

Instrumentation Pipe Fittings



1FMA
Female to Male
Adapter

69



1FPC
Female
Pipe Cap

69



1FPRU
Female Pipe
Reducer Union

69



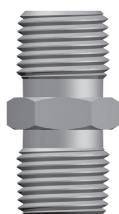
1FPU
Female
Pipe Union

70



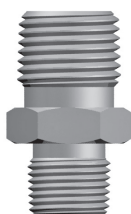
1HLN
Hex
Long Nipple

70



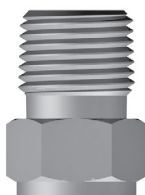
1HN
Hex Nipple

70



1HRN
Hex
Reducing Nipple

71



1MPP
Male Pipe
Plug

71



1RAFM
Reducer Adapter -
Female to Male

71



1RBMF
Reducer Bushing -
Male to Female

72



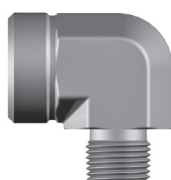
2FF
Female Pipe
Elbow

72



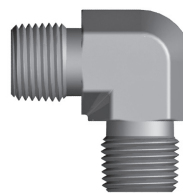
2FM
Female - Male
Pipe Elbow

72



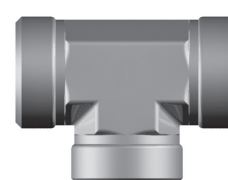
2FMR
Female - Male
Reducer Pipe Elbow

73



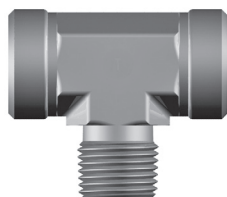
2MM
Male Pipe
Elbow

73



3FFF
All Female
Pipe Elbow

73



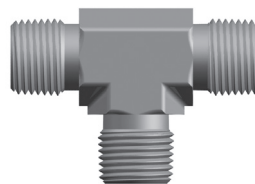
3FFM
Pipe Tee - Female -
Female - Male

74



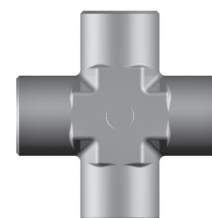
3FMF
Pipe Tee - Female -
Male - Female

74



3MMM
All Male
Pipe Tee

74



4FPCR
Female Pipe Cross

74

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 controls 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 & Training

Tylok Instrumentation Inc. ensures all of its Distributors are trained on the proper installation of fittings and valves. Tylok Distributors are trained to provide 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. The quality system complies with the international standard ISO 9001 and its technical equivalent, ANSI/ISO/ASQ 9001. Tylok strives to continuously improve the effectiveness of the Quality Management System.



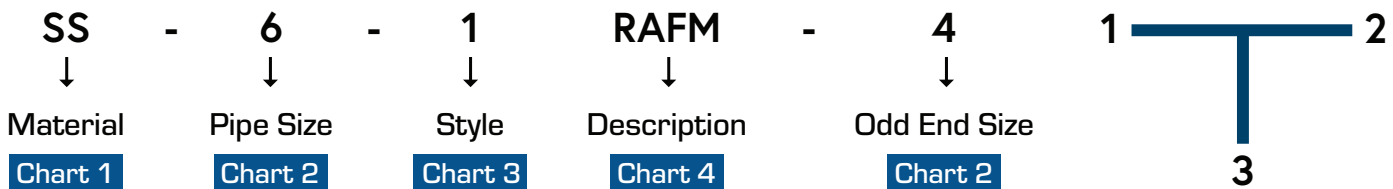
ISO 9001

How to Order

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.



| Chart 1 - Material | |
|--------------------|-----------------|
| B | Brass |
| SS | Stainless Steel |
| S | Steel |

| Chart 3 - Style | |
|-----------------|----------|
| 1 | Straight |
| 2 | Elbow |
| 3 | Tee |
| 4 | Cross |

