TYLOK SM
Fittings & Valves

Instrumentation Pipe Fittings

The Tylok Philosophy

Our Mission

It is our mission, at Tylok International, Inc., to continuously strive for and achieve total customer satisfaction with both our products and services.

This objective falls within the framework of the larger movement toward "Total Quality" which is derived of four elements:

1. **Total satisfaction of our customers**
2. **Make our distributors and suppliers our partners in providing the highest quality**
3. **Create a positive environment for our employees that fosters their full potential**
4. **Continuous financial success of the company**

We accomplish this by maintaining an honest and ethical business relationship with our customers, suppliers and employees.

Our Goal

Tylok's aggressive goal is to establish ourselves as an industry leader and expand our market share. This is maintained in every department within the organization. Our "total effort" will guard against losing the personal touch that makes our business enjoyable and prosperous for all involved.

Instrumentation Pipe Fittings

Tylok Instrumentation Pipe Fittings are offered in popular configurations such as reducing adapters, reducing bushings, pipe unions, elbows, tees, crosses, etc.

Fittings are manufactured to the same high quality standards as other Tylok Fittings. Each fitting is thoroughly cleaned to eliminate system contamination and features an attractive surface finish to enhance the appearance of modern scientific instrumentation and equipment.

Fittings are manufactured from materials meeting applicable ASTM or ASME specifications, with pipe threads which meet or exceed ANSI/ASME B1.20.1 requirements. Strict quality control procedures are followed throughout production.

Pipe thread connections are very common in today's industry. They are relatively easy to work with because of the common sizes and dimensions throughout manufacturing. It is important to use a thread sealant.

These products range from pipe "dopes" to Teflon tape, all of which can be purchased through your local Tylok Distributor.

Design/Features

Tylok Instrumentation Pipe Fittings are manufactured to the same high quality standards as other Tylok Fittings. Each fitting is thoroughly cleaned to eliminate system contamination and features an attractive surface finish to enhance the appearance of modern scientific instrumentation and equipment.

Technical Support and Training

Tylok International, Inc. ensures all of its Distributors are trained on the proper installation of fittings and valves. Tylok Distributors are trained to provided the technical support you deserve. Additionally, our Distributors will help in finding solutions for specific applications. Contact your local Tylok Distributor for further information.

Quality Management System

SAI Global has registered Tylok International's Quality Management System to ISO 9001:2008. The quality system complies with the international standard ISO 9001:2008 and its technical equivalent, ANSI/ISO/ASQ Q9001:2008. Tylok strives to continuously improve the effectiveness of the Quality Management System.

Certified System™

ISO 9001

ISO 9001:2008

Table of Contents/Product Locator

How to Order Pipe Fittings

Tylok Instrumentation Pipe Fittings are ordered as listed in this catalog by inserting the material code before the part number.

Tylok Instrumentation Pipe Fittings can be identified through the part number as to material, pipe size, configuration and thread connection. The part number describes a complete fitting. The size nomenclature to describe a tee fitting is from left (1) to right (2) and down (3). Special Configurations available upon request.

Example: A Stainless Steel Reducer Adapter 3/8" Female Pipe to 1/4" Male Pipe is designated as follows:

SS	-	6	-	1	RAFM	-	4
↓		↓		↓	↓		↓
Material		Pipe Size		Style	Description		Odd End Size
Chart 1		Chart 2		Chart 3	Chart 4		Chart 2

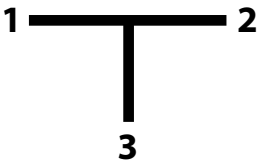


Chart 1 - Material

B	Brass
SS	Stainless Steel
S	Steel

Chart 3 - Style

1	Straight
2	Elbow
3	Tee
4	Cross

Chart 2 - Pipe Size

Designator	Pipe Thread (NPT)	Pipe Thread BSPP/BSPT
1	1/16-27	1/16-28
2	1/8-27	1/8-28
3		
4	1/4-18	1/4-19
5		
6	3/8-18	3/8-19
8	1/2-14	1/2-14
10		
12	3/4-14	3/4-14
14		
16	1.0-11 1/2	1.0-11

