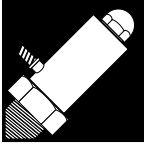


Machine Nozzle Technical Specifications

Machine Nozzle User Guide

All specifications are subject to change without notification.

Integrally Heated Machine Nozzles



These highly durable Machine Nozzles feature an integrally heated construction exclusive to Tutco. This unique design concept eliminates the voids and air gaps which limit the performance of conventionally heated nozzle systems. The improved heat transfer characteristics of the Sensitip® Nozzle provide performance and reliability far superior to any existing nozzle designs.

Tip Options for the Machine Nozzle



General Purpose Tip –

This nozzle tip is designed to suit the specific characteristics of the resins belonging to the (PS) Polystyrene, (PE) Polyethylene, and (PP) Polypropylene families.



Full Taper Tip –

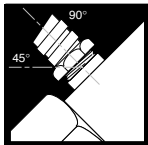
This nozzle tip is designed to suit the specific characteristics of the resins belonging to the ABS, (PMMA) Acrylic, and Polysulfone families.



Nylon Tip –

This nozzle tip is designed to suit the specific characteristics of the resins belonging to the Nylon and Acetal families.

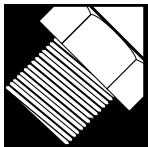
Lead Options for the Machine Nozzle



90° (Standard) or 45° (Optional)–

Lead options are customized to meet your specific machine characteristics.

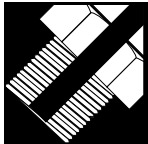
Thread Options for the Machine Nozzle



Three Standard Sizes –

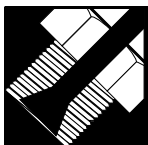
Standard thread sizes include; (1 1/4 - 12 UNF), (1 1/2 - 12 UNF), and (1 3/4 - 8 UNF). For other thread options contact the Hot Runner Group at Tutco. (Metric sizes are available upon request.)

Flow Diameters for the Machine Nozzle



.500" Diameter (Standard) –

Precise flow passage ensures a smooth melt transfer from machine barrel to mold.



