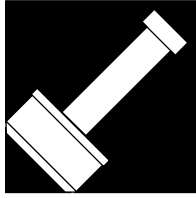


### Integrally Heated Sprue Bushings

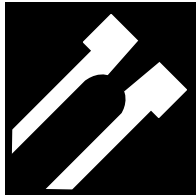


The Integrally Heated Sprue Bushing is an exclusive medium to large volume bushing with the ability to process a wide range of resins. The streamlined flow channel terminates in a reverse taper gate, providing minimum pressure loss and allowing for rapid gate freeze. The formation of a small gate stub 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 its integrally heated design. To optimize processing conditions for all thermoplastics, a replaceable thermocouple is strategically located close to the flow channel.

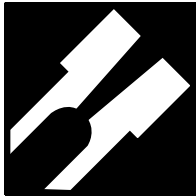
The Integrally Heated Sprue Bushing is available in three flow diameters, two head styles and three gate styles to suit a broad range of applications.

### Gating Options for Sprue Bushings



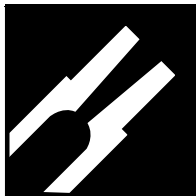
#### Sprue Gate –

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" (See engineering charts on pages 5, 9 and 13).



#### Extra Stock Sprue Gate –

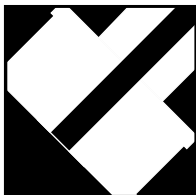
The Extra Stock Sprue gate is available for applications requiring machining of the gate area for runner profiles, part contours, or adjustment of the bushing height. The .750" diameter and 1.00" diameter bushings have .500" of extra stock, while the 1.500" diameter bushing has .750" of extra stock. The press fit areas are held to +/- .0005" (See engineering charts on pages 5, 9 and 13).



#### Eurostyle Sprue Gate –

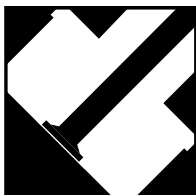
Originally designed for the European market, the Eurostyle Sprue Gate is similar to the extra stock gate except that it also has a reduced gate diameter to allow gating in more restricted areas. This design also minimizes heat loss at the press fit area. The press fit areas are held to +/- .0005" (See engineering charts on pages 5, 9 and 13).

### Head Options for Sprue Bushings



#### Flat Style –

Provides a seal of mating surfaces while allowing for lateral expansion between the manifold and bushing.



#### O'Ring Style –

When retrofitting a Tutco Heated Sprue Bushing to an existing manifold, the O'Ring style provides an optimal means of sealing mating surfaces.

**Note: Must be replaced each time the system is disassembled.**

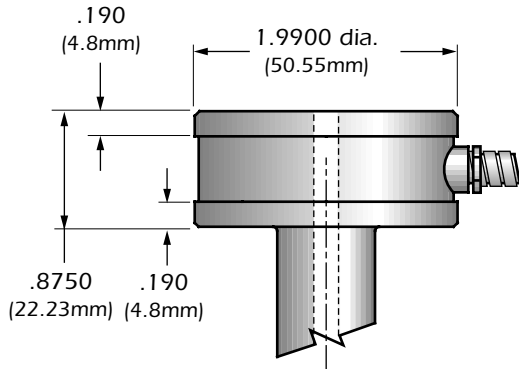
# Sprue Bushing Technical Specifications

## .750" Series

All specifications are subject to change without notification.

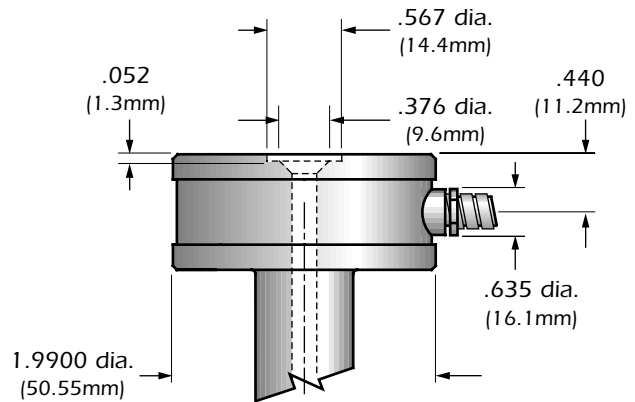
### Head Options

#### Flat Head Style



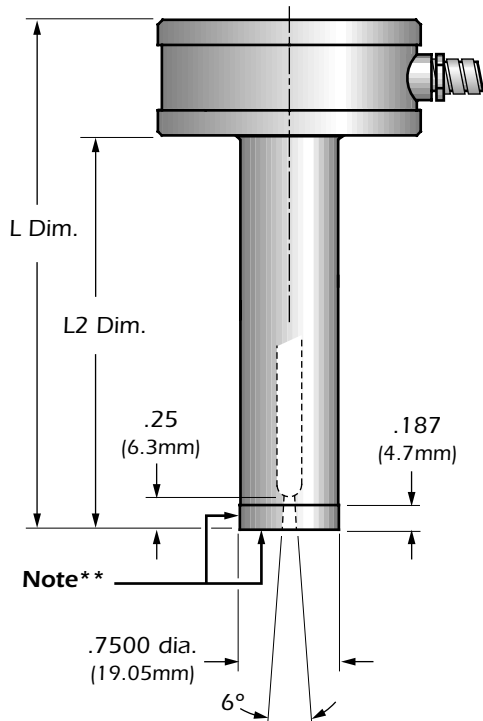
#### O'Ring Head Style

(See page 14 for O'Ring Details)

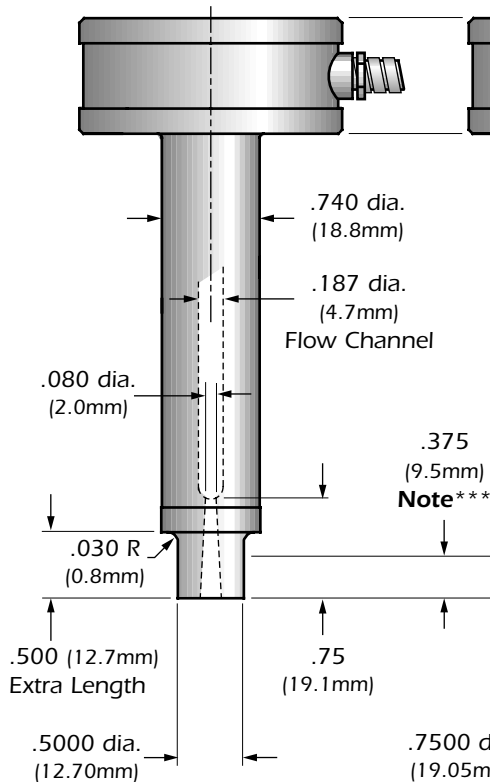


### Gating Options / Bushing Dimensions

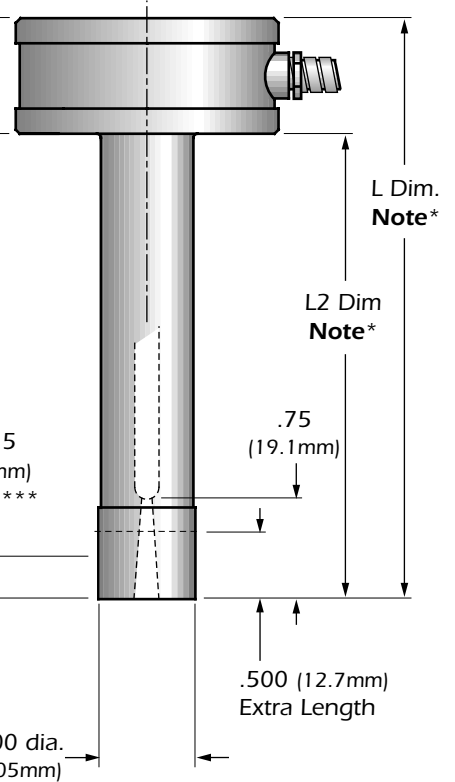
#### Sprue Gate



#### Eurostyle 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.

Dimensions are in inches. Millimeters are in parentheses.


