

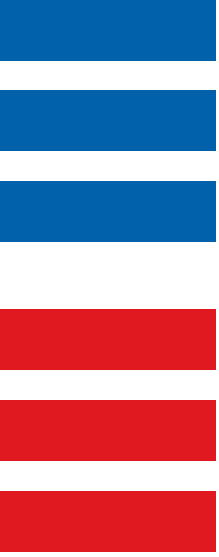


**KMT –  
PSC – Precision System Components**

High Pressure Valves, Fittings and  
Tubing Products







## Innovative Solutions and Services

KMT WATERJET SYSTEMS designs, manufactures, distributes, services and provides solutions for ultra-high pressure waterjet cutting systems, LDPE polyethylene production and various other ultra-high pressure associated industries.

## High performance through durability, reliability and availability

The product lines within Precision System Components (PSC) were developed based on customer input and KMT's experience with extreme pressure systems. Key attributes identified as top needs before development began were durability, reliability and availability.

The net result is a new line of valves, fittings and tubing, made for higher performance in even the toughest environments, using precision production machines, superior materials, and new designs.

PSC represents a whole new standard for the key components needed for reliable production - valves, fittings and tubing.

## The Value of Genuine KMT PSC Parts

KMT understands the need to keep your ultra high and medium pressure equipment running at peak performance. For this reason the company uses the latest technology to make parts for most any ultra high and medium pressure applications. By purchasing parts from KMT, you are assured of using Genuine Certified Parts that are made using the newest technology available – even if the parts are for older systems. Working with KMT for PSC Certified Genuine Parts has several additional benefits:

- KMT stocks a comprehensive inventory of high quality genuine parts with most available for immediate shipment.
- KMT replacement parts are the same reliable parts as your high and medium pressure system's original parts.
- Quick shipment of stock items in one business day or emergency same day delivery.
- KMT representatives are on hand 24/7 to answer technical questions, ship parts and, if required, dispatch a field service technician for an emergency site visit.
- Global Distribution Network



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# KMT Part Number Logic for Needle Valves

In addition to standard, base catalog parts, parts can be configured to fit almost any need.



## Special Configuration Codes:

### (1) CONNECTION FITTING

- 0 Standard connection fittings
- 1 Anti-Vibration Collet Gland
- 2 Moly Coated Anti-Vib Collet Gland

### (2) PACKING

- 0 Standard valve packing - Glass Filled - Service to 315° C (600° F)
- 1 Grafoil Packing; service to 426° C (800° F)
- 2 Teflon Packing; Service to 232° C (450° F)

### (3) STEM

- 0 Standard-Vee Valve Stem
- 1 Regulating Stem
- 2 Metering Stem
- 3 Micrometering Stem
- 4 Stellite replaceable stem
- 5 Stellite replaceable stem w/ replaceable seat
- 6 316SS wetted parts
- 7 Vee Stem "repair kit"
- 8 Reg. Stem "repair kit"

### (4) ACTUATOR

- 0 Standard hand valve
- 1 Air to close 5"
- 2 Air to open 5"
- 3 Air to close 8"
- 4 Air to open 8"
- 5 Double Acting 5"
- 6 Double Acting 8"
- 7 2X Double Acting
- 8 Double Acting Hydraulic
- 9 Double Acting Hydraulic Heavy

### (5) SERVICE

- 0 Standard valve
- 1 Cryogenic
- 2 High Temperature
- 3 Sour Gas Service
- 4 Cleaned for O2 service

### (6) MATERIAL

- 0 Standard valve 316SS CW
- 1 Hastelloy "C"™
- 2 Monel 400™
- 3 Inconel 600
- 4 Inconel 625
- 5 Duplex 2205
- 6 Super Duplex 2507
- 7 Titanium

### (7) MOUNTING AND HANDLES

- 0 Standard valve
- 1 Panel Mounted Packing Gland
- 2 Handle Locking Device (Prevents unauthorized open/closing valves)
- 3 Stem Locking Device (Prevents stem from turning due to vibration)

## Part Number Format:

1 2 3 4 5 6 7 8 - 1 2 3 4 5 6 7  
8 Digits Catalog Base Number      variable part number – red numbers on left side

### Example Part Number:

10078889 - 0110001

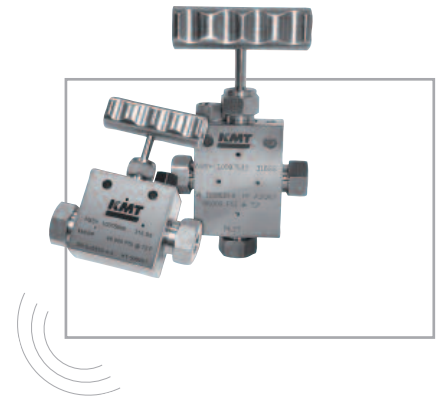
### Itemization:

66K valve, 9/16" Straight – Standard Connection Fittings, Grafoil Packing, Regulating Stem, No Actuator, No Special Service, Standard 316SS Material and Panel Mounted Packing Gland

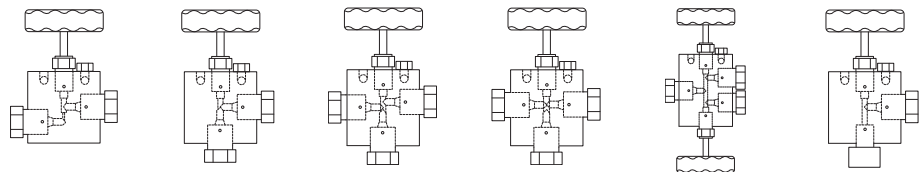
# Manual Needle Valves

Standard PSC valves are made from a high grade of cold worked stainless steel. The valves were deep cycle tested for performance under extreme conditions and are available in all industry-standard sizes and body patterns.

PSC standard valves are available for quick delivery and designed for safe, reliable operation in even harsh environments. The valves can be configured in a large number of ways (see options on page 5).



- Coned and threaded connections provide dependable performance in gas or liquid service.
- Operating temperatures from -252° C (-423° F) to 649° C (1200° F).
- Non-rotating stem to prevent galling and scoring.
- Metal to metal seating.
- Six different body patterns, with choice of several stem styles (valve part numbers listed below are "vee" style stems).
- Safety weep holes for all pressure connections and stem packing area.



MAWP*	Tube OD	Cv**	2-way Straight	2-way Angle	3-way Two on Pressure	2-way One on Pressure	2-stem Manifold	2-way Angle Replaceable Seat
<b>1.380 bar (20.000 PSI)</b>	1/4"	0,31	20441435	20453289	20447004	20447063	20447113	20447162
	3/8"	0,75	20453292	20453301	20447022	20447071	20447121	20447170
	9/16"	1,75	20441732	20441750	20447029	20447079	20447128	20447178
	3/4"	2,80	20441932	20441940	20447037	20447087	20447136	20447186
	1"	5,20	20442130	20442137	20447045	20447095	20447144	20447194
<b>2.070 bar (30.000 PSI)</b>	1/4"	0,12	20447212	20447253	20447285	20447326	20447368	20447409
	3/8"	0,23	20447219	20447261	20447303	20447334	20447376	20447417
	9/16"	0,33	20447227	20447269	20447311	20447352	20447384	20447425
	1"	2,80	20447235	20447277	20447318	20447360	20447402	20447443
<b>2.760 bar (40.000 PSI)</b>	9/16"	0,31	20447451	20447459	20447467	20447475	20447493	20447500
<b>4.550 bar (66.000 PSI)</b>	1/4"	0,09	10079259	10079002	20447534	20447550	80077712	20447607
	3/8"	0,14	10078863	10078749	05137724	10097533	10119030	20447615
	9/16"	0,27	10078889	10079275	10153500	10097541	10100287	20447633
	3/4"	0,50	49832926	20447516	20447542	20447558	20447599	20447641

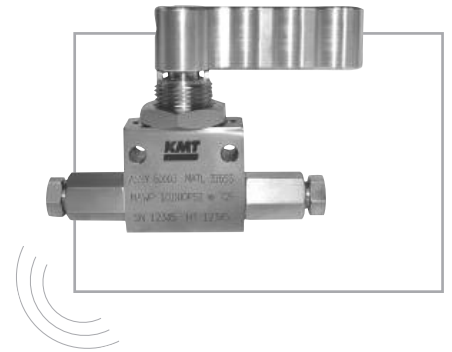
\* MAWP = Maximum Allowable Working Pressure at 22° C (72° F)

\*\* Cv values listed are for 2-way straight pattern valves. For 2-way angle pattern valves, increase Cv value by 50%.