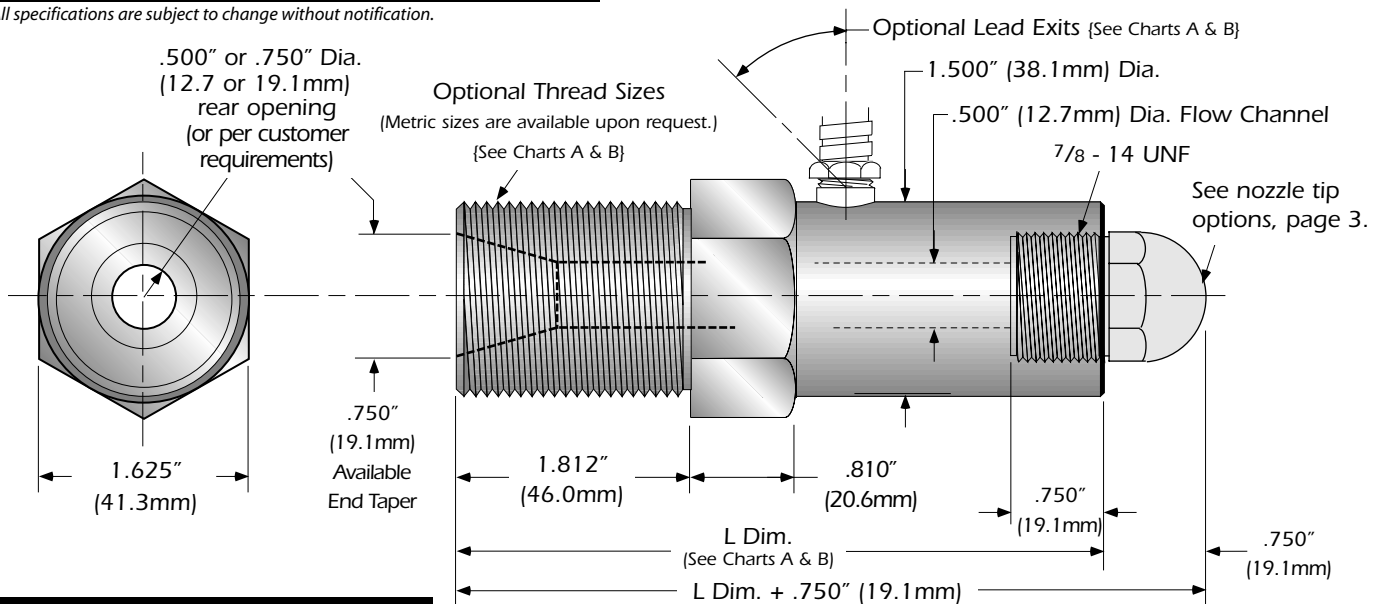
.750" End Taper Diameter Available –

A polished taper from .500" to .750" can be machined to suit customer machine specifications.

Machine Nozzle Technical Specifications

Nozzle Dimensions & Ordering

All specifications are subject to change without notification.



NOZZLES W/90° LEADS

All nozzles listed include 240 Volt rating (120 Volt is optional), Type "J" thermocouple, 24" (61 cm) Teflon® wrap, 600 Volt rated leads, and 18" (46 cm) square-lock stainless steel armor cable. Other thread sizes and rear openings are available. Consult Tutco for details.

Chart A

L DIM. IN. MM	1 1/4 - 12 UNF		1 1/2 - 12 UNF		1 3/4 - 8 UNF		WATTS
	.500" DIA. (12.7 MM)	.750" DIA. (19.1 MM)	.500" DIA. (12.7 MM)	.750" DIA. (19.1 MM)	.500" DIA. (12.7 MM)	.750" DIA. (19.1 MM)	
5.000 (127.0)	SN010002	SN010003	SN010004	SN010005	SN010006	SN010007	635
6.000 (152.4)	SN010012	SN010013	SN010014	SN010015	SN010016	SN010017	800
7.000 (177.8)	SN010022	SN010023	SN010024	SN010025	SN010026	SN010027	965
8.000 (203.2)	SN010032	SN010033	SN010034	SN010035	SN010036	SN010037	1130
9.000 (228.6)	SN010042	SN010043	SN010044	SN010045	SN010046	SN010047	1295
10.000 (254.0)	SN010053	SN010054	SN010055	SN010056	SN010057	SN010058	1460
11.000 (279.4)	SN010063	SN010064	SN010065	SN010066	SN010067	SN010068	1625
12.000 (304.8)	SN010073	SN010074	SN010075	SN010076	SN010077	SN010078	1790
13.000 (330.2)	SN010083	SN010084	SN010085	SN010086	SN010087	SN010088	1955
14.000 (355.6)	SN010092	SN010093	SN010094	SN010095	SN010096	SN010097	2120

NOZZLES W/45° LEADS

All nozzles listed include 240 Volt rating (120 Volt is optional), Type "J" thermocouple, 24" (61 cm) Teflon® wrap, 600 Volt rated leads, and 18" (46 cm) square-lock stainless steel armor cable. Other thread sizes and rear openings are available. Consult Tutco for details.

