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IY-LOK

Always together, Always success
Since 1993

Ihsung IY-LOK

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Always together, Always success Since 1993

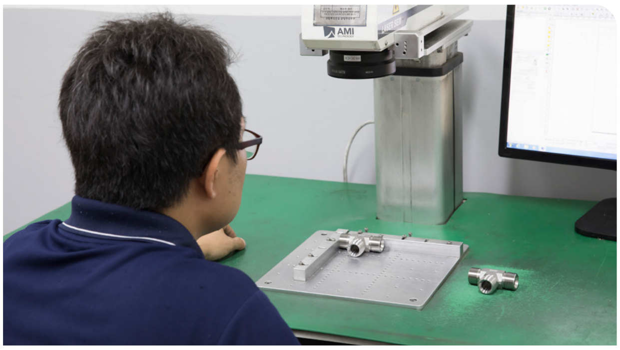
Company Profile

IHSUNG TECH Co., Ltd. is high precision manufacturer of instrument fittings, valves and related components, as flow and control systems, providing precision-engineered solutions for a wide variety of industries since 1993.

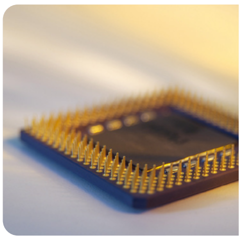
IHSUNG TECH Co., Ltd. presents the main brand 'IY-LOK' and dedicated to being the global leader in the design, manufacture and distribution of high quality components for the Petrochemical, Chemical Processing, Oil and Gas, Power Generation, Water Analysis, Biopharmaceutical, Semiconductor Manufacturing and Analytical Equipment industries.

IY-LOK promises the confidence that IY-LOK supplies the products and services with Prompt Response, Competitive Price, and Excellent After-Service. As slogan 'Always Together, Always Success.'
the partnership is the most important in our business. As a result, IY-LOK has a stronger worldwide network and providing comprehensive technical support and after-sales support in the world industry markets.

IY-LOK is always looking for the valuable partner all over the world.

Business Area



Semiconductor

Semiconductor, Display, Solar, Equipment, Engineering, Equipment set-up

Petrochemical

Up Stream, Down Stream, Equipment, Engineering, Construction

Natural Gas

LNG, CNG, Equipment, Engineering, Construction

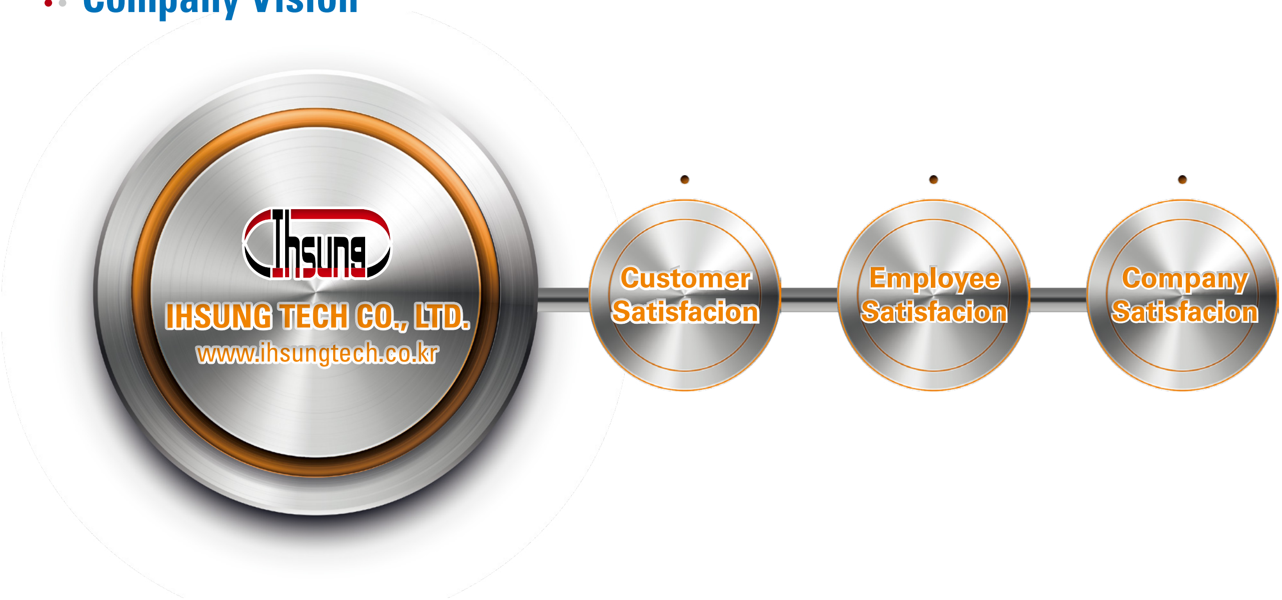
Generation

Water Power, Steam Power, Nuclear Power, Equipment, Engineering, Construction

Marine Shipbuilding

LNG Carrier, Container Ship, On/Off Shore, Equipment, Engineering, Construction

Company Vision



Certificates

ISO 9001

ISO 14001

OHSAS 18001

DNV·GL

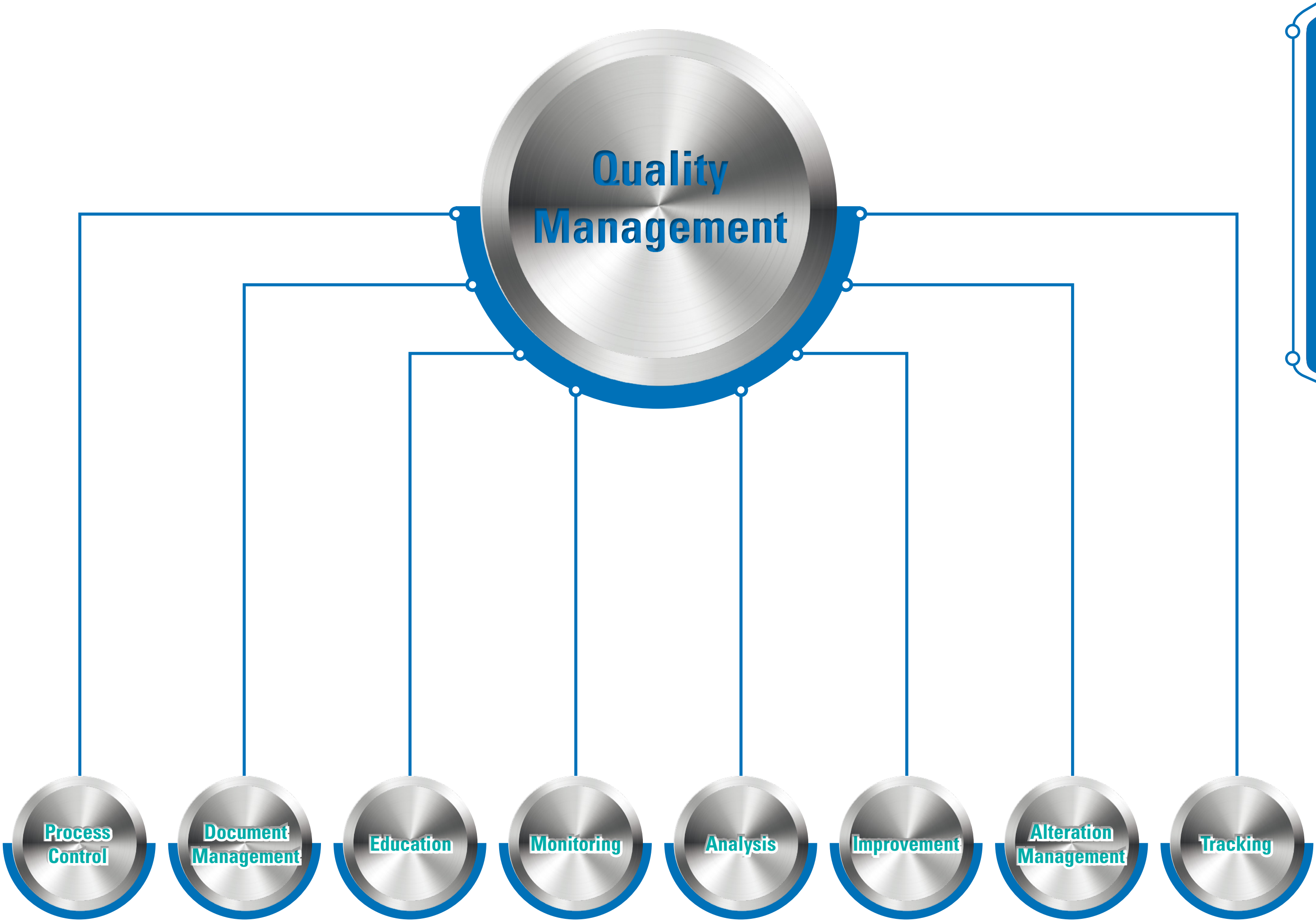
Certificate for Specialized Components and Materials Enterprise
(소재 · 부품 전문기업)

Certificate of Inno-Biz
(기업혁신형 중소기업)

Promising Export Small & Medium Enterprise (Eng)
(수출 유망 중소기업)

Certificate of R&D Center
(기업부설연구소 인증서)

Quality Assurance Policy



1. **Inspection for manufacturing**
   IY-LOK inspects dimension, hardness, roughness, and surface in each lot.
2. **Measuring equipment**
   IY-LOK conducts scrutiny by measuring equipment such as roughness tester, hardness tester, measuring machine and etc.
3. **Calibration maintenance**
   All of measuring equipment are maintained through the calibration.
4. **Inspection equipment**
   IY-LOK has various inspection equipment to confirm performance of products precisely.
5. **Performance warranty**
   Regarding all products, IY-LOK guarantees performance as various tests.
6. **Evaluation of subcontractor**
   IY-LOK regularly conducts evaluation of subcontractors for maintain their quality level.

Company History

Globalization

2018	Selected 'Promising Export Small & Medium Enterprise' by MSS, Approved Vendor Registration for 'Hanyang Engineering.' Approved Vendor Registration for 'Hanwha Engineering & Construction' Attended 2018 G-Fair (Korea Sourcing Fair) in Mumbai
2017	Attended 2017 G-Fair (Korea Sourcing Fair) in Ho Chi Minh Selected 'Kookmin's Best Company' by KB Bank Approved Vendor Registration for 'Hyundai Engineering & Construction' Supplied Key Lock Ball Valve to Samsung Electronics in Pyeongtaek, Korea Supplied Hex Ball Valve to Samsung Electronics in Vietnam
2016	Attended Valve World Expo 2016 Approved 'PTTGC', Thailand Approved BNPP(Barakah Nuclear Power Plant) Project, in UAE Attended AOG 2016 (Australia Oil & Gas 2016) Acquired ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007
2015	Attended OGAV 2015 (Oil & Gas Vietnam 2015) Approved 'PETRONAS', Malaysia

Growth and Development

2014	Founded R&D Center
2011	Selected 'Promising Small Business' by SMBA, Republic of Korea
2010	Approved 'DNV·GL' Certificate.
2008	Moved Headquarter and Factory to Hwaseong then, Extended Facilities

Quality Reinforcemnet

2004	Developed Insulation Cover for Valve
2003	Developed Locking Device for Valve
2001	Changed Company Name as 'Ihsung Tech Co., Ltd.'
2000	Acquired ISO 9001 Cert.

Set-up

1997	Launched Brand, 'IY-LOK' and Started to Mass Production
1993	Established 'Ihsung Precision Industry'

Tube Fittings

Semiconductor, Display, Solar. Oil Gas,
Power Plant, Offshore and Water Desalination

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Tube to Male Pipe

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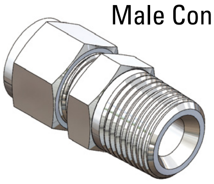
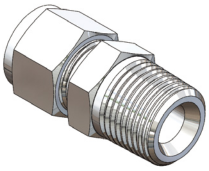
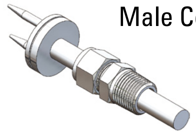
18 **IMC** (Fractional)
Male Connector



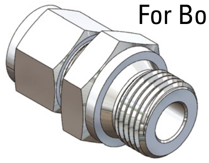
19 **IMC** (Metric)



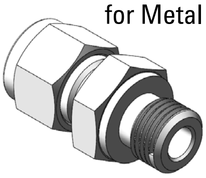
19 **IMC-T**
Thermocouple
Male Connector



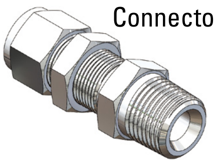
20 **IMC-G**
Male Connector
For Bonded Seal



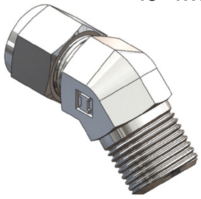
21 **IOM**
Male Connector
for Metal Gasket



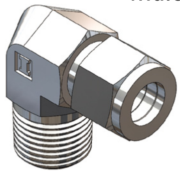
22 **IBMC**
Bulkhead Male
Connector



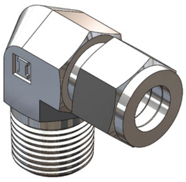
22 **IME 45D**
45° Male Elbow



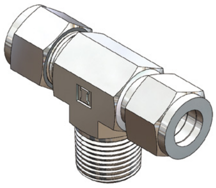
23 **IME**
Male Elbow



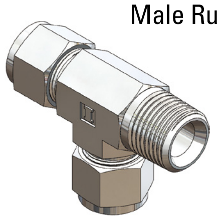
24 **IME**
Male Elbow



25 **IMBT**
Male Branch Tee



26 **IMRT**
Male Run Tee



Tube to Female Pipe

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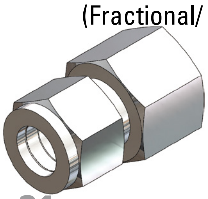
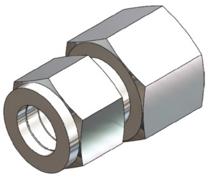
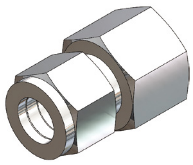
27 **IFC**
Female Connector
(Fractional/ Fractional
to Metric)



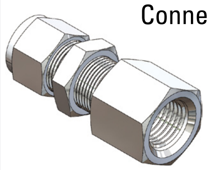
28 **IFC**
Female Connector
(Metric)



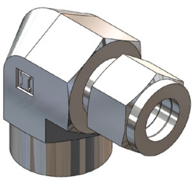
29 **IGC**
Gauge Connector



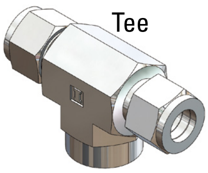
30 **IBFC**
Bulkhead Female
Connector



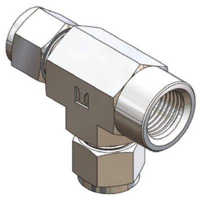
31 **IFE**
Female Elbow



32 **IFBT**
Female Branch
Tee



33 **IFRT**
Female Run Tee



Tube to Tube

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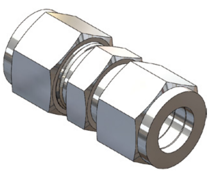
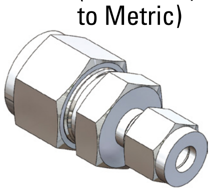
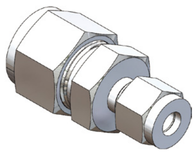
34 **IU** Union



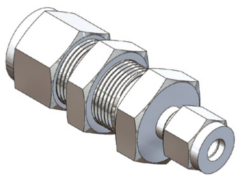
35 **IRU**
Reducing Union
(Fractional/Fractional
to Metric)



36 **IRU**
Reducing Union
(Metric)



36 **IRBU**
Reducing Bulkhead
Union



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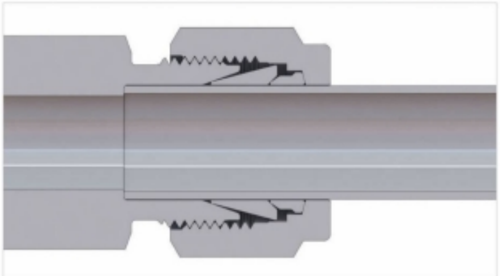
Iy-Lok Tube Fittings

The IHSUNG TECH Iy-Lok twin tube fitting consists of four high precision engineered parts designed to provide secure leak - proof joints capable of satisfying high pressure, vaccum and vibration application



Nut : Iy - Lok's high quality, silver plated nut ensures no galling of body threads.

Body : Deep tube abutment and close tolerance of nut and body for accurate tube alignment.

Back ferrule : Iy - Lok's back ferrule provides a strong mechanical and anti - vibration hold on the tube

Front Ferrule : Critical pressure seal by front ferrule on tube and body.

Component Working action

The front ferrule swage onto the tube as it moves down the body seat creating a pressure & vacuum - tight seal on both tube and body by the interface pressure and surface finish of mating components.
The Iy - Lok back ferrule then moves inwards in the cone of the front ferrule, forming into the tube and creating a strong mechanical hold on the tube.

Installation

Size 1 thru 3
(1/16" thru 3/16")
Only 3/4 turn from finger - tight position

Size 4 thru 16
(1/4" thru 1")
Only 1 - 1/4 turn from finger - tight position

Assembly Instructions

Iy - Lok Tube fittings will be delivered with finger tightening state to immediate use in field. Iy - Lok tube fittings are installed in three easy steps.

1. Insert the tubing into the Iy - Lok fitting until the tubing sits on the shoulder of the body and then make sure the nut is finger - tight.
2. Set the finger - tight position, rotate the nut 3/4 turns for sizes between 1/16 inch and 3/16 inch : and 1 - 1/4 turns for the sizes between 1/4 inch and 1 inch.

Reassembly Instructions

Iy - Lok tube fittings can be assembled and disassembled repeatedly, the following instructions should be carried out to reassemble a fitting.

1. Insert the tubing with the preswaged ferrule into the Iy - Lok fitting body until front ferrule sits on the fitting body and then make sure the nut is finger - tight.
2. Rotate the nut to the original tighten position with a wrench. At the original position, the nut has to be tighten slightly more for resistance increases.

Notification

1. Make sure whether the thickness and material of tubing is proper to applicable usage.
   The material of tubing is compatible with the material of fitting and the hardness of tubing shall be less than that of fitting.
2. Do not assemble or disassemble the fitting when the pressure is holdat the system.
3. Do not turn the fitting body

Material

Table 3. Typical Material Specification

Materila	Bar Stock	Forging
Stainless Steel Type 316	ASTM A479, ASTM A276, ASTM SA479	ASTM A182, ASTM SA182
BRASS	ASTM B16 Alloy 360, ASTM B453 Alloy 345	ASTM B283 Alloy 377
Carbon Steel	ASTM A108	ASTM A576
Alloy 20	ASTM B473	ASTM B462
Alloy 400	ASTM B164, ASME SB164	ASTM B564, ASME SB564
Alloy 600	ASTM B166, ASME SB166	ASTM B564, ASME SB564

Materila	Bar Stock	Forging
Alloy 625	ASTM B466	ASTM B564, ASME SB564
Alloy 825	ASTM B425	ASTM B564 ASME SB564
Alloy C - 276	ASTM B574	ASTM B564
Titanium	ASTM B348	ASTM B381
Alumiunium	ASTM B211	ASTM B427
SAF 2570	ASTM A479	ASTM A182
Nylon	ASTM D4066	-
PTFE	ASTM D1710	ASTM D3294

※ Carbon Steel Hy - Lok tow ferrule tube fittings are supplied with 316 stainless steel back ferrule.

Iy-Lok Tube End Designator

Fractional Tube

Designator	1	2	3	4	5	6	8	10	12	14	16	20	24	32
Tube O,Q.	1/16"	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1-1/4"	1-1/2"	2"

Metric Tube

Designator	1M	3M	4M	6M	8M	10M	12M	15M	16M	20M	22M	25M	28M	32M	38M
Tube O,Q.	1mm	3mm	4mm	6mm	8mm	10mm	12mm	15mm	16mm	20mm	22mm	25mm	28mm	32mm	38mm

Pipe Thread Designator

Materila	1/16"	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	Application Specifications
NPT	1	2	4	6	8	12	16	20	24	32	ANSI B1.20.1 (NPT)
ISO Tapered	1R	2R	4R	6R	8R	12R	16R	20R	24R	32R	JIS B0203(PT) , DIN2999, IS07/1, BS 21 (BSPT)
JS0 Parallel	1G	2G	4G	6G	8G	12G	16G	20G	24G	32G	JIS B0202(PF) , DIN ISO 228/1, BS 2779(BSPT)

Tube Selection

The careful selecting, specifying, purchasing and handling of tubing are essential to the successful of Iy - Lok Tube Fittings.

1. HARDNESS RESTRICTIONS

In general, metal tubing should be fully annealed to work properly with Iy - Lok tube fittings. While most stainless steel tubing is restricted to a maximum rockwell hardness of Rb90, many users specify that this hardness be further restricted to Rb80. Such tubing lowers the installed cost because it is more easily bent and installed. While Iy - Lok stainless steel tube fittings may be used on stainless steel tube with hardness of Rb90 maximum, we suggest that whenever possible, you specify a maximum hardness of Rb80.

2. TUBING PRESSURE RATINGS BY TEMPERATURE CHANGE

Allowable Stress Factors

°F	°C	Copper	304SS	316SS	Monel
200	93	0.80	1.00	1.00	0.88
400	204	0.50	0.93	0.96	0.79
600	316	-	0.82	0.85	0.79
800	427	-	0.76	0.79	0.76
1000	538	-	0.69	0.76	-
1200	649	-	0.30	0.37	-

To determine allowable pressure at elevated temperatures, multiply the allowable working pressure in Table 2 by the factor shown in table 1.

Example

Type316SS1/2"O.D.x0.049"
wall thickness at 1000°F : 3,700psix0.76 = 2,812psi
Allowable working pressure for 1/2"O.D.×0.049"wall thickness 316SS tubing is therefore 2,812psi at 1000°F

3. Maximum Allowable Working Pressure Tables
STAINLESS STEEL TUBING

Fully annealed high quality type 304, 316, etc
Stainless steel hydraulic tubing ASTM A - 269 or A - 2213 or equivalent.
Hardness : Rb90 or less

Stainless Steel Tube Inch Size

Part No. (Inches)	Tube Wall Thickness In Inches															
	0.010	0.012	0.014	0.016	0.020	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.120	0.134	0.156	0.188
1/16"	5,600	6,800	8,200	9,600	12,600											
1/8"						8,500	11,200									
3/16"						5,400	7,000	10,400								
1/4"						4,000	5,100	7,500	10,400							
5/16"							4,000	5,800	8,000							
3/8"							3,300	4,800	6,500							
1/2"							2,600	3,700	5,100	6,700						
5/8"								2,900	4,000	5,200	6,000					
3/4"								2,400	3,300	4,200	4,900	5,800				
7/8"								2,000	2,800	3,600	4,200	4,800				
1"									2,400	3,100	3,600	4,200	4,700			
1-1/4"										2,500	2,800	3,300	3,600	4,100	4,900	
1-1/2"											2,300	2,700	3,000	3,400	4,000	4,900
2"												2,000	2,200	2,500	2,900	3,600

Working Pressure in Psig

For gas service, applying tube wall thickness only on outside of shade boumdary

Stainless Steel Tube Metric Size

Part No. (mm)	Tube Wall Thickness In Millimeter (Inches)															
	0.71 (0.028)	0.89 (0.035)	1	1.25 (0.049)	1.50	1.65	2	2.11 (0.083)	2.41 (0.095)	2.50	2.77 (0.109)	3	3.05	3.50	4	4.50
3	10,800	13,800	15,300													
4	7,900	10,100	11,500	14,400												
6	5,000	6,500	7,400	9,400	11,500	12,700										
8		4,700	5,800	6,800	8,400	9,300										
10		3,700	4,200	5,300	6,500	7,300										
12		3,000	3,400	4,400	5,300	5,900	6,600	7,000								
16			2,500	3,200	3,900	4,300	5,300	5,700	6,600	6,800						
18				2,800	3,400	3,800	4,700	5,000	5,800	6,000	6,700					
20				2,500	3,000	3,400	4,200	4,400	5,100	5,300	6,000					
22				2,300	2,800	3,000	3,800	4,000	4,600	4,800	5,400					
25				2,000	2,400	2,700	3,300	3,500	4,000	4,200	4,700	5,100	5,200			
38										2,300		2,900		3,400	3,900	4,400

Working Pressure in Psig

For gas service, applying tube wall thickness only on outside of shade boumdary

Allowable Stress

20,000psi between - 20°F and 100°F based on ultimate tensile strength 75,000psi (ANSI B31.3 code)
(Bar = psig x 0.0689, kPa = psig × 6.89)

Notification

1) All calculations are based on maximum outside diameter and minimum wall thickness without allowance for corrosion and erosion.
2) Care should be taken for temperature rating if tubing is coated or plated
3) Figures shown are not for design pupose but for reference only and the accuracy of information is not liability of Ihsung Tech Co.,Ltd.

Copper Tubing

High quality soft annealed seamless copper tube to ASTM B - 75 or equivalent.

Fractional Copper Tubing

Part No. (Inches)	Tube Wall Thickness In Inches									
	0.010	0.012	0.024	0.035	0.049	0.065	0.083	0.095	0.019	0.020
1/16"	1,652	2,124	6,742	9,871						
1/8"			2,840	3,787						
3/16"			1,810	2,343	3,615			Working Pressure in Psig		
1/4"			1,321	1,696	2,565	3,639				
5/16"				1,329	1,988	2,782				
3/8"				1,093	1,623	2,251				
1/2"				806	1,187	1,630	2,160			
5/8"					935	1,277	1,681	1,970		
3/4"					748	1,017	1,332	1,555	1,823	
7/8"					639	867	1,133	1,320	1,544	
1"					559	756	986	1,147	1,339	1,479

Metric Copper Tubing

Part No. (mm)	Tube Wall Thickness In Millimeter									
	0.8	1	1.2	1.5	1.8	2	2.2	2.5	2.8	3
3	239	326								
4	175	228	291					Working Pressure in Bar		
6	111	142	178	237	299					
8	81	103	128	168	210					
10	64	81	100	131	162	184				
12	53.	67	82	107	131	149				
14		57	70	90	111	125	139	162		
15		53	65	78	96	116	129	150		
16		49	61	78	96	108	120	139		
18		43	53	68	83	94	104	121	138	150
20		39	47	61	75	84	93	107	123	133
22		35	43	55	67	76	84	97	110	120
25		31	38	48	59	66	73	84	96	104

Allowable Stress

6,500psi between - 20°F and 100°F based on ultimate tensile strength 30,000psi (ANSI B31.3 code)
(Bar = psig x 0.0689, kPa = psig × 6.89)

MONEL TUBING

Fully annealed quality seamless MONEL 400 hydraulic tubing ASTM B - 165 or equivalent.
Hardness : Rb75 Maximum

Monel 400 Fractional Tubing

Part No. (Inches)	Tube Wall Thickness In Inches									
	0.010	0.012	0.028	0.035	0.049	0.065	0.083	0.095	0.019	0.020
1/8"			7,900	10,100						
1/4"			3,700	4,800	7,000	9,500		Working Pressure in Psig		
3/8"				3,100	4,400	6,100				
1/2"				2,300	3,200	4,400				
3/4"					2,200	3,000	4,000	4,600		
1"						2,200	2,900	3,400	3,900	4,300

Allowable Stress

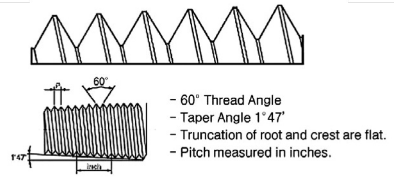
18,700psi between - 20°F and 100°F based on ultimate tensile strength 70,000psi (ANSI B31.3 code)
(Bar = psig × 0.0689, kPa = psig × 6.89)

Pipe Threads Information

Threads of many kinds are used for different purposes in small piping components.
The followings are the more common types of pipe threads.

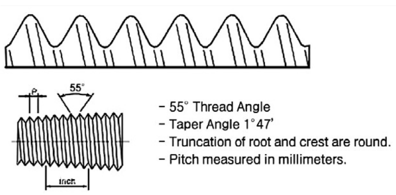
1. NPT Tapered Pipe Threads

NPT(National Pipe Tapered) is made to specifications outlined in ANSI B1. 20. 1 This is the pipe thread used on the pipe end.



2. ISO 7/1 Tapered Pipe Threads

International Organization for Standards(ISO 7/1) Tapered.(PT)
ISO tapered threads are equivalent to DIN 2999. BSP TR, JIS B0203, R 1/8 and R 1/4 Keg.



In application ISO threads are used similar to NPT threads.
However, care should be used that ISO and NPT threads are not mixed.
ISO threads have a 55°angle versus 60°for NPT.

Thread Identification Reference Tables

Nominal Thread Size inch	Designation	Included Thread Angle	Nominal Male Thread Diameter		Pitch*
			inch	mm	
1/16	NPT	60°	0.308	7.84	27U
	ISO 7/1	55°	0.304	7.72	28W
1/8	NPT	60°	0.401	10.18	27U
	ISO 7/1	55°	0.383	9.73	28W
1/4	NPT	60°	0.533	13.54	18U
	ISO 7/1	55°	0.518	13.16	19W
3/8	NPT	60°	0.668	16.98	18U
	ISO 7/1	55°	0.656	16.86	19W
1/2	NPT	60°	0.832	21.14	14U
	ISO 7/1	55°	0.825	20.96	14W
3/4	NPT	60°	1.043	26.49	14U
	ISO 7/1	55°	1.041	26.44	14W
1	NPT	60°	1.305	33.14	11.5U
	ISO 7/1	55°	1.309	33.25	11W
1-1/4	NPT	60°	1.649	41.90	11.5U
	ISO 7/1	55°	1.650	41.91	11W
1-1/2	NPT	60°	1.888	47.97	11.5U
	ISO 7/1	55°	1.882	47.80	11W
2	NPT	60°	2.362	60.00	11.5U
	ISO 7/1	55°	2.347	59.61	11W

*U = Unified, W = Whitworth

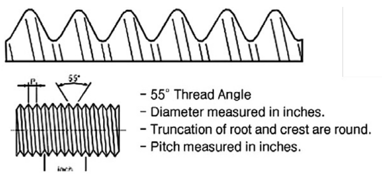
Thread pitch is usually measured in millimeters but may be expressed in inch. In many sizes the threads-per-inch are different and the root and crest configurations are different from NPT.

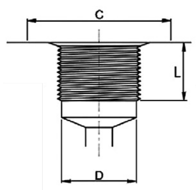
3. ISO 229/1 Parallel Pipe Threads

a. Bonded Washer Seal (IMC-G)
Be sealed by contacting the inclined surface of the hex body of male thread to the surface of the female thread. In case of sealing, a washer which composed of metal and elastic material is located at the center of tapered surface.

b. Metal Gasket Seal (IOM)
A Metal gasket(generally copper) is sealed between the body of male thread and the surface of female thread.

c. Metal Gasket Seal (IOM)
This is a method to insert a gasket into the flat surface of thread's inside. The sealing shall be completed with pushing the gasket by male thread surface.





International Organization for Standards(ISO 228/1) Parallel(PF) ISO Parallel threads are equivalent to DIN ISO 228/1, BSP PL, JIS B0202, 1/8 and R 1/4. These pipe threads are similar in configuration to 7/1 threads except there is no taper. Therefore do not work by thread interference like the tapered pipe threads of ISO 7/1 or NPT. A gasket or O-Ring is normaly used to seal into the parallel female threaded component.

Iy-Lok Designator	ISO Female Parallel Pipe Size (inch)	Minimum Full Thread Depth L(inch)	Thread Minor Diameter D(inch)	Minimum Flat Diameterfor a&b C(inch)	Minimum Flat Diameter for Posi
2G	1/8	0.31	0.337/0.348	0.59	0.68
4G	1/4	0.47	0.450/0.468	0.75	0.90
6G	3/8	0.47	0.586/0.606	0.91	1.04
8G	1/2	0.55	0.733/0.755	1.06	1.26
12G	3/4	0.63	0.949/0.971	1.30	1.62
16G	1	0.71	1.193/1.218	1.57	1.91

Ordering System

Iy - Lok tube fittings parts numbers are constructed
from symbols that identify the style
and size of the fitting and material used.

Fractional Tube Numbering System

I	MC	6	-	4	-	R	-	SS
Iy - Lok Fitting (Brand)	Fitting Type (Male Connector)	Tube O.D. 3/8" O.D.		Pipe Thread 1/4"		Thread Type N or Blank : NPT R : ISO Tapered G: Straight Thread		Material SS : SS316 B : BRASS M : MONEL

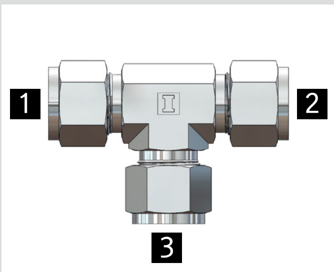
Example : Stainless steel 316 Male Connector for 3/8" O.D. tube and 1/4" male ISO Tapered thread.(IMC 6 - 4R - SS)

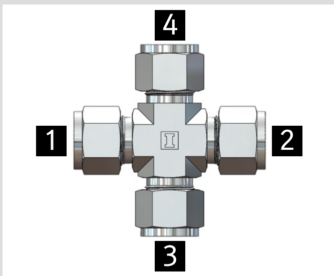
Metric Tube Numbering System

I	MC	12M	-	4	-	R	-	SS
Iy - Lok (Brand)	Fitting Type (Male Connector)	Tube O.D. 12mm		Pipe Thread 1/4"		Thread Type N or Blank : NPT R : ISO Tapered G: Straight Thread		Material SS : SS316 B : BRASS M : MONEL

Example : Stainless steel 316 Male Connector for 12mm tube and 1/4" male ISO Tapered thread.(IMC 12M - 4R - SS)

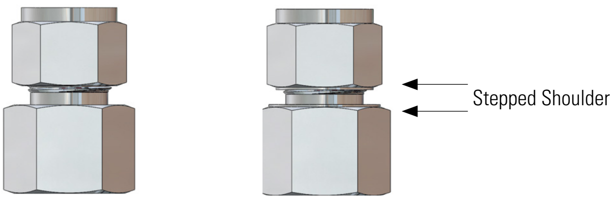
Note : **Straights & Elbows :** Call out largest Iy - Lok tube end size first followed by the smaller Iy - Lok tube end or pipe thread size.
Tees & Crosses : For drop size tees - First size the run (1 to 2) and the branch (3) . For Crosses - First size the run (1 to 2) and then the branch (3 to 4) .
For tees with all ends thesame size, use the tube end size after the style designator; i.e, Union 1/4"O.D.: IUT - 4





Identification of Iy- Lok Metric tube fittings from Fractional

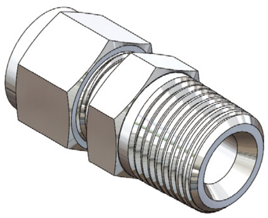
These two are similar in appearance. To avoid any confusion and for ready identification, the stepped shoulders are machined on the body and on the hex nut of metric size tube fittings as shown. The metric tube nut must not be used on fractional body, and vice versa

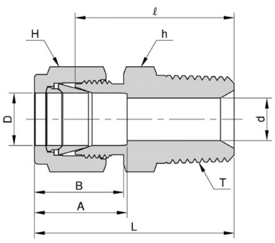


Fractional   Metric

Color Coding For easy reference, table heads are color indicated as follows : Fractional ——— Metric ———

IMC Male Connector



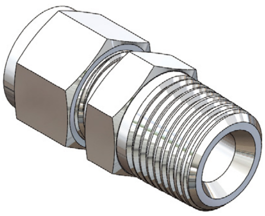


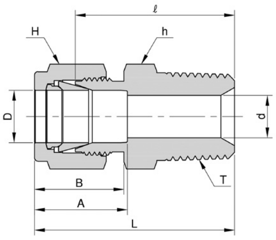
Connector Fractional Tube To Female NPT Thread

Part No.	Tube O.D. D		T*	d	Width Across Flat				A	B	ℓ	L
					h		H					
	inch	mm	NPT	min.	inch	mm	inch	mm				
IMC 1-1N	1/16	1.59	1/16	1.27	5/16	7.93	5/16	7.93	8.63	10.92	20.00	23.83
IMC 1-2N	1/16	1.59	1/8	1.27	7/16	11.11	5/16	7.93	8.63	10.92	22.35	26.23
IMC 1-4N	1/16	1.59	1/4	1.27	9/16	14.28	5/16	7.93	8.63	10.92	27.17	30.98
IMC 2-1N	1/8	3.17	1/16	2.28	7/16	11.11	7/16	11.11	12.70	15.24	23.11	29.71
IMC 2-2N	1/8	3.17	1/8	2.28	7/16	11.11	7/16	11.11	12.70	15.24	23.87	30.48
IMC 2-4N	1/8	3.17	1/4	2.28	9/16	14.28	7/16	11.11	12.70	15.24	28.95	35.56
IMC 2-6N	1/8	3.17	3/8	2.28	11/16	17.46	7/16	11.11	12.70	15.24	29.21	35.81
IMC 2-8N	1/8	3.17	1/2	2.28	7/8	22.22	7/16	11.11	12.70	15.24	35.56	42.16
IMC 3-2N	3/16	4.76	1/8	3.04	7/16	11.11	1/2	12.70	13.71	16.00	24.63	31.24
IMC 3-4N	3/16	4.76	1/4	3.04	9/16	14.28	1/2	12.70	13.71	16.00	29.71	36.32
IMC 4-1N	1/4	6.35	1/16	4.82	1/2	12.70	9/16	14.28	15.24	17.78	25.40	32.76
IMC 4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	25.40	32.76
IMC 4-4N	1/4	6.35	1/4	4.82	9/16	14.28	9/16	14.28	15.24	17.78	30.48	37.84
IMC 4-6N	1/4	6.35	3/8	4.82	11/16	17.46	9/16	14.28	15.24	17.78	30.98	38.35
IMC 4-8N	1/4	6.35	1/2	4.82	7/8	22.22	9/16	14.28	15.24	17.78	37.33	44.70
IMC 4-12N	1/4	6.35	3/4	4.82	1-1/16	26.98	9/16	14.28	15.24	17.78	38.86	46.22
IMC 5-2N	5/16	7.93	1/8	4.82	9/16	14.28	5/8	15.87	16.25	18.54	26.67	34.03
IMC 5-4N	5/16	7.93	1/4	6.35	9/16	14.28	5/8	15.87	16.25	18.54	31.24	38.60
IMC 5-6N	5/16	7.93	3/8	6.35	11/16	17.46	5/8	15.87	16.25	18.54	31.75	39.11
IMC 5-8N	5/16	7.93	1/2	6.35	7/8	22.22	5/8	15.87	16.25	18.54	38.11	45.60
IMC 6-2N	3/8	9.52	1/8	4.82	5/8	15.87	11/16	17.46	16.76	19.30	27.94	35.30
IMC 6-4N	3/8	9.52	1/4	7.11	5/8	15.87	11/16	17.46	16.76	19.30	32.51	39.87
IMC 6-6N	3/8	9.52	3/8	7.11	11/16	17.46	11/16	17.46	16.76	19.30	32.51	39.87
IMC 6-8N	3/8	9.52	1/2	7.11	7/8	22.22	11/16	17.46	16.76	19.30	38.86	46.22
IMC 6-12N	3/8	9.52	3/4	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	40.38	47.75
IMC 6-16N	3/8	9.52	1	7.11	1-3/8	34.92	11/16	17.46	16.76	19.30	47.0	54.37
IMC 8-2N	1/2	12.7	1/8	4.82	13/16	20.64	7/8	22.22	22.86	21.84	28.70	38.86
IMC 8-4N	1/2	12.7	1/4	7.11	13/16	20.64	7/8	22.22	22.86	21.84	33.27	43.43
IMC 8-6N	1/2	12.7	3/8	9.65	13/16	20.64	7/8	22.22	22.86	21.84	33.27	43.43
IMC 8-8N	1/2	12.7	1/2	10.41	7/8	22.22	7/8	22.22	22.86	21.84	38.86	49.02
IMC 8-12N	1/2	12.7	3/4	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	40.38	50.54
IMC 8-16N	1/2	12.7	1	10.41	1-3/8	34.92	7/8	22.22	22.86	21.84	46.99	57.15
IMC 10-4N	5/8	15.87	1/4	6.35	15/16	23.81	1	25.40	24.38	21.84	33.80	43.96
IMC 10-6N	5/8	15.87	3/8	9.65	15/16	23.81	1	25.40	24.38	21.84	34.03	44.19
IMC 10-8N	5/8	15.87	1/2	11.93	15/16	23.81	1	25.40	24.38	21.84	38.86	49.02
IMC 10-12N	5/8	15.87	3/4	12.70	1-1/16	26.98	1	25.40	24.38	21.84	40.38	50.54
IMC 12-6N	3/4	19.05	3/8	9.65	1-1/16	26.98	1-1/8	28.58	24.38	21.84	34.03	44.19
IMC 12-8N	3/4	19.05	1/2	11.93	1-1/16	26.98	1-1/8	28.58	24.38	21.84	40.38	50.54
IMC 12-12N	3/4	19.05	3/4	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	40.38	50.54
IMC 12-16N	3/4	19.05	1	15.74	1-3/8	34.92	1-1/8	28.58	24.38	21.84	46.99	57.15
IMC 14-8N	7/8	22.22	1/2	11.9	1-3/16	30.16	1-1/4	31.75	25.90	21.84	40.38	50.54
IMC 14-12N	7/8	22.22	3/4	15.74	1-3/16	30.16	1-1/4	31.75	25.90	21.84	40.38	50.54
IMC 14-16N	7/8	22.22	1	18.28	1-3/8	34.92	1-1/4	31.75	25.90	21.84	46.99	57.15
IMC 16-6N	1	25.4	3/8	9.65	1-3/8	34.92	1-1/2	38.10	31.24	26.41	40.30	52.49
IMC 16-8N	1	25.4	1/2	11.93	1-3/8	34.92	1-1/2	38.10	31.24	26.41	45.21	57.40
IMC 16-12N	1	25.4	3/4	15.74	1-3/8	34.92	1-1/2	38.10	31.24	26.41	45.21	57.40
IMC 16-16N	1	25.4	1	22.35	1-3/8	34.62	1-1/2	38.10	31.24	26.41	50.03	62.23
IMC 20-16N	1-1/4	31.75	1	22.35	1-3/4	44.45	1-7/8	47.63	41.14	38.86	55.11	77.21
IMC 20-20N	1-1/4	31.75	1-1/4	27.68	1-3/4	53.98	1-7/8	47.63	41.14	38.86	55.11	77.21
IMC 20-24N	1-1/4	31.75	1-1/2	27.68	1-3/4	53.98	1-7/8	47.63	41.14	38.86	60.54	82.64
IMC 24-20N	1-1/2	38.1	1-1/4	27.68	2-1/8	53.98	2-1/4	57.15	50.03	45.21	59.42	86.60
IMC 24-24N	1-1/2	38.1	1-1/2	33.90	2-1/8	53.98	2-1/4	57.15	50.03	45.21	61.72	88.90
IMC 32-20N	2	50.8	1-1/4	45.97	2-3/4	69.85	3	76.20	67.56	62.73	71.40	108.73
IMC 32-24N	2	50.8	1-1/2	45.97	2-3/4	69.85	3	76.20	67.56	62.73	75.50	112.83
IMC 32-32N	2	50.8	2	45.97	2-3/4	69.85	3	76.20	67.56	62.73	76.20	113.53

＊ISO Tapered Thread, put "R" digit at the last of part number.

IMC Male Connector



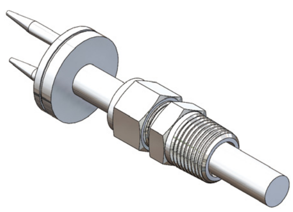


Connector Metric Tube To Female ISO Tapered Thread

Part No.	Tube O.D. D	T* NPT	d min.	Width Across Flat		A	B	ℓ	L
				h	H				
IMC 2M- 2R	2	1/8	1.7	12	12	12.9	15.3	23.9	30.5
IMC 3M- 2R	3	1/8	2.4	12	12	12.9	15.3	23.9	30.5
IMC 3M- 4R	3	1/4	2.4	14	12	12.9	15.3	29.0	35.6
IMC 4M- 2R	4	1/8	2.4	12	12	13.7	16.1	24.6	31.2
IMC 4M- 4R	4	1/4	2.4	14	12	13.7	16.1	29.7	36.3
IMC 6M- 2R	6	1/8	4.8	14	14	15.3	17.7	25.4	32.8
IMC 6M- 4R	6	1/4	4.8	14	14	15.3	17.7	30.5	37.9
IMC 6M- 6R	6	3/8	4.8	18	14	15.3	17.7	31.0	38.4
IMC 6M- 8R	6	1/2	4.8	22	14	15.3	17.7	37.3	44.7
IMC 8M- 2R	8	1/8	4.8	15	16	16.2	18.6	26.7	34.2
IMC 8M- 4R	8	1/4	6.4	15	16	16.2	18.6	31.2	38.7
IMC 8M- 6R	8	3/8	6.4	18	16	16.2	18.6	31.8	39.3
IMC 8M- 8R	8	1/2	6.4	22	19	16.2	18.6	38.1	45.6
IMC 10M-2R	10	1/8	4.8	18	19	17.2	19.5	28.7	36.3
IMC 10M-4R	10	1/4	7.9	18	19	17.2	19.5	33.3	40.9
IMC 10M-6R	10	3/8	7.9	18	19	17.2	19.5	33.3	40.9
IMC 10M-8R	10	1/2	7.9	22	22	17.2	19.5	38.9	46.5
IMC 12M-2R	12	1/8	4.8	22	22	22.8	19.5	28.7	38.8
IMC 12M-4R	12	1/4	7.1	22	22	22.8	22.0	33.3	43.4
IMC 12M-6R	12	3/8	9.5	22	22	22.8	22.0	33.3	43.4
IMC 12M-8R	12	1/2	9.5	22	22	22.8	22.0	38.9	49.0
IMC 12M-12R	12	3/4	9.5	27	22	22.8	22.0	40.4	50.5
IMC 14M-4R	14	1/4	7.1	24	25	24.4	22.0	33.3	44.1
IMC 14M-6R	14	3/8	9.5	24	25	24.4	22.0	33.3	44.1
IMC 14M-8R	14	1/2	11.1	24	25	24.4	22.0	38.9	49.0
IMC 16M-6R	16	3/8	9.5	24	25	24.4	22.0	34.0	44.1
IMC 16M-8R	16	1/2	11.9	24	25	24.4	22.0	38.9	49.0
IMC 16M-12R	16	3/4	12.7	27	25	24.4	22.0	40.4	50.5
IMC 18M-8R	18	1/2	11.9	27	30	24.4	22.0	40.4	50.5
IMC 18M-12R	18	3/4	15.1	27	30	24.4	22.0	40.4	50.5
IMC 20M-8R	20	1/2	11.9	30	32	26.0	22.0	42.2	52.3
IMC 20M-12R	20	3/4	15.9	30	32	26.0	22.0	42.2	52.3
IMC 22M-12R	22	3/4	15.9	30	32	26.0	22.0	42.2	52.3
IMC 22M-16R	22	1	18.3	35	32	26.0	22.0	47.0	57.1
IMC 25M-12R	25	3/4	15.9	35	38	31.3	26.5	45.2	57.5
IMC 25M-16R	25	1	21.8	35	38	31.3	26.5	50.0	62.3
IMC 28M-16R	28	1	21.8	41	46	36.6	36.6	51.6	72.4
IMC 28M-20R	28	1-1/4	21.8	46	46	36.6	36.6	52.3	73.1
IMC 30M-20R	30	1-1/4	26.2	46	50	39.6	39.2	55.6	77.2
IMC 32M-20R	32	1-1/4	28.6	46	50	42.0	41.6	56.6	79.6
IMC 38M-24R	38	1-1/2	33.7	55	60	49.4	47.9	64.0	91.6

∗NPT Thread, put "N" digit at the last of part number.

IMC-T Thermocouple Male Connector

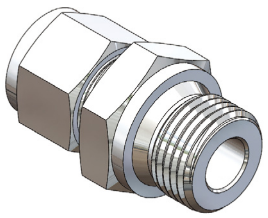


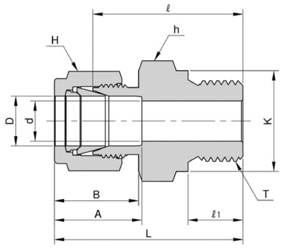
Iy-lok Bore-through Male Connector accommodate thermocouple or drip tubes.
To order bored-through Male Connector(IMC).

Example : 1/2" tube O.D. x 1/2"NPT   IMC 8-8TNS
6mm tube O.D. x 1/4"PT   IMC 6M-4TPS

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

IMC-G Male Connector For Bonded Seal





Connector Fractional Tube To Female ISO Parallel Thread

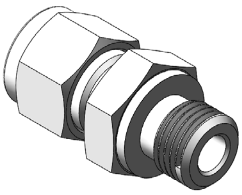
Part No.	Tube O.D. D		T G(PF)	d min.	Width Across Flat				A	B	ℓ	ℓ1	L	K
					h		H							
	inch	mm			inch	mm	inch	mm						
IMC 2-2G	1/8	3.17	1/8	2.28	9/16	14.28	7/16	11.11	12.70	15.24	23.37	7.11	29.97	13.8
IMC 2-4G	1/8	3.17	1/4	2.28	3/4	19.05	7/16	11.11	12.70	15.24	28.70	11.18	35.31	18.0
IMC 2-6G	1/8	3.17	3/8	2.28	7/8	22.22	7/16	11.11	12.70	15.24	29.72	11.18	36.21	21.8
IMC 4-2G	1/4	6.35	1/8	2.28	9/16	14.28	9/16	14.28	15.24	17.78	24.89	7.11	32.26	13.8
IMC 4-4G	1/4	6.35	1/4	4.8	3/4	19.05	9/16	14.28	15.24	17.78	30.23	11.18	37.59	18.0
IMC 4-6G	1/4	6.35	3/8	4.8	7/8	22.22	9/16	14.28	15.24	17.78	31.50	11.18	38.86	21.8
IMC 4-8G	1/4	6.35	1/2	4.8	1-1/16	26.98	9/16	14.28	15.24	17.78	37.34	14.22	44.7	26.0
IMC 6-2G	3/8	9.52	1/8	4.8	5/8	15.87	11/16	17.46	16.76	19.30	26.40	7.11	33.77	13.8
IMC 6-4G	3/8	9.53	1/4	4.82	3/4	19.05	11/16	17.46	16.76	19.30	31.75	11.18	39.12	18.0
IMC 6-6G	3/8	9.53	3/8	7.11	7/8	22.22	11/16	17.46	16.76	19.30	33.02	11.18	40.39	21.8
IMC 6-8G	3/8	9.53	1/2	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	38.86	14.22	46.23	26.0
IMC 8-4G	1/2	12.70	1/4	7.11	13/16	20.64	7/8	22.22	22.86	21.84	32.51	11.18	42.67	18.0
IMC 8-6G	1/2	12.70	3/8	7.90	7/8	22.22	7/8	22.22	22.86	21.84	33.02	11.18	43.18	21.8
IMC 8-8G	1/2	12.70	1/2	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	38.86	14.22	49.02	26.0
IMC 12-8G	3/4	19.05	1/2	11.93	1-1/16	26.98	1-1/8	28.58	24.38	21.84	38.86	14.22	49.02	26.0
IMC 12-12G	3/4	19.05	3/4	15.74	1-5/16	33.33	1-1/8	28.58	24.38	21.84	42.67	15.75	52.83	32.0
IMC 16-8G	1	25.40	1/2	11.93	1-3/8	34.92	1-1/2	38.10	31.24	26.41	43.69	14.22	55.88	26.0
IMC 16-12G	1	25.40	3/4	15.74	1-3/8	34.92	1-1/2	38.10	31.24	26.41	43.69	15.75	55.88	32.0
IMC 16-16G	1	25.40	1	22.35	1-5/8	41.27	1-1/2	38.10	31.24	26.41	47.75	18.29	59.94	39.0
IMC 20-20G	1-1/4	31.75	1-1/4	27.68	2	50.80	1-7/8	47.63	41.14	38.86	51.16	20.00	73.26	49.0
IMC 24-24G	1-1/2	38.10	1-1/2	34.03	2-1/4	57.15	2-1/4	57.15	50.03	45.21	57.57	22.00	84.75	54.7

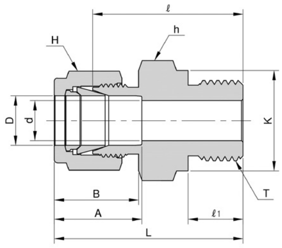
Connector Metric Tube To Female ISO Parallel Thread

Part No.	Tube O.D. D	T G(PF)	d min.	Width Across Flat		A	B	ℓ	ℓ1	L	K
				h	H						
IMC 3M- 2G	3	1/8	2.4	14	12	12.9	15.3	23.4	7.1	30.0	13.8
IMC 3M- 4G	3	1/4	2.4	19	12	12.9	15.3	28.7	11.2	35.3	18.0
IMC 4M- 2G	4	1/8	2.4	14	12	13.7	16.1	24.1	7.1	30.7	13.8
IMC 6M- 2G	6	1/8	4.0	14	14	15.3	17.7	24.9	7.1	32.3	13.8
IMC 6M- 4G	6	1/4	4.8	19	14	15.3	17.7	30.2	11.2	37.6	18.0
IMC 6M- 6G	6	3/8	4.8	22	14	15.3	17.7	31.5	11.2	38.9	21.8
IMC 6M- 8G	6	1/2	4.8	27	14	15.3	17.7	37.3	14.2	44.7	26.0
IMC 8M- 2G	8	1/8	4.0	15	16	16.2	18.6	25.7	7.1	33.2	13.8
IMC 8M- 4G	8	1/4	6.4	19	16	16.2	18.6	31.0	11.2	38.5	18.0
IMC 8M- 6G	8	3/8	6.4	22	16	16.2	18.6	32.3	11.2	39.8	21.8
IMC 8M- 8G	8	1/2	6.4	27	16	16.2	18.6	38.1	14.2	45.6	26.0
IMC 10M- 4G	10	1/4	5.9	19	19	17.2	19.5	31.8	11.2	39.4	18.0
IMC 10M- 6G	10	3/8	7.9	22	19	17.2	19.5	33.0	11.2	40.6	21.8
IMC 10M- 8G	10	1/2	7.9	27	19	17.2	19.5	38.9	14.2	46.5	26.0
IMC 12M-4G	12	1/4	5.9	22	22	22.8	22.0	32.5	15.7	42.6	18.0
IMC 12M-6G	12	3/8	7.9	22	22	22.8	22.0	33.0	11.2	43.1	21.8
IMC 12M-8G	12	1/2	9.5	27	22	22.8	22.0	38.9	14.2	49.0	26.0
IMC 12M-12G	12	3/4	9.5	35	22	22.8	22.0	42.7	14.2	52.8	32.0
IMC 16M-6G	16	3/8	7.9	24	25	24.4	22.0	33.8	15.7	43.9	21.8
IMC 16M-8G	16	1/2	11.9	27	25	24.4	22.0	38.9	14.2	49.0	26.0
IMC 18M-8G	18	1/2	11.9	27	30	24.4	22.0	38.9	14.2	49.0	26.0
IMC 18M-12G	18	3/4	15.1	35	30	24.4	22.0	42.7	15.7	52.8	32.0
IMC 20M-8G	20	1/2	11.9	30	32	26.0	22.0	40.4	14.2	50.5	26.0
IMC 20M-12G	20	3/4	15.9	35	32	26.0	22.0	42.7	15.7	52.8	32.0
IMC 22M-12G	22	3/4	15.9	35	32	26.0	22.0	42.7	15.7	52.8	32.0
IMC 22M-16G	22	1	18.3	41	32	26.0	22.0	45.2	18.3	55.3	39.0
IMC 25M-12G	25	3/4	15.9	35	38	31.3	26.5	45.2	15.7	57.5	32.0
IMC 25M-16G	25	1	19.8	41	38	31.3	26.5	47.8	18.3	60.1	39.0

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

IOM Male Connector for Metal Gasket





Connector Fractional Tube To Female ISO Parallel Thread

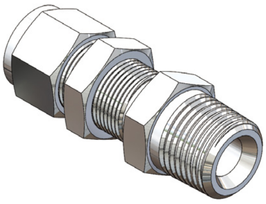
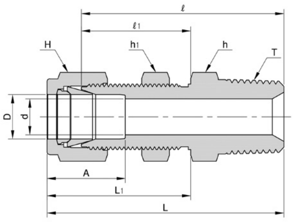
Part No.	Tube O.D. D		T G(PF)	d min.	Width Across Flat				A	B	ℓ	$ℓ_1$	L	K
					h		H							
	inch	mm			inch	mm	inch	mm						
IOM 2-2G	1/8	3.17	1/8	2.28	9/16	14.28	7/16	11.11	12.70	15.24	23.37	7.11	29.97	13.72
IOM 2-4G	1/8	3.17	1/4	2.28	3/4	19.05	7/16	11.11	12.70	15.24	28.70	11.18	35.31	18.03
IOM 2-6G	1/8	3.17	3/8	2.28	7/8	22.22	7/16	11.11	12.70	15.24	29.72	11.18	36.21	21.84
IOM 4-2G	1/4	6.35	1/8	2.28	9/16	14.28	9/16	14.28	15.24	17.78	24.89	7.11	32.26	13.72
IOM 4-4G	1/4	6.35	1/4	4.82	3/4	19.05	9/16	14.28	15.24	17.78	30.23	11.18	37.59	18.03
IOM 4-6G	1/4	6.35	3/8	4.82	7/8	22.22	9/16	14.28	15.24	17.78	31.50	11.18	38.86	21.84
IOM 4-8G	1/4	6.35	1/2	4.82	1-1/16	26.98	9/16	14.28	15.24	17.78	37.34	14.22	44.7	25.91
IOM 6-4G	3/8	9.53	1/4	4.82	3/4	19.05	11/16	17.46	16.76	19.30	31.75	11.18	39.12	18.03
IOM 6-6G	3/8	9.53	3/8	7.11	7/8	22.22	11/16	17.46	16.76	19.30	33.02	11.18	40.39	21.84
IOM 6-8G	3/8	9.53	1/2	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	38.86	14.22	46.23	25.91
IOM 8-4G	1/2	12.70	1/4	7.11	13/16	20.64	7/8	22.22	22.86	21.84	32.51	11.18	42.67	18.03
IOM 8-6G	1/2	12.70	3/8	9.65	7/8	22.22	7/8	22.22	22.86	21.84	33.02	11.18	43.18	21.84
IOM 8-8G	1/2	12.70	1/2	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	38.86	14.22	49.02	25.91
IOM 12-8G	3/4	19.05	1/2	11.93	1-1/16	26.98	1-1/8	28.58	24.38	21.84	38.86	14.22	49.02	25.91
IOM 12-12G	3/4	19.05	3/4	15.74	1-5/16	33.33	1-1/8	28.58	24.38	21.84	42.67	15.75	52.83	32.00
IOM 16-8G	1	25.40	1/2	11.93	1-3/8	34.92	1-1/2	38.10	31.24	26.41	43.69	14.22	55.88	25.91
IOM 16-16G	1	25.40	1	22.35	1-5/8	41.27	1-1/2	38.10	31.24	26.41	47.75	18.29	59.94	39.12
IOM 20-20G	1-1/4	31.75	1-1/4	27.68	2	50.80	1-7/8	47.63	41.14	38.86	51.16	20.00	73.26	49.00
IOM 24-24G	1-1/2	38.10	1-1/2	34.03	2-1/4	57.15	2-1/4	57.15	50.03	45.21	57.57	22.00	84.75	54.70

Connector Metric Tube To Female ISO Parallel Thread

Part No.	Tube O.D. D	T G(PF)	d min.	Width Across Flat		A	B	ℓ	$ℓ_1$	L	K
				h	H						
IOM 3M-2G	3	1/8	2.4	14	12	12.9	15.3	23.4	7.1	30.0	13.8
IOM 3M-4G	3	1/4	2.4	19	12	12.9	15.3	28.7	11.2	35.3	18.0
IOM 4M-2G	4	1/8	2.4	14	12	13.7	16.1	24.1	7.1	30.7	13.8
IOM 6M-2G	6	1/8	4.0	14	14	15.3	17.7	24.9	7.1	32.3	13.8
IOM 6M-4G	6	1/4	4.8	19	14	15.3	17.7	30.2	11.2	37.6	18.0
IOM 6M-6G	6	3/8	4.8	22	14	15.3	17.7	31.5	11.2	38.9	21.8
IOM 6M-8G	6	1/2	4.8	27	14	15.3	17.7	37.3	14.2	44.7	26.0
IOM 8M-2G	8	1/8	4.0	15	16	16.2	18.6	25.7	7.1	33.2	13.8
IOM 8M-4G	8	1/4	6.4	19	16	16.2	18.6	31.0	11.2	38.5	18.0
IOM 8M-6G	8	3/8	6.4	22	16	16.2	18.6	32.3	11.2	39.8	21.8
IOM 8M-8G	8	1/2	6.4	27	16	16.2	18.6	38.1	14.2	45.6	26.0
IOM 10M-4G	10	1/4	5.9	19	19	17.2	19.5	31.8	11.2	39.4	18.0
IOM 10M-6G	10	3/8	7.9	22	19	17.2	19.5	33.0	11.2	40.6	21.8
IOM 10M-8G	10	1/2	7.9	27	19	17.2	19.5	38.9	14.2	46.5	26.0
IOM 12M-4G	12	1/4	5.9	22	22	22.8	22.0	32.5	15.7	42.6	18.0
IOM 12M-6G	12	3/8	7.9	22	22	22.8	22.0	33.0	11.2	43.1	21.8
IOM 12M-8G	12	1/2	9.5	27	22	22.8	22.0	38.9	14.2	49.0	26.0
IOM 12M-12G	12	3/4	9.5	35	22	22.8	22.0	42.7	14.2	52.8	32.0
IOM 16M-6G	16	3/8	7.9	24	25	24.4	22.0	33.8	15.7	43.9	21.8
IOM 16M-8G	16	1/2	11.9	27	25	24.4	22.0	38.9	14.2	49.0	26.0
IOM 18M-8G	18	1/2	11.9	27	30	24.4	22.0	38.9	14.2	49.0	26.0
IOM 18M-12G	18	3/4	15.1	35	30	24.4	22.0	42.7	15.7	52.8	32.0
IOM 20M-8G	20	1/2	11.9	30	32	26.0	22.0	40.4	14.2	50.5	26.0
IOM 20M-12G	20	3/4	15.9	35	32	26.0	22.0	42.7	15.7	52.8	32.0
IOM 22M-12G	22	3/4	15.9	35	32	26.0	22.0	42.7	15.7	52.8	32.0
IOM 22M-16G	22	1	18.3	41	32	26.0	22.0	45.2	18.3	55.3	39.0
IOM 25M-12G	25	3/4	15.9	35	38	31.3	26.5	45.2	15.7	57.5	32.0
IOM 25M-16G	25	1	19.8	41	38	31.3	26.5	47.8	18.3	60.1	39.0

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

IBMC Bulkhead Male Connector

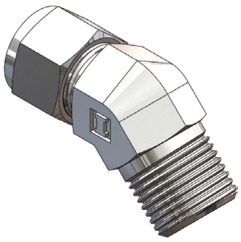
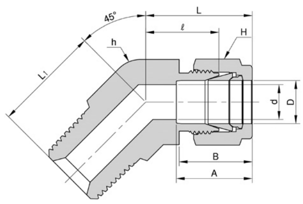



Connector Fractional Tube To Female NPT Thread

Part No.	Tube O.D. D		T* NPT	d min.	Width Across Flat h		Width Across Flat h^1		Width Across Flat H		A	ℓ	$ℓ^1$	L	L_1	Panel Hole Drill Size	Panel Max Thickness
	inch	mm			inch	mm	inch	mm	inch	mm							
IBMC 2-2N	1/8	3.17	1/8	2.28	1/2	12.70	1/2	12.70	7/16	11.11	12.70	39.87	24.63	46.48	31.24	8.33	12.70
IBMC 4-2N	1/4	6.35	1/8	4.82	5/8	15.87	5/8	15.87	9/16	14.28	15.24	42.16	26.16	49.53	33.52	11.50	10.16
IBMC 4-4N	1/4	6.35	1/4	4.82	5/8	15.87	5/8	15.87	9/16	14.28	15.24	45.97	26.16	53.34	33.52	11.50	10.16
IBMC 4-6N	1/4	6.35	3/8	4.8	3/4	19.05	5/8	15.87	9/16	14.28	15.24	45.97	26.16	53.34	33.52	11.50	10.16
IBMC 4-8N	1/4	6.35	1/2	4.8	7/8	22.22	5/8	15.87	9/16	14.28	15.24	53.08	26.16	60.45	33.52	11.50	10.16
IBMC 6-4N	3/8	9.52	1/4	7.11	3/4	19.05	3/4	19.05	11/16	17.46	16.76	50.03	29.46	57.40	36.83	14.68	11.17
IBMC 6-6N	3/8	9.52	3/8	7.11	3/4	19.05	3/4	19.05	11/16	17.46	16.76	50.03	29.46	57.40	36.83	14.68	11.17
IBMC 6-8N	3/8	9.52	1/2	7.11	7/8	22.22	3/4	19.05	11/16	17.46	16.76	56.38	29.46	63.75	36.83	14.68	11.17
IBMC 8-6N	1/2	12.70	3/8	9.39	15/16	23.81	15/16	23.81	7/8	22.22	22.86	53.08	31.75	63.24	41.91	19.44	12.70
IBMC 8-8N	1/2	12.70	1/2	10.41	15/16	23.81	15/16	23.81	7/8	22.22	22.86	58.67	31.75	68.83	41.91	19.44	12.70
IBMC 10-6N	5/8	15.87	3/8	7.93	1-1/16	26.98	1-1/16	26.98	1	25.4	24.38	54.52	32.51	64.68	42.67	22.62	12.70
IBMC 12-12N	3/4	19.05	3/4	15.74	1-3/16	30.16	1-3/16	30.16	1-1/8	28.58	24.38	66.04	37.33	76.20	47.49	25.76	16.76
IBMC 16-16N	1	25.40	1	22.35	1-5/8	41.28	1-5/8	41.28	1-1/2	38.10	31.24	81.02	45.21	93.21	57.40	33.73	19.05

∗ISO Tapered Thread, put "R" digit at the last of part number.

IME 45D 45° Male Elbow

Connector Fractional Tube To Female NPT Thread

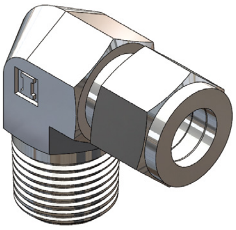
Part No.	Tube O.D. D		T* NPT	d min.	Width Across Flat h		Width Across Flat H		A	B	ℓ	L	L_1
	inch	mm			inch	mm	inch	mm					
IME45D 4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	17.27	24.63	16.51
IME45D 4-4N	1/4	6.35	1/4	4.82	1/2	12.70	9/16	14.28	15.24	17.78	17.27	24.63	21.08
IME45D 6-2N	3/8	9.52	1/8	4.82	5/8	15.87	11/16	17.46	16.76	19.30	20.57	27.94	18.28
IME45D 6-4N	3/8	9.52	1/4	7.11	5/8	15.87	11/16	17.46	16.76	19.30	20.57	27.94	22.86
IME45D 6-6N	3/8	9.52	3/8	7.11	13/16	20.64	11/16	17.46	16.76	19.30	21.84	29.21	24.13
IME45D 8-6N	1/2	12.70	3/8	9.65	13/16	20.64	7/8	22.22	22.86	21.84	21.84	32.00	24.13
IME45D 8-8N	1/2	12.70	1/2	10.41	13/16	20.64	7/8	22.22	22.86	21.84	21.84	32.00	28.95
IME45D 12-12N	3/4	19.05	3/4	15.74	1-1/8	28.58	1-1/8	28.58	24.38	21.84	23.87	34.03	30.98
IME45D 16-16N	1	25.40	1	22.35	1-3/8	34.93	1-1/2	38.10	31.24	26.41	28.19	40.38	37.84

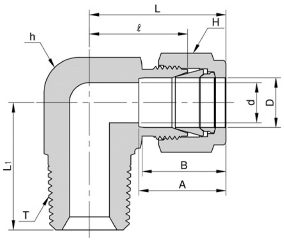
∗ISO Tapered Thread, put "R" digit at the last of part number.