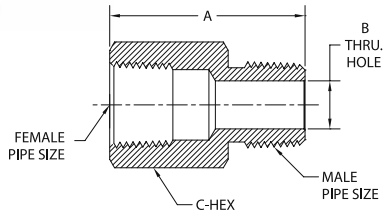
Chart 4 - Description

1FMA	Female To Male Adapter
1FPC	Female Pipe Cap
1FPRU	Female Pipe Reducer Union
1HLN	Hex Long Nipple
1HN	Hex Nipple
1HRN	Hex Reducing Nipple
1MPP	Male Pipe Plug
1RAFM	Reducer Adapter - Female to Male
1RBMF	Reducer Bushing - Male To Female

2FF	Female Pipe Elbow
2FM	Female - Male Pipe Elbow
2FMR	Female - Male Reducer Pipe Elbow
2MM	Male Pipe Elbow
3FFF	All Female Pipe Tee
3FMF	Pipe Tee - Female - Male - Female
3MMM	All Male Pipe Tee
4FPCR	Female Pipe Cross
1MDF	Mud Dauber Fitting

1FMA

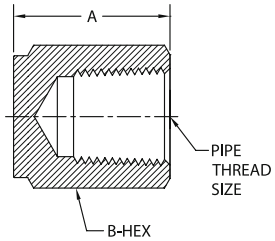
FEMALE TO MALE ADAPTER



PART NO.	FEMALE PIPE SIZE	MALE PIPE SIZE	A	B THRU HOLE	C HEX
2-1FMA	1/8	1/8	1.062	.187	9/16
4-1FMA	1/4	1/4	1.375	.281	3/4
6-1FMA	3/8	3/8	1.562	.375	7/8
8-1FMA	1/2	1/2	1.906	.468	1-1/16
12-1FMA	3/4	3/4	1.937	.625	1-5/16
16-1FMA	1	1	2.281	.875	1-5/8

1FPC

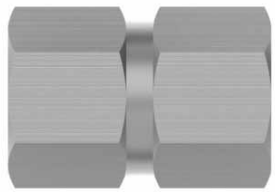
FEMALE PIPE CAP

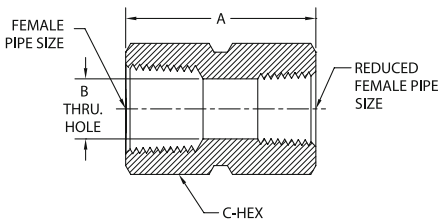


PART NO.	PIPE THREAD SIZE	A	B HEX
2-1FPC	1/8	.750	9/16
4-1FPC	1/4	.906	3/4
6-1FPC	3/8	1.031	7/8
8-1FPC	1/2	1.343	1-1/16
12-1FPC	3/4	1.437	1-5/16
16-1FPC	1	1.625	1-5/8

1FPRU

FEMALE PIPE REDUCER UNION





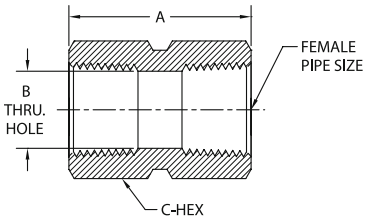
PART NO.	FEMALE PIPE SIZE	REDUCED FEMALE PIPE SIZE	A	B THRU HOLE	C HEX
4-1FPRU-2	1/4	1/8	1.218	.328	3/4
6-1FPRU-4	3/8	1/4	1.375	.421	7/8
8-1FPRU-2	1/2	1/8	1.562	.328	1-1/16
8-1FPRU-4	1/2	1/4	1.750	.421	1-1/16
8-1FPRU-6	1/2	3/8	1.781	.562	1-1/16
12-1FPRU-4	3/4	1/4	1.812	.421	1-5/16
12-1FPRU-8	3/4	1/2	2.062	.687	1-5/16
16-1FPRU-8	1	1/2	2.187	.687	1-5/8
16-1FPRU-12	1	3/4	2.250	.890	1-5/8