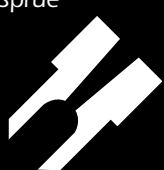

Note: For additional gate dimensions see page 4.

# Sprue Bushing Technical Specifications

## .750" Series Ordering Charts

All specifications are subject to change without notification.

### Chart A

Gate Style	L Dim.		L2 Dim.		Flat Style Head	O'Ring Style Head	Watts	Thermocouple
 Sprue	2.375"	(60.3)	1.500"	(38.1)	SB030002	SB030003	315	MT020020
	2.875"	(73.0)	2.000"	(50.8)	SB030010	SB030011	370	MT020020
	3.375"	(85.7)	2.500"	(63.5)	SB030018	SB030019	425	MT020020
	3.875"	(98.4)	3.000"	(76.2)	SB030026	SB030027	480	MT020020
	4.375"	(111.1)	3.500"	(88.9)	SB030034	SB030035	535	MT020021
 Extra Stock Sprue	2.875"	(73.0)	2.000"	(50.8)	SB030006	SB030007	315	MT020020
	3.375"	(85.7)	2.500"	(63.5)	SB030014	SB030015	370	MT020020
	3.875"	(98.4)	3.000"	(76.2)	SB030022	SB030023	425	MT020020
	4.375"	(111.1)	3.500"	(88.9)	SB030030	SB030031	480	MT020020
	4.875"	(123.8)	4.000"	(101.6)	SB030038	SB030039	535	MT020021
 Eurostyle Sprue	2.875"	(73.0)	2.000"	(50.8)	SB040063	SB040064	315	MT020020
	3.375"	(85.7)	2.500"	(63.5)	SB040067	SB040068	370	MT020020
	3.875"	(98.4)	3.000"	(76.2)	SB040071	SB040072	425	MT020020
	4.375"	(111.1)	3.500"	(88.9)	SB040075	SB040076	480	MT020020
	4.875"	(123.8)	4.000"	(101.6)	SB040079	SB040080	535	MT020021

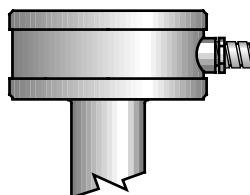
Dimensions are in inches. Millimeters are in parentheses.

### Lead Exit Options

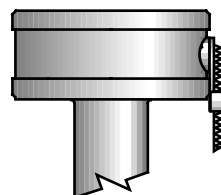
Lead Exit	Right	Front	Back
Braid	▪	▪	▪
Armor	*	N/A	N/A

\* Standard Lead exit –  
60" (1.52m) teflon wrap - 600 Volt leads;  
right angle lead exit; and 6" (15.2cm)  
stainless steel, square-lock armor cable.

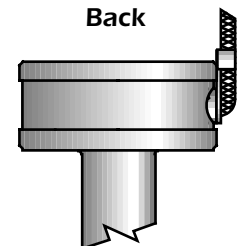
Right (Standard)



Front



Back



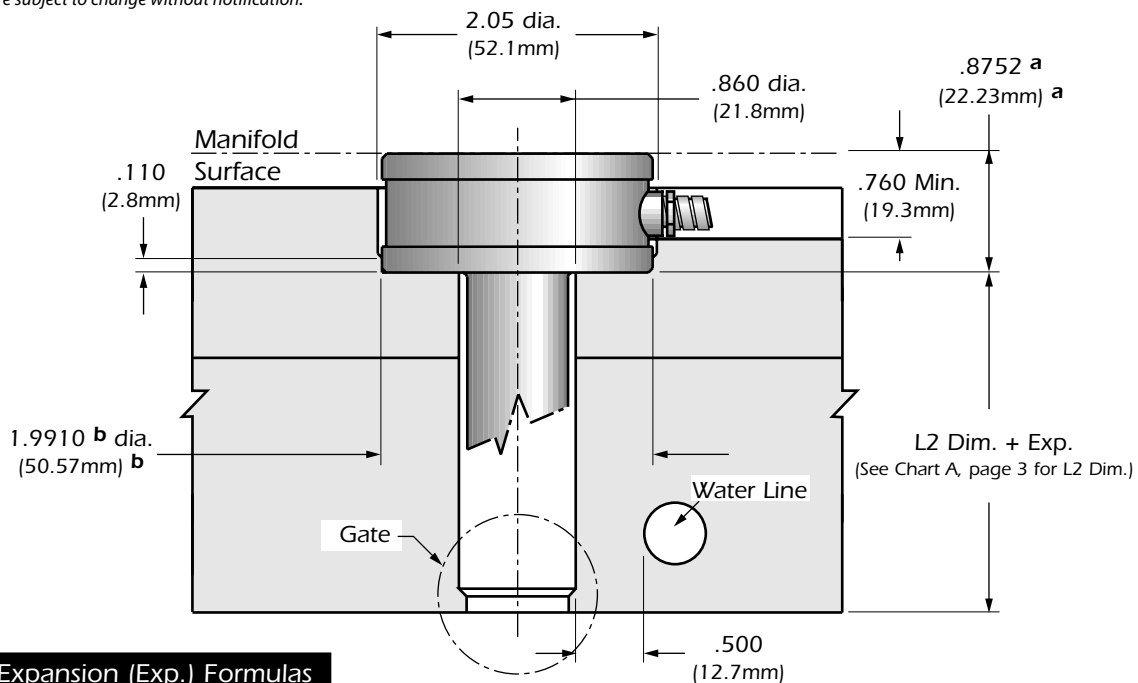
MANIFOLD APPLICATIONS

# Sprue Bushing Technical Specifications

MANIFOLD APPLICATIONS

## .750" Series Bore & Gate Dimensions

All specifications are subject to change without notification.