# Ball Valves

PSC ball valves, designed for maximum flow and easy maintenance, are available for pressure systems to 1.380 bar (20,000 PSI), in 2- to 5-way designs and many options for connections and packing materials. They can also be fitted with PSC actuators for remote operation. Key features:

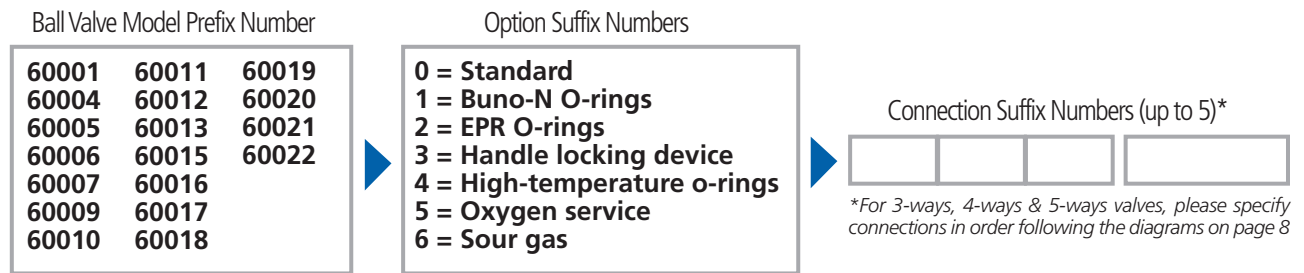
- Smooth, low torque, 1/4 –turn operation
- Built-in safety, pressure relief system
- Maintainable for lower operating costs
- Maximum-flow design to avoid pressure changes across valve
- Flow-indicator on handle
- Available in stainless steel material for quick delivery or other materials upon request.



Please call for more ordering information.

## KMT Part Number Logic for Ball Valves

In addition to standard base catalog parts, valves can be configured to fit almost any need.



Example Part Number:

**60005 - 00909**

**60005-00909 = 20,000 PSI, 2-Way Valve, On-Off Service, 1/4" Port, 1.40 CV – Standard, 1/4" Female Medium Pressure, Coned/Threaded Tube x 1/4" Female Medium Pressure, Coned/Threaded Tube**

MAWP*	Port	Cv**	Ball Valve Number
2-Way Valves for On-Off Services 690 bar (10.000 PSI)	3/16"	0,75	60001
	1/2"	10,00	60004
2-Way Valves for On-Off Services 1.380 bar (20.000 PSI)	1/4"	1,40	60005
	3/8"	3,40	60006

MAWP*	Port	Cv**	Ball Valve Number
3-Way Valves for Diverting Service 690 bar (10.000 PSI)	3/16"	0,56	60013
	1/2"	5,00	60015
3-Way Valves for Diverting Service 830 bar (12.000 PSI)	3/16"	0,56	60016
3-Way Valves for Diverting Service 1.380 bar (20.000 PSI)	3/16"	0,56	60017
	3/8"	2,40	60018

MAWP*	Port	Cv**	Ball Valve Number
3-Way Valves for Diverting Service 690 bar (10.000 PSI)	3/16"	0,56	60007
	1/2"	5,00	60009
3-Way Valves for Diverting Service 830 bar (12.000 PSI)	3/16"	0,56	60010
3-Way Valves for Diverting Service 1.380 bar (20.000 PSI)	3/16"	0,56	60011
	3/8"	2,40	60012

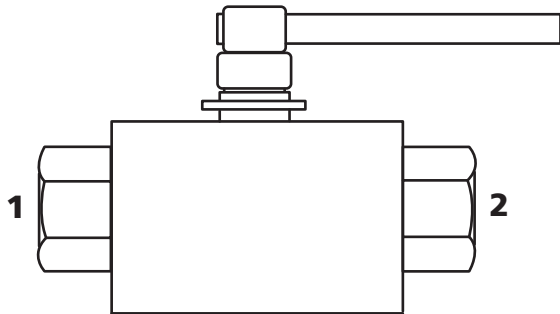
MAWP*	Port	Cv**	Ball Valve Number
4-Way & 5-Way Valves 690 bar (10.000 PSI)	3/16"	0,56	60019
	3/16" (5-Way)	0,56	60020
	3/8"	2,40	60021
	3/8" (5-Way)	2,40	60022

\* MAWP = Maximum Allowable Working Pressure at 22° C (72° F)

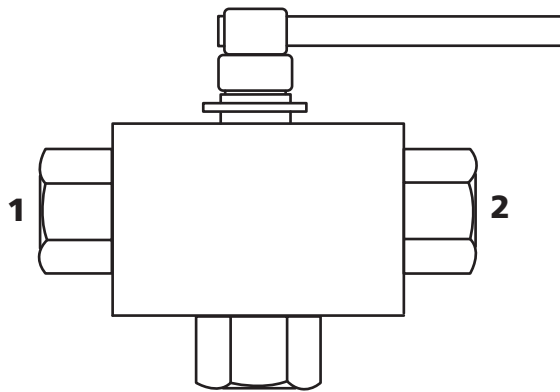
\*\* Cv values listed are for 2-way straight pattern valves excluding metering valves. For 2-way angle pattern valves, increase Cv value by 50%. For Metering Values: Cv=.004, Port size=0.062"

All KMT ball valves can be fitted with pneumatic or electric actuators for remote control. In addition, we also offer models for custom, limited and unique applications. Please call for more information.

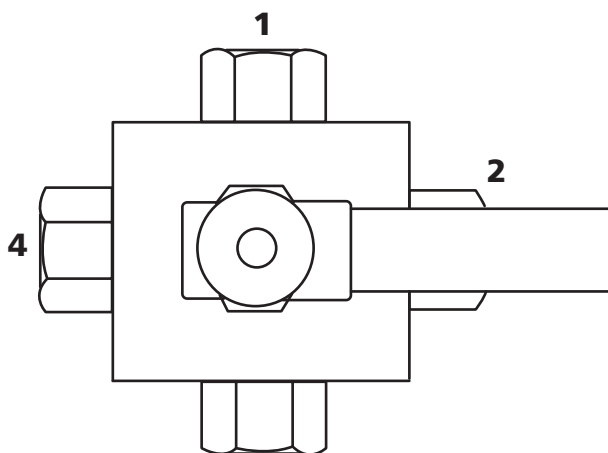
# Ball Valve Connection Suffix Numbers



**2-Way**



**3-Way**



**4- & 5-Way**

\* MAWP = Maximum Allowable Working Pressure at 22° C (72° F)

CAUTION: The MAWP of the valve shall not exceed the MAWP of the valve series or the selected connection, whichever is less.

## FEMALE PIPE

MAWP*	Side Connection Suffix	Connection	Bottom Connection Suffix
1.035 bar (15.000 PSI)	12	1/8" FNPT	12B
	13	1/4" FNPT	13B
	14	3/8" FNPT	14B
	15	1/2" FNPT	15B
690 bar (10.000 PSI)	22	3/4" FNPT	22B
	25	1" FNPT	25B
	26	1-1/2" FNPT	26B

## MALE PIPE

MAWP*	Side Connection Suffix	Connection	Bottom Connection Suffix
1.035 bar (15.000 PSI)	01	1/8" MNPT	01B
	02	1/4" MNPT	02B
	03	3/8" MNPT	03B
	04	1/2" MNPT	04B
690 bar (10.000 PSI)	28	3/4" MNPT	28B
	29	1" MNPT	29B
	30	1-1/2" MNPT	30B

## FEMALE M/P CONED & THREADED TUBE

MAWP*	Side Connection Suffix	Connection	Bottom Connection Suffix
1.380 bar (20.000 PSI)	09	1/4" M/P	09B
	10	3/8" M/P	10B
	11	9/16" M/P	11B
	20	3/4" M/P	20B
	24	1" M/P	24B

## MALE M/P CONED & THREADED TUBE

MAWP*	Side Connection Suffix	Connection	Bottom Connection Suffix
1.380 bar (20.000 PSI)	05	1/4" M/P	05B
	07	3/8" M/P	07B
	08	9/16" M/P	08B
	21	3/4" M/P	21B
	27	1" M/P	27B

## FEMALE H/P CONED & THREADED TUBE

MAWP*	Side Connection Suffix	Connection	Bottom Connection Suffix
1.380 bar (20.000 PSI)	16	1/4" H/P	16B
	17	3/8" H/P	17B
	18	9/16" H/P	18B

## MALE H/P CONED & THREADED TUBE

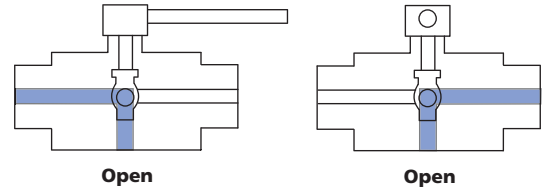
MAWP*	Side Connection Suffix	Connection	Bottom Connection Suffix
1.380 bar (20.000 PSI)	06	1/4" H/P	06B
	19	3/8" H/P	19B
	23	9/16" H/P	23B



# Ball Valves function-chart

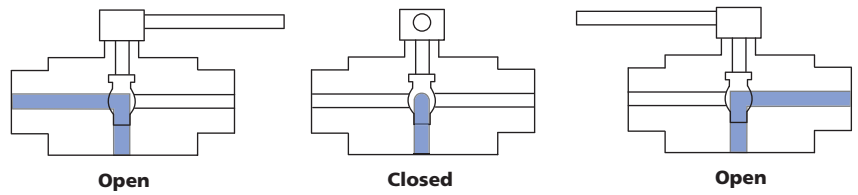
## 3-Way Diverting

3-Way diverting ball valves are designed to divert media from a single source to one of two separate lines. The 90° quarter-turn design allows for continuous on-line service.