Chart B

L DIM. IN. MM	1 1/4 - 12 UNF		1 1/2 - 12 UNF		1 3/4 - 8 UNF		WATTS
	.500" DIA. (12.7 MM)	.750" DIA. (19.1 MM)	.500" DIA. (12.7 MM)	.750" DIA. (19.1 MM)	.500" DIA. (12.7 MM)	.750" DIA. (19.1 MM)	
5.000 (127.0)	SN010102	SN010103	SN010104	SN010105	SN010106	SN010107	635
6.000 (152.4)	SN010112	SN010113	SN010114	SN010115	SN010116	SN010117	800
7.000 (177.8)	SN010122	SN010123	SN010124	SN010125	SN010126	SN010127	965
8.000 (203.2)	SN010132	SN010133	SN010134	SN010135	SN010136	SN010137	1130
9.000 (228.6)	SN010142	SN010143	SN010144	SN010145	SN010146	SN010147	1295
10.000 (254.0)	SN010152	SN010153	SN010154	SN010155	SN010156	SN010157	1460
11.000 (279.4)	SN010162	SN010163	SN010164	SN010165	SN010166	SN010167	1625
12.000 (304.8)	SN010172	SN010173	SN010174	SN010175	SN010176	SN010177	1790
13.000 (330.2)	SN010182	SN010183	SN010184	SN010185	SN010186	SN010187	1955
14.000 (355.6)	SN010192	SN010193	SN010194	SN010195	SN010196	SN010197	2120

Dimensions are in inches. Millimeters are in parentheses.

Machine Nozzle Technical Specifications

Tip Options & Ordering

All specifications are subject to change without notification.

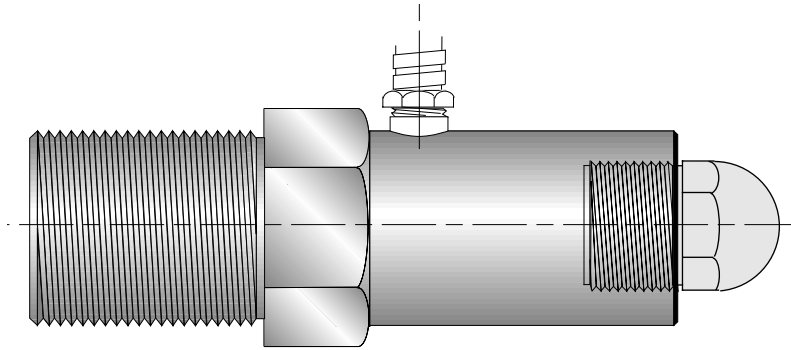
DESIGNED FOR ENGINEERING & COMMODITY GRADE RESINS

Each nozzle tip is designed to match the characteristics of a specific family of resins.

GENERAL PURPOSE tips can be used with polystyrene, polypropylene and polyethylene.

FULL TAPER tips perform best with ABS, acrylic and polysulfone.

NYLON tips were created specifically for nylon and acetal applications.



.500" (12.7mm) SPHERICAL RADIUS TIP

All nozzle tips are precision machined and hardened for maximum durability.

Chart C

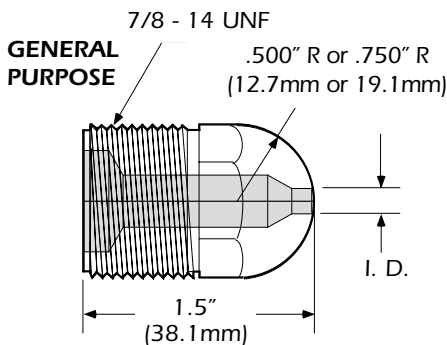
TYPE	1/8" ID (3.2mm)	3/16" ID (4.8mm)	1/4" ID (6.4mm)
GENERAL PURPOSE	MN010000	MN010001	MN010002
FULL TAPER	MN010012	MN010013	MN010014
NYLON	MN010006	MN010007	MN010008

.750" (19mm) SPHERICAL RADIUS TIP

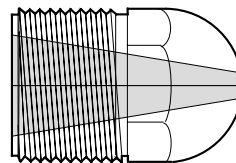
Three styles are available to choose from, depending upon your resin requirements.

Chart D

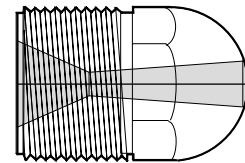
TYPE	1/8" ID (3.2mm)	3/16" ID (4.8mm)	1/4" ID (6.4mm)
GENERAL PURPOSE	MN010003	MN010004	MN010005
FULL TAPER	MN010015	MN010016	MN010017
NYLON	MN010009	MN010010	MN010011



FULL TAPER



NYLON



External dimensions and 7/8" hex apply to all tips.