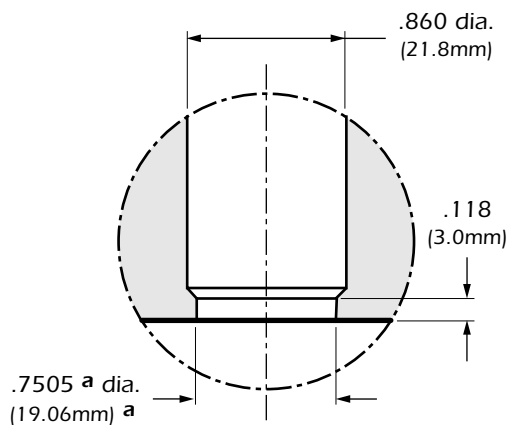
### Thermal Expansion (Exp.) Formulas

$$\text{Exp. in} = \text{L2 in.} \times 6.88 \times 10^{-6} \times (\text{Processing Temp.} - 70^{\circ}\text{F})$$

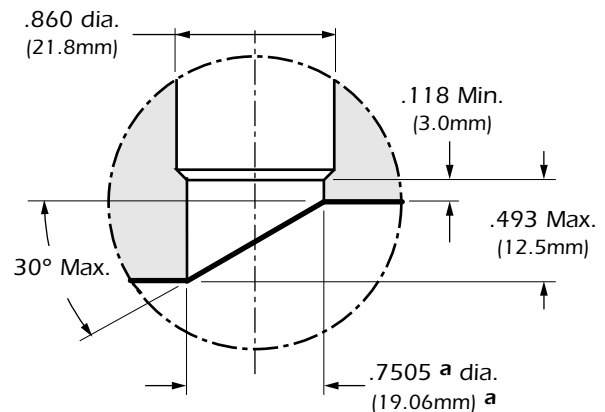
$$\text{Exp. mm} = \text{L2 mm} \times 13 \times 10^{-6} \times (\text{Processing Temp.} - 21^{\circ}\text{C})$$

$$\text{Ref: } 10^{-6} = 0.000001$$

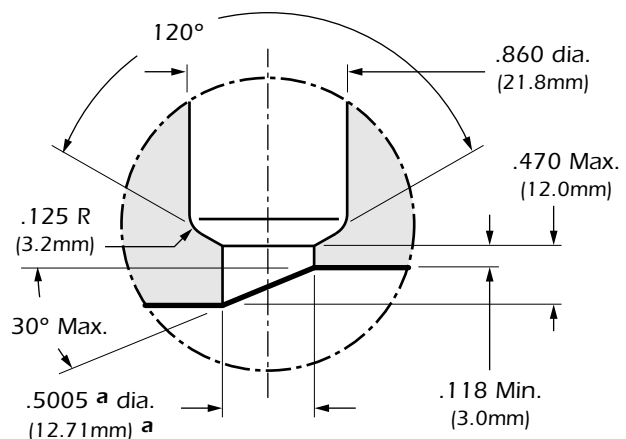
### Sprue Gate



### Extra Stock Sprue Gate



### Eurostyle Sprue Gate



### Bore & Gate Tolerances

#### Tol. "a" Chart

$$\frac{\text{in.} + 0.0005}{-0}$$

$$\frac{\text{mm.} + 0.01}{-0}$$

#### Tol. "b" Chart

$$\frac{\text{in.} + 0.0010}{-0}$$

$$\frac{\text{mm.} + 0.02}{-0}$$

4

Dimensions are in inches. Millimeters are in parentheses.

# Sprue Bushing Technical Specifications

## .750" Series Engineering Charts

All specifications are subject to change without notification.

MANIFOLD APPLICATIONS

### Chart 1

.750" Series Resin Compatibility Chart			
Gating Options	Commodity Resin	Engineering Resin	Glass-Filled Resin
Sprue	●	●	●
Extra Stock Sprue	●	●	●
Eurostyle 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.)
Eurostyle 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
Eurostyle Sprue	50g	150g	300g

Consult Tutco Hot Runner Dept. when changing Max. shot weight.

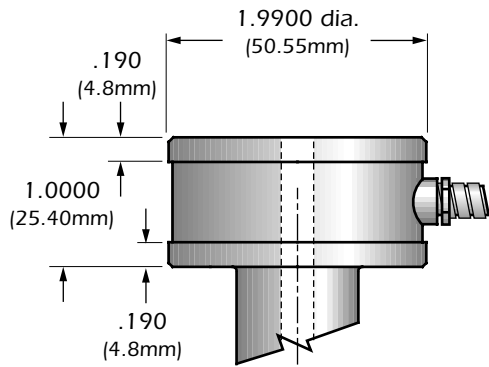
# Sprue Bushing Technical Specifications

## 1.000" Series

All specifications are subject to change without notification.

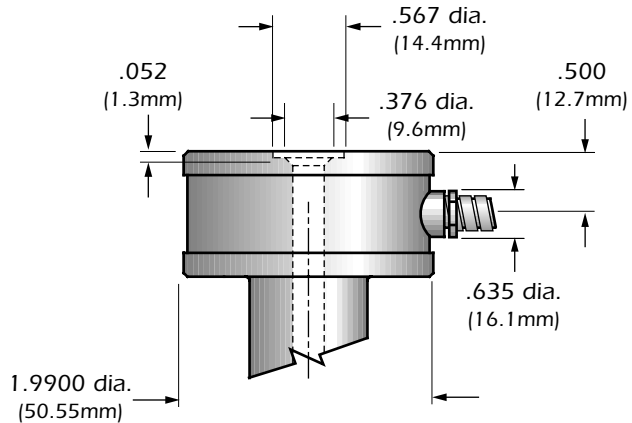
### Head Options

Flat Head Style



O'Ring Head Style

(See page 14 for O'Ring Details)