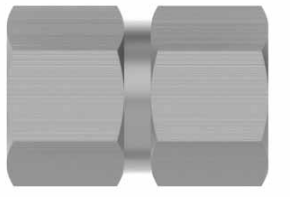
**NOTE: All dimensions subject to change, to be used for reference only.*

1FPU

FEMALE PIPE UNION

PART NO.	FEMALE PIPE SIZE	A	B THRU HOLE	C HEX
2-1FPU	1/8	.812	.328	9/16
4-1FPU	1/4	1.187	.421	3/4
6-1FPU	3/8	1.312	.562	7/8
8-1FPU	1/2	1.625	.687	1-1/16
12-1FPU	3/4	1.687	.890	1-5/16
16-1FPU	1	2.000	1.125	1-5/8

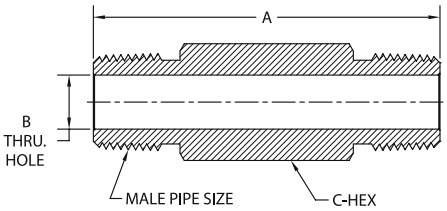




1HLN

HEX LONG NIPPLE

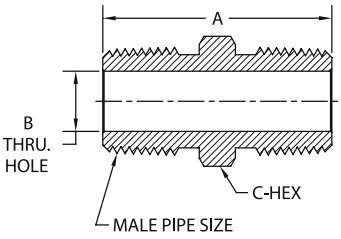
PART NO.	MALE PIPE SIZE	A	B THRU HOLE	C HEX
2-1HLN-★	1/8	★ Made To Order Specify Size	.187	7/16
4-1HLN-★	1/4		.281	9/16
6-1HLN-★	3/8		.3751	1/16
8-1HLN-★	1/2		.468	7/8
12-1HLN-★	3/4		.625	1-1/16
16-1HLN-★	1		.875	1-3/8

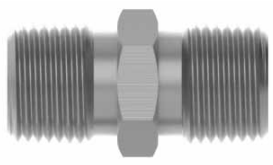


1HN

HEX NIPPLE

PART NO.	MALE PIPE SIZE	A	B THRU HOLE	C HEX
1-1HN	1/16	.937	.125	3/8
2-1HN	1/8	1.000	.187	7/16
4-1HN	1/4	1.375	.281	9/16
6-1HN	3/8	1.406	.375	11/16
8-1HN	1/2	1.781	.468	7/8
12-1HN	3/4	1.812	.625	1-1/16
16-1HN	1	2.281	.875	1-3/8

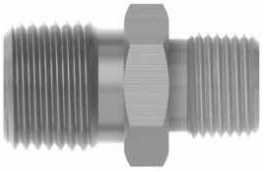


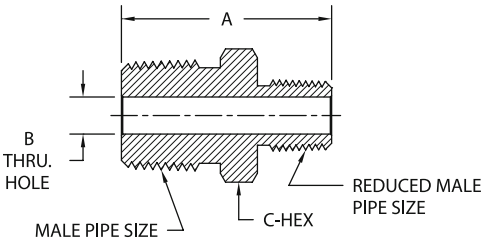


**NOTE: All dimensions subject to change, to be used for reference only.*

1HRN

HEX REDUCING NIPPLE

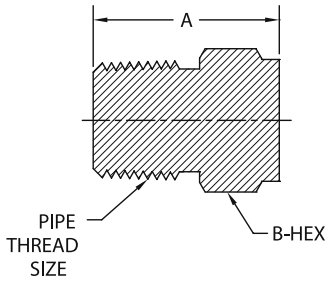




PART NO.	MALE PIPE SIZE	REDUCED MALE PIPE SIZE	A	B THRU HOLE	C HEX
2-1HRN-1	1/8	1/16	1.000	.125	7/16
4-1HRN-2	1/4	1/8	1.187	.187	9/16
6-1HRN-2	3/8	1/8	1.218	.1871	1/16
6-1HRN-4	3/8	1/4	1.406	.281	11/16
8-1HRN-2	1/2	1/8	1.406	.187	7/8
8-1HRN-4	1/2	1/4	1.593	.281	7/8
8-1HRN-6	1/2	3/8	1.625	.375	7/8
12-1HRN-4	3/4	1/4	1.625	.281	1-1/16
12-1HRN-8	3/4	1/2	1.812	.468	1-1/16
16-1HRN-4	1	1/4	1.906	.281	1-3/8
16-1HRN-8	1	1/2	2.093	.468	1-3/8
16-1HRN-12	1	3/4	2.093	.625	1-3/8