Tube Fittings

Always together, Always success Since 1993

IME Male Elbow



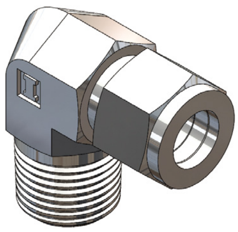


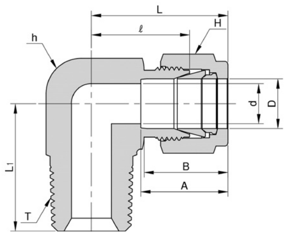
Connector Fractional Tube To Female NPT Thread

Part No.	Tube O.D. D		T* NPT	d min.	Width Across Flat				A	B	ℓ	L	L_1
					h		H						
	inch	mm			inch	mm	inch	mm					
IME 1-1N	1/16	1.59	1/16	1.27	7/16	11.11	5/16	7.93	8.63	10.92	15.24	19.05	17.78
IME 1-2N	1/16	1.59	1/8	1.27	7/16	11.11	5/16	7.93	8.63	10.92	15.24	19.05	17.78
IME 2-1N	1/8	3.17	1/16	2.28	7/16	11.11	7/16	11.11	12.70	15.24	17.02	23.63	17.78
IME 2-2N	1/8	3.17	1/8	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	18.90
IME 2-4N	1/8	3.17	1/4	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	23.26
IME 3-2N	3/16	4.76	1/8	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	25.40	18.79
IME 3-4N	3/16	4.76	1/4	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	25.40	23.36
IME 4-1N	1/4	6.35	1/16	3.04	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.90	18.79
IME 4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.47	18.79
IME 4-4N	1/4	6.35	1/4	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.81	27.18	23.87
IME 4-6N	1/4	6.35	3/8	4.82	11/16	17.46	9/16	14.28	15.24	17.78	22.35	29.71	26.20
IME 4-8N	1/4	6.35	1/2	4.82	13/16	20.64	9/16	14.28	15.24	17.78	24.60	31.97	33.02
IME 5-2N	5/16	7.93	1/8	4.82	9/16	14.28	5/8	15.87	16.25	18.54	21.33	28.70	19.81
IME 5-4N	5/16	7.93	1/4	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	29.77	24.50
IME 5-6N	5/16	7.93	3/8	6.35	11/16	17.46	5/8	15.87	16.25	18.54	23.11	30.48	26.20
IME 6-2N	3/8	9.52	1/8	4.82	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	20.60
IME 6-4N	3/8	9.52	1/4	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	25.40
IME 6-6N	3/8	9.52	3/8	7.11	11/16	17.46	11/16	17.46	16.76	19.30	23.87	31.24	26.20
IME 6-8N	3/8	9.52	1/2	7.11	13/16	20.64	11/16	17.46	16.76	19.30	25.90	31.42	33.02
IME 6-12N	3/8	9.52	3/4	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	29.71	37.08	36.83
IME 8-4N	1/2	12.70	1/4	7.11	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
IME 8-6N	1/2	12.70	3/8	9.65	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
IME 8-8N	1/2	12.70	1/2	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	33.02
IME 8-12N	1/2	12.70	3/4	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	29.71	39.87	36.83
IME 10-6N	5/8	15.87	3/8	9.65	15/16	23.81	1	25.40	24.38	21.84	28.00	37.06	30.22
IME 10-8N	5/8	15.87	1/2	11.93	15/16	23.81	1	25.40	24.38	21.84	28.00	37.06	35.10
IME 10-12N	5/8	15.87	3/4	12.70	1-1/16	26.98	1	25.40	24.38	21.84	29.71	39.87	36.83
IME 12-8N	3/4	19.05	1/2	11.93	1-1/16	26.98	1-1/8	28.57	24.38	21.84	29.71	39.87	37.00
IME 12-12N	3/4	19.05	3/4	15.74	1-1/16	26.98	1-1/8	28.57	24.38	21.84	29.71	39.87	36.83
IME 14-12N	7/8	22.22	3/4	15.74	1-3/8	34.92	1-1/4	31.75	25.90	21.84	34.54	44.70	41.65
IME 16-12N	1	25.40	3/4	15.74	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	42.20
IME 16-16N	1	25.40	1	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	46.70
IME 20-20N	1-1/4	31.75	1-1/4	27.68	1-11/16	42.86	1-7/8	47.63	41.14	38.86	44.50	66.54	47.75
IME 24-24N	1-1/2	38.10	1-1/2	33.90	2	50.80	2-1/4	57.15	50.03	45.21	50.80	77.97	60.45
IME 32-32N	2	50.80	2	45.97	2-3/4	69.85	3	76.20	62.73	63.73	69.80	107.18	70.61

∗ISO Tapered Thread, put "R" digit at the last of part number.

IME Male Elbow



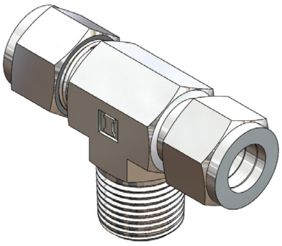


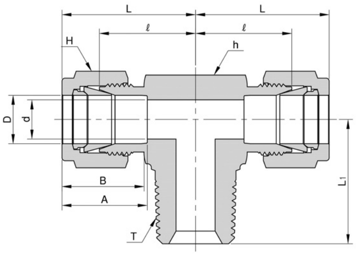
Connector Metric Tube To Female NPT Thread

Part No.	Tube O.D. D	T* PT	d min.	Width Across Flat h	Width Across Flat H	A	B	ℓ	L	L_1
IME 3M-2R	3	1/8	2.4	12.7	12	12.9	15.3	17.0	23.6	17.8
IME 3M-4R	3	1/4	2.4	12.7	12	12.9	15.3	18.0	24.6	23.4
IME 4M-2R	4	1/8	2.4	12.7	12	13.7	16.1	18.8	25.4	18.8
IME 4M-4R	4	1/4	2.4	12.7	12	13.7	16.1	18.8	25.4	23.4
IME 6M-2R	6	1/8	4.8	12.7	14	15.3	17.7	19.6	27.0	18.8
IME 6M-4R	6	1/4	4.8	12.7	14	15.3	17.7	19.6	27.0	23.4
IME 6M-6R	6	3/8	4.8	17.5	14	15.3	17.7	22.4	29.8	26.2
IME 6M-8R	6	1/2	4.8	20.6	14	15.3	17.7	24.4	31.8	33.0
IME 8M-2R	8	1/8	4.8	14.3	16	16.2	18.6	21.3	28.8	19.8
IME 8M-4R	8	1/4	6.4	14.3	16	16.2	18.6	21.3	28.8	24.4
IME 8M-6R	8	3/8	6.4	17.5	16	16.2	18.6	23.1	30.6	26.2
IME 8M-8R	8	1/2	6.4	20.6	16	16.2	18.6	25.1	32.6	33.0
IME 10M-2R	10	1/8	4.8	17.5	19	17.2	19.5	23.9	31.5	23.6
IME 10M-4R	10	1/4	7.1	17.5	19	17.2	19.5	23.9	31.5	26.2
IME 10M-6R	10	3/8	7.9	17.5	19	17.2	19.5	23.9	31.5	26.2
IME 10M-8R	10	1/2	7.9	20.6	19	17.2	19.5	25.9	33.5	33.0
IME 12M-2R	12	1/8	4.8	20.6	22	22.8	22.0	25.9	36.0	23.6
IME 12M-4R	12	1/4	7.1	20.6	22	22.8	22.0	25.9	36.0	28.2
IME 12M-6R	12	3/8	9.5	20.6	22	22.8	22.0	25.9	36.0	28.2
IME 12M-8R	12	1/2	9.5	20.6	22	22.8	22.0	25.9	36.0	33.0
IME 12M-12R	12	3/4	9.5	27.0	22	22.8	22.0	29.7	39.8	36.8
IME 16M-6R	16	3/8	9.5	25.4	25	24.4	22.0	27.9	38.0	30.2
IME 16M-8R	16	1/2	11.9	23.81	25	24.4	22.0	27.9	38.0	35.1
IME 16M-12R	16	3/4	12.7	23.81	25	24.4	22.0	29.7	39.8	36.8
IME 18M-8R	18	1/2	11.9	27.0	30	24.4	22.0	29.7	39.8	36.8
IME 18M-12R	18	3/4	15.1	27.0	30	24.4	22.0	29.7	39.8	36.8
IME 20M-8R	20	1/2	11.9	34.9	32	26.0	22.0	34.5	44.6	41.7
IME 20M-12R	20	3/4	15.9	34.9	32	26.0	22.0	34.5	44.6	41.7
IME 22M-8R	22	1/2	11.9	34.9	32	26.0	22.0	32.5	42.6	39.6
IME 22M-12R	22	3/4	15.9	34.9	32	26.0	22.0	34.5	44.6	41.7
IME 22M-16R	22	1	18.3	34.9	32	26.0	22.0	34.5	44.6	46.5
IME 25M-12R	25	3/4	15.9	34.9	38	31.3	26.5	36.8	49.1	41.7
IME 25M-16R	25	1	21.8	34.9	38	31.3	26.5	36.8	49.1	46.5
IME 28M-16R	28	1	21.8	41.0	46	36.6	36.6	43.2	64.0	53.7
IME 30M-20R	30	1-1/4	26.2	46.0	50	39.6	39.2	48.3	69.9	53.1
IME 32M-20R	32	1-1/4	27.8	46.0	50	42.0	41.6	49.3	72.3	53.1
IME 38M-24R	38	1-1/2	33.7	50.8	60	49.4	47.9	56.4	84.0	60.4

∗NPT Thread, put "N" digit at the last of part number.

IMBT Male Branch Tee





Connector Fractional Tube To Female NPT Thread

Part No.	Tube O.D. D		T* NPT	d min.	Width Across Flat				A	B	ℓ	L	L_1
					h		H						
	inch	mm			inch	mm	inch	mm					
IMBT 2-2N	1/8	3.17	1/8	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	18.90
IMBT 2-4N	1/8	3.17	1/4	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	23.36
IMBT 3-2N	3/16	4.76	1/8	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	24.38	18.79
IMBT 4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92	19.10
IMBT 4-4N	1/4	6.35	1/4	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	27.08	23.87
IMBT 4-6N	1/4	6.35	3/8	4.82	11/16	17.46	9/16	14.28	15.24	17.78	22.35	29.71	28.40
IMBT 5-2N	5/16	7.93	1/8	4.82	9/16	14.28	5/8	15.87	16.25	18.54	22.35	29.71	20.82
IMBT 5-4N	5/16	7.93	1/4	6.35	9/16	14.28	5/8	15.87	16.25	18.54	22.35	29.77	24.50
IMBT 6-4N	3/8	9.52	1/4	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	25.40
IMBT 6-6N	3/8	9.52	3/8	7.11	11/16	17.46	11/16	17.46	16.76	19.30	23.87	31.24	28.44
IMBT 8-4N	1/2	12.70	1/4	7.11	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
IMBT 8-6N	1/2	12.70	3/8	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
IMBT 8-8N	1/2	12.70	1/2	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	33.02
IMBT 10-6N	5/8	15.87	3/8	9.65	15/16	23.81	111	25.40	24.38	21.84	27.90	38.10	29.40
IMBT 10-8N	5/8	15.87	1/2	11.93	15/16	23.81	1-1/8	25.40	24.38	21.84	27.90	38.10	35.05
IMBT 12-8N	3/4	19.05	1/2	11.93	1-1/16	26.98	1-1/4	28.58	24.38	21.84	29.71	39.87	37.00
IMBT 12-12N	3/4	19.05	3/4	15.74	1-1/16	26.98	1-1/2	28.58	24.38	21.84	29.71	39.87	36.83
IMBT 16-12N	1	25.40	3/4	15.74	1-3/8	34.92	1-7/8	38.10	31.24	26.41	36.83	49.02	42.20
IMBT 16-16N	1	25.40	1	22.35	1-3/8	34.92	2-1/4	38.10	31.24	26.41	36.83	49.02	46.70

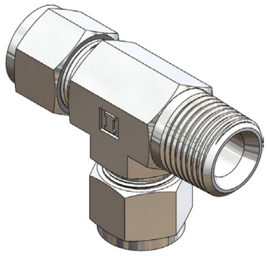
∗ ISO Tapered Thread, put "R" digit at the last of part number.

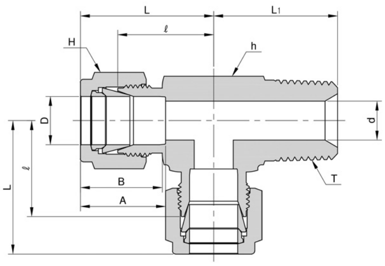
Connector Metric Tube To Female ISO Tapered Thread

Part No.	Tube O.D. D	T* PT	d min.	Width Across Flat		A	B	ℓ	L	L_1
				h	H					
IMBT 3M-2R	3	1/8	2.4	12.7	12.0	12.9	15.3	17.0	23.6	17.8
IMBT 3M-4R	3	1/4	2.4	12.7	12.0	12.9	15.3	18.0	24.6	23.4
IMBT 4M-2R	4	1/8	2.4	12.7	12.0	13.7	16.1	18.8	25.4	18.8
IMBT 6M-2R	6	1/8	4.8	12.7	14.0	15.3	17.7	19.6	27.0	18.8
IMBT 6M-4R	6	1/4	4.8	14.3	14.0	15.3	17.7	19.6	27.0	23.4
IMBT 6M-6R	6	3/8	4.8	17.5	14.0	15.3	17.7	22.4	29.8	26.2
IMBT 8M-2R	8	1/8	4.8	14.3	16.0	16.2	18.6	21.3	28.8	19.8
IMBT 8M-4R	8	1/4	6.4	14.3	16.0	16.2	18.6	21.3	28.8	24.4
IMBT 8M-6R	8	3/8	6.4	17.5	16.0	16.2	18.6	23.1	30.6	26.2
IMBT 10M-4R	10	1/4	7.1	17.5	19.0	17.2	19.5	23.9	31.5	28.2
IMBT 10M-6R	10	3/8	7.9	17.5	19.0	17.2	19.5	23.9	31.5	28.2
IMBT 12M-4R	12	1/4	7.1	20.6	22.0	22.8	22.0	25.9	36.0	28.2
IMBT 12M-6R	12	3/8	9.5	20.6	22.0	22.8	22.0	25.9	36.0	28.2
IMBT 12M-8R	12	1/2	9.5	20.6	22.0	22.8	22.0	25.9	36.0	33.0
IMBT 16M-6R	16	3/8	9.5	25.4	25.0	24.4	22.0	27.9	38.0	30.2
IMBT 16M-8R	16	1/2	11.9	25.4	25.0	24.4	22.0	27.9	38.0	35.1
IMBT 20M-8R	20	1/2	11.9	34.9	32.0	26.0	22.0	34.5	44.6	41.7
IMBT 20M-12R	20	3/4	15.9	34.9	32.0	26.0	22.0	34.5	44.6	41.7
IMBT 25M-12R	25	3/4	15.9	34.9	38.0	31.3	26.5	36.8	49.1	41.7
IMBT 25M-16R	25	1	21.8	34.9	38.0	31.3	26.5	36.8	49.1	46.5

∗NPT Thread, put "N" digit at the last of part number.

IMRT Male Run Tee





Connector Fractional Tube To Female NPT Thread

Part No.	Tube O.D. D inch	Tube O.D. D mm	T* NPT	d min.	Width Across Flat h inch	Width Across Flat h mm	Width Across Flat H inch	Width Across Flat H mm	A	B	ℓ	L	L_1
IMRT 2-2N	1/8	3.17	1/8	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	18.90
IMRT 2-4N	1/8	3.17	1/4	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	23.36
IMRT 3-2N	3/16	4.76	1/8	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	24.38	18.79
IMRT 4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92	19.10
IMRT 4-4N	1/4	6.35	1/4	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	27.08	23.87
IMRT 4-6N	1/4	6.35	3/8	4.82	11/16	17.46	9/16	14.28	15.24	17.78	22.35	29.71	28.40
IMRT 5-2N	5/16	7.93	1/8	4.82	9/16	14.28	5/8	15.87	16.25	18.54	22.35	29.71	20.82
IMRT 5-4N	5/16	7.93	1/4	6.35	9/16	14.28	5/8	15.87	16.25	18.54	22.35	29.77	24.50
IMRT 6-4N	3/8	9.52	1/4	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	25.40
IMRT 6-6N	3/8	9.52	3/8	7.11	11/16	17.46	11/16	17.46	16.76	19.30	23.87	31.24	28.44
IMRT 8-4N	1/2	12.70	1/4	7.11	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
IMRT 8-6N	1/2	12.70	3/8	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
IMRT 8-8N	1/2	12.70	1/2	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	33.02
IMRT 10-6N	5/8	15.87	3/8	9.65	15/16	23.81	111	25.40	24.38	21.84	27.90	38.10	29.40
IMRT 10-8N	5/8	15.87	1/2	11.93	15/16	23.81	1-1/8	25.40	24.38	21.84	27.90	38.10	35.05
IMRT 12-8N	3/4	19.05	1/2	11.93	1-1/16	26.98	1-1/4	28.58	24.38	21.84	29.71	39.87	37.00
IMRT 12-12N	3/4	19.05	3/4	15.74	1-1/16	26.98	1-1/2	28.58	24.38	21.84	29.71	39.87	36.83

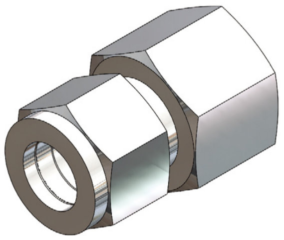
∗ ISO Tapered Thread, put "R" digit at the last of part number.

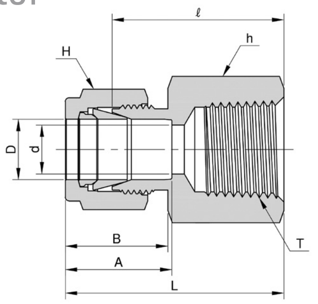
Connector Metric Tube To Female ISO Tapered Thread

Part No.	Tube O.D. D	T* PT	d min.	Width Across Flat h		A	B	ℓ	L	L_1
IMRT 3M-2R	3	1/8	2.4	12.7	12	12.9	15.3	17.0	23.6	17.8
IMRT 3M-4R	3	1/4	2.4	12.7	12	12.9	15.3	18.0	24.6	23.4
IMRT 4M-2R	4	1/8	2.4	12.7	12	13.7	16.1	18.8	25.4	18.8
IMRT 6M-2R	6	1/8	4.8	12.7	14	15.3	17.7	19.6	27.0	18.8
IMRT 6M-4R	6	1/4	4.8	14.3	14	15.3	17.7	19.6	27.0	23.4
IMRT 6M-6R	6	3/8	4.8	17.5	14	15.3	17.7	22.4	29.8	26.2
IMRT 8M-2R	8	1/8	4.8	14.3	16	16.2	18.6	21.3	28.8	19.8
IMRT 8M-4R	8	1/4	6.4	14.3	16	16.2	18.6	21.3	28.8	24.4
IMRT 8M-6R	8	3/8	6.4	17.5	16	16.2	18.6	23.1	30.6	26.2
IMRT 10M-4R	10	1/4	7.1	17.5	19	17.2	19.5	23.9	31.5	28.2
IMRT 10M-6R	10	3/8	7.9	17.5	19	17.2	19.5	23.9	31.5	28.2
IMRT 12M-4R	12	1/4	7.1	20.6	22	22.8	22.0	25.9	36.0	28.2
IMRT 12M-6R	12	3/8	9.5	20.6	22	22.8	22.0	25.9	36.0	28.2
IMRT 12M-8R	12	1/2	9.5	20.6	22	22.8	22.0	25.9	36.0	33.0
IMRT 16M-6R	16	3/8	9.5	25.4	25	24.4	22.0	27.9	38.0	30.2
IMRT 16M-8R	16	1/2	11.9	25.4	25	24.4	22.0	27.9	38.0	35.1
IMRT 20M-8R	20	1/2	11.9	34.92	32	26.0	22.0	34.5	44.6	41.7
IMRT 20M-12R	20	3/4	15.9	34.92	32	26.0	22.0	34.5	44.6	41.7
IMRT 25M-12R	25	3/4	15.9	34.92	38	31.3	26.5	36.8	49.1	41.7
IMRT 25M-16R	25	1	21.8	34.92	38	31.3	26.5	36.8	49.1	46.5

∗NPT Thread, put "N" digit at the last of part number.

IFC Female Connector



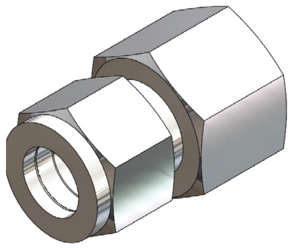


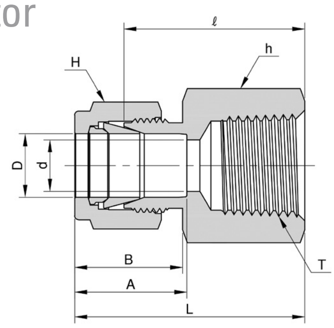
Connector Fractional Tube To Male NPT Thread

Part No.	Tube O.D. D		T* NPT	d min.	Width Across Flat				A	B	ℓ	L
					h		H					
	inch	mm			inch	mm	inch	mm				
IFC 1-1N	1/16	1.58	1/16	1.27	7/16	11.11	5/16	7.93	8.63	10.92	19.81	23.62
IFC 1-2N	1/16	1.58	1/8	1.27	9/16	14.28	5/16	7.93	8.63	10.92	20.57	24.38
IFC 2-2N	1/8	3.17	1/8	2.28	9/16	14.28	7/16	11.11	12.70	15.24	22.09	28.70
IFC 2-4N	1/8	3.17	1/4	2.28	3/4	19.05	7/16	11.11	12.70	15.24	26.92	33.52
IFC 3-2N	3/16	4.76	1/8	3.04	9/16	14.28	1/2	12.70	13.71	16.00	23.11	29.71
IFC 4-2N	1/4	6.35	1/8	4.82	9/16	14.28	9/16	14.28	15.24	17.78	23.87	31.24
IFC 4-4N	1/4	6.35	1/4	4.82	3/4	19.05	9/16	14.28	15.24	17.78	28.44	35.81
IFC 4-6N	1/4	6.35	3/8	4.82	7/8	22.22	9/16	14.28	15.24	17.78	30.22	37.59
IFC 4-8N	1/4	6.35	1/2	4.82	1-1/16	26.98	9/16	14.28	15.24	17.78	35.05	42.41
IFC 5-2N	5/16	7.93	1/8	6.35	9/16	14.28	5/8	15.87	16.25	18.54	24.63	32.00
IFC 5-4N	5/16	7.93	1/4	6.35	3/4	19.05	5/8	15.87	16.25	18.54	29.46	36.83
IFC 6-2N	3/8	9.52	1/8	7.11	5/8	15.87	11/16	17.46	16.76	19.30	25.40	32.76
IFC 6-4N	3/8	9.52	1/4	7.11	3/4	19.05	11/16	17.46	16.76	19.30	30.22	37.59
IFC 6-6N	3/8	9.52	3/8	7.11	7/8	22.22	11/16	17.46	16.76	19.30	31.75	39.11
IFC 6-8N	3/8	9.52	1/2	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	36.57	43.94
IFC 6-12N	3/8	9.52	3/4	7.11	1-5/16	33.33	11/16	17.46	16.76	19.30	40.38	47.75
IFC 8-4N	1/2	12.70	1/4	10.41	13/16	20.63	7/8	22.22	22.86	21.84	30.22	40.38
IFC 8-6N	1/2	12.70	3/8	10.41	7/8	22.22	7/8	22.22	22.86	21.84	31.75	41.91
IFC 8-8N	1/2	12.70	1/2	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	36.57	46.73
IFC 8-12N	1/2	12.70	3/4	10.41	1-5/16	33.33	7/8	22.22	22.86	21.84	38.10	48.26
IFC 10-6N	5/8	15.87	3/8	12.70	15/16	23.80	1	25.40	24.38	21.84	31.75	41.91
IFC 10-8N	5/8	15.87	1/2	12.70	1-1/16	26.98	1	25.40	24.38	21.84	36.57	46.73
IFC 10-12N	5/8	15.87	3/4	12.70	1-5/16	33.33	1	25.40	24.38	21.84	38.10	48.26
IFC 12-8N	3/4	19.05	1/2	15.74	1-1/16	26.98	1-1/8	28.57	24.38	21.84	36.57	46.73
IFC 12-12N	3/4	19.05	3/4	15.74	1-5/16	33.33	1-1/8	28.57	24.38	21.84	38.10	48.26
IFC 14-12N	7/8	22.22	3/4	18.28	1-5/16	33.33	1-1/4	31.75	25.90	21.84	39.62	49.78
IFC 16-12N	1	25.40	3/4	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	41.14	53.34
IFC 16-16N	1	25.40	1	22.35	1-5/8	41.27	1-1/2	38.10	31.24	26.41	50.03	62.23
IFC 20-20N	1-1/4	31.75	1-1/4	27.68	2-1/8	53.97	1-7/8	47.62	41.14	38.86	52.57	74.67
IFC 24-24N	1-1/2	38.10	1-1/2	34.03	2-3/8	60.32	2-1/4	57.15	50.03	45.21	56.13	83.31
IFC 32-32N	2	50.80	2	45.97	2-7/8	70.03	3	76.20	67.56	62.73	64.26	101.60

∗ISO Tapered Thread, put "R" digit at the last of part number.

IFC Female Connector



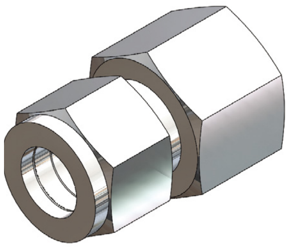


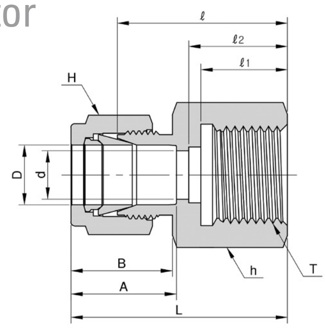
Connector Metric Tube To Female ISO Tapered Thread

Part No.	Tube O.D. D	T* R(PT)	d min.	Width Across Flat		A	B	ℓ	L
				h	H				
IFC 3M-2R	3	1/8	2.4	14	12	12.9	15.3	22.1	28.7
IFC 3M-4R	3	1/4	2.4	19	12	12.9	15.3	26.9	33.5
IFC 4M-2R	4	1/8	2.4	14	12	13.7	16.1	23.1	29.7
IFC 6M-2R	6	1/8	4.8	14	14	15.3	17.7	23.9	31.3
IFC 6M-4R	6	1/4	4.8	19	14	15.3	17.7	28.4	35.8
IFC 6M-6R	6	3/8	4.8	22	14	15.3	17.7	29.5	36.9
IFC 6M-8R	6	1/2	4.8	27	14	15.3	17.7	35.1	42.5
IFC 8M-2R	8	1/8	6.4	15	16	16.2	18.6	24.6	32.1
IFC 8M-4R	8	1/4	6.4	19	16	16.2	18.6	29.5	37.0
IFC 8M-6R	8	3/8	6.4	22	16	16.2	18.6	30.2	37.7
IFC 8M-8R	8	1/2	6.4	27	16	16.2	18.6	35.8	43.3
IFC 10M-2R	10	1/8	7.9	18	19	17.2	19.5	25.4	33.0
IFC 10M-4R	10	1/4	7.9	19	19	17.2	19.5	30.2	37.8
IFC 10M-6R	10	3/8	7.9	22	19	17.2	19.5	31.0	38.6
IFC 10M-8R	10	1/2	7.9	27	19	17.2	19.5	36.6	44.2
IFC 12M-2R	12	1/8	9.5	22	22	22.8	22.0	28.4	38.5
IFC 12M-4R	12	1/4	9.5	22	22	22.8	22.0	30.2	40.3
IFC 12M-6R	12	3/8	9.5	22	22	22.8	22.0	31.0	41.1
IFC 12M-8R	12	1/2	9.5	27	22	22.8	22.0	36.6	46.7
IFC 12M-12R	12	3/4	9.5	35	22	22.8	22.0	38.9	49.0
IFC 15M-8R	15	1/2	11.9	27	25	24.4	22.0	36.6	46.7
IFC 16M-8R	16	1/2	12.7	27	25	24.4	22.0	36.8	46.9
IFC 20M-8R	20	1/2	15.9	30	32	26.0	22.0	37.8	47.9
IFC 20M-12R	20	3/4	15.9	35	32	26.0	22.0	39.6	49.7
IFC 22M-12R	22	3/4	18.3	35	32	26.0	22.0	39.6	49.7
IFC 22M-16R	22	1	18.3	41	32	26.0	22.0	47.8	57.9
IFC 25M-12R	25	3/4	21.8	35	38	31.3	26.5	41.1	53.4
IFC 25M-16R	25	1	21.8	41	38	31.3	26.5	50.0	62.3

∗NPT Thread, put "N" digit at the last of part number.

IGC Gauge Connector





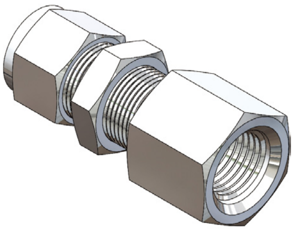
Connector Fractional Tube To ISO Parallel Thread (Gauge)

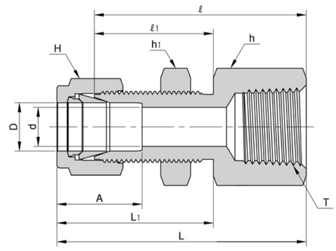
Part No.	Tube O.D. D		T G(PF)	d min.	d_1	Width Across Flat				A	B	ℓ	$ℓ_1$	$ℓ_2$	L
						h		H							
	inch	mm				inch	mm	inch	mm						
IGC 2-4G	1/8	3.17	1/4	2.4	5.5	3/4	19.05	7/16	11.11	12.70	15.24	28.70	13.00	-	35.31
IGC 4-2G	1/4	6.35	1/8	4.82	-	9/16	14.28	9/16	14.28	15.24	17.78	26.30	12.00	-	33.55
IGC 4-4G	1/4	6.35	1/4	4.82	5.58	3/4	19.05	9/16	14.28	15.24	17.78	30.22	13.00	17.00	37.59
IGC 4-6G	1/4	6.35	3/8	4.82	6.60	15/16	24.81	9/16	14.28	15.24	17.78	30.22	14.22	20.30	37.59
IGC 4-8G	1/4	6.35	1/2	4.82	6.60	11/16	26.98	9/16	14.28	15.24	17.78	30.07	18.80	24.90	43.43
IGC 5-4G	5/16	7.93	1/4	5.58	-	3/4	19.05	5/8	15.87	16.25	18.54	30.98	13.00	-	38.35
IGC 5-8G	5/16	7.93	1/2	7.11	-	1-1/16	26.98	5/8	15.87	16.25	18.54	33.02	18.80	-	40.38
IGC 6-4G	3/8	9.52	1/8	5.58	-	3/4	19.05	11/16	17.46	16.76	19.30	31.75	12.95	-	39.12
IGC 6-6G	3/8	9.52	3/8	6.60	-	15/16	24.81	11/16	17.46	16.76	19.30	31.24	14.22	-	38.61
IGC 6-8G	3/8	9.52	1/2	7.11	-	1-1/16	26.98	11/16	17.46	16.76	19.30	34.54	18.80	-	41.91
IGC 8-4G	1/2	12.70	1/4	5.5	-	7/8	22.22	7/8	22.22	22.86	21.84	31.80	13.00	-	41.95
IGC 8-6G	1/2	12.70	3/8	6.60	-	15/16	23.81	7/8	22.22	22.86	21.84	34.29	14.24	-	44.45
IGC 8-8G	1/2	12.70	1/2	7.11	7.11	1-1/16	26.98	7/8	22.22	22.86	21.84	38.10	18.80	-	48.26

Connector Metric Tube To ISO Parallel Thread (Gauge)

Part No.	Tube O.D. D	T G(PF)	d min.	d_1	Width Across Flat		A	B	ℓ	$ℓ_1$	$ℓ_2$	L
					h	H						
IGC 3M-4G	3	1/4	2.4	5.5	19	12	12.9	15.3	28.7	13	17	35.3
IGC 6M-4G	6	1/4	4.8	5.5	19	14	15.3	17.7	30.2	13	17	37.6
IGC 6M-6G	6	3/8	4.8	6.5	24	14	15.3	17.7	30.2	14	20	37.6
IGC 6M-8G	6	1/2	4.8	7.0	27	14	15.3	17.7	36.3	19	25	43.0
IGC 8M-4G	8	1/4	5.5	-	19	16	16.2	18.6	31.0	13	-	38.5
IGC 8M-6G	8	3/8	6.5	-	24	16	16.2	18.6	28.7	14	-	36.2
IGC 8M-8G	8	1/2	7.0	-	27	16	16.2	18.6	33.0	19	-	40.5
IGC 10M-4G	10	1/4	5.5	-	19	19	17.2	19.5	31.8	13	-	39.4
IGC 10M-6G	10	3/8	6.5	-	24	19	17.2	19.5	31.2	14	-	38.8
IGC 10M-8G	10	1/2	7.0	-	27	19	17.2	19.5	34.5	19	-	41.4
IGC 12M-4G	12	1/4	5.5	-	22	22	22.8	22.0	31.8	13	-	41.9
IGC 12M-6G	12	3/8	6.5	-	24	22	22.8	22.0	34.3	14	-	44.4
IGC 12M-8G	12	1/2	7.0	-	27	22	22.8	22.0	38.1	19	-	48.2
IGC 20M-8G	20	1/2	7.0	-	30	32	26.0	22.0	44.2	19	-	54.3
IGC 22M-8G	22	1/2	7.0	-	30	32	26.0	22.0	44.2	19	-	54.3

IBFC Bulkhead Female Connector





Connector Fractional Tube To Male NPT Thread

Part No.	Tube O.D. D		T* NPT	d min.	Width Across Flat						A	ℓ	ℓ_1	L	L_1	Panel Hole Drill Size	Panel Max. Thickness
					h		h_1		H								
	inch	mm			inch	mm	inch	mm	inch	mm							
IBFC 2-2N	1/8	3.17	1/8	2.28	9/16	14.28	1/2	12.70	7/16	11.11	12.70	38.10	24.63	44.70	31.24	8.38	12.70
IBFC 4-2N	1/4	6.35	1/8	4.82	5/8	15.87	5/8	15.87	9/16	14.28	15.24	39.62	26.16	46.99	33.52	11.50	10.16
IBFC 4-4N	1/4	6.35	1/4	4.82	3/4	19.05	5/8	15.87	9/16	14.28	15.24	44.45	26.16	51.81	33.52	11.50	10.16
IBFC 6-4N	3/8	9.52	1/4	7.11	3/4	19.05	3/4	19.05	11/16	17.46	16.76	47.75	29.46	55.11	36.83	14.68	11.17
IBFC 8-6N	1/2	12.70	3/8	10.41	15/16	23.81	15/16	23.81	7/8	22.22	22.86	51.56	31.75	61.72	41.91	19.44	12.70
IBFC 8-8N	1/2	12.70	1/2	10.41	1-1/16	26.98	15/16	23.81	7/8	22.22	22.86	56.38	31.75	66.54	41.91	19.44	12.70
IBFC 12-12N	3/4	19.05	3/4	15.74	1-1/4	31.75	1-3/16	30.16	1-1/8	28.57	24.38	63.60	38.30	73.51	47.21	25.79	16.76
IBFC 16-16N	1	25.40	1	22.35	1-5/8	41.27	1-5/8	41.27	1-1/2	38.01	31.24	81.04	45.21	93.23	57.40	33.73	19.05
IBFC 20-20N	1-1/4	31.75	1-1/4	27.68	1-7/8	47.63	1-7/8	47.63	1-7/8	47.63	41.14	83.49	47.75	105.59	69.85	41.67	19.05
IBFC 24-24N	1-1/2	38.10	1-1/2	33.90	1-1/4	57.15	2-1/4	57-15	2-1/4	57-15	50.03	87.39	49.27	114.57	76.45	49.61	19.05
IBFC 32-32N	2	50.80	2	45.97	1-3/4	69.85	2-3/4	76.20	3	76..20	67.56	95.30	56.38	132.63	93.71	57.94	19.05

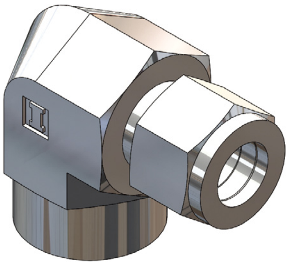
∗ISO Tapered Thread, put "R" digit at the last of part number.

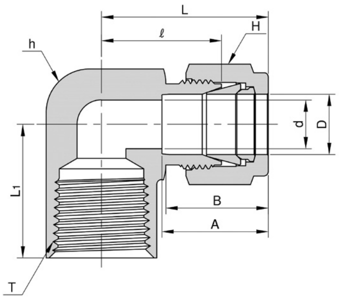
Connector Metric Tube To Female ISO Tapered Thread

Part No.	Tube O.D. D	T* PT	d min.	Width Across Flat			A	ℓ	ℓ_1	L	L_2	Panel Hole Drill Size	Panel Max. Thickness
				h	h_1	H							
IBFC 6M-2R	6	1/8	4.8	15.8	15.8	14	15.3	39.6	27.7	46.90	35.00	11.5	10.2
IBFC 6M-4R	6	1/4	4.8	19.0	16.0	14	15.3	44.4	26.2	51.80	33.60	11.5	10.2
IBFC 8M-4R	8	1/4	6.3	19.0	17.4	16	16.2	46.7	28.4	53.85	35.55	13.1	11.2
IBFC 12M-8R	12	1/2	9.5	27.0	24.0	22	22.8	56.4	31.8	66.50	41.90	19.5	12.7

∗NPT Thread, put "N" digit at the last of part number.

IFE Female Elbow





Connector Fractional Tube To Male NPT Thread

Part No.	Tube O.D. D		T G(PF)	d min.	Width Across Flat				A	B	ℓ	$ℓ_1$	L
					h		H						
	inch	mm			inch	mm	inch	mm					
IFE 2-2N	1/8	3.17	1/8	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.03	24.63	19.05
IFE 2-4N	1/8	3.17	1/4	2.28	11/16	17.46	7/16	11.11	12.70	15.24	20.82	27.43	22.35
IFE 3-2N	3/16	4.76	1/8	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	25.40	19.05
IFE 4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92	19.05
IFE 4-4N	1/4	6.35	1/4	4.82	11/16	17.46	9/16	14.28	15.24	17.78	22.35	29.71	22.35
IFE 4-6N	1/4	6.35	3/8	4.82	13/16	20.63	9/16	14.28	15.24	17.78	24.38	31.75	22.35
IFE 4-8N	1/4	6.35	1/2	4.82	1	25.40	9/16	14.28	15.24	17.78	27.17	34.54	28.44
IFE 5-2N	5/16	7.93	1/8	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	28.70	19.05
IFE 5-4N	5/16	7.93	1/4	6.35	11/16	17.46	5/8	15.87	16.25	18.54	23.11	30.48	22.35
IFE 6-2N	3/8	9.52	1/8	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	19.05
IFE 6-4N	3/8	9.52	1/4	7.11	11/16	17.46	11/16	17.46	16.76	19.30	23.87	31.24	22.35
IFE 6-6N	3/8	9.52	3/8	7.11	13/16	20.63	11/16	17.46	16.76	19.30	25.90	33.27	22.35
IFE 6-8N	3/8	9.52	1/2	7.11	1	25.40	11/16	17.46	16.76	19.30	28.70	36.06	28.44
IFE 8-4N	1/2	12.70	1/4	10.41	13/16	20.63	7/8	22.22	22.86	21.84	25.90	36.06	22.35
IFE 8-6N	1/2	12.70	3/8	10.41	13/16	20.63	7/8	22.22	22.86	21.84	25.90	36.06	22.35
IFE 8-8N	1/2	12.70	1/2	10.41	1	25.40	7/8	22.22	22.86	21.84	28.70	38.86	28.44
IFE 10-6N	5/8	15.87	3/8	12.70	15/16	23.80	1	25.40	24.38	21.84	27.94	38.10	22.35
IFE 10-8N	5/8	15.87	1/2	12.70	1	25.40	1	25.40	24.38	21.84	29.71	39.87	28.44
IFE 12-8N	3/4	19.05	1/2	15.74	1-1/16	26.98	1-1/8	28.57	24.38	21.84	29.71	39.87	28.44
IFE 12-12N	3/4	19.05	3/4	15.74	1-3/8	34.92	1-1/8	28.57	24.38	21.84	34.54	44.70	31.75
IFE 14-12N	7/8	22.22	3/4	18.28	1-3/8	34.92	1-1/4	31.75	25.90	21.84	34.54	44.70	31.75
IFE 16-12N	1	25.40	3/4	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	31.75
IFE 16-16N	1	25.40	1	22.35	1-11/16	42.86	1-1/2	38.10	31.24	26.41	38.10	50.29	38.10

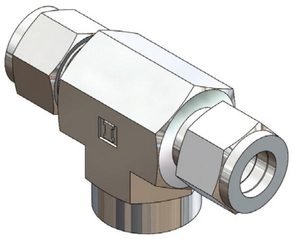
∗ISO Tapered Thread, put "R" digit at the last of part number.

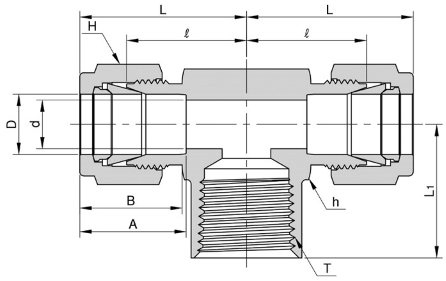
Connector Mertic Tube to Female ISO Tapered Thread

Part No.	Tube O.D. D	T* PT	d min.	Width Across Flat		A	B	ℓ	L	L_1
				h	H					
IFE 6M-2R	6	1/8	4.8	12.7	14	15.3	17.7	19.6	27.0	19.00
IFE 6M-4R	6	1/4	4.8	17.5	14	15.3	17.7	22.4	29.8	22.40
IFE 6M-6R	6	3/8	4.8	20.6	14	15.3	17.7	24.4	31.7	22.40
IFE 6M-8R	6	1/2	4.8	25.4	14	15.3	17.7	27.2	34.6	28.40
IFE 8M-4R	8	1/4	6.4	17.5	16	16.2	18.6	23.1	30.6	22.40
IFE 8M-8R	8	1/2	6.4	20.6	16	16.2	18.6	28.0	35.2	28.40
IFE 10M-2R	10	1/8	7.9	17.5	19	17.2	19.5	23.9	31.5	19.00
IFE 10M-4R	10	1/4	7.9	17.5	19	17.2	19.5	25.9	33.5	22.40
IFE 10M-6R	10	3/8	7.9	20.6	19	17.2	19.5	25.9	33.5	22.40
IFE 10M-8R	10	1/2	7.9	25.4	19	17.2	19.5	28.7	36.1	28.40
IFE 12M-4R	12	1/4	9.5	20.6	22	22.8	22.0	25.9	36.0	22.40
IFE 12M-6R	12	3/8	9.5	20.6	22	22.8	22.0	25.9	36.0	22.40
IFE 12M-8R	12	1/2	9.5	25.4	22	22.8	22.0	28.7	38.8	28.40
IFE 16M-8R	16	1/2	12.7	27.0	25	24.4	22.0	29.7	39.5	28.40

∗NPT Thread, put "N" digit at the last of part number.

IFBT Female Branch Tee





Connector Fractional Tube To Male NPT Thread

Part No.	Tube O.D. D		T* NPT	d min.	Width Across Flat				A	B	ℓ	L	L_1
					h		H						
	inch	mm			inch	mm	inch	mm					
IFBT 2-2N	1/8	3.17	1/8	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.03	24.38	19.05
IFBT 2-4N	1/8	3.17	1/4	2.28	11/16	17.46	7/16	11.11	12.70	15.24	20.82	27.43	22.35
IFBT 4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92	19.05
IFBT 4-4N	1/4	6.35	1/4	4.82	11/16	17.46	9/16	14.28	15.24	17.78	22.35	29.71	22.35
IFBT 4-6N	1/4	6.35	3/8	4.82	13/16	20.64	9/16	14.28	15.24	17.78	24.38	31.75	22.35
IFBT 5-2N	5/16	7.94	1/8	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	28.70	19.05
IFBT 5-4N	5/16	7.94	1/4	6.35	11/16	17.46	5/8	15.87	16.25	18.54	23.11	30.48	22.35
IFBT 6-2N	3/8	9.52	1/8	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	19.05
IFBT 6-4N	3/8	9.52	1/4	7.11	11/16	17.46	11/16	17.46	16.76	19.30	23.87	31.24	22.35
IFBT 6-6N	3/8	9.52	3/8	6.35	13/16	20.64	11/16	17.46	16.76	19.30	25.90	33.27	22.35
IFBT 6-8N	3/8	9.52	1/2	7.11	1	25.40	11/16	17.46	16.76	19.30	28.70	36.06	28.44
IFBT 8-4N	1/2	12.70	1/4	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	22.35
IFBT 8-6N	1/2	12.70	3/8	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	22.35
IFBT 8-8N	1/2	12.70	1/2	10.41	1	25.40	7/8	22.22	22.86	21.84	29.71	39.87	28.44
IFBT 10-6N	5/8	15.87	3/8	12.70	15/16	23.81	1	25.40	24.38	21.84	27.94	38.10	22.35
IFBT 10-8N	5/8	15.87	1/2	12.70	1	25.40	1	25.40	24.38	21.84	28.70	38.86	28.44
IFBT 12-8N	3/4	19.05	1/2	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87	28.44
IFBT 12-12N	3/4	19.05	3/4	15.74	1-3/8	34.92	1-1/8	28.58	24.38	21.84	34.54	44.70	31.75
IFBT 16-12N	1	25.40	3/4	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	31.75
IFBT 16-16N	1	25.40	1	22.35	1-11/16	42.86	1-1/2	38.10	31.24	26.41	41.40	53.59	38.10

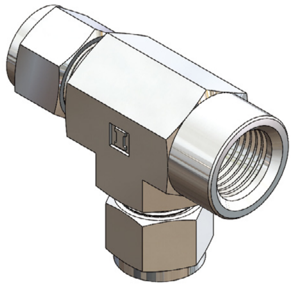
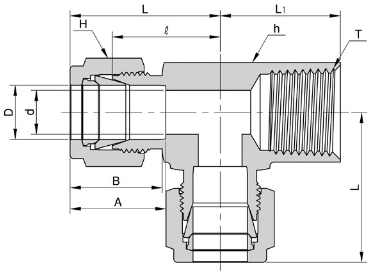
∗ISO Tapered Thread, put "R" digit at the last of part number.

Connector Metric Tube To Female ISO Tapered Thread

Part No.	Tube O.D. D	T* R(PT)	d min.	Width Across Flat		A	B	ℓ	L	L_1
				h	H					
IFBT 6M-2R	6	1/8	4.8	12.70	14	15.3	17.7	19.6	27.0	19.00
IFBT 6M-4R	6	1/4	4.8	17.46	14	15.3	17.7	22.4	29.8	22.40
IFBT 6M-6R	6	3/8	4.8	20.64	14	15.3	17.7	24.4	31.7	22.40
IFBT 6M-8R	6	1/2	4.8	25.40	14	15.3	17.7	27.2	34.5	28.40
IFBT 8M-2R	8	1/8	6.4	15.87	16	16.2	18.6	23.1	29.9	19.00
IFBT 8M-4R	8	1/4	6.4	17.46	16	16.2	18.6	23.1	30.6	22.40
IFBT 8M-6R	8	3/8	6.4	20.64	16	16.2	18.6	25.2	32.4	22.40
IFBT 8M-8R	8	1/2	6.4	25.40	16	16.2	18.6	28.0	35.2	28.40
IFBT 10M-2R	10	1/8	7.9	17.50	19	17.2	19.5	23.9	31.5	19.00
IFBT 10M-4R	10	1/4	7.9	20.64	19	17.2	19.5	25.9	33.5	22.40
IFBT 10M-6R	10	3/8	7.9	20.64	19	17.2	19.5	25.9	33.5	22.40
IFBT 10M-8R	10	1/2	9.5	25.40	19	17.2	19.5	26.2	33.6	22.40
IFBT 12M-4R	12	1/4	9.5	20.64	22	22.8	22.0	25.9	36.0	22.40
IFBT 12M-6R	12	3/8	9.5	20.64	22	22.8	22.0	25.9	36.0	22.40
IFBT 12M-8R	12	1/2	9.5	25.40	22	22.8	22.0	29.7	40.0	28.40
IFBT 16M-8R	16	1/2	12.7	25.40	25	24.4	22.0	29.7	40.0	28.70

∗NPT Thread, put "N" digit at the last of part number.

IFRT Female Run Tee

Connector Fractional Tube To Male NPT Thread

Part No.	Tube O.D. D		T G(PF)	d min.	Width Across Flat				A	B	ℓ	L	L_1
					h		H						
	inch	mm			inch	mm	inch	mm					
IFRT 2-2N	1/8	3.17	1/8	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.03	24.38	19.05
IFRT 2-4N	1/8	3.17	1/4	2.28	11/16	17.46	7/16	11.11	12.70	15.24	20.82	27.43	22.35
IFRT 4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92	19.05
IFRT 4-4N	1/4	6.35	1/4	4.82	11/16	17.46	9/16	14.28	15.24	17.78	22.35	29.71	22.35
IFRT 4-6N	1/4	6.35	3/8	4.82	13/16	20.64	9/16	14.28	15.24	17.78	24.38	31.75	22.35
IFRT 5-2N	5/16	7.94	1/8	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	28.70	19.05
IFRT 5-4N	5/16	7.94	1/4	6.35	11/16	17.46	5/8	15.87	16.25	18.54	23.11	30.48	22.35
IFRT 6-2N	3/8	9.52	1/8	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	19.05
IFRT 6-4N	3/8	9.52	1/4	7.11	11/16	17.46	11/16	17.46	16.76	19.30	23.87	31.24	22.35
IFRT 6-6N	3/8	9.52	3/8	6.35	13/16	20.64	11/16	17.46	16.76	19.30	25.90	33.27	22.35
IFRT 6-8N	3/8	9.52	1/2	7.11	1	25.40	11/16	17.46	16.76	19.30	28.70	36.06	28.44
IFRT 8-4N	1/2	12.70	1/4	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	22.35
IFRT 8-6N	1/2	12.70	3/8	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	22.35
IFRT 8-8N	1/2	12.70	1/2	10.41	1	25.40	7/8	22.22	22.86	21.84	29.71	39.87	28.44
IFRT 10-6N	5/8	15.87	3/8	12.70	15/16	23.81	1	25.40	24.38	21.84	27.94	38.10	22.35
IFRT 10-8N	5/8	15.87	1/2	12.70	1	25.40	1	25.40	24.38	21.84	28.70	38.86	28.44
IFRT 12-8N	3/4	19.05	1/2	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87	28.44
IFRT 12-12N	3/4	19.05	3/4	15.74	1-3/8	34.92	1-1/8	28.58	24.38	21.84	34.54	44.70	31.75
IFRT 16-12N	1	25.40	3/4	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	31.75
IFRT 16-16N	1	25.40	1	22.35	1-11/16	42.86	1-1/2	38.10	31.24	26.41	41.40	53.59	38.10

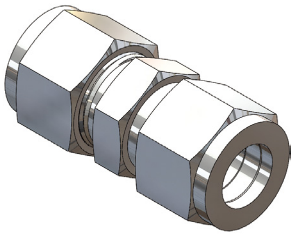
∗ISO Tapered Thread, put "R" digit at the last of part number.

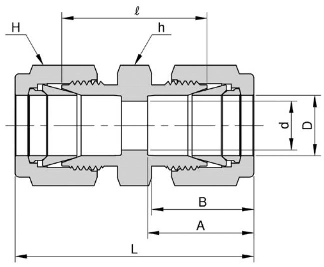
Connector Metric Tube To Female ISO Tapered Thread

Part No.	Tube O.D. D	T* R(PT)	d min.	Width Across Flat		A	B	ℓ	L	L_1
				h	H					
IFRT 6M-2R	6	1/8	4.8	12.70	14	15.3	17.7	19.6	27.0	19.00
IFRT 6M-4R	6	1/4	4.8	17.46	14	15.3	17.7	22.4	29.8	22.40
IFRT 6M-6R	6	3/8	4.8	20.64	14	15.3	17.7	24.4	31.7	22.40
IFRT 6M-8R	6	1/2	4.8	25.40	14	15.3	17.7	27.2	34.5	28.40
IFRT 8M-2R	8	1/8	6.4	15.87	16	16.2	18.6	23.1	29.9	19.00
IFRT 8M-4R	8	1/4	6.4	17.46	16	16.2	18.6	23.1	30.6	22.40
IFRT 8M-6R	8	3/8	6.4	20.64	16	16.2	18.6	25.2	32.4	22.40
IFRT 8M-8R	8	1/2	6.4	25.40	16	16.2	18.6	28.0	35.2	28.40
IFRT 10M-2R	10	1/8	7.9	17.50	19	17.2	19.5	23.9	31.5	19.00
IFRT 10M-4R	10	1/4	7.9	20.64	19	17.2	19.5	25.9	33.5	22.40
IFRT 10M-6R	10	3/8	7.9	20.64	19	17.2	19.5	25.9	33.5	22.40
IFRT 10M-8R	10	1/2	9.5	25.40	19	17.2	19.5	26.2	33.6	22.40
IFRT 12M-4R	12	1/4	9.5	20.64	22	22.8	22.0	25.9	36.0	22.40
IFRT 12M-6R	12	3/8	9.5	20.64	22	22.8	22.0	25.9	36.0	22.40
IFRT 12M-8R	12	1/2	9.5	25.40	22	22.8	22.0	29.7	40.0	28.40
IFRT 16M-8R	16	1/2	12.7	25.40	25	24.4	22.0	29.7	40.0	28.70

∗NPT Thread, put "N" digit at the last of part number.

IU Union





Connector Fractional Tubes

Part No.	Tube O.D. D		d min.	Width Across Flat				A	B	ℓ	L
				h		H					
	inch	mm		inch	mm	inch	mm				
IU-1	1/16	1.58	1.27	5/16	7.93	5/16	7.93	8.63	10.92	19.00	25.15
IU-2	1/8	3.17	2.28	7/16	11.11	7/16	11.11	12.7	15.24	22.35	35.56
IU-3	3/16	4.76	3.04	7/16	11.11	1/2	12.70	13.71	16.00	24.13	37.33
IU-4	1/4	6.35	4.82	1/2	12.70	9/16	14.28	15.24	17.78	26.16	40.89
IU-5	5/16	7.93	6.35	9/16	14.28	5/8	15.87	16.25	18.54	28.19	42.92
IU-6	3/8	9.52	7.11	5/8	15.87	11/16	17.46	16.76	19.30	30.22	44.95
IU-8	1/2	12.70	10.41	13/16	20.63	7/8	22.22	22.86	21.84	30.98	51.30
IU-10	5/8	15.87	12.70	15/16	23.81	1	25.40	24.38	21.84	31.75	52.07
IU-12	3/4	19.05	15.74	1-1/16	26.98	1-1/8	28.57	24.38	21.84	33.27	53.59
IU-14	7/8	22.22	18.28	1-3/16	30.16	1-1/4	31.75	25.90	21.84	35.05	55.37
IU-16	1	25.40	22.35	1-3/8	34.92	1-1/2	38.10	31.24	36.41	40.38	64.77
IU-20	1-1/4	31.75	27.68	1-3/4	44.45	1-7/8	47.62	41.14	38.86	48.00	92.20
IU-24	1-1/2	38.10	34.03	2-1/8	53.97	2-1/4	57.15	50.03	45.21	53.60	107.95
IU-32	2	50.80	45.97	2-3/4	69.85	3	76.20	67.56	62.73	74.70	149.35

Connector Metric Tubes

Part No.	Tube O.D. D	d min.	Width Across Flat		A	B	ℓ	L
			h	H				
IU-2M	2	1.7	12	12	12.9	15.3	22.4	35.6
IU-3M	3	2.4	12	12	12.9	15.3	22.1	35.3
IU-4M	4	2.4	12	12	13.7	16.1	24.1	37.3
IU-6M	6	4.8	14	14	15.3	17.7	26.2	41.0
IU-8M	8	6.4	15	16	16.2	18.6	28.2	43.2
IU-10M	10	7.9	18	19	17.2	19.5	31.0	46.2
IU-12M	12	9.8	22	22	22.8	22.0	31.0	51.2
IU-15M	15	11.9	24	25	24.4	22.0	31.8	52.0
IU-16M	16	12.7	24	25	24.4	22.0	31.8	52.0
IU-18M	18	15.1	27	30	24.4	22.0	33.3	53.5
IU-20M	20	15.9	30	32	26.0	22.0	34.8	55.0
IU-22M	22	18.3	30	32	26.0	22.0	34.8	55.0
IU-25M	25	21.8	35	38	31.3	26.5	40.4	65.0
IU-28M	28	21.8	41	46	36.6	36.6	43.4	85.0
IU-32M	32	28.6	46	50	42.0	41.6	51.3	97.3
IU-38M	38	33.7	55	60	49.4	47.9	58.4	113.6
IU-42M	42	36.0	55	65	55.1	53.6	64.0	126.2

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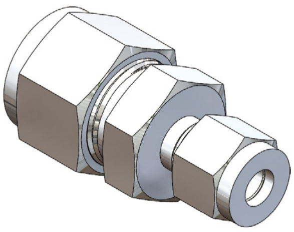
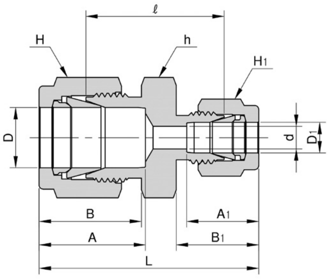
IRU Reducing Union





Connector Fractional Tubes

Part No.	Tube O.D. D				d min.	Width Across Flat						A	A_1	B	B_1	ℓ	L
	D		D_1			h		H		H_1							
	inch	mm	inch	mm		inch	mm	inch	mm	inch	mm						
IRU 2-1	1/8	3.16	1/16	1.58	1.27	7/16	11.11	7/16	11.11	5/16	7.93	12.70	8.63	15.24	10.92	20.60	30.91
IRU 3-1	3/16	4.76	1/16	1.58	1.27	7/16	11/11	1/2	12.70	5/16	7.93	13.71	8.63	16.00	10.92	21.84	32.25
IRU 3-2	3/16	4.76	1/8	3.17	2.28	7/16	11/11	1/2	12.70	7/16	11.11	13.71	12.70	16.00	15.24	23.36	36.57
IRU 4-1	1/4	6.35	1/16	1.58	1.27	1/2	12.70	9/16	14.28	5/16	7.93	15.24	8.63	17.78	10.92	23.11	34.29
IRU 4-2	1/4	6.35	1/8	3.17	2.28	1/2	12.70	9/16	14.28	7/16	11.11	15.24	12.70	17.78	15.24	24.63	38.60
IRU 4-3	1/4	6.35	3.16	4.76	3.04	1/2	12.70	9/16	14.28	1/2	12.70	15.24	13.71	17.78	16.00	25.40	39.37
IRU 5-2	5/16	7.93	1/8	3.17	2.28	9/16	14.28	5/8	15.87	7/16	11.11	16.25	12.70	18.54	15.24	25.90	39.87
IRU 5-4	5/16	7.93	1/4	6.35	4.82	9/16	14.28	5/8	15.87	9/16	14.28	16.25	15.24	18.54	17.78	27.43	42.16
IRU 6-1	3/8	9.52	1/16	1.58	1.27	5/8	15.87	11/16	17.46	5/16	7.93	16.76	8.63	19.30	10.92	25.40	36.57
IRU 6-2	3/8	9.52	1/8	3.17	2.28	5/8	15.87	11/16	17.46	7/16	11.11	16.76	12.70	19.30	15.24	26.92	40.89
IRU 6-4	3/8	9.52	1/4	6.35	4.82	5/8	15.87	11/16	17.46	9/16	14.28	16.76	15.24	19.30	17.78	28.44	43.18
IRU 6-5	3/8	9.52	5.16	7.93	6.35	5/8	15.87	11/16	17.46	5/8	15/87	16.76	16.25	19.30	18.54	29.46	44.19
IRU 8-2	1/2	12.70	1/8	3.17	2.28	13/16	20.63	7/8	22.22	7/16	11.11	22.86	12.70	21.84	15.24	28.44	45.21
IRU 8-4	1/2	12.70	1/4	6.35	4.82	13/16	20.63	7/8	22.22	9/16	14.28	22.86	15.24	21.84	17.78	29.46	46.99
IRU 8-6	1/2	12.70	3/8	9.52	7.11	13/16	20.63	7/8	22.22	11/16	17.46	22.86	16.76	21.84	19.30	30.98	48.51
IRU 10-6	5/8	15.87	3/8	9.52	7.11	15/16	23.81	1	25.40	11/16	17.46	24.38	16.76	21.84	19.30	31.75	49.27
IRU 10-8	5/8	15.87	1/2	12.7	10.41	15/16	23.81	1	25.40	7/8	22.22	24.38	22.86	21.84	21.84	31.75	52.07
IRU 12-4	3/4	19.05	1/4	6.35	4.82	1-1/16	26.98	1-1/8	28.57	9/16	14.28	24.38	15.24	21.84	17.78	31.75	49.27
IRU 12-6	3/4	19.05	3/8	9.52	7.11	1-1/16	26.98	1-1/8	28.57	11/16	17.46	24.38	16.76	21.84	19.30	33.27	50.80
IRU 12-8	3/4	19.05	1/2	12.70	10.41	1-1/16	26.98	1-1/8	28.57	7/8	22.22	24.38	22.86	21.84	21.84	33.27	53.59
IRU 12-10	3/4	19.05	5/8	15.87	12.70	1-1/16	26.98	1-1/8	28.57	1	25.40	24.38	24.38	21.84	21.84	33.27	53.59
IRU 16-8	1	25.40	1/2	12.70	10.41	1-3/8	34.92	1-1/2	38.10	7/8	22.22	31.24	22.86	26.41	21.84	40.89	63.24
IRU 16-12	1	25.40	3/4	19.05	15.74	1-3/8	34.92	1-1/2	38.10	1-1/8	28.57	31.24	24.38	26.41	21.84	40.38	62.73

Connector Metric Tubes

Part No.	Tube O.D. D		d min.	Width Across Flat			A	A_1	B	B_1	ℓ	L
	D	D_1		h	H	H_1						
IRU 3M-2M	3	2	1.7	12	12	12	12.9	12.9	15.3	15.3	22.1	35.3
IRU 6M-2M	6	2	1.7	14	14	12	15.3	12.9	17.7	15.3	24.6	38.6
IRU 6M-3M	6	3	2.4	14	14	12	15.3	12.9	17.7	15.3	24.6	38.6
IRU 6M-4M	6	4	2.4	14	14	12	15.3	13.7	17.7	16.1	25.4	39.4
IRU 8M-6M	8	6	4.8	15	16	14	16.2	15.3	18.6	17.7	27.4	42.3
IRU 10M-6M	10	6	4.8	18	19	14	17.2	15.3	19.5	17.7	29.5	44.5
IRU 10M-8M	10	8	6.4	18	19	16	17.2	16.2	19.5	18.6	30.0	45.1
IRU 12M-6M	12	6	4.8	22	22	14	22.8	15.3	22.0	17.7	29.5	47.0
IRU 12M-8M	12	8	6.4	22	22	16	22.8	16.2	22.0	18.6	30.2	47.8
IRU 12M-10M	12	10	7.9	22	22	19	22.8	17.2	22.0	19.5	31.0	48.7
IRU 16M-10M	16	10	7.9	24	25	19	24.4	17.2	22.0	19.5	31.8	49.5
IRU 16M-12M	16	12	9.5	24	25	22	24.4	22.8	22.0	22.0	31.8	52.0
IRU 18M-12M	18	12	9.5	27	30	22	24.4	22.8	22.0	22.0	33.3	53.5
IRU 25M-18M	25	18	15.1	35	38	30	31.3	24.4	26.5	22.0	38.6	61.0
IRU 25M-20M	25	20	15.1	35	38	32	31.3	26.0	26.5	22.0	39.9	62.3

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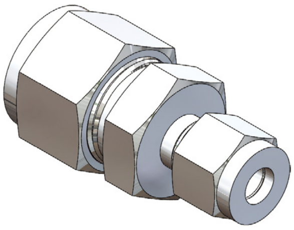
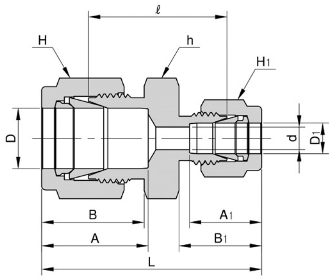
IRU Reducing Union

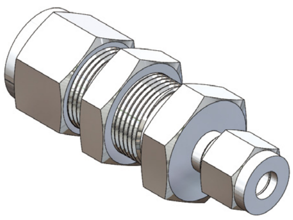


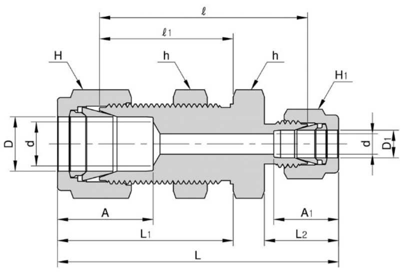


Connector Metric Tubes To Fractional Tubes

Part No.	Tube O.D. D			d min.	Width Across Flat			A	A_1	B	B_1	ℓ	L
	D	D_1			h	H	H_1						
		inch	mm										
IRU 3M-2	3	1/8	3.17	2.4	12.0	12	11.1	12.9	12.8	15.3	15.2	22.1	35.2
IRU 4M-2	4	1/8	3.17	2.4	12.0	12	11.1	13.7	12.8	16.1	15.2	23.4	36.5
IRU 4M-4	4	1/4	6.35	2.4	14.0	12	14.3	13.7	15.3	16.1	17.7	25.4	39.4
IRU 6M-2	6	1/8	3.17	2.4	14.0	14	11.1	15.3	12.8	17.7	15.2	24.6	38.5
IRU 6M-4	6	1/4	6.35	4.8	14.0	14	14.3	15.3	15.3	17.7	17.7	26.2	41.0
IRU 6M-5	6	5/16	7.93	4.8	14.0	14	15.9	15.3	16.2	17.7	18.6	27.4	42.3
IRU 8M-4	8	1/4	6.35	4.8	15.0	16	14.3	16.2	15.3	18.6	17.7	27.4	42.3
IRU 10M-2	10	1/8	3.17	2.4	18.0	19	11.1	17.2	12.8	19.5	15.2	27.7	41.8
IRU 10M-4	10	1/4	6.35	4.8	18.0	19	14.3	17.2	15.3	19.5	17.7	29.5	44.5
IRU 10M-5	10	5/16	7.93	6.4	18.0	19	15.9	17.2	16.2	19.5	18.6	30.3	45.1
IRU 10M-6	10	3/8	9.52	7.1	18.0	19	17.5	17.2	16.9	19.5	19.2	31.0	45.9
IRU 12M-5	12	5/16	7.93	6.4	22.0	22	15.9	22.8	16.2	22.0	18.6	30.2	47.8
IRU 12M-6	12	3/8	9.52	7.1	22.0	22	17.5	22.8	16.9	22.0	19.2	31.0	48.4
IRU 12M-8	12	1/2	12.70	9.5	22.0	22	22.2	22.8	22.8	22.0	22.0	31.0	51.2
IRU 15M-8	15	1/2	12.70	10.3	24.0	25	22.2	24.4	22.8	22.0	22.0	31.8	52.0
IRU 16M-10	16	5/8	15.87	12.7	24.0	25	25.4	24.4	24.4	22.0	22.0	31.8	52.0
IRU 18M-12	18	3/4	19.05	15.1	27.0	30	28.6	24.4	24.4	22.0	22.0	33.3	53.5
IRU 20M-12	20	3/4	19.05	15.9	30.0	32	28.6	26.0	24.4	22.0	22.0	34.8	54.9
IRU 20M-16	20	1	25.40	15.9	34.9	32	38.1	26.0	31.2	22.0	26.4	38.0	60.3
IRU 22M-16	22	1	25.40	15.9	34.9	32	38.1	26.0	31.2	22.0	26.4	38.2	60.3