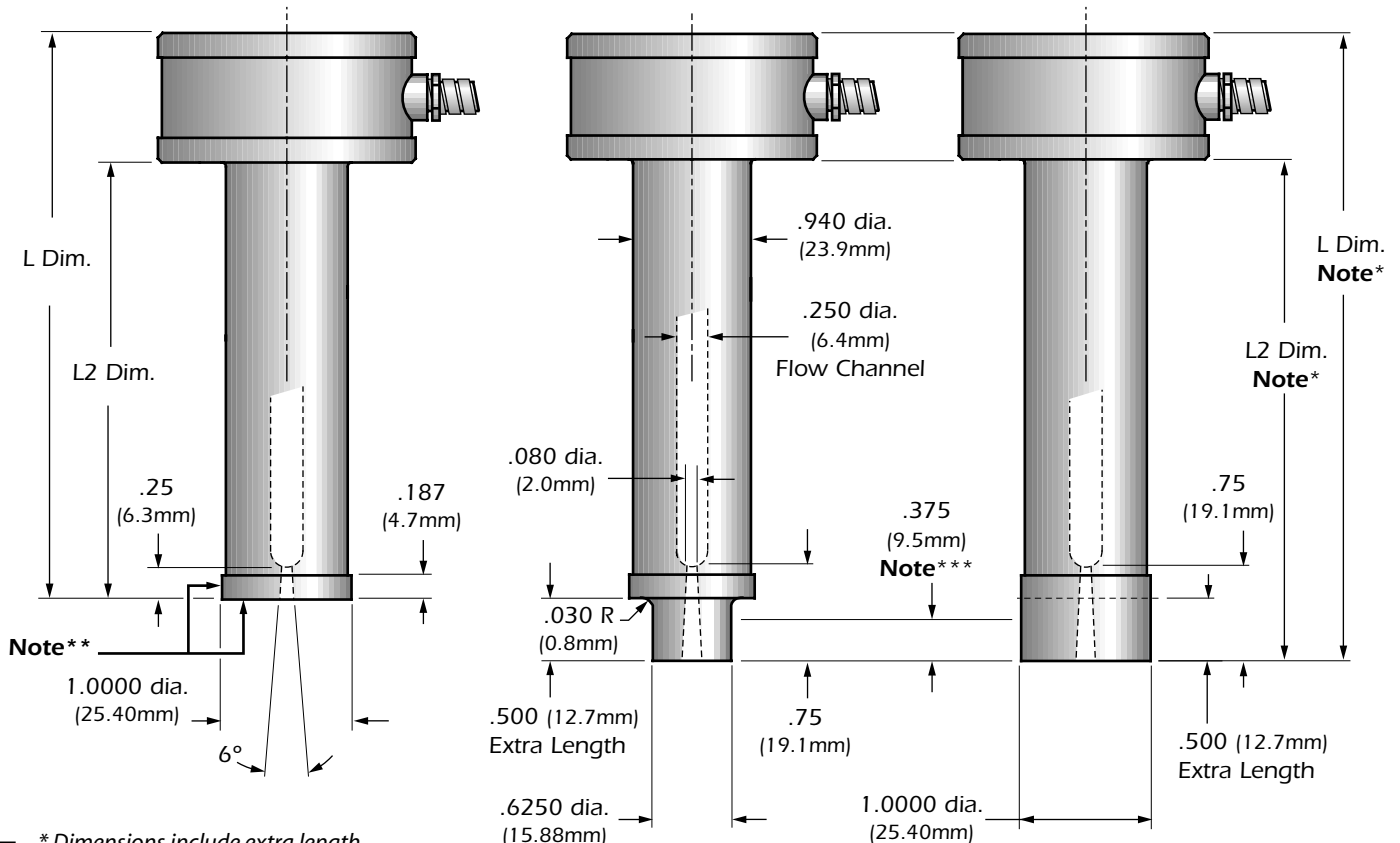


### Gating Options / Bushing Dimensions

Sprue Gate

Eurostyle Sprue Gate

Extra Stock Sprue Gate



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

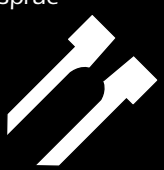
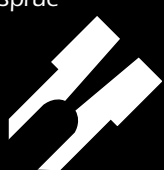

Dimensions are in inches. Millimeters are in parentheses.  
Note: For additional gate dimensions see page 8.

# Sprue Bushing Technical Specifications

## 1.000" Series Ordering Charts

All specifications are subject to change without notification.

### Chart A

Gate Style	L Dim.		L2 Dim.		Flat Style Head	O'Ring Style Head	Watts	Thermocouple
 Sprue	2.375"	(60.3)	1.375"	(34.9)	SB030042	SB030043	325	MT020020
	2.875"	(73.0)	1.875"	(47.6)	SB030050	SB030051	380	MT020020
	3.375"	(85.7)	2.375"	(60.3)	SB030058	SB030059	435	MT020020
	3.875"	(98.4)	2.875"	(73.0)	SB030066	SB030067	490	MT020020
	4.375"	(111.1)	3.375"	(85.7)	SB030074	SB030075	545	MT020021
	4.875"	(123.8)	3.875"	(98.4)	SB030082	SB030083	600	MT020021
	5.375"	(136.5)	4.375"	(111.1)	SB030090	SB030091	655	MT020021
	5.875"	(149.2)	4.875"	(123.8)	SB030098	SB030099	710	MT020021
	6.375"	(161.9)	5.375"	(136.5)	SB030106	SB030107	765	MT020022
	6.875"	(174.6)	5.875"	(149.2)	SB030114	SB030115	820	MT020022
7.375"	(187.3)	6.375"	(161.9)	SB030122	SB030123	875	MT020022	
 Extra Stock Sprue	2.875"	(73.0)	1.875"	(47.6)	SB030046	SB030047	325	MT020020
	3.375"	(85.7)	2.375"	(60.3)	SB030054	SB030055	380	MT020020
	3.875"	(98.4)	2.875"	(73.0)	SB030062	SB030063	435	MT020020
	4.375"	(111.1)	3.375"	(85.7)	SB030070	SB030071	490	MT020020
	4.875"	(123.8)	3.875"	(98.4)	SB030078	SB030079	545	MT020021
	5.375"	(136.5)	4.375"	(111.1)	SB030086	SB030087	600	MT020021
	5.875"	(149.2)	4.875"	(123.8)	SB030094	SB030095	655	MT020021
	6.375"	(161.9)	5.375"	(136.5)	SB030102	SB030103	710	MT020021
	6.875"	(174.6)	5.875"	(149.2)	SB030110	SB030111	765	MT020022
	7.375"	(187.3)	6.375"	(161.9)	SB030118	SB030119	820	MT020022
7.875"	(200.0)	6.875"	(174.6)	SB030126	SB030127	875	MT020022	
 Eurostyle Sprue	2.875"	(73.0)	1.875"	(47.6)	SB040083	SB040084	325	MT020020
	3.375"	(85.7)	2.375"	(60.3)	SB040087	SB040088	380	MT020020
	3.875"	(98.4)	2.875"	(73.0)	SB040091	SB040092	435	MT020020
	4.375"	(111.1)	3.375"	(85.7)	SB040095	SB040096	490	MT020020
	4.875"	(123.8)	3.875"	(98.4)	SB040099	SB040100	545	MT020021
	5.375"	(136.5)	4.375"	(111.1)	SB040103	SB040104	600	MT020021
	5.875"	(149.2)	4.875"	(123.8)	SB040107	SB040108	655	MT020021
	6.375"	(161.9)	5.375"	(136.5)	SB040111	SB040112	710	MT020021
	6.875"	(174.6)	5.875"	(149.2)	SB040115	SB040116	765	MT020022
	7.375"	(187.3)	6.375"	(161.9)	SB040119	SB040120	820	MT020022
7.875"	(200.0)	6.875"	(174.6)	SB040123	SB040124	875	MT020022	

Dimensions are in inches. Millimeters are in parentheses.

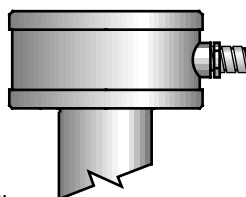
### Lead Exit Options

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

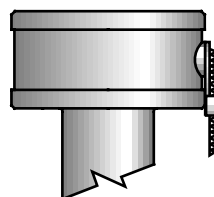
\* Standard Lead exit –

60" (1.52m) teflon wrap - 600 Volt leads;  
right angle lead exit; and 6" (15.2cm)  
stainless steel, square-lock armor cable.