1MPP

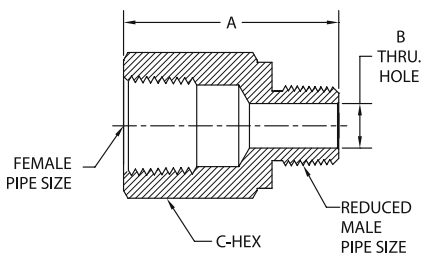
MALE PIPE PLUG



PART NO.	PIPE THREAD	A	B HEX
1-1MPP	1/16	.750	3/8
2-1MPP	1/8	.750	7/16
4-1MPP	1/4	1.000	9/16
6-1MPP	3/8	1.000	11/16
8-1MPP	1/2	1.312	7/8
12-1MPP	3/4	1.375	1-1/16
16-1MPP	1	1.500	1-3/8

1RAFM

REDUCER ADAPTER - FEMALE TO MALE



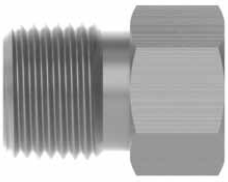
PART NO.	FEMALE PIPE SIZE	REDUCED MALE PIPE SIZE	A	B THRU HOLE	C HEX
2-1RAFM-1	1/8	1/16	1.093	.125	9/16
4-1RAFM-2	1/4	1/8	1.250	.187	3/4
6-1RAFM-2	3/8	1/8	1.437	.187	7/8
6-1RAFM-4	3/8	1/4	1.562	.281	7/8
8-1RAFM-2	1/2	1/8	1.687	.187	1-1/16
8-1RAFM-4	1/2	1/4	1.812	.281	1-1/16
8-1RAFM-6	1/2	3/8	1.812	.375	1-1/16
12-1RAFM-4	3/4	1/4	1.968	.281	1-5/16
12-1RAFM-6	3/4	3/8	1.968	.375	1-5/16
12-1RAFM-8	3/4	1/2	2.062	.468	1-5/16
16-1RAFM-4	1	1/4	2.125	.281	1-5/8
16-1RAFM-8	1	1/2	2.250	.468	1-5/8
16-1RAFM-12	1	3/4	2.250	.625	1-5/8

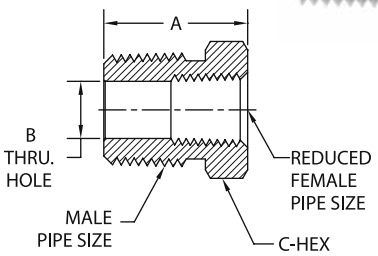
***NOTE: All dimensions subject to change, to be used for reference only.**

1RBMF

REDUCER BUSHING - MALE TO FEMALE

PART NO.	MALE PIPE SIZE	REDUCED FEMALE PIPE SIZE	A	B THRU HOLE	C HEX
2-1RBMF-1	1/8	1/16	1.000	.187	7/16
4-1RBMF-2	1/4	1/8	1.000	.281	9/16
6-1RBMF-2	3/8	1/8	.843	.328	11/16
6-1RBMF-4	3/8	1/4	1.125	.375	3/4
8-1RBMF-2	1/2	1/8	1.062	.328	7/8
8-1RBMF-4	1/2	1/4	1.062	.421	7/8
8-1RBMF-6	1/2	3/8	1.312	.468	7/8
12-1RBMF-4	3/4	1/4	1.062	.421	1-1/16
12-1RBMF-6	3/4	3/8	1.062	.562	1-1/16
12-1RBMF-8	3/4	1/2	1.562	.625	1-1/16
16-1RBMF-4	1	1/4	1.343	.421	1-3/8
16-1RBMF-6	1	3/8	1.343	.562	1-3/8
16-1RBMF-8	1	1/2	1.343	.687	1-3/8
16-1RBMF-12	1	3/4	1.750	.875	1-3/8