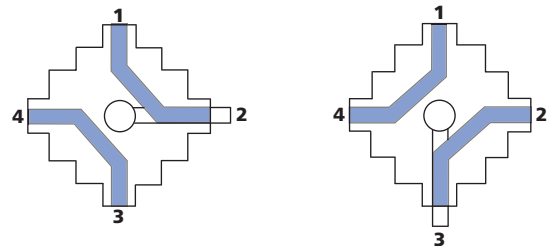
## 3-Way Switching

3-Way switching ball valves are designed to direct media from bottom inlet to one of two separate lines. The 180° quarter-turn design allows for positive shutoff in the center position.



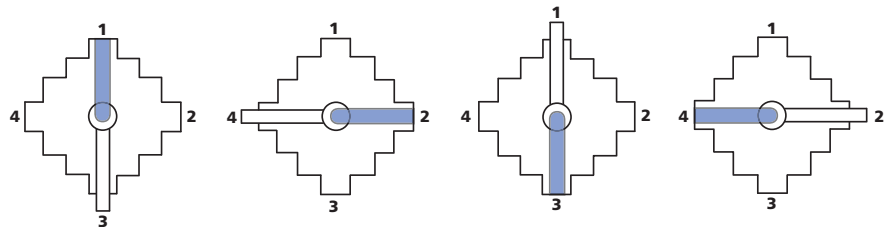
## 4-Way

4-way ball valves utilize a double-ported ball for crossover of two flows. The 90° quarter-turn design allows for continuous on-line service. The valve can be used in place of a three valve manifold.



## 5-Way

5-way ball valves direct media flow from a single bottom inlet to one of four separate lines. The 360° quarter-turn design allows for continuous on-line service.



All PSC Ball Valves are capable of bi-directional flow.



# Air or Hydraulic Actuators for Remote Valve Operation

PSC actuators enable remote operation of manual valves and are typically used on valves located in harsh environments or limited access areas. The actuators were developed specifically for durability and reliable performance.

**Single-Action Actuators** have built in safety mechanisms which automatically close or open upon a loss in air pressure.

**Normally Closed** – Air is required to open the valve; any loss in air pressure automatically closes the valve.

**Normally Open** – Air is required to close the valve; any loss in air pressure automatically opens the valve.

**Double-Action Actuators** open or close valves in a controlled motion, using air or hydraulic pressure.



## Selection Process:

- Step 1 – Choose the best manual valve for the application from the Manual Needle Valve section.
- Step 2 – Locate that valve number's prefix on the Actuator Chart below.
- Step 3 – Locate the line with the correct system pressure.
- Step 4 – Select the best Actuator for the application. Actuator number is at the top of the column.

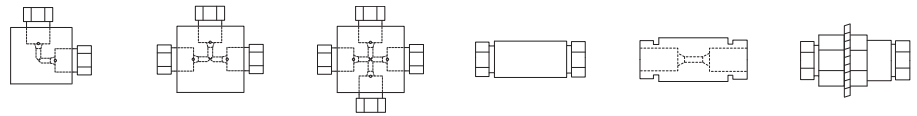
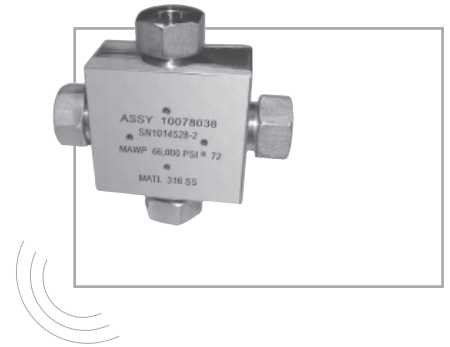
**This Chart for Actuator only. See page 5 for ordering with Needle Valve.**

Valve Series & Tube OD		Normally Open, Air-to Close Actuators		Normally Closed, Air-to Open Actuators		Double-Acting Pneumatic Actuators		Double-Acting Hydraulic Actuators	
		20447649	20447657	20447665	20447683	20447690	20447698	20447706	20447724
20K 1/4" – 3/8"	MAWP*	1.380 bar (20.000 PSI)	–	1.380 bar (20.000 PSI)	1.380 bar (20.000 PSI)	1.380 bar (20.000 PSI)	–	1.380 bar (20.000 PSI)	–
	Req'd Air Pressure	5 bar (74 PSI)	–	6 bar (82 PSI)	4 bar (55 PSI)	4 bar (63 PSI)	–	41 bar (592 PSI)	–
20K 9/16"	MAWP*	1.241 bar (18.000 PSI)	1.380 bar (20.000 PSI)	965 bar (14.000 PSI)	1.380 bar (20.000 PSI)	1.380 bar (20.000 PSI)	–	1.380 bar (20.000 PSI)	–
	Req'd Air Pressure	7 bar (100 PSI)	3 bar (49 PSI)	6 bar (84 PSI)	4 bar (58 PSI)	7 bar (98 PSI)	–	64 bar (925 PSI)	–
20K 3/4"	MAWP*	–	1.380 bar (20.000 PSI)	–	862 bar (12.500 PSI)	–	1.380 bar (20.000 PSI)	–	1.380 bar (20.000 PSI)
	Req'd Air Pressure	–	7 bar (101 PSI)	–	5 bar (66 PSI)	–	6 bar (90 PSI)	–	78 bar (1,134 PSI)
20K 1"	MAWP*	–	827 bar (12.000 PSI)	–	517 bar (7.500 PSI)	–	827 bar (12.000 PSI)	–	1.103 bar (16.000 PSI)
	Req'd Air Pressure	–	7 bar (100 PSI)	–	5 bar (66 PSI)	–	6 bar (89 PSI)	–	103 bar (1,500 PSI)
30K 1/4" – 9/16"	MAWP*	2.068 bar (30.000 PSI)	–	2.068 bar (30.000 PSI)	–	2.068 bar (30.000 PSI)	–	2.068 bar (30.000 PSI)	–
	Req'd Air Pressure	2 bar (35 PSI)	–	5 bar (78 PSI)	–	2 bar (32 PSI)	–	15 bar (222 PSI)	–
30K 1"	MAWP*	–	1.241 bar (18.000 PSI)	–	861 bar (12.500 PSI)	–	1.517 bar (22.000 PSI)	–	1.793 bar (26.000 PSI)
	Req'd Air Pressure	–	–	–	5 bar (66 PSI)	–	7 bar (99 PSI)	–	102 bar (1,475 PSI)
40K 9/16"	MAWP*	2.758 bar (40.000 PSI)	–	2.758 bar (40.000 PSI)	–	2.758 bar (40.000 PSI)	–	2.758 bar (40.000 PSI)	–
	Req'd Air Pressure	2 bar (36 PSI)	–	5 bar (78 PSI)	–	2 bar (24 PSI)	–	16 bar (227 PSI)	–
66K 1/4" – 9/16"	MAWP*	4.550 bar (66.000 PSI)	–	4.550 bar (66.000 PSI)	–	4.550 bar (66.000 PSI)	–	4.550 bar (66.000 PSI)	–
	Req'd Air Pressure	2 bar (23 PSI)	–	6 bar (88 PSI)	–	1 bar (12 PSI)	–	8 bar (111 PSI)	–

\* MAWP = Maximum Allowable Working Pressure at 22° C (72° F)

# Medium and High Pressure Fittings

A wide assortment of fittings and couplings are stocked and available to handle nearly any coned and threaded connection requirement. Made from high quality stainless steel material, all are sized for best fit and durability, even in harsh environments. Custom sizes and shapes are available if needed.