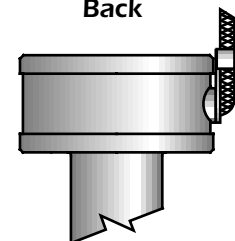
Right (Standard)



Front



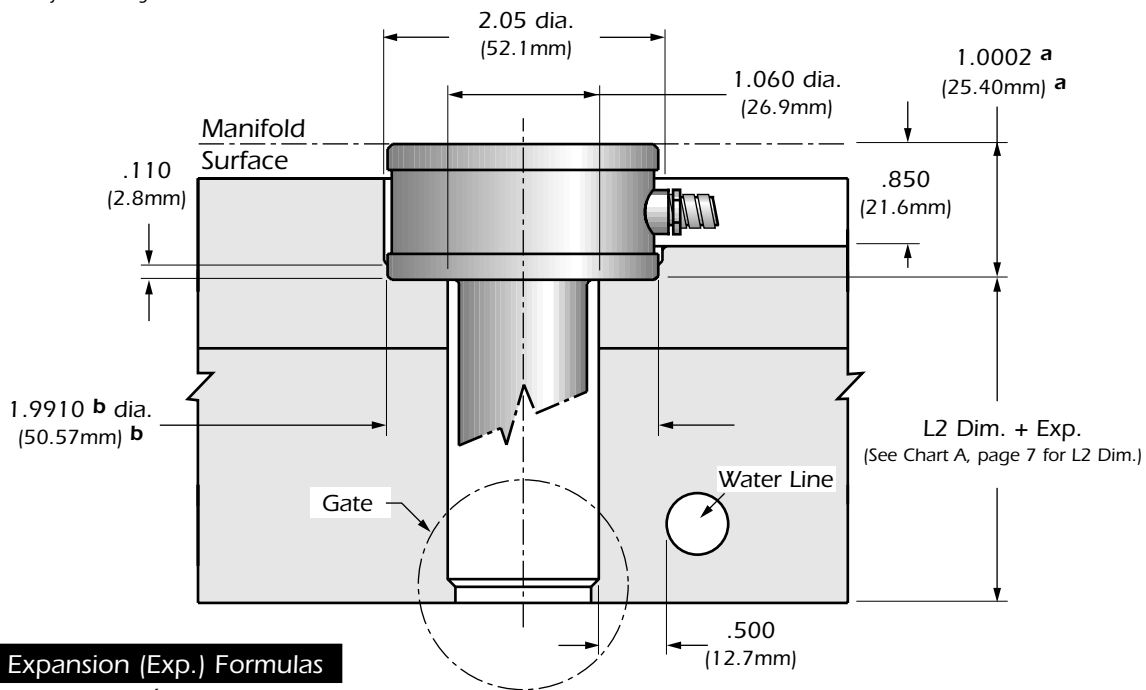
Back



# Sprue Bushing Technical Specifications

## 1.000" Series Bore & Gate Dimensions

All specifications are subject to change without notification.



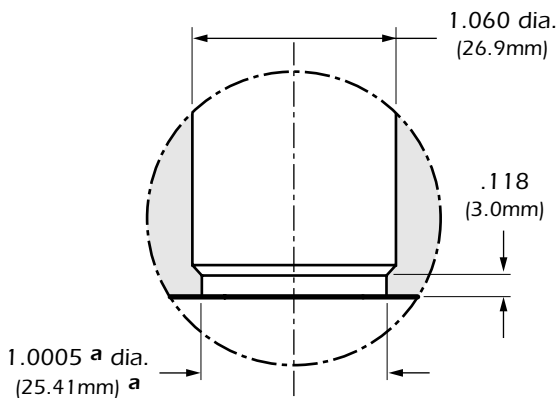
### Thermal Expansion (Exp.) Formulas

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

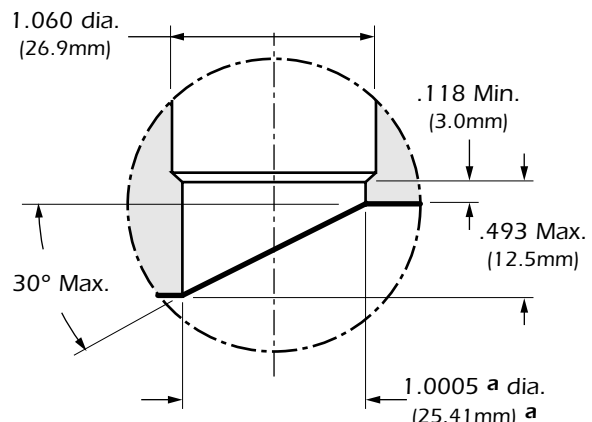
Exp. mm = L2 mm x  $13 \times 10^{-6}$  x (Processing Temp. - 21°C)

Ref:  $10^{-6} = 0.000001$

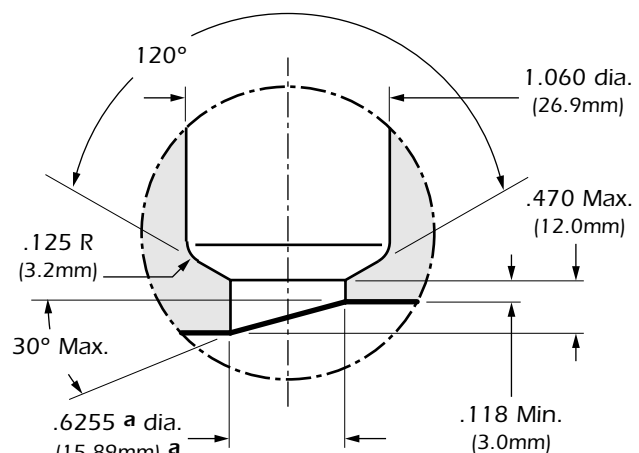
### Sprue Gate



### Extra Stock Sprue Gate



### Eurostyle Sprue Gate



### Bore & Gate Tolerances

Tol. "a" Chart	
in:	+0.0005
	-0
mm:	+0.01
	-0

Tol. "b" Chart	
in:	+0.0010
	-0
mm:	+0.02
	-0

8

Dimensions are in inches. Millimeters are in parentheses.

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# Sprue Bushing Technical Specifications

## 1.000" Series Engineering Charts

All specifications are subject to change without notification.

### Chart 1

1.000" Series Resin Compatibility Chart			
Gating Options	Commodity Resin	Engineering Resin	Glass-Filled Resin
Sprue	●	●	●
Extra Stock Sprue	●	●	●
Eurostyle Sprue	●	●	●

Reference: ● = Recommended

### Chart 2

1.000" Series Gate Diameters			
Gating Options	Resin Viscosity		
	High	Medium	Low
Sprue	.080" to .156"* Max. (2mm to 4mm* Max.)	.080" to .156"* Max. (2mm to 4mm* Max.)	.080" to .156"* Max. (2mm to 4mm* Max.)
Extra Stock Sprue	.080" to .156"* Max. (2mm to 4mm* Max.)	.080" to .156"* Max. (2mm to 4mm* Max.)	.080" to .156"* Max. (2mm to 4mm* Max.)
Eurostyle Sprue	.080" to .156"* Max. (2mm to 4mm* Max.)	.080" to .156"* Max. (2mm to 4mm* Max.)	.080" to .156"* Max. (2mm to 4mm* 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

1.000" Series Maximum Shot Weights in Grams (0.080" Gate)			
Gating Options	Resin Viscosity		
	High	Medium	Low
Sprue	200g	300g	500g
Extra Stock Sprue	200g	300g	500g
Eurostyle Sprue	200g	300g	500g

Consult Tutco Hot Runner Dept. when changing Max. shot weight.

MANIFOLD APPLICATIONS

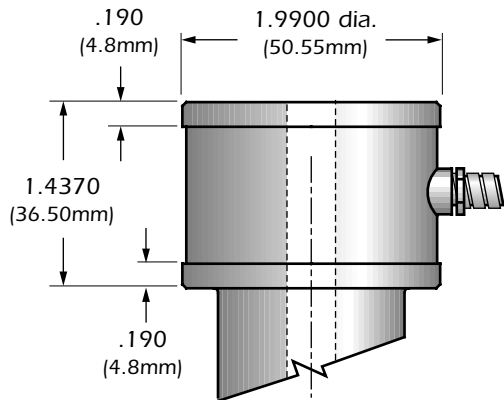
# Sprue Bushing Technical Specifications

## 1.500" Series

All specifications are subject to change without notification.