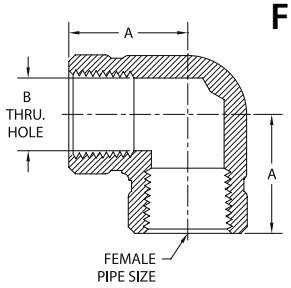




2FF

FEMALE PIPE ELBOW

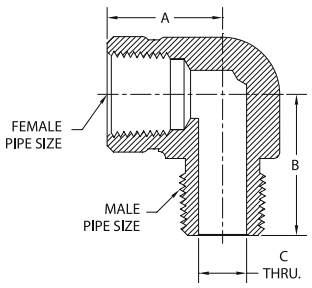
PART NO.	FEMALE PIPE SIZE	A	B THRU HOLE
2-2FF-2	1/8	.843	.328
4-2FF-4	1/4	.968	.421
6-2FF-6	3/8	1.000	.562
8-2FF-8	1/2	1.125	.687
12-2FF-12	3/4	1.437	.890



2FM

FEMALE - MALE PIPE ELBOW

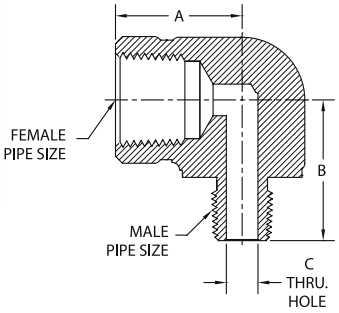
PART NO.	PIPE SIZES	A	B	C THRU HOLE
1-2FM-1	1/16	.750	.718	.125
2-2FM-2	1/8	.843	.843	.187
4-2FM-4	1/4	.843	1.093	.281
6-2FM-6	3/8	1.000	1.125	.375
8-2FM-8	1/2	1.125	1.375	.468
12-2FM-12	3/4	1.437	1.562	.625
16-2FM-16	1	1.906	1.906	.875



**NOTE: All dimensions subject to change, to be used for reference only.*

2FMR

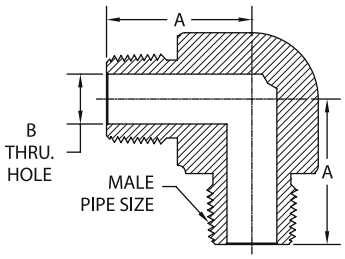
FEMALE - MALE REDUCER PIPE ELBOW



PART NO.	FEMALE PIPE SIZE	MALE PIPE SIZE	A	B	C THRU HOLE
2-2FMR-1	1/8	1/16	.750	.750	.125
4-2FMR-2	1/4	1/8	.843	.937	.187
6-2FMR-4	3/8	1/4	1.062	1.062	.281
8-2FMR-4	1/2	1/4	1.125	1.250	.281
8-2FMR-6	1/2	3/8	1.125	1.250	.375

2MM

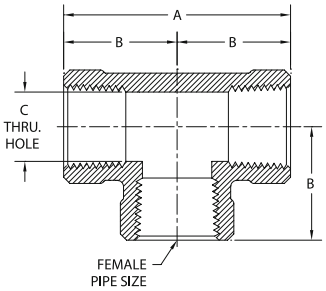
MALE PIPE ELBOW



PART NO.	MALE PIPE SIZE	A	B THRU HOLE
2-2MM-2	1/8	.750	.187
4-2MM-4	1/4	1.000	.281
6-2MM-6	3/8	1.093	.375
8-2MM-8	1/2	1.375	.468
12-2MM-12	3/4	1.500	.625
16-2MM-16	1	1.875	.875