IRBU Reducing Bulkhead Union





Connector Fractional Tubes

Part No.	Tube O.D. D				d min.	Width Across Flat						A	A_1	L	L_1	L	L_1	L_2	Panel Hole Drill Size	Panel Max Thickness
	D		D_1			h		H		H_1										
	inch	mm	inch	mm		inch	mm	inch	mm	inch	mm									
IRBU 4-2	1/4	6.35	1/8	3.17	2.28	5/8	15.87	9/16	14.28	7/16	11.11	15.24	12.70	41.14	26.16	55.11	33.52	15.24	11.50	10.16
IRBU 6-4	3/8	9.52	1/4	6.35	4.82	3/4	19.05	11/16	17.46	9/16	14.28	16.76	15.24	45.97	29.46	60.70	36.57	17.78	14.68	11.17
IRBU 8-4	1/2	12.70	1/4	6.35	4.82	15/16	23.80	7/8	22.22	9/16	14.28	22.86	15.24	49.27	31.75	66.80	41.91	17.78	19.44	12.70

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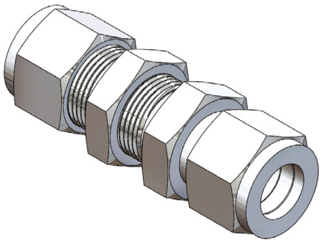
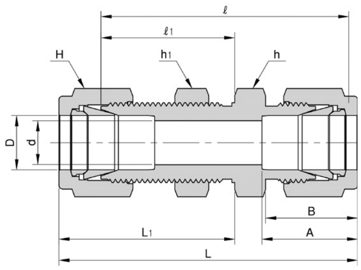
IBU Bulkhead Union





Connector Fractional Tubes

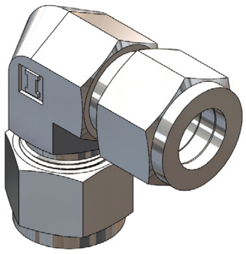
Part No.	Tube O.D. D		d min.	Width Across Flat				A	B	ℓ	ℓ_1	L	ℓ_1	Panel Hole Drill Size	Panel Max Thickness
	D			h		H									
	inch	mm		inch	mm	inch	mm								
IBU-1	1/16	1.58	1.27	5/16	7.93	5/16	7.93	8.63	10.92	23.87	13.46	31.50	17.27	5.16	3.05
IBU-2	1/8	3.17	2.28	1/2	12.70	7/16	11.11	12.70	15.24	38.10	24.63	51.30	31.24	8.33	12.70
IBU-3	3/16	4.76	3.04	9/16	14.28	1/2	12.70	13.71	16.00	40.38	25.40	53.59	32.00	9.92	12.70
IBU-4	1/4	6.35	4.82	5/8	15.87	9/16	14.28	15.24	17.78	42.92	26.16	57.65	33.52	11.50	10.16
IBU-5	5/16	7.93	6.35	11/16	17.46	5/8	15.87	16.25	18.54	45.97	28.44	60.70	35.81	13.09	11.17
IBU-6	3/8	9.52	7.11	3/4	19.05	11/16	17.46	16.76	19.30	47.49	29.46	62.23	36.83	14.68	11.17
IBU-8	1/2	12.70	10.41	15/16	23.81	7/8	22.22	22.86	21.84	50.80	31.75	71.12	41.91	19.44	12.70
IBU-10	5/8	15.87	12.70	1-1/16	26.98	1	25.40	24.38	21.84	52.32	32.51	72.64	42.67	22.62	12.70
IBU-12	3/4	19.05	15.74	1-3/16	30.16	1-1/8	28.57	24.38	21.84	58.67	37.33	78.99	47.49	25.78	16.76
IBU-14	7/8	22.22	18.28	1-3/8	34.92	1-1/4	31.75	25.90	21.84	64.26	42.92	84.58	53.08	28.97	19.05
IBU-16	1	25.40	22.35	1-5/8	41.27	1-1/2	38.10	31.24	26.41	71.37	45.21	95.75	57.40	33.73	19.05
IBU-20	1-1/4	31.75	27.68	1-7/8	47.62	1-7/8	47.62	41.14	38.86	78.99	47.75	123.19	69.85	41.67	19.05
IBU-24	1-1/2	38.10	34.03	2-1/4	57.15	2-1/4	57.15	50.03	45.21	84.83	49.27	139.19	76.45	49.61	19.05
IBU-32	2	50.80	45.97	2-3/4	69.85	3	76.20	67.56	62.73	105.66	56.38	180.34	93.72	67.07	19.05

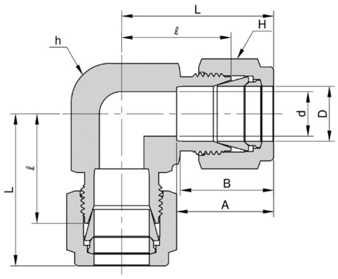
Connector Metric Tubes

Part No.	Tube O.D. D	d min.	Width Across Flat			A	B	ℓ	ℓ_1	L	L_1	Panel Hole Drill Size	Panel Max Thickness
			h	h_1*	H_1								
IBU-3M	3	2.4	14	12.7	12	12.9	15.3	38.1	24.6	51.3	31.2	8.3	12.7
IBU - 4M	4	2.4	14	14.3	12	13.7	16.1	40.4	25.4	53.6	32.0	9.9	12.7
IBU - 6M	6	4.8	16	15.9	14	15.3	17.7	42.9	26.2	57.7	33.6	11.5	10.2
IBU - 8M	8	6.4	18	17.5	16	16.2	18.6	46.0	28.6	61.0	36.1	13.1	11.2
IBU-10M	10	7.9	22	22.0	19	17.2	19.5	48.5	29.4	63.7	37.0	16.2	11.2
IBU-12M	12	9.5	24	23.8	22	22.8	22.0	50.8	31.8	71.0	41.9	19.5	12.7
IBU-15M	15	11.9	27	27.0	25	24.4	22.0	52.3	32.5	72.5	42.6	22.8	12.7
IBU-16M	16	12.7	27	27.0	25	24.4	22.0	52.3	32.5	72.5	42.6	22.8	12.7
IBU-18M	18	15.1	30	30.0	30	24.4	22.0	58.7	37.3	78.9	47.4	26.0	16.8
IBU-20M	20	15.9	35	35.0	32	26.0	22.0	64.3	42.9	84.5	53.0	29.0	17.0
IBU-22M	22	18.3	35	35.0	32	26.0	22.0	64.3	42.9	84.5	53.0	29.0	19.1
IBU-25M	25	21.8	41.3	41.3	38	31.3	26.5	71.4	45.2	95.9	57.5	33.7	19.1
IBU-32M	32	28.6	50	50.0	50	42.0	41.6	82.3	49.5	128.3	72.5	42.5	19.0
IBU-38M	38	33.7	60	60.0	60	49.4	47.9	89.4	51.5	144.6	79.1	50.5	19.0

∗h_1: Application to metric Tube bulkhead Hexagon only

IUE Union Elbow





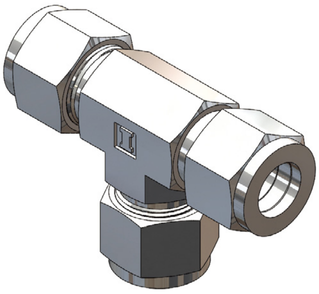
Connector Fractional Tubes

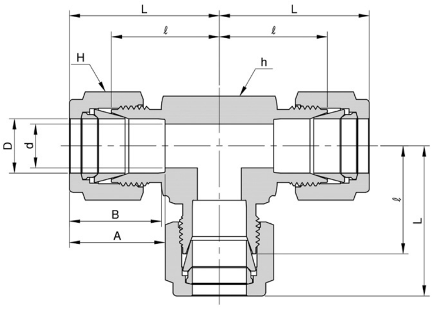
Part No.	Tube O.D. D		d min.	Width Across Flat				A	B	ℓ	L
				h		H					
	inch	mm		inch	mm	inch	mm				
IUE-1	1/16	1.58	1.27	3/8	9.52	5/16	7.93	8.63	10.92	14.00	17.88
IUE-2	1/8	3.17	2.28	3/8	9.52	7/16	11.11	12.70	15.24	15.74	22.35
IUE-3	3/16	4.76	3.04	1/2	12.70	1/2	12.70	13.71	16.00	17.78	24.38
IUE-4	1/4	6.35	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92
IUE-5	5/16	7.93	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	28.70
IUE-6	3/8	9.52	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48
IUE-8	1/2	12.70	10.41	13/16	20.63	7/8	22.22	22.86	21.84	25.90	36.06
IUE-10	5/8	15.87	12.70	15/16	23.80	1	25.40	24.38	21.84	28.70	38.80
IUE-12	3/4	19.05	15.74	1-1/16	26.98	1-1/8	28.57	24.38	21.84	29.71	39.87
IUE-14	7/8	22.22	18.28	1-3/16	30.00	1-1/4	31.75	25.90	21.84	34.54	44.70
IUE-16	1	25.40	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	26.83	49.02
IUE-20	1-1/4	31.75	27.68	1-11/16	42.86	1-7/8	47.62	41.14	28.86	44.50	66.54
IUE-24	1-1/2	38.10	34.03	2	50.80	2-1/4	57.15	50.03	45.21	50.80	77.97
IUE-32	2	50.80	45.97	2-3/4	69.85	3	76.20	67.56	62.73	69.80	107.18

Connector Metric Tubes

Part No.	Tube O.D. D	d min.	Width Across Flat		A	B	ℓ	L
			h	H				
IUE-2M	2	1.7	9.5	12	12.9	15.3	15.7	22.3
IUE-3M	3	2.4	9.5	12	12.9	15.3	15.7	22.3
IUE-4M	4	2.4	12.7	12	13.7	16.4	18.8	25.4
IUE-6M	6	4.8	12.7	14	15.3	17.7	19.6	27.0
IUE-8M	8	6.4	14.3	16	16.2	18.6	21.9	28.8
IUE-10M	10	7.9	17.5	19	17.2	19.5	23.9	31.5
IUE-12M	12	9.5	20.6	22	22.8	22.0	25.9	36.0
IUE-15M	15	11.9	23.8	25	24.4	22.0	28.7	38.8
IUE-16M	16	12.7	23.8	25	24.4	22.0	28.7	38.8
IUE-18M	18	15.1	27.0	30	24.4	22.0	29.7	39.8
IUE-20M	20	15.9	34.9	32	26.0	22.0	32.5	42.6
IUE-22M	22	18.3	34.9	32	26.0	22.0	32.5	42.6
IUE-25M	25	21.8	34.9	38	31.3	22.0	36.8	49.1
IUE-28M	28	21.8	41.0	46	36.6	36.6	43.2	64.0
IUE-32M	32	28.6	46.0	50	42.0	41.6	49.3	72.3
IUE-38M	38	33.7	55.0	60	49.4	47.9	56.4	84.0
IUE-42M	42	36.0	55.0	65	55.1	53.6	58.0	89.1

IUT Union Tee





Connector Fractional Tubes

Part No.	Tube O.D. D		d min.	Width Across Flat				A	B	ℓ	L
				h		H					
	inch	mm		inch	mm	inch	mm				
IUT-1	1/16	1.58	1.27	7/16	11.11	5/16	7.93	8.63	10.92	15.00	17.88
IUT-2	1/8	3.17	2.28	3/8	9.52	7/16	11.11	12.70	15.24	15.74	22.35
IUT-3	3/16	4.76	3.04	1/2	12.70	1/2	12.70	13.71	16.00	17.78	24.38
IUT-4	1/4	6.35	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92
IUT-5	5/16	7.93	6.35	5/8	15.87	5/8	15.87	16.25	18.54	21.33	28.70
IUT-6	3/8	9.52	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48
IUT-8	1/2	12.70	10.41	13/16	20.63	7/8	22.22	22.86	21.84	25.90	36.06
IUT-10	5/8	15.87	12.70	15/16	23.80	1	25.40	24.38	21.84	28.70	38.80
IUT-12	3/4	19.05	15.74	1-1/16	26.98	1-1/8	28.57	24.38	21.84	29.71	39.87
IUT-14	7/8	22.22	18.28	1-3/16	30.00	1-1/4	31.75	25.90	21.84	34.54	44.70
IUT-16	1	25.40	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02
IUT-20	1-1/4	31.75	27.68	1-11/16	42.86	1-7/8	47.62	41.14	38.86	44.50	66.54
IUT-24	1-1/2	38.10	34.03	2	50.80	2-1/4	57.15	50.03	45.21	50.80	77.97
IUT-32	2	50.80	45.97	2-3/4	69.85	3	76.20	67.56	62.73	69.80	107.18

Connector Metric Tubes

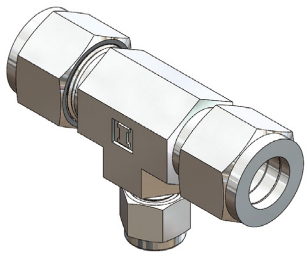
Part No.	Tube O.D. D	d min.	Width Across Flat		A	B	ℓ	L
			h	H				
IUT-2M	2	1.7	9.5	12	12.9	15.3	15.7	22.3
IUT-3M	3	2.4	9.5	12	12.9	15.3	15.7	22.3
IUT-4M	4	2.4	12.7	12	13.7	16.1	18.8	25.4
IUT-6M	6	4.8	12.7	14	15.3	17.7	19.6	27.0
IUT-8M	8	6.4	14.3	16	16.2	18.6	21.3	28.8
IUT-10M	10	7.9	17.5	19	17.2	19.5	23.9	31.5
IUT-12M	12	9.5	20.6	22	22.8	22.0	25.9	36.0
IUT-15M	15	11.9	23.8	25	24.4	22.0	28.7	38.8
IUT-16M	16	12.7	23.8	25	24.4	22.0	28.7	38.8
IUT-18M	18	15.1	27.0	30	24.4	22.0	29.7	39.8
IUT-20M	20	15.9	30.0	32	26.0	22.0	32.5	42.6
IUT-22M	22	18.3	30.0	32	26.0	22.0	32.5	42.6
IUT-25M	25	21.8	34.9	38	31.3	26.5	36.8	49.1
IUT-28M	28	21.8	41.0	46	36.6	36.6	43.2	64.0
IUT-32M	32	28.6	46.0	50	42.0	41.6	49.3	72.3
IUT-38M	38	33.7	55.0	60	49.4	47.9	56.4	84.0
IUT-42M	42	36.0	55.0	65	55.1	53.6	58.0	89.1

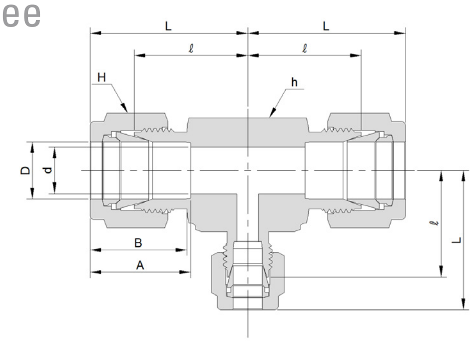
Tube Fittings

Always together, Always success Since 1993

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

IRT Reducing Union Tee



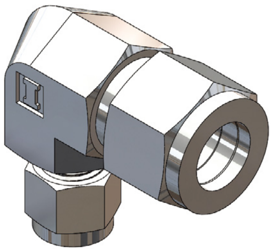


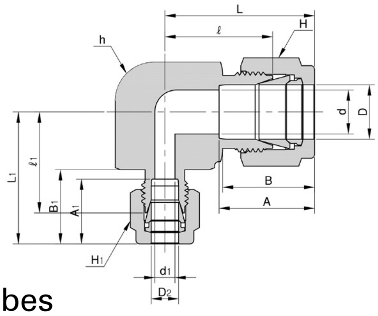
Connector Fractional Tubes

Part No.	Tube O.D. D						d min.	Width Across Flat								ℓ	ℓ1	ℓ2	L	L1	L2
	D		D1		D2			h		H		H1		H2							
	inch	mm	inch	mm	inch	mm		inch	mm	inch	mm	inch	mm	inch	mm						
IRT 4-4-2	1/4	6.35	1/4	6.35	1/8	3.17	2.28	1/2	12.70	9/16	14.28	9/16	14.28	7/16	11.11	19.55	19.55	17.9	26.91	26.91	24.50
IRT 4-4-6	1/4	6.35	1/4	6.35	3/8	9.52	4.82	5/8	15.87	9/16	14.28	9/16	14.28	11/16	17.46	21.92	21.92	23.10	29.28	29.28	30.46
IRT 6-4-6	3/8	9.52	1/4	6.35	3/8	9.52	4.82	5/8	15.87	11/16	17.46	9/16	14.28	11/16	17.46	23.10	21.92	23.10	30.46	29.28	30.46
IRT 6-6-4	3/8	9.52	3/8	9.52	1/4	6.35	4.82	5/8	15.87	11/16	17.46	11/16	17.46	9/16	14.28	23.10	23.10	21.92	30.46	30.46	29.28
IRT 6-6-8	3/8	9.52	3/8	9.52	1/2	12.70	7.11	13/16	20.64	11/16	17.46	11/16	17.46	7/8	22.22	25.90	25.90	25.90	33.26	33.26	36.06
IRT 8-4-4	1/2	12.70	1/4	6.35	1/4	6.35	4.82	13/16	20.64	7/8	22.22	9/16	14.28	9/16	14.28	25.90	24.40	24.40	36.06	31.76	31.76
IRT 8-4-8	1/2	12.70	1/4	6.35	1/2	12.70	7.11	13/16	20.64	7/8	22.22	9/16	14.28	7/8	22.22	25.90	24.40	25.90	36.06	31.76	36.06
IRT 8-6-6	1/2	12.70	3/8	9.52	3/8	9.52	7.11	13/16	20.64	7/8	22.22	11/16	17.46	11/16	17.46	25.90	25.90	25.90	36.06	33.26	33.26
IRT 8-8-4	1/2	12.70	1/2	12.70	1/4	6.35	4.82	13/16	20.64	7/8	22.22	7/8	22.22	9/16	14.28	25.90	25.90	24.40	36.06	36.06	31.76
IRT 8-8-6	1/2	12.70	1/2	12.70	3/8	9.52	7.11	13/16	20.64	7/8	22.22	7/8	22.22	11/16	17.46	25.90	25.90	25.90	36.06	36.06	33.26
IRT 10-10-6	5/8	15.87	5/8	15.87	3/8	9.52	7.11	15/16	23.81	1	25.4	1	25.40	11/16	17.46	28.70	28.70	28.70	38.86	38.86	36.06
IRT 12-8-8	3/4	19.05	1/2	12.70	1/2	12.70	10.41	1-1/16	26.98	1-1/8	28.57	7/8	22.22	7/8	22.22	29.71	29.71	29.71	39.87	39.87	38.37
IRT 12-8-12	3/4	19.05	1/2	12.70	3/4	19.05	10.41	1-1/16	26.98	1-1/8	28.57	7/8	22.22	1-1/8	28.57	29.71	29.71	29.71	39.87	39.87	39.87
IRT 12-12-4	3/4	19.05	3/4	19.05	1/4	6.35	4.82	1-1/16	26.98	1-1/8	28.57	1-1/8	28.57	9/16	14.28	29.71	29.71	28.21	39.87	39.87	35.57
IRT 12-12-6	3/4	19.05	3/4	19.05	3/8	9.52	7.11	1-1/16	26.98	1-1/8	28.57	1-1/8	28.57	11/16	17.46	29.71	29.71	29.71	39.87	39.87	35.57
IRT 12-12-8	3/4	19.05	3/4	19.05	1/2	12.70	10.41	1-1/16	26.98	1-1/8	28.57	1-1/8	28.57	7/8	22.22	29.71	29.71	29.71	39.87	39.87	38.37
IRT 12-12-16	3/4	19.05	3/4	19.05	1	25.40	15.74	1-3/8	34.92	1-1/8	28.57	1-1/8	28.57	1-1/2	38.10	34.43	34.43	36.83	49.02	49.02	45.70
IRT 16-12-12	1	25.40	3/4	19.05	3/4	19.05	15.74	1-3/8	34.92	1-1/2	38.10	1-1/8	28.57	1-1/8	28.57	36.83	35.54	35.54	49.02	45.70	45.70
IRT 16-16-4	1	25.40	1	25.40	1/4	6.35	4.82	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	9/16	14.28	36.83	36.83	33.04	49.02	49.02	40.40
IRT 16-16-6	1	25.40	1	25.40	3/8	9.52	7.11	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	11/16	17.46	36.83	36.83	34.54	49.02	49.02	41.90
IRT 16-16-8	1	25.40	1	25.40	1/2	12.70	10.41	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	7/8	22.22	36.83	36.83	34.54	49.02	49.02	44.70
IRT 16-16-12	1	25.40	1	25.40	3/4	19.05	15.74	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	1-1/8	28.57	36.83	36.83	35.54	49.02	49.02	45.70
IRT 20-12-12	1-1/4	31.75	3/4	19.05	3/4	19.05	15.74	1-11/16	42.86	1-7/8	47.63	1-1/8	28.57	1-1/8	28.57	44.45	39.41	39.41	66.55	49.57	49.57
IRT 20-20-12	1-1/4	31.75	1-1/4	31.75	3/4	19.05	15.74	1-11/16	42.86	1-7/8	47.63	1-7/8	47.63	1-1/8	28.57	44.45	44.45	39.41	66.55	66.55	49.57
IRT 24-20-20	1-1/2	38.10	1-1/4	31.75	1-1/4	31.75	27.69	2	50.80	2-1/4	57.15	1-7/8	47.63	1-7/8	47.63	50.80	49.62	49.62	77.97	71.72	71.72
IRT 24-24-8	1-1/2	38.10	1-1/2	38.10	1/2	12.70	10.41	2	50.80	2-1/4	57.15	2-1/4	57.15	7/8	22.22	50.80	50.80	44.58	77.97	77.97	54.74
IRT 24-24-12	1-1/2	38.10	1-1/2	38.10	3/4	19.05	15.74	2	50.80	2-1/4	57.15	2-1/4	57.15	1-1/8	28.57	50.80	50.80	44.58	77.97	77.97	54.74
IRT 24-24-16	1-1/2	38.10	1-1/2	38.10	1	25.40	22.35	2	50.80	2-1/4	57.15	2-1/4	57.15	1-1/2	38.10	50.80	50.80	47.75	77.97	77.97	59.94

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

IRUE Reducing Union Elbow

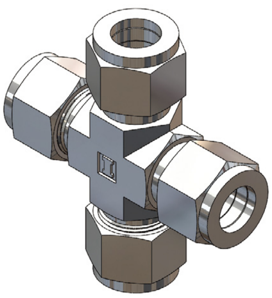


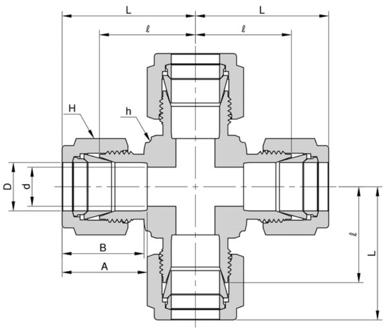


Connector Fractional Tubes

Part No.	Tube O.D. D				d min.	d min.	Width Across Flat						A	A1	B	B1	ℓ1	ℓ2	L1	L2
	D		D1				h		H		H1									
	inch	mm	inch	mm			inch	mm	inch	mm	inch	mm								
IRUE 4-2	1/4	6.35	1/8	3.17	4.82	2.28	1/2	12.70	9/16	14.28	7/6	11.11	15.24	12.7	17.78	15.24	19.55	17.9	26.92	24.50
IRUE 6-4	3/8	9.52	1/4	6.35	7.11	4.82	5/8	15.87	11/16	17.46	9/16	14.28	16.76	15.24	19.30	17.78	23.10	21.92	30.47	29.29
IRUE 8-4	1/2	12.70	1/4	6.35	10.41	4.82	13/16	20.64	7/8	22.22	9/16	14.28	22.86	15.24	21.84	17.78	25.90	24.38	36.06	31.77
IRUE 8-6	1/2	12.70	3/8	9.52	10.41	7.11	13/16	20.64	7/8	22.22	11/16	17.46	22.86	16.76	21.84	19.30	25.90	25.90	36.06	33.27
IRUE 12-6	3/4	19.05	3/8	9.52	15.74	7.11	1-1/16	26.98	1-1/8	28.57	11/16	17.46	24.38	16.76	21.84	19.30	29.46	29.46	39.62	36.83
IRUE 12-8	3/4	19.05	1/2	12.70	15.74	10.41	1-1/16	26.98	1-1/8	28.57	7/8	22.22	24.38	22.86	21.84	21.84	29.46	29.46	39.62	39.62
IRUE 16-8	1	25.40	1/2	12.70	22.35	10.41	1-3/8	34.92	1-1/2	38.10	7/8	22.22	31.24	22.86	26.41	21.84	36.83	34.54	49.27	44.70
IRUE 16-12	1	25.40	3/4	19.05	22.35	15.74	1-3/8	34.92	1-1/2	38.10	1-1/8	28.57	31.24	24.38	26.41	21.84	36.83	34.54	49.27	44.70

IUC Union Cross





Connector Fractional Tubes

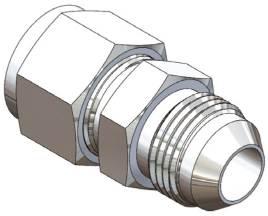
Part No.	Tube O.D. D		d min.	Width Across Flat				A	B	ℓ	L
				h		H					
	inch	mm		inch	mm	inch	mm				
IUC-1	1/16	1.58	1.27	3/8	9.52	5/16	7.93	8.63	10.92	14.00	17.88
IUC-2	1/8	3.17	2.28	3/8	9.52	7/16	11.11	12.70	15.24	15.74	22.35
IUC-3	3/16	4.76	3.04	1/2	12.70	1/2	12.70	13.71	16.00	17.79	24.38
IUC-4	1/4	6.35	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92
IUC-5	5/16	7.93	6.35	5/8	15.87	5/8	15.87	16.25	18.54	21.33	28.70
IUC-6	3/8	9.52	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48
IUC-8	1/2	12.70	10.41	13/16	20.63	7/8	22.22	22.86	21.84	25.90	36.06
IUC-10	5/8	15.87	12.70	13/16	20.63	1	25.40	24.38	21.84	28.70	38.80
IUC-12	3/4	19.05	15.74	1-1/16	26.98	1-1/8	28.57	24.38	21.84	29.71	39.87
IUC-14	7/8	22.22	18.28	1-3/16	30.00	1-1/4	31.75	25.90	21.84	34.54	44.70
IUC-16	1	25.40	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02

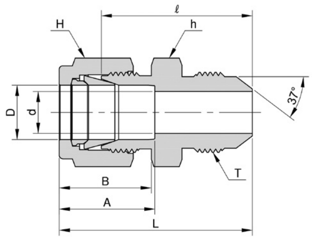
Connector Metric Tubes

Part No.	Tube O.D. D	d min.	Width Across Flat		A	B	ℓ	L
			h	H				
IUC-3M	3	2.4	9.5	12	12.9	15.3	15.7	22.3
IUC-6M	6	4.8	12.7	14	15.3	17.7	19.6	27.0
IUC-8M	8	6.4	15.8	16	16.2	18.6	21.3	28.8
IUC-10M	10	7.9	20.6	19	17.2	19.5	23.9	31.5
IUC-12M	12	9.5	20.6	22	22.8	22.0	25.9	36.0
IUC-16M	16	12.7	23.8	25	24.4	22.0	28.7	38.8
IUC-18M	18	15.1	27.0	30	24.4	22.0	29.7	39.8
IUC-20M	20	15.9	30.0	32	26.0	22.0	32.5	42.6
IUC-25M	25	21.8	34.9	38	31.3	22.0	36.8	49.1

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

IAU An Union

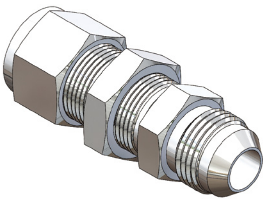


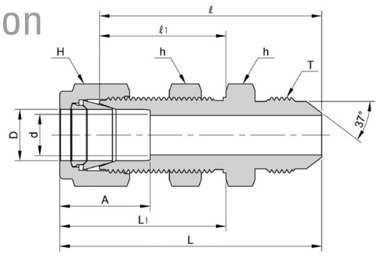


Connector Fractional Tube To AN Flared Tube

Part No.	Tube O.D. D		AN Tube Flare Size		Straight Thread T(U)	d min.	Width Across Flat				A	B	ℓ	L
							h		H					
	inch	mm	inch	mm			inch	mm	inch	mm				
IAU 1-2	1/16	1.59	1/8	3.17	5/16-24	1.27	7/16	11.11	5/16	7.93	8.63	10.92	23.36	27.17
IAU 2-2	1/8	3.17	1/8	3.17	5/16-24	1.52	7/16	11.11	7/16	11.11	12.70	15.24	24.89	31.49
IAU 2-4	1/8	3.17	1/4	6.35	7/16-20	2.28	1/2	12.70	7/16	11.11	12.70	15.24	28.44	35.05
IAU 4-4	1/4	6.35	1/4	6.35	7/16-20	4.31	1/2	12.70	9/16	14.28	15.24	17.78	30.22	37.59
IAU 5-5	5/16	7.93	5/16	7.93	1/2-20	5.84	9/16	14.28	5/8	15.87	16.25	18.54	30.98	38.35
IAU 6-4	3/8	9.52	1/4	6.35	7/16-20	4.31	5/8	15.87	11/16	17.46	16.76	19.30	32.25	39.62
IAU 6-6	3/8	9.52	3/8	9.52	9/16-18	7.11	5/8	15.87	11/16	17.46	16.76	19.30	32.25	39.62
IAU 8-8	1/2	12.70	1/2	12.70	3/4-16	9.90	13/16	20.64	7/8	22.22	22.86	21.84	35.81	45.97
IAU 12-12	3/4	19.05	3/4	19.05	1-1/16-12	15.49	1-1/8	28.58	1-1/8	28.58	24.38	21.84	43.18	53.34
IAU 16-16	1	25.40	1	25.40	1-5/16-12	21.33	1-3/8	34.92	1-1/2	38.10	31.24	26.41	49.27	61.46

IABU An Bulkhead Union

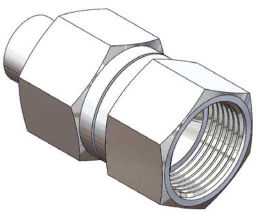


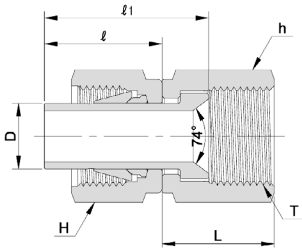


Connector Fractional Tube To AN Flared Tube

Part No.	Tube O.D. D		AN Tube Flare Size		Straight Thread T(U)	d min.	Width Across Flat				A	ℓ	$ℓ_1$	L	L	Panel Hole Drill Size	Panel Max Thickness
							h		H								
	inch	mm	inch	mm			inch	mm	inch	mm							
IABU 2-2	1/8	3.17	1/8	3.17	5/16-24	1.52	1/2	12.70	7/16	11.11	13.71	40.85	24.63	47.45	31.23	8.33	12.70
IABU 4-4	1/4	6.35	1/4	6.35	7/16-20	4.31	5/8	15.87	9/16	14.28	15.24	46.48	26.16	53.84	33.52	11.50	10.16
IABU 6-6	3/8	9.52	3/8	9.52	9/16-18	7.11	3/4	19.05	11/16	17.46	16.76	49.78	29.46	57.15	36.83	14.68	11.17
IABU 8-8	1/2	12.70	1/2	12.70	3/4-16	9.90	5/16	23.81	7/8	22.22	22.86	55.62	31.75	65.78	41.91	19.44	12.70
IABU 12-12	3/4	19.05	3/4	19.05	1-1/16-12	15.49	1-3/16	30.16	1-1/8	28.58	24.38	68.83	37.33	78.99	47.49	25.79	16.76
IABU 16-16	1	25.40	1	25.40	1-5/16-12	21.33	1-5/8	41.27	1-1/2	38.10	31.24	80.26	45.21	92.45	57.40	33.73	19.05

IAF An Flare



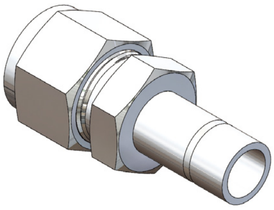


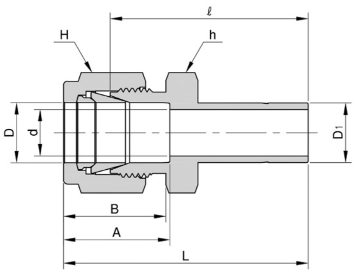
Connector Fractional Tube To AN Flared Tube

Part No.	Tube O.D. D		AN Tube Flare Size		Straight Thread T(U)	Width Across Flat				A	ℓ	$ℓ_1$
						h		H				
	inch	mm	inch	mm		inch	mm	inch	mm			
IAF 2-2	1/8	3.17	1/8	3.17	5/16-24	3/8	9.52	7/16	11.11	13.71	13.46	18.54
IAF 2-4	1/8	3.17	1/4	6.35	7/16-20	9/16	14.28	7/16	11.11	15.74	13.46	19.05
IAF 4-4	1/4	6.35	1/4	6.35	7/16-20	9/16	14.28	9/16	14.28	15.74	15.74	21.33
IAF 6-6	3/8	9.52	3/8	9.52	9/16-18	11/16	17.46	11/16	17.46	18.28	17.52	24.89
IAF 8-8	1/2	12.70	1/2	12.70	3/4-16	7/8	22.22	7/8	22.22	21.59	23.11	31.75

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

IR Reducer





Connector Fractional Tube To Fractional Iy-Lok Port

Part No.	Tube O.D .D				d min.	Width Across Flat				A	B	ℓ	L
	D		D_1			h		H					
	inch	mm	inch	mm		inch	mm	inch	mm				
IR 1-2	1/16	1.59	1/8	3.17	1.27	5/16	7.93	5/16	7.93	8.63	10.92	25.40	29.21
IR 1-4	1/16	1.59	1/4	6.35	1.27	5/16	7.93	5/16	7.93	8.63	10.92	27.68	31.49
IR 2-1	1/8	3.17	1/16	1.59	0.76	7/16	11.11	7/16	11.11	12.70	15.24	22.35	28.95
IR 2-2	1/8	3.17	1/8	3.17	2.03	7/16	11.11	7/16	11.11	12.70	15.24	26.92	33.52
IR 2-3	1/8	3.17	3/16	4.76	2.28	7/16	11.11	7/16	11.11	12.70	15.24	27.68	34.29
IR 2-4	1/8	3.17	1/4	6.35	2.28	7/16	11.11	7/16	11.11	12.70	15.24	29.46	36.06
IR 2-6	1/8	3.17	3/8	9.52	2.28	7/16	11.11	7/16	11.11	12.70	15.24	30.98	37.59
IR 2-8	1/8	3.17	1/2	12.70	2.28	9/16	14.28	7/16	11.11	12.70	15.24	37.59	44.19
IR 3-2	3/16	4.76	1/8	3.17	2.03	7/16	11.11	1/2	12.70	13.71	16.00	28.19	34.79
IR 3-4	3/16	4.76	1/4	6.35	3.04	7/16	11.11	1/2	12.70	13.71	16.00	30.48	37.08
IR 4-2	1/4	6.35	1/8	3.17	2.03	1/2	12.70	9/16	14.28	15.24	17.78	29.46	36.83
IR 4-3	1/4	6.35	3/16	4.76	3.04	1/2	12.70	9/16	14.28	15.24	17.78	30.22	37.59
IR 4-4	1/4	6.35	1/4	6.35	4.82	1/2	12.70	9/16	14.28	15.24	17.78	31.75	39.11
IR 4-5	1/4	6.35	5/16	7.93	4.82	1/2	12.70	9/16	14.28	15.24	17.78	32.51	39.87
IR 4-6	1/4	6.35	3/8	9.52	4.82	1/2	12.70	9/16	14.28	15.24	17.78	33.27	40.64
IR 4-8	1/4	6.35	1/2	12.70	4.82	9/16	14.28	9/16	14.28	15.24	17.78	38.86	46.22
IR 4-10	1/4	6.35	5/8	15.87	4.82	11/16	17.46	9/16	14.28	15.24	17.78	40.64	48.00
IR 4-12	1/4	6.35	3/4	19.05	4.82	13/16	20.64	9/16	14.28	15.24	17.78	40.38	47.75
IR 5-6	5/16	7.93	3/8	9.52	6.35	9/16	14.28	5/8	15.87	16.25	18.54	34.54	41.91
IR 5-8	5/16	7.93	1/2	12.70	6.35	9/16	14.28	5/8	15.87	16.25	18.54	40.13	47.49
IR 6-4	3/8	9.52	1/4	6.35	4.82	5/8	15.87	11/16	17.46	16.76	19.30	34.03	41.40
IR 6-6	3/8	9.52	3/8	9.52	7.11	5/8	15.87	11/16	17.46	16.76	19.30	35.81	43.18
IR 6-8	3/8	9.52	1/2	12.70	7.11	5/8	15.87	11/16	17.46	16.76	19.30	41.14	48.51
IR 6-10	3/8	9.52	5/8	15.87	7.11	11/16	17.46	11/16	17.46	16.76	19.30	42.92	50.29
IR 6-12	3/8	9.52	3/4	19.05	7.11	13/16	20.64	11/16	17.46	16.76	19.30	42.92	50.29
IR 8-4	1/2	12.70	1/4	6.35	4.82	13/16	20.64	7/8	22.22	22.86	21.84	34.79	44.95
IR 8-6	1/2	12.70	3/8	9.52	7.11	13/16	20.64	7/8	22.22	22.86	21.84	36.57	46.73
IR 8-8	1/2	12.70	1/2	12.70	9.40	13/16	20.64	7/8	22.22	22.86	21.84	42.16	52.32
IR 8-10	1/2	12.70	5/8	15.87	10.41	13/16	20.64	7/8	22.22	22.86	21.84	43.68	53.84
IR 8-12	1/2	12.70	3/4	19.05	10.41	13/16	20.64	7/8	22.22	22.86	21.84	43.68	53.84
IR 8-16	1/2	12.70	1	25.40	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	50.03	60.19
IR 10-12	5/8	15.87	3/4	19.05	12.70	15/16	23.81	1	25.40	24.38	21.84	44.45	54.61
IR 10-14	5/8	15.87	7/8	22.22	12.70	15/16	23.81	1	25.40	24.38	21.84	45.97	56.13
IR 10-16	5/8	15.87	1	25.40	12.70	1-1/16	26.98	1	25.40	24.38	21.84	50.80	60.96
IR 12-8	3/4	19.05	1/2	12.70	9.40	1-1/16	26.98	1-1/8	28.57	24.38	21.84	44.45	54.61
IR 12-16	3/4	19.05	1	25.40	15.74	1-1/16	26.98	1-1/8	28.57	24.38	21.84	52.32	62.48
IR 16-20	1	25.40	1-1/4	31.75	22.35	1-3/8	34.93	1-1/2	38.10	31.24	26.41	68.32	80.51
IR 16-24	1	25.40	1-1/2	38.10	22.35	1-5/8	41.28	1-1/2	38.10	31.24	26.41	76.96	89.15
IR 16-32	1	25.40	2	50.80	22.35	2-1/8	53.98	1-1/2	38.10	31.24	26.41	100.33	112.52
IR 20-24	1-1/4	31.75	1-1/2	38.10	27.68	1-7/8	47.63	1-7/8	57.15	41.14	38.86	82.04	104.14
IR 20-32	1-1/4	31.75	2	50.80	27.68	1-7/8	47.63	1-7/8	76.20	41.14	38.86	103.12	125.22
IR 24-32	1-1/2	38.10	2	50.80	34.03	2-1/4	57.15	2-1/4	76.20	50.03	45.21	104.14	131.31

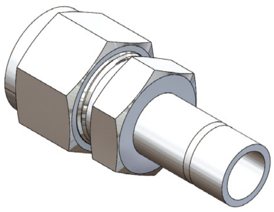
∗Connector Fractional Tube to Metric Iy-Lok port are available upon request.

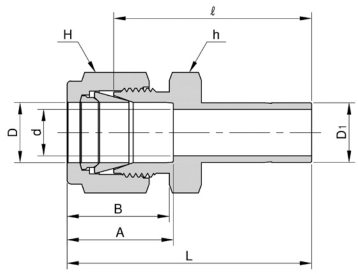
Tube Fittings

Always together, Always success Since 1993

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

IR Reducer



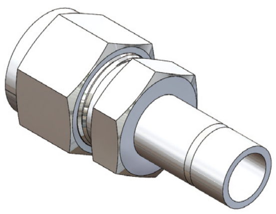


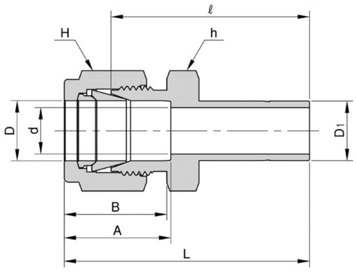
Connector Metric Tube To Metric Iy-Lok Port

Part No.	Tube O.D. D		d min.	Width Across Flat		A	B	ℓ	L
	D	D_1		h	H				
IR 2M-3M	2	3	1.7	12	12	12.9	15.3	26.9	35.3
IR 3M-4M	3	4	2.2	12	12	12.9	15.3	28.4	35.0
IR 3M-6M	3	6	2.4	12	12	12.9	15.3	29.5	36.1
IR 3M-10M	3	10	2.4	12	12	12.9	15.3	31.8	38.4
IR 4M-6M	4	6	2.4	12	12	13.7	16.1	30.5	37.1
IR 6M-3M	6	3	1.8	14	14	15.3	17.7	29.5	36.9
IR 6M-8M	6	8	4.8	14	14	15.3	17.7	32.5	39.9
IR 6M-10M	6	10	4.8	14	14	15.3	17.7	33.3	40.7
IR 6M-12M	6	12	4.8	14	14	15.3	17.7	38.9	46.3
IR 8M-6M	8	6	4.1	15	16	16.2	18.6	32.8	40.3
IR 8M-10M	8	10	6.4	15	16	16.2	18.6	34.5	42.0
IR 8M-12M	8	12	6.4	15	16	16.2	18.6	40.1	47.6
IR 10M-6M	10	6	4.1	18	19	17.2	19.5	34.8	42.4
IR 10M-12M	10	12	7.9	18	19	17.2	19.5	42.2	49.8
IR 10M-15M	10	15	7.9	18	19	17.2	19.5	43.7	51.3
IR 10M-18M	10	18	7.9	19	19	17.2	19.5	43.7	51.3
IR 12M-6M	12	6	4.1	22	22	22.8	22.0	34.8	44.9
IR 12M-10M	12	10	7.1	22	22	22.8	22.0	36.6	46.7
IR 12M-16M	12	16	9.5	22	22	22.8	22.0	43.7	53.8
IR 12M-18M	12	18	9.5	22	22	22.8	22.0	43.7	53.8
IR 12M-20M	12	20	9.5	22	22	22.8	22.0	46.0	56.1
IR 12M-22M	12	22	9.5	24	22	22.8	22.0	46.0	56.1
IR 12M-25M	12	25	9.5	27	22	22.8	22.0	52.3	62.4
IR 16M-12M	16	12	8.8	24	25	24.4	22.0	42.9	53.0
IR 18M-12M	18	12	8.8	27	30	24.4	22.0	44.5	54.6
IR 18M-16M	18	16	12.0	27	30	24.4	22.0	46.0	56.1
IR 18M-20M	18	20	15.1	27	30	24.4	22.0	47.5	57.6
IR 18M-22M	18	22	15.1	27	30	24.4	22.0	47.5	57.6
IR 18M-25M	18	25	15.1	27	30	24.4	22.0	52.3	62.4
IR 20M-16M	20	16	12.0	30	32	26.0	22.0	47.8	57.9
IR 20M-18M	20	18	13.9	30	32	26.0	22.0	47.8	57.9
IR 20M-22M	20	22	15.8	30	32	26.0	22.0	49.3	59.4
IR 20M-25M	20	25	15.8	30	32	26.0	22.0	54.1	64.2
IR 22M-18M	22	18	13.9	30	32	26.0	22.0	47.8	57.9
IR 22M-20M	22	20	15.1	30	32	26.0	22.0	49.3	59.4
IR 22M-25M	22	25	18.3	30	32	26.0	22.0	54.1	64.2
IR 25M-18M	25	18	13.9	35	38	31.3	26.5	50.8	63.1
IR 25M-20M	25	20	15.5	35	38	31.3	26.5	52.3	64.6

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

IR Reducer

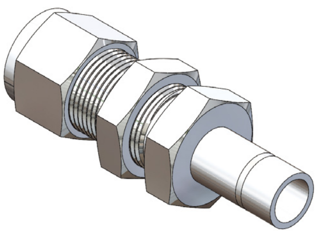


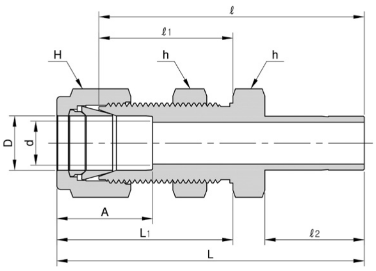


Connector Metric Tube To Fractional Iy-Lok Port

Part No.	Tube O.D. D			d min.	Width Across Flat		A	B	ℓ	L
	D	D_1			h	H				
		inch	mm							
IR 2M-2	2	1/8	3.17	1.7	12	12	12.9	15.3	26.9	33.5
IR 3M-2	3	1/8	3.17	2.0	12	12	12.9	15.3	26.9	33.5
IR 3M-4	3	1/4	6.35	2.4	12	12	12.9	15.3	29.5	36.1
IR 4M-4	4	1/4	6.35	2.4	12	12	13.7	16.1	30.5	37.1
IR 6M-2	6	1/8	3.18	2.0	14	14	15.3	17.7	29.5	36.9
IR 6M-4	6	1/4	6.35	4.8	14	14	15.3	17.7	31.8	39.2
IR 6M-5	6	5/16	7.93	4.8	14	14	15.3	17.7	32.5	39.9
IR 6M-6	6	3/8	9.52	4.8	14	14	15.3	17.7	33.3	40.7
IR 6M-8	6	1/2	12.70	4.8	14	14	15.3	17.7	38.9	46.3
IR 8M-6	8	3/8	9.52	6.4	15	16	16.2	18.6	34.5	42.0
IR 8M-8	8	1/2	12.70	6.4	15	16	16.2	18.6	40.1	47.6
IR 10M-6	10	3/8	9.52	6.9	18	19	17.2	19.5	36.6	44.2
IR 10M-8	10	1/2	12.70	7.9	18	19	17.2	19.5	42.2	49.8
IR 12M-8	12	1/2	12.70	9.4	22	22	22.8	22.0	42.2	52.3
IR 12M-12	12	3/4	19.05	9.5	22	22	22.8	22.0	43.7	53.8
IR 18M-12	18	3/4	19.05	14.7	27	30	24.4	22.0	46.0	56.1
IR 18M-16	18	1	25.40	15.1	27	30	24.4	22.0	52.3	62.4
IR 25M-16	25	1	25.40	20.2	35	38	31.3	26.5	57.2	69.5

IBR Bulkhead Reducer



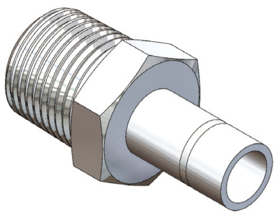


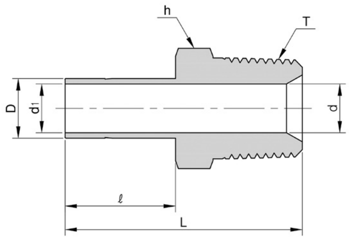
Connector Fractional Tube To Fractional Iy-Lok Port

Part No.	Tube O.D. D		d min.	Width Across Flat				A	A	B	A	ℓ	A	Panel Hole Drill Size	Panel Max. Thickness
				h		H									
	inch	mm		inch	mm	inch	mm								
IBR 2-2	1/8	3.17	2.03	1/2	12.70	7/16	11.11	12.70	42.92	24.63	13.45	49.53	31.24	8.33	12.70
IBR 4-4	1/4	6.35	4.32	5/8	15.87	9/16	14.28	15.24	48.51	26.16	15.74	55.88	33.52	11.50	10.16
IBR 6-6	3/8	9.52	6.86	3/4	19.05	11/16	17.46	16.76	53.84	29.46	17.50	61.21	36.83	14.68	11.17
IBR 8-8	1/2	12.70	9.40	15/16	23.81	7/8	22.22	22.86	62.73	31.75	23.11	72.89	41.91	19.44	12.70
IBR 10-10	5/8	15.87	11.94	1-1/16	26.98	1	25.40	24.38	65.02	32.51	24.70	75.18	42.67	22.62	12.70
IBR 16-16	1	25.40	20.32	1-5/8	41.28	1-1/2	38.10	31.24	88.13	45.21	31.70	100.33	57.40	33.73	19.05

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

IMA Male Adapter



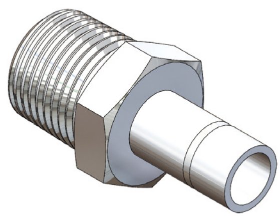


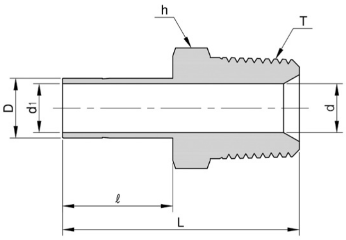
Connector Fractional Iy-Lok Port To Female NPT Thread

Part No.	Tube O.D. D		T* NPT	d min.	d_1	Width Across Flat h		ℓ	L
	inch	mm				inch	mm		
IMA 2-2N	1/8	3.17	1/8	4.82	2.03	7/16	11.11	13.45	29.50
IMA 2-4N	1/8	3.17	1/4	7.11	2.03	9/16	14.28	13.45	34.80
IMA 3-2N	3/16	4.76	1/8	4.82	3.04	7/16	11.11	14.20	30.22
IMA 3-4N	3/16	4.76	1/4	7.11	3.04	9/16	14.28	14.20	35.56
IMA 4-2N	1/4	6.35	1/8	4.32	4.32	7/16	11.11	15.75	31.80
IMA 4-4N	1/4	6.35	1/4	4.32	4.32	9/16	14.28	15.75	37.08
IMA 4-6N	1/4	6.35	3/8	4.32	4.32	11/16	17.46	15.75	37.84
IMA 4-8N	1/4	6.35	1/2	4.32	4.32	7/8	22.22	15.75	43.43
IMA 5-2N	5/16	7.93	1/8	4.82	5.58	7/16	11.11	16.80	32.76
IMA 5-4N	5/16	7.93	1/4	6.35	5.58	9/16	14.28	16.80	38.10
IMA 6-2N	3/8	9.52	1/8	4.82	6.85	7/16	11.11	17.50	33.50
IMA 6-4N	3/8	9.52	1/4	6.85	6.85	9/16	14.28	17.50	38.90
IMA 6-6N	3/8	9.52	3/8	6.85	6.85	11/16	17.46	17.50	39.60
IMA 6-8N	3/8	9.52	1/2	6.85	6.85	7/8	22.22	17.50	45.20
IMA 8-4N	1/2	12.70	1/4	7.11	9.39	9/16	14.28	23.20	44.50
IMA 8-6N	1/2	12.70	3/8	9.39	9.39	11/16	17.46	23.20	45.20
IMA 8-8N	1/2	12.70	1/2	9.39	9.39	7/8	22.22	23.20	50.50
IMA 10-6N	5/8	15.87	3/8	9.39	11.93	11/16	17.46	24.70	47.40
IMA 10-8N	5/8	15.87	1/2	11.93	11.93	7/8	22.22	24.70	52.30
IMA 10-12N	5/8	15.87	3/4	14.73	11.93	1-1/16	26.98	24.70	52.30
IMA 12-8N	3/4	19.05	1/2	11.93	14.73	7/8	22.22	24.70	52.30
IMA 12-12N	3/4	19.05	3/4	14.73	14.73	1-1/16	26.98	24.70	52.30
IMA 12-16N	3/4	19.05	1	20.32	14.73	1-3/8	34.92	24.70	57.91
IMA 14-12N	7/8	22.22	3/4	14.73	17.27	1-1/16	26.98	26.70	54.30
IMA 16-12N	1	25.40	3/4	15.74	20.32	1-1/16	26.98	31.70	58.70
IMA 16-16N	1	25.40	1	20.32	20.32	1-3/8	34.92	31.70	66.00
IMA 20-20N	1-1/4	31.75	1-1/4	25.91	-	1-3/4	44.45	40.00	80.26
IMA 24-24N	1-1/2	38.10	1-1/2	31.75	-	2-1/8	53.98	51.50	94.48
IMA 32-32N	2	50.80	2	43.69	-	2-3/4	69.85	68.40	119.38

∗ISO Tapered Thread, put "R" digit at the last of part number.

IMA Male Adapter





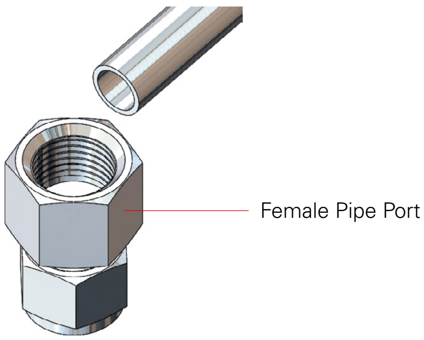
Connector Metric Iy-Lok Port To Female ISO Tapered Thread

Part No.	Tube O.D. D	T* PT	d min	d_1	Width Across Flat h	ℓ	L
IMA 6M-2R	6	1/8	4.6	4.6	12	15.75	32.8
IMA 6M-4R	6	1/4	4.6	4.6	14	15.75	38.1
IMA 8M-4R	8	1/4	6.3	6.3	14	16.50	39.1
IMA 10M-4R	10	1/4	7.7	7.7	14	17.50	39.9
IMA 10M-6R	10	3/8	7.7	7.7	18	17.50	40.6
IMA 10M-8R	10	1/2	11.9	7.7	22	17.50	45.2
IMA 12M-4R	12	1/4	7.1	8.8	14	23.50	46.5
IMA 12M-6R	12	3/8	8.8	8.8	17	23.50	46.5
IMA 12M-8R	12	1/2	11.9	8.8	22	23.50	51.8
IMA 18M-8R	18	1/2	11.9	13.9	22	24.90	53.2
IMA 18M-12R	18	3/4	15.9	13.9	27	24.90	53.2
IMA 28M-16R	28	1	22.2	-	35	31.70	74.7
IMA 28M-20R	28	1-1/4	22.5	-	46	31.70	76.2
IMA 32M-20R	32	1-1/4	27.4	-	46	40.00	81.0
IMA 38M-24R	38	1-1/2	33.3	-	55	51.50	92.2

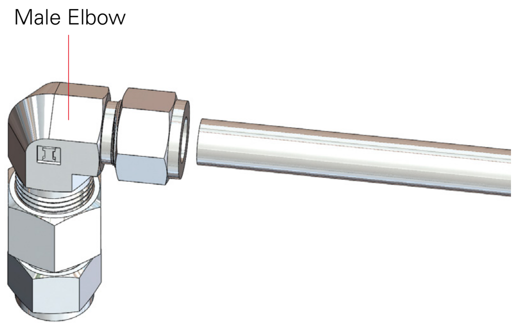
∗NPT Thread, put "N" digit at the last of part number.

Iy-Lok Adapter eliminates alignment problems

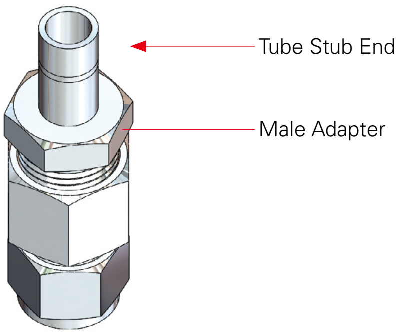
A. It is required to install tubing to a Female Port in a certain direction as shown.



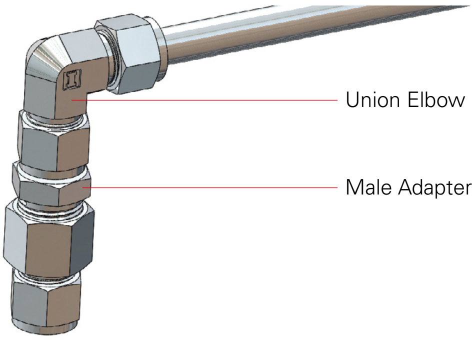
B. With pipe connection tight, the Male Elbow is directed to wrong direction.



C. To avoid this, simply tighten the pipe thread of Male Adapter into Female Port.

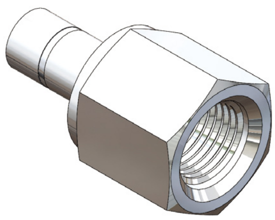


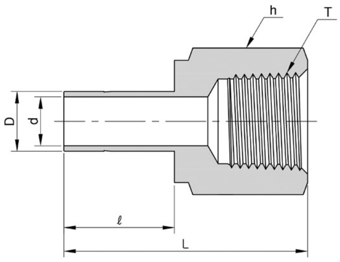
D. Connect Union Elbow to Male Adapter by tightening the Iy-Lok nut while keeping the elbow in the desired direction, Then install the tubing into the other end of Elbow.



※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

IFA Female Adapter





Connector Fractional Iy-Lok Port To Male NPT Thread

Part No.	Tube O.D. D		T* NPT	d min.	Width Across Flat h		ℓ	L
	inch	mm			inch	mm		
IFA 2-2N	1/8	3.17	1/8	2.03	9/16	14.28	13.45	31.50
IFA 2-4N	1/8	3.17	1/4	2.03	3/4	19.05	13.45	35.30
IFA 3-2N	3/16	4.76	1/8	3.04	9/16	14.28	14.20	32.00
IFA 3-4N	3/16	4.76	1/4	3.04	3/4	19.05	14.20	35.81
IFA 4-2N	1/4	6.35	1/8	4.32	9/16	14.28	15.75	33.02
IFA 4-4N	1/4	6.35	1/4	4.32	3/4	19.05	15.75	37.10
IFA 4-6N	1/4	6.35	3/8	4.32	7/8	22.22	15.75	39.37
IFA 4-8N	1/4	6.35	1/2	4.32	1-1/16	26.98	15.75	45.50
IFA 5-2N	5/16	7.93	1/8	5.59	9/16	14.28	16.80	34.29
IFA 5-4N	5/16	7.93	1/4	5.59	3/4	19.05	16.80	37.59
IFA 6-2N	3/8	9.52	1/8	6.86	9/16	14.28	17.50	34.29
IFA 6-4N	3/8	9.52	1/4	6.86	3/4	19.05	17.50	38.10
IFA 6-6N	3/8	9.52	3/8	6.86	7/8	22.22	17.50	40.38
IFA 6-8N	3/8	9.52	1/2	6.86	1-1/16	26.98	17.50	46.73
IFA 8-4N	1/2	12.70	1/4	9.40	3/4	19.05	23.20	43.43
IFA 8-6N	1/2	12.70	3/8	9.40	7/8	22.22	23.20	45.46
IFA 8-8N	1/2	12.70	1/2	9.40	1-1/16	26.98	23.20	51.80
IFA 10-6N	5/8	15.87	3/8	11.94	7/8	22.22	24.70	48.26
IFA 10-8N	5/8	15.87	1/2	11.94	1-1/16	26.98	24.70	53.84
IFA 10-12N	5/8	15.87	3/4	11.94	1-5/16	33.33	24.70	55.37
IFA 12-8N	3/4	19.05	1/2	14.73	1-1/16	26.98	24.70	52.83
IFA 12-12N	3/4	19.05	3/4	14.73	1-5/16	33.33	24.70	54.86
IFA 12-16N	3/4	19.05	1	14.73	1-5/8	41.27	24.70	58.42
IFA 14-12N	7/8	22.22	3/4	15.75	1-5/16	33.33	26.70	57.15
IFA 16-12N	1	25.40	3/4	20.32	1-5/16	33.33	31.70	60.70
IFA 16-16N	1	25.40	1	20.32	1-5/8	41.27	31.70	64.26
IFA 20-20N	1-1/4	31.75	1-1/4	25.91	2-1/8	53.97	40.00	77.72
IFA 24-24N	1-1/2	38.10	1-1/2	31.75	2-3/8	60.32	51.50	88.90
IFA 32-32N	2	50.80	2	43.69	2-7/8	73.02	68.40	107.44

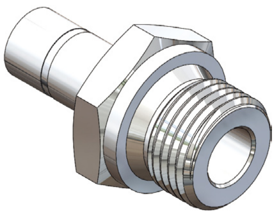
∗ISO Tapered Thread, put "R" digit at the last of part number.

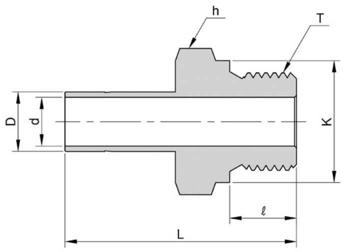
Connector Metric IY-LOK Port to ISO Tapered Thread

Part No.	Tube O.D. D	T* R(PT)	d min.	Width Across Flat h	ℓ	L
IFA 3M-2R	3	1/8	1.9	14	13.15	31.2
IFA 6M-2R	6	1/8	4.1	14	15.75	32.5
IFA 6M-4R	6	1/4	4.1	19	15.75	37.1
IFA 8M-4R	8	1/4	5.6	19	16.50	37.6
IFA 10M-4R	10	1/4	7.1	19	17.50	38.1
IFA 10M-6R	10	3/8	7.1	22	17.50	40.1
IFA 10M-8R	10	1/2	7.1	27	17.50	46.5
IFA 12M-4R	12	1/4	8.8	19	23.50	43.7
IFA 12M-6R	12	3/8	8.8	22	23.50	46.0
IFA 12M-8R	12	1/2	8.8	27	23.50	52.3
IFA 18M-12R	18	3/4	13.9	32	24.90	54.8

∗NPT Thread, put "N" digit at the last of part number.

