



# TH2 MP Fittings

Medium Pressure Cone & Thread



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## Introduction

Parker TH2 series Medium Pressure Cone and Thread connections were created for hydrogen industrial application. Designed for a maximum of 20,000 psi MAWP using high tensile strength cold worked 316 Stainless Steel material as standard. This Medium Pressure series has all metal sealing, temperature ranges from -423°F to 1200°F (-252 °C to 650 °C).

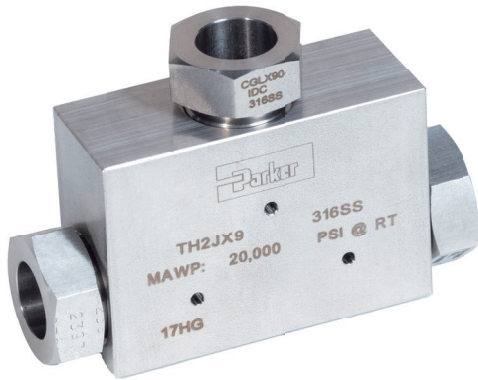


### **WARNING**

FAILURE, IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

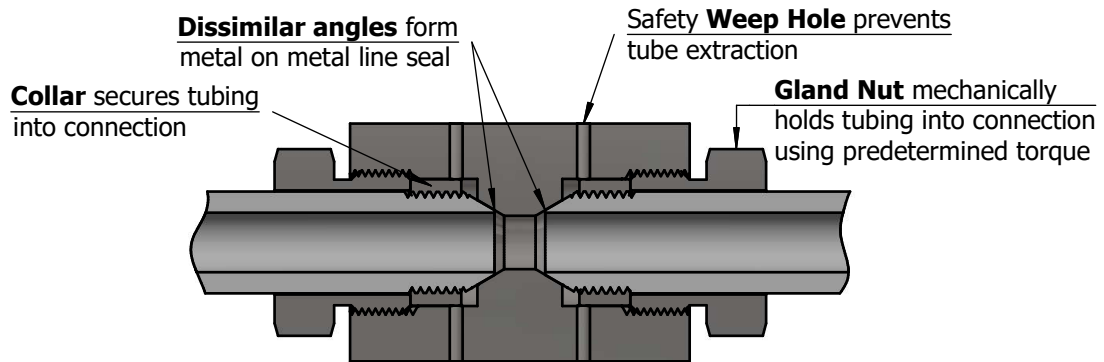
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## TH2 MP Fitting Features:

- Utilize High Flow Medium Pressure Coned-and-Threaded connections,
- Maximum working pressure up to 20,000 psi (1379 bar),
- Available sizes are 1/4", 3/8", 9/16", 3/4" and 1",
- Standard Fitting Material is 316 stainless steel material, cold worked to Parker proprietary standards,
- Operating Temperatures from -423°F to 1200°F(-252 °C to 650 °C),
- Designed with weep holes for security and leak detection,
- Marked with heat code for complete traceability,
- Wetted parts material with Ni $\geq$ 12% standard and Nickel equivalent  $\geq$ 28.5% optional.