MAWP*	Tube OD	Elbow	Tee	Cross	Coupling	Replaceable Seat Coupling	Bulkhead Coupling
<b>1.380 bar (20.000 PSI)</b>	1/4"	80089576	80089584	20442955	20443087	20445195	20443064
	3/8"	20442897	20442923	20442973	20443095	20445203	20443072
	9/16"	49879208	20442931	20442980	20443113	20445211	20443079
	3/4"	20442905	20442939	20442988	20445179	20445229	20445244
	1"	49879802	49879810	49879828	20445187	20445237	20445252
<b>2.070 bar (30.000 PSI)</b>	1"	20445260	20445278	20445286	20445294	20445302	20445310
<b>2.760 bar (40.000 PSI)</b>	9/16"	20417213	20417221	20445343	20417229	20445369	20445377
<b>4.550 bar (66.000 PSI)</b>	1/4"	10079051	10079481	10097228	10079028	05142336	05089966
	3/8"	10078780	10078590	10078038	10078905	20445419	10078160
	9/16"	10078525	10079465	10079168	10078640	20445427	10079705
	3/4"	49832645	49832660	49832652	20445393	20445434	20424785

Standard material is 316 stainless steel. Other materials available upon request.



MAWP*	Tube OD	Gland	Collar	Plug	Anti-Vibration Collet Gland	Cap	1/4" Angle Safety Head	1/2" Flat Safety Head
<b>1.380 bar (20.000 PSI)</b>	1/4"	20441700	20441716	80089568	20443030	20442996	20446782	20455395
	3/8"	20441708	20441724	20446699	20443038	20443014	20446790	20455398
	9/16"	49879216	20441914	20446707	20443046	20443022	05075585	20455401
	3/4"	49880024	49880032	20446715	20446741	20446756	20446806	N/A
	1"	49879786	49879794	80085921	20446748	20446764	20446814	N/A
<b>2.070 bar (30.000 PSI)</b>	1"	20442312	20442319	20446847	20446748	20446863	20446881	–
<b>2.760 bar (40.000 PSI)</b>	9/16"	10078608	10079119	20446905	20446946	20446931	20446938	–
<b>4.550 bar (66.000 PSI)</b>	1/4"	10078459	10078426	10078244	10078699	20446954	05018767	–
	3/8"	10078129	10078715	10079523	10078913	20446972	10078186	–
	9/16"	10078608	10079119	10078772	10093573	20446980	10078574	–
	3/4"	49832678	49832686	49832694	20455914	20446988	‡20446996	–

‡ See page 13 for rupture disc

\* MAWP = Maximum Allowable Working Pressure at 22° C (72° F)

# Male and Female Adapters and In-Line Couplings

KMT designs and manufactures a wide variety of adapters and couplings in an array of styles and sizes.

The following Charts (or Tables) offer some of the different tube connection adapters and couplings. Other connection styles and sizes are available upon request.

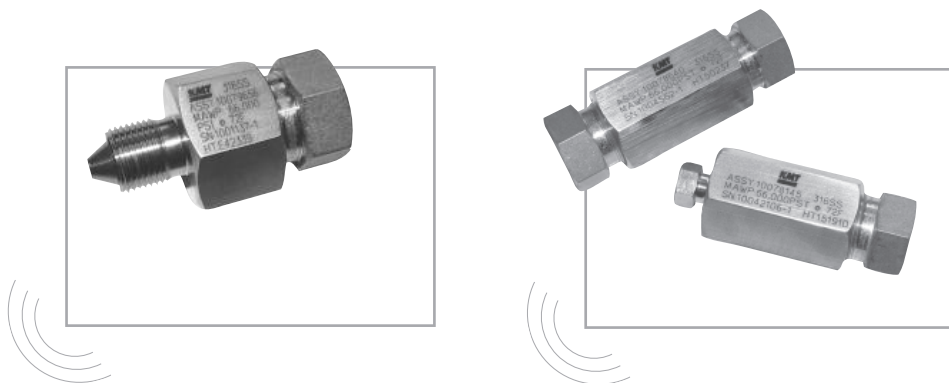
- All adapters and couplings are 316 cold worked stainless steel material. (Other materials available).
- Adapters are available in one or two piece male end design.

		FEMALE END				
		NAWP*: 690 bar (10.000 PSI), NPT				
MAWP*	Tube OD	1/4"	3/8"	1/2"	3/4"	1"
NPT	1/4"	-	-	-	-	-
	3/8"	-	-	-	-	-
	1/2"	-	-	-	-	-
	3/4"	-	-	-	-	-
	1"	-	-	-	-	-
1.380 bar (20.000 PSI)	1/4"	20445708	20445624	20445715	20460630	20460633
	3/8"	20457090	20457093	20457096	20460636	20460639
	9/16"	20457099	20457102	20457105	20462214	05076039
	3/4"	20462220	20462223	20462226	20462229	20462232
	1"	20462235	20462238	05075593	20462244	20462247
4.550 bar (66.000 PSI)	1/4"	05071154	20457111	20457114	20462250	20462253
	3/8"	20457117	20457120	20457123	20462256	20462259
	9/16"	05074679	20457129	20460492	20462262	05142328
	3/4"	20462268	20462271	20462274	20462277	20462280

		MALE END				
		NAWP*: 690 bar (10.000 PSI), NPT				
MAWP*	Tube OD	1/4"	3/8"	1/2"	3/4"	1"
NPT	1/4"	-	-	-	-	-
	3/8"	-	-	-	-	-
	1/2"	-	-	-	-	-
	3/4"	-	-	-	-	-
	1"	-	-	-	-	-
1.380 bar (20.000 PSI)	1/4"	20455551	20455554	20455557	20462379	20462394
	3/8"	20460495	20460498	20460501	20462382	20462397
	9/16"	20460504	20460507	20460510	20462385	20462400
	3/4"	20462361	20462367	20462373	20462388	20462403
	1"	20462364	20462370	20462376	20462391	20462406
4.550 bar (66.000 PSI)	1/4"	20460945	20460513	20460516	20462418	20462430
	3/8"	20460519	20460522	20460525	20462421	20462433
	9/16"	20460528	20460531	20460534	20462424	20462436
	3/4"	20462409	20462412	20462415	20462427	20462439

\*MAWP = Maximum Allowable Working Pressure at 22° C (72° F)  
 Note: Maximum Pressure Rating of an adapter / coupling is based on the lowest rating of the two connections. Actual working pressure may be determined by the tubing.

		FEMALE END				
		NAWP*: 690 bar (10.000 PSI), NPT				
MAWP*	Tube OD	1/4"	3/8"	1/2"	3/4"	1"
NPT	1/4"	-	-	-	-	-
	3/8"	-	-	-	-	-
	1/2"	-	-	-	-	-
	3/4"	-	-	-	-	-
	1"	-	-	-	-	-
1.380 bar (20.000 PSI)	1/4"	20460801	20460804	20460807	20462493	20462508
	3/8"	20460810	20460813	20460816	20462496	20462511
	9/16"	20460819	20460822	20460825	20462499	20462514
	3/4"	20462475	20462481	20462487	20462502	20462517
	1"	20462478	20462484	20462490	20462505	20462520
4.550 bar (66.000 PSI)	1/4"	20460828	20460831	20460834	20462532	20462544
	3/8"	20460837	20460840	20460843	20462535	20462547
	9/16"	20460846	20460849	20460852	20462538	20462550
	3/4"	20462523	20462526	20462529	20462541	20462553



FEMALE END									
NAWP*: 1.380 bar (20.000 PSI), Tube OD					NAWP*: 4.550 bar (66.000 PSI), Tube OD				
1/4"	3/8"	9/16"	3/4"	1"	1/4"	3/8"	9/16"	3/4"	
80088529	20460750	20460753	20462283	20462286	20460774	20460777	20460780	20462331	
20460756	20460759	20460762	20462289	20462292	20460783	05042817	20460789	20462334	
20460765	20460768	20460771	20462304	20462307	20460792	20460795	20460798	20462346	
20462295	20462298	20462301	20462310	20462313	20462337	10126746	20461278	20462349	
20462316	20462319	20462322	20462325	20462328	20462352	20462355	20462343	20462358	
20445905	20445955	20446004	20446054	20446103	20446153	20446202	20446252	20446311	
20445913	20445963	20446012	20446062	20446121	20446171	20446220	20446270	20446319	
20445921	20445971	20446030	20446080	20446129	20446179	20446228	20446277	20446327	
20445939	20445989	20446038	20446087	20446137	20446186	20446236	20446285	20446335	
20445947	20445996	05075577	20446095	20446145	20446194	20446244	49889306	20446343	
20446361	20446392	20446434	20446483	20446525	49830151	10079473	10079424	20446650	
20446369	20446410	20446442	20446501	20446551	10079432	20446600	10079655	20446657	
20446376	20446418	20446460	20446509	20446558	10079580	10079457	20446616	49832801	
20446384	20446426	20446475	20446517	20446566	20446592	80072549	49837206	20446673	