3FFF

ALL FEMALE PIPE TEE



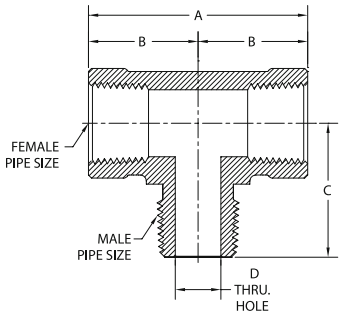
PART NO.	FEMALE PIPE SIZE	A	B	C THRU HOLE
2-3FFF-2	1/8	1.687	.843	.328
4-3FFF-4	1/4	1.687	.843	.421
6-3FFF-6	3/8	2.000	1.000	.562
8-3FFF-8	1/2	2.250	1.125	.687
12-3FFF-12	3/4	2.625	1.312	.890
16-3FFF-16	1	3.250	1.6251	.125

***NOTE: All dimensions subject to change, to be used for reference only.**

PART NO.	PIPE SIZES	A	B	C	D THRU HOLE
2-3FFM-2	1/8	1.687	.843	.843	.187
4-3FFM-4	1/4	1.875	.937	1.000	.281
6-3FFM-6	3/8	2.000	1.000	1.125	.375
8-3FFM-8	1/2	2.250	1.125	1.375	.468
12-3FFM-12	3/4	2.750	1.375	1.625	.625

3FFM

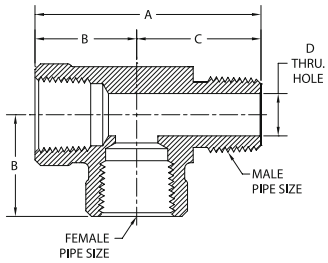
PIPE TEE - FEMALE-FEMALE-MALE



PART NO.	PIPE SIZES	A	B	C	D THRU HOLE
2-3FMF-2	1/8	1.687	.843	.843	.187
4-3FMF-4	1/4	1.890	.843	1.046	.281
6-3FMF-6	3/8	2.125	1.000	1.125	.375
8-3FMF-8	1/2	2.500	1.125	1.375	.468
12-3FMF-12	3/4	2.937	1.437	1.500	.625

3FMF

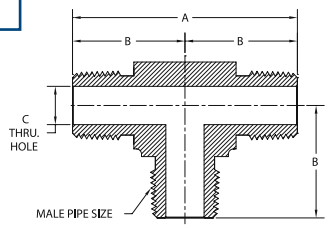
PIPE TEE - FEMALE-MALE-FEMALE



PART NO.	MALE PIPE SIZE	A	B	C THRU HOLE
2-3MMM-2	1/8	1.437	.718	.187
4-3MMM-4	1/4	1.875	.937	.281
6-3MMM-6	3/8	2.000	1.000	.375
8-3MMM-8	1/2	2.750	1.375	.468
12-3MMM-12	3/4	2.750	1.375	.625

3MMM

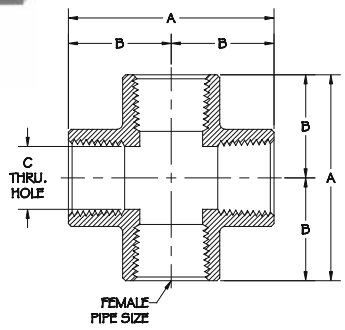
ALL MALE PIPE TEE



**NOTE: All dimensions subject to change, to be used for reference only.*

4FPCR

FEMALE PIPE CROSS

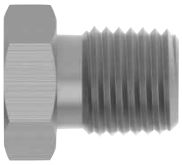


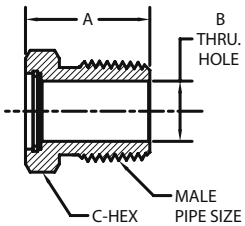
PART NO.	FEMALE PIPE SIZE	A	B	C THRU HOLE
2-4FPCR	1/8	1.687	.843	.328
4-4FPCR	1/4	1.687	.843	.421
6-4FPCR	3/8	2.125	1.062	.562
8-4FPCR	1/2	2.250	1.125	.687
12-4FPCR	3/4	2.875	1.437	.890
16-4FPCR	1	3.250	1.625	1.125