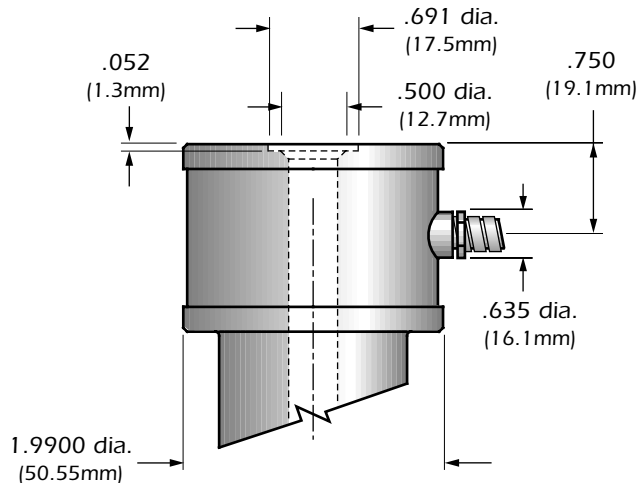
### Head Options

#### Flat Head Style



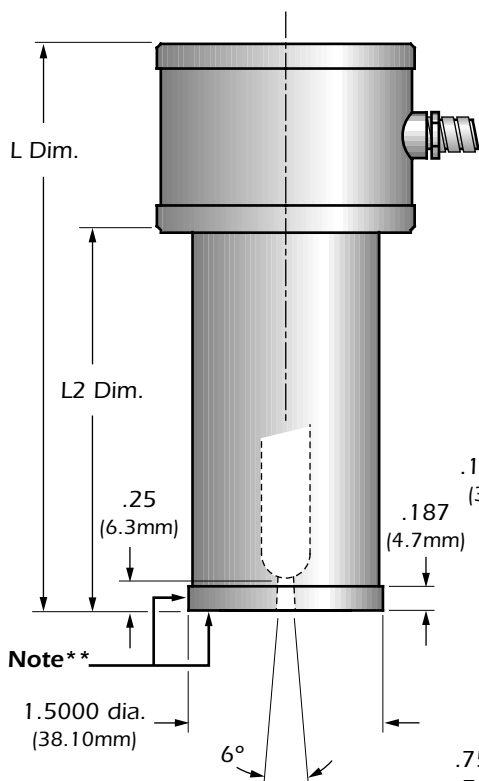
#### O'Ring Head Style

(See page 14 for O'Ring Details)

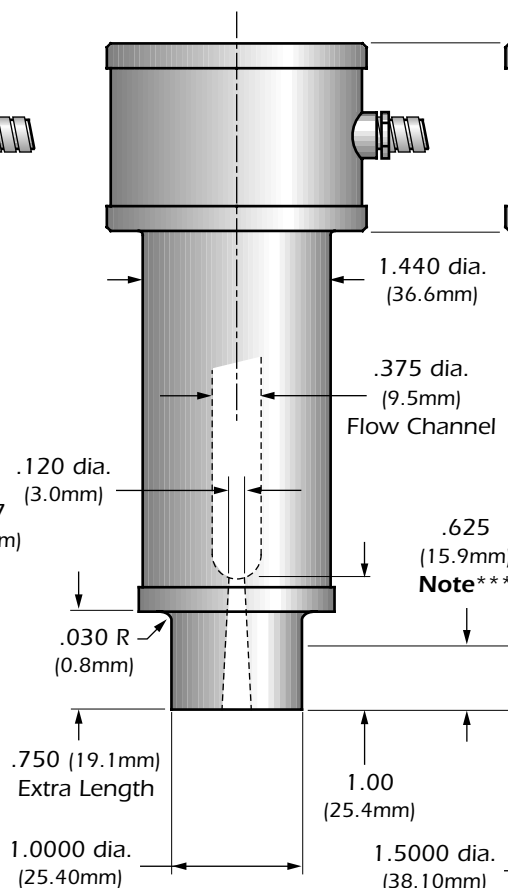


### Gating Options / Bushing Dimensions

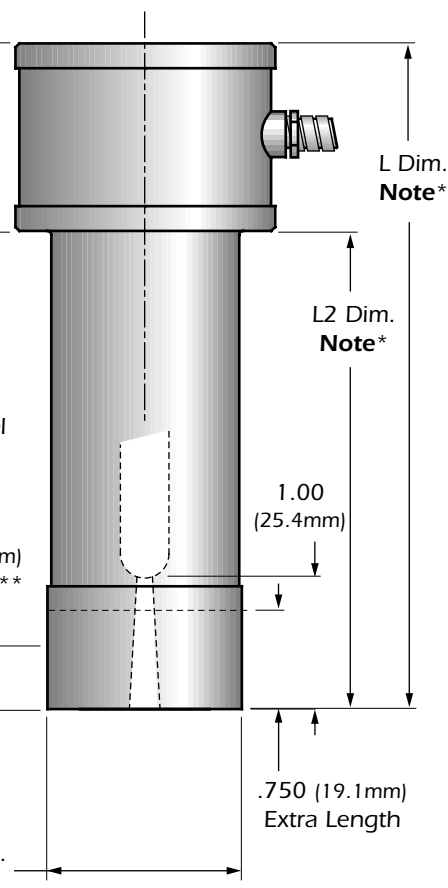
#### Sprue Gate



#### Eurostyle Sprue Gate



#### Extra Stock Sprue Gate



Note\*\*

\* Dimensions include extra length.

\*\* This surface cannot be machined, modified or altered.

\*\*\* Maximum machining stock, only this area can be machined.

Dimensions are in inches. Millimeters are in parentheses.  
Note: For additional gate dimensions see page 12.




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# Sprue Bushing Technical Specifications

## 1.500" Series Ordering Charts

All specifications are subject to change without notification.