| 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 |

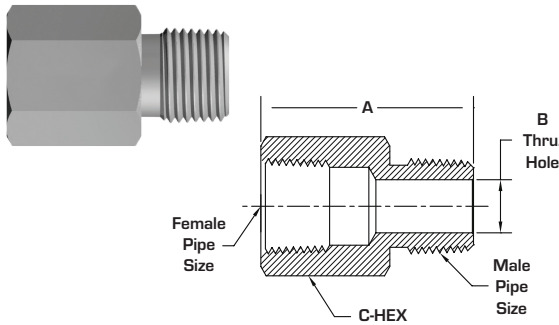
| Chart 2 - Pipe Size | | |
|---------------------|-------------------|-----------------------|
| Designator | Pipe Thread (NPT) | Pipe Thread BSPP/BSPT |
| 1 | 1/16-27 | 1/16-28 |
| 2 | 1/8-27 | 1/8-28 |
| 3 | - | - |
| 4 | 1/4-18 | 1/4-19 |
| 5 | - | - |
| 6 | 3/8-18 | 3/8-19 |
| 8 | 1/2-14 | 1/2-14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

| Chart 4 - Description | |
|-----------------------|-----------------------------------|
| 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, 1FPC, 1FPRU

1FMA

Female to Male Adapter

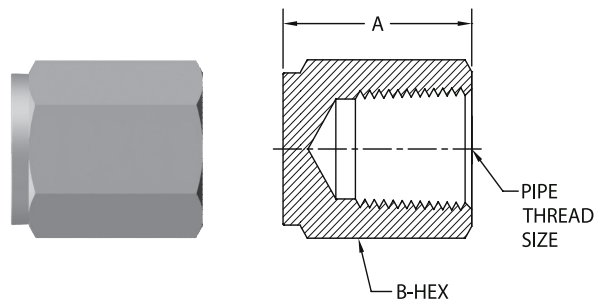


| Part No. | Female Pipe Size | Male Pipe Size | A | B Thru Hole | C Hex |
|----------|------------------|----------------|-------|-------------|--------|
| 2-1FMA | 1/8 | 1/8 | 1.062 | .187 | 9/16 |
| 4-1FMA | 1/4 | 1/4 | 1.375 | .281 | 3/4 |
| 6-1FMA | 3/8 | 3/8 | 1.562 | .375 | 7/8 |
| 8-1FMA | 1/2 | 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 |

| 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 |

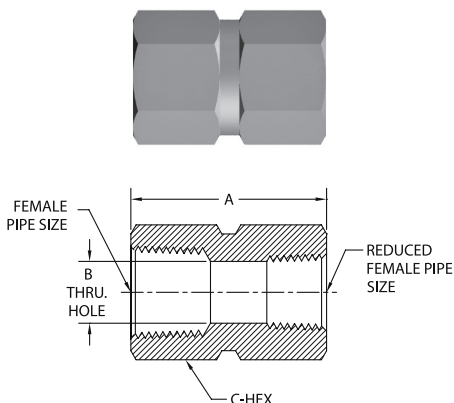
1FPC

Female Pipe Cap



1FPRU

Female Pipe Reducer Union



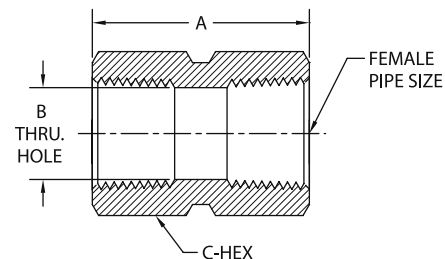
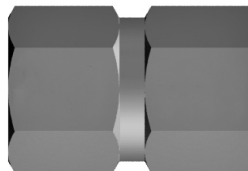
| Part No. | Female Pipe Size | Reduced Female Pipe Size | A | B Thru Hole | C Hex |
|-------------|------------------|--------------------------|-------|-------------|--------|
| 4-1FPRU-2 | 1/4 | 1/8 | 1.218 | .328 | 3/4 |
| 6-1FPRU-4 | 3/8 | 1/4 | 1.375 | .421 | 7/8 |
| 8-1FPRU-2 | 1/2 | 1/8 | 1.562 | .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 |

1FPU, 1HLN, 1HN

| 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 |

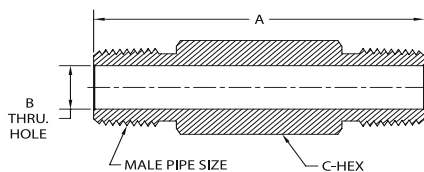
1FPU

Female Pipe Union



1HLN

Hex Long Nipple

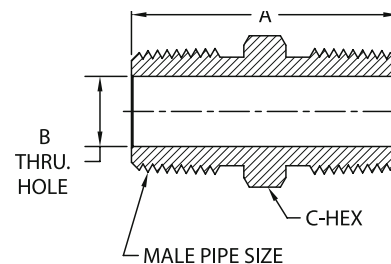
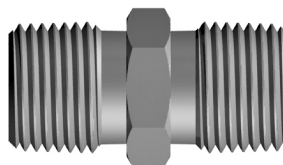