IMA-G Male Adapte





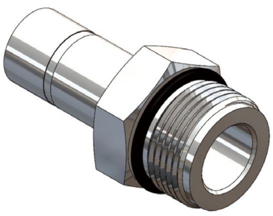
Connector Fractional Iy-Lok Port To Female ISO Parallel Thread

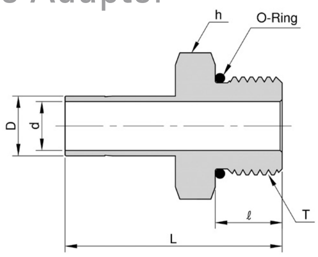
Part No.	Tube O.D. D		T G(PF)	d min.	Width Across Flat h		ℓ	L	K
	inch	mm			h	H			
IMA 2-2G	1/8	3.17	1/8	2.03	9/16	14.28	7.11	30.99	13.72
IMA 2-4G	1/8	3.17	1/4	2.03	3/4	19.05	11.17	35.81	17.78
IMA 4-2G	1/4	6.35	1/8	4.06	9/16	14.28	7.11	33.27	13.72
IMA 4-4G	1/4	6.35	1/4	4.32	3/4	19.05	11.17	38.10	17.78
IMA 6-4G	3/8	9.52	1/4	5.84	3/4	19.05	11.17	39.88	17.78
IMA 6-6G	3/8	9.52	3/8	6.86	7/8	22.22	11.17	40.64	21.59
IMA 8-4G	1/2	12.70	1/4	5.84	3/4	19.05	11.17	45.47	17.78
IMA 8-6G	1/2	12.70	3/8	7.88	7/8	22.22	11.17	46.23	21.59
IMA 8-8G	1/2	12.70	1/2	9.40	1-1/16	26.98	14.22	49.28	25.91
IMA 12-12G	3/4	19.05	3/4	14.73	1-5/16	33.33	15.75	54.88	31.75
IMA 16-16G	1	25.40	1	20.32	1-5/8	41.27	18.29	64.52	38.86

Connector Metric IY-LOK Port to ISO Parallel Thread

Part No.	Tube O.D. D	T* R(PT)	d min.	Width Across Flat h	ℓ	L	K
IMA 6M-2G	6	1/8	4.0	14	7.1	34.3	13.7
IMA 6M-4G	6	1/4	4.1	19	11.2	39.1	17.9
IMA 8M-4G	8	1/4	5.6	19	11.2	40.1	17.9
IMA 10M-4G	10	1/4	5.9	19	11.2	40.9	17.9
IMA 10M-6G	10	3/8	7.1	22	11.2	41.7	21.7
IMA 10M-8G	10	1/2	7.1	27	14.2	44.7	25.9
IMA 12M-4G	12	1/4	5.9	19	11.2	46.7	17.9
IMA 12M-6G	12	3/8	7.9	22	11.2	47.2	21.7
IMA 12M-8G	12	1/2	8.8	27	14.2	50.5	25.9
IMA 18M-8G	18	1/2	11.9	27	14.2	52.1	25.9
IMA 18M-12G	18	3/4	13.9	35	15.7	56.1	31.9
IMA 28M-16G	28	1	19.8	41	18.3	72.9	39.0
IMA 28M-20G	28	1-1/4	22.5	50	19.8	77.0	49.0
IMA 30M-20G	30	1-1/4	24.3	50	19.8	80.8	49.0
IMA 32M-20G	32	1-1/4	26.5	50	19.8	81.8	49.0
IMA 38M-24G	38	1-1/2	31.6	55	22.1	94.5	54.7

ISMA SAE/MS Male Adapter

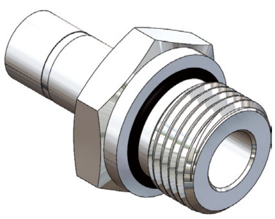


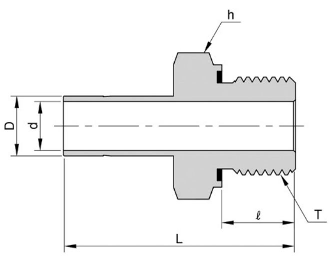


Connector Fractional Iy-Lok Port To SAE/MS Straight Thread Boss

Part No.	Tube O.D. D		Straight Thread T(U)	d min.	Width Across Flat h		ℓ	L	O-ring Uniform Size Number
	inch	mm			inch	mm			
ISMA 2-2U	1/8	3.17	5/16-24	2.03	7/16	11.11	7.62	30.48	-902
ISMA 4-4U	1/4	6.35	7/16-20	4.32	9/16	14.28	9.14	35.30	-904
ISMA 6-4U	3/8	9.52	7/16-20	5.08	9/16	14.28	9.14	37.08	-904
ISMA 6-6U	3/8	9.52	9/16-18	6.86	11/16	17.46	9.90	38.60	-906
ISMA 6-8U	3/8	9.52	3/4-16	6.86	7/8	22.22	11.17	40.64	-908
ISMA 8-6U	1/2	12.70	9/16-18	7.11	11/16	17.46	9.90	44.20	-906
ISMA 8-8U	1/2	12.70	3/4-16	9.40	7/8	22.22	11.17	46.22	-908
ISMA 10-10U	5/8	15.87	7/8-14	11.94	1	25.40	12.70	49.27	-910
ISMA 12-12U	3/4	19.05	1-1/16-12	14.73	1-1/4	31.75	14.98	53.34	-912
ISMA 16-16U	1	25.40	1-5/16-12	20.32	1-1/2	38.10	14.98	61.21	-916
ISMA 20-20U	1-1/4	31.75	1-5/8-12	25.91	1-7/8	47.62	14.98	71.37	-920
ISMA 24-24U	1-1/2	38.10	1-7/8-12	31.75	2-1/8	53.97	14.98	83.31	-924
ISMA 32-32U	2	50.80	2-1/2-12	43.69	2-3/4	69.85	14.98	107.44	-932

IOSA O-Seal Straight Thread Adapter

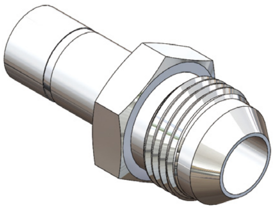


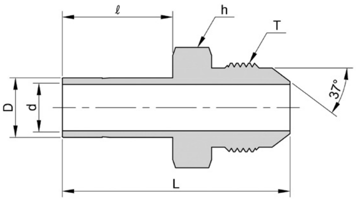


Connector Fractional Iy-Lok Port To O-Seal Female Straight Thread

Part No.	Tube O.D. D		Straight Thread T(U)	d min.	Width Across Flat h		ℓ	L	O-ring Uniform Size Number
	inch	mm			inch	mm			
IOSA 2-2U	1/8	3.17	5/16-24	2.03	9/16	14.28	8.63	32.51	-011
IOSA 3-3U	3/16	4.76	3/8-24	3.05	5/8	15.87	9.65	35.05	-012
IOSA 4-4U	1/4	6.35	7/16-20	4.32	3/4	19.05	10.41	39.11	-013
IOSA 5-5U	5/16	7.93	1/2-20	5.59	7/8	22.22	11.18	41.65	-112
IOSA 6-6U	3/8	9.52	9/16-18	6.85	15/16	23.81	11.94	43.18	-113
IOSA 8-8U	1/2	12.7	3/4-16	9.40	1-1/8	28.57	11.94	49.53	-116
IOSA 8-8U	1/2	12.7	3/4-16	9.40	1-1/8	28.57	11.94	49.53	-116

IAA AN Adapter

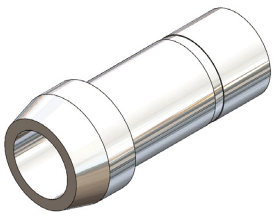


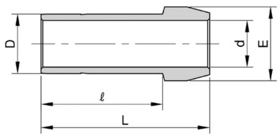


Connector Fractional Iy-Lok Port To AN Flared Tube

Part No.	Tube O.D. D		AN Tube O.D. D		Straight Thread T(U)	d min.	Width Across Flat h		L
	inch	mm	inch	mm			inch	mm	
IAA 4-4	1/4	6.35	1/4	6.35	7/16-20	4.32	1/2	12.7	37.08
IAA 6-4	3/8	9.52	1/4	9.52	7/16-20	4.32	1/2	12.7	38.86
IAA 6-6	3/8	9.52	3/8	9.52	9/16-18	6.86	5/8	15.87	39.62
IAA 8-8	1/2	12.70	1/2	12.70	3/4-16	9.40	13/16	20.64	48.51
IAA 12-12	3/4	19.05	3/4	19.05	1-1/16-12	14.73	1-1/8	28.57	56.13
IAA 16-16	1	25.4	1	25.4	1-5/16-12	20.32	1-3/8	34.92	65.53

IPC Port Connector





Connector Two Fractional Iy-Lok Ports

Part No.	Tube O.D. D		d min.	E	ℓ	L
	inch	mm				
IPC-1	1/16	1.58	0.76	3.30	10.66	13.72
IPC-2	1/8	3.17	2.03	6.09	15.75	22.35
IPC-4	1/4	6.35	4.32	9.39	18.79	24.89
IPC-5	5/16	7.93	5.59	10.92	20.06	25.91
IPC-6	3/8	9.52	6.86	12.70	20.32	26.67
IPC-8	1/2	12.70	9.40	15.74	25.90	36.32
IPC-12	3/4	19.05	14.73	22.09	27.68	37.85
IPC-16	1	25.40	20.32	28.44	34.54	49.28

Connector Two Metric Iy-Lok Ports

Part No.	Tube O.D. D	d min.	E	ℓ	L
IPC-3M	3	1.9	6.0	15.70	22.20
IPC-4M	4	2.2	7.0	16.67	23.21
IPC-6M	6	4.4	9.0	18.70	25.00
IPC-8M	8	5.6	11.0	20.00	26.00
IPC-10M	10	7.1	13.1	20.20	27.10
IPC-12M	12	8.8	15.0	26.70	36.20
IPC-15M	15	11.2	19.0	28.3	37.80
IPC-16M	16	12.0	19.0	28.3	37.80
IPC-18M	18	13.9	21.0	28.3	37.80
IPC-20M	20	15.5	23.0	29.20	39.40
IPC-22M	22	17.9	24.97	29.30	38.97
IPC-25M	25	19.9	28.0	35.70	49.30
IPC-28M	28	22.5	34.3	48.60	63.50
IPC-32M	32	26.5	39.5	52.80	69.70
IPC-38M	38	31.6	47.1	61.90	81.90

Installation Instruction

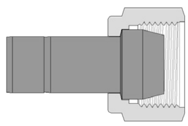


Fig. 1

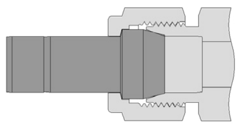


Fig. 2 (1/4 tum)

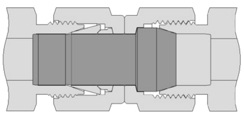


Fig. 3 (1-1/4 tum)

Machined Ferrule End

While holding fitting body steady, tighten the port Connector one-quarter turn from the finger-tight position.
For 1/16, 1/8, and 3/16 in.; 2, 3, and 4 mm tube fittings, tighten the port Connector one-eighth turn.
For over 1 in. and over 25 mm tube fittings, tighten the port Connector one-quarter turn.

Reassembly

You may disassemble and reassemble Iy-Lok port Connectors many times. Make subsequent connections by slightly tightening with a wrench after snugging the nut by hand.

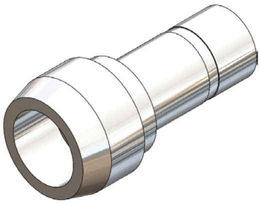
Tube Adapter End

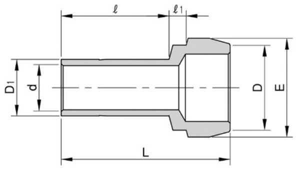
1. Insert the tube adapter into the Iy-Lok tube fitting. Make sure that the tube adapter rests firmly on the shoulder of the tube fitting body and that the nut is finger-tight (Fig. 3).
2. Mark the nut at the 6 o'clock position.
3. While holding fitting body steady, tighten the nut one and 1-1/4 turns to the 9 o'clock position. For 1/16, 1/8, and 3/16 in.; 2, 3, and 4 mm tube fittings, tighten the nut only 3/4 turn to the 3 o'clock position.

Reassembly

See Iy-Lok tube fitting reassembly, page 12.

IRPC Reducing Port Connector





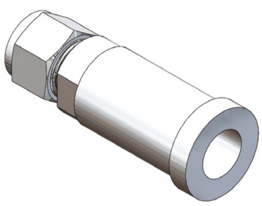
Connector Two Fractional Iy-Lok Ports

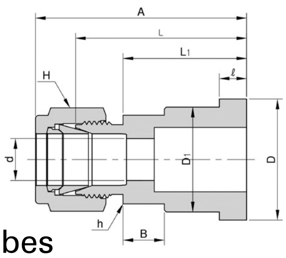
Part No.	Tube O.D. D		Reduced O.D. D_1		d min.	E	ℓ	$ℓ_1$	L
	inch	mm	inch	mm					
IRPC 2-1	1/8	3.17	1/16	1.59	0.76	6.09	9.14	2.03	18.30
IRPC 4-1	1/4	6.35	1/16	1.59	0.76	9.36	9.65	3.55	19.05
IRPC 4-2	1/4	6.35	1/8	3.17	2.28	9.36	13.71	3.30	22.86
IRPC 6-2	3/8	9.52	1/8	3.17	2.28	12.7	13.71	3.81	23.37
IRPC 6-4	3/8	9.52	1/4	6.35	4.82	12.7	16.25	3.30	25.40
IRPC 8-4	1/2	12.70	1/4	6.35	4.82	15.74	16.25	3.81	29.72
IRPC 8-6	1/2	12.70	3/8	9.52	7.11	15.74	17.78	3.30	30.73
IRPC 12-8	3/4	19.05	1/2	12.70	9.90	22.09	24.38	3.81	37.85
IRPC 16-8	1	25.40	1/2	12.70	9.90	28.44	24.38	4.82	42.93
IRPC 16-12	1	25.40	3/4	19.05	14.98	28.44	26.16	4.06	43.69

Connector Two Metric Iy-Lok Ports

Part No.	Tube O.D. D	Reduced O.D. D_1	d min.	E	ℓ	$ℓ_1$	L
IRPC 6M-3M	6	3	1.9	9.0	13.80	3.2	22.90
IRPC 8M-6M	8	6	4.1	11.0	16.30	3.2	25.40
IRPC 10M-6M	10	6	4.1	13.1	16.30	3.6	25.80
IRPC 10M-8M	10	8	5.6	13.1	17.00	3.4	26.30
IRPC 12M-6M	12	6	4.1	15.0	16.30	3.8	29.60
IRPC 12M-8M	12	8	5.6	15.0	17.00	3.6	30.10
IRPC 12M-10M	12	10	7.1	15.0	17.80	3.3	30.60
IRPC 16M-6M	16	6	4.1	19.0	15.75	3.6	29.37
IRPC 16M-12M	16	12	8.8	19.0	24.40	3.6	37.50
IRPC 28M-25M	28	25	19.9	34.3	33.00	8.2	56.50
IRPC 32M-25M	32	25	19.9	39.5	33.00	9.9	60.30
IRPC 38M-25M	38	25	19.9	47.1	33.00	12.3	65.80

ILFC Lapped Flange Connector





Connector Fractional Tubes

Part No.	Tube Size	Flange Seat	Dimensions A	B	L	L_1	ℓ	H		h		D	D1	d min	Flange Surface Finish (Ra)
								inch	mm	inch	mm				
ILFC 4 -SM	1/4	SM	80.8	8.9	74.9	56.5	6.5	9/16	14.28	11/16	17.46	35	22.2	4.8	3.2 - 6.3 Micrometer
ILFC 4 -SR	1/4	SR	80.8	8.9	74.9	56.5	6.5	9/16	14.28	11/16	17.46	35	22.2	4.8	6.3 - 12.5 Micrometer
ILFC 6 -SM	3/8	SM	82.3	8.9	74.9	56.5	6.5	11/16	17.46	11/16	17.46	35	22.2	7.1	3.2 - 6.3 Micrometer
ILFC 6 -SR	3/8	SR	82.3	8.9	74.9	56.5	6.5	11/16	17.46	11/16	17.46	35	22.2	7.1	6.3 - 12.5 Micrometer
ILFC 8 -SM	1/2	SM	85.1	8.9	74.9	56.5	6.5	7/8	22.22	3/4	19.05	35	22.2	10.4	3.2 - 6.3 Micrometer
ILFC 8 -SR	1/2	SR	85.1	8.9	74.9	56.5	6.5	7/8	22.22	3/4	19.05	35	22.2	10.4	6.3 - 12.5 Micrometer

Lapped Flange Connector tube Connector provieds easy joint between process lines and instruments designed for use with lap joint flanges to ANSI B 16.5 or BS 1560. Both "smooth(SM)" and "serrated(SE)" surface finishes are available. For identification of serrated surface finish, groove is provided.

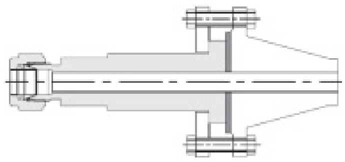
Flange Seal Finish

Smooth Identifier : SM

Serrated Identifier : SR

Installation Instruction

Lapped Flange Connector installation with slip-on and welding neck flanges, using sealing gasket on the flange seal face.



※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

SAE/MS Internal Straight Thread Boss

These Fitting are useful in that the direction of tube end can be oriented info desired direction with ease.
They can be installed on tanks or vessels without welding or brazing.

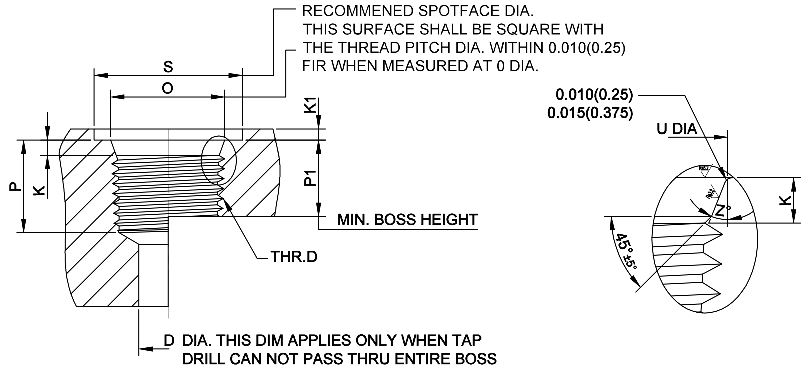


Table for SAE/MS Straight Thread Boss

〈Reprinted from "Hydraulic Tube Fitting-SAE J1926 / 1 Port Dimensions of SAE Standard."〉

Tube O.D.	Thread Size	D Min.	P_1 Min.	K	O Min.	P Min.	U	S	K_1 Max.	Y
1/8	5/16 - 24	1.6	10.0	1.9	11	12.0	9.1	17	1.6	12°
3/16	3/8 - 24	3.2	10.0	1.9	13	12.0	10.7	19	1.6	12°
1/4	7/16 - 20	4.4	11.5	2.4	15	14.0	12.4	21	1.6	12°
5/16	1/2 - 20	6.0	11.5	2.4	16	14.0	14.0	23	1.6	12°
3/8	9/16 - 18	7.5	12.7	2.5	18	15.6	15.6	25	1.6	12°
1/2	3/4 - 16	10.0	14.3	2.5	22	17.5	20.6	30	2.4	15°
5/8	7/8 - 14	12.5	16.7	3.3	26	20.0	23.9	34	2.4	15°
3/4	1-1/16 - 12	16.0	19.0	3.3	32	23.0	29.2	41	2.4	15°
7/8	1-3/16 - 12	18.0	19.0	3.3	35	23.0	32.3	45	2.4	15°
1	1-5/16 - 12	21.0	19.0	3.3	38	23.0	35.5	49	3.2	15°
1-1/4	1-5/8 - 12	27.0	19.0	3.3	48	23.0	43.5	58	3.2	15°
1-1/2	1-7/8 - 12	33.0	19.0	3.3	54	23.0	49.8	65	3.2	15°
2	2-1/2 - 12	70.0	19.0	3.3	70	23.0	65.7	88	3.2	15°

a. Diameter U shall be concentric with thread pitch diameter within 0.13 full indicator reading(FIR), and shall be free from longitudinal and spiral tool marks. Angular tool marks up to 2.5 Micro meter max. shall be permissible.

b. Maximum recommended spotface depth to permit sufficient wrench grip for proper tightening of the fitting or locknut If the surface of boss surface is machined, dimensions Y and S does not need to be apply as long as R0.25/0.375 is maintained to avoid damage to the O-Ring during installation.

c. Tap drill depth given require use of a bottoming taps to produce the specified full thread lengths.
Where standard taps are used, the tap drill depths must be increased accordingly.

d. Figures are for reference only, as any boss can be used for a tubing size depending upon other design criteria.

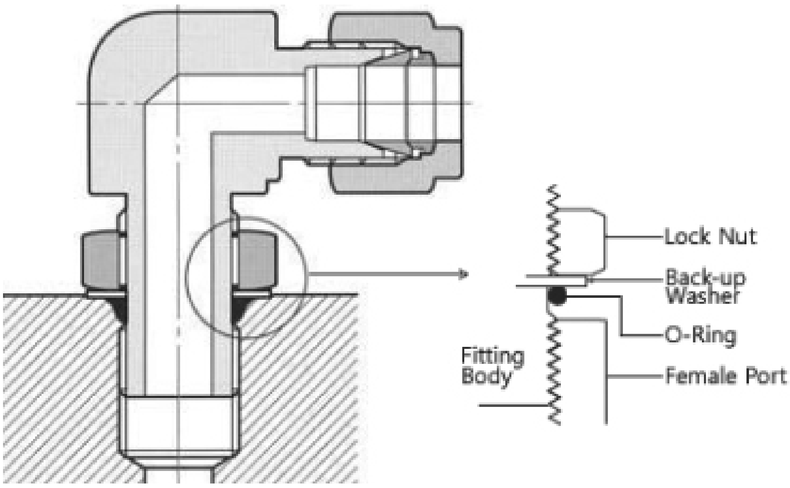
Connector Two Metric Iy-Lok Ports

Part No.	Tube O.D.	Thread Size	O-Ring Size No.	Dimension	
				I.D. mm	Cross Section mm
2	1/8	5/16 - 24	902	6.07	1.63
3	3/16	3/8 - 24	903	7.65	1.63
4	1/4	7/16 - 20	904	8.92	1.83
5	5/16	1/2 - 20	905	10.52	1.83
6	3/8	9/16 - 18	906	11.89	1.98
8	1/2	3/4 - 16	908	16.36	2.21
10	5/8	7/8- 14	910	19.18	2.46
12	3/4	1-1/16 - 12	912	23.47	2.95
14	7/8	1-3/16 - 12	914	26.59	2.95
16	1	1-5/16 - 12	916	29.74	2.95
20	1-1/4	1-5/8 - 12	920	37.47	3.00
24	1-1/2	1-7/8 - 12	924	43.69	3.00
32	2	2-1/2 - 12	932	59.36	3.00

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Adjustable **SAE/MS** Straight Thread Fittings

These adjustable or positionable fittings are useful in that the direction of Iy-Lok two ferrule tube fittings end can be oriented into desired direction with ease.
They can be installed on tanks or vessels without welding or brazing.
Viton O-Ring is standard, and other materials are available upon request.



Inatallation Instruction

a. Lubricate O-ring with a lubricant that is compatible with the system.
O-Ring material and place it over the groove close to metal back-up washer.

b Screw fitting into the SAE straight thread port until the back-up washer contacts the face of the boss.

c. Position the fitting by backing it out no more than one turn. (No more than one turn backing out.)

d. Hold the fitting in position and tighten the lock nut until the washer contacts the face of the boss. (See torque chart.)

Part No.	Straight Port		Adjustable Port	
	Torque (in-lbs)	(F.F.F.T.)	Torque (in-lbs)	(F.F.F.T.)
4	245 ± 10	1.0 ± .25	200 ± 10	1.5 ± 25
6	630 ± 25	1.5 ± .25	400 ± 10	1.5 ± 25
8	1150 ± 50	1.5 ± .25	640 ± 10	1.5 ± 25
10	1550 ± 50	1.5 ± .25	1125 ± 50	1.5 ± 25
12	2050 ± 50	1.5 ± .25	1450 ± 50	1.5 ± 25
16	3000 ± 50	1.5 ± .25	2150 ± 50	1.5 ± 25
20	3400 ± 100	1.5 ± .25	2800 ± 100	2.0 ± 25
24	4500 ± 100	1.5 ± .25	3450 ± 100	2.0 ± 25

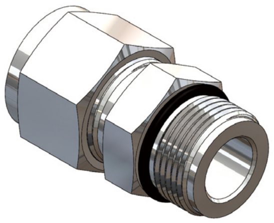
NOTES

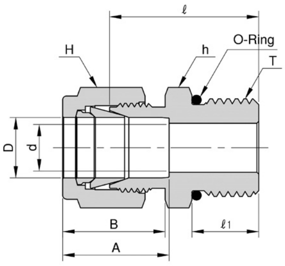
a. Restrain fitting body on adjustable if necessary in installation.

b.Values in charts are for assemblies with O-ring lubricated.

c. Use upper limits of torque ranges for stainless steel fittings.

ISMC SAE/MS Male Connector

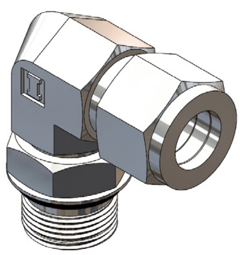


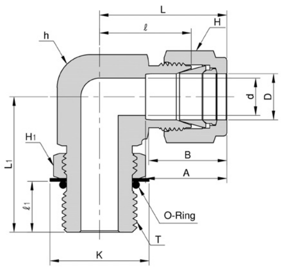


Connector Fractional TubeT to SAE / MS Straight Thread Boss

Part No.	Tube O.D. D		Straight Thread T(U)	d min.	Width Across Flat				A	B	ℓ	$ℓ_1$	L	O-Ring Uniform Size Number
					H		h							
	inch	mm			inch	mm	inch	mm						
ISMC 2-2U	1/8	3.17	5/16-24	2.28	7/16	11.11	7/16	11.11	12.70	15.24	23.26	7.62	29.97	-902
ISMC 2-4U	1/8	3.17	7/16-20	2.28	9/16	14.28	7/16	11.11	12.70	15.24	24.89	9.14	31.49	-904
ISMC 4-4U	1/4	6.35	7/16-20	4.82	9/16	14.28	9/16	14.28	15.24	17.78	26.67	9.14	34.03	-904
ISMC 4-6U	1/4	6.35	9/16-18	4.82	11/16	17.46	9/16	14.28	15.24	17.78	28.19	9.90	35.56	-906
ISMC 4-8U	1/4	6.35	3/4-16	4.82	7/8	22.22	9/16	14.28	15.24	17.78	30.22	11.17	37.59	-908
ISMC 4-10U	1/4	6.35	7/8-14	4.82	1	25.40	9/16	14.28	15.24	17.78	33.27	12.70	40.64	-910
ISMC 5-5U	5/16	7.93	1/2-20	5.84	5/8	15.87	5/8	15.87	16.25	18.54	27.43	9.14	34.79	-905
ISMC 6-4U	3/8	9.52	7/16-20	5.08	5/8	15.87	11/16	17.46	16.76	19.30	28.19	9.14	35.56	-904
ISMC 6-6U	3/8	9.52	9/16-18	7.11	11/16	17.46	11/16	17.46	16.76	19.30	29.71	9.90	37.08	-906
ISMC 6-8U	3/8	9.52	3/4-16	7.11	7/8	22.22	11/16	17.46	16.76	19.30	31.75	11.17	39.11	-908
ISMC 6-10U	3/8	9.52	7/8-14	7.11	1	25.40	11/16	17.46	16.76	19.30	34.79	12.70	42.16	-910
ISMC 8-6U	1/2	12.70	9/16-18	7.11	13/16	20.64	7/8	22.22	22.86	21.84	28.95	9.90	39.11	-906
ISMC 8-8U	1/2	12.70	3/4-16	10.41	7/8	22.22	7/8	22.22	22.86	21.84	31.75	11.17	41.91	-908
ISMC 8-10U	1/2	12.70	7/8-14	10.41	1	25.40	7/8	22.22	22.86	21.84	34.79	12.70	44.95	-910
ISMC 8-12U	1/2	12.70	1-1/16-12	10.41	1-1/4	31.75	7/8	22.22	22.86	21.84	38.86	14.98	49.02	-912
ISMC 10-8U	5/8	15.87	3/4-16	10.66	15/16	23.81	1	25.40	24.38	21.84	31.75	11.17	41.91	-908
ISMC 10-10U	5/8	15.87	7/8-14	12.70	1	25.40	1	25.40	24.38	21.84	35.05	12.70	45.21	-910
ISMC 12-8U	3/4	19.05	3/4-16	10.66	1-1/16	26.98	1-1/8	28.57	24.38	21.84	35.81	11.17	45.97	-908
ISMC 12-12U	3/4	19.05	1-1/16-12	15.74	1-1/4	31.75	1-1/8	28.57	24.38	21.84	38.86	14.98	49.02	-912
ISMC 14-14U	7/8	22.22	1-3/16-12	18.28	1-3/8	34.92	1-1/4	31.75	25.90	21.84	38.86	14.98	49.02	-914
ISMC 16-12U	1	25.40	1-1/16-12	16.76	1-3/8	34.92	1-1/2	38.10	31.24	26.41	41.14	14.98	53.34	-912
ISMC 16-16U	1	25.40	1-5/16-12	22.35	1-1/2	38.10	1-1/2	38.10	31.24	26.41	42.16	14.98	54.35	-916
ISMC 20-20U	1-1/4	31.75	1-5/8-12	27.68	1-7/8	47.63	1-7/8	47.63	41.14	38.86	46.22	14.98	68.32	-920
ISMC 24-24U	1-1/2	38.10	1-7/8-12	33.90	2-1/8	53.98	2-1/4	57.15	50.03	45.21	50.54	14.98	77.72	-924
ISMC 32-32U	2	50.80	2-1/2-12	45.97	2-3/4	69.85	3	76.20	67.56	62.73	64.26	14.98	101.60	-932

ISME Positionable SAE/MS Male Elbow



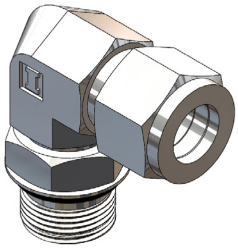


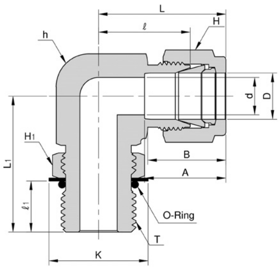
Connector Fractional TubeT to SAE / MS Straight Thread Boss

Part No.	Tube O.D. D		Straight Thread T(U)	d min.	Width Across Flat						A	B	ℓ	$ℓ_1$	L	L_1	K	O-Ring Uniform Size Number
					h		H		H_1									
	inch	mm			inch	mm	inch	mm	inch	mm								
ISME 4-4U	1/4	6.35	7/16-20	4.82	1/2	12.70	9/16	14.28	9/16	14.28	15.24	17.78	21.08	9.90	28.44	28.44	16.51	-904
ISME 4-6U	1/4	6.35	9/16-18	4.82	5/8	15.87	9/16	14.28	9/16	14.28	15.24	17.78	23.11	11.17	30.48	32.25	20.06	-906
ISME 5-5U	5/16	7.93	1/2-20	5.84	9/16	14.28	5/8	15.87	5/8	15.87	16.25	18.54	22.86	9.90	30.22	29.46	18.28	-905
ISME 6-6U	3/8	9.52	9/16-18	7.11	5/8	15.87	11/16	17.46	11/16	17.46	16.76	19.30	24.63	11.17	32.00	32.25	20.06	-906
ISME 6-8U	3/8	9.52	3/4-16	7.11	13/16	20.64	11/16	17.46	7/8	22.22	16.76	19.30	27.43	12.70	34.79	37.84	25.65	-908
ISME 8-8U	1/2	12.70	3/4-16	10.41	13/16	20.64	7/8	22.22	7/8	22.22	22.86	21.84	27.43	12.70	37.59	37.84	25.65	-908
ISME 10-10U	5/8	15.87	7/8-14	12.70	1	25.40	1	25.40	1	25.40	24.38	21.84	29.46	14.22	39.62	43.43	29.46	-910
ISME 12-12U	3/4	19.05	1-1/16-12	15.74	1-1/16	26.98	1-1/8	28.57	1-1/4	31.75	24.38	21.84	31.24	16.76	41.40	48.76	36.57	-912
ISME 14-14U	7/8	22.22	1-3/16-12	18.28	1-1/4	31.75	1-1/4	31.75	1-3/8	34.92	25.90	21.84	33.02	16.76	43.18	50.54	40.38	-914
ISME 16-16U	1	25.40	1-5/16-12	22.35	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	31.24	26.41	38.35	16.76	50.54	53.59	43.94	-916
ISME 20-20U	1-1/4	31.75	1-5/8-12	27.68	1-11/16	42.76	1-7/8	47.63	1-7/8	47.63	41.14	38.86	45.72	16.76	67.81	58.16	54.86	-920
ISME 24-24U	1-1/2	38.10	1-7/8-12	33.90	2	50.80	2-1/4	57.15	2-1/8	53.98	50.03	45.21	50.80	16.76	77.97	60.45	62.23	-924
ISME 32-32U	2	50.80	2-1/2-12	45.97	2-3/4	69.85	3	76.20	2-3/4	69.85	67.56	62.73	69.85	16.76	107.18	71.62	80.26	-932

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

ISME Positionable SAE/MS Male Elbow





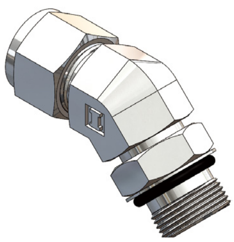
Connector Fractional Tube To ISO Parallel Thread

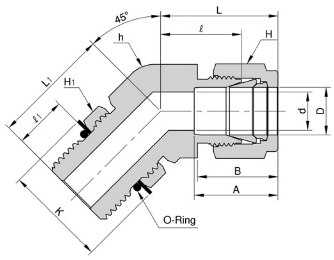
Part No.	Tube O.D. D		Straight Thread T(U)	d min.	Width Across Flat						A	B	ℓ	$ℓ_1$	L	L_1	K	O-Ring Uniform Size Number
					h		H		H_1									
	inch	mm			inch	mm	inch	mm	inch	mm								
ISME 4-2G	1/4	6.35	1/8	4.06	1/2	12.70	9/16	14.28	9/16	14.28	15.24	17.78	19.6	8.12	26.92	26.42	15.24	P8
ISME 4-4G	1/4	6.35	1/4	4.82	5/8	15.87	11/16	17.46	3/4	19.05	15.24	17.78	21.6	9.14	28.95	32.30	20.32	-111
ISME 6-4G	3/8	9.52	1/4	5.84	5/8	15.87	11/16	17.46	3/4	19.05	16.76	19.30	23.1	9.14	30.48	32.30	20.32	-111
ISME 6-6G	3/8	9.52	3/8	7.11	13/16	20.64	11/16	17.46	3/4	19.05	16.76	19.30	25.9	9.39	33.27	37.10	24.38	-113
ISME 8-4G	1/2	12.70	1/4	5.84	13/16	20.64	7/8	22.22	7/8	22.22	22.86	21.84	25.9	9.14	36.06	35.10	20.32	-111
ISME 8-6G	1/2	12.70	3/8	7.87	13/16	20.64	7/8	22.22	7/8	22.22	22.86	21.84	25.9	9.39	36.06	37.10	24.38	-113
ISME 8-8G	1/2	12.70	1/2	10.41	15/16	23.81	7/8	22.22	1-1/16	26.98	22.86	21.84	27.9	12.95	38.10	43.40	29.46	P18
ISME 12-8G	3/4	19.05	1/2	11.93	1-1/16	26.98	1-1/8	28.57	1-1/16	26.98	24.38	21.84	29.7	12.95	39.87	45.21	29.46	P18
ISME 12-12G	3/4	19.05	3/4	15.74	1-1/16	26.98	1-1/8	28.57	1-3/8	34.92	24.38	21.84	29.7	12.95	39.87	48.77	36.32	-119
ISME 16-16G	1	25.40	1	19.81	1-3/8	34.92	1-1/2	38.10	1-5/8	41.28	31.24	26.41	36.8	13.97	49.02	53.60	46.22	-217

Connector Metric Tube To ISO Parallel Thread

Part No.	Tube O.D. D	T G(PF)	d min.	Width Across Flat			A	B	ℓ	$ℓ_1$	L	L_1	K	LO-Ring Uniform Size Number
				h	H	H_1								
ISME 6M-2G	6	1/8	4.0	12.7	14	14.28	15.3	17.7	19.6	8.1	27.0	26.4	15.2	P8
ISME 6M-4G	6	1/4	4.8	15.8	14	19.05	15.3	17.7	21.6	9.1	29.0	32.3	20.3	-111
ISME 8M-2G	8	1/8	4.0	14.2	16	14.28	16.2	18.6	21.3	8.1	28.8	27.4	15.2	P8
ISME 8M-4G	8	1/4	5.9	15.8	16	19.05	16.2	18.6	22.4	9.1	29.9	32.2	20.3	-111
ISME 10M-4G	10	1/4	5.9	20.6	19	19.05	17.2	19.5	25.9	9.1	33.5	35.0	24.4	-113
ISME 10M-6G	10	3/8	7.9	20.6	19	22.22	17.2	19.5	25.9	9.4	33.5	37.1	20.3	-111
ISME 12M-4G	12	1/4	5.9	20.6	22	19.05	22.8	22.0	25.9	9.1	36.0	35.0	24.4	-113
ISME 12M-6G	12	3/8	7.9	20.6	22	22.22	22.8	22.0	25.9	9.4	36.0	37.1	32.0	-113
ISME 12M-8G	12	1/2	9.5	23.8	22	26.98	22.8	22.0	27.9	13.0	38.0	43.4	36.3	P18

ISME 45D SAE/MS 45° Male Elbow



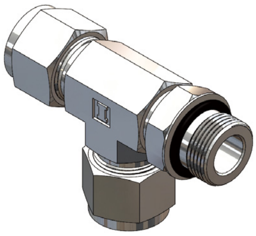
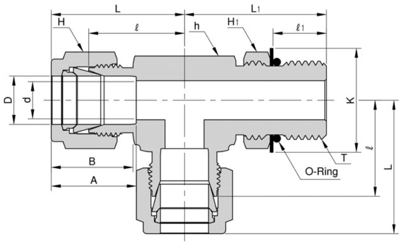


Connector Fractional Tube To SAE / MS Straight Thread Boss

Part No.	Tube O.D. D		Straight Thread T(U)	d min.	Width Across Flat						A	B	ℓ	$ℓ_1$	L	L_1	K	O-Ring Uniform Size Number
					h		H		H_1									
	inch	mm			inch	mm	inch	mm	inch	mm								
ISME45D 4-4U	1/4	6.35	7/16-20	4.82	1/2	12.70	9/16	14.28	9/16	14.28	15.24	17.78	18.28	9.90	25.65	25.65	16.51	904
ISME45D 6-6U	3/8	9.52	9/16-18	7.11	5/8	15.87	11/16	17.46	11/16	17.46	16.76	19.30	20.57	11.17	27.94	28.19	20.06	-906
ISME45D 8-8U	1/2	12.70	3/4-16	10.41	13/16	20.64	7/8	22.22	7/8	22.22	22.86	21.84	21.84	12.70	32.00	32.25	25.65	-908
ISME45D 12-12U	3/4	19.05	1-1/16-12	15.74	1-1/8	28.58	1-1/8	28.58	1-1/4	31.75	24.38	21.84	29.71	16.76	39.87	47.24	36.57	-912
ISME45D 16-16U	1	25.40	1-5/16-12	22.35	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	31.24	26.41	35.30	16.76	47.49	50.54	43.94	-916

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

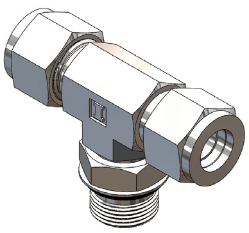
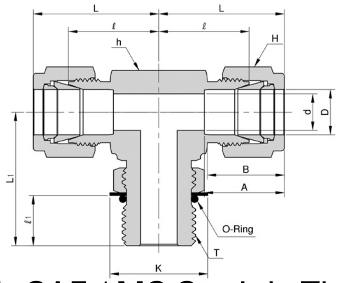
ISMRT SAE/MS Male Run Tee

Connector Fractional Tube To SAE / MS Straight Thread Boss

Part No.	Tube O.D. D		Straight Thread T(U)	d min.	Width Across Flat h		Width Across Flat H		Width Across Flat H_1		A	B	ℓ	$ℓ_1$	L	L_1	K	O-Ring Uniform Size Number
	inch	mm			inch	mm	inch	mm	inch	mm								
ISMRT 4-4U	1/4	6.35	7/16-20	4.82	1/2	12.70	9/16	14.28	9/16	14.28	15.24	17.78	21.08	9.90	28.44	28.44	16.51	-904
ISMRT 6-6U	3/8	9.52	9/16-18	7.11	5/8	15.87	11/16	17.46	11/16	17.46	16.76	19.30	24.63	11.17	32.00	32.25	20.06	-906
ISMRT 8-8U	1/2	12.70	3/4-16	10.41	13/16	20.64	7/8	22.22	7/8	22.22	22.86	21.84	27.43	12.70	37.59	37.84	25.65	-908
ISMRT 12-12U	3/4	19.05	1-1/16-12	15.74	1-1/8	26.98	1-1/8	28.58	1-1/4	31.75	24.38	21.84	31.24	16.76	41.40	48.76	36.57	-912
ISMRT 16-16U	1	25.40	1-5/16-12	22.35	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	31.24	26.41	38.35	16.76	50.54	50.54	43.94	-916
ISMRT 20-20U	1-1/4	31.75	1-5/8-12	27.68	1-11/16	42.86	1-7/8	47.63	1-7/8	47.63	41.14	38.86	45.72	16.76	67.81	58.16	54.86	-920
ISMRT 24-24U	1-1/2	38.10	1-7/8-12	33.90	2	50.80	2-1/4	57.15	2-1/8	53.98	50.03	45.21	50.80	16.76	77.97	60.45	62.23	-924
ISMRT 32-32U	2	50.80	2-1/2-12	45.97	2-3/4	69.85	3	76.20	2-3/4	69.85	67.56	62.73	69.85	16.76	107.18	71.62	80.26	-932

ISMBT SAE/MS Male Branch Tee

Connector Fractional Tube To SAE / MS Straight Thread Boss

Part No.	Tube O.D. D		Straight Thread T(U)	d min.	Width Across Flat h		Width Across Flat H		Width Across Flat H_1		A	B	ℓ	$ℓ_1$	L	L_1	K	O-Ring Uniform Size Number
	inch	mm			inch	mm	inch	mm	inch	mm								
ISMBT 4-4U	1/4	6.35	7/16-20	4.82	1/2	12.70	9/16	14.28	9/16	14.28	15.24	17.78	21.08	9.90	28.44	28.44	16.51	-904
ISMBT 6-6U	3/8	9.52	9/16-18	7.11	5/8	15.87	11/16	17.46	11/16	17.46	16.76	19.30	24.63	11.17	32.00	32.25	20.06	-906
ISMBT 8-8U	1/2	12.70	3/4-16	10.41	13/16	20.64	7/8	22.22	7/8	22.22	22.86	21.84	27.43	12.70	37.59	37.84	25.65	-908
ISMBT 12-12U	3/4	19.05	1-1/16-12	15.74	1-1/16	26.98	1-1/8	28.58	1-1/4	31.75	24.38	21.84	31.24	16.76	41.40	48.76	36.57	-912
ISMBT 16-16U	1	25.40	1-5/16-12	22.35	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	31.24	26.41	38.35	16.76	50.54	53.59	43.94	-916
ISMBT 20-20U	1-1/4	31.75	1-5/8-12	27.68	1-11/16	42.86	1-7/8	47.63	1-7/8	47.63	41.14	38.86	45.72	16.76	67.81	58.16	54.86	-920
ISMBT 24-24U	1-1/2	38.10	1-7/8-12	33.90	2	50.80	2-1/4	57.15	2-1/8	53.98	50.03	45.21	50.80	16.76	77.97	60.45	62.23	-924
ISMBT 32-32U	2	50.80	2-1/2-12	45.97	2-3/4	69.85	3	76.20	2-3/4	69.85	67.56	62.73	69.85	16.76	107.18	71.62	80.26	-932

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

Mounting Dimensions For O-Seal Fitting

O-Seal Connector

O-Seal Connector can be directly installed into existing pipe thread or straight thread port.The standard Viton O-ring is contained in a precision groove to prevent O-ring extrusion at high pressure and for a controlled squeeze in a vaccum service.

Installation Instruction

1. Turn it until finger-tight. (The squeeze on O-Ring can be felt during the last 1/4 turn)
2. After finger-tight installation, snug lightly with a wrench.

NOTES

Always use a back-up wrench on the O-Seal fitting hex so it does not turn while the nut is being tightened. Also use a back-up wrench when disconnectiong a tubing connection.

Figure 1. it is recommended that the flat surface have a diameter at least as large as dimension A for the various size O-Seal fittings.
This diameter is sufficient to allow metal-to-metal contact outside of the O-Ring sealing diameter and to prevent O-Ring extrusion at high pressure.

Figure 2. is an O-Seal fitting using with a counter bored or recessed hole.
In this case, the diameter B is sufficient to allow the round shoulder of the O-seal to clear for proper installation.
D gives the maximum depth that can be used with this diameter.

Figure 3. shows the usage at deeper grooved or concaved area and E is the maximum depth that will allow a thin wrench(1/8)to hold the O-Seal fitting while the Iy-Lok connection is made to the tubing.
The diameter C is sufficient to allow the hex of the fitting to turn in the recessed hole.

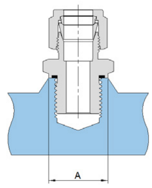


Fig. 1

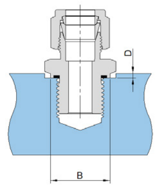


Fig. 2

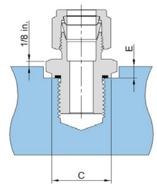
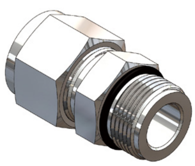
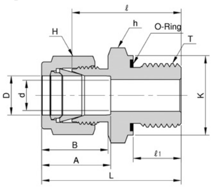


Fig. 3

Part No.	Straight Thread	Pipe Thread	A Min. Dia.	B Min. Dia.	C Min. Dia.	D Min. Dia.	D Min. Dia.
IOSC 2-2U	5/16-24	-	12.7	15.0	16.8	2.3	5.6
IOPC 2-2N	-	1/8 NPT	17.5	19.8	22.4	4.1	7.1
IOSC 3-3U	3/8-24	-	14.2	16.8	19.1	2.3	5.6
IOSC 4-4U	7/16-20	-	17.5	19.8	22.4	4.1	7.1
IOPC 4-2N	-	1/8 NPT	17.5	19.8	22.4	4.1	7.1
IOPC 4-4N	-	1/4 NPT	22.1	24.6	27.7	4.1	7.9
IOSC 5-5U	1/2-20	-	19.1	23.1	26.2	4.1	7.9
IOSC 6-6U	9/16-18	-	20.6	24.6	27.7	4.1	7.9
IOPC 6-4N	-	1/4 NPT	22.1	24.6	27.7	4.1	7.9
IOPC 6-6N	-	3/8 NPT	25.4	29.5	33.3	4.1	8.6
IOPC 6-8N	-	1/2 NPT	31.0	34.0	38.9	5.6	11.2
IOSC 8-8U	3/4-16	-	25.4	29.5	33.3	4.1	8.6
IOPC 8-8N	-	1/2 NPT	31.0	34.0	38.9	5.6	11.2
IOSC 12-12U	1-1/16-12	-	35.8	38.9	44.5	5.6	12.7
IOSC 16-16U	1-5/16-12	-	42.9	45.2	51.6	5.6	14.2

IOSC O-Seal Straight Thread Connector

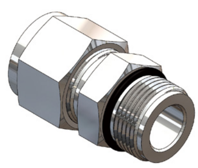


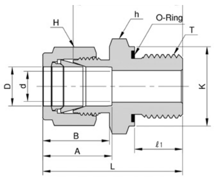


Connector Fractional Tube To Female Straight Thread.

Part No.	Tube O.D. D		Straight Thread T(U)	d min.	Width Across Flat h		Width Across Flat H		A	B	ℓ	ℓ1	L	K	O-Ring Uniform Size Number
	inch	mm			inch	mm	inch	mm							
IOSC 2-2U	1/8	3.17	5/16-20	2.28	9/16	14.28	7/16	11.11	12.70	15.24	26.16	8.63	32.76	13.97	-011
IOSC 3-3U	3/16	4.76	3/8-24	3.04	5/8	15.87	1/2	12.70	13.71	16.00	27.68	9.65	34.29	15.75	-012
IOSC 4-4U	1/4	6.35	7/16-20	4.82	3/4	19.05	9/16	14.28	15.24	17.78	30.98	10.41	38.35	18.80	-013
IOSC 5-5U	5/16	7.93	1/2-20	6.35	7/8	22.22	5/8	15.87	16.25	18.54	33.27	11.17	40.64	21.84	-112
IOSC 6-6U	3/8	9.52	9/16-18	7.11	15/16	23.81	11/16	17.46	16.76	19.30	35.05	11.93	42.41	23.62	-113
IOSC 8-8U	1/2	12.70	3/4-16	10.41	1-1/8	28.57	7/8	22.22	22.86	21.84	35.81	11.93	45.97	28.45	-116
IOSC 12-12U	3/4	19.05	1-1/16-12	15.74	1-1/2	38.10	1-1/8	28.58	24.38	21.84	42.16	14.22	52.32	37.85	-121
IOSC 16-16U	1	25.40	1-5/16-12	22.35	1-3/4	44.45	1-1/2	38.10	31.24	26.41	45.97	14.22	58.16	44.20	-125

IOPC O-Seal Pipe Thread Connector





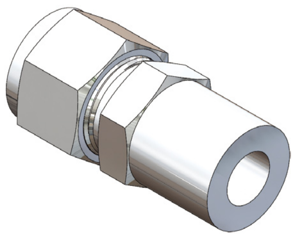
Connector Fractional Tube To Female Straight Thread.

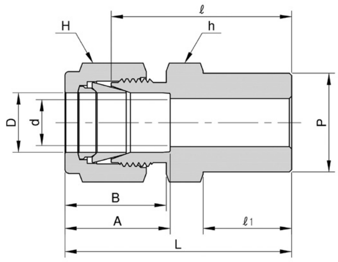
Part No.	Tube O.D. D		T* NPT	d min.	Width Across Flat h		Width Across Flat H		A	B	ℓ	ℓ1	L	K	O-Ring Uniform Size Number
	inch	mm			inch	mm	inch	mm							
IOPC 2-2N	1/8	3.17	1/8	2.28	3/4	19.05	7/16	11.11	12.70	15.24	26.16	7.11	32.76	18.80	-111
IOPC 4-2N	1/4	6.35	1/8	4.82	3/4	19.05	9/16	14.28	15.24	17.78	27.68	7.11	35.05	18.80	-111
IOPC 4-4N	1/4	6.35	1/4	4.82	15/16	23.81	9/16	14.28	15.24	17.78	30.98	9.65	38.35	23.62	-113
IOPC 6-4N	3/8	9.52	1/4	7.11	15/16	23.81	11/16	17.46	16.76	19.30	32.51	9.65	39.87	23.62	-113
IOPC 6-6N	3/8	9.52	3/8	7.11	1-1/8	28.58	11/16	17.46	16.76	19.30	34.03	10.41	41.40	28.45	-116
IOPC 6-8N	3/8	9.52	1/2	7.11	1-5/16	33.33	11/16	17.46	16.76	19.30	39.62	13.46	46.99	33.02	-212
IOPC 8-8N	1/2	12.70	1/2	10.41	1-5/16	33.33	7/8	22.22	22.86	21.84	39.62	13.46	49.78	33.02	-212

*ISO Tapered Thread, put "R" digit at the last of part number.

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

IMPWC Male Pipe Weld Connector





Connector Fractional Tubes To Pipe

Part No.	Tube O.D. D		Male Pipe Size P		d min.	Width Across Flat				A	B	ℓ	$ℓ_1$	L
						h		H						
	inch	mm	Nom.	O.D.		inch	mm	inch	mm					
IMPWC 2-2P	1/8	3.17	1/8	10.30	2.28	7/16	11.11	7/16	11.11	12.70	15.24	23.87	9.65	31.24
IMPWC 3-2P	3/16	4.76	1/8	10.30	3.04	7/16	11.11	1/2	12.70	13.71	16.00	24.63	9.65	31.24
IMPWC 4-2P	1/4	6.35	1/8	10.30	4.82	1/2	12.70	9/16	14.28	15.24	17.78	25.40	9.65	32.76
IMPWC 4-4P	1/4	6.35	1/4	13.70	4.82	9/16	14.28	9/16	14.28	15.24	17.78	30.48	14.22	37.84
IMPWC 5-2P	5/16	7.93	1/8	10.30	5.08	9/16	14.28	5/8	15.87	16.25	18.54	26.67	9.65	34.03
IMPWC 5-4P	5/16	7.93	1/4	13.70	6.35	9/16	14.28	5/8	15.87	16.25	18.54	31.24	14.22	38.60
IMPWC 6-4P	3/8	9.52	1/4	13.70	7.11	5/8	15.87	11/16	17.46	16.76	19.30	32.51	14.22	39.87
IMPWC 6-6P	3/8	9.52	3/8	17.10	7.11	11/16	17.46	11/16	17.46	16.76	19.30	32.51	14.22	39.87
IMPWC 6-8P	3/8	9.52	1/2	21.30	7.11	7/8	22.22	11/16	17.46	16.76	19.30	38.86	19.05	46.23
IMPWC 6-12P	3/8	9.52	3/4	26.67	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	40.38	19.05	47.75
IMPWC 8-6P	1/2	12.70	3/8	17.10	10.41	13/16	20.64	7/8	22.22	22.86	21.84	33.27	14.22	43.43
IMPWC 8-8P	1/2	12.70	1/2	21.30	10.41	7/8	22.22	7/8	22.22	22.86	21.84	38.86	19.05	49.02
IMPWC 8-12P	1/2	12.70	3/4	26.67	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	40.38	19.05	50.54
IMPWC 10-8P	5/8	15.87	1/2	21.30	12.70	15/16	23.81	1	25.40	24.38	21.84	38.86	19.05	49.02
IMPWC 12-12P	3/4	19.05	3/4	26.67	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	40.38	19.05	50.54
IMPWC 16-16P	1	25.40	1	33.40	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	50.03	23.87	62.23
IMPWC 20-20P	1-1/4	31.75	1-1/4	42.16	27.68	1-3/4	44.45	2	50.80	41.14	38.86	55.11	23.87	77.21
IMPWC 24-24P	1-1/2	38.10	1-1/2	48.26	33.90	2-1/8	53.98	2-1/4	57.15	50.03	45.21	61.72	26.16	88.90
IMPWC 32-32P	2	50.80	2	60.32	47.75	2-3/4	69.85	3	76.20	67.56	62.73	76.20	26.92	113.53

Connector Metric Tube To Pipe

Part No.	Tube O.D. D	Male Pipe Size P		d min.	Width Across Flat		A	B	ℓ	$ℓ_1$	L
		inch	mm		h	H					
IMPWC 3M-2P	3	1/8	10.29	2.4	12	12	12.9	15.3	23.1	9.7	29.7
IMPWC 4M-2P	4	1/8	10.29	2.4	12	12	13.7	16.1	24.1	9.7	30.7
IMPWC 6M-2P	6	1/8	10.29	4.8	14	14	15.3	17.7	25.4	9.7	32.8
IMPWC 6M-4P	6	1/4	13.72	4.8	14	14	15.3	17.7	30.2	14.2	37.6
IMPWC 8M-2P	8	1/8	10.29	5.1	15	16	16.2	18.6	26.7	9.7	34.2
IMPWC 8M-4P	8	1/4	13.72	6.4	15	16	16.2	18.6	31.2	14.2	38.7
IMPWC 8M-8P	8	1/2	21.34	6.4	22	16	16.2	18.6	37.3	19.0	44.8
IMPWC 10M-4P	10	1/4	13.72	7.1	18	19	17.2	19.5	33.3	14.2	40.9
IMPWC 10M-6P	10	3/8	17.15	7.9	18	19	17.2	19.5	32.5	14.2	40.1
IMPWC 10M-8P	10	1/2	21.34	7.9	22	19	17.2	19.5	38.1	19.0	45.7
IMPWC 12M-4P	12	1/4	13.72	7.1	22	22	22.8	22.0	33.3	14.2	43.4
IMPWC 12M-6P	12	3/8	17.15	9.5	22	22	22.8	22.0	33.3	14.2	43.4
IMPWC 12M-8P	12	1/2	21.34	9.5	22	22	22.8	22.0	38.1	19.0	48.2
IMPWC 14M-6P	14	3/8	17.15	10.3	24	25	24.4	22.0	34.0	14.2	44.1
IMPWC 15M-8P	15	1/2	21.34	11.9	24	25	24.4	22.0	38.9	19.0	49.0
IMPWC 16M-8P	16	1/2	21.34	12.7	24	25	24.4	22.0	38.9	19.0	49.0
IMPWC 18M-8P	18	1/2	21.34	13.5	27	30	24.4	22.0	40.4	19.0	50.5
IMPWC 32M-20P	32	1-1/4	42.16	28.6	46	50	42.0	41.6	56.6	23.9	79.6
IMPWC 38M-24P	38	1-1/2	48.26	33.7	55	60	49.4	47.9	64.0	26.2	91.6

NOTES : All Iy-Lok pipe weld ends have schedule 80 wall thickness or greater. **Weld End** : ANSI B31.1 and B31.3

Welding Information

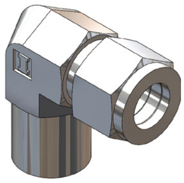
a. If you weld the fully assembled fittings, the assembly can be distored and the lubricant on the nut can be removed, which is not desirable.

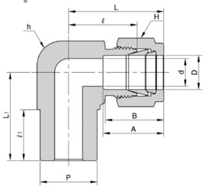
b. To avoid this, remove nut and ferrules from the body and cover thread and seat area with another nut or a plug in order to protect them from weld splatter. (Just finger tighten easy removal)

c. Provide a proper heat sink for heat dissipation. After welding, replace the nut and ferrule.

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

IMPWE Male Pipe Weld Elbow

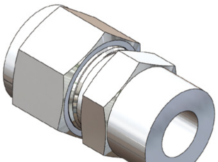


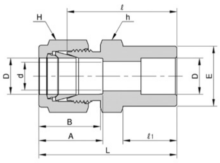


Connector Fractional Tubes To Pipe

Part No.	Tube O.D. D		Male Pipe Size P		d min.	Width Across Flat				A	B	ℓ	ℓ_1	L	L_1
						h		H							
	inch	mm	inch	mm		inch	mm	inch	mm						
IMPWE 2-2P	1/8	3.17	1/8	10.29	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	9.65	26.92	18.79
IMPWE 4-4P	1/4	6.35	1/4	13.72	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	14.22	26.92	23.36
IMPWE 6-4P	3/8	9.52	1/4	13.72	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	14.22	30.48	25.40
IMPWE 8-8P	1/2	12.70	1/2	21.34	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	19.05	36.06	33.02
IMPWE 12-12P	3/4	19.05	3/4	26.67	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	19.05	39.87	36.83
IMPWE 16-16P	1	25.40	1	33.40	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	23.87	49.02	46.70

ITSWC Tube Socket Weld Connector

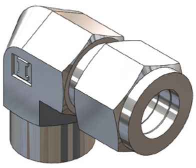


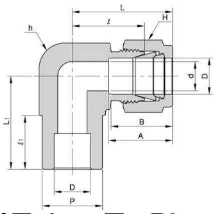


Connector Fractional Tubes To Pipe

Part No.	Tube O.D. D		d min.	E	Width Across Flat				A	B	ℓ	ℓ_1	ℓ_2	L
					h		H							
	inch	mm			inch	mm	inch	mm						
ITSWC 2-2	1/8	3.17	2.28	7.87	7/16	11.11	7/16	11.11	12.70	15.24	22.35	8.63	6.35	28.95
ITSWC 4-4	1/4	6.35	4.82	11.17	1/2	12.70	9/16	14.28	15.24	17.78	26.16	10.41	7.87	33.52
ITSWC 6-6	3/8	9.52	7.11	15.74	5/8	15.87	11/16	17.46	16.76	19.30	30.22	11.93	9.65	37.59
ITSWC 8-8	1/2	12.70	10.41	19.05	13/16	20.64	7/8	22.22	22.86	21.84	30.98	11.93	12.70	41.14
ITSWC 12-12	3/4	19.05	15.74	26.67	1-1/16	26.98	1-1/8	28.58	24.38	21.84	33.27	11.93	14.22	43.43
ITSWC 16-16	1	25.40	22.35	33.27	1-3/8	34.92	1-1/2	38.10	31.24	26.41	40.38	14.22	19.05	52.57

ITSWE Tube Socket Weld Elbow

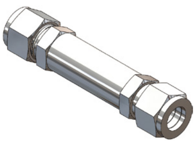


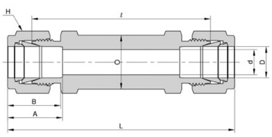


Connector Fractional Tubes To Pipe

Part No.	Tube O.D. D		d min.	E	Width Across Flat				A	B	ℓ	ℓ_1	ℓ_2	L
					h		H							
	inch	mm			inch	mm	inch	mm						
ITSWE 4-4	1/4	6.35	4.82	12.70	1/2	12.70	9/16	14.28	15.24	17.78	19.55	7.87	26.92	19.55
ITSWE 6-6	3/8	9.52	7.11	15.74	5/8	15.87	11/16	17.46	16.76	19.30	23.11	9.65	30.48	23.11
ITSWE 8-8	1/2	12.70	10.41	20.57	13/16	20.64	7/8	22.22	22.86	21.84	25.90	12.70	36.06	25.90
ITSWE 12-12	3/4	19.05	15.74	26.92	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	14.22	39.87	29.71
ITSWE 16-16	1	25.40	22.35	35.05	1-3/8	34.93	1-1/2	38.10	31.24	26.41	36.83	19.05	49.02	36.83

IWU Weld Union



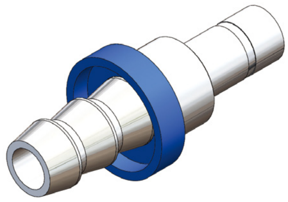


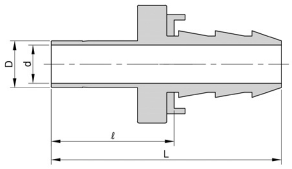
Connector Fractional Tubes To Pipe

Part No.	Tube O.D. D		d min.	Width Across Flat H		A	B	ℓ	L	O
	inch	mm		inch	mm					
IWU-4	1/4	6.35	4.82	9/16	14.28	15.24	17.78	70.4	85.56	14.00
IWU-6	3/8	9.52	7.11	11/16	17.46	16.76	19.30	73.7	88.60	19.00
IWU-8	1/2	12.70	10.41	7/8	22.22	22.86	21.84	73.7	93.68	23.00

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

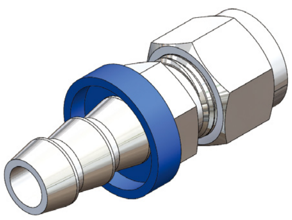
ITH Tube Adapter to Hose

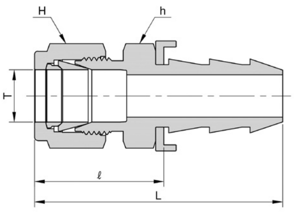




Part No.	T (Tube O.D)	Nominal Hose Size	Dimension, inch. (mm)	
			L	ℓ
ITH 4-4	1/4	1/4	1.93 (49.0)	1.17 (29.7)
ITH 6-6	3/8	3/8	2.03 (51.6)	1.16 (29.5)
ITH 8-8	1/2	1/2	2.47 (62.7)	1.42 (36.1)
ITH 12-12	3/4	3/4	3.14 (79.8)	1.47 (37.3)
ITH 16-16	1	1	4.13 (105.0)	1.91 (48.5)

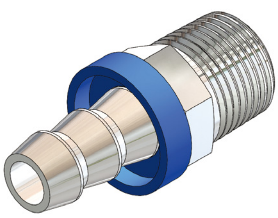
ILH Iy-Lok to Hose

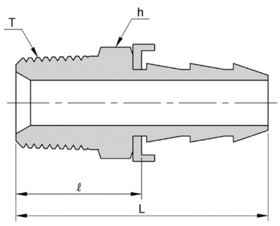




Part No.	T (Tube O.D)	Nominal Hose Size	Dimension, inch. (mm)			
			Hex		L	ℓ
			h	H		
ILH 4-4	1/4	1/4	1/2 (12.70)	9/16 (14.28)	1.97 (50.0)	1.21 (30.7)
ILH 6-6	3/8	3/8	5/8 (15.87)	11/16 (17.46)	2.11 (53.6)	1.24 (31.5)
ILH 8-8	1/2	1/2	13/16 (20.63)	7/8 (22.22)	2.47 (62.7)	1.42 (36.1)
ILH 12-12	3/4	3/4	1-1/16 (26.98)	1-1/8 (28.57)	3.15 (80.0)	1.45 (36.8)

IMH Hose to Male Pipe Thread

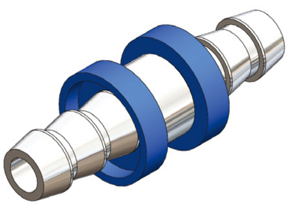


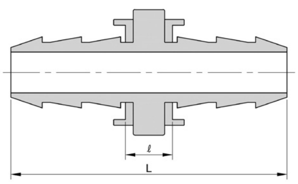


Part No.	T* Pipe Thread (NPT)	Nominal Hose Size	Dimension, inch. (mm)		
			H(Hex)	L	ℓ
ITH 4N-4	1/4	1/4	9/16 (14.28)	1.68 (42.7)	0.92 (23.4)
ITH 6N-6	3/8	3/8	11/16 (17.46)	1.80 (45.7)	0.93 (23.6)
ITH 8N-8	1/2	1/2	7/8 (22.22)	2.19 (55.6)	1.14 (29.0)
ITH 12N-12	3/4	3/4	1-1/16 (26.98)	2.81 (71.4)	1.14 (29.0)
ITH 16N-16	1	1	1-3/8 (34.92)	3.78 (96.0)	1.55 (39.4)

*SO Tapered Thread, put "R" digit at the last of part number.

IHH Hose to Hose





Part No.	Nominal Hose Size	Dimension, inch. (mm)	
		L	ℓ
IHH 4-4	1/4	2.07 (52.6)	0.55 (14.0)
IHH 6-6	3/8	2.25 (57.2)	0.52 (13.2)
IHH 8-8	1/2	2.61 (66.3)	0.52 (13.2)
IHH 12-12	3/4	3.85 (97.8)	0.52 (13.2)

Push-On Hose Assembly Instruction

a. Cut a clean, square edge on end of hose.

b. Cover first barb of end connection with hose. (Lubrication fitting stem with light oil may ease assembly)

c. Hold end connection against flat surface,
Grip hose and push with a steady force until hose seats into blue finishing.

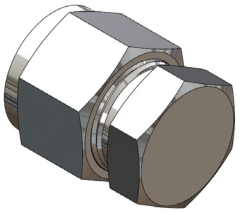
Push-On Hose Disassembly Instruction

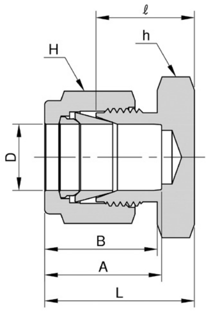
a. Slit hose lengthwise from blue finishing cap to end of barb. Do not damage barbs.

b. Bend hose to expose barbs, then remove hose with a quick pull.

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

IC Cap





Connector Cap End of Fractional Tube End

Part No.	Tube O.D. D		Width Across Flat				A	B	ℓ	L
			h		H					
	inch	mm	inch	mm	inch	mm				
IC-1	1/16	1.59	5/16	7.93	5/16	7.93	8.63	10.92	11.20	14.18
IC-2	1/8	3.17	7/16	11.11	7/16	11.11	12.70	15.24	13.46	20.06
IC-3	3/16	4.76	7/16	11.11	1/2	12.70	13.71	16.00	14.73	21.33
IC-4	1/4	6.35	1/2	12.70	9/16	14.28	15.24	17.78	16.00	23.26
IC-5	5/16	7.93	9/16	14.28	5/8	15.87	16.25	18.54	17.01	24.38
IC-6	3/8	9.52	5/8	15.87	11/16	17.46	16.76	19.30	18.28	25.65
IC-8	1/2	12.70	13/16	20.63	7/8	22.22	22.86	21.84	19.05	29.21
IC-10	5/8	15.87	15/16	23.81	1	25.40	24.38	21.84	19.81	29.97
IC-12	3/4	19.05	1-1/16	26.98	1-1/8	28.57	24.38	21.84	21.33	31.49
IC-14	7/8	22.22	1-3/16	30.16	1-1/4	31.75	25.90	21.84	23.87	34.03
IC-16	1	25.40	1-3/8	34.92	1-1/2	38.10	31.24	26.41	26.16	38.35
IC-20	1-1/4	31.75	1-3/4	44.45	1-7/8	47.63	41.14	38.86	31.24	53.34
IC-24	1-1/2	38.10	2-1/8	53.98	2-1/4	57.15	50.15	45.21	37.33	64.51
IC-32	2	50.80	2-3/4	69.85	3	76.20	67.56	62.73	49.27	86.61

Connector Cap End of Metric Tube End

Part No.	Tube O.D. D	Width Across Flat		A	B	ℓ	L
		h	H				
IC-2M	2	12	12	12.9	15.3	13.5	20.1
IC-3M	3	12	12	12.9	15.3	13.5	20.1
IC-4M	4	12	12	13.7	16.1	14.7	21.3
IC-6M	6	14	14	15.3	17.7	15.7	23.1
IC-8M	8	15	16	16.2	18.6	17.0	24.5
IC-10M	10	18	19	17.2	19.5	19.0	26.6
IC-12M	12	22	22	22.8	22.0	19.0	29.1
IC-15M	15	24	25	24.4	22.0	19.8	29.9
IC-16M	16	24	25	24.4	22.0	19.8	29.9
IC-18M	18	27	30	24.4	22.0	21.3	31.4
IC-20M	20	30	32	26.0	22.0	23.9	34.0
IC-22M	22	30	32	26.0	22.0	23.9	34.0
IC-25M	25	35	38	31.3	26.5	26.2	38.5
IC-28M	28	41	46	36.6	36.6	27.7	48.5
IC-32M	32	46	50	42.0	41.6	32.8	55.8
IC-38M	38	55	60	49.4	47.9	37.8	65.4

Installation Instruction - Cap is for capping tubing end.

a. Insert tube end into the cap. (Make sure tube end bottoms on the shoulder of the cap.)

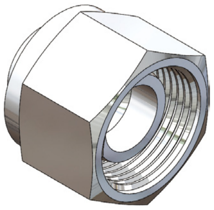
b. Finger-tighten the nut.

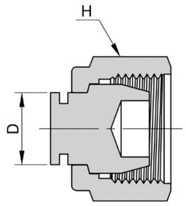
c. Wrench-tighten the nut 1-1/4 turns beyond the finger tight position, keeping the body steady with a backup wrench.
(Tightens 3/4 turns for 1/16, 1/8, and 3/16 in. | 2,3, and 4mm fittings.)

∗For re-use, see re-assembly instruction.