MALE END									
NAWP*: 1.380 bar (20.000 PSI), Tube OD					NAWP*: 4.550 bar (66.000 PSI), Tube OD				
1/4"	3/8"	9/16"	3/4"	1"	1/4"	3/8"	9/16"	3/4"	
20455551	20460495	20460504	20462361	20462364	20460945	20460519	20460528	20462409	
20455554	20460498	20460507	20462367	20462370	20460513	20460522	20460531	20462412	
20455557	20460501	20460510	20462373	20462376	20460516	20460525	20460534	20462415	
20462379	20462382	20462385	20462388	20462391	20462418	20462421	20462424	20462427	
20462394	20462397	20462400	20462403	20462406	20462430	20462433	20462436	20462439	
20455578	20460567	20460570	20460591	20460594	20460645	20460654	20460663	20462442	
20460567	20460573	20460579	20460597	20460576	20460648	20460657	20460666	20462445	
20460570	20460579	20460600	20460603	20460606	20460651	20460660	20460669	20462448	
20460591	20460597	20460603	20460609	20460612	20462451	20462454	20462457	20462460	
20460594	20460576	20460606	20460612	20460615	20462463	20462466	20462469	20462472	
20460645	20460648	20460651	20462451	20462463	20460459	20460552	20460558	20460618	
20460654	20460657	20460660	20462454	20462466	20460552	20460555	20460561	20460621	
20460663	20460666	20460669	20462457	20462469	20460558	20460561	20460564	20460624	
20462442	20462445	20462448	20462460	20462472	20460618	20460621	20460624	20460627	

FEMALE END									
NAWP*: 1.380 bar (20.000 PSI), Tube OD					NAWP*: 4.550 bar (66.000 PSI), Tube OD				
1/4"	3/8"	9/16"	3/4"	1"	1/4"	3/8"	9/16"	3/4"	
20460801	20460810	20460819	20462475	20462478	20460828	20460837	20460846	20462523	
20460804	20460813	20460822	20462481	20462484	20460831	20460840	20460849	20462526	
20460807	20460816	20460825	20462487	20462490	20460834	20460843	20460852	20462529	
20462493	20462496	20462499	20462502	20462505	20462532	20462535	20462538	20462541	
20462508	20462511	20462514	20462517	20462520	20462544	20462547	20462550	20462553	
20443087	20445468	20445484	20445492	20445500	20445749	20445781	20445799	20445806	
20445468	20443095	20445518	20445525	20445533	20446574	20445757	20445814	20445822	
20445484	20445518	20443113	20445541	20445559	20446046	20446293	20445765	20445840	
20445492	20445525	20445541	20445179	20445575	20446608	20446665	20457108	20445773	
20445500	20445533	20445559	20445575	20445187	20445848	20445856	20445864	20445872	
20445749	20446574	20446046	20446608	20445848	10079028	10079614	10078145	20445890	
20445781	20445757	20446293	20446665	20445856	10079614	10078905	10079531	20445898	
20445799	20445814	20445765	20457108	20445864	10078145	10079531	10078640	20455920	
20445806	20445822	20445840	20445773	20445872	20445890	20445898	20455920	49832835	

# 1/4" Angular and 1/2" Flat Rupture Discs

1/4" & 1/2" rupture discs are designed to be used with the safety head assemblies shown on previous page. Minimum rupture disc pressure ratings should be at least 110% of system operating pressure. The standard material is Inconel. The pressure ranges indicated in the following tables are at room temperature (22° F). Other materials and pressure ranges are available upon request. See page 11 for Safety Head Assemblies.



Catalog Number	Pressure Range (bar)
20455989	635 – 695
05075569	669 – 731
20455992	702 – 767
20455995	736 – 804
20455998	769 – 840
20456001	803 – 877
20456004	836 – 914
20456007	869 – 950
20456010	903 – 987
20456013	936 – 1.025
20456016	1.005 – 1.095
20456019	1.035 – 1.135
20456022	1.070 – 1.170
20456025	1.105 – 1.205
20456028	1.135 – 1.245
20456031	1.170 – 1.280
20456034	1.205 – 1.315

Catalog Number	Pressure Range (bar)
20456037	1.234 – 1.350
20456040	1.305 – 1.425
20456043	1.340 – 1.460
20456046	1.370 – 1.500
20456049	1.445 – 1.515
20456052	1.505 – 1.645
20456055	1.670 – 1.825
20456058	1.740 – 1.900
20456061	1.805 – 1.975
20456064	1.875 – 2.045
20456067	2.005 – 2.195
20456070	2.075 – 2.265
20456073	2.175 – 2.375
20456076	2.340 – 2.560
20456079	2.510 – 2.740
20456082	2.680 – 2.925
20456085	2.845 – 3.105

Catalog Number	Pressure Range (bar)
20456088	3.010 – 3.290
20456091	3.345 – 3.655
20456094	3.680 – 4.020
20456097	4.010 – 4.385
20456100	4.285 – 4.550
20456103	4.545 – 4.970
20456106	4.750 – 5.190

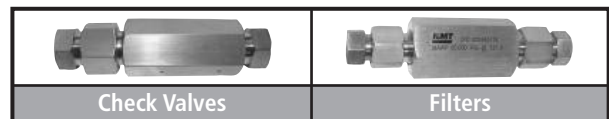
Catalog Number	Pressure Range (bar)
20456190	334 – 365
20456193	368 – 402
20456196	388 – 424
20456199	401 – 439
20456202	435 – 475
20456205	468 – 512
20456229	502 – 548
20456232	535 – 585
20456235	568 – 621
20456238	602 – 658
20456241	669 – 731

} 1/2" Flat Rupture Disc

## Check Valves and Filters

Micron rating of filter must be specified. To order, complete the catalog number with the desired micron rating, upstream first:  
**20444831-40/20** = line filter with 1/4" M/P connections, a 40 micron filter upstream and 20 micron downstream.

Micron rating of filter must be specified. To order, complete the catalog number with the desired micron rating:  
**20444880-20** = cup filter with 1/4" M/P connections, with a 20 micron filter.

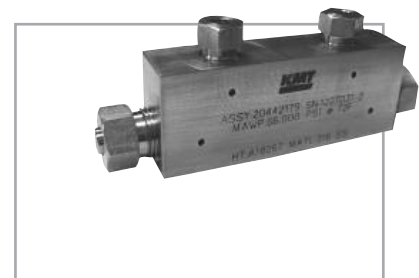


		Check Valves		Filters	
MAWP*	Tube OD	Ball Type	O-ring Type	Line	Cup
<b>1.380 bar (20.000 PSI)</b>	1/4"	20444732	20444781	20444831	20444880
	3/8"	20444740	20444789	20444839	20444898
	9/16"	20444758	20444807	20444857	20444906
	3/4"	20444766	20444815	20444864	20444914
	1"	20444773	20444823	20444872	20444922
<b>2.070 bar (30.000 PSI)</b>	1"	20444930	20444948	20444956	20444963
<b>2.760 bar (40.000 PSI)</b>	9/16"	20444971	20444979	20444997	20445005
<b>4.550 bar (66.000 PSI)</b>	1/4"	80073885	20445054	20445096	20445138
	3/8"	05075999	20445062	20445104	20445145
	9/16"	10096139	20445070	20445112	20445153
	3/4"	20445047	20445088	20445120	20445161

\* MAWP = Maximum Allowable Working Pressure at 22° C (72° F)

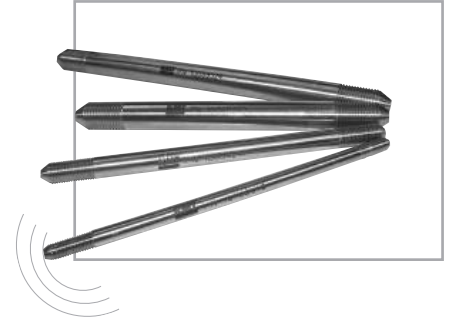
## Manifolds

Custom, high pressure manifolds can be machined quickly from a large variety of materials, to provide a simple method of connecting multiple feeder lines to one supply. Design assistance is available if necessary. To speed production, files should be sent in dxf format, specifying material to be machined, material to be contained and types and sizes of fittings to be used. Once the manifold is made, it can easily be reordered with the same part number as marked on the manifold.



