	2.875"	(73.0)	2.000"	(50.8)	SB030004	SB030005	315	MT020020
	3.375"	(85.7)	2.500"	(63.5)	SB030012	SB030013	370	MT020020
	3.875"	(98.4)	3.000"	(76.2)	SB030020	SB030021	425	MT020020
	4."	(111.1)	3.500"	(88.9)	SB030028	SB030029	480	MT020020
	4.875"	(123.8)	4.000"	(101.6)	SB030036	SB030037	535	MT020021

Dimensions are in inches. Millimeters are in parentheses.

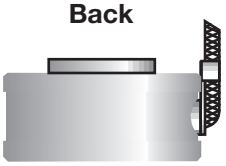
Lead Exit Options

Lead Exit	Right	Front	Back
Braid	•	•	•
Armor	*	N/A	N/A

Right (Standard)

Front

Back



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.750" Series Bore & Gate Dimensions

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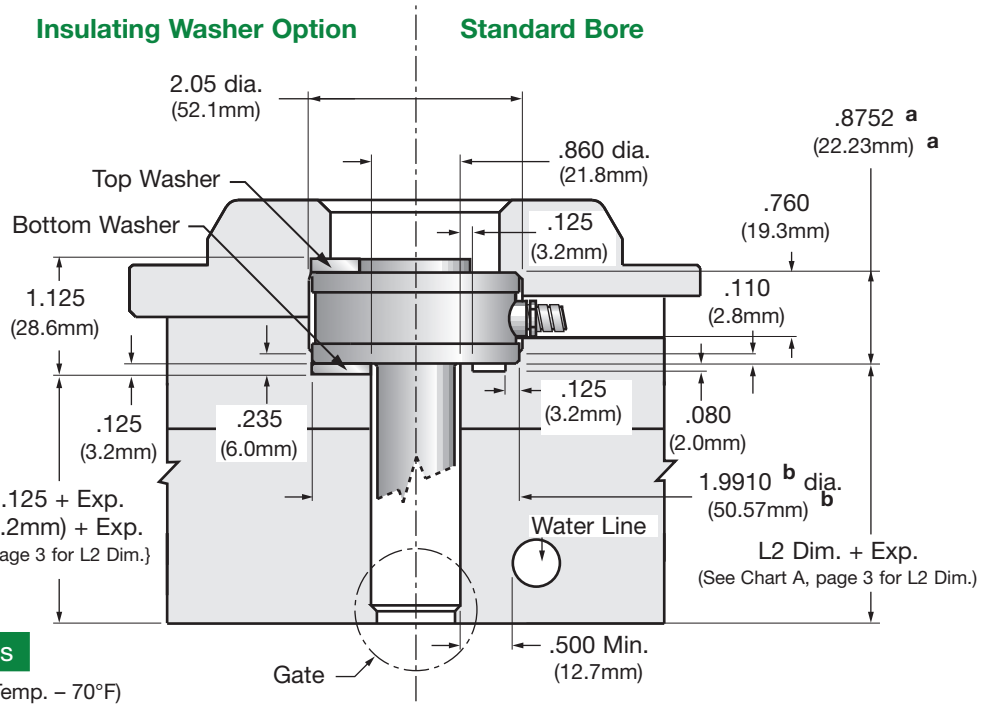
Insulating Washer Ordering

	Top	Bottom
Part#	MAX10015	MAX10027
O.D.	1.99 (50.5mm)	1.99 (50.5mm)
I.D.	1.07 (27.2mm)	.810 (20.6mm)
Thickness	.125 (3.2mm)	.125 (3.2mm)

Note: Insulating Washers are not required, but are recommended for high temperature applications.

Insulating Washer Option — Standard Bore



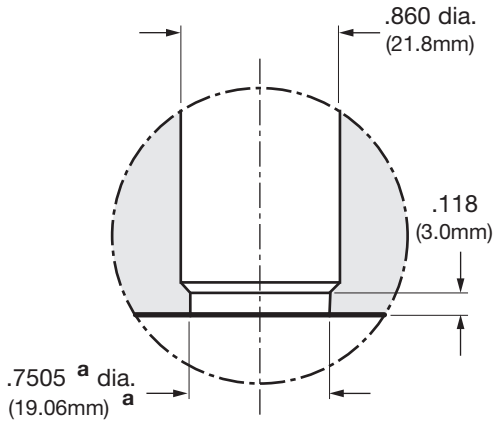
Thermal Expansion (Exp.) Formulas

Exp. in = L2 in. x 6.88 x 10^{-6} x (Processing Temp. – 70°F)

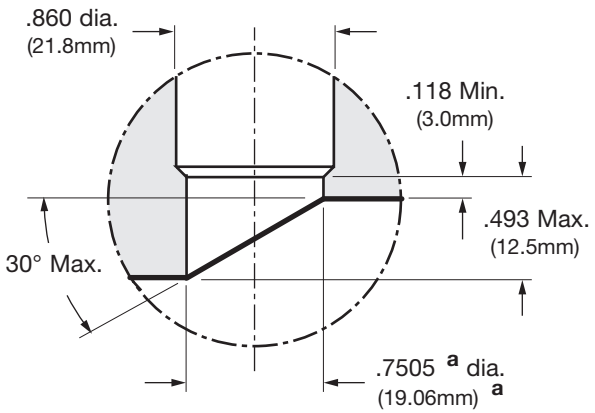
Exp. mm = L2 mm x 13 x 10^{-6} x (Processing Temp. – 21°C)

Ref: 10^{-6} = 0.000001

Sprue Gate



Extra Stock Sprue Gate



Bore & Gate Tolerances

Tol. "a" Chart	Tol. "b" Chart
in: $^{+\ 0.0005}_{-\ 0}$	in: $^{+\ 0.0010}_{-\ 0}$
mm: $^{+\ 0.01}_{-\ 0}$	mm: $^{+\ 0.02}_{-\ 0}$

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.750" Series Engineering Charts

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Chart 1

.750" Series Resin Compatibility Chart

Gating Options	Commodity Resin	Engineering Resin	Glass-Filled Resin
Sprue	●	●	●
Extra Stock Sprue	●	●	●

Reference: ● = Recommended

Chart 2

.750" Series Gate Diameters

Gating Options	Resin Viscosity High	Medium	Low
Sprue	.080" to .125"* Max. (2mm to 3.2mm* Max.)	.080" to .125"* Max. (2mm to 3.2mm* Max.)	.080" to .125"* Max. (2mm to 3.2mm* Max.)
Extra Stock Sprue	.080" to .125"* Max. (2mm to 3.2mm* Max.)	.080" to .125"* Max. (2mm to 3.2mm* Max.)	.080" to .125"* Max. (2mm to 3.2mm* Max.)

Reference: High Viscosity = Melt Flow (0.02 – 6); Medium Viscosity = Melt Flow (7 – 16); Low Viscosity = Melt Flow (16 – up). The values expressed in grams are for reference purposes only. Part dimensions, wall thickness, mold condition, and molding parameters must also be considered.

*** Re-machine gate diameter, if necessary, for larger shot weights. Maintain gate angle and remove all machine marks.**

Chart 3

.750" Series Maximum Shot Weights in Grams (0.080" Gate)

Gating Options	Resin Viscosity High	Medium	Low
Sprue	50g	150g	300g
Extra Stock Sprue	50g	150g	300g

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