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

IP Plug





Connector Fractional Iy-Lok Port

Part No.	Tube O.D. D		Width Across Flat h	
	inch	mm	inch	mm
IP-1	1/16	1.59	5/16	7.93
IP-2	1/8	3.17	7/16	11.11
IP-3	3/16	4.76	1/2	12.70
IP-4	1/4	6.35	9/16	14.28
IP-5	5/16	7.93	5/8	15.87
IP-6	3/8	9.52	11/16	17.46
IP-8	1/2	12.70	7/8	22.22

Part No.	Tube O.D. D		Width Across Flat h	
	inch	mm	inch	mm
IP-10	5/8	15.87	1	25.40
IP-12	3/4	19.05	1-1/8	28.58
IP-14	7/8	22.22	1-1/4	31.75
IP-16	1	25.40	1-1/2	38.10
IP-20	1-1/4	31.75	1-7/8	47.63
IP-24	1-1/2	38.10	2-1/4	57.15
IP-32	2	50.80	3	76.20

Plugs Unused port of Metric Iy-Lok fittings.

Connector Metric Iy-Lok Port

Part No.	Tube O.D. D	Width Across Flat H
IP-2M	2	12
IP-3M	3	12
IP-4M	4	12
IP-6M	6	14
IP-8M	8	16
IP-10M	10	19
IP-12M	12	22
IP-15M	15	25
IP-16M	16	25
IP-18M	18	30
IP-20M	20	32
IP-22M	22	32
IP-25M	25	38
IP-28M	28	46
IP-32M	32	50
IP-38M	38	60

Plugs Unused port of Fractional Iy-Lok fittings.

Installation Instruction
- Plug is for plugging un-used Iy-Lok port.

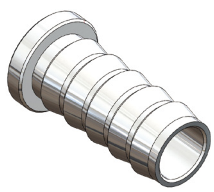
a. Remove the nut and ferrules from the Iy-Lok fitting body.

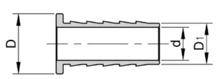
b. Finger-tighten the plug.

c. Tighten the plug 1/4 turn beyond the finger-tight position, keeping the fitting body steady with a backup wrench.

*Do not tighten 1-1/4 turns as this has machined ferrule not the standard ferrules.
*Tighten 1/8 turn for 1/16, 1/8, and 3/16 in. 1 2, 3, and 4mm tube Fittings.

ITI Tube Insert





Installation Instruction
- For Nylon or Soft Plastic Tubing

Iy-Lok tube insert supports the soft plastic tube internally.
This helps the soft tube to connect to Iy-Lok port with no collapse.

a. Fully insert the tube insert into the soft tube end.

b. Insert the soft tube end into the Iy-Lok port.

c. Finger-tighten the nut.

*Tighten 3/4 turn for 3/16 in. tube fittings.

Fractional

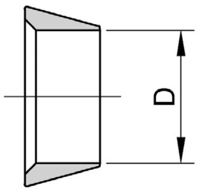
Part No.	Tube O.D.D		Tube I.D.D_1		Bore I.D.d
	inch	mm	inch	mm	
ITI 3-2	3/16	4.76	1/8	3.17	2.28
ITI 4-2	1/4	6.35	1/8	3.17	2.28
ITI 4-3	1/4	6.35	3/16	4.76	3.55
ITI 5-2	5/16	7.93	1/8	3.17	2.28
ITI 5-3	5/16	7.93	3/16	4.76	3.04
ITI 5-4	5/16	7.93	1/4	6.35	4.82
ITI 6-3	3/8	9.52	3/16	4.76	3.04
ITI 6-4	3/8	9.52	1/4	6.35	4.82
ITI 8-4	1/2	12.7	1/4	6.35	4.82
ITI 8-6	1/2	12.7	3/8	9.52	7.87
ITI 10-6	5/8	15.87	3/8	9.52	7.87
ITI 10-8	5/8	15.87	1/2	12.70	11.17
ITI 12-8	3/4	19.05	1/2	12.70	11.17
ITI 12-10	3/4	19.05	5/8	15.87	14.22
ITI 16-12	1	25.4	3/4	19.05	17.52

Metric

Part No.	Tube O.D.D	Tube I.D.D_1	Bore I.D.d
ITI 6M-4M	6	4	2.8
ITI 8M-6M	8	6	4.4
ITI 10M-8M	10	8	6.4
ITI 12M-8M	12	8	6.4
ITI 12M-10M	12	10	8.3

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

IFF Front Ferrule



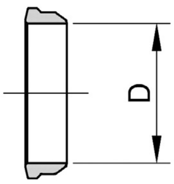
Fractional

Part No.	Tube O.D D	
	inch	mm
IFF-1	1/16	1.58
IFF-2	1/8	3.17
IFF-3	3/16	4.76
IFF-4	1/4	6.35
IFF-5	5/16	7.93
IFF-6	3/8	9.52
IFF-8	1/2	12.70
IFF-10	5/8	15.87
IFF-12	3/4	19.05
IFF-14	7/8	22.22
IFF-16	1	25.40
IFF-20 *	1-1/4	31.75
IFF-24 *	1-1/2	38.10
IFF-32 *	2	50.80

Metric

Part No.	Tube O.D D
IFF-2M	2
IFF-3M	3
IFF-4M	4
IFF-6M	6
IFF-8M	8
IFF-10M	10
IFF-12M	12
IFF-15M	15
IFF-16M	16
IFF-18M	18
IFF-20M	20
IFF-22M	22
IFF-25M	25
IFF-28M *	28
IFF-32M *	32
IFF-38M *	38

IBF Back Ferrule



Fractional

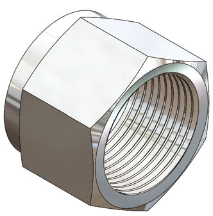
Part No.	Tube O.D D	
	inch	mm
IBF-1	1/16	1.59
IBF-2	1/8	3.17
IBF-3	3/16	4.76
IBF-4	1/4	6.35
IBF-5	5/16	7.93
IBF-6	3/8	9.52
IBF-8	1/2	12.70
IBF-10	5/8	15.87
IBF-12	3/4	19.05
IBF-14	7/8	22.22
IBF-16	1	25.40
IBF-20 *	1-1/4	31.75
IBF-24 *	1-1/2	38.10
IBF-32 *	2	50.80

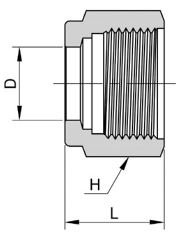
Metric

Part No.	Tube O.D D
IBF-2M	2
IBF-3M	3
IBF-4M	4
IBF-6M	6
IBF-8M	8
IBF-10M	10
IBF-12M	12
IBF-15M	15
IBF-16M	16
IBF-18M	18
IBF-20M	20
IBF-22M	22
IBF-25M	25
IBF-28M *	28
IBF-32M *	32
IBF-38M *	38

NOTES : "*" Over 1", and 25mm stainless steel fittings use stainless steel ferrule with a PFA coating.

IN Nut





Fractional

Part No.	Tube O.D D		Width Across Flat H		L
	inch	mm	inch	mm	
IN-1	1/16	1.59	5/16	7.93	7.90
IN-2	1/8	3.17	7/16	11.11	11.93
IN-3	3/16	4.76	1/2	12.70	11.93
IN-4	1/4	6.35	9/16	14.28	12.70
IN-5	5/16	7.93	5/8	15.87	13.46
IN-6	3/8	9.52	11/16	17.46	14.22
IN-8	1/2	12.70	7/8	22.22	17.52
IN-10	5/8	15.87	1	25.40	17.52
IN-12	3/4	19.05	1-1/8	28.57	17.52
IN-14	7/8	22.22	1-1/4	31.75	17.52
IN-16	1	25.40	1-1/2	38.10	20.57
IN-20	1-1/4	31.75	1-7/8	47.63	31.75
IN-24	1-1/2	38.10	2-1/4	57.15	38.10
IN-32	2	50.80	3	76.20	52.32

Metric

Part No.	Tube O.D D	Width Across Flat H	L
IN-2M	2	12	11.90
IN-3M	3	12	11.90
IN-4M	4	12	11.90
IN-6M	6	14	12.70
IN-8M	8	16	13.50
IN-10M	10	19	15.10
IN-12M	12	22	17.40
IN-15M	15	25	17.40
IN-16M	16	25	17.40
IN-18M	18	30	17.40
IN-20M	20	32	17.40
IN-22M	22	32	17.40
IN-25M	25	38	20.60
IN-28M	28	46	30.60
IN-32M	32	50	34.40
IN-38M	38	60	40.60

Pipe Fittings

Semiconductor, Display, Solar. Oil Gas,
Power Plant, Offshore and Water Desalination

Index

Instrument Pipe Fittings

Iy-Lok Instrument Thread Fittings

Features

1. Threads meet or exceed requirements of ANSI B1. 20. 1[NPT], MIL-P-7105 B[ANPT] for tapered pipe threads, to ensure quality requirments for leak-free systems.
2. Maximum thread engagement ensures reliable make-up of pipe connections.
3. Fittings are available in many combinations of sizes, multi-step reductions and shapes which reduce the number of fittings needed in a system.
4. Attactive finishes meet quality appearance requirments for precision equipment.
5. Male threads are protected to ensure thread integrity.

MATERIALS

	BARSTOCK	FORGING
316 Stainless Steel	ASMESA479 ASTMA276	ASMESA182 ASTMA182
Brass	ASTMB16 ASTMB453	ASTMB283
Carbon Steel	ASTMA108	ASTMA276

▶ Other Materials are available by consulting your Authorized Iy-Lok Sales & Service Representative.

Pressure Ratings Basis

Based on ANSI Code for Pressure Piping B31.3	
MATERIAL	ALLOWABLE STRESS VALUE
SS316	20,000 psig (1378 bar)
Brass	10,000 psig (689 bar)
Carbon Steel	20,000 psig (1378 bar)

Temperature Ratings

SS316	-325˚F - 1200˚F (-198˚C - 648˚C)
Brass	-325˚F - 400˚F (-198˚C - 204˚C)
Carbon Steel	-20˚F - 350˚F (- 29˚C - 176˚C)

▶ System temperatures may be limited by the thread sealant or the gasket or O-ring Material.
▶ PTFE tape applied to male threads limits the maximum temperature to + 450˚F (232˚c)

Connector Fractional Tubes To Pipe

Size Designator	NPT Size	316 Stainless Steel				Brass				Carbon Steel			
		Male		Female		Male		Female		Male		Female	
		psig	bar	psig	bar	psig	bar	psig	bar	psig	bar	psig	bar
1	1/16	11,000	757	6700	461	5500	378	3300	227	11,000	757	6700	461
2	1/8	10,000	689	6500	447	5000	344	3200	220	10,000	689	6500	447
4	1/4	8000	551	6600	454	4000	275	3300	227	8000	551	6600	454
6	3/8	7800	537	5300	365	3900	268	2600	179	7800	537	5300	365
8	1/2	7700	530	4900	337	3800	261	2400	165	7700	530	4900	337
12	3/4	7300	502	4600	316	3600	248	2300	158	7300	502	4600	316
16	1	5300	365	4400	303	2600	179	2200	151	5300	365	4400	303
20	1 1/4	6000	413	5000	344	3000	206	2500	172	6000	413	5000	344
24	1 1/2	5000	344	4600	316	2500	172	2300	158	5000	344	4600	316
32	2	3900	268	3900	268	1900	130	1900	130	3900	268	3900	268

▶ Working pressures calculated are reference only.
▶ To determine pressure ratings in accordance with ANSI 31.1 for 316SS, multiply psig by 0.94 (94%) to above chart.
▶ Due to larger outer diameter of female threads, pressure ratings of female are lower than male threads
▶ To determine kPa, multiply psig by 6.89

Thread Specifications

Thread Type	Specification
NPT	ASME B1.20.1, SAE AS71051
ISO/BSPT (Tapered)	ISO 7/1, BS21, JIS B 0203
ISO/BSPP (Parallel)	ISO 228, JIS B 0202
Unified (SAE)	ASME B1.1

Pipe Thread Symbol

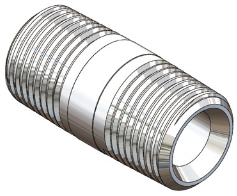
Nom. PipeSize	Symbol	ANSI Pipe Thread(NPT)	BSP/ISOThread	
			Tapered (7/1)	Parallel (228/1)
1/8	2	2N	2R	2G
1/4	4	4N	4R	4G
3/8	6	6N	6R	6G
1/2	8	8N	8R	8G
3/4	12	12N	12R	12G
1	16	16N	16R	16G

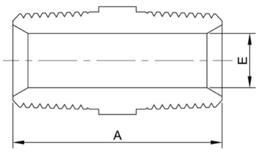
Ordering System

IHN - **8R** - **SS**

- Name of Fitting (Initial of Product)
  - I : Iy-Lok
  - H : Hexagonal
  - N : Nipple
- Pipe thread size
  - 8 : Pipe thread size
  - R : BSPT
  - N or Blank : NPT
- Material
  - SS : 316 Stainless Steel
  - B : Brass
  - SC : Cabon Steel

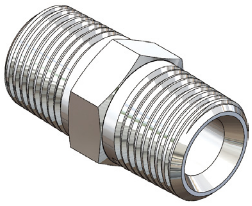
ICN LOSE NIPPLE Male NPT both ends.

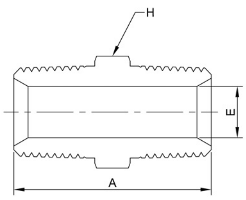




Part Number	Pipe Size	Dimension	
		A	E
ICN-2N	1/8	19.1	4.8
ICN-4N	1/4	33	7.1
ICN-6N	3/8	33	9.6
ICN-8N	1/2	38.1	11.9
ICN-12N	3/4	38.1	15.7
ICN-16N	1	47.8	22.4

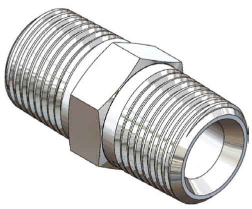
IHN-N HEX NIPPLE Male NPT both ends.

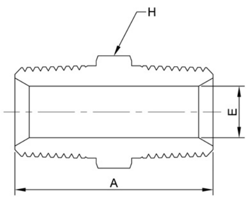




Part Number	Pipe Size	Dimension		
		A	E	H
IHN-2N	1/8	25.4	4.8	11.1
IHN-4N	1/4	35.3	7.1	14.2
IHN-6N	3/8	36.1	9.6	17.4
IHN-8N	1/2	46.7	11.9	22.2
IHN-12N	3/4	46.7	15.7	26.9
IHN-16N	1	58.7	22.3	34.9

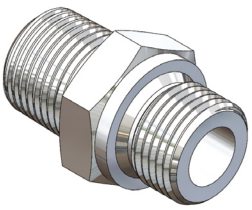
IHN-NR HEX NIPPLE Male NPT to ISO tapered.

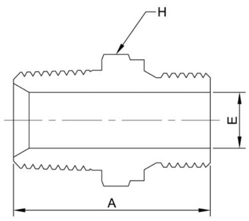




Part Number	Pipe Size	BSP/ISO Thread Size	Dimension		
			A	E	H
IHN-2NR	1/8	1/8-28	24.6	4.1	11.1
IHN-4NR	1/4	1/4-19	35.6	6.4	14.2
IHN-6NR	3/8	3/8-19	36.3	9.7	17.4
IHN-8NR	1/2	1/2-14	46.0	11.9	22.2
IHN-12NR	3/4	3/4-14	46.7	15.7	26.9
IHN-16NR	1	1-11	58.9	22.4	34.9

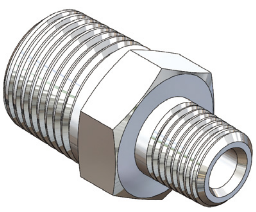
IHN-NG HEX NIPPLE Male NPT to ISO parallel.

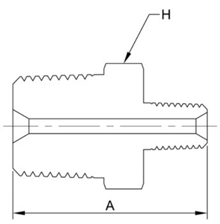




Part Number	Pipe Size	BSP/ISO Thread Size	Dimension				
			A	B	C	E	H
IHN-2NG	1/8	1/8-28	27.4	7.1	13.7	4.1	14.2
IHN-4NG	1/4	1/4-19	36.8	11.2	17.8	6.4	19.05
IHN-6NG	3/8	3/8-19	37.6	11.2	21.8	9.7	22.2
IHN-8NG	1/2	1/2-14	45.0	14.2	26.1	11.9	26.9
IHN-12NG	3/4	3/4-14	49.0	15.7	31.5	15.7	33.3
IHN-16NG	1	1-11	56.9	18.3	38.9	22.4	41.2

IHRN HEX REDUCING NIPPLE Male NPT to reduced male NPT.

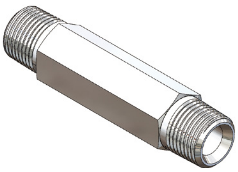
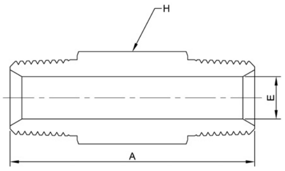




Part Number	Pipe Size	P1 Reduced PipeSize	Dimension		
			A	E	H
IHRN-4N2N	1/4	1/8	30.7	4.8	14.2
IHRN-6N2N	3/8	1/8	32.0	4.8	17.4
IHRN-6N4N	3/8	1/4	32.0	7.1	17.4
IHRN-8N2N	1/2	1/8	37.2	4.8	22.2
IHRN-8N4N	1/2	1/4	41.7	7.1	22.2
IHRN-8N6N	1/2	3/8	41.7	9.6	22.2
IHRN-12N4N	3/4	1/4	41.7	7.1	26.9
IHRN-12N8N	3/4	1/2	46.7	11.9	26.9
IHRN-16N4N	1	1/4	49.3	7.1	34.9
IHRN-16N8N	1	1/2	54.1	11.9	34.9
IHRN-16N12N	1	3/4	54.1	15.7	34.9

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

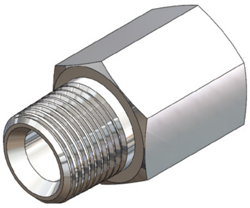
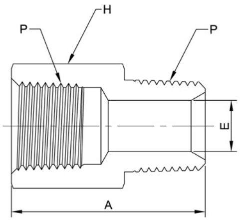
IHLN HEX LONG NIPPLE Male NPT both ends.

Part Number	Male Pipesize	A (Available Lengths), In.					E	H
		1.50	2.00	2.50	3.00	4.00		
IHLN-2N	1/8	O	O	O	O	N/A	4.8	11.1
IHLN-4N	1/4	O	O	O	O	O	7.1	14.2
IHLN-6N	3/8	O	O	O	O	O	9.7	17.4
IHLN-8N	1/2	N/A	O	N/A	O	O	11.9	22.2
IHLN-12N	3/4	N/A	O	N/A	O	O	15.7	26.9
IHLN-16N	1	N/A	N/A	N/A	O	O	22.4	34.9

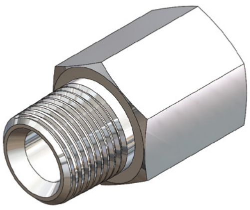
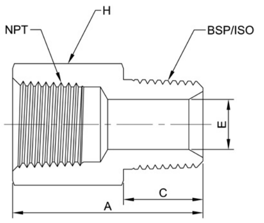
∗Specified length to be shown as last designator in part number. **Example** : IHLN-8N2.0(2.0=2"Length=51mm)

IHA ADAPTER Female NPT to same size male NPT.

Part Number	Pipe Size	A	E	H
IHA-2N	1/8	27.4	4.8	14.2
IHA-4N	1/4	35.6	7.1	19.05
IHA-6N	3/8	37.8	9.6	22.2
IHA-8N	1/2	49.0	11.9	26.9
IHA-12N	3/4	50.3	15.7	31.7
IHA-16N	1	58.0	22.3	41.2

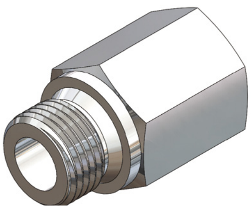
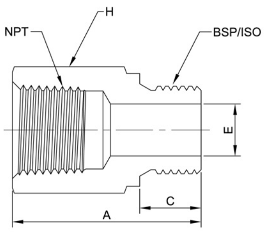
IHA-NR ADAPTER Female NPT to male ISO tapered.

Part Number	Pipe Size	BSP/ISO Thread Size	A	C	E	H
IHA-2NR	1/8	1/8-28	27.4	9.7	4.8	14.2
IHA-4NR	1/4	1/4-19	35.8	14.2	7.1	19.05
IHA-6NR	3/8	3/8-19	37.6	14.2	9.7	22.2
IHA-8NR	1/2	1/2-14	49.0	19.1	11.9	26.9
IHA-12NR	3/4	3/4-14	50.3	19.1	15.7	31.8
IHA-16NR	1	1-11	58.0	23.9	22.3	41.2

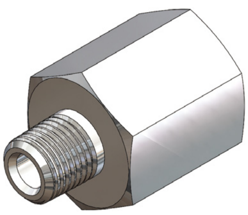
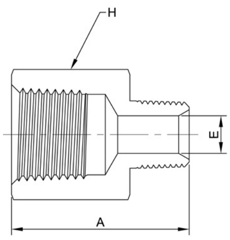
∗Female ISO Tapered to Male NPT Available (Example "IHA-8RN" for ordering Number)

IHA-G ADAPTER Female NPT male ISO tapered.

Part Number	Pipe Size	BSP/ISO Thread Size	A	B	C	E	H
IHA-2NG	1/8	1/8-28	24.9	7.1	13.7	4.1	14.2
IHA-4NG	1/4	1/4-19	33.3	11.2	17.8	5.8	19.05
IHA-6NG	3/8	3/8-19	37.8	11.2	21.8	7.9	22.2
IHA-8NG	1/2	1/2-14	43.9	14.2	26.1	11.9	26.9
IHA-12NG	3/4	3/4-14	50.8	15.7	31.5	15.7	33.3
IHA-16NG	1	1-11	53.1	18.3	38.9	19.8	41.2

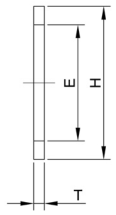
IHRA REDUCING ADAPTER Female NPT to reduced male NPT.

Part Number	Female Pipe Size	Male Pipe Size	A	E	H
IHRA-4N2N	1/4	1/8	31.5	4.8	19.05
IHRA-6N2N	3/8	1/8	33.5	4.8	22.2
IHRA-6N4N	3/8	1/4	37.8	7.1	22.2
IHRA-8N2N	1/2	1/8	40.0	4.8	26.9
IHRA-8N4N	1/2	1/4	44.5	7.1	26.9
IHRA-8N6N	1/2	3/8	44.5	9.6	26.9
IHRA-12N4N	3/4	1/4	45.7	7.1	31.8
IHRA-12N6N	3/4	3/8	45.7	9.6	31.8
IHRA-12N8N	3/4	1/2	51.1	11.9	31.8
IHRA-16N4N	1	1/4	50.8	7.1	41.2
IHRA-16N8N	1	1/2	55.3	11.9	41.2
IHRA-16N12N	1	3/4	54.9	15.7	41.2

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

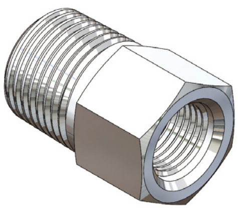
AG ADAPTER GASKET for Male ISO Parallel.

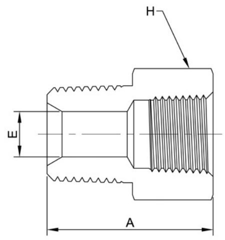


Part Number	Pipe Size	E	H	Tx
AG-02	1/8	10.0	2.0	16.0
AG-04	1/4	14.0	2.0	19.5
AG-06	3/8	17.0	2.0	24.0
AG-08	1/2	22.0	2.0	29.0
AG-12	3/4	27.0	2.0	34.5
AG-16	1	34.0	2.0	42.0

∗Material is Copper only.

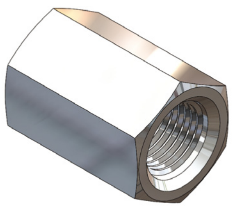
IHRB HEX BUSHING Male NPT to reduced female NPT.

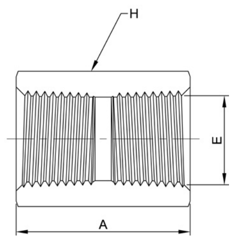




Part Number	Male Pipesize	Female PipeSize	A	E	H
IHRB-4N2N	1/4	1/8	26.7	7.1	14.2
IHRB-6N4N	3/8	1/4	30.0	9.0	19.0
IHRB-8N6N	1/2	3/8	35.6	12.0	22.2
IHRB-12N4N	3/4	1/4	27.4	11.0	26.9
IHRB-12N6N	3/4	3/8	27.4	14.4	26.9
IHRB-12N8N	3/4	1/2	41.0	15.7	26.9
IHRB-16N4N	1	1/4	34.8	11.0	34.9
IHRB-16N6N	1	3/8	34.8	14.4	34.9
IHRB-16N8N	1	1/2	34.8	17.8	34.9
IHRB-16N12N	1	3/4	47.0	22.3	34.9

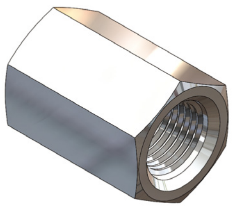
IHC HEX COUPLING Female NPT both ends.

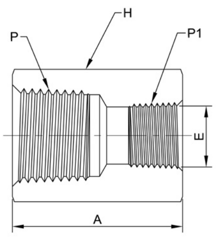




Part Number	Pipe Size	A	E	H
IHC-2N	1/8	19.05	4.8	12.7
IHC-4N	1/4	24.5	7.1	12.7
IHC-6N	3/8	26.9	9.6	17.5
IHC-8N	1/2	33.2	11.9	20.6
IHC-12N	3/4	35.3	15.7	25.4
IHC-16N	1	44.5	22.3	31.8

IHRC HEX REDUCING COUPLING Female NPT to reduced female NPT

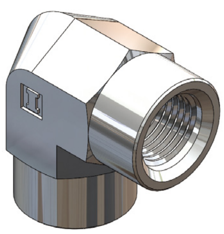


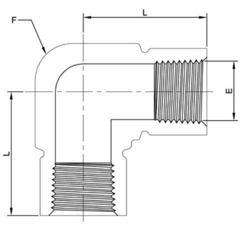


Part Number	Female Pipe Size	P1 Reduced Pipe Size	A	E	H
IHRC-4N2N	1/4	1/8	31.2	8.9	19.05
IHRC-6N4N	3/8	1/4	34.8	11.7	22.2
IHRC-8N2N	1/2	1/8	39.4	8.9	26.9
IHRC-8N4N	1/2	1/4	44.2	11.7	26.9
IHRC-8N6N	1/2	3/8	45.0	15.0	26.9
IHRC-12N4N	3/4	1/4	45.7	11.7	31.8
IHRC-12N8N	3/4	1/2	52.0	18.7	31.8
IHRC-16N4N	1	1/4	50.8	11.7	41.2
IHRC-16N8N	1	1/2	55.4	18.7	41.2
IHRC-16N12N	1	3/4	57.0	23.5	41.2

∗ISO Tapered thread, put "R" digit at the last of basic ordering number.

IPFE PIPE FEMALE ELBOW Female NPT all ports.

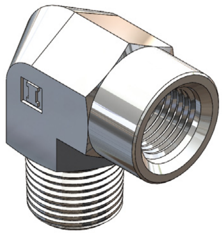
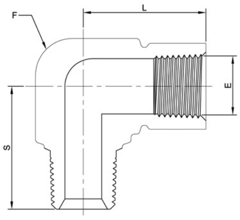




Part Number	Pipe Size	L	E	F
IPFE-2N	1/8	24.0	8.9	12.7
IPFE-4N	1/4	29.0	11.7	17.5
IPFE-6N	3/8	34.5	15.0	20.6
IPFE-8N	1/2	37.0	18.7	25.4
IPFE-12N	3/4	46.5	23.5	31.8
IPFE-16N	1	48.8	29.7	42.9

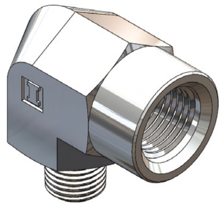
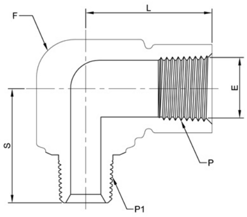
※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

ISE STREET ELBOW Female to male NPT.

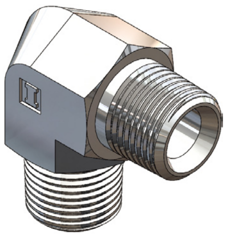
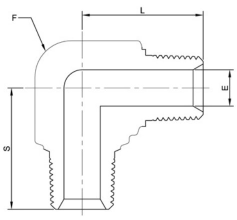
Part Number	Pipe Size	L	S	E	F
ISE-2N	1/8	24.0	22.4	4.8	12.7
ISE-4N	1/4	29.0	29.0	7.1	17.5
ISE-6N	3/8	34.5	32.0	9.6	20.6
ISE-8N	1/2	37.0	39.6	11.9	25.4
ISE-12N	3/4	46.5	42.4	15.7	31.8
ISE-16N	1	48.8	49.2	22.3	42.9

IRSE Reducing STREET ELBOW Female NPT to reduced male NPT.

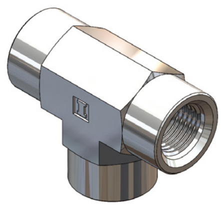
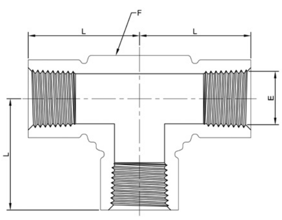
Part Number	P Pipe Size	P1 Reduced Pipe Size	L	S	E	F
IRSE-4N2N	1/4	1/8	29.7	25.4	4.8	17.5
IRSE-6N4N	3/8	1/4	36.1	32.0	7.1	20.6
IRSE-8N4N	1/2	1/4	39.6	35.1	7.1	25.4
IRSE-8N6N	1/2	3/8	39.6	35.1	9.6	25.4
IRSE-12N8N	3/4	1/2	46.5	39.6	11.9	31.8
IRSE-16N12N	1	3/4	48.7	44.5	11.9	42.9

IPME PIPE MALE ELBOW Male NPT both ends.

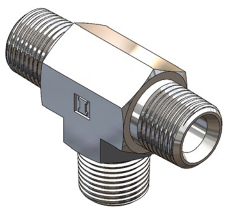
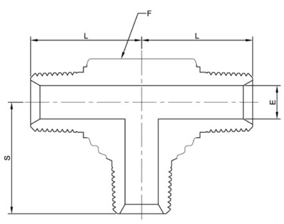
Part Number	Pipe Size	L	E	F
IPME-2N	1/8	19.05	4.8	12.7
IPME-4N	1/4	24.5	7.1	12.7
IPME-6N	3/8	26.9	9.6	17.5
IPME-8N	1/2	33.2	11.9	20.6
IPME-12N	3/4	35.3	15.7	25.4
IPME-16N	1	44.5	22.3	31.8

IPFT PIPE FEMALE TEE Female NPT all ports.

Part Number	Pipe Size	L	E	F
IPFT-2N	1/8	24.0	8.9	12.7
IPFT-4N	1/4	29.0	11.7	17.5
IPFT-6N	3/8	34.5	15.0	20.6
IPFT-8N	1/2	37.0	18.7	25.4
IPFT-12N	3/4	46.5	23.5	31.8
IPFT-16N	1	48.5	29.7	42.9

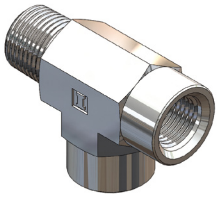
IPMT PIPE MALE TEE Male NPT all ports.

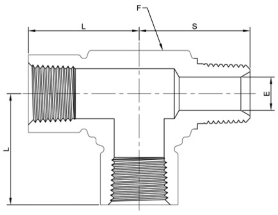



Part Number	Pipe Size	L	E	F
IPMT-2N	1/8	19.05	4.8	12.7
IPMT-4N	1/4	24.5	7.1	12.7
IPMT-6N	3/8	26.9	9.6	17.5
IPMT-8N	1/2	33.2	11.9	20.6
IPMT-12N	3/4	35.3	15.7	25.4
IPMT-16N	1	44.5	22.3	31.8

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

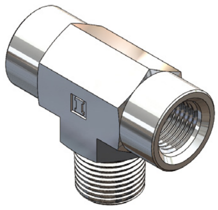
IST STREET TEE Female to male to female NPT.

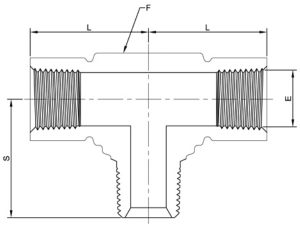




Part Number	Pipe Size	L	S	E	F
IST-2N	1/8	24.0	19.6	4.8	12.7
IST-4N	1/4	29.0	26.5	7.1	17.5
IST-6N	3/8	34.5	28.2	9.6	20.6
IST-8N	1/2	37.0	35.3	11.9	25.4
IST-12N	3/4	46.5	39.6	15.7	31.8
IST-16N	1	48.8	49.2	22.3	42.9

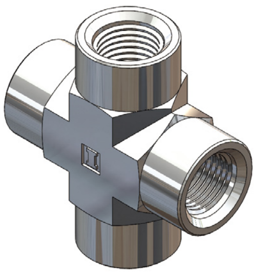
IBT BRANCH TEE Female to female to male NPT..

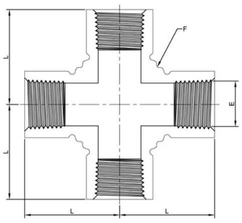




Part Number	Pipe Size	L	S	E	F
IBT-2N	1/8	24.0	19.6	4.8	12.7
IBT-4N	1/4	29.0	26.5	7.1	17.5
IBT-6N	3/8	34.5	28.2	9.6	20.6
IBT-8N	1/2	37.0	35.3	11.9	25.4
IBT-12N	3/4	46.5	39.6	15.7	31.8
IBT-16N	1	48.8	49.2	22.3	42.9

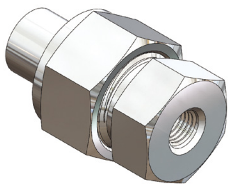
ICR CROSS Female NPT all ports.

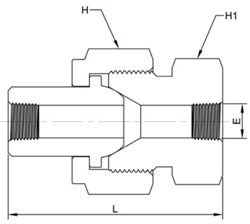




Part Number	Pipe Size	L	E	F
ICR-2N	1/8	24.0	8.9	12.7
ICR-4N	1/4	29.0	11.7	17.5
ICR-6N	3/8	34.5	15.0	20.6
ICR-8N	1/2	37.0	18.7	25.4
ICR-12N	3/4	46.5	23.5	31.8
ICR-16N	1	48.5	29.7	42.9

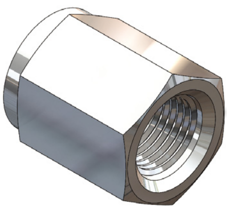
IUBJF UNION BALL JOINT Female NPT both ends.

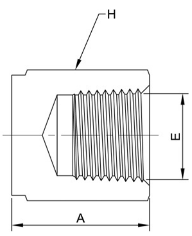




Part Number	Pipe Size	L	E	H	H_1
IUBJF-2N	1/8	45.7	6.9	28.6	23.8
IUBJF-4N	1/4	59.4	9.1	34.9	30.2
IUBJF-6N	3/8	63.5	13.2	38.1	33.3
IUBJF-8N	1/2	68.6	15.7	44.5	41.3
IUBJF-12N	3/4	79.2	22.4	50.8	47.6
IUBJF-16N	1	90.4	26.2	63.5	60.3

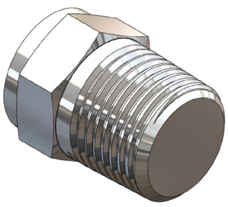
IHPC HEX PIPE CAP Female NPT

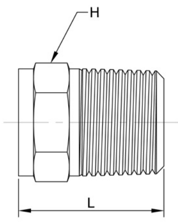




Part Number	Pipe Size	L	H
IHPC-2N	1/8	19.1	14.2
IHPC-4N	1/4	22.9	19.05
IHPC-6N	3/8	26.2	22.2
IHPC-8N	1/2	34.0	26.9
IHPC-12N	3/4	36.6	31.8
IHPC-16N	1	41.1	41.2

IHP HEX PIPE PLUG Male NPT.





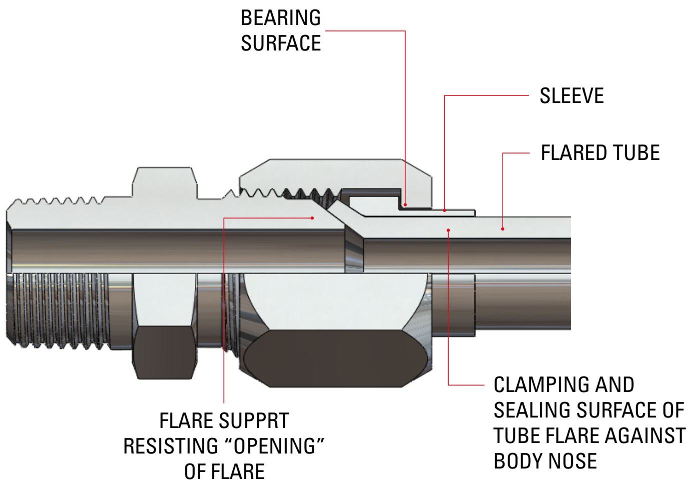
Part Number	Pipe Size	L	H
IHP-2N	1/8	19.05	11.1
IHP-4N	1/4	24.1	14.2
IHP-6N	3/8	25.0	17.4
IHP-8N	1/2	30.5	22.2
IHP-12N	3/4	30.5	26.9
IHP-16N	1	38.1	34.9

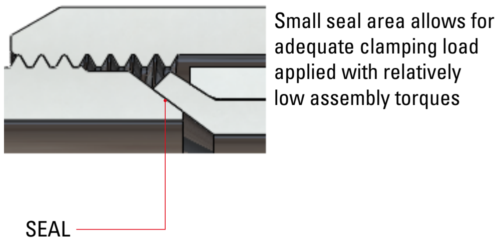
※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

37° Flared Tube Fittings

Semiconductor, Display, Solar. Oil Gas,
Power Plant, Offshore and Water Desalination

Features





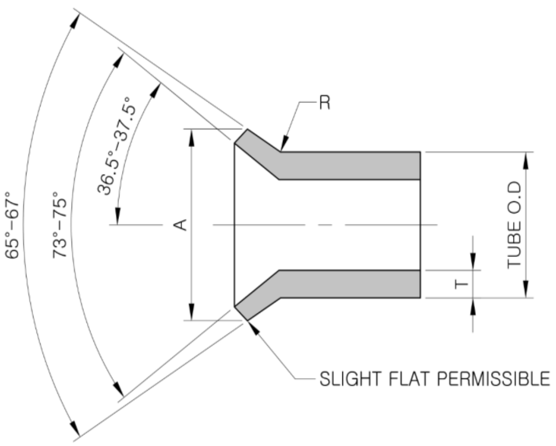
Material Standard

Material	Body		Nut / Sleeve	Flared Tubing
	Bar Stock	Forging		
Stainless Steel 316/316L	ASTM A276 / A479	ASTM A182 F316 / F316L	ASTM A276 / A479	ASTM A269 / A213
Brass	ASTM B453 UNS C35300	ASTM B283 UNS C37700	ASTM B453 UNS C35300	Copper Tubing ASTM B75 / B75

Working Pressure Rating

SAE Dash Size	Tube O.D.		Port Thread (JIC)	Union and Bulkheads		Fitting with Female Swivel		Fitting with Pipe Thread	
No.	inch	mm	UN/UNF	psig	bar	psig	bar	psig	bar
2	1/8	3	5/16" -24	5,000	345	5,000	345	5,000	345
3	3/16	4	3/8" -24	5,000	345	5,000	345	5,000	345
4	1/4	6	7/16" -20	5,000	345	4,500	310	5,000	345
5	5/16	8	1/2" -20	5,000	345	4,000	275	5,000	345
6	3/8	10	9/16" -18	5,000	345	4,000	275	4,000	275
8	1/2	12	3/4" -16	4,500	310	4,000	275	3,000	210
10	5/8	14, 15, 16	7/8" -14	3,500	240	3,000	210	3,000	210
12	3/4	18, 20	1-1/16 -12	3,500	240	3,000	210	2,500	170
14	7/8	22	1-3/16" -12	3,000	210	2,500	170	2,500	170
16	1	25	1-5/16" -12	3,000	210	2,500	170	2,000	140
20	1-1/4	28, 30, 32	1-5/8" 12	2,500	170	2,000	140	1,150	80
24	1-1/2	35, 38	1-7/8" -12	2,000	140	1,500	105	1,000	70
32	2	50	2-1/2" -12	1,500	105	1,125	80	1,000	70

Flaring Information



SAE Dash Size	Tube O.D.	T		A (Single Flare Diameter)		R
No.	inch	inch	mm	Min.	Max.	
2	1/8	0.035	0.88	4.58	5.08	0.8
3	3/16	0.035	0.88	6.61	7.11	0.8
4	1/4	0.065	1.65	8.64	9.14	0.8
5	5/16	0.065	1.65	10.16	10.92	0.8
6	3/8	0.065	2.1	11.69	12.44	1.0
8	1/2	0.083	2.41	16.01	16.76	1.5
10	5/8	0.095	2.76	19.31	20.06	1.5
12	3/4	0.109	2.76	23.37	24.13	2.0
14	7/8	0.109	2.76	26.42	27.17	2.0
16	1	0.120	3.04	29.72	30.48	2.3
20	1-1/4	0.120	3.04	34.92	35.05	2.3
24	1-1/2	0.120	3.04	37.60	38.35	2.3
32	2	0.120	3.04	43.18	43.94	2.3

Ordering System

J	MC	8	-	04N	-	SS	-	A
IY-LOK JIC Fitting	Fitting Type	Tube O.D.		Thread Size & Type		Material		None : Without Nut & Sleeve A : With Nut & Sleeve

IY-LOK JIC Fitting Type Designator			
Union	U	O-Seal Male Connector (PF)	OMC-G
Reducing Union	RU	O-Seal Male Connector (UNF)	OMC-U
Bulkhead Union	BU	O-Seal Bulkhead Male Connector (UNF)	OBMC-U
Union Elbow	UE	O-Seal Male Elbow (UNF)	OME-U
Bulkhead Union Elbow	BUE	O-Seal 45˚ Male Elbow (UNF)	OME45D-U
Union Tee	UT	O-Seal Male Run Tee (UNF)	OMRT-U
Union Cross	UC	O-Seal Male Branch Tee (UNF)	OMBT-U
Weld Bulkhead Union	WBU	Swivel Nut Union	SNU
Male Connector	MC	Swivel Male Connector	SMC
Bulkhead Male Connector	BMC	O-Seal Swivel Male Connector	OSMC
Male Elbow	ME	Swivel Female Connector	SFC
45˚ Male Elbow	45DME	Swivel Elbow	SE
Male Run Tee	MRT	Swivel Run Tee	SRT
Male Branch Tee	MBT	Swivel Branch Tee	SBT
Female Connector	FC	Port Reducer	PR
Bulkhead Female Connector	BFC	Plug	P
Female Elbow	FE	Plug Cap	PC
Female Run Tee	FRT	Nut	N
Female Branch Tee	FBT	Sleeve	S
		Lock Nut	LN

Tube O.D Designator															
Inch	Size	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	7/8	1	1-1/4	1-1/2	2	
Tube	Designator	2	3	4	5	6	8	10	12	14	16	20	24	36	
Metric	Size	3	4	6	8	10	12	16	18	20	22	25	32	38	50
Tube	Designator	3M	4M	6M	8M	10M	12M	16M	18M	20M	22M	25M	32M	38M	50M

Pipe Thread Designator (NPT, ISO7/1 (PT), ISO 228/1 (PF))										
Pipe Size	1/16"	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
NPT	1N	2N	4N	6N	8N	12N	16N	20N	24N	32N
ISO 7/1 (PT)	1R	2R	4R	6R	8R	12R	16R	20R	24R	32R
ISO 228/1 (PF)	1G	2G	4G	6G	8G	12G	16G	20G	24G	32G

Unified Thread Designator									
Thread Size	5/16"	7/16"	9/16"	3/4"	7/8"	1-1/16"	1-3/16"	1-5/16"	1-5/8"
Designator	2U	4U	6U	8U	10U	12U	14U	16U	20U

Material Designator	
316/316L SS	SS
BRASS	B

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Tube to Tube

Tube to Male Pipe

Tube to Female Pipe

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Tube to Straight Thread

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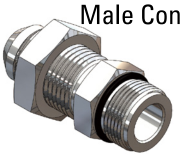
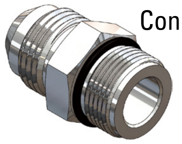
JOBMC-U
O-Seal Bulkhead
Male Connector (UNF)



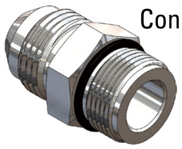
89

JOMC-G
O-Seal Male
Connector (PF)



89

JOMC-U
O-Seal Male
Connector (UNF)



Swivel Fitting

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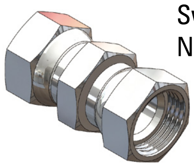
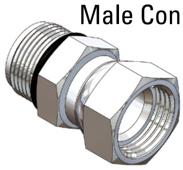
90

JSNU
Swivel
Nut Union



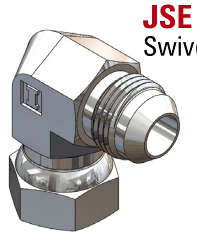
91

JOSMC
O-Seal Swivel
Male Connector (UNF)



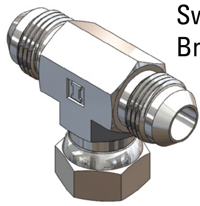
92

JSE
Swivel Elbow



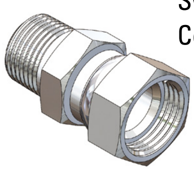
93

JSBT
Swivel
Branch Tee



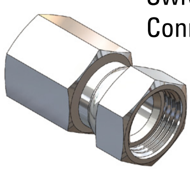
90

JSMC
Swivel Male
Connector



92

JSFC
Swivel Female
Connector



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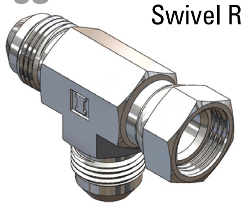
JSRT
Swivel Run Tee



Spare Parts

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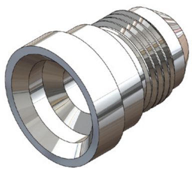
JPR
Port
Reducer

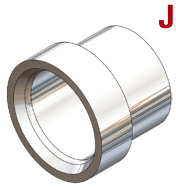


95

JPC
Plug Cap

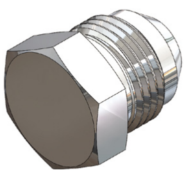
96

JS Sleeve



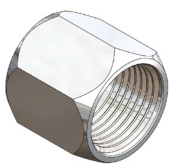
94

JP Plug



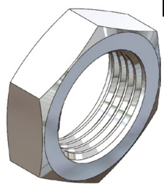
95

JN Nut

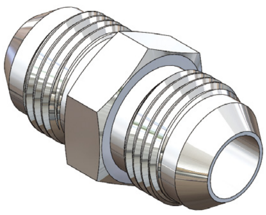


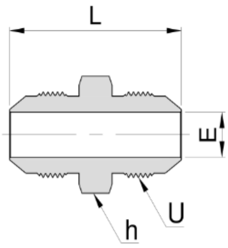
96

JLN
Lock Nut



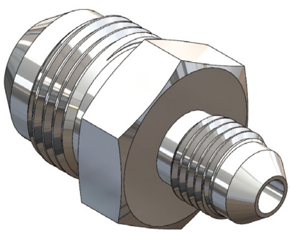
JU Union

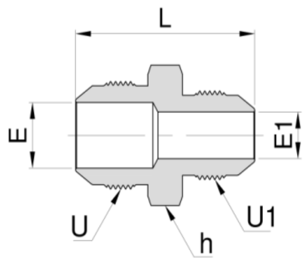




Part No.	Tube O.D.		U (UNF, UN)	Dimensions (mm)		
	inch	mm		E	L	h(HEX)
JU-2	1/8	3.17	5/16"-24	1.6	29.7	11.1
JU-3	3/16	4.76	3/8"-24	3.2	31.2	11.1
JU-4	1/4	6.35	7/16"-20	4.4	34.8	12.7
JU-5	5/16	7.93	1/2"-20	6	34.8	14.2
JU-6	3/8	9.52	9/16"-18	7.5	35.8	15.8
JU-8	1/2	12.7	3/4"-16	9.9	41.1	20.6
JU-10	5/8	15.87	7/8"-14	12.3	47.8	23.8
JU-12	3/4	19.05	1-1/16"-12	15.5	54.9	28.5
JU-14	7/8	22.22	1-3/16"-12	18	56.1	31.7
JU-16	1	25.4	1-5/16"-12	21.5	57.2	34.9
JU-20	1-1/4	31.75	1-5/8"-12	27.5	61.7	42.8
JU-24	1-1/2	38.1	1-7/8"-12	33	69.8	50.8
JU-32	2	50.8	2-1/2"-12	45	86.4	66.7

JRU Reducing Union

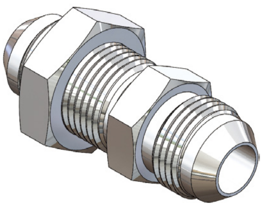


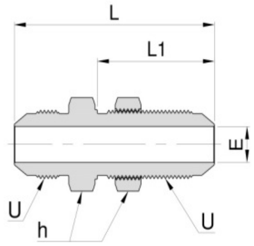


Part No.	Tube O.D		Tube O.D1		U (UNF, UN)	U1 (UNF, UN)	Dimensions (mm)			
	inch	mm	inch	mm			E	E1	L	h(HEX)
JRU-4-2	1/4	6.35	1/8	3.17	7/16"-20	5/16"-24	4.4	1.6	32.2	12.7
JRU-4-3	1/4	6.35	3/16	4.76	7/16"-20	3/8"-24	4.4	3.2	33	12.7
JRU-5-4	5/16	7.93	1/4	6.35	1/2"-20	7/16"-20	6	4.4	35	14.2
JRU-6-4	3/8	9.52	1/4	6.35	9/16"-18	7/16"-20	7.5	4.4	35.8	15.8
JRU-6-5	3/8	9.52	5/16	7.93	9/16"-18	1/2"-20	7.5	6	35.8	15.8
JRU-8-4	1/2	12.7	1/4	6.35	3/4"-16	7/16"-20	9.9	4.4	38.6	20.6
JRU-8-6	1/2	12.7	3/8	9.52	3/4"-16	9/16"-18	9.9	7.5	38.6	20.6
JRU-10-8	5/8	15.87	1/2	12.7	7/8"-14	3/4"-16	12.3	9.9	45.2	23.8
JRU-12-8	3/4	19.05	1/2	12.7	1-1/16"-12	3/4"-16	15.5	9.9	49.5	28.5
JRU-12-10	3/4	19.05	5/8	15.87	1-1/16"-12	7/8"-14	15.5	12.3	52.1	28.5
JRU-16-12	1	25.4	3/4	19.05	1-5/16"-12	1-1/16"-12	21.5	15.5	55.9	34.9
JRU-24-10	1-1/2	38.1	5/8	15.87	1-7/8"-12	7/8"-14	33	12.3	61.5	50.8
JRU-24-12	1-1/2	38.1	3/4	19.05	1-7/8"-12	1-1/16"-12	33	15.5	64.3	50.8
JRU-24-16	1-1/2	38.1	1	25.4	1-7/8"-12	1-5/16"-12	33	21.5	65.5	50.8
JRU-32-24	2	50.8	1-1/2	38.1	2-1/2"-12	1-7/8"-12	45	33	71.4	66.7

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

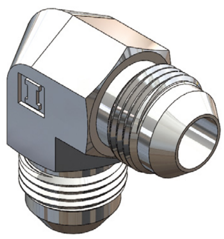
JBU Bulkhead Union

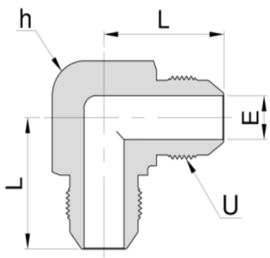




Part No.	Tube O.D.		U	Dimensions (mm)			
	inch	m	(UNF, UN)	E	L	L1	h(HEX)
JBU-2	1/8	3.17	5/16"-24	1.6	47.5	28.2	14.2
JBU-3	3/16	4.76	3/8"-24	3.2	48.3	28.2	15.8
JBU-4	1/4	6.35	7/16"-20	4.4	52.6	30.5	17.4
JBU-5	5/16	7.93	1/2"-20	6	52.6	30.5	19.05
JBU-6	3/8	9.52	9/16"-18	7.5	55.4	32.5	20.6
JBU-8	1/2	12.7	3/4"-16	9.9	62	36.6	25.4
JBU-10	5/8	15.87	7/8"-14	12.3	69.6	40.1	28.5
JBU-12	3/4	19.05	1-1/16"-12	15.5	78.5	44.4	34.9
JBU-14	7/8	22.22	1-3/16"-12	18	79.2	44.4	38.1
JBU-16	1	25.4	1-5/16"-12	21.5	79.8	44.4	41.2
JBU-20	1-1/4	31.75	1-5/8"-12	27.5	84.1	45.7	47.6
JBU-24	1-1/2	38.1	1-7/8"-12	33	89.4	46	53.9
JBU-32	2	50.8	2-1/2"-12	45	106.7	53.1	69.8

JUE Union Elbow

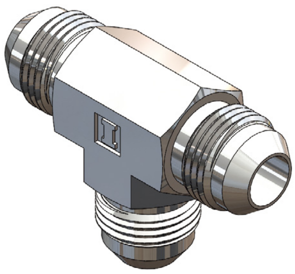
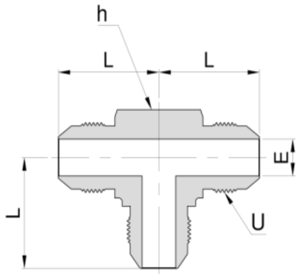




Part No.	Tube O.D.		U	Dimensions (mm)		
	inch	mm	(UNF, UN)	E	L	h(HEX)
JUE-2	1/8	3.17	5/16"-24	1.6	19.6	11.1
JUE-3	3/16	4.76	3/8"-24	3.2	21.1	11.1
JUE-4	1/4	6.35	7/16"-20	4.4	22.6	11.1
JUE-5	5/16	7.93	1/2"-20	6	24.1	14.2
JUE-6	3/8	9.52	9/16"-18	7.5	26.9	14.2
JUE-8	1/2	12.7	3/4"-16	9.9	31.8	19.05
JUE-10	5/8	15.87	7/8"-14	12.3	36.8	22.2
JUE-12	3/4	19.05	1-1/16"-12	15.5	42.2	26.9
JUE-14	7/8	22.22	1-3/16"-12	18	45.7	33.3
JUE-16	1	25.4	1-5/16"-12	21.5	46	33.3
JUE-20	1-1/4	31.75	1-5/8"-12	27.5	52.3	41.3
JUE-24	1-1/2	38.1	1-7/8"-12	33	59.2	47.6
JUE-32	2	50.8	2-1/2"-12	45	77.7	63.5

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

JUT Union Tee

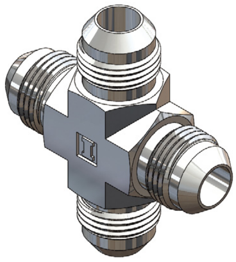



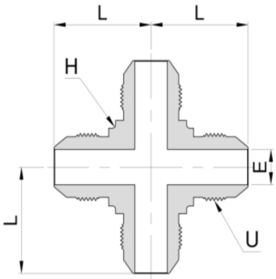
Part No.	Tube O.D.		U (UNF, UN)	Dimensions (mm)		
	inch	mm		E	L	h(HEX)
JUT-2	1/8	3.17	5/16"-24	1.6	19.6	11.1
JUT-3	3/16	4.76	3/8"-24	3.2	21.1	11.1
JUT-4	1/4	6.35	7/16"-20	4.4	22.6	11.1
JUT-5	5/16	7.93	1/2"-20	6	24.1	14.2
JUT-6	3/8	9.52	9/16"-18	7.5	26.9	14.2
JUT-8	1/2	12.7	3/4"-16	9.9	31.8	19.05
JUT-10	5/8	15.87	7/8"-14	12.3	36.8	22.2
JUT-12	3/4	19.05	1-1/16"-12	15.5	42.2	26.9
JUT-14	7/8	22.22	1-3/16"-12	18	45.7	33.3
JUT-16	1	25.4	1-5/16"-12	21.5	46	34.9
JUT-20	1-1/4	31.75	1-5/8"-12	27.5	52.3	41.2
JUT-24	1-1/2	38.1	1-7/8"-12	33	59.2	47.6
JUT-32	2	50.8	2-1/2"-12	45	77.7	63.5

37° Flared Tube Fittings

Always together, Always success Since 1993

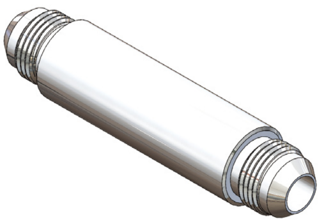
JUC Union Cross

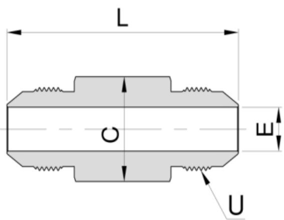




Part No.	Tube O.D.		U	Dimensions (mm)		
	inch	mm	(UNF, UN)	E	L	h(HEX)
JUC-4	1/4	6.35	7/16"-20	4.4	22.6	11.1
JUC-6	3/8	9.52	9/16"-18	7.5	26.9	14.2
JUC-8	1/2	12.7	3/4"-16	9.9	31.8	19.05
JUC-10	5/8	15.87	7/8"-14	12.3	36.8	22.22
JUC-12	3/4	19.05	1-1/16"-12	15.5	42.2	26.9
JUC-16	1	25.4	1-5/16"-12	21.5	46	34.9

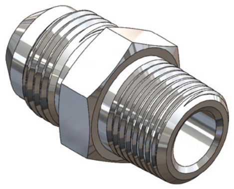
JWBU Weld Bulkhead Union

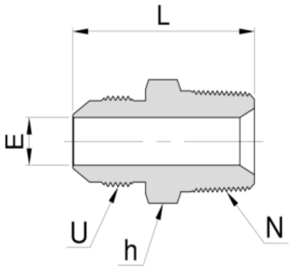




Part No.	Tube O.D.		U	Dimensions (mm)		
	inch	mm	(UNF, UN)	E	L	C
JWBU-2	1/8	3.17	5/16"-24	1.6	70	11
JWBU-3	3/16	4.76	3/8"-24	3.2	70	11
JWBU-4	1/4	6.35	7/16"-20	4.4	80	14
JWBU-5	5/16	7.93	1/2"-20	6	100	16
JWBU-6	3/8	9.52	9/16"-18	7.5	100	17
JWBU-8	1/2	12.7	3/4"-16	9.9	100	22
JWBU-10	5/8	15.87	7/8"-14	12.3	110	25
JWBU-12	3/4	19.05	1-1/16"-12	15.5	120	30
JWBU-14	7/8	22.22	1-3/16"-12	18	130	32
JWBU-16	1	25.4	1-5/16"-12	21.5	130	40
JWBU-20	1-1/4	31.75	1-5/8"-12	27.5	140	46
JWBU-24	1-1/2	38.1	1-7/8"-12	33	140	50
JWBU-32	2	50.8	2-1/2"-12	45	150	70

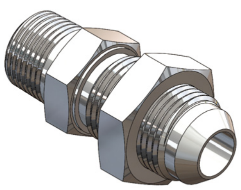
JMC Male Connector

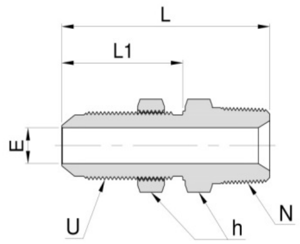




Part No.	Tube O.D.		U (UNF, UN)	N (NPT)	Dimensions (mm)		
	inch	mm			E	L	h(HEX)
JMC-2-2N	1/8	3.17	5/16"-24	1/8"	1.6	28.2	11.1
JMC-3-2N	3/16	4.76	3/8"-24	1/8"	3.2	29	11.1
JMC-4-2N	1/4	6.35	7/16"-20	1/8"	4.4	31	12.7
JMC-5-2N	5/16	7.93	1/2"-20	1/8"	6	31	14.2
JMC-6-4N	3/8	9.52	9/16"-18	1/4"	7.5	36.3	15.8
JMC-8-6N	1/2	12.7	3/4"-16	3/8"	9.9	38.9	20.6
JMC-10-8N	5/8	15.87	7/8"-14	1/2"	12.3	48	20.6
JMC-12-12N	3/4	19.05	1-1/16"-12	3/4"	15.5	52.3	28.5
JMC-14-12N	7/8	22.22	1-3/16"-12	3/4"	18	53.1	31.7
JMC-16-16N	1	25.4	1-5/16"-12	1"	21.5	58.4	34.9
JMC-20-20N	1-1/4	31.75	1-5/8"-12	1-1/4"	27.5	62.2	42.8
JMC-24-24N	1-1/2	38.1	1-7/8"-12	1-1/2"	33	68.1	50.8
JMC-32-32N	2	50.8	2-1/2"-12	2"	45	79	66.6

JBMC Bulkhead Male Connector

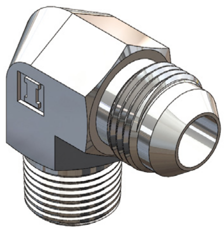


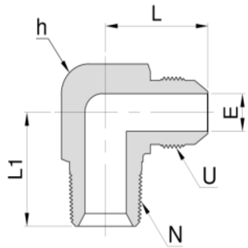


Part No.	Tube O.D.		U (UNF, UN)	N (NPT)	Dimensions (mm)			
	inch	mm			E	L	L_1	h(HEX)
JBMC-4-2N	1/4	6.35	7/16"-20	1/8"	4.4	47.7	30.5	17.4
JBMC-4-4N	1/4	6.35	7/16"-20	1/4"	4.4	53.3	30.5	17.4
JBMC-6-4N	3/8	9.52	9/16"-18	1/4"	7.5	55.4	32.5	20.6
JBMC-6-6N	3/8	9.52	9/16"-18	3/8"	7.5	54.9	32.5	20.6
JBMC-6-8N	3/8	9.52	9/16"-18	1/2"	7.5	61.2	32.5	22.2
JBMC-8-6N	1/2	12/7	3/4"-16	3/8"	9.9	59.4	36.6	25.4
JBMC-8-8N	1/2	12.7	3/4"-16	1/2"	9.9	66	36.6	25.4
JBMC-10-8N	5/8	15.87	7/8"-14	5/8"	12.3	69.6	40.1	28.5
JBMC-12-12N	3/4	19.05	1-1/16"-12	3/4"	15.5	74.9	44.4	34.9
JBMC-16-16N	1	25.4	1-5/16"-12	1"	21.5	79.7	44.4	41.2

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

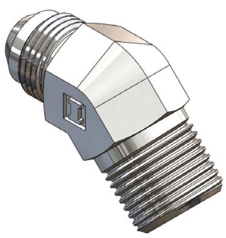
JME Male Elbow

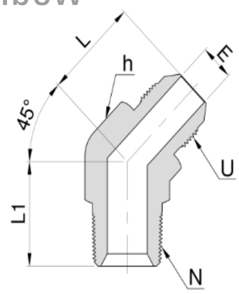




Part No.	Tube O.D.		U	N	Dimensions (mm)			
	inch	mm	(UNF, UN)	(NPT)	E	L	L_1	h(HEX)
JME-2-2N	1/8	3.17	5/16"-24	1/8"	1.6	19.6	18.3	11.1
JME-3-2N	3/16	4.76	3/8"-24	1/8"	3.2	21.1	18.3	11.1
JME-4-2N	1/4	6.35	7/16"-20	1/8"	4.4	22.6	19.8	11.1
JME-5-2N	5/16	7.93	1/2"-20	1/8"	6	24.1	19.8	14.3
JME-6-4N	3/8	9.52	9/16"-18	1/4"	7.5	26.9	27.7	14.3
JME-8-6N	1/2	12.7	3/4"-16	3/8"	9.9	31.8	31	19.05
JME-10-8N	5/8	15.87	7/8"-14	1/2"	12.3	36.8	37.3	22.2
JME-12-12N	3/4	19.05	1-1/16"-12	3/4"	15.5	42.2	40.4	26.9
JME-14-12N	7/8	22.22	1-3/16"-12	3/4"	18	45.7	42.9	33.3
JME-16-16N	1	25.4	1-5/16"-12	1"	21.5	46	50	33.3
JME-20-20N	1-1/4	31.75	1-5/8"-12	1-1/4"	27.5	52.3	60.5	41.2
JME-24-24N	1-1/2	38.1	1-7/8"-12	1-1/2"	33	59.2	67.1	47.6
JME-32-32N	2	50.8	2-1/2"-12	2"	45	77.7	76.2	63.5

JME45D 45˚ Male Elbow

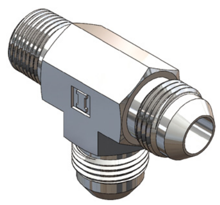
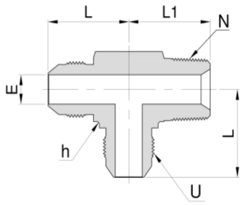




Part No.	Tube O.D.		U	N	Dimensions (mm)			
	inch	mm	(UNF, UN)	(NPT)	E	L	L_1	h(HEX)
JME45D-2-2N	1/8	3.17	5/16"-24	1/8"	1.6	17.5	13.2	11.1
JME45D-3-2N	3/16	4.76	3/8"-24	1/8"	3.2	17.5	13.2	11.1
JME45D-4-2N	1/4	6.35	7/16"-20	1/8"	4.4	18.3	16.3	11.1
JME45D-5-2N	5/16	7.93	1/2"-20	1/8"	6	19.6	16.3	14.3
JME45D-6-4N	3/8	9.52	9/16"-18	1/4"	7.5	21.1	21.8	14.3
JME45D-8-6N	1/2	12.7	3/4"-16	3/8"	9.9	24.9	24.1	19.05
JME45D-10-8N	5/8	15.87	7/8"-14	1/2"	12.3	28.2	29.7	22.2
JME45D-12-12N	3/4	19.05	1-1/16"-12	3/4"	15.5	32.5	30.5	26.9
JME45D-14-12N	7/8	22.22	1-3/16"-12	3/4"	18	36.8	33	33.3
JME45D-16-16N	1	25.4	1-5/16"-12	1"	21.5	37.3	37.6	34.9
JME45D-20-20N	1-1/4	31.75	1-5/8"-12	1-1/4"	27.5	40.4	42.4	41.2
JME45D-24-24N	1-1/2	38.1	1-7/8"-12	1-1/2"	33	45.2	45	47.6
JME45D-32-32N	2	50.8	2-1/2"-12	2"	45	56.4	53.6	63.5

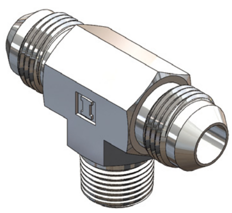
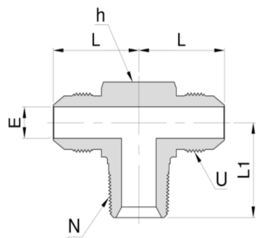
※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