| Part No. | Male Pipe Size | A | B Thru Hole | C Hex |
|-----------|----------------|------------------------------|-------------|--------|
| 2-1HLN * | 1/8 | * Made To Order Specify Size | .187 | 7/16 |
| 4-1HLN * | 1/4 | | .281 | 9/16 |
| 6-1HLN * | 3/8 | | .3751 | 1/16 |
| 8-1HLN * | 1/2 | | .468 | 7/8 |
| 12-1HLN * | 3/4 | | .625 | 1-1/16 |
| 16-1HLN * | 1 | | .875 | 1-3/8 |

| 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 |

1HN

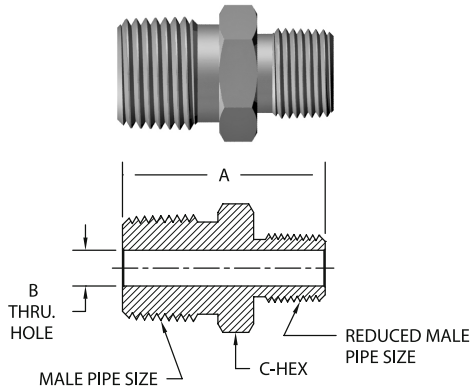
Hex Nipple



1HRN, 1MPP, 1RAFM

1HRN

Hex Reducing Nipple

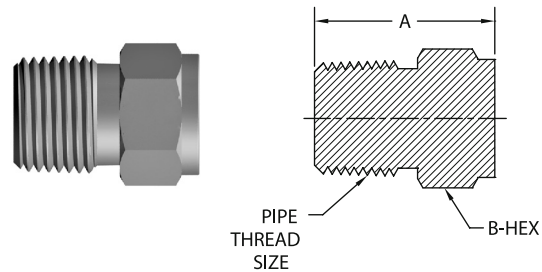


| Part No. | Male Pipe Size | Reduced Male Pipe Size | A | B Thru Hole | C Hex |
|------------|----------------|------------------------|-------|-------------|--------|
| 2-1HRN-1 | 1/8 | 1/16 | 1.000 | .125 | 7/16 |
| 4-1HRN-2 | 1/4 | 1/8 | 1.187 | .187 | 9/16 |
| 6-1HRN-2 | 3/8 | 1/8 | 1.218 | .1871 | 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 |

| 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 |

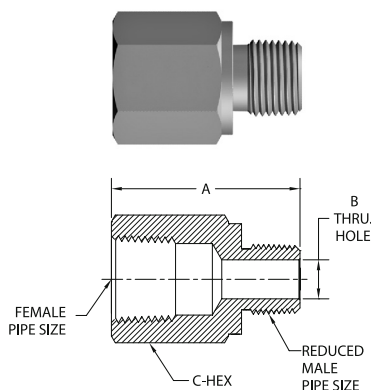
1MPP

Male Pipe Plug



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 |

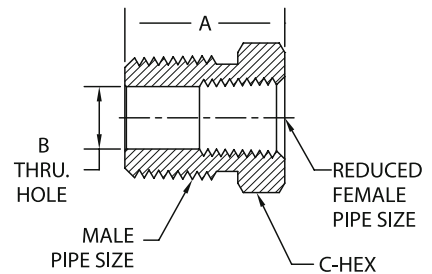
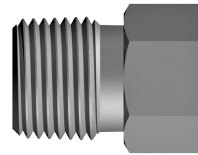
*Note: All dimensions subject to change, to be used for reference only.

1RBMF, 2FF, 2FM

| 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 |

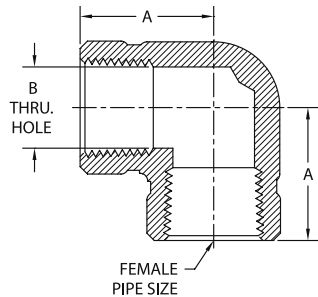
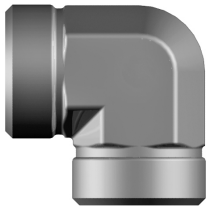
1RBMF