Chart A

Gate Style	L Dim.		L2 Dim.		Flat Style Head	O'Ring Style Head	Watts	Thermocouple
 Sprue	3.375"	(85.7)	1.938"	(49.2)	SB030130	SB030131	700	MT020020
	3.875"	(98.4)	2.438"	(61.9)	SB030138	SB030139	780	MT020020
	4.375"	(111.1)	2.938"	(74.6)	SB030146	SB030147	860	MT020021
	4.875"	(123.8)	3.438"	(87.3)	SB030154	SB030155	945	MT020021
	5.375"	(136.5)	3.938"	(100.0)	SB030162	SB030163	1025	MT020021
	5.875"	(149.2)	4.438"	(112.7)	SB030170	SB030171	1110	MT020021
	6.375"	(161.9)	4.938"	(125.4)	SB030178	SB030179	1190	MT020022
	6.875"	(174.6)	5.438"	(138.1)	SB030186	SB030187	1275	MT020022
	7.375"	(187.3)	5.938"	(150.8)	SB030194	SB030195	1360	MT020022
 Extra Stock Sprue	4.125"	(104.8)	2.688"	(68.3)	SB030134	SB030135	700	MT020020
	4.625"	(117.5)	3.188"	(81.0)	SB030142	SB030143	780	MT020020
	5.125"	(130.2)	3.688"	(93.7)	SB030150	SB030151	860	MT020021
	5.625"	(142.9)	4.188"	(106.4)	SB030158	SB030159	945	MT020021
	6.125"	(155.6)	4.688"	(119.1)	SB030166	SB030167	1025	MT020021
	6.625"	(168.3)	5.188"	(131.8)	SB030174	SB030176	1110	MT020021
	7.125"	(181.0)	5.688"	(144.5)	SB030182	SB030183	1190	MT020022
	7.625"	(193.7)	6.188"	(157.2)	SB030190	SB030191	1275	MT020022
	8.125"	(206.4)	6.688"	(169.9)	SB030198	SB030199	1360	MT020022
 Eurostyle Sprue	4.125"	(104.8)	2.688"	(68.3)	SB040127	SB040128	700	MT020020
	4.625"	(117.5)	3.188"	(81.0)	SB040131	SB040132	780	MT020020
	5.125"	(130.2)	3.688"	(93.7)	SB040135	SB040136	860	MT020021
	5.625"	(142.9)	4.188"	(106.4)	SB040139	SB040140	945	MT020021
	6.125"	(155.6)	4.688"	(119.1)	SB040143	SB040144	1025	MT020021
	6.625"	(168.3)	5.188"	(131.8)	SB040147	SB040148	1110	MT020021
	7.125"	(181.0)	5.688"	(144.5)	SB040151	SB040152	1190	MT020022
	7.625"	(193.7)	6.188"	(157.2)	SB040155	SB040156	1275	MT020022
	8.125"	(206.4)	6.688"	(169.9)	SB040159	SB040160	1360	MT020022

Dimensions are in inches. Millimeters are in parentheses.

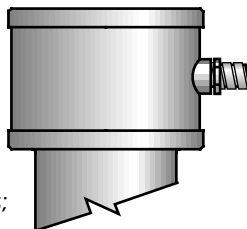
### Lead Exit Options

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

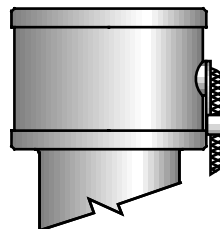
\* Standard Lead exit -

60" (1.52m) teflon wrap - 600 Volt leads;  
right angle lead exit; and 6" (15.2cm)  
stainless steel, square-lock armor cable.

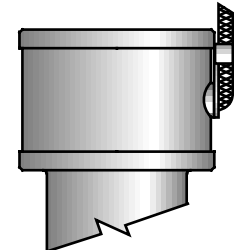
Right (Standard)



Front



Back

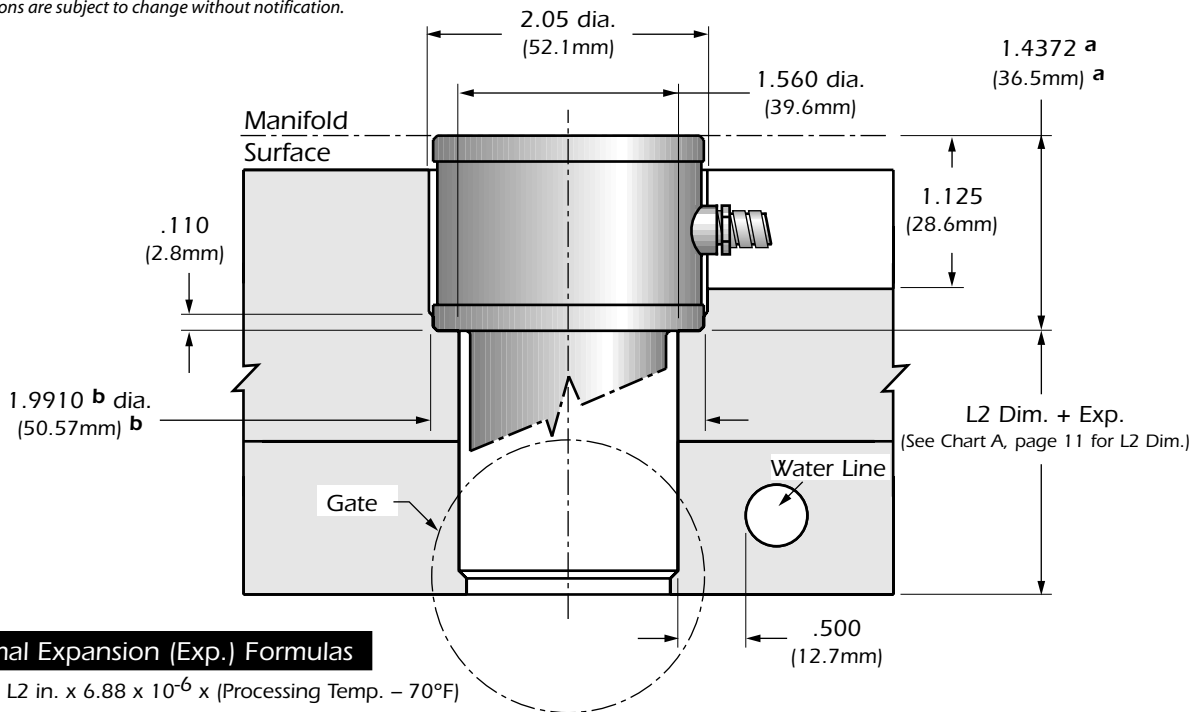


# Sprue Bushing Technical Specifications

MANIFOLD APPLICATIONS

## 1.500" Series Bore & Gate Dimensions

All specifications are subject to change without notification.



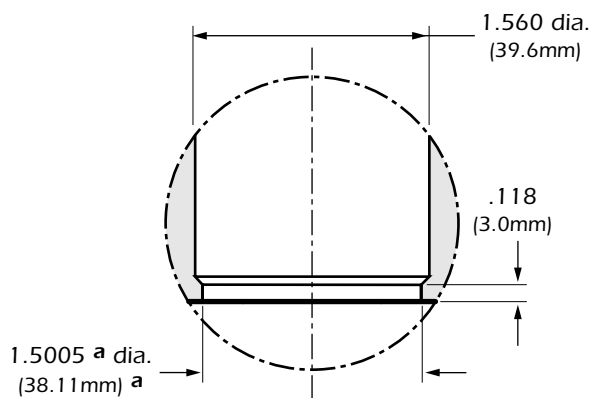
### Thermal Expansion (Exp.) Formulas

$$\text{Exp. in} = \text{L2 in.} \times 6.88 \times 10^{-6} \times (\text{Processing Temp.} - 70^{\circ}\text{F})$$