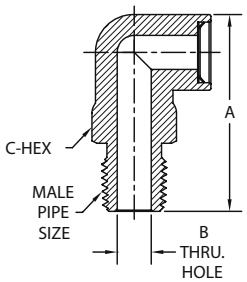
1MDF

MUD DAUBER

PART NO.	INTERCHANGES WITH		NPT SIZE	A	B THRU HOLE	C HEX
4-1MDF	MD-4	2 MDF	1/4-18	.81	.28	9/16
6-1MDF	MD-6	6 MDF	3/8-18	.81	.41	11/16
8-1MDF	MD-8	8 MDF	1/2-14	1.03	.50	7/8
PP-4-2MDF	-	-	1/4-18	1.44	.28	5/8
PP-6-2MDF	-	-	3/8-18	1.44	.28	11/16







- Tylok Mud Daubers or Vent Protector fittings protect open ends of tubing, instruments, outlet vents and exhaust lines
- Each Vent Protector has a 300 series stainless steel 40 mesh wire screen to prevent obstructive foreign objects, such as insects, from entering and clogging a system
- Straight Vent Protectors are available in either Stainless Steel (SS) or Brass. *Add an SS or B in front of part number to specify the desired material*
- Angled Vent Protectors are available in Polypropylene (PP) only

***NOTE: All dimensions subject to change, to be used for reference only.**

Pipe Thread Specifications

Tylok Instrumentation Pipe Fittings are manufactured from materials meeting applicable ASTM or ASME specifications, with pipe threads which meet or exceed ANSI/ASME B1.20.1 requirements. Strict quality control procedures are followed throughout production. All parts are individually inspected to provide the finest possible product.

Materials: Brass ■ 316 Stainless Steel ■ Steel

Suggested Maximum Operating Pressures for Male Pipe Threads

MNPT Size	316 Stainless Steel PSI Rating	Brass PSI Rating	Steel PSI Rating
1/16″	10,100	5,700	10,500
1/8″	9,200	5,300	9,800
1/4″	7,500	4,100	8,000
3/8″	7,250	4,000	7,700
1/2″	6,900	3,900	7,300
3/4″	6,600	3,700	7,000
1″	5,000	2,700	5,000

Suggested Maximum Operating Pressures for Female Pipe Threads

FNPT Size	316 Stainless Steel PSI Rating	Brass PSI Rating	Steel PSI Rating
1/16″	6,200	3,500	6,800
1/8″	6,000	3,400	6,600
1/4″	6,100	3,300	6,500
3/8″	5,000	2,700	5,400
1/2″	4,700	2,500	4,800
3/4″	4,300	2,400	4,600
1″	4,100	2,300	4,500

These charts are to be used as a guide only and are based on normal wall thicknesses, used for the various sizes. These ratings may vary widely from effects such as the proper use of sealants, size of stock, temperature, corrosion factors, etc. Therefore, Tylok International, Inc., assumes no responsibility for its accuracy in any individual design.

Temperature Ratings

Tylok Instrumentation Pipe Fittings are rated at the following temperatures:

316 Stainless -325°F to 1000°F (-198°C to 538°C) Brass -40°F to 400°F (-40°C to 204°C) Steel -20°F to 400°F (-28°C to 204°C)

Note: Consideration should be given to maximum temperature ratings if fittings and/or tubing are coated or plated.

Heat Traceability

Tylok Stainless Steel Instrumentation Pipe Fittings are completely heat code traceable back to the original mill heat from which it was made. Starting with the original billet, the mill creates a certificate which completely describes the chemical and physical makeup. The material certifications can be provided when calling Tylok and giving the heat code stamp marked on the part itself, along with the part number.