JMRT Male Run Tee

Part No.	Tube O.D.		U	N	Dimensions (mm)			
	inch	mm	(UNF, UN)	(NPT)	E	L	L_1	h(HEX)
JMRT-2-2N	1/8	3.17	5/16"-24	1/8"	1.6	19.6	18.3	11.1
JMRT-3-2N	3/16	4.76	3/8"-24	1/8"	3.2	21.1	18.3	11.1
JMRT-4-2N	1/4	6.35	7/16"-20	1/8"	4.4	22.6	19.8	11.1
JMRT-5-2N	5/16	7.93	1/2"-20	1/8"	6	24.1	19.8	14.2
JMRT-6-4N	3/8	9.52	9/16"-18	1/4"	7.5	26.9	27.7	14.2
JMRT-8-6N	1/2	12.7	3/4"-16	3/8"	9.9	31.8	31	19.05
JMRT-10-8N	5/8	15.87	7/8"-14	1/2"	12.3	36.8	37.3	22.2
JMRT-12-12N	3/4	19.05	1-1/16"-12	3/4"	15.5	42.2	40.4	26.9
JMRT-14-12N	7/8	22.22	1-3/16"-12	3/4"	18	45.7	42.9	33.3
JMRT-16-16N	1	25.4	1-5/16"-12	1"	21.5	46	50	34.9
JMRT-20-20N	1-1/4	31.75	1-5/8"-12	1-1/4"	27.5	52.3	60.5	41.3
JMRT-24-24N	1-1/2	38.1	1-7/8"-12	1-1/2"	33	59.2	67.1	47.6
JMRT-32-32N	2	50.8	2-1/2"-12	2"	45	77.7	76.2	63.5

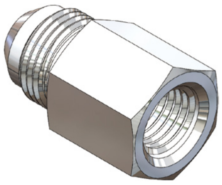
JMBT Male Branch Tee

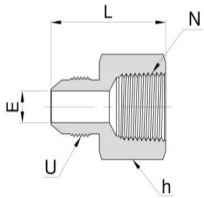



Part No.	Tube O.D.		U	N	Dimensions (mm)			
	inch	mm	(UNF, UN)	(NPT)	E	L	L_1	h(HEX)
JMBT-2-2N	1/8	3.17	5/16"-24	1/8"	1.6	19.6	18.3	11.1
JMBT-3-2N	3/16	4.76	3/8"-24	1/8"	3.2	21.1	18.3	11.1
JMBT-4-2N	1/4	6.35	7/16"-20	1/8"	4.4	22.6	19.8	11.1
JMBT-5-2N	5/16	7.93	1/2"-20	1/8"	6	24.1	19.8	14.2
JMBT-6-4N	3/8	9.52	9/16"-18	1/4"	7.5	26.9	27.7	14.2
JMBT-8-6N	1/2	12.7	3/4"-16	3/8"	9.9	31.8	31	19.05
JMBT-10-8N	5/8	15.87	7/8"-14	1/2"	12.3	36.8	37.3	22.2
JMBT-12-12N	3/4	19.05	1-1/16"-12	3/4"	15.5	42.2	40.4	26.9
JMBT-14-12N	7/8	22.22	1-3/16"-12	3/4"	18	45.7	42.9	33.3
JMBT-16-16N	1	25.4	1-5/16"-12	1"	21.5	46	50	34.9
JMBT-20-20N	1-1/4	31.75	1-5/8"-12	1-1/4"	27.5	52.3	60.5	41.3
JMBT-24-24N	1-1/2	38.1	1-7/8"-12	1-1/2"	33	59.2	67.1	47.6
JMBT-32-32N	2	50.8	2-1/2"-12	2"	45	77.7	76.2	63.5

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

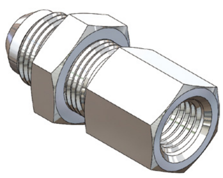
JFC Female Connector

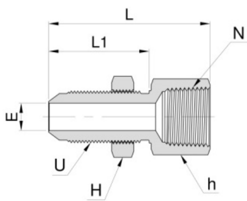




Part No.	Tube O.D.		N	U	Dimensions (mm)		
	inch	mm	(NPT)	(UNF,UN)	E	L	h(HEX)
JFC-2-2N	1/8	3.17	1/8"	5/16"-24	1.6	28.4	14.2
JFC-3-2N	3/16	4.76	1/8"	3/8"-24	3.2	28.7	14.2
JFC-4-2N	1/4	6.35	1/8"	7/16"-20	4.4	30.2	14.2
JFC-5-2N	5/16	7.93	1/8"	1/2"-20	6	29.7	14.2
JFC-6-4N	3/8	9.52	1/4"	9/16"-18	7.5	35.6	19.05
JFC-8-6N	1/2	12.7	3/8"	3/4"-16	9.9	39.6	22.2
JFC-10-8N	5/8	15.87	1/2"	7/8"-14	12.3	48	28.5
JFC-12-12N	3/4	19.05	3/4"	1-1/16"-12	15.5	52.3	34.9
JFC-14-12N	7/8	22.22	3/4"	1-3/16"-12	18	52.3	34.9
JFC-16-16N	1	25.4	1"	1-5/16"-12	21.5	59.7	41.2
JFC-20-20N	1-1/4	31.75	1-1/4"	1-5/8"-12	27.5	63.2	50.8
JFC-24-24N	1-1/2	38.1	1-1/2"	1-7/8"-12	33	66.5	60.3
JFC-32-32N	2	50.8	2"	2-1/2"-12	45	75.4	73.02

JBFC Bulkhead Female Connector





Part No.	Tube O.D.		N	U	Dimensions (mm)				
	inch	mm	(NPT)	(UNF,UN)	E	L	L_1	h(HEX)	H(HEX)
JBFC-2-2N	1/8	3.17	1/8"	5/16"-24	1.6	41.2	28.2	14.2	14.2
JBFC-3-2N	3/16	4.76	1/8"	3/8"-24	3.2	41.2	28.2	14.2	15.8
JBFC-4-2N	1/4	6.35	1/8"	7/16"-20	4.4	43.5	30.5	14.2	17.4
JBFC-5-2N	5/16	7.93	1/8"	1/2"-20	6	43.5	30.5	14.2	19.05
JBFC-6-4N	3/8	9.52	1/4"	9/16"-18	7.5	50.5	32.5	19.05	20.6
JBFC-8-6N	1/2	12.7	3/8"	3/4"-16	9.9	56.6	36.6	22.2	25.4
JBFC-10-8N	5/8	15.87	1/2"	7/8"-14	12.3	66.1	40.1	28.5	28.5
JBFC-12-12N	3/4	19.05	3/4"	1-1/16"-12	15.5	71.4	44.4	34.9	34.9
JBFC-14-12N	7/8	22.22	3/4"	1-3/16"-12	18	71.4	44.4	34.9	38.1
JBFC-16-16N	1	25.4	1"	1-5/16"-12	21.5	75.4	44.4	41.2	41.2
JBFC-20-20N	1-1/4	31.75	1-1/4"	1-5/8"-12	27.5	80.7	45.7	50.8	47.6
JBFC-24-24N	1-1/2	38.1	1-1/2"	1-7/8"-12	33	81	46	60.3	53.9
JBFC-32-32N	2	50.8	2"	2-1/2"-12	45	93.1	53.1	73.02	69.8

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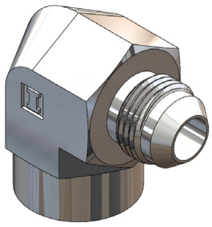
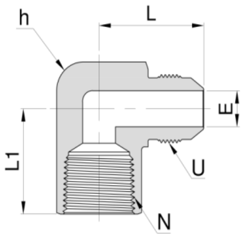
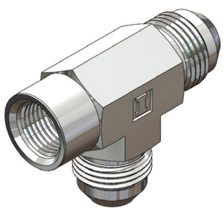
JFE Female Elbow

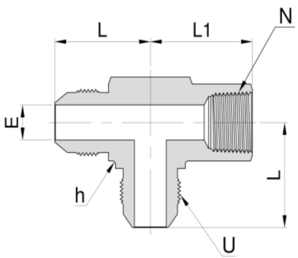




Part No.	Tube O.D.		N	U	Dimensions (mm)			
	inch	mm	(NPT)	(UNF,UN)	E	L	L_1	h(HEX)
JFE-2-2N	1/8	3.17	1/8"	5/16"-24	1.6	25.4	16.8	14.2
JFE-3-2N	3/16	4.76	1/8"	3/8"-24	3.2	26.2	16.8	14.2
JFE-4-2N	1/4	6.35	1/8"	7/16"-20	4.4	27.4	16.8	14.2
JFE-5-2N	5/16	7.93	1/8"	1/2"-20	6	27.4	16.8	14.2
JFE-6-4N	3/8	9.52	1/4"	9/16"-18	7.5	31.2	22.4	19.05
JFE-8-6N	1/2	12.7	3/8"	3/4"-16	9.9	36.1	25.9	22.2
JFE-10-8N	5/8	15.87	1/2"	7/8"-14	12.3	41.7	31.2	26.9
JFE-12-12N	3/4	19.05	3/4"	1-1/16"-12	15.5	48	34.5	33.3
JFE-14-12N	7/8	22.22	3/4"	1-3/16"-12	18	47.2	36.1	33.3
JFE-16-16N	1	25.4	1"	1-5/16"-12	21.5	55.1	41.1	41.2
JFE-20-20N	1-1/4	31.75	1-1/4"	1-5/8"-12	27.5	59.2	43.2	47.6
JFE-24-24N	1-1/2	38.1	1-1/2"	1-7/8"-12	33	73.4	52.8	63.5

JFRT Female Run Tee





Part No.	Tube O.D.		N	U	Dimensions (mm)			
	inch	mm	(NPT)	(UNF,UN)	E	L	L_1	h(HEX)
JFRT-2-2N	1/8	3.17	1/8"	5/16"-24	1.6	25.4	16.8	14.2
JFRT-3-2N	3/16	4.76	1/8"	3/8"-24	3.2	26.2	16.8	14.2
JFRT-4-2N	1/4	6.35	1/8"	7/16"-20	4.4	27.4	16.8	14.2
JFRT-5-2N	5/16	7.93	1/8"	1/2"-20	6	27.4	16.8	14.2
JFRT-6-4N	3/8	9.52	1/4"	9/16"-18	7.5	31.2	22.4	19.05
JFRT-8-6N	1/2	12.7	3/8"	3/4"-16	9.9	36.1	25.9	22.2
JFRT-10-8N	5/8	15.87	1/2"	7/8"-14	12.3	41.7	31.2	26.9
JFRT-12-12N	3/4	19.05	3/4"	1-1/16"-12	15.5	48	34.5	33.3
JFRT-14-12N	7/8	22.22	3/4"	1-3/16"-12	18	47.2	36.1	33.3
JFRT-16-16N	1	25.4	1"	1-5/16"-12	21.5	55.1	41.1	41.2
JFRT-20-20N	1-1/4	31.75	1-1/4"	1-5/8"-12	27.5	59.2	43.2	47.6
JFRT-24-24N	1-1/2	38.1	1-1/2"	1-7/8"-12	33	73.4	52.8	63.5

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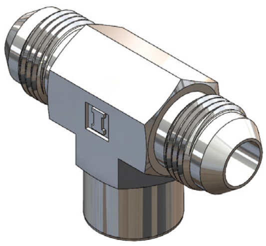
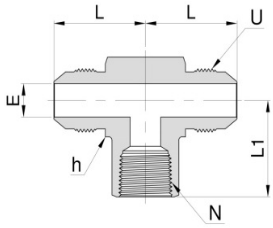
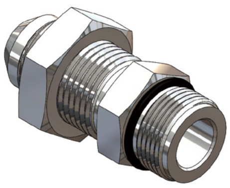
JFBT Female Branch Tee

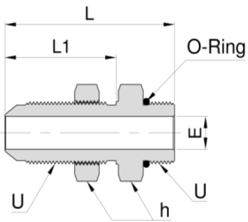




Part No.	Tube O.D.		U	N	Dimensions (mm)			
	inch	mm	(UNF, UN)	(NPT)	E	L	L_1	h(HEX)
JFBT-2-2N	1/8	3.17	1/8"	5/16"-24	1.6	25.4	16.8	14.2
JFBT-3-2N	3/16	4.76	1/8"	3/8"-24	3.2	26.2	16.8	14.2
JFBT-4-2N	1/4	6.35	1/8"	7/16"-20	4.4	27.4	16.8	14.2
JFBT-5-2N	5/16	7.93	1/8"	1/2"-20	6	27.4	16.8	14.2
JFBT-6-4N	3/8	9.52	1/4"	9/16"-18	7.5	31.2	22.4	19.05
JFBT-8-6N	1/2	12.7	3/8"	3/4"-16	9.9	36.1	25.9	22.2
JFBT-10-8N	5/8	15.87	1/2"	7/8"-14	12.3	41.7	31.2	26.9
JFBT-12-12N	3/4	19.05	3/4"	1-1/16"-12	15.5	48	34.5	33.3
JFBT-14-12N	7/8	22.22	3/4"	1-3/16"-12	18	47.2	36.1	33.3
JFBT-16-16N	1	25.4	1"	1-5/16"-12	21.5	55.1	41.1	41.2
JFBT-20-20N	1-1/4	31.75	1-1/4"	1-5/8"-12	27.5	59.2	43.2	47.6
JFBT-24-24N	1-1/2	38.1	1-1/2"	1-7/8"-12	33	73.4	52.8	63.5

JOBMC-U O-Seal Bulkhead Male Connector (UNF)





Part No.	Tube O.D.		U	Dimensions (mm)				O-Ring Uniform Size Number
	inch	mm	(UNF,UN)	E	L	L_1	h(HEX)	
JOBMC-4-4U	1/4	3.17	7/16"-20	4.4	46.7	30.5	17.4	-904
JOBMC-6-6U	3/8	4.76	9/16"-18	7.5	51.3	32.5	20.6	-906
JOBMC-8-8U	1/2	6.35	3/4"-16	9.9	55.6	36.6	25.4	-908
JOBMC-10-10U	5/8	7.93	7/8"-14	12.3	62.7	40.1	28.5	-910
JOBMC-12-12U	3/4	9.52	1-1/16"-12	15.5	70.9	44.4	34.9	-912
JOBMC-16-16U	1	12.7	1-5/16"-12	21.5	73.7	44.4	41.2	-916

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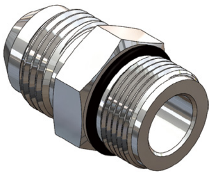
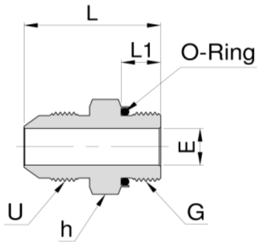
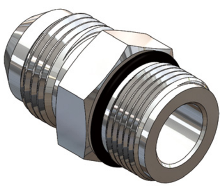
JOMC-G O-Seal Male Connector (PF)

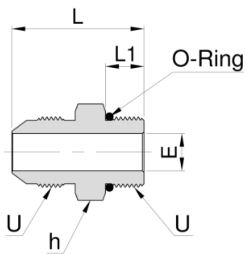




Part No.	Tube O.D.		G (PF)	U (UNF,UN)	Dimensions (mm)				O-Ring Uniform Size Number
	inch	mm			E	L	L_1	h(HEX)	
JOMC-2-2G	1/8	3.17	1/8"	5/16"-24	1.6	27.5	8	11.1	P8
JOMC-3-2G	3/16	4.76	1/8"	3/8"-24	3.2	28.5	8	12.7	P8
JOMC-4-2G	1/4	6.35	1/8"	7/16"-20	4.4	30.2	8	14.2	P8
JOMC-5-2G	5/16	7.93	1/8"	1/2"-20	6	30.2	8	15.8	P8
JOMC-6-4G	3/8	9.52	1/4"	9/16"-18	7.5	35	12	17.4	-111
JOMC-8-6G	1/2	12.7	3/8"	3/4"-16	9.9	38.7	12	22.2	-113
JOMC-10-8G	5/8	15.87	1/2"	7/8"-14	12.3	44.5	14	25.4	P18
JOMC-12-12G	3/4	19.05	3/4"	1-1/16"-12	15.5	50.9	16	31.7	-119
JOMC-14-12G	7/8	22.22	3/4"	1-3/16"-12	18	51.4	16	34.9	-119
JOMC-16-16G	1	25.4	1"	1-5/16"-12	21.5	52.7	18	38.1	-217

JOMC-U O-Seal Male Connector (UNF)





Part No.	Tube O.D.		U (UNF,UN)	Dimensions (mm)				O-Ring Uniform Size Number
	inch	mm		E	L	L_1	h(HEX)	
JOMC-2-2U	1/8	3.17	5/16"-24	1.6	26.9	7.5	11.1	-902
JOMC-3-3U	3/16	4.76	3/8"-24	3.2	27.9	7.5	12.7	-903
JOMC-4-4U	1/4	6.35	7/16"-20	4.4	31.2	9.1	14.2	-904
JOMC-5-5U	5/16	7.93	1/2"-20	6	31.2	9.1	15.8	-905
JOMC-6-6U	3/8	9.52	9/16"-18	7.5	33	9.9	17.4	-906
JOMC-8-8U	1/2	12.7	3/4"-16	9.9	37.6	11.1	22.2	-908
JOMC-10-10U	5/8	15.87	7/8"-14	12.3	43.2	12.7	25.4	-910
JOMC-12-12U	3/4	19.05	1-1/16"-12	15.5	50	15.1	31.7	-912
JOMC-14-14U	7/8	22.22	1-3/16"-12	18	50.5	15.1	34.9	-914
JOMC-16-16U	1	25.4	1-5/16"-12	21.5	51.8	15.1	38.1	-916
JOMC-20-20U	1-1/4	31.75	1-5/8"-12	27.5	55.1	15.1	47.6	-920
JOMC-24-24U	1-1/2	38.1	1-7/8"-12	33	60.2	15.1	53.9	-924
JOMC-32-32U	2	50.8	2-1/2"-12	45	70.6	15.1	69.8	-932

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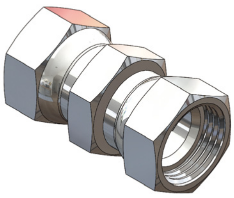
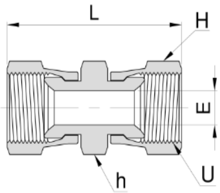
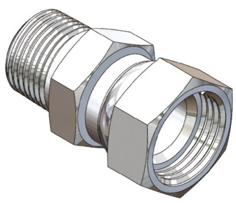
JSNU Swivel Nut Union

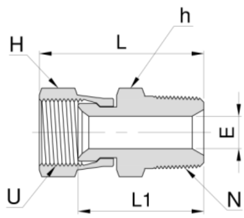




Part No.	Tube O.D.		Dimensions (mm)		
	inch	mm	E	L	h(HEX)
JSNU-4	1/4	6.35	9.9	37.6	14.2
JSNU-6	3/8	9.52	7.5	44.4	17.4
JSNU-8	1/2	12.7	9.9	51.3	22.2
JSNU-10	5/8	15.87	12.3	56.9	25.4
JSNU-12	3/4	19.05	15.5	58.7	31.75
JSNU-16	1	25.4	21.5	69.8	38.1

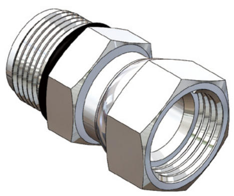
JSMC Swivel Male Connector

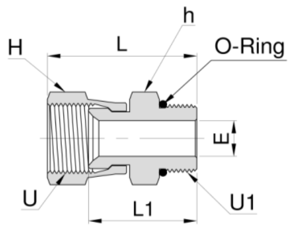




Part No.	Tube O.D.		N	U	Dimensions (mm)				
	inch	mm	(NPT)	(UNF,UN)	E	L	L_1	h(HEX)	H(HEX)
JSMC-2-2N	1/8	3.17	1/8"	5/16"-24	1.6	30	22	11.1	11.1
JSMC-3-2N	3/16	4.76	1/8"	3/8"-24	3.2	32	23.5	11.1	12.7
JSMC-4-2N	1/4	6.35	1/8"	7/16"-20	4.4	34.2	25.5	12.7	14.2
JSMC-5-2N	5/16	7.93	1/8"	1/2"-20	6	35	25.5	14.2	15.8
JSMC-6-4N	3/8	9.52	1/4"	9/16"-18	7.5	40.2	30.7	15.8	17.4
JSMC-8-6N	1/2	12.7	3/8"	3/4"-16	9.9	42.7	32	20.6	22.2
JSMC-10-8N	5/8	15.87	1/2"	7/8"-14	12.3	51.3	38.6	23.8	25.4
JSMC-12-12N	3/4	19.05	3/4"	1-1/16"-12	15.5	54.5	40.2	28.5	31.7
JSMC-14-12N	7/8	22.22	3/4"	1-3/16"-12	18	56	41.2	31.7	34.9
JSMC-16-16N	1	25.4	1"	1-5/16"-12	21.5	63.7	48.6	34.9	38.1
JSMC-20-20N	1-1/4	31.75	1-1/4"	1-5/8"-12	27.5	68.9	53	47.6	50.8
JSMC-24-24N	1-1/2	38.1	1-1/2"	1-7/8"-12	33	77.6	59	50.8	57.1
JSMC-32-32N	2	50.8	2"	2-1/2"-12	45	92.9	69.1	66.6	73.02

JOSMC O-Seal Swivel Male Connector (UNF)

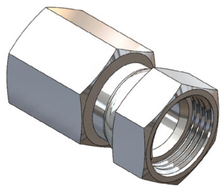


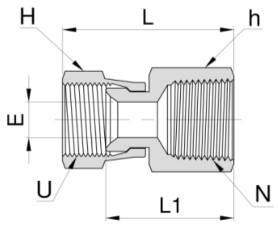


Part No.	Tube O.D.		U	U1	Dimensions (mm)					
	inch	mm	(UNF,UN)	(UNF,UN)	E	L	L_1	L_2	h(HEX)	H(HEX)
JOSMC-2-2U	1/8	3.17	5/16"-24	5/16"-24	1.6	30.4	22.5	7.5	11.1	11.1
JOSMC-3-2U	3/16	4.76	3/8"-24	5/16"-24	3.2	31	22.7	7.5	12.7	12.7
JOSMC-4-4U	1/4	6.35	7/16"-20	7/16"-20	4.4	33.9	25.2	9.1	14.2	14.2
JOSMC-5-5U	5/16	7.93	1/2"-20	1/2"-20	6	35.7	26.2	9.1	15.8	15.8
JOSMC-6-6U	3/8	9.52	9/16"-18	9/16"-18	7.5	37.4	27.9	9.9	17.4	19.05
JOSMC-8-8U	1/2	12.7	3/4"-16	3/4"-16	9.9	41.6	30.9	11.1	22.2	22.2
JOSMC-10-10U	5/8	15.87	7/8"-14	7/8"-14	12.3	47.6	34.9	12.7	25.4	26.9
JOSMC-12-12U	3/4	19.05	1-1/16"-12	1-1/16"-12	15.5	54.4	40.1	15.1	31.7	31.7
JOSMC-14-14U	7/8	22.22	1-3/16"-12	1-3/16"-12	18	55.6	40.9	15.1	34.9	34.9
JOSMC-16-16U	1	25.4	1-5/16"-12	1-5/16"-12	21.5	56.8	41.7	15.1	38.1	38.1
JOSMC-20-20U	1-1/4	31.75	1-5/8"-12	1-5/8"-12	27.5	63.2	47.3	15.1	47.6	50.8
JOSMC-24-24U	1-1/2	38.1	1-7/8"-12	1-7/8"-12	33	71.3	52.7	15.1	53.9	57.1
JOSMC-32-32U	2	50.8	2-1/2"-12	2-1/2"-12	45	72.5	58.7	15.1	69.8	73.02

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

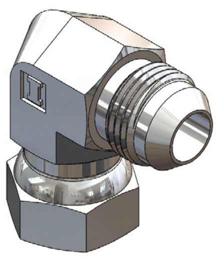
JSFC Swivel Female Connector

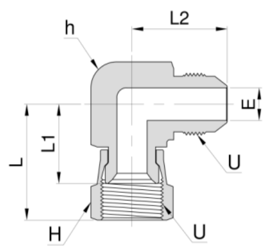




Part No.	Tube O.D.		N	U	Dimensions (mm)				
	inch	mm	(NPT)	(UNF,UN)	E	L	L_1	h(HEX)	H(HEX)
JSFC-2-2N	1/8	3.17	1/8"	5/16"-24	1.6	36.1	28.2	14.2	11.1
JSFC-3-2N	3/16	4.76	1/8"	3/8"-24	3.2	37.3	29	14.2	12.7
JSFC-4-2N	1/4	6.35	1/8"	7/16"-20	4.4	39.7	31	14.2	14.2
JSFC-5-2N	5/16	7.93	1/8"	1/2"-20	6	40.5	31	14.2	15.8
JSFC-6-4N	3/8	9.52	1/4"	9/16"-18	7.5	45.8	36.3	19.05	17.4
JSFC-8-6N	1/2	12.7	3/8"	3/4"-16	9.9	47	38.9	22.2	22.2
JSFC-10-8N	5/8	15.87	1/2"	7/8"-14	12.3	51.6	48	28.5	25.4
JSFC-12-12N	3/4	19.05	3/4"	1-1/16"-12	15.5	66.6	52.3	34.9	31.7
JSFC-14-12N	7/8	22.22	3/4"	1-3/16"-12	18	67.8	53.1	34.9	34.9
JSFC-16-16N	1	25.4	1"	1-5/16"-12	21.5	73.5	58.4	41.2	38.1
JSFC-20-20N	1-1/4	31.75	1-1/4"	1-5/8"-12	27.5	78.1	62.2	50.8	50.8
JSFC-24-24N	1-1/2	38.1	1-1/2"	1-7/8"-12	33	86.7	68.1	57.1	57.1
JSFC-32-32N	2	50.8	2"	2-1/2"-12	45	89.3	65.5	73.02	73.02

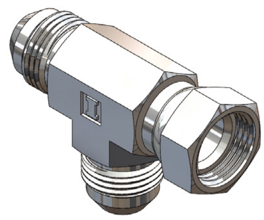
JSE Swivel Elbow

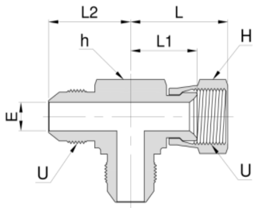




Part No.	Tube O.D.		U	Dimensions (mm)					
	inch	mm	(UNF,UN)	E	L	L_1	L_2	h(HEX)	H(HEX)
JSE-2U	1/8	3.17	5/16"-24	1.6	24.6	16.7	19.6	11.1	11.1
JSE-3U	3/16	4.76	3/8"-24	3.2	25.4	17.1	21.1	11.1	12.7
JSE-4U	1/4	6.35	7/16"-20	4.4	25.4	16.7	22.6	11.1	14.2
JSE-5U	5/16	7.93	1/2"-20	6	26.9	17.4	24.1	14.3	15.8
JSE-6U	3/8	9.52	9/16"-18	7.5	31.8	22.3	26.9	14.3	17.4
JSE-8U	1/2	12.7	3/4"-16	9.9	35.1	24.4	31.8	19.05	22.2
JSE-10U	5/8	15.87	7/8"-14	12.3	41.1	28.4	36.8	22.2	25.4
JSE-12N	3/4	19.05	1-1/16"-12	15.5	44.4	30.1	42.2	27.7	31.7
JSE-14U	7/8	22.22	1-3/16"-12	18	45.2	30.5	45.7	33.3	34.9
JSE-16U	1	25.4	1-5/16"-12	21.5	50.8	35.7	46	33.3	38.1
JSE-20U	1-1/4	31.75	1-5/8"-12	27.5	58.7	42.8	52.3	41.3	50.8
JSE-24U	1-1/2	38.1	1-7/8"-12	33	65.8	47.2	59.2	47.6	57.1
JSE-32U	2	50.8	2-1/2"-12	45	85.9	62.1	77.7	63.5	69.8

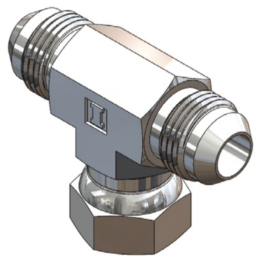
JSRT Swivel Run Tee

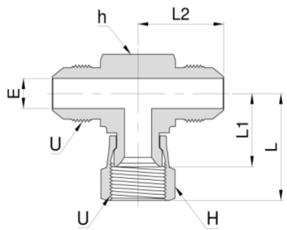




Part No.	Tube O.D.		U	Dimensions (mm)					
	inch	mm	(UNF,UN)	E	L	L_1	L_2	h(HEX)	H(HEX)
JSRT-2	1/8	3.17	5/16"-24	1.6	24.6	16.7	19.6	11.1	11.1
JSRT-3	3/16	4.76	3/8"-24	3.2	25.4	17.1	21.1	11.1	12.7
JSRT-4	1/4	6.35	7/16"-20	4.4	25.4	16.7	22.6	11.1	14.2
JSRT-5	5/16	7.93	1/2"-20	6	26.9	17.4	24.1	14.2	15.8
JSRT-6	3/8	9.52	9/16"-18	7.5	31.8	22.3	26.9	14.2	17.4
JSRT-8	1/2	12.7	3/4"-16	9.9	35.1	24.4	31.8	19.05	22.2
JSRT-10	5/8	15.87	7/8"-14	12.3	41.1	28.4	36.8	22.2	25.4
JSRT-12	3/4	19.05	1-1/16"-12	15.5	44.4	30.1	42.2	26.9	31.7
JSRT-14	7/8	22.22	1-3/16"-12	18	45.2	30.5	45.7	33.3	34.9
JSRT-16	1	25.4	1-5/16"-12	21.5	50.8	35.7	46	33.3	38.1
JSRT-20	1-1/4	31.75	1-5/8"-12	27.5	58.7	42.8	52.3	41.3	50.8
JSRT-24	1-1/2	38.1	1-7/8"-12	33	65.8	47.2	59.2	47.6	57.1
JSRT-32	2	50.8	2-1/2"-12	45	85.9	62.1	77.7	63.5	73.02

JSBT Swivel Branch Tee

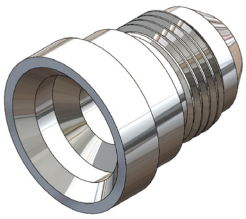


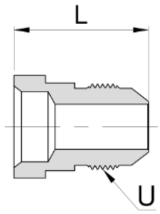


Part No.	Tube O.D.		U	Dimensions (mm)					
	inch	mm	(UNF,UN)	E	L	L_1	L_2	h(HEX)	H(HEX)
JSBT-2	1/8	3.17	5/16"-24	1.6	24.6	16.7	19.6	11.1	11.1
JSBT-3	3/16	4.76	3/8"-24	3.2	25.4	17.1	21.1	11.1	12.7
JSBT-4	1/4	6.35	7/16"-20	4.4	25.4	16.7	22.6	11.1	14.2
JSBT-5	5/16	7.93	1/2"-20	6	26.9	17.4	24.1	14.2	15.8
JSBT-6	3/8	9.52	9/16"-18	7.5	31.8	22.3	26.9	14.2	17.4
JSBT-8	1/2	12.7	3/4"-16	9.9	35.1	24.4	31.8	19.05	22.2
JSBT-10	5/8	15.87	7/8"-14	12.3	41.1	28.4	36.8	22.2	25.4
JSBT-12	3/4	19.05	1-1/16"-12	15.5	44.4	30.1	42.2	26.9	31.7
JSBT-14	7/8	22.22	1-3/16"-12	18	45.2	30.5	45.7	33.3	34.9
JSBT-16	1	25.4	1-5/16"-12	21.5	50.8	35.7	46	33.3	38.1
JSBT-20	1-1/4	31.75	1-5/8"-12	27.5	58.7	42.8	52.3	41.3	50.8
JSBT-24	1-1/2	38.1	1-7/8"-12	33	65.8	47.2	59.2	47.6	57.1
JSBT-32	2	50.8	2-1/2"-12	45	85.9	62.1	77.7	63.5	73.02

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

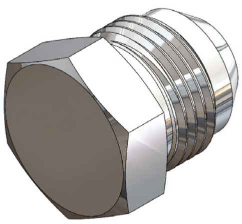
JPR Port Reducer

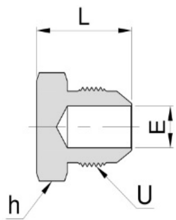




Part No.	Tube O.D		Tube O.D1		U	Dimensions (mm)	
	inch	mm	inch	mm	(UNF,UN)	E	L
JPR-6-4	3/8	9.52	1/4	6.35	5/16"-24	4.4	24.6
JPR-8-4	1/2	12.7	1/4	6.35	3/8"-24	4.4	25.4
JPR-8-6	1/2	12.7	3/8	9.52	7/16"-20	7.5	25.4
JPR-10-4	5/8	15.87	1/4	6.35	1/2"-20	4.4	26.2
JPR-10-6	5/8	15.87	3/8	9.52	9/16"-18	7.5	26.2
JPR-12-4	3/4	19.05	1/4	6.35	3/4"-16	4.4	27.7
JPR-12-6	3/4	19.05	3/8	9.52	7/8"-14	7.5	27.7
JPR-12-8	3/4	19.05	1/2	12.7	1-1/16"-12	10	30.2
JPR-16-12	1	25.4	3/4	19.05	1-3/16"-12	15.5	37.3
JPR-20-12	1-1/4	31.75	3/4	19.05	1-5/16"-12	15.5	38.3
JPR-20-16	1-1/4	31.75	1	25.4	1-5/8"-12	21.5	40.3
JPR-24-20	1-1/2	38.1	1-1/4	31.75	1-7/8"-12	27.5	42.9

JP Plug

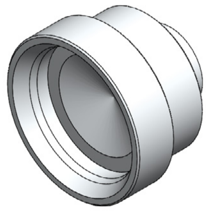


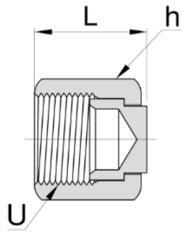


Part No.	Tube O.D		U	Dimensions (mm)	
	inch	mm	(UNF,UN)	E	L
JP-2	1/8	3.17	5/16"-24	17.8	11.1
JP-3	3/16	4.76	3/8"-24	18.5	11.1
JP-4	1/4	6.35	7/16"-20	20.3	12.7
JP-5	5/16	7.93	1/2"-20	20.3	14.2
JP-6	3/8	9.52	9/16"-18	21.3	15.8
JP-8	1/2	12.7	3/4"-16	23.9	20.6
JP-10	5/8	15.87	7/8"-14	27.9	20.6
JP-12	3/4	19.05	1-1/16"-12	32.5	28.5
JP-14	7/8	22.22	1-3/16"-12	33.3	31.7
JP-16	1	25.4	1-5/16"-12	33.8	34.9
JP-20	1-1/4	31.75	1-5/8"-12	36.8	42.8
JP-24	1-1/2	38.1	1-7/8"-12	41.9	50.8
JP-32	2	50.8	2-1/2"-12	52.1	66.6

※All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

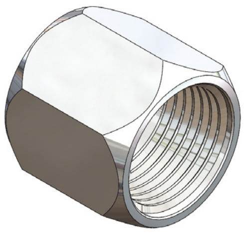
JPC Plug Cap

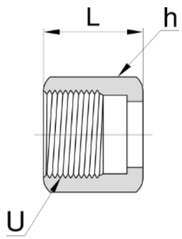




Part No.	Tube O.D		U	Dimensions (mm)	
	inch	mm	(UNF,UN)	L	h(HEX)
JPC-2	1/8	3.17	5/16"-24	13.7	9.5
JPC-3	3/16	4.76	3/8"-24	15.2	11.1
JPC-4	1/4	6.35	7/16"-20	15.5	14.2
JPC-5	5/16	7.93	1/2"-20	17	15.8
JPC-6	3/8	9.52	9/16"-18	18.3	17.4
JPC-8	1/2	12.7	3/4"-16	21.3	22.2
JPC-10	5/8	15.87	7/8"-14	24.6	25.4
JPC-12	3/4	19.05	1-1/16"-12	25.9	31.7
JPC-14	7/8	22.22	1-3/16"-12	27.4	34.9
JPC-16	1	25.4	1-5/16"-12	28.4	38.1
JPC-20	1-1/4	31.75	1-5/8"-12	31	50.8
JPC-24	1-1/2	38.1	1-7/8"-12	35.8	57.1
JPC-32	2	50.8	2-1/2"-12	44.2	73.02

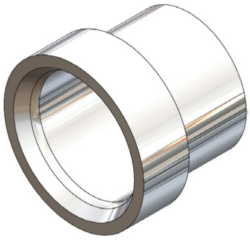
JN Nut

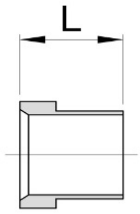




Part No.	Tube O.D		U	Dimensions (mm)	
	inch	mm	(UNF,UN)	L	h(HEX)
JN-2	1/8	3.17	5/16"-24	14	9.5
JN-3	3/16	4.76	3/8"-24	15.5	11.1
JN-4	1/4	6.35	7/16"-20	15.8	14.2
JN-5	5/16	7.93	1/2"-20	17.3	15.8
JN-6	3/8	9.52	9/16"-18	18.5	17.4
JN-8	1/2	12.7	3/4"-16	21.6	22.2
JN-10	5/8	15.87	7/8"-14	24.9	25.4
JN-12	3/4	19.05	1-1/16"-12	26.2	31.7
JN-14	7/8	22.22	1-3/16"-12	27.7	34.9
JN-16	1	25.4	1-5/16"-12	28.7	38.1
JN-20	1-1/4	31.75	1-5/8"-12	31.2	50.8
JN-24	1-1/2	38.1	1-7/8"-12	36.1	57.1
JN-32	2	50.8	2-1/2"-12	44.5	73.02

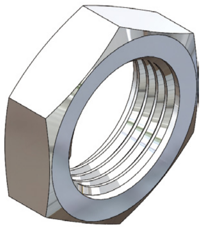
JS Sleeve

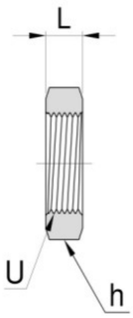




Part No.	Tube O.D		Dimensions (mm)
	inch	mm	L
JS-2	1/8	3.17	8.6
JS-3	3/16	4.76	8.6
JS-4	1/4	6.35	10.4
JS-5	5/16	7.93	11.2
JS-6	3/8	9.52	12.7
JS-8	1/2	12.7	14.2
JS-10	5/8	15.87	16.8
JS-12	3/4	19.05	17.3
JS-14	7/8	22.22	19.3
JS-16	1	25.4	19.8
JS-20	1-1/4	31.75	23.1
JS-24	1-1/2	38.1	28.4
JS-32	2	50.8	30.2

JLN Lock Nut





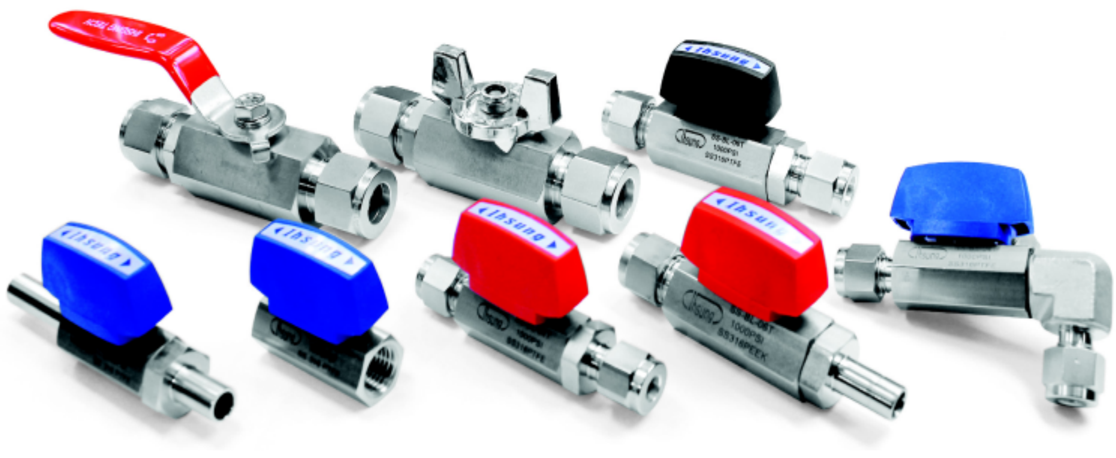
Part No.	Tube O.D		U (UNF,UN)	Dimensions (mm)	
	inch	mm		E	h(HEX)
JLN-2	1/8	3.17	5/16"-24	5.6	14.2
JLN-3	3/16	4.76	3/8"-24	5.6	15.8
JLN-4	1/4	6.35	7/16"-20	6.4	17.4
JLN-5	5/16	7.93	1/2"-20	6.4	19
JLN-6	3/8	9.52	9/16"-18	6.9	20.6
JLN-8	1/2	12.7	3/4"-16	7.9	25.4
JLN-10	5/8	15.87	7/8"-14	9.1	28.5
JLN-12	3/4	19.05	1-1/16"-12	10.4	34.9
JLN-14	7/8	22.22	1-3/16"-12	10.4	38.1
JLN-16	1	25.4	1-5/16"-12	10.4	41.2
JLN-20	1-1/4	31.75	1-5/8"-12	10.4	47.6
JLN-24	1-1/2	38.1	1-7/8"-12	10.4	53.9
JLN-32	2	50.8	2-1/2"-12	10.4	69.8

Ball Valve Series

Application

Semiconductor, Display, Solar. Oil Gas,
Power Plant, Offshore and Water Desalination

BL Series Hex Ball Valve Working Pressure Max. 1000psig



Maximum operation pressure
1000psi at 100˚F(38˚C) with PTFE Seat.

Compact Design
One piece hexagon body for high structural strength.

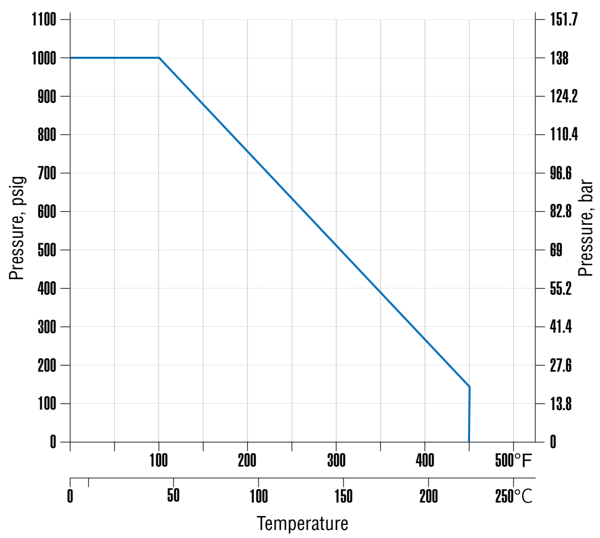
Easy operation
Tight shut-off of low torque and quarter – turn Quick operation.

Patented Nylon Handle
Available for better installation in a restricted space

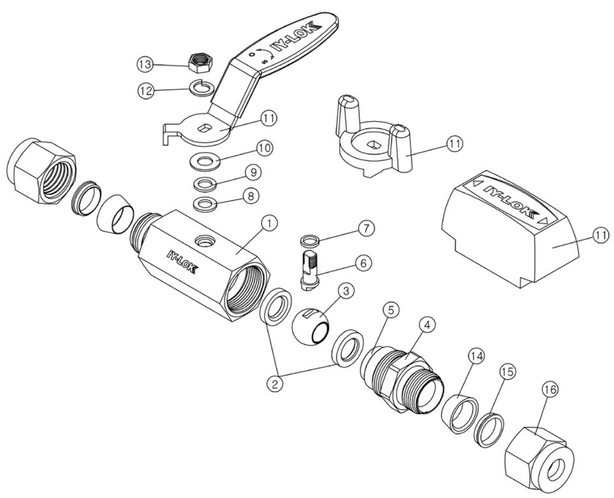
Easy to distinguish the flow line. (BLACK, RED, BLUE)

Variety of End Connections.

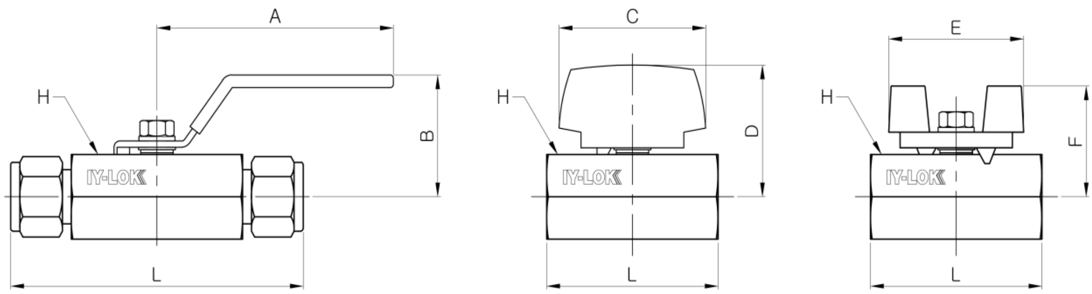
100% Factory tested



Materials of Constructon



ITEM NO.	DESCRIPTION	MATERIALS
①	Body	316 SS
②	Seat	PTFE
③	Ball	316 SS
④	Insert	316 SS
⑤	O-ring	FKM
⑥	Stem	316 SS
⑦	Inner Packing	PTFE
⑧	Outer Packing	PTFE
⑨	Gland	304 SS
⑩	Gland Washer	304 SS
	Lever Handle	304 SS
⑪	Butterfly Handle	Zinc
	Knob Handle	PTB
⑫	Spring Washer	304 SS
⑬	Lock Nut	304 SS
⑭	Front Ferrule	316 SS
⑮	Back Ferrule	316 SS
⑯	Nut	316 SS



Basic Part No.		End Connection Inlet	End Connection Outlet	Orifice	L	A	B	C	D	E	F	H(HEX)
BL1-	I - 06M	6mm IY-Lok		5.0	80.0	60.0	32	41	33.47	37.6	26.6	17.46
	I - 04T	1/4" IY-Lok			80.0							
	F - 04N	1/4" Female NPT			40.0							
	IS – 04TR	1/4" Stub Tube	1/4" IY-Lok		78							
	S – 04TRR	1/4" Stub Tube			75.7							
BL2-	I - 10M	10mm1/4" IY-Lok		7.5	90.0	80.0	40	41	34.70	41.0	30.2	20.63
	I - 06T	3/8" IY-Lok			90.0							
	F - 06N	3/8" Female NPT			45.0							
	IS – 06TR	3/8" Stub Tube	3/8" IY-Lok		90.0							
	S – 06TRR	3/8" Stub Tube			88.1							
BL3-	I - 12M	12mm IY-Lok		9.0	99.0	80.0	42	50	42.31	45.6	35.5	26.98
	I - 08T	1/2" IY-Lok			99.0							
	F - 08N	1/2" Female NPT			54.5							
	IS – 08TR	1/2" Stub Tube	1/2" IY-Lok		102							
	S – 08TRR	1/2" Stub Tube			103.2							
BL4-	I - 16M	16mm IY-Lok		12.5	109.0	100.0	51	50	43.93	49.0	38.1	31.75
	I - 10T	5/8" IY-Lok			109.0							
	I - 12T	3/4" IY-Lok			110.0							
	F - 12N	3/4" Female NPT			61.0							
	IS – 12TR	3/4" Stub Tube	3/4" IY-Lok		110.5							
	S – 12TRR	3/4" Stub Tube			113.2							
BL5-	I - 16T	1" IY-Lok		16.0	134.0	100.0	55	62	53.50	65.0	45.2	38.10
	F - 16N	1" Female NPT			76.0							
	IS – 16TR	1"Stub Tube	1" IY-Lok		138							
	S – 16TRR	1"Stub Tube			143.2							

Ordering System

BL3	-	I	-	08T	-	B	-	SS	-		-	
Valve Series		End Connection Type		End Connection Size		Handle Designator		Body Material		Seat Material		Option

Valve Series

BL1	BALL VALVE 1Series
BL2	BALL VALVE 2Series
BL3	BALL VALVE 3Series
BL4	BALL VALVE 4Series
BL5	BALL VALVE 5Series

End Connection Type

I	IY-LOK Tube Fitting
M	Male Pipe Thread
F	Female Pipe Thread
S	Stub Tube

End Connection Size

Tube O.D. Designation

Inch Tube	Tube O.D (inch)	1/4	3/8	1/2	3/4	1
	Designator	04T	06T	08T	12T	16T
Metric Tube	Tube O.D (mm)	6	8	10	12	16
	Designator	06M	08M	10M	12M	16M

Pipe Thread Designation (NPT or ISO7/1 (PT)

Thread Size	1/4	3/8	1/2	3/4	1
Designator	04N/R	06N/R	08N/R	12N/R	16N/R

Handle Designator

Nil	Lever Handle	
B	Butterfly Handle	
K1	Knob Handle	Black
K2		Red
K3		Blue

Body Material

SS	316 / 316L SS

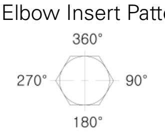
Seat Material

Nil	PTFE
PK	PEEK

Option (Pattern)

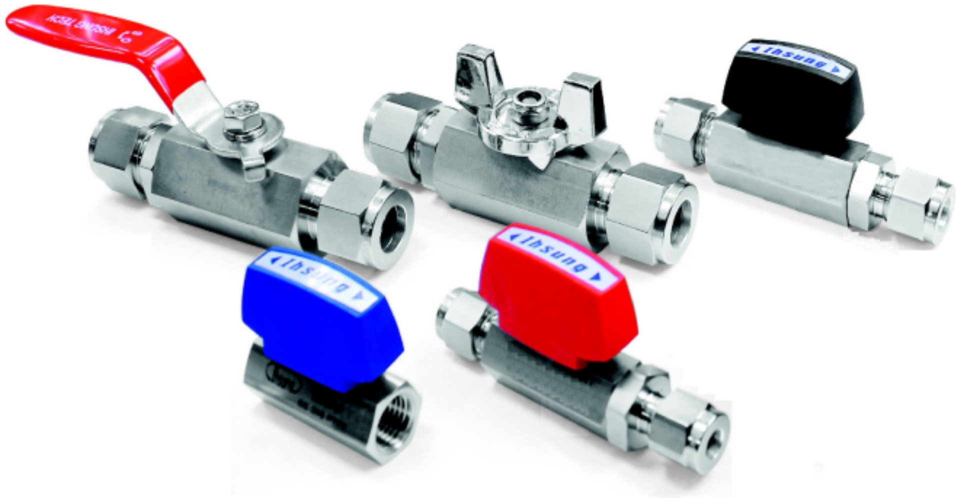
Nil	Hex Insert
90E	90˚ Pattern
180E	180˚ Pattern
270E	270˚ Pattern
360E	360˚ Pattern

∗Elbow Insert Pattern



※All dimensions are in millimeter for reference only. Dimensions shown with IY-LOK nuts in finger-tight position, where applicable.

BLT Series Working Pressure Max. 2000psig



Maximum operation pressure
2000psi at 100˚F(38˚C) with Modified PTFE Seat.

Compact Design
One piece hexagon body for high structural strength.

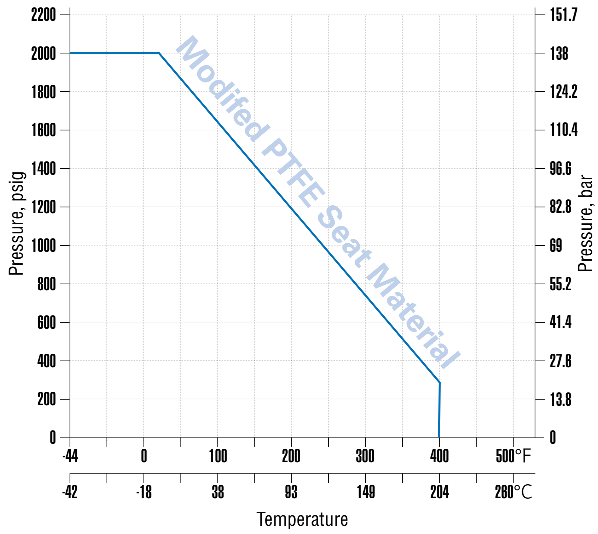
Easy operation
Tight shut-off of low torque and quarter – turn Quick operation.

Patented Nylon Handle
Available for better installation in a restricted space

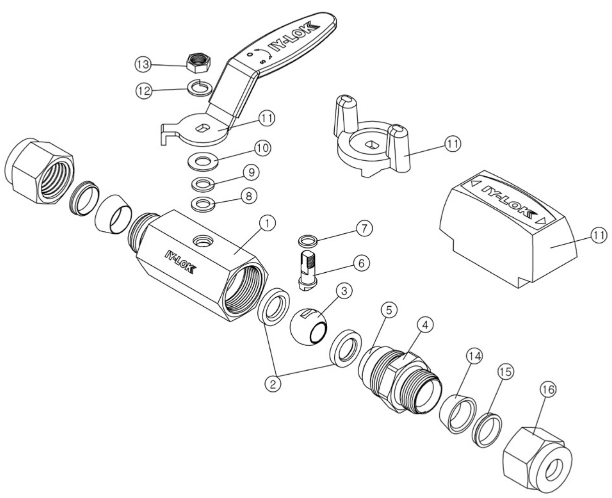
Easy to distinguish the flow line. (BLACK, RED, BLUE)

Variety of End Connections.

100% Factory tested

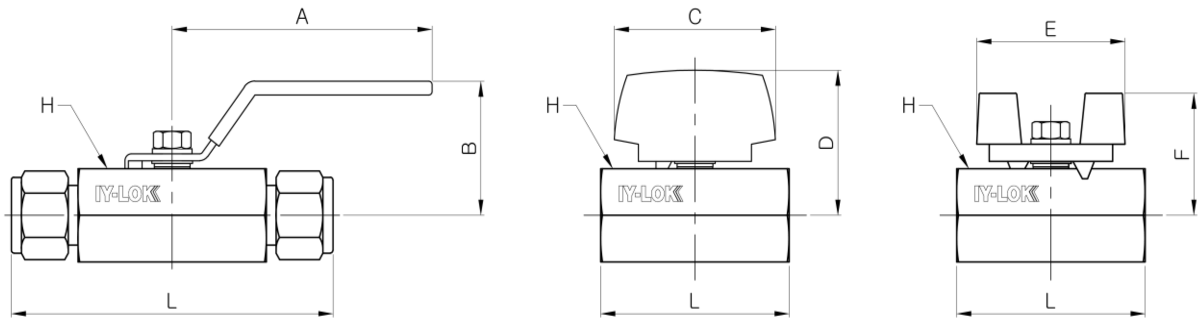


Materials of Constructon



ITEM NO.	DESCRIPTION	MATERIALS
①	Body	316 SS
②	Seat	TKM 1600
③	Ball	316 SS
④	Insert	316 SS
⑤	O-ring	FKM
⑥	Stem	316 SS
⑦	Inner Packing	PTFE
⑧	Outer Packing	PTFE
⑨	Gland	304 SS
⑩	Gland Washer	304 SS
⑪	Lever Handle	304 SS
	Butterfly Handle	Zinc
	Knob Handle	PTB
⑫	Spring Washer	304 SS
⑬	Lock Nut	304 SS
⑭	Front Ferrule	316 SS
⑮	Back Ferrule	316 SS
⑯	Nut	316 SS

Working Pressure Max. 2000psig



Basic Part No.		End Connection		Orifice	Dimensions (mm)							
		Inlet	Outlet		L	A	B	C	D	E	F	H(HEX)
BLT1-	I - 06M	6mm IY-Lok		5.0	80.0	60.0	32	41	33.47	37.6	26.6	17.46
	I - 04T	1/4" IY-Lok			80.0							
	F - 04N	1/4" Female NPT			40.0							
BLT2-	I - 10M	10mm IY-Lok		7.5	90.0	80.0	40	41	34.70	41.0	30.2	20.63
	I - 06T	3/8" IY-Lok			90.0							
	F - 06N	3/8" Female NPT			45.0							
BLT3-	I - 12M	12mm IY-Lok		9.0	99.0	80.0	42	50	42.31	45.6	35.5	26.98
	I - 08T	1/2" IY-Lok			99.0							
	F - 08N	1/2" Female NPT			54.5							
BLT4-	I - 16M	16mm IY-Lok		12.5	109.0	100.0	51	50	43.93	49.0	38.1	31.75
	I - 10T	5/8" IY-Lok			109.0							
	I - 12T	3/4" IY-Lok			110.0							
	F - 12N	3/4" Female NPT			61.0							
BLT5-	I - 16T	1" IY-Lok		16.0	134.0	100.0	55	62	53.50	65.0	45.2	38.10
	F - 16N	1" Female NPT			76.0							

Ordering System

BLT3 - I - 08T - B - SS

BLT3	I	08T	B	SS
Valve Series	End Connection Type	End Connection Size	Handle Designator	Body Material

Valve Series	
BLT1	BALL VALVE 1Series (2000 psi)
BLT2	BALL VALVE 2Series (2000 psi)
BLT3	BALL VALVE 3Series (2000 psi)
BLT4	BALL VALVE 4Series (2000 psi)
BLT5	BALL VALVE 5Series (2000 psi)

End Connection Type	
I	IY-LOK Tube Fitting
F	Female Pipe Thread

End Connection Size						
Tube O.D. Designation						
Inch Tube	Tube O.D (inch)	1/4	3/8	1/2	3/4	1
	Designator	04T	06T	08T	12T	16T
Metric Tube	Tube O.D (mm)	6	8	10	12	16
	Designator	06M	08M	10M	12M	16M

Pipe Thread Designation (NPT or ISO7/1 (PT)					
Thread Size	1/4	3/8	1/2	3/4	1
Designator	04N/R	06N/R	08N/R	12N/R	16N/R

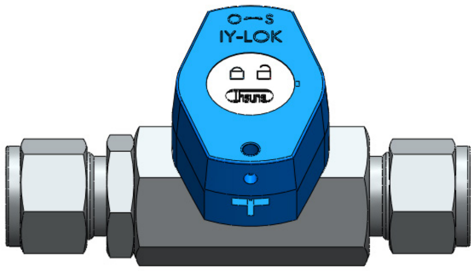
Handle Designator		
Nil	Lever Handle	
B	Butterfly Handle	
K1	Knob Handle	Black
K2		Red
K3		Blue

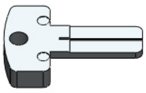
Body Material	
SS	316 / 316L SS

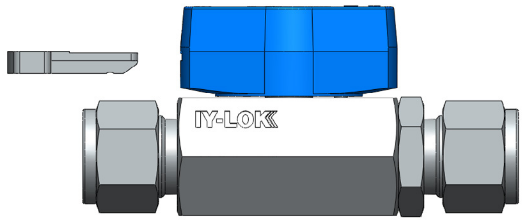
Ball Valve Series

Always together, Always success Since 1993

KBL Series Key Lock Ball Valve Working Pressure Max. 1000psig







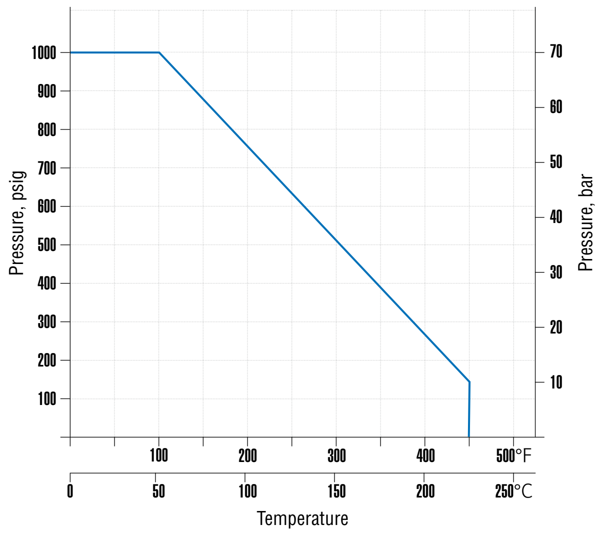
Max. operation pressure
1000psi(69bar) at 38˚F(100˚C) With PTFE Seat.

Compact Handle Design
Master Key release type

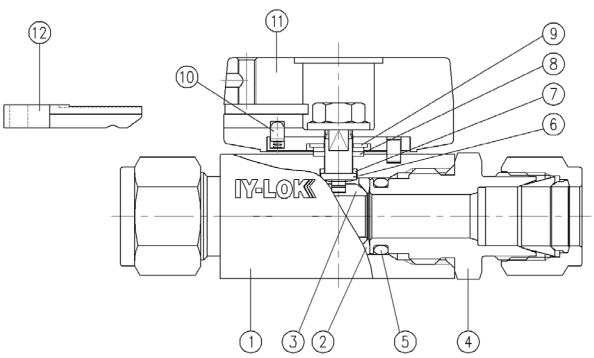
Body Material
316 Stainless steel

Variety of end connections.
IY-LOK Tube Fitting, NPT or ISO7/1 Female Thread.

100% Factory tested.

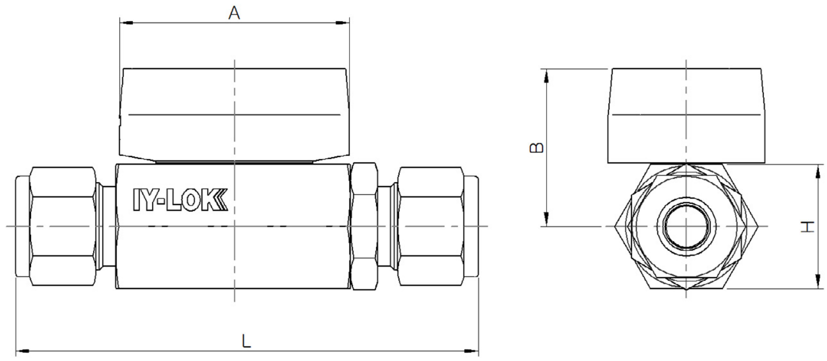


Materials of Constructon



ITEM NO.	DESCRIPTION	MATERIALS
①	Body	316 SS
②	Seat	PTFE
③	Stem	316 SS
④	Insert	316 SS
⑤	O-ring	FKM
⑥	Stem	316 SS
⑦	Inner Packing	PTFE
⑧	Outer Packing	PTFE
⑨	Gland	316 SS
⑩	Stop Pin	316 SS
⑪	Handle	Zinc
⑫	Key	Zinc

Working Pressure Max. 1000psig



Basic Part No.		End Connection		Orifice	Dimensions (mm)			
		Inlet	Outlet		L	A	B	H
KBL1	I-04T	1/4" IY-Lok		5.0	80.0	42	28.23	17.46
	F-04N	1/4" Female NPT			40.0			
KBL2	I-06T	3/8" IY-Lok		7.5	90.0	42	31.80	20.63
	F-06N	3/8" Female NPT			45.0			
KBL3	I-08T	1/2" IY-Lok		9.0	99.0	42	35.00	26.98
	F-08N	1/2" Female NPT			54.5			
KBL4	I-12T	3/4" IY-Lok		12.5	110.0	42	38.90	31.75
	F-12N	3/4" Female NPT			61.0			

Ordering System

KBL3	-	I	-	08T	-	SS	-		-	
Key Lock Ball Valve Series		End Connection Inlet & Outlet		End Connection Size		Body Material		Handle Color		Seat Material

Valve Series	
KBL3	Key Lock Ball Valve 3Series

End Connection Type	
I	IY-LOK Tube Fitting
M	Male Pipe Thread
F	Female Pipe Thread
S	Stub Tube

End Connection Size Tube O.D. Designation					
Inch Tube	Tube O.D (inch)	1/4	3/8	1/2	3/4
	Designator	04T	06T	08T	12T

Pipe Thread Designation (NPT or ISO7/1 (PT)				
Thread Size	1/4	3/8	1/2	3/4
Designator	04N/R	06N/R	08N/R	12N/R

Handle Color	
Nil	Blue
OR	Orange

Body Material	
SS	316 / 316L SS

Seat Material	
Nil	PTFE
PK	PEEK

※All dimensions are in millimeter for reference only. Dimensions shown with IY-LOK nuts in finger-tight position, where applicable.

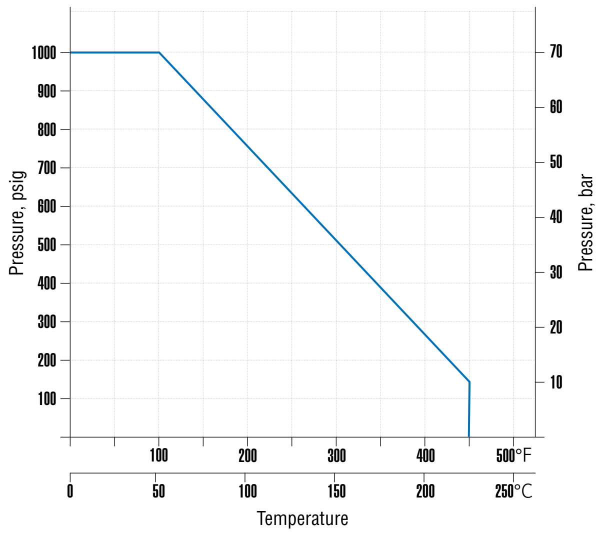
CBL Series Clean Ball Valve Working Pressure Max. 1000psig

Maximum operation pressure
1000psi at 100˚F(38˚C) with PTFE Seat.

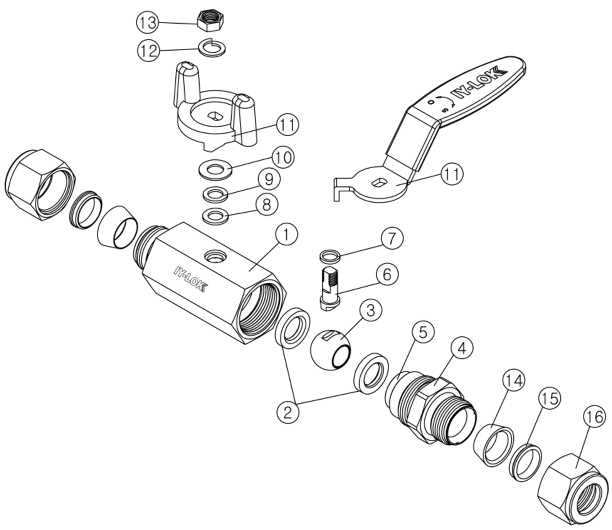
Compact Design
One piece hexagon body for high structural strength.

Easy operation
Tight shut-off of low torque and quarter – turn Quick operation.

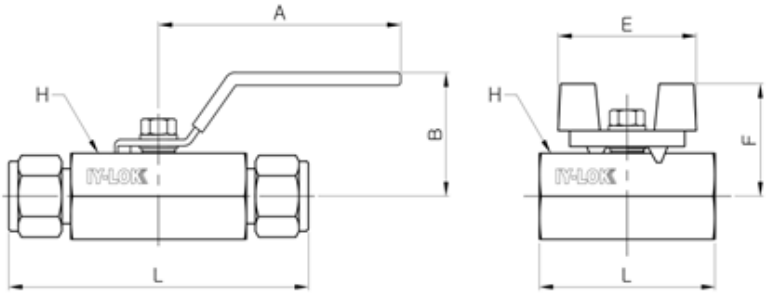
Maximum Flow Capacity.
Cleaning Process in a Certified Clean Room
Variety of End Connections.
100% Factory tested.