# Nipples and Tubing

Tested, inspected and cold-drawn for maximum strength and performance, PSC stainless steel tubing meets high quality and performance standards for reliability at high pressures while containing corrosive materials. **Autofrettaged tubing is also available.**



## Nipples

Coned to the correct angle for proper seating and threaded the appropriate length to avoid weakening the tube, PSC nipples are available in standard lengths (for quick delivery) and in custom lengths upon request. To order, choose the pressure range, outside diameter (OD) and length.

The standard material is 316 stainless steel. Other materials may be provided upon request.

MAWP*	Tube		Length						
	O.D.	I.D.	2,75"	3,00"	4,00"	6,00"	8,00"	10,00"	12,00"
<b>1.380 bar (20.000 PSI)</b>	1/4"	0,109"	20447914	20447922	20447930	20447938	20447946	20447964	20447971
	3/8"	0,203"	20447979	20447987	20448005	20448013	20448021	20448029	20448037
	9/16"	0,312"	–	20448063	05076021	20448078	20448086	20448104	20448112
	3/4"	0,438"	–	–	20448136	20448154	20448164	20448169	20448177
	1"	0,562"	–	–	–	20448219	20448227	20448245	20448253
<b>2.070 bar (30.000 PSI)</b>	1"	0,438"	–	–	–	20448294	20448302	20448310	20448318
<b>2.760 bar (40.000 PSI)</b>	9/16"	0,250"	–	–	20448351	20448359	20448367	20448385	20448393
<b>4.550 bar (66.000 PSI)</b>	1/4"	0,083"	10066520	10093359	10105880	10103018	80070519	10057636	10092153
	3/8"	0,125"	05050554	10094704	10105443	10094217	10103067	05147707	10106508
	9/16"	0,188"	–	05010822	10069326	10090272	10069524	05067780	05134457
	3/4"	0,250"	–	–	20448401	20448409	20448417	20448435	20448442

## Tubing

PSC offers a complete selection of Austenetic cold drawn, stainless steel tubing in standard 20-27 foot lengths (lengths vary due to production runs) or in special lengths to 40 feet<sup>‡</sup>. Inspected for consistency, the tubes have high strength and anti-corrosion durability for dependable, long-lasting performance.

The standard materials are 316 and 304 stainless steel. Other materials may be provided upon request depending on the specific material size and required pressure rating.

MAWP*	Tube		Catalog Number	
	O.D.	I.D.	316SS	304SS
<b>1.380 bar (20.000 PSI)</b>	1/4"	0,109"	80088578	20447748
	3/8"	0,203"	20447756	20447774
	9/16"	0,312"	20447782	10096154
	3/4"	0,438"	20447797	20447805
	1"	0,562"	20447823	20447831
<b>2.070 bar (30.000 PSI)</b>	1"	0,438"	20447839	20447847
<b>2.760 bar (40.000 PSI)</b>	9/16"	0,250"	20447855	20417206
<b>4.550 bar (66.000 PSI)</b>	1/4"	0,083"	‡10064376	80074420
	3/8"	0,125"	10064665	05056478
	9/16"	0,188"	10061190	05143474
	3/4"	0,250"	49832884	20447896

<sup>‡</sup> 40' Length – Use Part Number 10184810

\* MAWP = Maximum Allowable Working Pressure at 22° C (72° F)

# Pressure Gauges

KMT offers a line of gauges for indication of system pressure. All gauges are supplied with 1/4" H/P Coned and Threaded connections. Various adapters are available for use with medium and high pressure component systems. PSC pressure gauges are available for quick delivery and reliable operation. All are marked with part numbers to simplify re-ordering of the same gauge for new pressure lines or panels. All are supplied with 1/4" fittings and are made from stainless steel for durability and accuracy.



## Standard Features:

- Coned and threaded for high pressure connection
- Accuracy within 0.5%
- Built-in pressure relief panel
- Plastic face and aluminum alloy case with stainless steel fittings
- Convenient calibration adjustment access from front

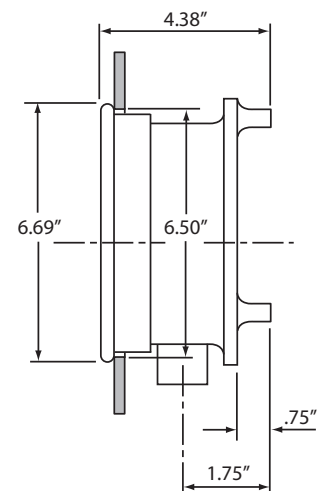
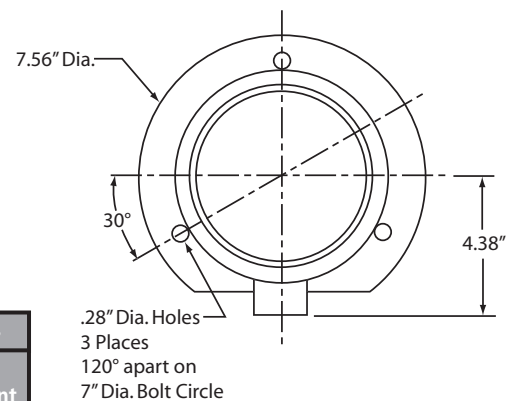
## Design Features:

- Designed to Class AA standards: 1/4 of 1% accuracy
- Impact resistant aluminum case
- Black epoxy finish
- 316SS Bourdon tube and socket
- Solid front provides maximum safety with a solid wall between the Bourdon tube and window
- Blowout disc covers entire rear of gauge for pressure relief should the Bourdon tube fail
- Other material are available upon request

## Options:

- Electric Contact Face
- Liquid Filled

Pressure Range	Pressure Divisions	Bottom Connected Gauges		Back Connected Gauges	
		Wall Mount	Flush Mount	Wall Mount	Flush Mount
1.035 bar 15.000 PSI	7 bar 100 PSI	20454993	20454996	20454999	20455002
1.380 bar 20.000 PSI	14 bar 200 PSI	20455005	20455008	20455011	20455014
2.070 bar 30.000 PSI	17 bar 250 PSI	20455017	20455020	20455023	20455026
3.450 bar 50.000 PSI	34 bar 500 PSI	20455029	20455032	20455035	20455038
5.170 bar 75.000 PSI	34 bar 500 PSI	20455041	20455044	20455047	20455050
6.895 bar 100.000 PSI	69 bar 1.000 PSI	20455053	20455056	20455059	20455062









# Tools and Installation

KMT offers manual and power coning and threading tools designed to prepare accurate tubing ends to accept the medium and high pressure cone and threaded connections.

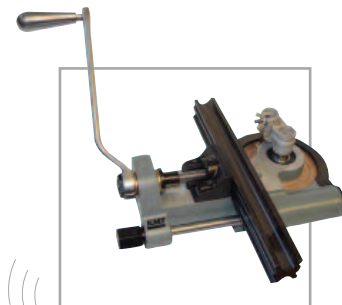
## Coning and Threading Tools

Manual and power tool attachments are both available for coning and threading different materials. Additional replacement blades, dies and bushings are available.

							
		MANUAL TOOLS		POWER TOOLS		Thread Dies	Coning Blades
Series	Tube O.D.	Coning Tool	Threading Tool	Coning Tool	Threading Tool		
<b>1.380 bar (20.000 PSI)</b>	1/4 "	20444558	05108865	20444667	05122742	05108899	20455206
	3/8 "	20444576	05108873	20444674	05120258	05108915	20455209
	9/16 "	20444583	05108881	20444682	05122759	10078301	20455212
	3/4 "	20444591	20444633	20444690	49832843	20461488	20455215
	1 "	20444599	20444641	20444708	20444649	20461491	20461494
<b>2.070 bar (30.000 PSI)</b>	1 "	20444625	20444641	20444724	20444649	20461491	20461500
<b>4.550 bar (66.000 PSI)</b>	1/4 "	05108832	05108865	05109897	05122742	05108899	05108808
	3/8 "	05108857	05108873	05109889	05120258	05108915	05108824
	9/16 "	05108840	05108881	05109871	05122759	10078301	05108816
	3/4 "	49832850	49832868	49832892	49832843	49838311	49838337

### Manual Tube Bender

The manual tube bender is light, precise, and portable for bending tubes onsite. This allows for easy and quick bending of the tubing to the angle needed.



MAWP*	Tube O.D.	Catalog Number
<b>Blending Shoe</b>	1/4 "	20417734
	3/8 "	20417701
	9/16 "	20417708
<b>Tool only for</b>	1/4 ", 3/8 ", 9/16 "	20455404
<b>Tool Complete with all Blending Shoes</b>		20417726

### Tube Vises

The easiest, most portable way to hold tubing while coning and threading the ends. Tube vises are designed to clamp the tube while keeping the surface intact for maximum strength.