## TH2 MP Fitting Cone & Thread Section View



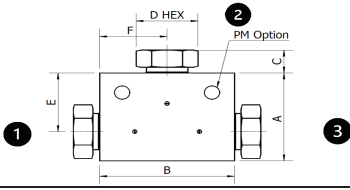
Cone & Thread design

Collar in front of gland, keeping port size and fitting width to minimum

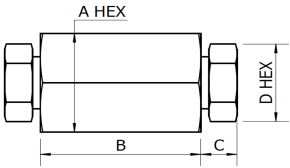
## 90° Elbow

Catalog Number	Connection Type	Outside Diameter Tube	Pressure Rating psi(bar)*	Orifice inches (mm)	Dimensions-Inches(mm)						Block Thickness
					A	B	C	D	E	F	
TH2EX4	1/4" MP	1/4 (6.35)	20,000 (1379)	0.125 (3.18)	1.12 (28.45)	1.50 (38.10)	0.38 (9.53)	0.50 (13)	0.75 (19.05)	0.75 (19.05)	0.62 (15.75)
TH2EX6	3/8" MP	3/8 (9.53)	20,000 (1379)	0.219 (5.56)	1.38 (35.05)	2.00 (50.80)	0.44 (11.18)	0.62 (16)	1.00 (25.40)	1.00 (25.40)	0.75 (19.05)
TH2EX9	9/16" MP	9/16 (14.29)	20,000 (1379)	0.359 (9.12)	1.75 (44.45)	2.50 (63.50)	0.53 (13.46)	0.94 (24)	1.25 (31.75)	1.25 (31.75)	1.00 (25.40)
TH2EX12	3/4" MP	3/4 (19.05)	20,000 (1379)	0.516 (13.11)	2.25 (57.15)	3.00 (76.20)	0.62 (15.75)	1.19 (30)	1.50 (38.10)	1.50 (38.10)	1.38 (34.93)
TH2EX16	1" MP	1 (25.40)	20,000 (1379)	.688 (17.48)	3.00 (76.20)	4.12 (104.65)	0.72 (18.29)	1.38 (35)	2.06 (52.32)	2.06 (52.32)	1.75 (44.45)
<p style="text-align: center;">Elbow</p>					<p>*Maximum pressure rating is based on the lowest rating of any component. Actual working pressure may be determined by tubing pressure rating, if lower. All dimensions for reference only and subject to change. Fitting body material hct number start with Q and underline.</p> <p>For mounting hole option add suffix -PM to catalog number. Consult factory for mounting hole dimensions. For Connection Torque requirements please see "Assembly Instructions" (Page 5)</p>						

## Tee

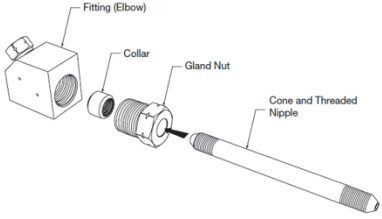
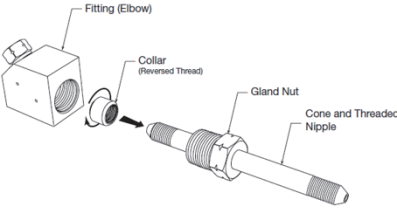
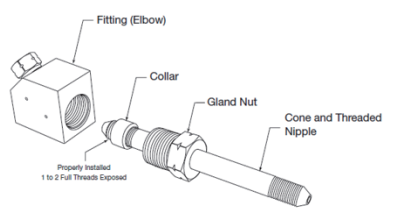
Catalog Number	Connection Type	Outside Diameter Tube	Pressure Rating psi(bar)*	Orifice inches (mm)	Dimensions-Inches(mm)						Block Thickness
					A	B	C	D	E	F	
TH2JX4	1/4" MP	1/4 (6.35)	20,000 (1379)	0.125 (3.18)	1.12 (28.45)	1.50 (38.10)	0.38 (9.53)	0.50 (13)	0.75 (19.05)	0.75 (19.05)	0.62 (15.75)
TH2JX6	3/8" MP	3/8 (9.53)	20,000 (1379)	0.219 (5.56)	1.38 (35.05)	2.00 (50.80)	0.44 (11.18)	0.62 (16)	1.00 (25.40)	1.00 (25.40)	0.75 (19.05)
TH2JX9	9/16" MP	9/16 (14.29)	20,000 (1379)	0.359 (9.12)	1.75 (44.45)	2.50 (63.50)	0.53 (13.46)	0.94 (24)	1.25 (31.75)	1.25 (31.75)	1.00 (25.40)
TH2JX12	3/4" MP	3/4 (19.05)	20,000 (1379)	0.516 (13.11)	2.25 (57.15)	3.00 (76.20)	0.62 (15.75)	1.19 (30)	1.50 (38.10)	1.50 (38.10)	1.38 (34.93)
TH2JX16	1" MP	1 (25.40)	20,000 (1379)	.688 (17.48)	3.00 (76.20)	4.12 (104.65)	0.72 (18.29)	1.38 (35)	2.06 (52.32)	2.06 (52.32)	1.75 (44.45)
					<p>*Maximum pressure rating is based on the lowest rating of any component. Actual working pressure may be determined by tubing pressure rating, if lower. All dimensions for reference only and subject to change. Fitting body material hot number start with Q and underline.</p> <p>For mounting hole option add suffix -PM to catalog number. Consult factory for mounting hole dimensions. To order Tee with different size connections of same type, contact local representative. For Connection Torque requirements, please see "Assembly Instructions" (Page 5)</p>						
Tee											

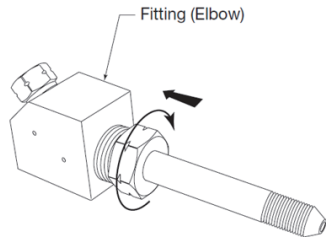
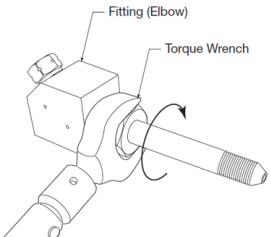
## Straight Coupling