Materials of Constructon



ITEM NO.	DESCRIPTION	MATERIALS
①	Body	316 SS
②	Seat	PTFE
③	Ball	316 SS
④	Insert	316 SS
⑤	O-ring	FKM
⑥	Stem	316 SS
⑦	Inner Packing	PTFE
⑧	Outer Packing	PTFE
⑨	Gland	304 SS
⑩	Gland Washer	304 SS
⑪	Lever Handle	304 SS
	Butterfly Handle	Zinc
⑫	Spring Washer	304 SS
⑬	Lock Nut	304 SS
⑭	Front Ferrule	316 SS
⑮	Back Ferrule	316 SS
⑯	Nut	316 SS



Basic Part No.		End Connection Inlet	End Connection Outlet	Orifice	Dimensions (mm) L	A	B	C	E	F	H(HEX)
CBL 1	I - 06M	6mm IY-Lok		5.0	80.0	60.0	32	37.6	26.6	17.46	17.46
	I - 04T	1/4" IY-Lok			80.0						
	F - 04N	1/4" Female NPT			40.0						
	IS – 04TR	1/4" Stub Tube	1/4" IY-Lok		78						
	S – 04TRR	1/4" Stub Tube			75.7						
CBL 2	I - 10M	10mm1/4" IY-Lok		7.5	90.0	80.0	40	41.0	30.2	20.63	20.63
	I - 06T	3/8" IY-Lok			90.0						
	F - 06N	3/8" Female NPT			45.0						
	IS – 06TR	3/8" Stub Tube	3/8" IY-Lok		90.0						
	S – 06TRR	3/8" Stub Tube			88.1						
CBL 3	I - 12M	12mm IY-Lok		9.0	99.0	80.0	42	45.6	35.5	26.98	26.98
	I - 08T	1/2" IY-Lok			99.0						
	F - 08N	1/2" Female NPT			54.5						
	IS – 08TR	1/2" Stub Tube	1/2" IY-Lok		102						
	S – 08TRR	1/2" Stub Tube			103.2						
CBL 4	I - 16M	16mm IY-Lok		12.5	109.0	100.0	51	49.0	38.1	31.75	31.75
	I - 10T	5/8" IY-Lok			109.0						
	I - 12T	3/4" IY-Lok			110.0						
	F - 12N	3/4" Female NPT			61.0						
	IS – 12TR	3/4" Stub Tube	3/4" IY-Lok		110.5						
	S – 12TRR	3/4" Stub Tube			113.2						
CBL 5	I - 16T	1" IY-Lok		16.0	134.0	100.0	55	65.0	45.2	38.10	38.10
	F - 16N	1" Female NPT			76.0						
	IS – 16TR	1"Stub Tube	1" IY-Lok		138						
	S – 16TRR	1"Stub Tube			143.2						

Ordering System

CBL3 - **I** - **08T** - **SS** - ☐ - ☐

- CBL3: Clean Ball Valve Series
- I: End Connection Inlet & Outlet
- 08T: End Connection Size
- SS: Body Material
- Handle Designator
- Grade

Valve Series	
CBL1	Clean Ball Valve 1Series
CBL2	Clean Ball Valve 2Series
CBL3	Clean Ball Valve 3Series
CBL4	Clean Ball Valve 4Series
CBL5	Clean Ball Valve 5Series

End Connection Type	
I	IY-LOK Tube Fitting
M	Male Pipe Thread
F	Female Pipe Thread
S	Stub Tube

End Connection Size

Tube O.D. Designation						
Inch Tube	Tube O.D (inch)	1/4	3/8	1/2	3/4	1
	Designator	04T	06T	08T	12T	16T
Metric Tube	Tube O.D (mm)	6	8	10	12	16
	Designator	06M	08M	10M	12M	16M

Pipe Thread Designation (NPT or ISO7/1 (PT))					
Thread Size	1/4	3/8	1/2	3/4	1
Designator	04N/R	06N/R	08N/R	12N/R	16N/R

Handle Designator	
Nill	Butterfly Handle
L	Lever Handle

Body Material	
SS	316 / 316L SS

Grade	
Nil	Bright Anneal-ing
EP	Electro Polished

※All dimensions are in millimeter for reference only. Dimensions shown with IY-LOK nuts in finger-tight position, where applicable.

BM Series Working Pressure Max. 3000psig

Maximum operation pressure

Up to 3000psi(206bar) at 70˚F(21˚C)

Temperature rating

50˚F(10˚C) to 150˚F(65˚C) with reinforced PTFE seat and Packing.

Compact Design

One piece Compact bar stock design for high structural strength.

Easy operation

Tight shut-off of low torque and easy quick operation

Flow direction

Arrow on the handle indicates the flow direction.

Variety of flow patterns

Straight, Angle and 3-way patterns.

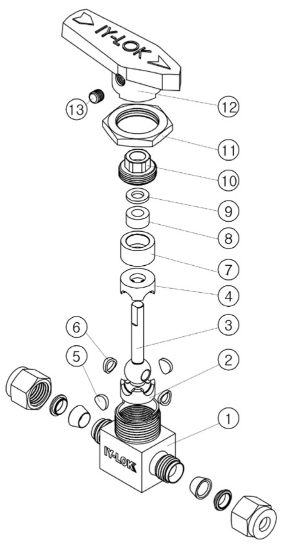
Variety of End Connections

100% Factory tested

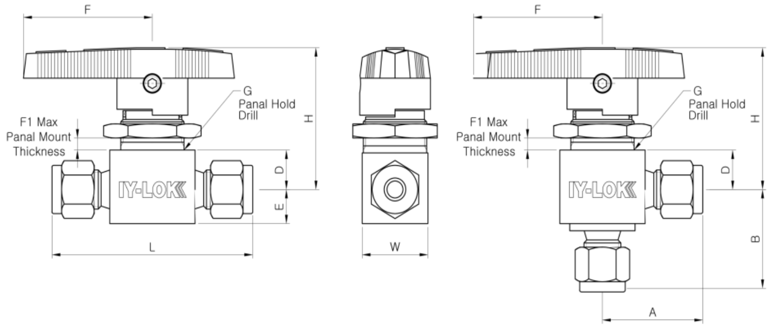
PRESSURE RATING @ 50˚F TO 150˚F (10˚C TO 65˚C)

ValveDesignator	Straight 2 - way	Angle 2 - way	Switching 3 - way
BM1	2500 psig (172bar)	2500 psig (172bar)	2500 psig (172bar)
BM2	3000 psig (206bar)	2500 psig (172bar)	2500 psig (172bar)
BM3	2500 psig (172bar)	1500 psig (103bar)	1500 psig (103bar)
BM4	2500 psig (172bar)	1500 psig (103bar)	1500 psig (103bar)

Materials of Constructon



ITEM NO.	DESCRIPTION	MATERIALS
①	Body	316 SS
②	Lower Ball Seat	316 SS
③	Ball Stem	316 SS
④	Upper Ball Seat	316 SS
⑤	Side Ring	316 SS
⑥	Side Disc	316 SS
⑦	Gland	316 SS
⑧	Packing	PTFE
⑨	Packing Ring	316 SS
⑩	Packing Bolt	316 SS
⑪	Panel Nut	316 SS
⑫	Handle	Nylon
⑬	Set screw	304 SS



2-WAY Shut Off Valve

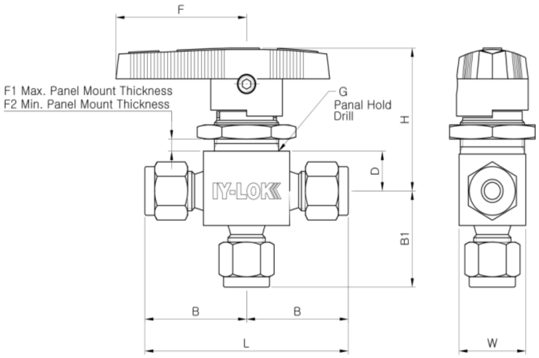
Basic	Orifice	CV	End Connection	Dimensions (mm)										
Part No.	mm		Inlet / Outlet	L	A	B	H	E	D	F	F_1	F_2	G	W
BM1-I-1T	1.3	0.1	1/16" IY-Lok	42.6	21.3	21.3	34.0	8.8	8.8	28.0	5.5	2.0	15.0	17.5
BM1-I-3M	2.4	0.2	3mm IY-Lok	50.8	25.4	25.4	34.0	8.8	8.8	28.0	5.5	2.0	15.0	17.5
BM1-I-2T		0.2	1/8" IY-Lok											
BM1-F-2N	3.2	0.5	1/8" Female NPT	41.2	20.6	20.6	34.0	8.8	8.8	28.0	5.5	2.0	15.0	17.5
BM1-I-6M		0.6	6mm IY-Lok	55.4	27.7	27.7								
BM1-I-4T		0.6	1/4" IY-Lok											
BM2-F-2N	4.8	1.2	1/8" Female NPT	50.8	25.4	25.4	41.2	10.0	10.0	39.0	6.0	2.5	20.0	20.0
BM2-F-4N		0.9	1/4" Female NPT	52.4	26.2	26.2								
BM2-F-2R		0.9	1/8" ISO Female Tapered											
BM2-I-6M		2.4	6mm IY-Lok	60.4	30.2									
BM2-I-4T		2.4	1/4" IY-Lok											
BM2-I-8M		1.5	8mm IY-Lok	62	31	31								
BM2-I-6T		1.5	3/8" IY-Lok	65	32.5	32.5								
BM3-F-4N	7.1	3.0	1/4" Female NPT	63.6	31.8	31.8	52.8	14.3	14.5	51.0	9.0	3.0	28.0	28.6
BM3-F-6N		2.6	3/8" Female NPT											
BM3-F-4R		2.6	1/4" ISO Female Tapered											
BM3-I-6T		6.0	3/8" IY-Lok	77.8	38.9	38.9								
BM3-I-10M		6.0	10mm IY-Lok											
BM4-F-8N	10.3	6.3	1/2" Female NPT	79.2	39.6	39.6	67.0	17.5	17.5	77.0	10.0	3.0	39.0	38.1
BM4-F-8R		63.0	1/2" ISO Female											
BM4-I-12M		12.0	12mm IY-Lok	100	50	50								
BM4-I-8T		12.0	1/2" IY-Lok											
BM4-I-12T		6.4	3/4" IY-Lok											

Flow Rate

Pressure Drop to Atmosphere(⊿p) in psi		Cv														
		0.1	0.2	0.5	0.6	0.9	1.2	1.5	1.6	2.4	2.6	3.0	6.0	6.3	6.4	12.0
Air SCFM @70˚F(21˚C)	10	1.1	2.7	6.9	8.3	12	17	21	22	33	36	41.5	83	87.2	88.6	166
	50	3	7.6	19.1	23	34	46	57	61	92	99.5	115	230	241	245	459
	100	5.3	14	33.9	40.7	61	81	100	110	160	176	203	407	427	434	814
Water US GPM @70˚F(21˚C)	10	0.3	0.6	1.6	1.9	2.8	3.7	4.7	5	7.5	8.2	9.5	19	19.9	20.2	87.9
	50	0.7	1.4	3.5	4.2	6.3	8.4	11	11	17	18.4	21.2	42.3	44.5	45.3	84.9
	100	1	2	5	6	9	12	15	16	24	26	30	60	63	64	120

※All dimensions are in millimeter for reference only. Dimensions shown with IY-LOK nuts in finger-tight position, where applicable.

Working Pressure Max. 3000psig



3-Way Switching Valve

Basic	Orifice	CV	End Connection		Dimensions (mm)									
Part No.	mm		Inlet	Outlet	L	B	B_1	D	H	F	F_1	F_2	G	W
BM1-3-I-1T	1.3	0.08	1/16" IY-Lok		42.6	21.3	20.6	8.8	34.0	28.0	5.5	2.0	15.0	17.5
BM1-3-I-3M	2.4	0.15	3mm IY-Lok		50.8	25.4	24.6	8.8	34.0	28.0	5.5	2.0	15.0	17.5
BM1-3-I-2T		0.15	1/8" IY-Lok											
BM1-3-F-2N	3.2	0.30	1/8" Female NPT		41.2	20.6	20.6	8.8	34.0	28.0	5.5	2.0	15.0	17.5
BM1-3-I-6M		0.35	6mm IY-Lok		55.4	27.7	26.2							
BM1-3-I-4T		0.35	1/4" IY-Lok											
BM2-3-F-4N	4.8	0.75	1/4" Female NPT		52.4	30.2	26.2	10.0	41.2	39.0	6.0	2.5	20.0	20.0
BM2-3-F-4R		0.75	1/4" ISO Female Ta-pered											
BM2-3-I-6M		0.90	6mm IY-Lok		60.4	30.2	29.5							
BM2-3-I-4T		0.90	1/4" IY-Lok											
BM2-3-I-8M		0.80	8mm IY-Lok		62	31	30.2							
BM3-3-F-4N	7.1	1.70	1/4" Female NPT		63.6	31.8	31.8	14.5	52.8	51.0	9.0	3.0	28.0	28.6
BM3-3-F-6N		1.50	3/8" Female NPT											
BM3-3-F-6R		1.50	3/8" ISO Female Ta-pered											
BM3-3-I-6T		2.00	3/8" IY-Lok		73.2	36.6	35.8							
BM3-3-I-10M		2.00	10mm IY-Lok											
BM4-3-F-8N	10.3	3.50	1/2" Female NPT		79.2	39.6	39.6	17.5	67.0	77.0	10.0	3.0	39.0	38.1
BM4-3-F-8R		3.50	1/2" ISO Female Ta-pered											
BM4-3-I-12M		4.60	12mm IY-Lok		89	44.5	44.5							
BM4-3-I-8T		4.60	1/2" IY-Lok											
BM4-3- I-12T		3.80	3/4" IY-Lok											

FLOW RATE

Pressure Drop to Atmosphere(⊿ p) in psi		Cv												
		0.08	0.15	0.30	0.35	0.75	0.80	0.90	1.50	1.70	2.00	3.50	3.80	4.60
Air SCFM @70˚F(21˚C)	10	0.9	2.0	4.2	4.8	10.0	11.0	12.0	20.8	23.5	27.7	48.4	52.6	63.7
	50	2.4	5.7	11.5	13.4	29.0	31.0	34.0	57.4	65.0	76.5	134.0	145.0	176.0
	100	4.3	10.1	20.3	23.7	51.0	54.0	61.0	102.0	115.0	136.0	237.0	258.0	312.0
Water US GPM @70˚F(21˚C)	10	0.3	0.4	0.9	1.1	2.3	2.5	2.8	4.7	5.4	6.3	11.1	12.0	14.5
	50	0.6	1.0	2.1	2.5	5.3	5.6	6.3	10.6	12.0	14.1	24.7	26.9	32.5
	100	0.8	1.5	3.0	3.5	7.5	8.0	9.0	15.0	17.0	20.0	35.0	38.0	46.0

※All dimensions are in millimeter for reference only. Dimensions shown with IY-LOK nuts in finger-tight position, where applicable.

Ordering System

BM2	-		-	I	-	06T	-	SS
Valve Series		Connection Pattern		End Connection Type		Size Designator		Body Material

Valve Series	
BM1	BM1 Series
BM2	BM2 Series
BM3	BM3 Series
BM4	BM4 Series

Valve Series	
Nill	2Way
3	3Way
A	Angle

End Connection Size

Tube O.D. Designation					
Inch Tube	Tube O.D (inch)	1/4	3/8	1/2	3/4
	Designator	04T	06T	08T	12T
Metric Tube	Tube O.D (mm)	6	8	10	12
	Designator	06M	08M	10M	12M

Pipe Thread Designation (NPT or ISO7/1 (PT))				
Thread Size	1/4	3/8	1/2	1
Designator	04N/R	06N/R	08N/R	16N/R

End Connection Type	
I	IY-LOK Tube Fitting
F	Female Pipe Thread

Body Material	
SS	316 / 316L SS

BH Series Working Pressure Max. 6000psig

Maximum operation pressure
Up to 6000psi(414bar) at 70˚F(21˚C)

Temperature rating
-22˚F(-30˚C) to 265˚F(130˚C) with PCTFE seat.
-65˚F(-54˚C) to 500˚F(260˚C) with PEEK seat.

Variety of flow patterns
Straight and 3-way patterns.

Function
On/off service with 2-way pattern
Diverter service with 3-way pattern

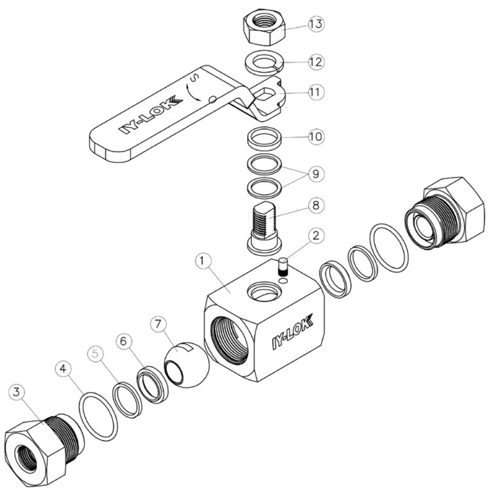
Variety of end connections.

Anti blow-out stem design.

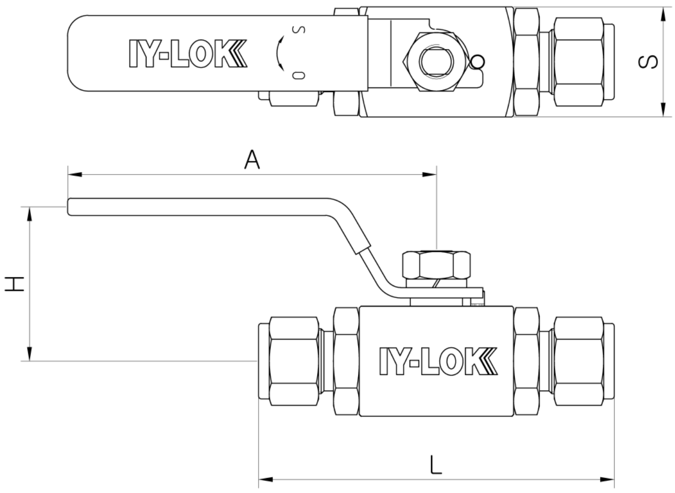
Minimize the pressure drop with Max orifice.

100% Factory tested.
* Each valve is tested with nitrogen @1000psig (69bar) to maximum allowable leak rate of 0.1SCCM.
* Hydrostatic shell test is performed at 1.5times the working pressure.
* Optional tests are available upon request.

Materials of Constructon



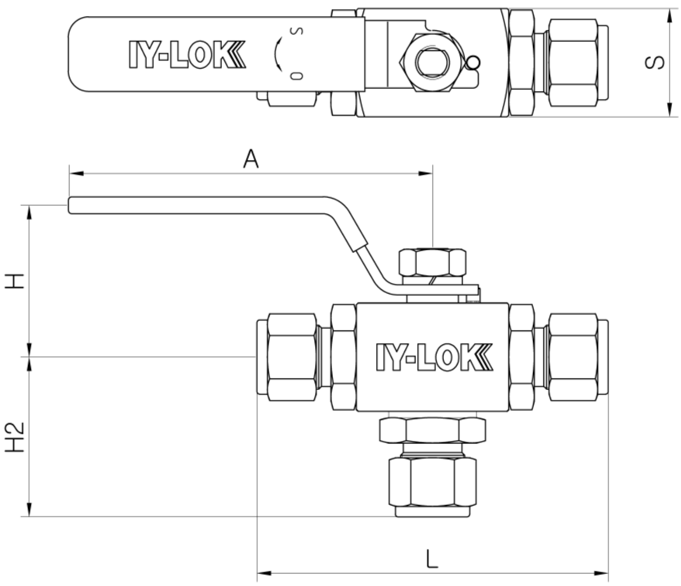
ITEM NO.	DESCRIPTION	MATERIALS
①	Body	316 SS
②	Stop Pin	304 SS
③	Connector	316 SS
④	O-Ring	FKM
⑤	Ring Seat	PTFE
⑥	Ball Seat	PCTFE
⑦	Ball	316 SS
⑧	Stem	316 SS
⑨	Packing	PTFE
⑩	Gland	316 SS
⑪	Handle	304 SS
⑫	Spring Washer	304 SS
⑬	Nut	304 SS



2-Way

Part No.		Orifice	CV	End Connection Inlet & Outlet	d Min.	Dimensions (mm) L	H	A	S
BH1	-I-4T	10	1.2	1/4" IY-Lok	4.8	91.6	45	107.5	32
	-I-6T		3.7	3/8" IY-lok	7.11	94.6			
	-I-8T		7.5	1/2" IY-lok	10	103.6			
	-F-4N			1/4" Female NPT		70			
	-F-6N			3/8" Female NPT		71			
	-F-8N			1/2" Female NPT		79			
	-M-4N		3.7	1/4" Male NPT	7.11	85.4			
	-M-6N		7.2	3/8" Male NPT	9.65	85.4			
	-M-8N		7.5	1/2" Male NPT	10	98			
BH2	-F-8N-	12.7	10	1/2" Female NPT	12.7	90	55.5	148.5	40
	-F-12N			3/4" Female NPT		98			
	-M-12N			3/4" Male NPT		105.2			
	-I-10T			5/8" IY-Lok		110.6			
	-I-12T			3/4" IY-lok		110.6			
BH3	-F-12N	19	30	3/4" Female NPT	20	90	55.5	148.5	50
	-F-16N			1" Female NPT		98.2			
	-I-12T		19	3/4" IY-lok	15.74	116.6			
	-I-16T		30	1" IY-lok	20	129.8			
	-M-12N		19	3/4" Male NPT	15.75	115.2			
	-M-16N		30	1" Male NPT	20	124.8			

※All dimensions are in millimeter for reference only. Dimensions shown with IY-LOK nuts in finger-tight position, where applicable.



3-Way

Part No.		Orifice	CV	End Connection Inlet & Outlet	d Min.	Dimensions (mm) L	H	A	S
BH1-3	-I-4T	10	1.2	1/4" IY-Lok	4.8	91.6	45	107.5	32
	-I-6T		3.7	3/8" IY-lok	7.11	94.6			
	-I-8T		7.5	1/2" IY-lok	10	103.6			
	-F-4N			1/4" Female NPT		70			
	-F-6N			3/8" Female NPT		71			
	-F-8N			1/2" Female NPT		79			
BH2-3	-F-8N-	12.7	10	1/2" Female NPT	12.7	90	55.5	148.5	40
	-F-12N			3/4" Female NPT		98			
	-I-12T			3/4" IY-lok		110.6			
BH3-3	-F-12N	19	30	3/4" Female NPT	20	90	55.5	148.5	50
	-F-16N			1" Female NPT		98.2			
	-I-12T		19	3/4" IY-lok	15.74	116.6			
	-I-16T		30	1" IY-lok	20	129.8			

※All dimensions are in millimeter for reference only. Dimensions shown with IY-LOK nuts in finger-tight position, where applicable.

Pressure Temperature Rating

2-WAY Straight Types

VALVE Series	Materials			Pressure Rating @ -65°F~70°F(-54°C~21°C)	Temperature Rating
	Seat	Stem Packing	End Seal		
BH1	PVDF	PTFE		6000psig(413bar)	-22°F~265°F (-30°C~130°C)
	PCTFE				-22°F~265°F (-30°C~130°C)
	PEEK			10000psig(690bar)	-65°F~500°F (-54°C~260°C)
BH2 , BH3	PVDF			5000psig(344bar)	-10°F~375°F (-23°C~191°C)
	PCTFE				
	PEEK			6000psig(413bar)	

3-WAY Straight Types

VALVE Series	Materials			Pressure Rating @ -65°F~70°F(-54°C~21°C)	Temperature Rating
	Seat	Stem Packing	End Seal		
BH1-3	PVDF	PTFE	VITON	4000psig(275bar)	-22°F~265°F (-30°C~130°C)
	PCTFE				-22°F~355°F (-30°C~180°C)
	PEEK			6000psig(413bar)	-65°F~500°F (-54°C~260°C)
BH2-3 BH3-3	PVDF			3000psig(206bar)	-10°F~375°F (-23°C~191°C)
	PCTFE				
	PEEK			4000psig(275bar)	

Ordering System

BH1	-		-	I	-	08T	-	SS
Valve Series		Connection Pattern		End Connection Type		Size Designator		Body Material

Valve Series	
BH1	BH1 Series
BH2	BH2 Series
BH3	BH3 Series

Connection Pattern	
Nill	2Way
3	3Way

End Connection Size						
Tube O.D. Designation						
Inch Tube	Tube O.D (inch)	1/4	3/8	1/2	3/4	1
	Designator	04T	06T	08T	12T	16T
Metric Tube	Tube O.D (mm)	6	8	10	12	16
	Designator	06M	08M	10M	12M	16M

Pipe Thread Designation (NPT or ISO7/1 (PT))					
Thread Size	1/4	3/8	1/2	3/4	1
Designator	04N/R	06N/R	08N/R	12N/R	16N/R

End Connection Type	
I	IY-LOK Tube Fitting
M	Male Pipe Thread
F	Female Pipe Thread

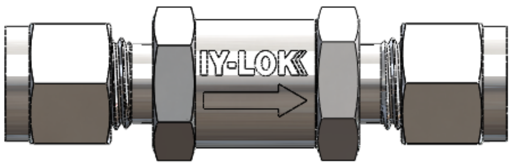
Body Material	
SS	316 / 316L SS

Check Valve Series

High Control & Technology

**Semiconductor, Display, Solar. Oil Gas,
Power Plant, Offshore and Water Desalination**

IHCV Series Working Pressure Max. 3000psi



Maximum operation pressure
Up to 3000psig(206bar) at 70˚F(21˚C)

Temperature rating
Up to 375˚F(191˚C) with FKM seal

Fixed Cracking Pressure Check Valves
From 1/3 to 25psi (0.02 to 1.7bar)

Suitable for Gas and Liquid

Variety of End Connections.

100% Factory tested.

Technical Data

Series No.	IHCV1,2,3 (1/8" to 1/2")	IHCV4,5 (3/4" to 1")
Max. Working Pressure@70˚F (21˚C)	3000psi (206bar)	2000psi (137bar)
OperatingTemperature Range	Fluorocarbon FKM (viton) -10˚F to 375˚F (-23˚C to 191˚C)	
NorminalCracking Pressure	1/3, 1, 3, 10, 25psi	

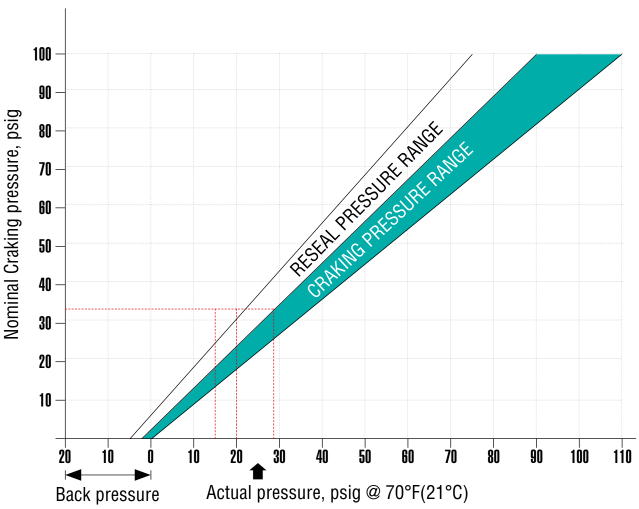
O-Ring Material Temperature Ratings

Material	Temperature Rating
Fluorocarbon FKM (Viton)	-10˚F to 375˚F (-23˚C to 190˚C)
NBR	-4˚F to 221˚F (-20˚C to 105˚C)

Pressure Temperature Rating (Viton)

Seat	Temperature		Working Pressuer, psi 316 SS	
	˚F	C˚	psi	bar
IHCV1, 2, 3 (1/8" to 1/2")	-10 to 100	-23 to 37	3000	206
	200	93	2575	177
	250	121	2450	168
	300	148	2325	160
	375	191	2185	150
IHCV4, 5 (3/4" to 1")	-10 to 100	-23 to 37	2000	137
	200	93	1715	118
	250	121	1630	112
	300	148	1545	106
	375	191	1450	99.9

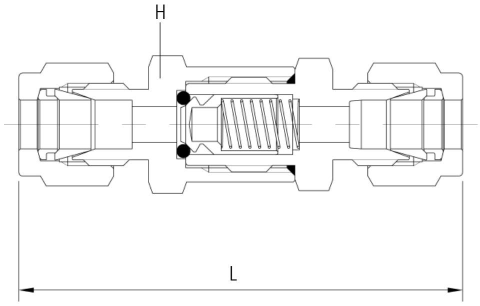
Cracking & Reseal Pressure @70˚F(21˚C)



* psi (bar)

Norminal CrackingPressure	Cracking Pressure Range	Reseal Pressure
1/3 (0.02)	0 ~ 3 (0 ~ 0.2)	up to 6 (0.41)
1 (0.06)	0 ~ 4 (0 ~ 0.27)	up to 5 (0.34)
3 (0.2)	2 ~ 7 (0.13 ~ 0.48)	up to 4 (0.27)
10 (0.68)	7 ~ 15 (0.48 ~ 1.03)	Min. 3 (0.2)
25 (1.72)	20 ~ 30 (1.37 ~ 2.06)	Min. 17 (1.1)

Working Pressure Max. 3000psig



Materials of Construction

No.	Description	Material
1	Body	316 SS
2	Insert	316 SS
3	Poppet	316 SS
4	Spring	304 SS
5	O-Ring	FKM

Table of Dimensions

Part No.		End Connections	Dimensions (mm)	
		Inlet | Outlet	L	H
IHCV1	I-02T	IY-Lok 1/8"	55.6	15.87
	I-04T	IY-Lok 1/4"	59.7	
	IS-04TR	1/4" Stub Tube | 1/4" IY-Lok	59.7	
	I-06M	IY-Lok 6mm	59.9	
	F-02N	Female 1/8" NPT	48	
	F-04N	Female 1/4" NPT	54.6	19.05
	M-02N	Male 1/8" NPT	43.4	15.87
	M-04N	Male 1/4" NPT	53.1	
IHCV2	I-06T	IY-Lok 3/8"	75.4	22.22
	IS-06TR	3/8" Stub Tube | 3/8" IY-Lok	75.4	
	I-10M	IY-Lok 10mm	84.3	
	F-06N	Female 3/8" NPT	75.7	
	M-06N	Male 3/8" NPT	70.6	
IHCV3	I-12M	IY-Lok 12mm	86.9	22.22
	I-08T	IY-Lok 1/2"	86.9	
	IS-08TR	1/2" Stub Tube | 1/2" IY-Lok	86.9	
	F-08N	Female 1/2" NPT	90.9	26.98
	M-08N	Male 1/2" NPT	80.3	22.22
IHCV4	I-12T	IY-Lok 3/4"	90.5	31.75
	IS-12TR	3/4" Stub Tube | 3/4" IY-Lok	90.5	
	SI-12TR	3/4" IY-Lok | 3/4" Stub Tube	90.5	
	F-12N	Female 3/4"	104	
	M-12N	Male 3/4"	104	
IHCV5	I-16T	IY-Lok 1"	120	34.92
	IS-16TR	1" Stub Tube | 1" IY-Lok	120	
	F-16N	Female 1"	123	41.27
	M-16N	Male 1"	115	41.27

∗ISO Tapered Thread, put "R" digit at the last of part number.

Ordering System

IHCV1 - I - 04T - 1 - SS - [ ]

- IHCV1: Valve Series
- I: Inlet & Outlet Connection Type
- 04T: End Connection Size
- 1: Cracking Pressure
- SS: Body Material
- [ ]: O-Ring Material

Valve Series	
IHCV1	Check Valve 1 Series
IHCV2	Check Valve 2 Series
IHCV3	Check Valve 3 Series
IHCV4	Check Valve 4 Series
IHCV5	Check Valve 5 Series

Inlet & Outlet Connection Type	
I	IY-LOK Tube Fitting
S	Stub Tube
M	Male Pipe Thread
F	Female Pipe Thread

End Connection Size – Tube O.D. Designation						
Inch Tube	Tube O.D (inch)	1/4	3/8	1/2	3/4	1
	Designator	04T	06T	08T	12T	16T
Metric Tube	Tube O.D (mm)	6	8	10	12	16
	Designator	06M	08M	10M	12M	16M

Pipe Thread Designation (NPT or ISO7/1 (PT))					
Thread Size	1/4	3/8	1/2	3/4	1
Designator	04N/R	06N/R	08N/R	12N/R	16N/R

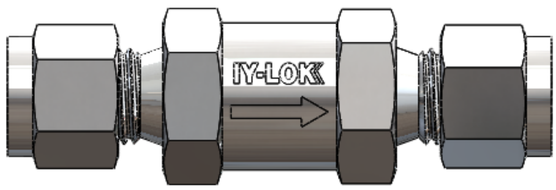
Body Material	
SS	316 / 316L SS

Cracking Pressure	
1/3	1/3 psi
1	1 psi
3	3 psi
10	10 psi
25	25 psi

O-Ring Material	
Nill(F)	FKM
N	NBR

※All dimensions are in millimeter for reference only. Dimensions shown with IY-LOK nuts in finger-tight position, where applicable.

CVH Series Working Pressure Max. 6000psig



Maximum operation pressure
Up to 6000psig(413bar) at 70˚F(21˚C)

Temperature rating
Up to 375˚F(191˚C) with FKM seal

Fixed Cracking Pressure Check Valves From 1/3 to 25psi (0.02 to 1.7bar)

O-Ring and Backup Ring Variety of End Connections.

100% Factory tested.

Technical Data

Series No.	CVH1,2	CVH3
Max. Working Pressure@70˚F (21˚C)	6000psi (413bar)	5000psi (344bar)
OperatingTemperature Range	Fluorocarbon FKM (viton) -10˚F to 375˚F (-23˚C to 191˚C)	
Norminal Cracking Pressure	1/3, 1, 3, 10, 25psi	

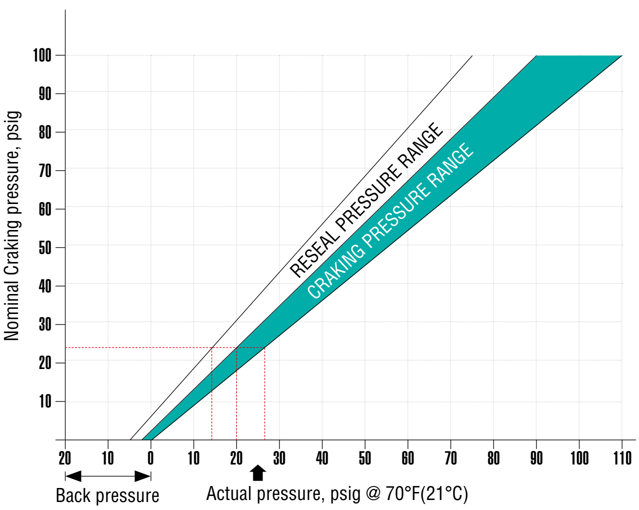
O-Ring Material Temperature Ratings

Material	Temperature Rating
Fluorocarbon FKM (Viton)	-10˚F to 375˚F (-23˚C to 191˚C)
NBR	-4˚F to 221˚F (-20˚C to 105˚C)
Ethylene Propylene	-50˚F to 275˚F (-46˚C to 135˚C)

PRESSURE TEMPERATURE RATING (VITON)

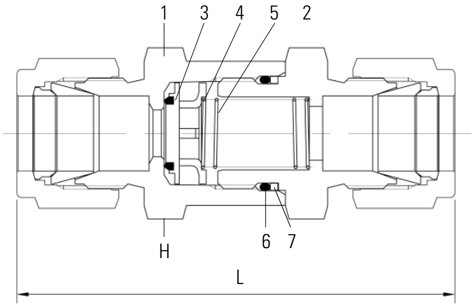
TEMPERATURE ˚F(˚C)	Working Pressure	
	CVH1,2	CVH3
-10˚F(-23˚C)~ 100˚F(37˚C)	6000psi (413bar)	5000psi (344bar)
200˚F(93˚C)	5160psi (355bar)	4290psi (295bar)
250˚F(121˚C)	4910psi (338bar)	4080psi (281bar)
300˚F(148˚C)	4660psi (321bar)	3875psi (366bar)
400˚F(204˚C)	4280psi (294bar)	3560psi (245bar)

Cracking & Reseal Pressure @70˚F(21˚C)



* psi (bar)

Norminal CrackingPressure	Cracking Pressure Range	Reseal Pressure
1/3 (0.02)	0 ~ 3 (0 ~ 0.2)	up to 6 (0.41)
1 (0.06)	0 ~ 4 (0 ~ 0.27)	up to 5 (0.34)
3 (0.2)	2 ~ 7 (0.13 ~ 0.48)	up to 4 (0.27)
10 (0.68)	7 ~ 15 (0.48 ~ 1.03)	Min. 3 (0.2)
25 (1.72)	20 ~ 30 (1.37 ~ 2.06)	Min. 17 (1.1)



Materials of Construction

No.	Description	Material
1	Body	316 SS
2	Insert	316 SS
3	Poppet	316 SS
4	Poppet Stop	316 SS
5	Spring	304 SS
6	O-Ring	FKM
7	Backup Ring	PTFE

Table of Dimensions

Part No.		End Connections		Dimensions (mm)	
		Inlet	Outlet	L	H
CVH1	I-02T	IY-Lok 1/8"		57.7	17.46
	I-04T	IY-Lok 1/4"		61.7	
	I-06M	IY-Lok 6mm		54.1	
	M-02N	Male 1/8" NPT		45.5	
	M-04N	Male 1/4" NPT		55.1	
CVH2	I-06T	IY-Lok 3/8"		69.9	25.4
	I-08T	IY-Lok 1/2"		75.2	
	I-08M	IY-Lok 8mm		68.6	
	I-10M	IY-Lok 10mm		71.1	
	I-12M	IY-Lok 12mm		75.2	
	F-06N	Female 3/8" NPT		64.8	
	F-08N	Female 1/2" NPT		77	26.98
	M-06N	Male 3/8" NPT		59.9	25.4
	M-08N	Male 1/2" NPT		69.3	
CVH3	I-12T	IY-Lok 3/4"		89.4	41.27
	I-16T	IY-Lok 1"		99.4	
	I-22M	IY-Lok 22mm		88.4	
	I-25M	IY-Lok 25mm		98.6	
	F-12N	Female 3/4" NPT		82	
	F-16N	Female 1" NPT		97.3	
	M-12N	Male 3/4" NPT		83.6	
	M-16N	Male 1" NPT		93.2	

∗ISO Tapered Thread, put “R” digit at the last of part number.

※All dimensions are in millimeter for reference only. Dimensions shown with IY-LOK nuts in finger-tight position, where applicable.

Ordering System

CVH2	-	I	-	06T	-	1	-	SS	-	
Valve Series		Inlet & Outlet Connection Type		End Connection Size		Cracking Pressure		Body Material		O-Ring Material

Valve Series	
CVH1	High Pressure Check Valve 1Series
CVH2	High Pressure Check Valve 2Series
CVH3	High Pressure Check Valve 3Series

Inlet & Outlet Connection Type	
I	IY-LOK Tube Fitting
S	Stub Tube
M	Male Pipe Thread
F	Female Pipe Thread

End Connection Size

Tube O.D. Designation						
Inch Tube	Tube O.D (inch)	1/4	3/8	1/2	3/4	1
	Designator	04T	06T	08T	12T	16T
Metric Tube	Tube O.D (mm)	6	8	10	12	16
	Designator	06M	08M	10M	12M	16M

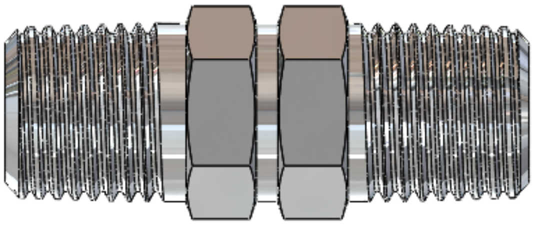
Pipe Thread Designation (NPT or ISO7/1 (PT))					
Thread Size	1/4	3/8	1/2	3/4	1
Designator	04N/R	06N/R	08N/R	12N/R	16N/R

Body Material	
SS	316 / 316L SS

Cracking Pressure	
1/3	1/3 psi
1	1 psi
3	3 psi
10	10 psi
25	25 psi

O-Ring Material	
Nill(F)	FKM
N	NBR
E	Ethylene Propylene

IHCVM Series Working Pressure Max. 3000psig



Maximum operation pressure
Up to 3000psig(206bar) at 70˚F(21˚C)

Temperature rating
Up to 375˚F(191˚C) with FKM seal

Fixed Cracking Pressure Check Valves From 1/3 to 25psi (0.02 to 1.7bar)

Compact One-piece Body

End Connections
Male & Female NPT

Male & Female ISO Taper thread (PT)

100% Factory tested.

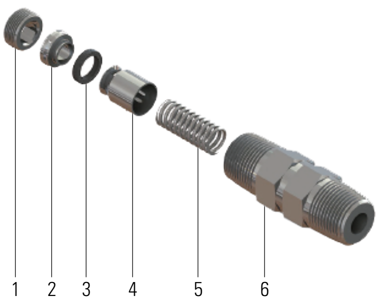
Technical Data

Series No.	IHCVM
Max. Working Pressure@70˚F (21˚C)	3000psi (206bar)
OperatingTemperature Range	Fluorocarbon FKM (viton) -10˚F to 375˚F (-23˚C to 191˚C)
Norminal Cracking Pressure	1/3, 1, 3, 10, 25psi

O-Ring Material Temperature Ratings

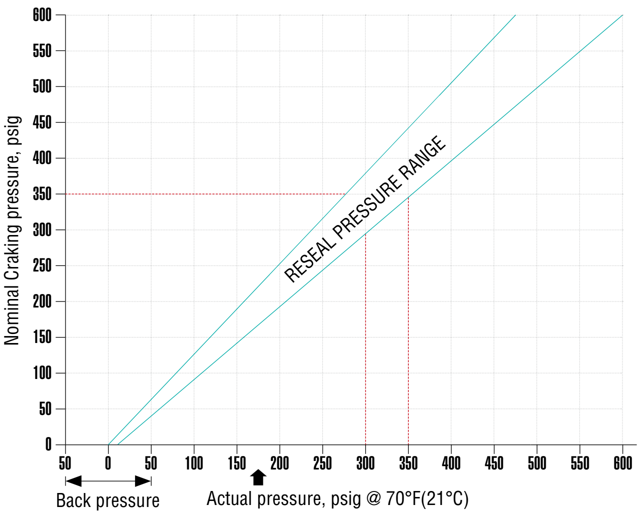
Material	Temperature Rating
Fluorocarbon FKM (Viton)	-10˚F to 375˚F (-23˚C to 191˚C)
Buna N	-4˚F to 221˚F (-20˚C to 105˚C)
Kalrez	-4˚F to 600˚F (-20˚C to 315˚C)
Neoprene	-40˚F to 250˚F (-40˚C to 121˚C)
Ethylene Propylene	-50˚F to 275˚F (-46˚C to 135˚C)

Materials of Construction



No.	Description	Material
1	Insert Lock Nut	316 SS
2	Insert	316 SS
3	O-Ring	FKM
4	Poppet	316 SS
5	Spring	304 SS
6	Body	316 SS

Cracking & Reseal Pressure @70˚F(21˚C)



If IHCVA set to crack at 350 psi, the minimum reseal pressure would be 300 psi.

IHCVA, IHCVM Set to crack at 20 psi or lower may require back pressure to reseal bubble-tight.

* For valves actuated for a period of time, initial cracking pressure may be higher than the set cracking pressure.

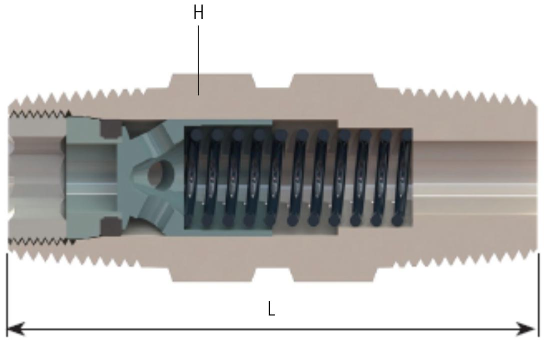


Table of Dimensions

Part No.		Cv	End Connections		Dimensions (mm)	
			Inlet	Outlet	L	H
IHCVM	M-4N	0.35	1/4" Male NPT		41.1	14.27
	M-8N	1.2	1/2" Male NPT		57.9	22.22
	F-4N	0.35	1/4" Female NPT		61.2	19.05
	F-8N	1.2	1/2" Female NPT		94.2	26.98
	FM-4N	0.35	1/4" Female NPT	1/4" Male NPT	58.2	19.05
	MF-4N		1/4" Male NPT	1/4" Female NPT	44.4	
	MF-8N	1.2	1/2" Male NPT	1/2" Female NPT	71.9	26.98

∗ISO Tapered Thread, put "R" digit at the last of part number.

Ordering System

IHCVM - M - 04N - 1 - SS -

IHCVM	M	04N	1	SS	
Valve Series	Inlet & Outlet Connection Type	End Connection Size	Cracking Pressure	Body Material	O-Ring Material

Valve Series	
IHCVM	Compact One-Piece Check Valve

Inlet & Outlet Connection Type		
	Inlet	Outlet
M	Male Pipe Thread	
F	Female Pipe Thread	
FM	Female Pipe Thread	Male Pipe Thread
MF	Male Pipe Thread	Female Pipe Thread

End Connection Size Tube O.D. Designation						
Inch Tube	Tube O.D (inch)	1/4	3/8	1/2	3/4	1
	Designator	04T	06T	08T	12T	16T
Metric Tube	Tube O.D (mm)	6	8	10	12	16
	Designator	06M	08M	10M	12M	16M

Pipe Thread Designation (NPT or ISO7/1 (PT))					
Thread Size	1/4	3/8	1/2	3/4	1
Designator	04N/R	06N/R	08N/R	12N/R	16N/R

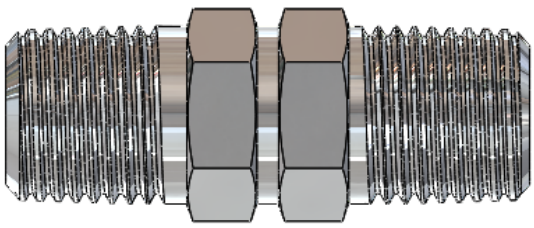
Cracking Pressure	
1/3	1/3 psi
1	1 psi
3	3 psi
10	10 psi
25	25 psi

Body Material	
SS	316 / 316L SS

O-Ring Material	
Nill	1/3 psi
N	Buna N
K	Kalrez
P	Neoprene
E	Ethylene Propylene

※All dimensions are in millimeter for reference only. Dimensions shown with IY-LOK nuts in finger-tight position, where applicable.

IHCVA Series Working Pressure Max. 3000psig



Maximum operation pressure
Up to 3000psig(206bar) at 70˚F(21˚C)

Temperature rating
Up to 375˚F(191˚C) with FKM seal

IHCVA Series - Adjusting Screw and Locking Screw

One-piece Body

End Connections
Male & Female NPT

Male & Female ISO Taper thread (PT)

100% Factory tested.

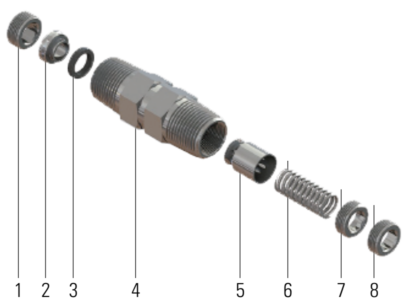
Technical Data

Series No.	IHCVA
Max. Working Pressure@70˚F (21˚C)	3000psi (206bar)
OperatingTemperature Range	Fluorocarbon FKM (viton -10˚F to 375˚F (-23˚C to 191˚C)
Norminal Cracking Pressure	3 to 50 psi 50 to 150 psi 150 to 350 psi 350 to 600 psi

O-Ring Material Temperature Ratings

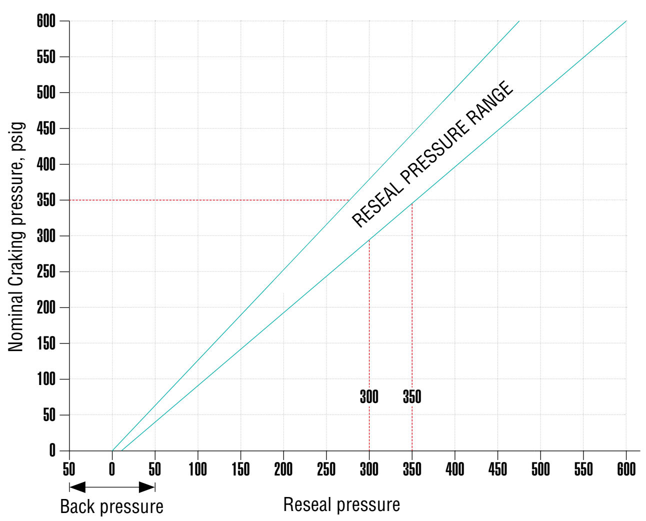
Material	Temperature Rating
Fluorocarbon FKM (Viton)	-10˚F to 375˚F (-23˚C to 191˚C)
Buna N	-4˚F to 221˚F (-20˚C to 105˚C)
Kalrez	-4˚F to 600˚F (-20˚C to 315˚C)
Neoprene	-40˚F to 250˚F (-40˚C to 121˚C)
Ethylene Propylene	-50˚F to 275˚F (-46˚C to 135˚C)

Materials of Construction



No.	Description	Material
1	Insert Lock Nut	316 SS
2	Insert	316 SS
3	O-Ring	FKM
4	Poppet	316 SS
5	Spring	304 SS
6	Body	316 SS
7	Adjusting Screw	316 SS
8	Locking Screw	316 SS

Cracking & Reseal Pressure @70˚F(21˚C)



If IHCVA set to crack at 350 psi, the minimum reseal pressure would be 300 psi.

IHCVA, IHCVM Set to crack at 20 psi or lower may require back pressure to reseal bubble-tight.

* For valves actuated for a period of time, initial cracking pressure may be higher than the set cracking pressure.

Working Pressure Max. 3000psig

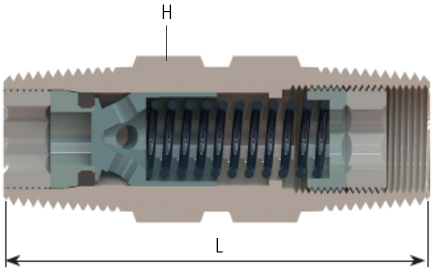


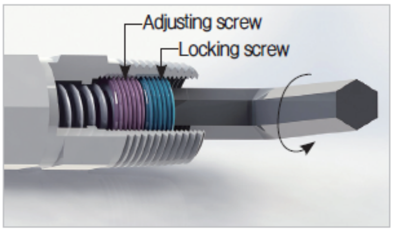
Table of Dimensions

Part No.		Cv	End Connections		Dimensions (mm)	
			Inlet	Outlet	L	H
IHCVA	M-4N	0.35	1/4" Male NPT		41.1	14.27
	F-4N		1/4" Female NPT		75.7	19.05
	M-8N	1.2	1/2" Male NPT		65	22.22

∗ISO Tapered Thread, put “R” digit at the last of part number.

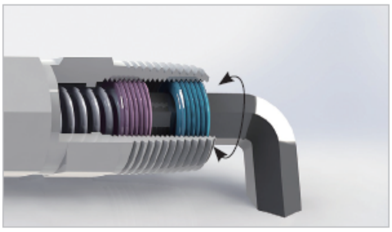
Cracking Pressure Adjustment

STEP. 1



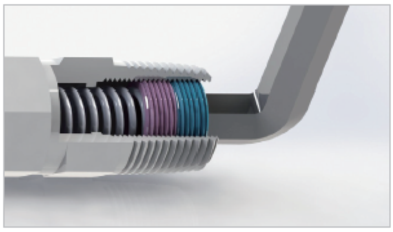
Insert the hex wrench into the locking screw and loosen the screw by rotaing the wrench counterdockwise 2 or 3turms.

STEP. 2



After loosening the locking screw, insert the wrench into the adjusting screw.
To set up the desired cracking pressure, rotate the wrench clockwise to increase the cracking pressure or rotate the wrench counterclockwise to decrease the cracking pressure.

STEP. 3



After adjusting the screw to desired cracking pressure, take out the wrench from adjusting screw. Tighten the locking screw firmly by rotating the wrench clockwise.

Testing for the desired cracking pressure, if additional adjusting is required, repeat steps 1 through 3.

Ordering System

IHCVA	-	M	-	04N	-	A	-	SS	-	
Valve Series		Inlet & Outlet Connection Type		End Connection Size		Cracking Pressure		Body Material		O-Ring Material

Valve Series	
IHCVA	Adjustable Cracking Pressure Check Valve

Inlet & Outlet Connection Type		
	Inlet	Outlet
M	Male Pipe Thread	

End Connection Size						
Tube O.D. Designation						
Inch Tube	Tube O.D (inch)	1/4	3/8	1/2	3/4	1
	Designator	04T	06T	08T	12T	16T
Metric Tube	Tube O.D (mm)	6	8	10	12	16
	Designator	06M	08M	10M	12M	16M

Pipe Thread Designation (NPT or ISO7/1 (PT))					
Thread Size	1/4	3/8	1/2	3/4	1
Designator	04N/R	06N/R	08N/R	12N/R	16N/R

Body Material	
SS	316 / 316L SS

O-Ring Material	
Nill	1/3 psi
N	Buna N
K	Kalrez
P	Neoprene
E	Ethylene Propylene

Cracking Pressure Range	
A	30 ~ 50 psi
B	50 ~ 150 psi
C	150 ~ 350 psi
D	350 ~ 600 psi

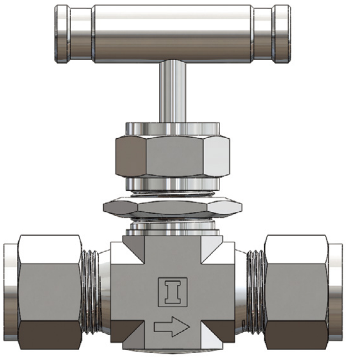
※All dimensions are in millimeter for reference only. Dimensions shown with IY-LOK nuts in finger-tight position, where applicable.

Always together, Always, success

Needle Valve

Semiconductor, Display, Solar. Oil Gas,
Power Plant, Offshore and Water Desalination

INV Series Integral Bonnet Needle Valve



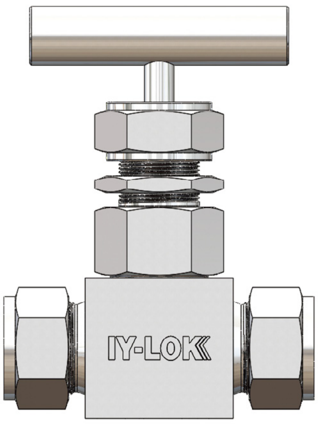
Features

Integral Bonnet Design
Panel Mountable
Body Type Straight pattern and Angle pattern
Variety of Stem Types Vee tip(Standard) and Regulating(Optional)
Variety of End Connections Iy-Lok Tube Fittings,
Male & Female NPT threads / BSPT threads,
and Socket weld ends

Specifications

Pressure rating up to 5000psig(340bar)@100°F(38°C)
Temperature rating from -65°F to 450°F (-54°C to 232°C)
with PTFE packing, and up to 600°F(315°C)
with optional PEEK packing.
Material Standard 316SS and Alloy400
Orifice 4.4mm, 6.4mm, and 9.5mm
100% Factory tested

ISV Series Screwed Bonnet Needle Valve



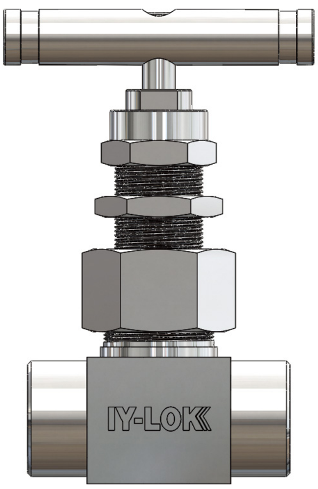
Features

Screwed Bonnet Design
Bar Scock Body
Body Type Straight pattern and Angle pattern
Stem Tips Vee tip(Standard) and Regulating(Optional)
Variety of End Connections Iy-Lok Tube Fittings,
Male & Female NPT threads / BSPT threads,
and Socket weld ends.

Specifications

Pressure rating up to 5000psig(340bar) @100°F(38°C)
Temperature rating from -65T to 450°F (-54°C to 232 D C)
with PTFE packing, and up to 600°F(315°C)
with optional PEEK packing.
Material Standard 316SS and Alloy400
Orifice 4.4mm, 6.4mm, 9.5mm, and 11.1mm
100% Factory tested

IUV Series Union Bonnet Valve



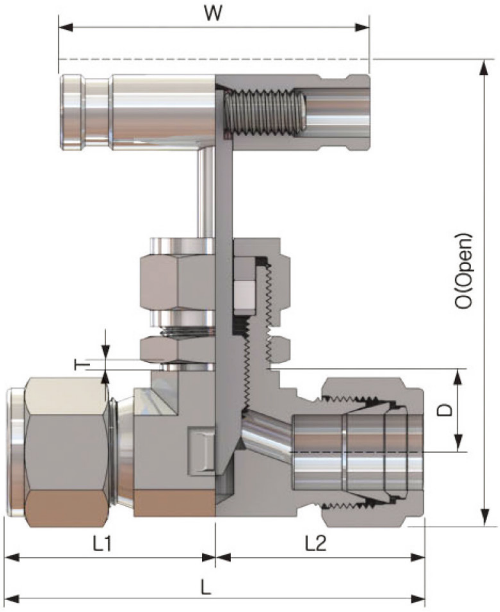
Features

Union Bonnet Design
Panel Mountable
Body Type Straight pattern and Angle pattern
Variety of Stem Types Vee tip(Standard) and Regulating(Optional)
Variety of End Connections Iy-Lok Tube Fittings,
Male & Female NPT threads / BSPT threads,
and Socket weld ends.

Specifications

Pressure rating up to 6000psig(413bar)@100°F(38°C)
Temperature rating from -65°F to 450°F (-54°C to 232°C)
with PTFE packing, and up to 600 o F(315t))
with optional PEEK packing.
Material Standard 316SS and Alloy400
Orifice 4.4mm, 6.4mm, and 11.1mm
100% Factory tested

INV Series Integral Bonnet Needle Valve



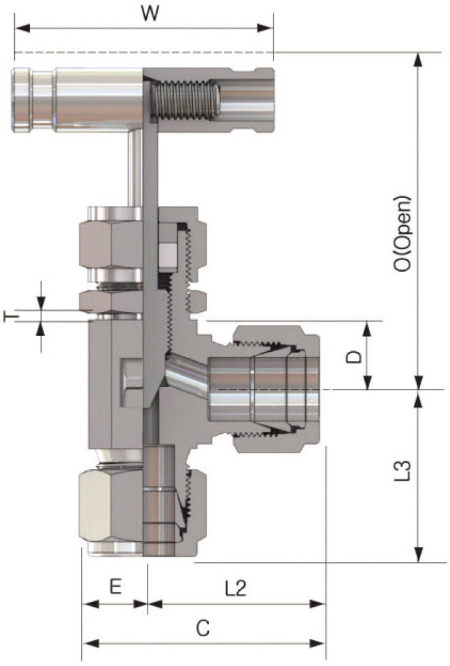


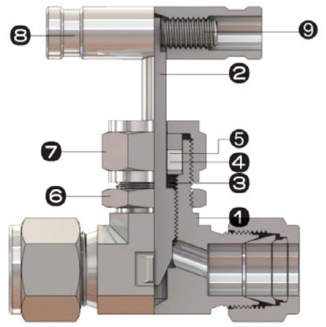
Table of Dimensions

Basic Part No.			Orifice	Cv	End Connections		Dimensions								
					Inlet	Outlet	L	L_1	L_2	L_3	C	D	E	W	O
INV1	F	-02N-	4.4	0.37	1/8 "Female NPT	1/8 "Female NPT	42.0	21.0	21.0	21.0	30.5	11.0	9.5	45.0	51.2
	M	-02N-			1/8'Male NPT	1/8 "Male NPT									
	M	-04N-			1/4 "Male NPT	1/4 "Male NPT	50.0	25.0	25.0	25.0	34.5				
	MI	-04N04T-			1/4 "Male NPT	1/4"ly-Lok	53.8		28.8		38.3				
	I	-06M-			6mm ly-Lok	6mm ly-Lok	57.6	28.8	28.8	28.8	38.3				
	I	-04T-			1/4 "ly-Lok	1/4"ly-Lok									
	I	-08M-			8mm ly-Lok	8mm ly-Lok	59.2	29.6	29.6	29.6	39.1				
INV2	F	-04N-	6.4	0.73	1/4 "Female NPT	1/4 "Female NPT	56.0	28.0	28.0	28.0	41.0	13.5	13.0	53.0	63.6
	F	-04R-			1/4 "Female ISO	1/4 "Female ISO									
	MF	-04N-			1/4 "Male NPT	1/4 "Female NPT									
	MI	-04N06T-			1/4 "Male NPT	3/8"ly-Lok	61.2		33.2	33.2	46.2				
	M	-06N-			3/8 "Male NPT	3/8 "Male NPT	58.0	29.0	29.0	29.0	42.0				
	MI	-04N06T-			1/4 "Male NPT	3/8"ly-Lok	62.2		33.2	33.2	46.2				
	MI	-04N08T-			1/4 "Male NPT	1/2"ly-Lok	65.0		36.0	36.0	49.0				
	I	-10M-			10mm ly-Lok	10mm ly-Lok	66.4	33.2	33.2	33.2	46.2				
	I	-06T-			3/8 "ly-Lok	3/8"ly-Lok									
	I	-12M-			12mm ly-lok	12mm ly-Lok	72.0	36.0	36.0	36.0	49.0				
	I	-08T-			1/2 " ly-Lok	1/2 "ly-Lok									
INV3	F	-06N-	9.4	1.8	3/8 "Female NPT	3/8 "Female NPT	76.0	38.0	38.0	38.0	57.0	19.0	19.0	63.5	99.4
	F	-06R-			3/8 "Female ISO	3/8 "Female ISO									
	F	-08N-			1/2 "Female NPT	1/2 "Female NPT									
	F	-08R-			1/2 "Female ISO	1/2 "Female ISO									
	M	-08N-			1/2 "Male NPT	1/2 "Male NPT									
	MF	-08N-			1/2 "Male NPT	1/2 "Female NPT									
	I	-08T-			1/2"ly-Lok	1/2"ly-Lok									
	I	-12T-			3/4ly-Lok	3/4"ly-Lok	97.0	48.5	48.5	48.5	67.5				

※All dimenstions in Millimeters. Dimensions shown with ly-Lok Nuts in finger-tight, where applicable.
※All dimensions are for reference only, subject to change.

Technical Data

Materials Of Construction



No.	Parts		Material Grade / HSTM Specifications SS316	Material Grade / HSTM Specifications Alloy 400
1	Body		SS316/A182	Alloy R-400/B564
2	Stem	Vee / Regulating	SS316/A276	Alloy R-405/B164
3	Packing Ring			
4	Packing		PTFE	
5	Packing Gland		SS316/A276	Alloy R-405/B164
6	Panel Nut			
7	Packing Nut			
8	Handle	Bar	SS316/A276 (Standard)	
		Knob	Nylon with Brass insert	
9	Set Screw		SS304/A276	

Temperature and Pressure rating with Packing and Body Materials.

Packing Material	Body Material	Temperature	Pressure rating
PTFE (Standard)	SS316	450°F(232°C)	3430 psig
PEEK (Optional)	SS316	-65°F~600°F (-54°C-3151°C)	3130 psig
	Alloy400	-65°F~500°F (-54°C ~260°C)	2370 psig

※PEEK is not recommened for service with aromatic heat transfer fluids or concentrated sulfuric and nitric acids. Other limitations may apply.

Testing

- Each Valve is 100 % factory tested with pneumatic at 1000psig(69bar) for leakage at the seat and packing. Seat test is preformed to a maximum allowable leak rate of 0.1SCCM
- Hydrostatic shell test is performed at 1.5times the working pressure. (OPTION)

Handle

- 316 Stainless Steel bar handles are standard for all SS316 and alloy 400 body valves.
- Black Round Handle is available as an option.

Working Pressure (g) Temperature

Temperature	RNSI Group / Materials	2.2 / S316	3.4 / niloy40Q
-65°F(-54°C) to	100°F(38°C)	5000 psig	3000 psig
	200°F(93°C)	4290 psig	2640 psig
	300°F(148°C)	3870 psig	2470 psig
	350°F(176°C)	3710 psig	2430 psig
	400°F(204°C)	3560 psig	2390 psig
	450°F(232°C)	3430 psig	2380 psig

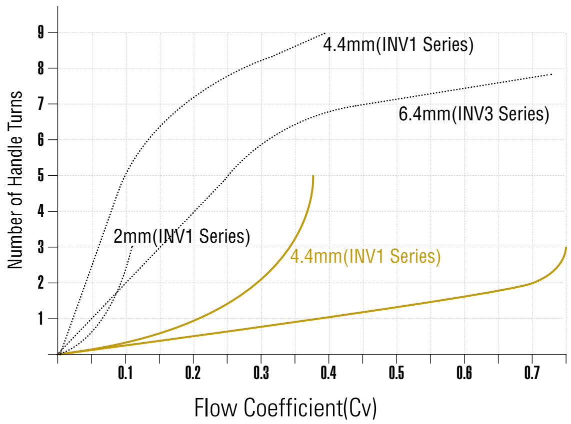
STEM (Two types of Stem)

Vee Stem

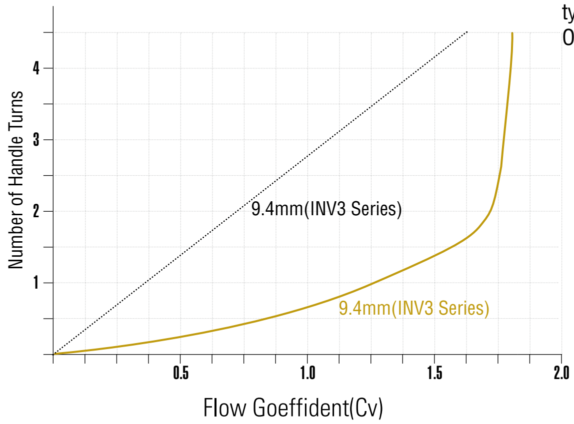
Regulating Stem

FLOW C0EFFICIENT(Cv)@TURNS OPEN

INV1, INV2 Series ········ Regulating Stem
———— Vee Stem



INV1, INV2 Series ········ Regulating Stem
———— Vee Stem



TIP
Flow Coefficient(CV) is related to Stem types and size of Orifice.