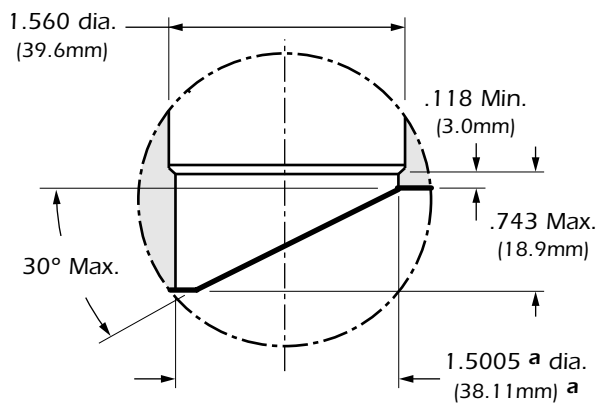
$$\text{Exp. mm} = \text{L2 mm} \times 13 \times 10^{-6} \times (\text{Processing Temp.} - 21^{\circ}\text{C})$$

$$\text{Ref: } 10^{-6} = 0.000001$$

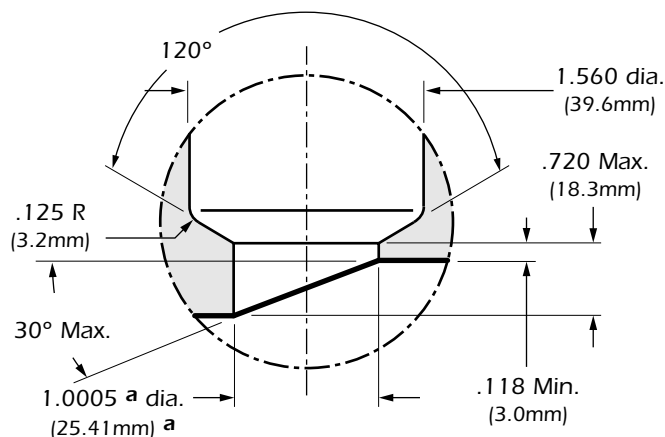
### Sprue Gate



### Extra Stock Sprue Gate



### Eurostyle Sprue Gate



### Bore & Gate Tolerances

Tol. "a" Chart	
in.	+0.0005 -0
mm.	+0.01 -0

Tol. "b" Chart	
in.	+0.0010 -0
mm.	+0.02 -0

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Dimensions are in inches. Millimeters are in parentheses.

# Sprue Bushing Technical Specifications

## 1.500" Series Engineering Charts

All specifications are subject to change without notification.

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### Chart 1

1.500" Series Resin Compatibility Chart			
Gating Options	Commodity Resin	Engineering Resin	Glass-Filled Resin
Sprue	●	●	●
Extra Stock Sprue	●	●	●
Eurostyle Sprue	●	●	●

Reference: ● = Recommended

### Chart 2

1.500" Series Gate Diameters			
Gating Options	Resin Viscosity		
	High	Medium	Low
Sprue	.120" to .312"* Max. (3mm to 8mm* Max.)	.120" to .312"* Max. (3mm to 8mm* Max.)	.120" to .312"* Max. (3mm to 8mm* Max.)
Extra Stock Sprue	.120" to .312"* Max. (3mm to 8mm* Max.)	.120" to .312"* Max. (3mm to 8mm* Max.)	.120" to .312"* Max. (3mm to 8mm* Max.)
Eurostyle Sprue	.120" to .312"* Max. (3mm to 8mm* Max.)	.120" to .312"* Max. (3mm to 8mm* Max.)	.120" to .312"* Max. (3mm to 8mm* 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

1.500" Series Maximum Shot Weights in Grams (0.120" Gate)			
Gating Options	Resin Viscosity		
	High	Medium	Low
Sprue	900g	1500g	2500g
Extra Stock Sprue	900g	1500g	2500g
Eurostyle Sprue	900g	1500g	2500g

Consult Tutco Hot Runner Dept. when changing Max. shot weight.

# Sprue Bushing Technical Specifications

## Operating/Service Instructions

All specifications are subject to change without notification.

### Operating & Servicing Instructions

The Sprue Bushing bodies are identical in design, but differ in length, diameter and head style. All Sprue Bushings feature: an integrated heater; Type "J" thermocouple; 60" teflon wrap - 600 Volt leads; right angle lead exit; and 6" stainless steel, square-lock armor cable.


### Start-up/Operating Procedures

If the temperature controller does not utilize "soft start" technology, set the controller to 200°F (93.3°C) in automatic or 10% in manual. Allow bushing to "soak" for 15 minutes before increasing to processing temperature. This step will allow the unit to dissipate any moisture and prolong heater life.

### Power Requirements

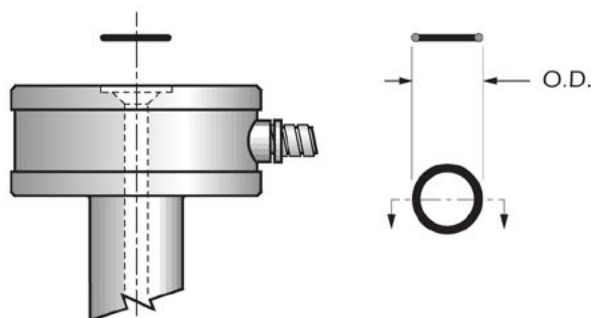
- 240 Volts AC – 15 amp fuse
- Grounding – Tutco brushings utilize the direct contact of the brushing, mold plates, and machine platens to establish a path for grounding.

**\*WARNING\***

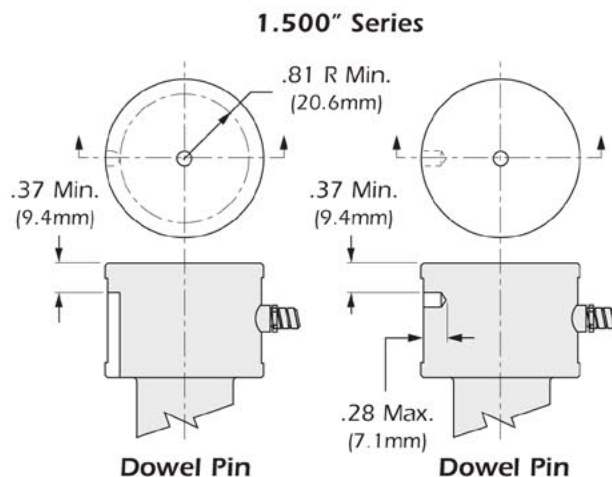
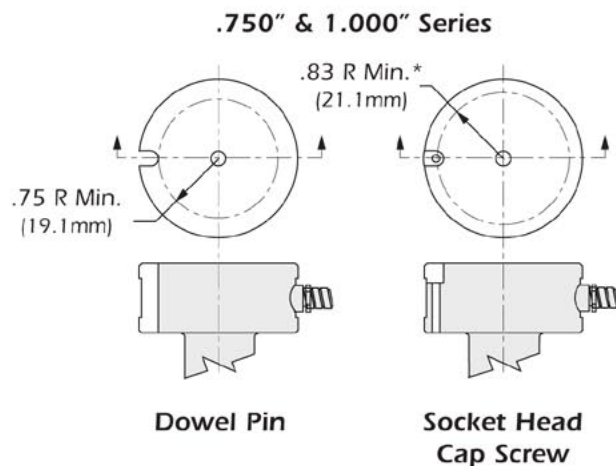
There must be a ground  present between the Mold "Hot Half" and the temperature control system or damage may occur to the bushing, thermocouple and/or temperature control system.

### Replacement O'Rings

Series	O.D.	Part Number
.750"	.566" (14.4mm)	MR010000
1.000"	.566" (14.4mm)	MR010000
1.500"	.690" (17.5mm)	MR010001



### Machining Options for Keying



\*Centerline for No. 10 screw.

Dimensions are in inches. Millimeters are in parentheses.

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