Catalog Number	Connection Type	Outside Diameter Tube	Pressure Rating psi(bar)*	Orifice inches (mm)	Dimensions-Inches(mm)				Coupling Type
					A	B	C	D	
TH2HX4	1/4" MP	1/4 (6.35)	20,000 (1379)	0.125 (3.18)	0.62 (15.75)	1.62 (41.15)	0.38 (9.53)	0.50 (13)	Straight
TH2HX6	3/8" MP	3/8 (9.53)	20,000 (1379)	0.219 (5.56)	0.75 (19.05)	1.75 (44.45)	0.44 (11.18)	0.62 (16)	Straight
TH2HX9	9/16" MP	9/16 (14.29)	20,000 (1379)	0.359 (9.12)	1.13 (28.70)	2.12 (53.85)	0.53 (13.46)	0.94 (24)	Straight
TH2HX12	3/4" MP	3/4 (19.05)	20,000 (1379)	0.516 (13.11)	1.38 (35.05)	2.50 (63.50)	0.62 (15.75)	1.19 (30)	Straight
TH2HX16	1" MP	1 (25.40)	20,000 (1379)	.688 (17.48)	1.75 (44.45)	3.50 (88.90)	0.72 (18.29)	1.38 (35)	Straight
					<p>*Maximum pressure rating is based on the lowest rating of any component. Actual working pressure may be determined by tubing pressure rating, if lower. All dimensions for reference only and subject to change. Fitting body material hot number start with Q and underline.</p> <p>For Connection Torque requirements please see "Assembly Instructions" (Page 5)</p>				
Straight Coupling									

Other inlet/outlet requirements, like NPT adapter, please contact Parker Hannifin.

## Medium Pressure Connection: Step by Step Assembly Instructions

Step 1	Step 2	Step 3
		
<p>Insert Coned and Threaded Nipple through Gland (Typical Elbow Fitting Assembly consisting of Fitting Body, Collar, Gland, and Coned and Threaded Nipple or Tube End.)</p>	<p>Thread Collar turning (Reverse Threaded to prevent rotation during torque process) onto Coned and Threaded Nipple end.</p>	<p>For proper Collar placement, thread Collar onto Nipple leaving 1-1/2 to 2 full threads exposed on Fitting side of Collar. Lubricate Gland Threads and Collar Contact surface with anti-seize compound and tube tip with process compatible lubricant (do not use metal-flake type on tube or adapter tip)</p>

Step 4	Step 5	Medium Pressure Gland Torque												
		<p>For 316/316L SS, Tubing &amp; Adapters</p> <table border="1" data-bbox="1093 862 1380 1008"> <thead> <tr> <th>Fitting Size</th> <th>Required Torque ft-lb (N.m)</th> </tr> </thead> <tbody> <tr> <td>1/4" MP</td> <td>20 (27)</td> </tr> <tr> <td>3/8" MP</td> <td>30 (41)</td> </tr> <tr> <td>9/16" MP</td> <td>55 (75)</td> </tr> <tr> <td>3/4" MP</td> <td>90 (122)</td> </tr> <tr> <td>1" MP</td> <td>135 (187)</td> </tr> </tbody> </table>	Fitting Size	Required Torque ft-lb (N.m)	1/4" MP	20 (27)	3/8" MP	30 (41)	9/16" MP	55 (75)	3/4" MP	90 (122)	1" MP	135 (187)
Fitting Size	Required Torque ft-lb (N.m)													
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3/4" MP	90 (122)													
1" MP	135 (187)													
<p>Insert Tube/Gland assembly into Fitting body, turning clockwise approximately 4-5 threads (if unable to turn full distance by hand, look for misalignment issues with tubing and correct for proper seal).</p>	<p>Use Torque Wrench to properly set (see chart in next frame) Cone &amp; Thread Connections.</p>	<p>Torque for optional materials and pressures lower than maximum (above)</p>												

### Warranty:

In order to design valve and fitting products that operate safely in extremes of pressure and temperature, Parker have developed product specifications that meet or exceed the best practices of different engineering societies using ASME B31.3 as the primary design code.

In so doing, we have designed our products (Valves, Fittings, & Tubing) to work together as a complete system where we specify and control both material and critical dimensions & tolerances to meet the conditions for which they are designed.

Parker TH2 MP Fittings, and Tools are not designed to work with common commercial instrument tubing and will only work with tubing built to Parker specific specifications. "Do not mix or interchange parts or tubing with those of other manufactures." "Failure to do so will void warranty."

It should also be noted that "Modifying Parker components in any manner without prior written approval" could pose a significant safety risk, alter the pressure rating, will void warranty and may be subject to certain liability issues. **Customer will undertake responsibility if mix or interchange parts or tubing with those of other manufactures.**



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