

## Metal Protection Tubes

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For longer life and continued accuracy, most thermocouples in industrial applications should be protected from physical damage, corrosion, and contamination by some type of

protecting tube or well. Metal tubes selected to suit the temperature, pressure and atmosphere are generally used with base metal thermocouples.



Typical Metal Protection Tube



Typical Cast Iron Protection Tube

Material	Maximum Operating Temperature	Typical Applications	Remarks
304 Stainless	1800°F (982°C)	Food and Dairy Products, Petroleum Products, Mild Acids, Alkalies	Embrittles in 800°F (427°C) to 1400°F (760°C) range.
Cast Iron	1300°F (704°C)	Molten Aluminum, Gas Ducts	Withstands sulphur and caustic solutions.
316 Stainless	1800°F (982°C)	Food and Dairy Products, Petroleum Products, Mild Acids, Alkalies	Greater corrosion resistance than 304 Stainless.
446 Stainless	2000°F (1093°C)	Sulphurous Atmospheres such as Hydrogen Sulphide, Neutral Salt Baths	Excellent resistance to corrosion and oxidation at high temperatures. Do not use in carburizing atmospheres.
Inconel 601®	2200°F (1204°C)	Neutral Salt Baths, Carburizing and Nitriding Atmospheres	Good resistance to corrosion at high temperatures; excellent resistance to oxidation at high temperatures. Do not use in carburizing atmospheres above 1000°F (538°C).
Black Steel Pipe per ASTM A120	1200°F (649°C)	Molten Babbitt, Tin, Lead, and Magnesium	Low Cost

#### 304 Stainless Steel (8% Nickel-18% Chrome)

Part Number	I.D. x O.D.	NPT Thread	Const.	Length
*MPT-101-___	.622" x .840"	½"	Welded	12" and over in 6" increments
*MPT-102-___	.824" x 1.050"	¾"	Welded	
*MPT-103-___	1.049" x 1.315"	1"	Welded	

\*If extra heavy wall is desired, specify.

#### Cast Iron

Part Number	I.D. x O.D.	NPT Thread	Const.	Length
MPT-104-___	⅞" x 1⅜"	¾" Int.*	Cast	12" thru 72" in 6" increments
MPT-105-___	⅞" x 1⅜"	1" Ext.	Cast	12" thru 48" in 6" increments

\*1" NPT external thread available on special request.

#### 316 Stainless Steel

Part Number	I.D. x O.D.	NPT Thread	Const.	Length
MPT-106-___	.622" x .840"	½"	Welded	12" and over in 6" increments
MPT-107-___	.824" x 1.050"	¾"	Welded	
MPT-108-___	1.049" x 1.315"	1"	Welded	

#### 446 Stainless Steel (28% Chrome Iron)

Part Number	I.D. x O.D.	NPT Thread	Const.	Length
MPT-109-___	.622" x .840"	½"	Seamless	12" and over in 6" increments
MPT-110-___	.824" x 1.050"	¾"	Seamless	
MPT-111-___	1.049" x 1.315"	1"	Seamless	

#### Inconel Alloy 601® (60% Nickel-23% Chrome-14% Iron)

Part Number	I.D. x O.D.	NPT Thread	Const.	Length
MPT-112-___	.622" x .840"	½"	Seamless	12" and over in 6" increments
MPT-113-___	.824" x 1.050"	¾"	Seamless	
MPT-114-___	1.049" x 1.315"	1"	Seamless	

#### Black Steel Pipe (Per ASTM A120)

Part Number	I.D. x O.D.	NPT Thread	Const.	Length
MPT-115-___	.364" x .540"	¼"	Welded	12" and over in 6" increments
MPT-116-___	.302" x .540"	¼"	Welded	
MPT-117-___	.546" x .840"	½"	Welded	
MPT-118-___	.742" x 1.050"	¾"	Welded	
MPT-119-___	.957" x 1.315"	1"	Welded	

### Ordering Information

Complete the Part Number with 3 digits indicating length in whole inches.

Example: = MPT-105-**012** is 12" long and  
MPT-107-**048** is 48" long.

**⚠ WARNING:** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).