Reducer Bushing-
Male to Female



2FF

Female Pipe Elbow

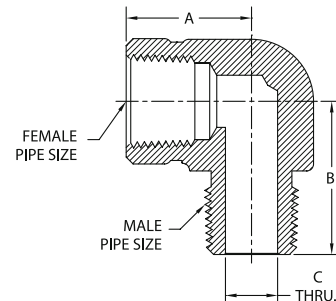
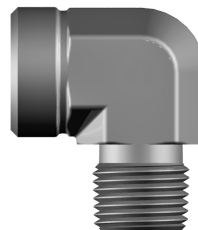


| Part No. | Female Pipe Size | A | B Thru Hole |
|-----------|------------------|-------|-------------|
| 2-2FF-2 | 1/8 | .843 | .328 |
| 4-2FF-4 | 1/4 | .968 | .421 |
| 6-2FF-6 | 3/8 | 1.000 | .562 |
| 8-2FF-8 | 1/2 | 1.125 | .687 |
| 12-2FF-12 | 3/4 | 1.437 | .890 |

| 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 |

2FM

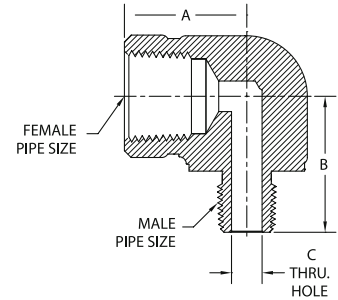
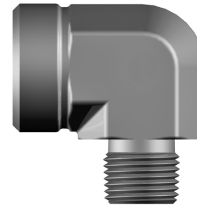
Female - Male Pipe Elbow



| 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 |

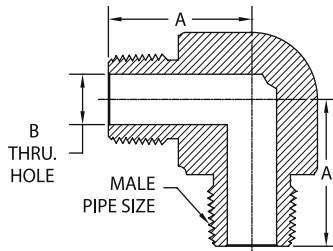
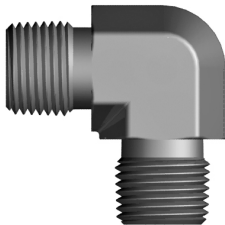
2FMR

Female - Male Reducer Pipe Elbow



2MM

Male Pipe Elbow

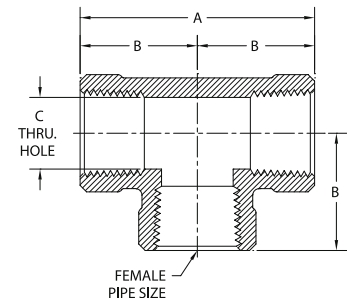
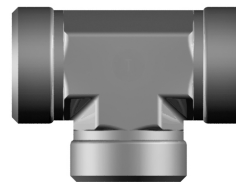


| Part No. | Male Pipe Size | A | B Thru Hole |
|-----------|----------------|-------|-------------|
| 2-2MM-2 | 1/8 | .750 | .187 |
| 4-2MM-4 | 1/4 | 1.000 | .281 |
| 6-2MM-6 | 3/8 | 1.093 | .375 |
| 8-2MM-8 | 1/2 | 1.375 | .468 |
| 12-2MM-12 | 3/4 | 1.500 | .625 |
| 16-2MM-16 | 1 | 1.875 | .875 |

| 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 |

3FFF

All Female Pipe Tee

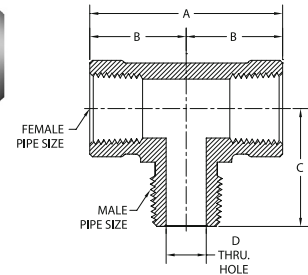


3FFM, 3FMF, 3MMM

| 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 |

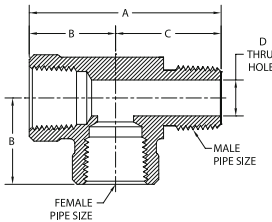
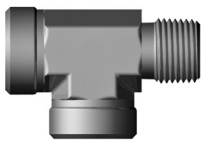
3FFM