Dimensions are in inches. Millimeters are in parentheses.

Machine Nozzle Technical Specifications

Operating/Service Instructions

All specifications are subject to change without notification.

Operating & Servicing Instructions

Refractory insulating material is swaged into place to allow maximum heat transfer. The resulting efficiency allows for a lower energy consumption when compared to more conventional heating. A type "J" thermocouple is placed near the flow passage to give an accurate temperature reading.

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 the machine nozzle to "soak" for 15 minutes before increasing to processing temperature. This step will allow the unit to dissipate any moisture and prolong heater life.

Nozzle Removal / Installation

Removal

- 1) Move the injection unit back as far as possible from the mold to allow enough room to remove the machine nozzle.
- 2) Use a standard 1 $\frac{5}{8}$ " open-end wrench and turn counterclockwise to loosen.

Installation

- 1) Move the injection unit back as far as possible from the mold to allow enough room to remove the machine nozzle.
- 2) Apply anti-seize sparingly onto male threads of the nozzle.
Note: excess anti-seize may contaminate the resin being processed.
- 3) Use a standard 1 $\frac{5}{8}$ " open-end wrench and install tip by turning clockwise.
- 4) **Torque to 350 ft./lbs. (475 Newton-Meters)**

Tip Removal / Installation

Removal

- 1) Place machine nozzle in "V" block and secure it firmly at the nozzle head.
- 2) Use a standard $\frac{7}{8}$ " box-end wrench and turn counterclockwise to loosen.


Installation

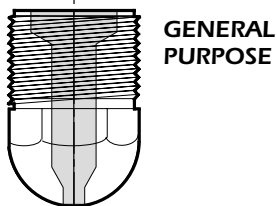
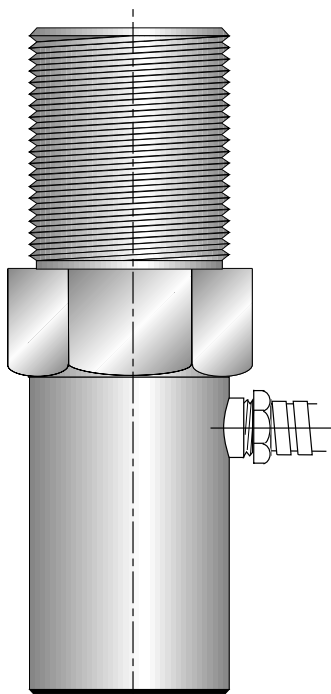
- 1) Place machine nozzle in "V" block and secure it firmly at the nozzle head.
- 2) Apply anti-seize sparingly onto male threads of tip.
Note: excess anti-seize may contaminate the resin being processed.
- 3) Use a standard $\frac{7}{8}$ " box-end wrench and install tip by turning clockwise.
- 4) **Torque to 150 ft./lbs. (203 Newton-Meters)**

Power Requirements

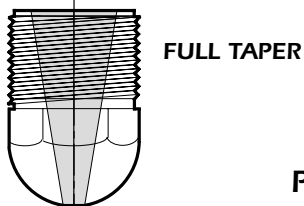
- 240 Volts AC – 15 amp fuse
- Grounding – Tutco machine nozzles do not require any additional grounding wire. The machine nozzles are grounded through the bodies of the components.

WARNING

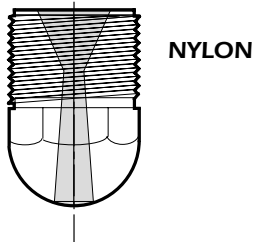
There must be a ground  present between the Injection Molding Machine and the temperature control system, or damage may occur to the machine nozzle, thermocouple and/or temperature control system.



GENERAL
PURPOSE



FULL TAPER



NYLON