Raw Material Specifications

Fitting Material	Bar Stock	Forging
Brass	ASTM-B16 Alloy 360 ASTM-B453 Alloy 345	ASTM-B124 Alloy 377
Stainless Steel	ASTM-A276 ASME-SA-479 Type 316-SS	ASME-SA-182 Type 316-SS
Steel	ASTM-A108	

Limited Warranty

Notice

In designing a system incorporating tube fittings and valves, it is the designer's or user's obligation and responsibility to determine the appropriate fittings and valves to be used for each application, and to insure proper installation and maintenance.

Limited Warranty

Tylok fittings and valves are warranted solely against defects in material and workmanship in the performance of the specific functions for which they are designed, as set forth in the published specifications for a period of 12 months. Should any fitting and valve or its component fail due to a defect in material or workmanship, Tylok will replace said fitting and valve without charge upon return of the failed part and evidence of its failure being due to materials or workmanship.

The Warranty above set forth is the only warranty applicable to Tylok products, and is in lieu of any and all other warranties either express or implied, including any warranty of merchantability or fitness. Tylok's sole responsibility or liability as a result of any loss or damage due to failure shall be to replace the failed part or fitting and valve, and it shall bear no liability for any incidental or consequential damages to person or property.

Other Tylok Product Families

CBC-Lok® Tube Fittings

- CBC-Lok Tube Fittings are fully interchangeable with Swagelok and Parker A-Lok
- Sizes: Fractional: 1/16" - 1"
- Materials: Stainless Steel, Brass, Steel

CS-Lok® Tube Fittings

- CS-Lok Tube Fittings are fully interchangeable with Parker CPI
- Sizes: Fractional: 1/16" - 1"
- Materials: Stainless Steel, Brass, Steel

TY-FLO HP Series Ball Valves

- Pressure Ratings: 1,500 PSI and 5,000 PSI
- End Connections: Tube, Male NPT, Female NPT
- Sizes:1/4" - 3/4"
- Materials: Stainless Steel and Brass

TY-FLO 3pc Ball Valves

- Pressure Ratings: 1,500 PSI, up to 3,000 PSI
- End Connections: Tube, Female NPT
- Sizes: 1/4" - 2"
- Materials: Stainless Steel and Brass

TY-FLO Needle Valves

- Pressure Ratings: 6,000 PSI, 10,000 PSI
- End Connections: Tube, Male NPT, Female NPT
- Sizes: 1/8" - 1"
- Materials: Stainless Steel, Brass, Steel

TY-FLO Plug Valves

- Pressure Ratings: 3,000 PSIG
- End Connections: Tube, Male NPT, Female NPT
- Sizes: 1/8" - 3/8"
- Materials: Stainless Steel

TYLOK SM
Fittings & Valves

Our History

In the mid 1940s, Cullen Crawford founded the Crawford Fitting Company. Mr. Crawford developed and patented the original flareless fitting (nut and two ferrule system), for the Crawford Fitting Company. Thus, a new and innovative industry was born making it far easier to make tubing connections. This reduces installation time and errors. Since his invention, End Users from all four corners of the globe have made billions of connections. This system provides leak proof seals and thus Mr. Crawford has been named "The founder of the flareless fitting."

Our Mission

It is our mission, at Tylok International, Inc., to continuously strive for and achieve total customer satisfaction with both our products and services.

Our Goal

Tylok's aggressive goal is to establish ourselves as an industry leader and expand our market share. This is maintained in every department within the organization. Our "total effort" will guard against losing the personal touch that makes our business enjoyable and prosperous for all involved.

INSTRUMENTATION TUBE FITTINGS

- **CBC-Lok®**
- **CS-Lok®**
- **Tylok Standard**

PIPE FITTINGS

WELD FITTINGS

BALL VALVES

- **Ty-Flo® HP Series**
- **Ty-Flo® 3 Piece**

TY-FLO® NEEDLE VALVES

PLUG VALVES

QUICK CONNECTS

FLEXIBLE METAL HOSE

TYLOK SM

1061 East 260th Street • Euclid, Ohio 44132
Tel: (216) 261-7310 • 1-800-321-0466 • Fax: (216) 261-7317
info@tylok.com
www.tylok.com

Pipe Fittings Catalog Doc. 72306 Rev. E