Pipe Tee - Female - Female - Male



3FMF

Pipe Tee - Female - Male - Female

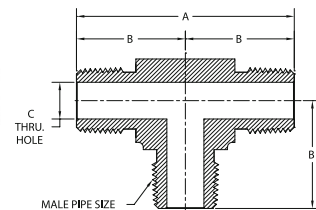
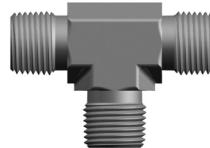


| Part No. | Pipe Sizes | A | B | C | D Thru Hole |
|------------|------------|-------|-------|-------|-------------|
| 2-3FMF-2 | 1/8 | 1.687 | .843 | .843 | .187 |
| 4-3FMF-4 | 1/4 | 1.890 | .843 | 1.046 | .281 |
| 6-3FMF-6 | 3/8 | 2.125 | 1.000 | 1.125 | .375 |
| 8-3FMF-8 | 1/2 | 2.500 | 1.125 | 1.375 | .468 |
| 12-3FMF-12 | 3/4 | 2.937 | 1.437 | 1.500 | .625 |

| 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 |

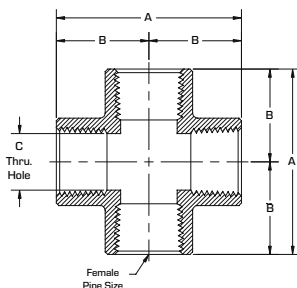
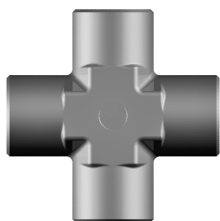
3MMM

All Male Pipe Tee



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 |

Instrumentation Pipe Fittings

PIPE THREAD SPECIFICATIONS

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

Materials: Brass • 316 Stainless Steel • Steel

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.

Pressure ratings for Tylok tube fittings that have differing end connection styles shall use the lowest of the pressure rating.

TUBE PRESSURE DERATING FACTORS ELEVATED TEMPERATURES

The table lists de-rating factors that must be considered in applications above that of ambient temperatures.

Example:

Type 316 Stainless Steel 1/4" O.D.x.0.49" wall at 800°F is 7,500 PSI x .79 = 5,925 psig.

Therefore, the suggested allowable working pressure for 316 Stainless Steel (1/4" O.D. with .049" tube wall) at 800°F is 5,925 psig.

| Suggested Maximum Operating Pressures for Pipe Threads (psig) | | | | |
|---------------------------------------------------------------|-----------------------|--------|-------|--------|
| NPT Size | 316 SS & Carbon Steel | | Brass | |
| | Male | Female | Male | Female |
| 1/16" | 11000 | 6700 | 5500 | 3300 |
| 1/8" | 10000 | 6500 | 5000 | 3200 |
| 1/4" | 8000 | 6600 | 4000 | 3300 |
| 3/8" | 7800 | 5300 | 3900 | 2600 |
| 1/2" | 7700 | 4900 | 3800 | 2400 |
| 3/4" | 7300 | 4600 | 3600 | 2300 |
| 1" | 5300 | 4400 | 2600 | 2200 |

| Tylok Instrumentation Fittings are rated at the following temperatures: | |
|-------------------------------------------------------------------------|---------------------------------------|
| 316 Stainless | -325°F to 1000°F (-198°C to 648°C) |
| Brass | -40°F to 400°F (-40°C to 204°C) |
| Steel | -65°F to 375°F (-54°C to 190°C) |

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

| TEMPERATURES | | TUBING MATERIAL | | |
|--------------|-----|-----------------|--------|--------|
| °F | °C | Carbon Steel | 304 SS | 316 SS |
| 200 | 93 | 0.95 | 1.00 | 1.00 |
| 300 | 149 | 0.90 | 1.00 | 1.00 |
| 400 | 204 | 0.87* | 0.93 | 0.96 |
| 500 | 260 | | 0.87 | 0.89 |
| 600 | 316 | | 0.82 | 0.85 |
| 700 | 371 | | 0.8 | 0.81 |
| 800 | 427 | | 0.76 | 0.79 |
| 900 | 482 | | 0.73 | 0.77 |
| 1000 | 538 | | 0.69 | 0.76 |

*Based on 375°F (190°C) max

| TEMPERATURES | | TUBING MATERIAL |
|--------------|-----|-----------------|
| °F | °C | Copper |
| 100 | 38 | 1.00 |
| 150 | 66 | 0.85 |
| 200 | 93 | 0.80 |
| 250 | 121 | 0.80 |
| 300 | 149 | 0.78 |
| 350 | 177 | 0.66 |
| 400 | 204 | 0.50 |



Temperature Ratings

Tylok Instrumentation Pipe Fittings are rated at the following temperatures:

316 Stainless: -325°F to 1000°F **Brass:** -40°F to 375°F **Steel:** -20°F to 400°F
(-198°C to 538°C) (-40°C to 204°C) (-28°C to 204°C)

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

Heat Traceability

Tylok 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 & 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 | - |