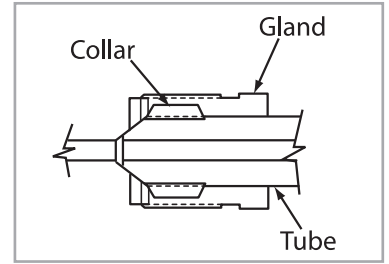


Tube O.D.	Catalog Number
1/4 "	05108782
3/8 "	05108790
9/16 "	05108774
3/4 "	49832876
1 "	20440071

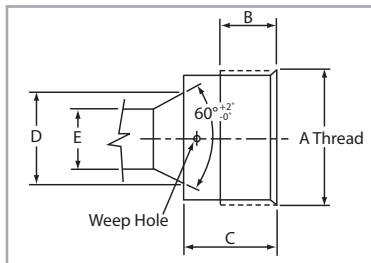
# Medium Pressure Connections

## Assembly Procedure:

1. Slip gland nut onto tubing or nipple.
2. Screw collar onto threaded end of tubing or nipple. Allow one or two threads to be exposed on tubing or nipple between collar and coned tubing.
3. Lubricate male threads of gland nut with a non-hardening lubricant suitable for use on stainless steel. Lubricant chosen should also be compatible with working temperature requirements.
4. A small amount of process tolerable lubricant, such as silicone grease, on the cone tip will help with the sealing process.
5. Insert tubing into female connection of valve or fitting. Screw gland into connection until finger-tight.
6. Tighten gland nut to torque value shown at right which corresponds to connection size being assembled.

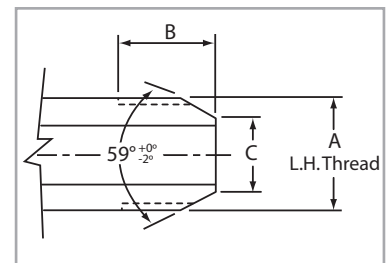


Tube Size	Engagement Allowance	Required Torque
1/4"	14,0 mm (0,55")	20 lb-ft 27 Nm
3/8"	17,5 mm (0,69")	30 lb-ft 41 Nm
9/16"	21,3 mm (0,84")	55 lb-ft 75 Nm
3/4"	25,7 mm (1,01")	90 lb-ft 122 Nm
1"	37,3 mm (1,47")	125lb-ft 170 Nm



Connection	A Thread	B	C	D	E
1/4" M/P	7/16"-20	7,1 mm (0,28")	12,7 mm (0,50")	4,8 mm (0,19")	2,8 mm (0,109")
3/8" M/P	9/16"-18	9,7 mm (0,38")	15,7 mm (0,62")	7,9 mm (0,31")	5,2 mm (0,203")
9/16" M/P	13/16"-16	11,2 mm (0,44")	19,1 mm (0,75")	12,7 mm (0,50")	7,9 mm (0,312")
3/4" M/P	3/4"-14 NPSM	12,7 mm (0,50")	23,9 mm (0,94")	15,7 mm (0,62")	11,1 mm (0,437")
1" M/P	1-38"-12	20,6 mm (0,81")	33,3 mm (1,31")	22,4 mm (0,88")	14,3 mm (0,562")

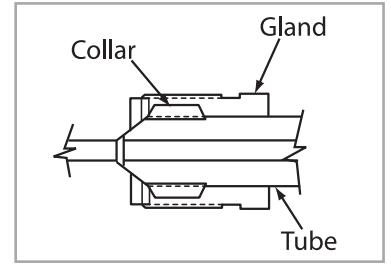
Connection	A Thread	B	C
1/4" M/P	1/4"-28	8,6 mm (0,34")	3,6 mm (0,140")
3/8" M/P	3/8"-24	11,2 mm (0,44")	6,4 mm (0,250")
9/16" M/P	9/16"-18	12,7 mm (0,50")	10,3 mm (0,406")
3/4" M/P	3/4"-16	15,7 mm (0,62")	14,3 mm (0,562")
1" M/P	1"-14	19,8 mm (0,78")	18,2 mm (0,718")



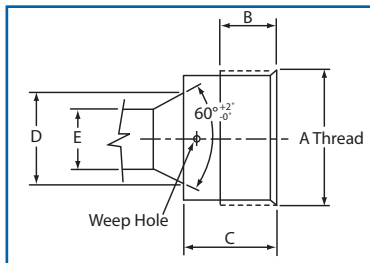
# High Pressure Connections

## Assembly Procedure:

1. Slip gland nut onto tubing or nipple.
2. Screw collar onto threaded end of tubing or nipple. Allow one or two threads to be exposed on tubing or nipple between collar and coned tubing.
3. Lubricate male threads of gland nut with a non-hardening lubricant suitable for use on stainless steel. Lubricant chosen should also be compatible with working temperature requirements.
4. A small amount of process tolerable lubricant, such as silicone grease, on the cone tip will help with the sealing process.
5. Insert tubing into female connection of valve or fitting. Screw gland into connection until finger-tight.
6. Tighten gland nut to torque value shown at right which corresponds to connection size being assembled.

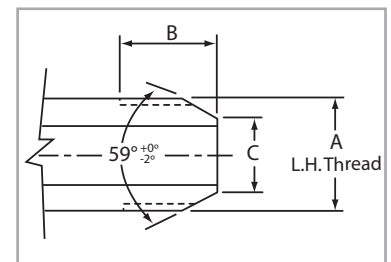


Tube Size	Engagement Allowance	Required Torque
1/4"	12,4 mm (0,49")	25 lb-ft 34 Nm
3/8"	17,3 mm (0,68")	50 lb-ft 68 Nm
9/16"	21,8 mm (0,86")	75 lb-ft 102 Nm
1"	40,6 mm (1,60")	150 lb-ft 203 Nm

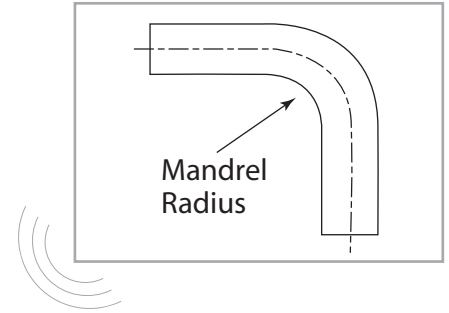


Connection	A Thread	B	C	D	E
1/4" H/P	9/16"-18	9,7 mm (0,38")	11,2 mm (0,44")	4,3 mm (0,17")	2,4 mm (0,093")
3/8" H/P	3/4"-16	9,7 mm (0,53")	15,7 mm (0,62")	6,6 mm (0,26")	3,2 mm (0,125")
9/16" H/P 4.550 bar	1-1/8"-12	15,7 mm (0,62")	19,1 mm (0,75")	9,7 mm (0,38")	4,8 mm (0,188")
9/16" H/P 2.758 bar	1-1/8"-12	15,7 mm (0,62")	19,1 mm (0,75")	11,4 mm (0,45")	6,4 mm (0,250")
1" H/P	1-3/8"-12	20,6 mm (0,81")	33,3 mm (1,31")	22,2 mm (0,88")	11,1 mm (0,438")

Connection	A Thread	B	C
1/4" H/P	1/4"-28	14,2 mm (0,56")	3,2 mm (0,125")
3/8" H/P	3/8"-24	19,1 mm (0,75")	5,6 mm (0,219")
9/16" H/P 4.550 bar	9/16"-18	23,9 mm (0,94")	7,1 mm (0,281")
9/16" H/P 2.758 bar	9/16" 18	23,9 mm (0,94")	9,0 mm (0,353")
1" H/P	1"-14	23,2 mm (0,92")	14,3 mm (0,562")



# Minimum Bend Radius for 316SS and 304SS Tubing



## 690 bar Tubing

O.D.	I.D.	Minimum Radius
9/16" (14,29 mm)	9,12 mm (0,359")	66,68 mm (2,625")
3/4" (19,05 mm)	13,11 mm (0,516")	88,90 mm (3,50")
1" (25,40 mm)	17,48 mm (0,688")	117,48 mm (4,625")

## 1.380 bar Tubing

O.D.	I.D.	Minimum Radius
1/4" (6,35 mm)	2,77 mm (0,109")	31,75 mm (1,25")
3/8" (9,53 mm)	5,16 mm (0,203")	44,45 mm (1,75")
9/16" (14,29 mm)	7,92 mm (0,312")	66,68 mm (2,625")
3/4" (19,05 mm)	11,13 mm (0,438")	88,90 mm (3,50")
1" (25,4 mm)	14,27 mm (0,562")	117,48 mm (4,625")

## 2.070 bar Tubing

O.D.	I.D.	Minimum Radius
1" (25,40 mm)	11,13 mm (0,438")	117,48 mm (4,625")

## 2.760 bar Tubing

O.D.	I.D.	Minimum Radius
9/16" (14,29 mm)	6,35 mm (0,250")	66,68 mm (2,625")

## 4.550 bar Tubing

O.D.	I.D.	Minimum Radius
1/4" (6,35 mm)	2,11 mm (0,083")	31,75 mm (1,25")
3/8" (9,53 mm)	3,18 mm (0,125")	44,45 mm (1,75")
9/16" (14,29 mm)	4,78 mm (0,188")	66,68 mm (2,625")

## Technical Information – Pressure vs. Temperature

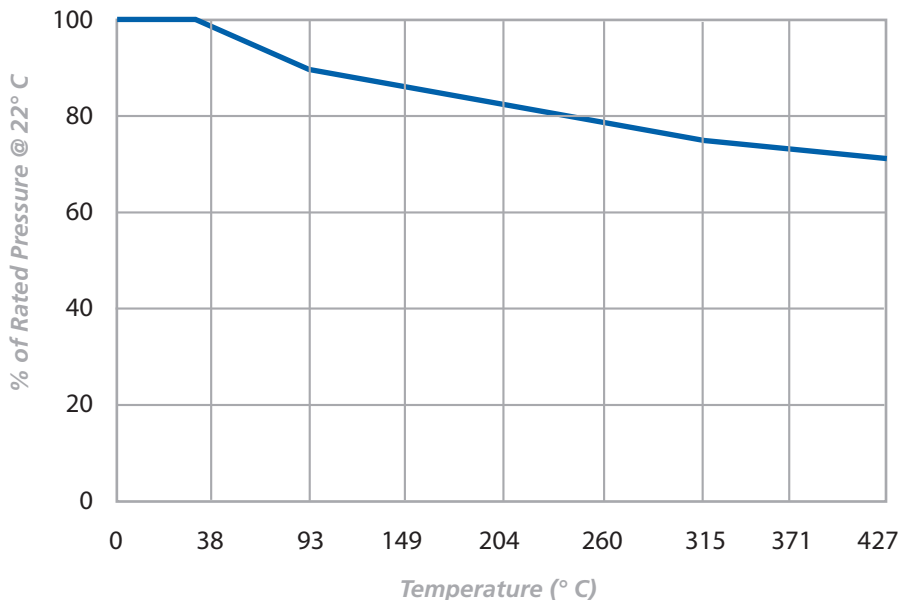
This information is only for use as general data for the selection of valves, fittings and tubing for elevated pressure and/or temperature applications in liquid or gas plumbing systems. Coned and threaded type tube fittings, standard on all valves and fittings can be used for most liquids and gases including lighter gases like Helium and Hydrogen.

This reference chart shows the effects of pressure versus temperature of cold worked 316 stainless steel material. When operating temperatures are above 427° C, a phenomenon

called intergranular corrosion can occur – a condition which can permanently change the material properties of cold worked stainless steel. Once this condition occurs, the material is considered permanently altered, thereby a lower allowable pressure applies.

Other factors including creep resistance, packing design and materials, corrosion resistance, cyclic conditions and other process variables may affect the use of components at elevated temperatures. Consult factory when operating above 427° C.

Pressure vs. Temperature for Cold Worked 316 SS



# Conversion Tables

## PRESSURE

To convert...	Into...	multiply by...
atm	bar	1,01325
	kg/cm <sup>2</sup>	1,0332
	PSI	14,696
	MPa	0,101325
	Pa	101,325
bar	atm	0,98692
	kg/cm <sup>2</sup>	1,01971
	PSI	14,504
	MPa	0,1
	Pa	100,000
kg/cm <sup>2</sup>	atm	0,96784
	bar	0,98067
	PSI	14,223
	MPa	0,98067
	Pa	98066,5
MPa	atm	9,8692
	bar	10
	kg/cm <sup>2</sup>	10,1971
	PSI	145,04
	Pa	1.000.000
Pa	atm	0,000098692
	bar	0,00001
	kg/cm <sup>2</sup>	0,0000101971
	PSI	0,00014504
	MPa	0,000001
PSI	atm	0,068046
	bar	0,068947
	kg/cm <sup>2</sup>	0,070307
	MPa	0,0068948
	Pa	6.894,757

## LINEAR

To convert...	Into...	multiply by...
cm	ft	0,032808
	in	0,3937
	meters	0,01
	microns	10.000
	mm	10
ft	cm	30,48006
	in	12
	meters	0,3048
	microns	304.800
	mm	305
in	cm	2,540005
	ft	0,08333
	meters	0,0254
	microns	25.400
	mm	25,40005
meters	cm	0,0001
	ft	3,28083
	in	39,37
	microns	1.000.000
	mm	1.000
microns	cm	0,0001
	ft	0
	in	0,00003937
	meters	0,00014504
	mm	0,000001
mm	cm	0,1
	ft	0,003281
	in	0,03937
	meters	0,001
	microns	1.000

## VOLUME

To convert...	Into...	multiply by...
cc	ft <sup>3</sup>	0,00003531
	in <sup>3</sup>	0,06102
	liter	0,001
	M <sup>3</sup>	0,000001
	quart	0,0010568
ft <sup>3</sup>	U.S. Gallon	0,0002642
	cc	28,317
	in <sup>3</sup>	1,728
	liter	28,317
	M <sup>3</sup>	0,028317
in <sup>3</sup>	quart	29,92
	U.S. Gallon	7,4805
	cc	16,387
	ft <sup>3</sup>	0,0005787
	liter	0,016387
liter	M <sup>3</sup>	0,05787
	quart	0,01732
	U.S. Gallon	0,004329
	cc	1.000,028
	ft <sup>3</sup>	0,03531
M <sup>3</sup>	in <sup>3</sup>	61,023
	quart	1,057
	U.S. Gallon	0,2642
	cc	1.000.000
	ft <sup>3</sup>	35,31
quart	in <sup>3</sup>	61,023
	liter	1.000
	M <sup>3</sup>	1.056,8
	U.S. Gallon	264,2
	cc	946,25
U.S. Gallon	ft <sup>3</sup>	0,03342
	in <sup>3</sup>	57,75
	liter	0,9463
	M <sup>3</sup>	0,0009463
	U.S. Gallon	0,25
U.S. Gallon	cc	3.785
	ft <sup>3</sup>	0,1337
	in <sup>3</sup>	231
	liter	3,785
	M <sup>3</sup>	0,003785
U.S. Gallon	quart	4

## FLOW

To convert...	Into...	multiply by...
cc/min.	ft <sup>3</sup> /min	0,0000353145
	gal/min	0,0002642
	in <sup>3</sup> /min	0,061
	lit/min	0,001
ft <sup>3</sup> /min	cc/min	28,320
	gal/min	7,48
	in <sup>3</sup> /min	28,8
	lit/min	28,32
gal/min	cc/min	3.784,80
	ft <sup>3</sup> /min	0,1337
	in <sup>3</sup> /min	231
	lit/min	3,7843
in <sup>3</sup> /min	cc/min	16,39
	ft <sup>3</sup> /min	0,035
	liter/min	0,016
	gal/min	0,004
lit/min	cc/min	1.000
	ft <sup>3</sup> /min	0,03531
	in <sup>3</sup> /min	61,02
	gal/min	0,26418

## AREA

To convert...	Into...	multiply by...
cm <sup>2</sup>	ft <sup>2</sup>	0,0010764
	in <sup>2</sup>	0,155
	m <sup>2</sup>	0,0001
	mm <sup>2</sup>	100
ft <sup>2</sup>	cm <sup>2</sup>	929,0341
	in <sup>2</sup>	144,00
	m <sup>2</sup>	0,092903
	mm <sup>2</sup>	9.290
in <sup>2</sup>	cm <sup>2</sup>	6,4516258
	ft <sup>2</sup>	0,006944
	m <sup>2</sup>	0,0006451
	mm <sup>2</sup>	645,16258
m <sup>2</sup>	cm <sup>2</sup>	10.000
	ft <sup>2</sup>	10,76387
	in <sup>2</sup>	1.550
	mm <sup>2</sup>	1.000.000
mm <sup>2</sup>	cm <sup>2</sup>	0,01
	ft <sup>2</sup>	0,000010764
	in <sup>2</sup>	0,00155
	m <sup>2</sup>	0,000001

## Temperature

$$\text{Deg F} = (\text{Deg C} \times 1,8) + 32$$

$$\text{Deg C} = (\text{Deg F} - 32) / 1,8$$







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