Ordering System

INV1		I	-	04T	-		-		-		-	SS
Valve Series	Pattern	End Connection Type		End Connection Size		Packing Material		Handle		Stem Tip		Body Material

Valve Series	
INV1	Integral Bonnet Needle Valve1 Series Orifice 4.4mm
INV2	Integral Bonnet Needle Valve2 Series Orifice 6.4mm
INV3	Integral Bonnet Needle Valve3 Series Orifice 9.4mm

Pattern	
Nill	Straight Pattern
A	Angle Pattern

End Connection Type		
No.	Inlet	Outlet
I	IY-LOK Tube Fitting	
M	Male ICR Thread	
F	Female ICR Thread	
MF	Male Pipe Thread	Female Pipe Thread

End Connection Size Tube O.D. Designation					
Inch Tube	Tube O.D (inch)	1/4	3/8	1/2	3/4
	Designator	04T	06T	08T	12T
Metric Tube	Tube O.D (mm)	6MM	8MM	10MM	12MM
	Designator	06M	08M	10M	12M

Pipe Thread Designation (NPT or ISO7/1(PT))				
Thread Size	1/8"	1/4"	3/8"	1/2"
Designator	02N/R	04N/R	06N/R	08N/R

Packing Material	
Nill	PTFE
PK	PEEK

Handle	
Nill	Stainless Bar Handle
K	Black Nylon Round Handle

Stem Tip	
Nill	Vee Stem
K	Regulating Stem

Body Material	
SS	316/316L SS
B	BRASS

ISV Series Screwed Bonnet Needle Valve

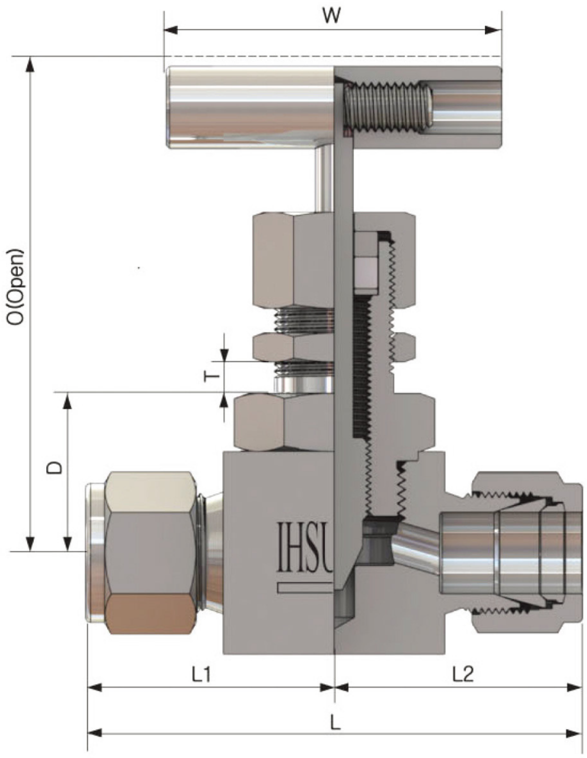


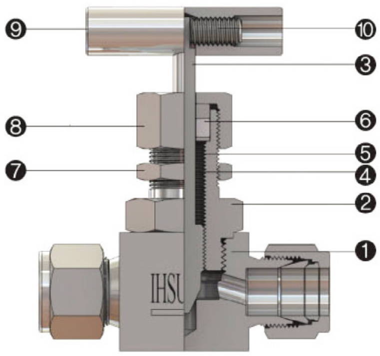
Table of Dimensions

Basic Part No.			Orifice	Cv	End Connections		Dimensions						
					Inlet	Outlet	L	L_1	L_2	T	D	W	O
ISV1	F	-04N-	4.4	0.37	1/4'Female NPT	1/4 "Female MPT	47.6	23.8	23.8	3	22	48	80
	F	-04R-			1/4 "Female ISO	1/4 "Female ISO							
	M	-04N-			1/4 "Male NPT	1/4 "Male NPT	49.2	24.6	24.6				
	MF	-04N-			1/4 "Male NPT	1/4 "Female NPT	48.4		23.8				
	MI	-04N04T-			1/4 "Male NPT	1/4 "ly-Lok	53.3		28.7				
	I	-04T-			1/4 "ly-Lok	1/4 "ly-Lok	62.4	31.2	31.2				
ISV2	F	-06N-	6.4	0.73	3/8" Female NPT	3/8 "Female NPT	64.0	32.0	32.0	3	23	48	94
	F	-08N-			1/2" Female NPT	1/2 "Female NPT					26	64	118
	F	-08R-			1/2 "Female ISO	1/2 "Female ISO							
	MF	-06N-			3/8 "Male NPT	3/8 "Female NPT					23	48	
	MF	-08N-			1/2 "Male NPT	1/2 "Female NPT	64.3	41.9			26	64	
	MF	-12N08N-			3/4 "Male NPT	1/2 "Female NPT	63.6	29.0					
	MI	-06N08T-			3/8 "Male NPT	1/2 ly-Lok	73.7		33.2				
	I	-06T-			3/8 "ly-Lok	3/8 "ly-Lok	78.2	36.0	36.0		23	48	
	I	-08T-			1/2 "ly-Lok	1/2 "ly-Lok	83.8	29.0	36.0		26	64	
ISV3	F	-08N-	9.5	1.80	1/2"Female NPT	1/2"Female NPT	66.0	33.0	33.0	4	38	70	94
	F	-12N-			3/4"Female NPT	3/4"Female NPT	74.0	37.0	37.0	4	32	64	120

※All dimenstions in Millimeters. Dimensions shown with ly-Lok Nuts in finger-tight, where applicable.
※All dimensions are for reference only, subject to change.

Technical Data

Materials Of Construction



No.	Parts		Material Grade / HSTM Specifications SS316	Alloy 400
1	Body		SS316/A182	Alloy R-400/B564
2	Bonne			
3	Stem	Vee	SS316/A276	Alloy R-405/B164
		Regulating		
4	Packing Ring			
5	Packing		PTFE	
6	Packing Gland		SS316/A276	Alloy R-405/B164
7	Panel Nut			
8	Packing Nut			
9	Handle	Bar	SS316/A276 (Standard)	
		Knob	Nylon with Brass insert	
10	Set Screw		SS304/A276	

Temperature and Pressure rating with Packing and Body Materials.

Packing Material	Body Material	Temperature	Pressure rating
PTFE (Standard)	SS316	450°F(232°C)	3430 psig
PEEK (Optional)	SS316	-65°F~600°F (-54°C-3151°C)	3130 psig
	Alloy400	-65°F~500T (-54°C ~260°C)	2370 psig

※PEEK is not recommened for service with aromatic heat transfer fluids or concentrated sulfuric and nitric acids. Other limitations may apply.

Testing

- Each Valve is 100 % factory tested with pneumatic at 1000psig(69bar) for leakage at the seat and packing.
  Seat test is preformed to a maximum allowable leak rate of 0.1SCCM
- Hydrostatic shell test is performed at 1.5times the working pressure. (OPTION)

Handle

- 316 Stainless Steel bar handles are standard for all SS316 and alloy 400 body valves.
- Black Round Handle is available as an option.

Working Pressure (g) Temperature

Temperature	RNSI Group Materials	2.2 S316	3.4 niloy40Q
-65°F(-54°C) to	100°F(38°C)	5000 psig	3000 psig
	200°F(93°C)	4290 psig	2640 psig
	300°F(148°C)	3870 psig	2470 psig
	350°F(176°C)	3710 psig	2430 psig
	400°F(204°C)	3560 psig	2390 psig
	450°F(232°C)	3430 psig	2380 psig

STEM (Two types of Stem)

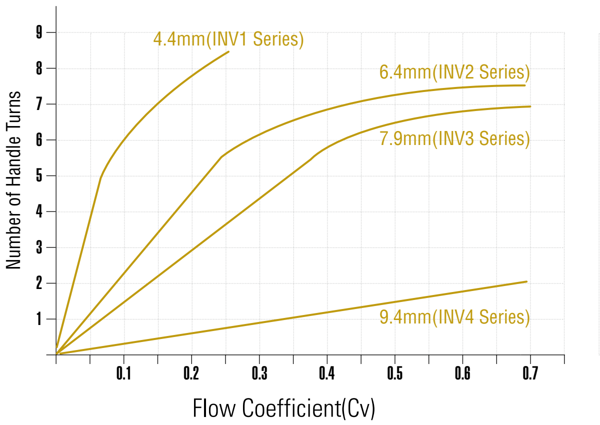

Vee Stem


Regulating Stem

FLOW COEFFICIENT(Cv)@TURNS OPEN

Soft Seat or Vee Stem
Vee Stem

Vee Stem TIP Flow Coefficient(CV) is related to Stem types and size of Orifice.



Ordering System

ISV2		F	-	08N	-		-		-		-	SS
Valve Series	Pattern	End Connection Type		End Connection Size		Packing Material		Handle		Stem Tip		Body Material

Valve Series	
ISV1	Screwed Bonnet Needle Valve1 Series Orifice 4.4mm
ISV2	Screwed Bonnet Needle Valve2 Series Orifice 6.4mm
ISV3	Screwed Bonnet Needle Valve4 Series Orifice 9.4mm

Pattern	
Nill	Straight Pattern
A	Angle Pattern

End Connection Type		
No.	Inlet	Outlet
I	IY-LOK Tube Fitting	
M	Male ICR Thread	
F	Female ICR Thread	
MF	Male Pipe Thread	Female Pipe Thread

End Connection Size					
Tube O.D. Designation					
Inch Tube	Tube O.D (inch)	1/4	3/8	1/2	3/4
	Designator	04T	06T	08T	12T
Metric Tube	Tube O.D (mm)	6MM	8MM	10MM	12MM
	Designator	06M	08M	10M	12M

Pipe Thread Designation (NPT or ISO7/1(PT))				
Thread Size	1/8"	1/4"	3/8"	1/2"
Designator	02N/R	04N/R	06N/R	08N/R

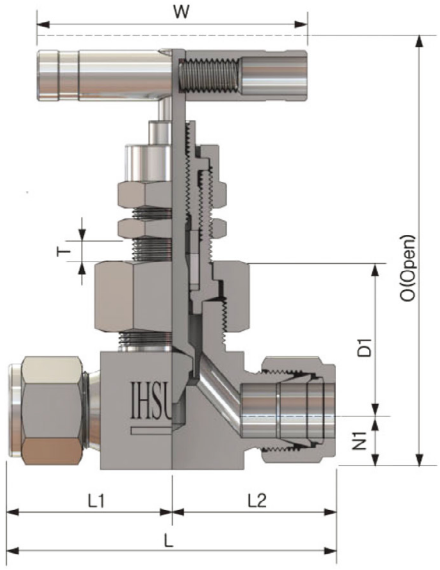
Packing Material	
Nill	PTFE
PK	PTFK
G	Graphite

Handle	
Nill	Stainless Bar Handle

Stem Tip	
Nill	Vee Stem
R	Regulating Stem

Body Material	
SS	316/316L SS

IUV Series Union Bonnet Valve



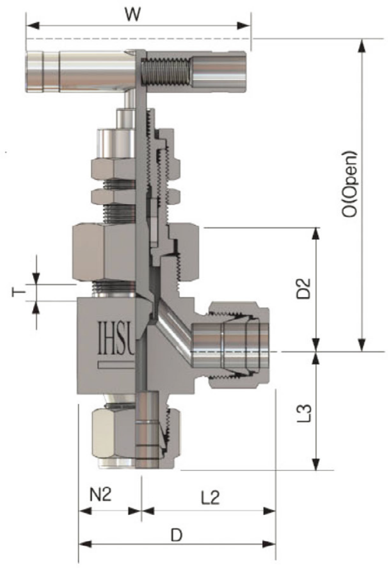


Table of Dimensions

<table>
<tr><th colspan="3" rowspan="2">Basic Part No.</th><th rowspan="2">Orifice</th><th rowspan="2">Cv</th><th>End Connections</th><th colspan="13">Dimensions</th></tr>
<tr><th>Inlet / Outlet</th><th>L</th><th>L_1</th><th>L_2</th><th>L_3</th><th>D</th><th>D_1</th><th>D_2</th><th>N_1</th><th>N_2</th><th>W</th><th>O Straight</th><th>O Angle</th><th>T</th></tr>
<tr><td rowspan="8">IUV1</td><td>F</td><td>-02N-</td><td rowspan="8">4.4</td><td rowspan="8">0.37</td><td>1/8 "Female NPT</td><td>50.8</td><td>25.4</td><td rowspan="2">23.0</td><td rowspan="4">25.4</td><td rowspan="2">32.6</td><td rowspan="8">27.8</td><td rowspan="4">32.6</td><td rowspan="8">9.6
12.7
15.9
19.9
25.4
15.9
19.9
25.4</td><td rowspan="8">9.6</td><td rowspan="8">45</td><td rowspan="8">77.8</td><td rowspan="4">82.6</td><td rowspan="6">-</td></tr>
<tr><td>FI</td><td>-04N-</td><td>1/4 "Female NPT</td><td>52.4</td><td>26.2</td></tr>
<tr><td>M</td><td>-04N-</td><td>1/4 "Male NPT</td><td>50.8</td><td>25.4</td><td>25.4</td><td>35.0</td></tr>
<tr><td>MF</td><td>-04N-</td><td>1/4"Male NPT/1/4" Female NPT</td><td>52.4</td><td>26.2</td><td>23.0</td><td>32.6</td></tr>
<tr><td>I</td><td>-06M-</td><td>6mm ly-Lok</td><td rowspan="2">61.9</td><td rowspan="2">31.0</td><td rowspan="2">29.4</td><td rowspan="2">37.3</td><td rowspan="2">38.9</td><td rowspan="4">27.8</td><td rowspan="4">77.8</td></tr>
<tr><td>I</td><td>-04T-</td><td>1/4" Ly-Lok</td></tr>
<tr><td>SW</td><td>-04T-</td><td>1/4"Tube Weld</td><td>46.0</td><td>23.0</td><td>22.3</td><td>30.2</td><td>31.8</td><td>7.2</td></tr>
<tr><td>I</td><td>-08M-</td><td>8mm ly-Lok</td><td>61.9</td><td>31.0</td><td>29.4</td><td>37.3</td><td>38.9</td><td>-</td></tr>
<tr><td rowspan="9">IUV2</td><td>F</td><td>-04N-</td><td rowspan="9">6.4</td><td rowspan="9">0.73</td><td>1/4 "Female NPT</td><td rowspan="2">57.2</td><td rowspan="2">28.6</td><td rowspan="2">25.4</td><td rowspan="2">28.6</td><td rowspan="2">38.1</td><td rowspan="9">34.1</td><td rowspan="2">37.3</td><td rowspan="9">15.9
17.5
15.9</td><td rowspan="9">12.7</td><td rowspan="9">64</td><td rowspan="9">93.7</td><td rowspan="2">96.9</td><td rowspan="6">-</td></tr>
<tr><td>F</td><td>-06N-</td><td>3/8 "Female NPT</td></tr>
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<tr><td>I</td><td>-06T-</td><td>3/8" ly-Lok</td><td>32.5</td><td>42.9</td><td>45.3</td><td>31.0</td><td>90.5</td></tr>
<tr><td>I</td><td>-12M-</td><td>12mm ly-Lok</td><td rowspan="2">77.8</td><td rowspan="2">38.9</td><td>35.7</td><td rowspan="2">42.1</td><td>48.4</td><td rowspan="2">34.2</td><td rowspan="2">93.7</td></tr>
<tr><td>I</td><td>-08T-</td><td>1/2" ly-Lok</td><td>34.9</td><td>47.6</td></tr>
<tr><td>SW</td><td>-04P-</td><td>1/4 "Pipe Weld</td><td rowspan="3">57.2</td><td rowspan="3">28.6</td><td rowspan="3">25.4</td><td rowspan="2">28.6</td><td rowspan="3">38.1</td><td rowspan="2">37.3</td><td rowspan="2">93.7</td><td>9.6</td></tr>
<tr><td>SW</td><td>-06T-</td><td>3/8 "Tube Weld</td><td>8.0</td></tr>
<tr><td>SW</td><td>-08T-</td><td>1/2 Tube Weld</td><td>25.4</td><td>35.7</td><td>95.3</td><td>9.6</td></tr>
<tr><td rowspan="13">IUV3</td><td>F</td><td>-08N-</td><td></td><td></td><td>1/2 "Female NPT</td><td>79.4</td><td>39.7</td><td>33.3</td><td>39.7</td><td>50.8</td><td>46.1</td><td>50.8</td><td></td><td>17.5</td><td rowspan="13">89</td><td>121.5</td><td>126.2</td><td rowspan="9">-</td></tr>
<tr><td>F</td><td>-12N-</td><td></td><td></td><td>3/4 "Female NPT</td><td>82.6</td><td>41.3</td><td>-</td><td>-</td><td>-</td><td>48.4</td><td>-</td><td></td><td>-</td><td>123.9</td><td>-</td></tr>
<tr><td>F</td><td>-16N-</td><td rowspan="11">11.1</td><td rowspan="11">2.2</td><td>1 "Female NPT</td><td>92.1</td><td>46.0</td><td>-</td><td>-</td><td>-</td><td>54.0</td><td>-</td><td></td><td>-</td><td>129.4</td><td>-</td></tr>
<tr><td>MF</td><td>08N-</td><td>1/2 "Male NPT/1/2'Female NPT</td><td>79.4</td><td>39.7</td><td>33.3</td><td>39.7</td><td>54.0</td><td>46.0</td><td>50.8</td><td></td><td>17.5</td><td>121.5</td><td>126.2</td></tr>
<tr><td>MF</td><td>-12N-</td><td>3/4 "Male NPT/ 1/2 "Female NPT</td><td>82.6</td><td>41.3</td><td>-</td><td>-</td><td>-</td><td>48.4</td><td>-</td><td></td><td>-</td><td>123.9</td><td>-</td></tr>
<tr><td>MF</td><td>-16N-</td><td>1 "Male NPT/1 "Female NPT</td><td>92.1</td><td>46.0</td><td>-</td><td>-</td><td>-</td><td>54.0</td><td>-</td><td></td><td>-</td><td>129.4</td><td>-</td></tr>
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<tr><td>I</td><td>-12T-</td><td>3/4 "ly-Lok</td><td></td></tr>
<tr><td>I</td><td>-16T-</td><td>1 "ly-Lok</td><td>-</td><td>-</td><td>-</td><td rowspan="2">47.6</td><td>-</td><td></td><td>-</td><td rowspan="2">123.1</td><td rowspan="2">126.2</td><td>9.6</td></tr>
<tr><td>SW</td><td>-08P-</td><td>1/2" Pipe Weld</td><td rowspan="3">79.4</td><td rowspan="3">39.7</td><td rowspan="2">33.3</td><td>39.7</td><td rowspan="2">50.8</td><td>50.8</td><td></td><td rowspan="2">17.5</td><td>9.6</td></tr>
<tr><td>SW</td><td>-08T-</td><td>1/2" Tube Weld</td><td>42.9</td><td rowspan="2">46.0</td><td>47.6</td><td></td><td rowspan="2">121.5</td><td>123.1</td><td>9.6</td></tr>
<tr><td>SW</td><td>-12T-</td><td>3/4" Tube Weld</td><td>-</td><td>-</td><td>-</td><td>-</td><td></td><td>-</td><td>-</td><td>11.1</td></tr>
</table>

※All dimenstions in Millimeters. Dimensions shown with ly-Lok Nuts in finger-tight, where applicable.
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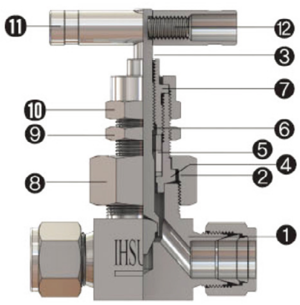
Technical Data

Materials Of Construction



No.	Parts		Material Grade / HSTM Specifications SS316	Alloy 400
1	Body		SS316/A182	Alloy R-400/B164
2	Bonnet		SS316/A276	Alloy R-405/B164
3	Stem	Vee		
		Regulating		
		Ball		
4	Packing Ring		Glass-filled PTFE	
5	Packing		PTFE	
6	Packing Gland		SS316/A276	Alloy R-405/B164
7	Packing Bolt			
8	Packing Nut			
9	Union Nut			
10	Panel Nut			
11	Handle	Bar	SS316/A276 (Standard)	
		Knob	Nylon with Brass insert	
12	Set Screw		SS304/A276	

Temperature vs Working Pressure

Temperature	ASME Group Materials	2.2 S316	3.4 Alloy 400
-65°F(-54°C) to	100°F(38°C)	6000 psig	5000 psig
	200°F(93°C)	5160 psig	4400 psig
	300°F(148°C)	4660 psig	4120 psig
	350°F(176°C)	4470 psig	4050 psig
	400°F(204°C)	4280 psig	3980 psig
	450°F(232°C)	4130 psig	3970 psig

Temperature and Pressure rating vs Packing and Body Materials.

Packing Material	Body Material	Temperature	Pressure rating @Temp Rating
PTFE (Standard)	SS316	-65°F-450°F (-54°C-232°C)	4130 psig
	Alloy400※		3970 psig
PEEK	SS316	-65°F-600°F (-54°C-315°C)	3760 psig
	Alloy400※	-65°F-500°F (-54°C-260°C)	3960 psig
Grafoil	SS316	-65°F~1200°F (-54°C-648°C)	1715 psig
	Alloy400※	-65°F~500°F (-54°C ~260°C)	3960 psig

※PEEK is not recommened for service with aromatic heat transfer fluids or concentrated sulfuric and nitric acids. Other limitations may apply.

Testing

- Each Valve is 100 % factory tested with pneumatic at 1000psig(69bar) for leakage at the seat and packing. Seat test is preformed to a maximum allowable leak rate of 0.1SCCM
- Hydrostatic shell test is performed at 1.5times the working pressure. (OPTION)

Handle

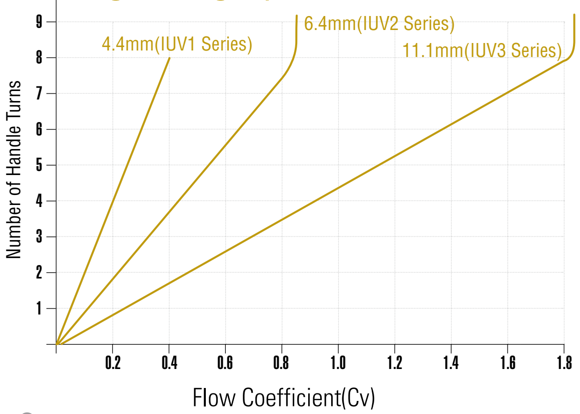
- 316 Stainless Steel bar handles are standard for all SS316 and alloy 400 body valves.
- Black Round Handle is available as an option.

Vee Stem

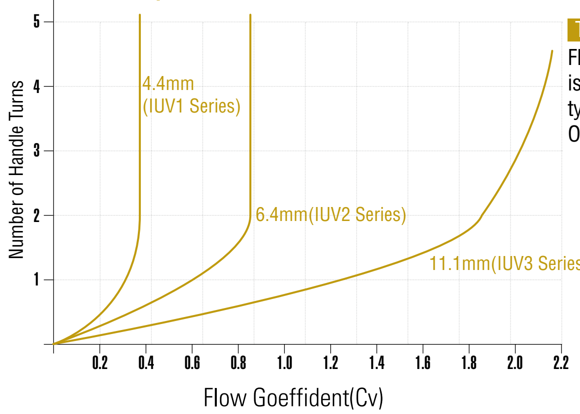
Regulating Stem

FLOW COEFFICIENT(Cv)@TURNS OPEN

Regulating Tip



Vee Tip



TIP

Flow Coefficient(CV) is related to Stem types and size of Orifice.

Ordering System

IUV3		F	-	08N	-		-		-		-	SS
Valve Series	Pattern	End Connection Type		End Connection Size		Packing Material		Handle		Stem Tip		Body Material

Valve Series	
IUV1	Union Bonnet Needle Valve1 Series Orifice 4.4mm
IUV2	Union Bonnet Needle Valve2 Series Orifice 6.4mm
IUV3	Union Bonnet Needle Valve3 Series Orifice 11.1mm

Pattern	
Nill	Straight Pattern
A	Angle Pattern

End Connection Type		
No.	Inlet	Outlet
I	IY-LOK Tube Fitting	
M	Male ICR Thread	
F	Female ICR Thread	
MF	Male Pipe Thread	Female Pipe Thread

End Connection Size					
Tube O.D. Designation					
Inch Tube	Tube O.D (inch)	1/4	3/8	1/2	3/4
	Designator	04T	06T	08T	12T
Metric Tube	Tube O.D (mm)	6MM	8MM	10MM	12MM
	Designator	06M	08M	10M	12M

Pipe Thread Designation (NPT or ISO7/1(PT))				
Thread Size	1/8″	1/4″	3/8″	1/2″
Designator	02N/R	04N/R	06N/R	08N/R

Packing Material	
Nill	PTFE
PK	PEEK
G	Graphite

Handle	
Nill	Stainless Bar Handle

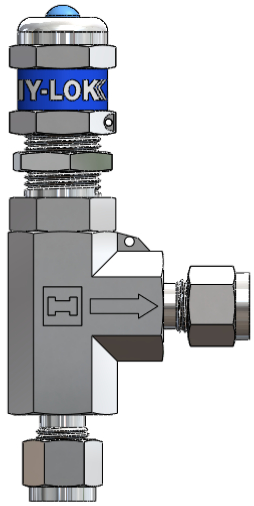
Stem Tip	
Nill	Vee Stem
R	Regulating Stem

Body Material	
SS	316/316L SS

Relief Valve

Semiconductor, Display, Solar. Oil Gas,
Power Plant, Offshore and Water Desalination

IRV3 Series Working Pressure Max. 3000psig



Maximum operation pressure
Up to 3000psig(206bar) at 70˚F(21˚C)

Temperature rating
-10˚F ~ 400˚F(-23˚C ~ 204˚C)

Operation Cracking Pressure
10 ~ 250 psig (0.68 ~ 17.23 bar)

Suitable for Gas and Liquid
Variety of End Connections.
100% Factory tested.

Specification

Part Series	IRV3
Max. Working Pressure	3000 psig (206 bar)
Orifice	4.8 mm (0.19")
OperationTemperature Range	-10˚F ~ 400˚F (-23˚C ~ 204˚C)
Operation Cracking Pressure Range	10 ~ 250 psig (0.7 ~ 18bar)

Spring Color and Cracking Pressure Range

Series	Color	Cracking Pressure	
		psig	bar
IRV3	BLUE	10~250	0.7~18

Reseal Pressure

Series	Test Pressurepsig (bar)	Min. Reseal Pressure(%)
IRV3	10 ~ 20 (0.7~1.3)	50
	175 ~ 225 (12.0~15.5)	90

Materials of Construction

No.	Description	Material
1	Body	316 SS
2	Stem Seal	FKM
3	Bonnet	316 SS
4	Stem	316 SS
5	Spring	304 SS
6	Name Plate	POLYESTER
7	Cap	316 SS
8	Plug	POLYPROPYLENE

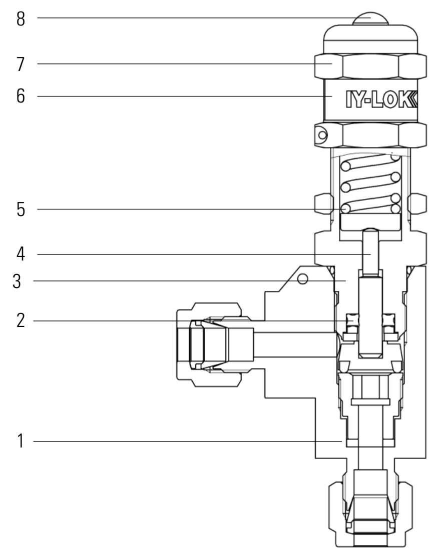
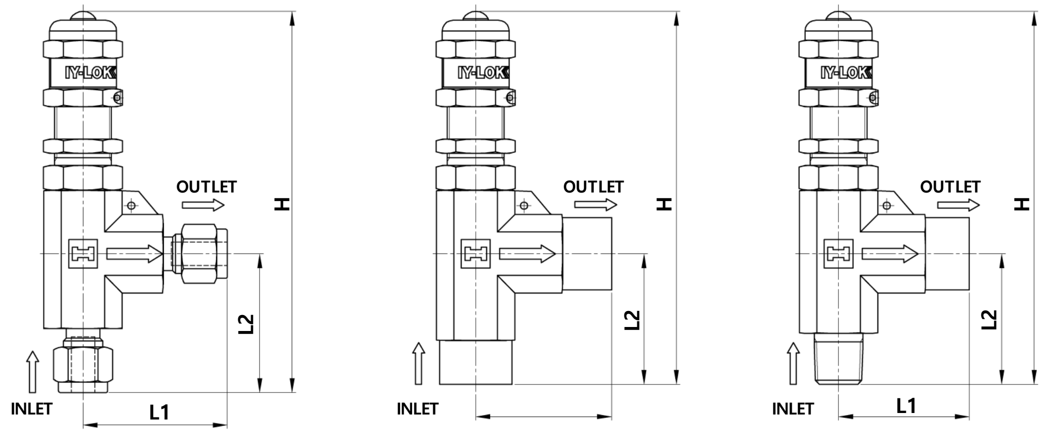


Table of Dimensions



Basic Part No.		End Connection		Orifice	Dimensions (mm)		
		Inlet	Outlet		L_1	L_2	H
IRV3-	I-04T	1/4" IY-LOK		4.8	39.6	39.6	109.4
	I-06T	3/8" IY-LOK			438	43.8	113.6
	I-08T	1/2" IY-LOK			46.5	46.5	116.4
	I-06M	6mm IY-LOK			39.6	39.6	109.4
	I-08M	8mm IY-LOK					
	I-12M	12mm IY-LOK			46.5	46.5	116.4
	MF-04N	1/4" Male NPT	1/4" Female NPT		32.5	32.5	102.3
	MF-06N	3/8" Male NPT	3/8" Female NPT		34.5		
	MF-08N	1/2" Male NPT	1/2" Female NPT		38	36.5	106.3
	MI-08N08T	1/2" Male NPT	1/2" IY-LOK		46.5		
	MI-08N12M	1/2" Male NPT	12mm IY-LOK				

∗ISO Tapered Thread, put “R” digit at the last of part number.

Ordering System

IRV3 - **I** - **04T** - **SS**

- IRV3: Valve Series
- I: Inlet & Outlet Connection Type
- 04T: End Connection Size
- SS: Body Material

Valve Series	
IRV3	Max. Working Pressure 300 psig

Inlet & Outlet Connection Type	
I	IY-LOK Tube Fitting
M	Male Pipe Thread
F	Female Pipe Thread

End Connection Size				
Tube O.D. Designation				
Inch Tube	Tube O.D (inch)	1/4	3/8	1/2
	Designator	04T	06T	08T
Metric Tube	Tube O.D (mm)	6	8	12
	Designator	06M	08M	12M

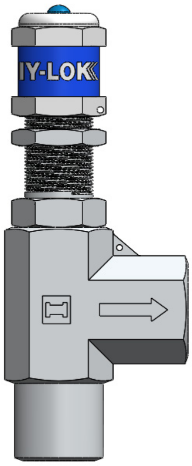
Body Material	
SS	316 / 316L SS

Pipe Thread Designation (NPT or ISO7/1 (PT))			
Thread Size	1/4″	3/8″	1/2′
Designator	04N/R	06N/R	08N/R

∗The IRV3 Series has various end connection. If Inlet - male pipe thread, outlet - female pipe thread are used, Write the ‘MF’ on Inlet & Outlet Connection Type.
∗IRV3 Series spring color is black and cracking pressure range with 10~250 psig.

※All dimensions are in millimeter for reference only. Dimensions shown with IY-LOK nuts in finger-tight position, where applicable.

IHRV Series Working Pressure Max. 6000psig



Cracking Pressure Range 225~6000psig to atmosphere
Max. Working Pressure : 6000psig at 68℉ (413bar at 20℃)
Operating Temperature Range : -10℉~400℉ (-23℃~204℃)
Orifice Size : 4.8mm
Cracking Pressure is not affected by the outlet pressure.

Temperature Rating

Seal Material	Temperature Rating, °F (°C)
FKM (VITON - Standard)	25°F~250°F (-4°C~121°C)
EPDM (Ethylene Propylene)	30°F~250°F (-1°C~121°C)
NBR	0°F~250°F (-17°C~121°C)

Materials of Construction

No.	Description	Material
1	Body	316 SS
2	Stem Seal	FKM
3	Bonnet	316 SS
4	Stem	316 SS
5	Spring	304 SS
6	Name Plate	POLYESTER
7	Cap	316 SS
8	Plug	POLYPROPYLENE

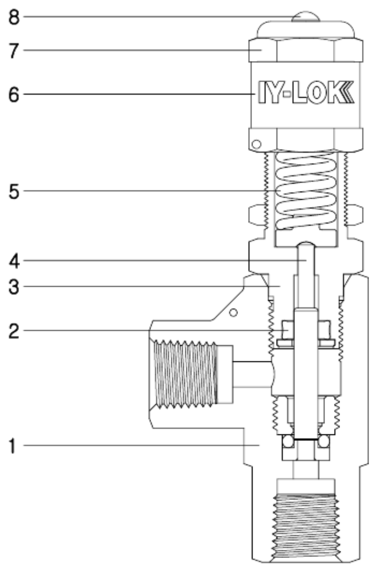
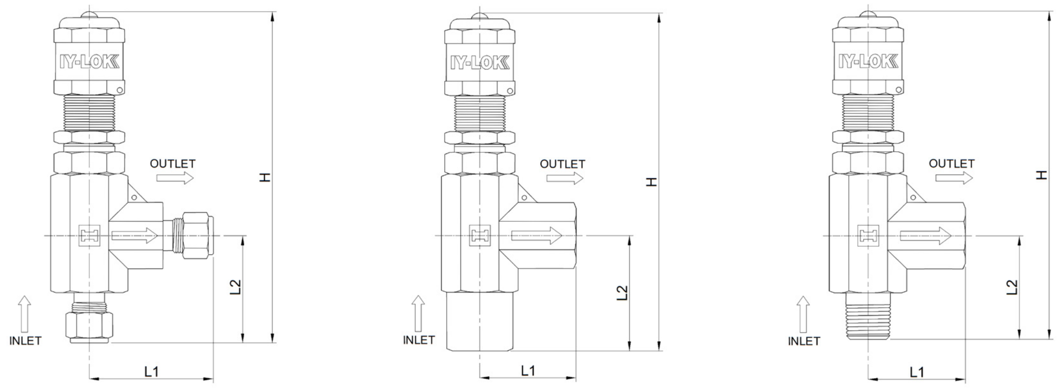


Table of Dimensions



Basic Part No.			End Connection		Orifice	Dimensions (mm)		
			Inlet	Outlet		L_1	L_2	H
IHRV	I	4T	1/4"	1/4"	4.8	39.6	39.6	109.4
	I	6M	6M	6M		39.6	39.6	109.4
	I	8T	1/2"	1/2"		46.5	46.5	116.5
	I	12M	12M	12M		46.5	46.5	116.4
	MI	8N8T	1/2"Male NPT(PT)	1/2"		46.5	36.5	106.3
	MI	8N12M	1/2"Male NPT(PT)	12M				
	MF	4N(R)	1/4"Male NPT(PT)	1/4" Female NPT(PT)		32.5	32.5	102.3
	MF	6N(R)	3/8"Male NPT(PT)	3/8" Female NPT(PT)		34.5		
	MF	8N(R)	1/2"Male NPT(PT)	1/2" Female NPT(PT)		38	36.5	106.3

∗ISO Tapered Thread, put "R" digit at the last of part number.

Ordering System

IHRV	-	I	-	04T	-	A	-	EP
Valve Series		Inlet & Outlet Connection Type		End Connection Size		Spring and Cracking Pressure		Seal

Valve Series	
IHRV	Max. Working Pressure 6000psig

Designator	End Connection
I	Both End Iy-Lok Tube Fitting
MI	Male Pipe thread & Tube Fitting
MF	Male Pipe Thread & Female Pipe Thread

Body Material
316L SS

Spring Designator	Cracking Pressure	
	Psig	Bar
A	225-750	15.5-51.5
B	750-1500	51.5-103
C	1500-2250	103-155
D	2250-3000	155-206
E	3000-4000	206-275
F	4000-5000	275-344
G	5000-6000	344-414

Seal Material	Designator
FKM (VITON - Standard)	None
EPDM (Ethylene Propylene)	EP
NBR	NBR

End Connection Size Tube O.D. Designation				
Inch Tube	Tube O.D (inch)	1/4	3/8	1/2
	Designator	04T	06T	08T
Metric Tube	Tube O.D (mm)	6	8	12
	Designator	06M	08M	12M

For Example: IHRV-I-04T-A-EP : Both End Tube Fittings 1/4"O.D. / 225-750psig Cracking pressure / EPDM Seat.

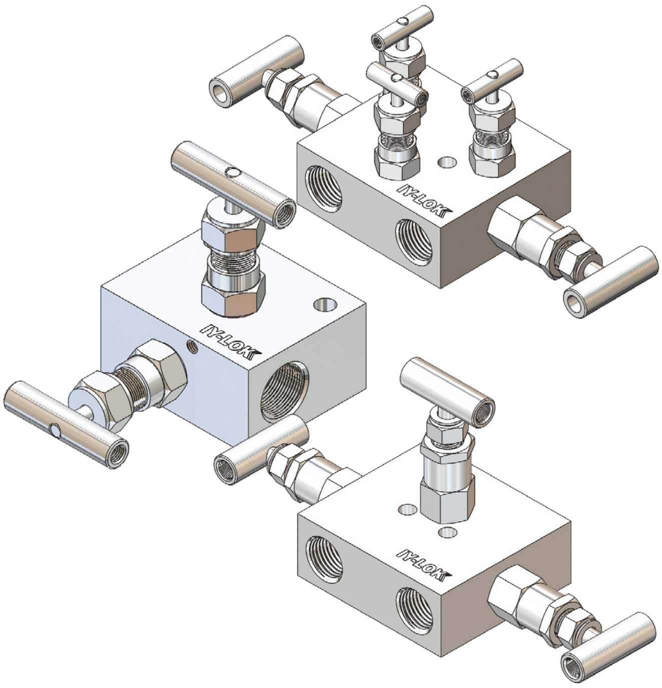
∗The IHRV Series has various end connection. If Inlet - male pipe thread, outlet - female pipe thread are used, Write the 'MF' on Inlet & Outlet Connection Type.
∗IRV3 Series spring color is black and cracking pressure range with 225~6000 psig.

Manifold Valve

Application

Refineries, Liquid petroleum gas processing plant, Petro chemical plant

Manifold Valve



Technical Data

Working pressure up to

6000psi(413bar) at 100˚F (38˚C)

Temperature Rating

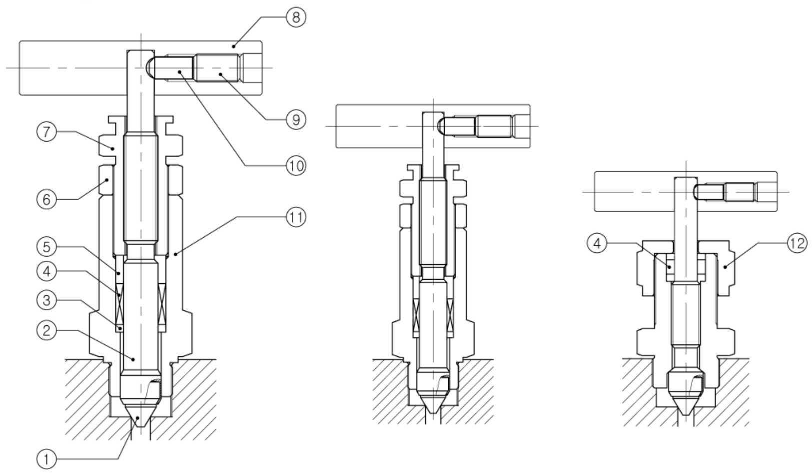
PTFE 450˚F (232˚C), Grafoil 1200˚F (648˚C)

100% Factory tested.

Body Material	Packing Materia	Temperature Rating	Pressure Rating @ 100˚F (38˚C)	Pressure Rating@ Max. Temp.
Stainless Steel	PTFE	-65 to 450˚F (-54 to 232˚C)	6000 psig (413 bar)	4130 psig@450˚F (285 bar@232˚C)
	Grafoil	-65 to 1200˚F* (-54 to 648˚C)		1715 psig@1200˚F (118 bar@648˚C)
Carbon Steel	PTFE	-20 to 350˚F (-29 to 176˚C)	6000 psig (413 bar)	5230 psig@350˚F (360 bar@176˚C)
	Grafoil	-20 to 350˚F (-29 to 176˚C)		

Materials of Bonnet

No.	Description	Material
1	Stem Tip	316 SS
2	Stem	316 SS
3	Packing Ring	316 SS
4	Packing	PTFE / Grafoil
5	Gland	316 SS
6	Lock Nut	304 SS
7	Packing Bolt	316 SS
8	Handle	304 SS
9	Set Screw	304 SS
10	Handle Pin	304 SS
11	Bonnet	316 SS
12	Packing Nut	316 SS



Large Bonnet
Orifice : 6.4mm

Medium Bonnet
Orifice : 5.0mm

Small Bonnet
Orifice : 3.2mm

Ordering System

IM2	-	08N	-		-	SS	-		-	
Manifold Valve Design		Connection Size		Stem Tip		Body Material		Seat Material		Option

Manifold Valve Design			
Type	**2-WAY**	**3-WAY**	**5-WAY**
Remote Mounting	IM2	IM3	IM5
	IM2V		
Direct Mounting	IM2F1	IM3F1	IM5F1
	IM2BF	IM3BF	IM5BF
			IM5BFA

Connection Size	
08N	Female 1/2" NPT

Stem Tip	
Nil	Vee Tip
B	Ball Tip

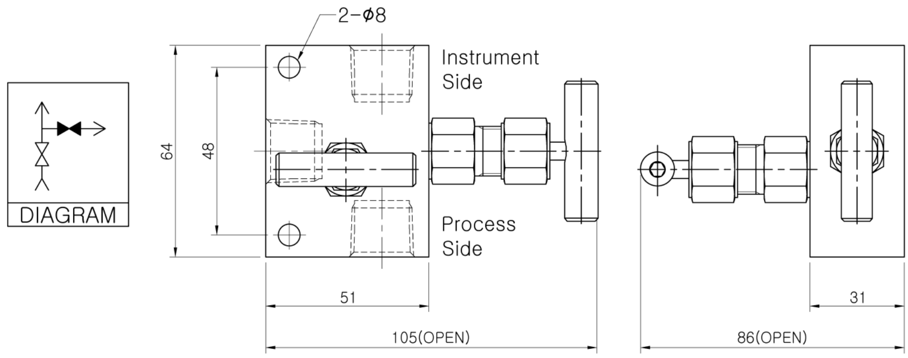
Seat Material	
Nil	PTFE
GR	Grafoil

Body Material	
SS	316 SS
SL	316L
D	Duplex
H	Hastelloy
T	Titanium
M040	Monel (ALLOY 400)

Option	
Nil	No Option
N	NACE MR-0175

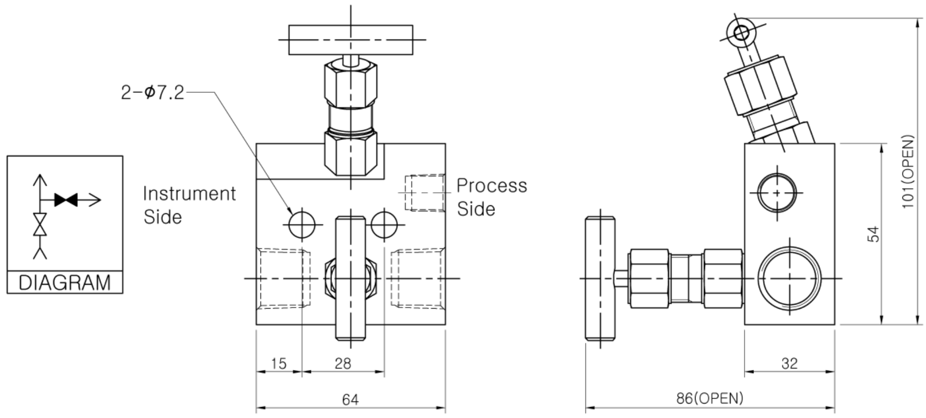
2-WAY Remote Mounting

Block Type



Model No.	Inlet	Outlet	Drain / Test
IM2	Female 1/2" NPT	Female 1/2" NPT	1/2" NPT

Vertical Port Type

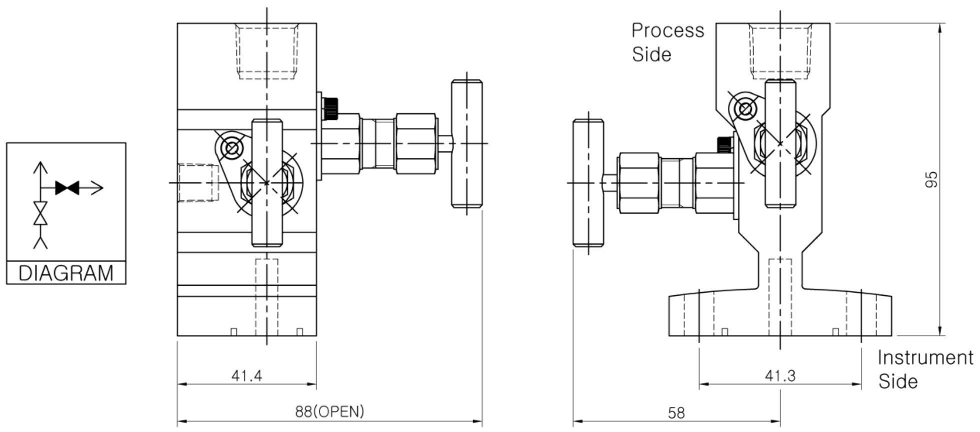


Model No.	Inlet	Outlet	Drain / Test
IM2V	Female 1/2" NPT	Female 1/2" NPT	Female 1/4" NPT

※All dimensions are in millimeter for reference only. Dimensions shown with IY-LOK nuts in finger-tight position, where applicable.

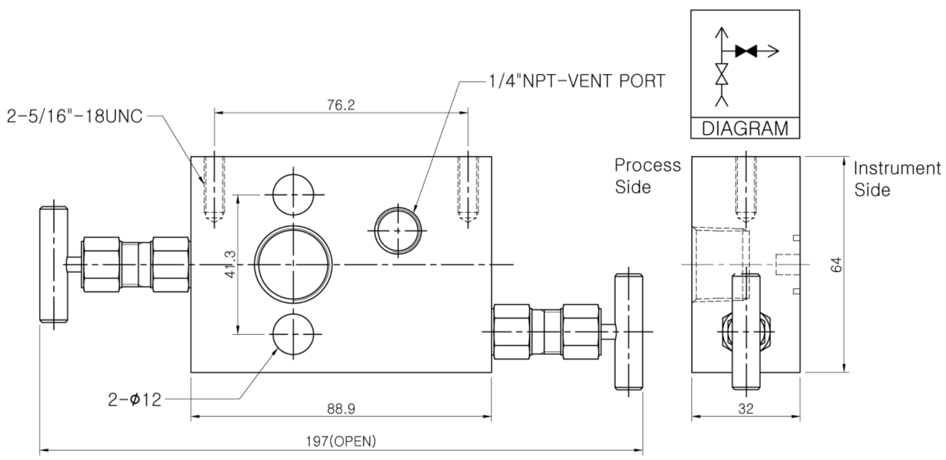
2-WAY Direct Mounting

Single Flange Type



Model No.	Inlet	Outlet	Drain / Test
IM2F1	Female 1/2" NPT	Flange	Female 1/4" NPT

Vertical Port Type

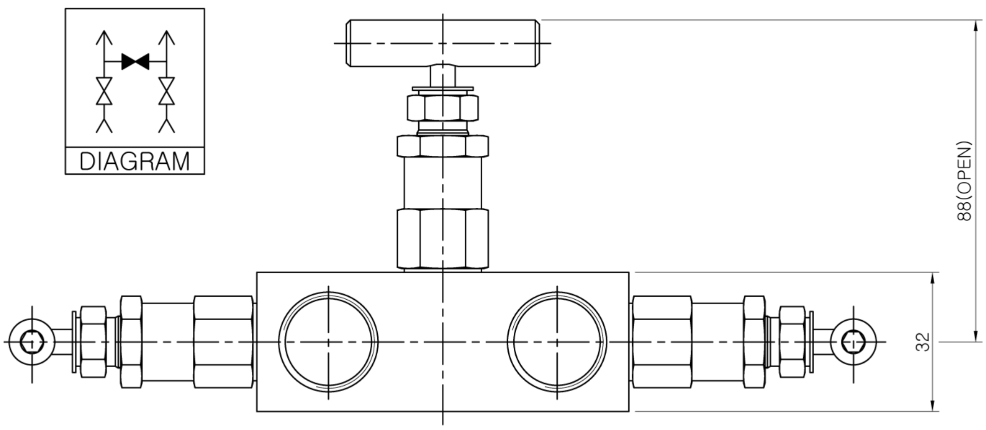


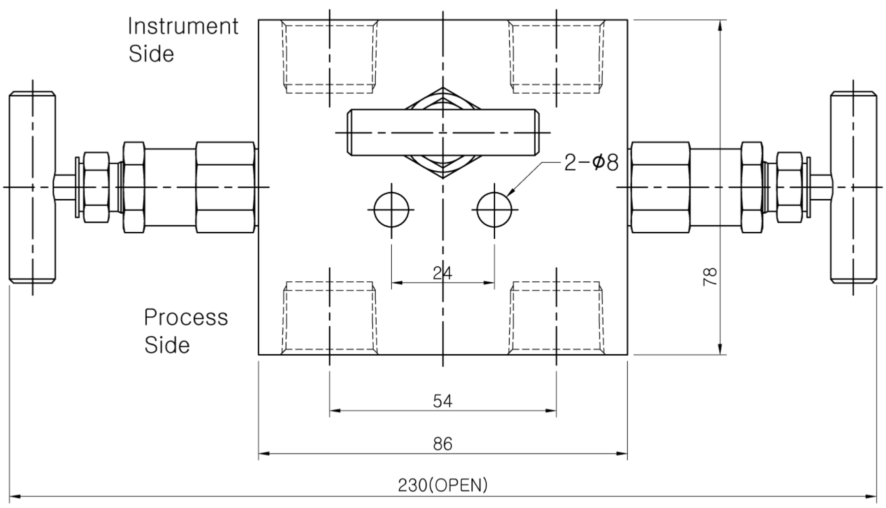
Model No.	Inlet	Outlet	Drain / Test
IM2BF	Female 1/2" NPT	Flange	Female 1/4" NPT

※All dimensions are in millimeter for reference only. Dimensions shown with IY-LOK nuts in finger-tight position, where applicable.

3-WAY Remote Mounting

Block Type



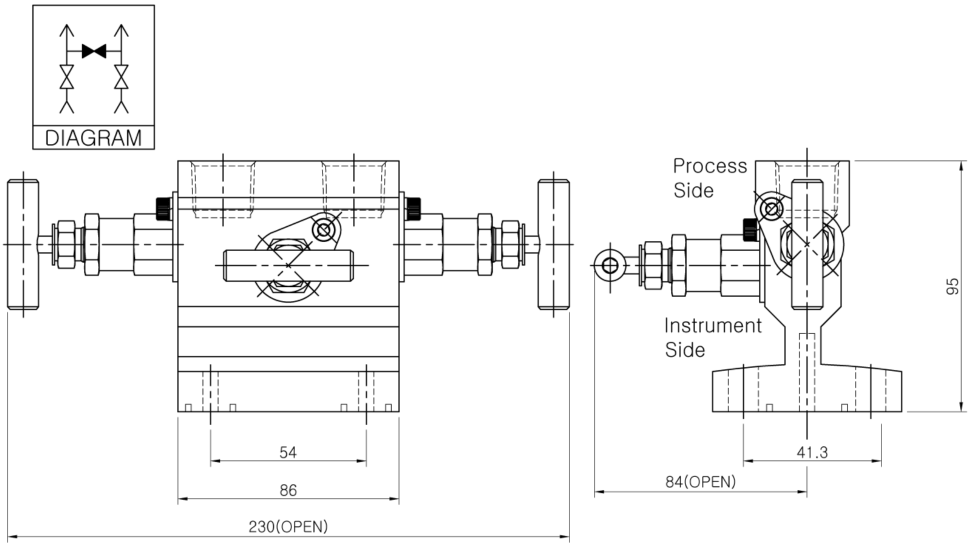


Model No.	Inlet	Outlet
IM3	Female 1/2" NPT	Female 1/2" NPT

※All dimensions are in millimeter for reference only. Dimensions shown with IY-LOK nuts in finger-tight position, where applicable.

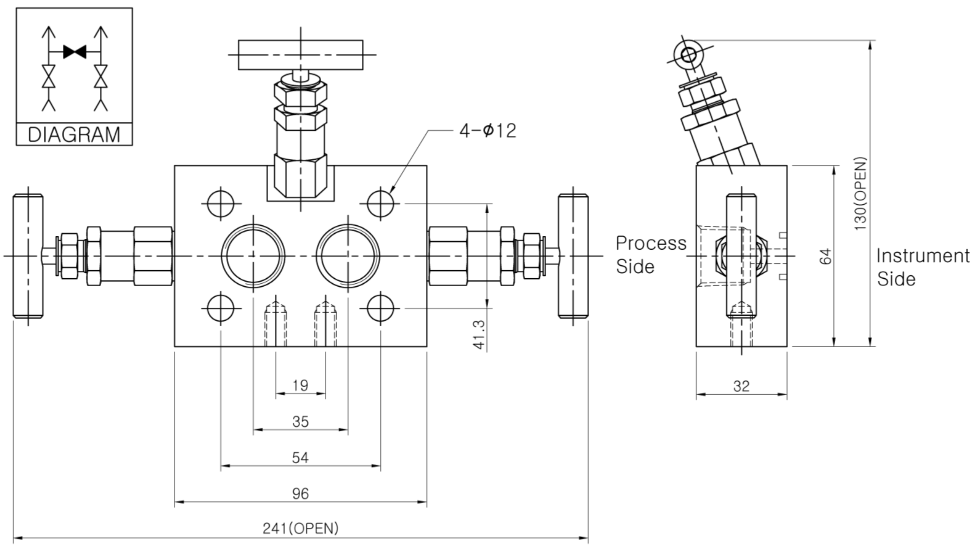
3-WAY Remote Mounting

Single Flange Type



Model No.	Inlet	Outlet
IM3F1	Female 1/2" NPT	Flange

Single Block Flange Type

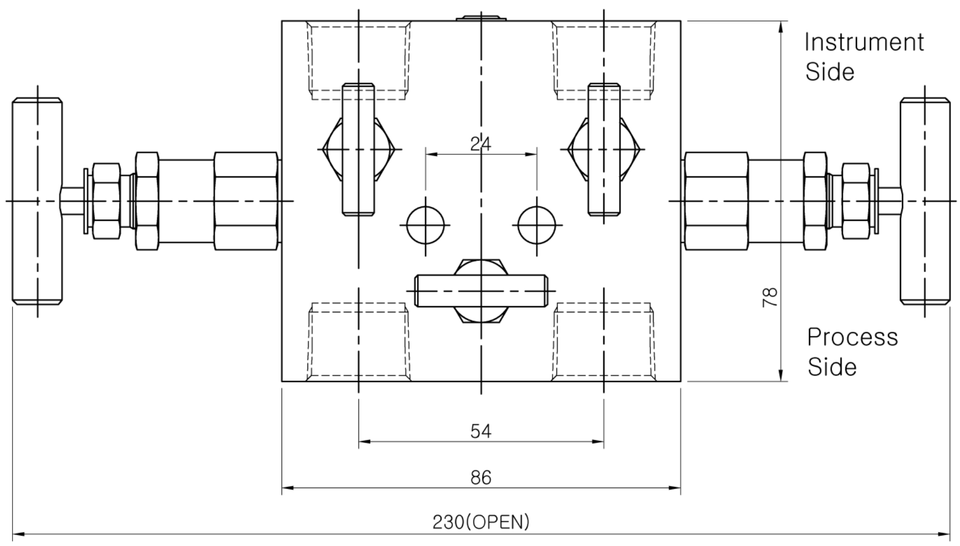


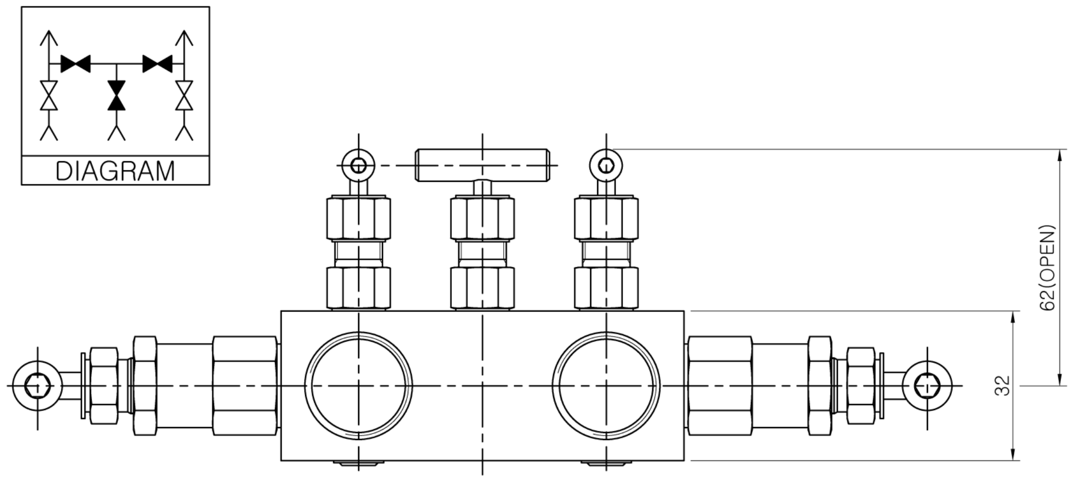
Model No.	Inlet	Outlet
IM3BF	Female 1/2" NPT	Flange

※All dimensions are in millimeter for reference only. Dimensions shown with IY-LOK nuts in finger-tight position, where applicable.

5-WAY Remote Mounting

Block Type



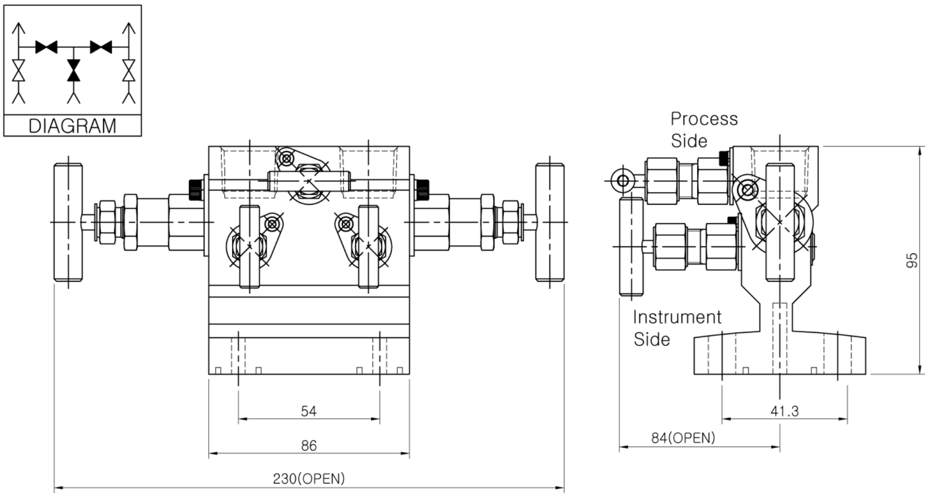


Model No.	Inlet	Outlet	Drain / Test
IM5	Female 1/2" NPT	Female 1/2" NPT	Female 1/4" NPT

※All dimensions are in millimeter for reference only. Dimensions shown with IY-LOK nuts in finger-tight position, where applicable.

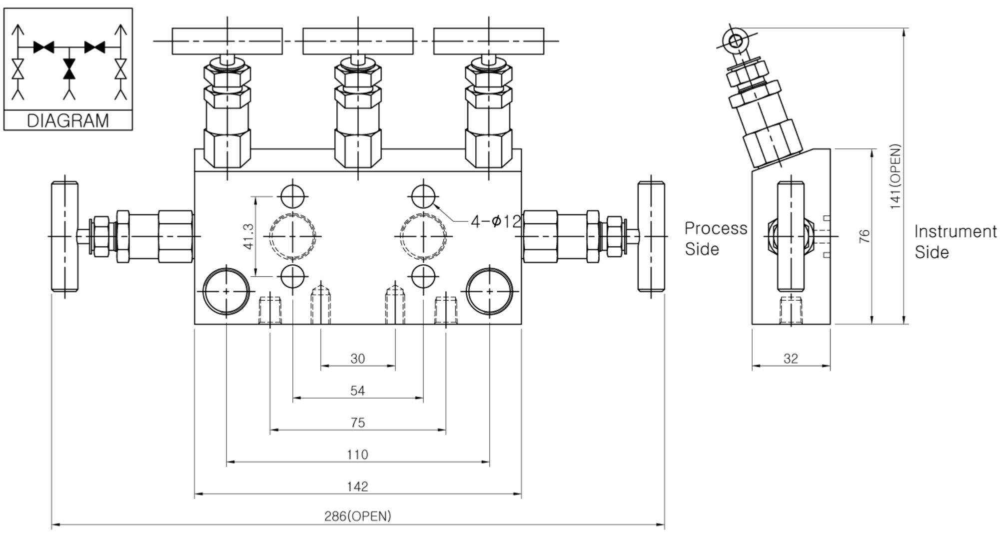
5-WAY Direct Mounting

Single Flange Type



Model No.	Inlet	Outlet	Drain / Test
IM5F1	Female 1/2" NPT	Flange	Female 1/4" NPT

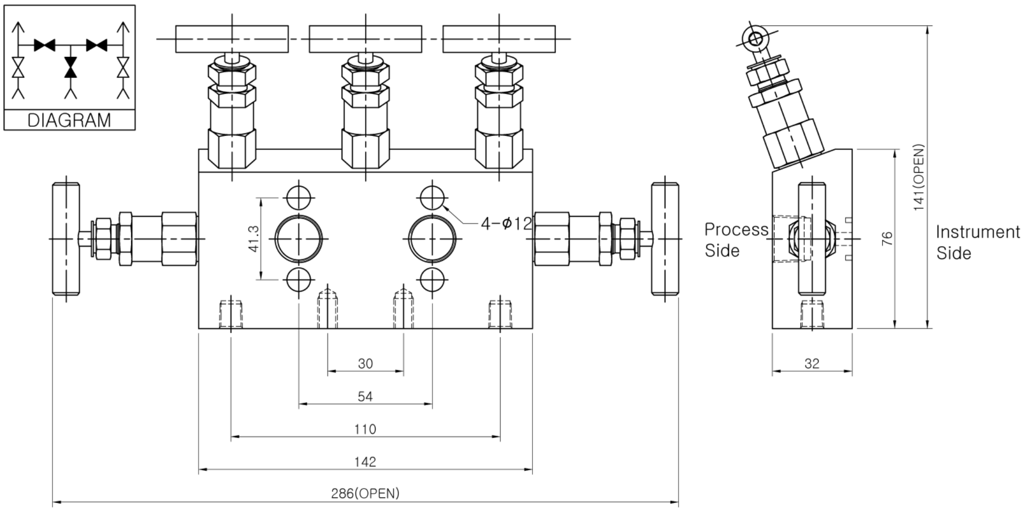
Single Block Flange Type



Model No.	Inlet	Outlet	Drain / Test
IM5BF	Female 1/2" NPT	Flange	Female 1/4" NPT

※All dimensions are in millimeter for reference only. Dimensions shown with IY-LOK nuts in finger-tight position, where applicable.

Single Block Flange Type – A



Model No.	Inlet	Outlet	Drain / Test
IM5BFA	Female 1/2" NPT	Flange	Female 1/4" NPT

Manifold support brackets and blocks are recommended when an instrument is to be directly mounted to the manifold.

Most manifolds are suitable for base / bracket mounting and can be supplied With the necessary mounting supports.

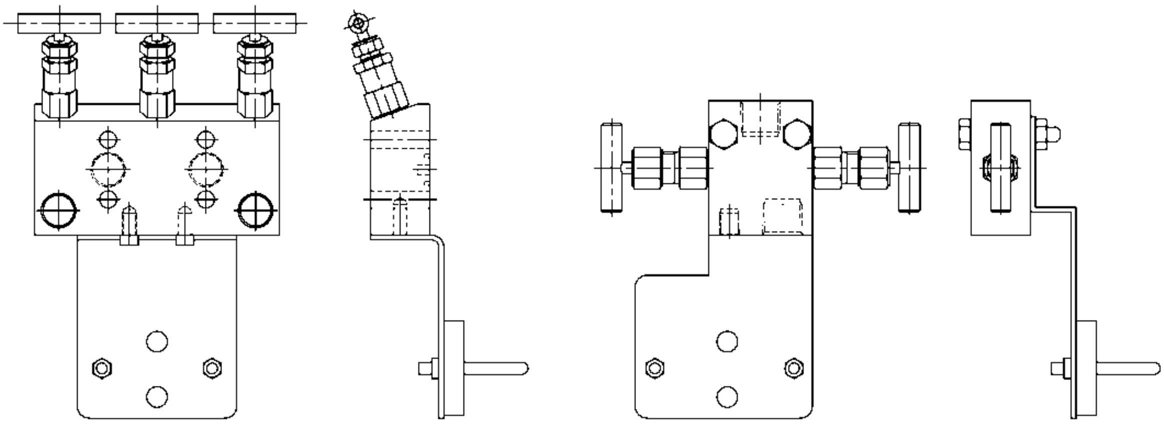
By mounting the manifold the user will ensure that when / if the instrument is to be removed the manifold remains fully supported.

Another advantage of the “mount the manifold” philosophy is that the installation piping can proceed without the need to assemble the instrument.

Manifold base support / bracket kits can be supplied in either shot blasted and zinc sprayed steel or stainless steel upon request.

Each kit includes appropriate bracket, U bolt nuts and bracket nuts / pins.

Bracket are suitable for 2” NB standpipe or uni-strut mounting.



IY-LOK Always together, Always, success

Bleed Valve

Semiconductor, Display, Solar. Oil Gas,
Power Plant, Offshore and Water Desalination

Bleed Valve Working Pressure Max. 10000psi

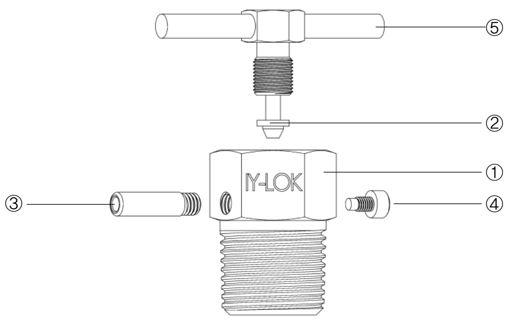
Technical Data

Maximum operation pressure
Up to 10000psig(689bar) at 100°F(38°C)

Temperature rating
From -65°F(-54°C) 850°F(454°C) With Stainless Steel

Stem thread and tips are chrome-plated for a long cycle life
Back stop screw prevents accidental removal of stem
Size range from 1/8” to 1/2” Tubing and piping system.
Male NPT & ISO 7/1 (PT) and SAE End connection.
100% Factory tested.

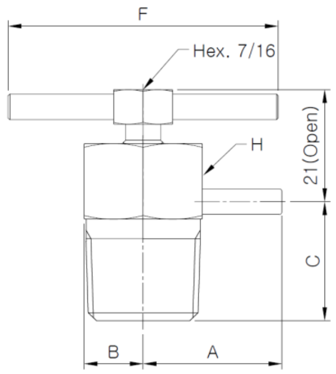
Materials of Construction



No.	Description	Materials
①	Body	316 SS
②	Stem	316 SS
③	Vent Tube	316 SS
④	Back Stop Screw	316 SS
⑤	*Bar Handle (Option)	316 SS

∗Bar Handle is available on request.

Table of Dimensions



Part No.	End Connection		Orifice	Cv	Dimensions (mm)				
	Inlet	Outle			A	B	C	H	F
BLV	M-02N	O.D 3/16" Tube Stub	3.2	0.25	23.0	10.2	19.1	15.87 (5/8")	50.8
	M-04N								
	M-06N				26.1	11.1	22.3	22.22 (7/8")	
	M-08N								

∗ISO Tapered Thread, put “R” digit at the last of part number.

Ordering System

BLV	-	M	-	04N	-	SS	-	
Valve Series		Inlet Connection Type		Pipe Thread Designator		Body Material		Option

Valve Series	
BLV	Bleed Valve

Inlet Connection Type	
M	Male Pipe Thread

Pipe Thread Designation (NPT or ISO7/1 (PT))				
Thread Size	1/8	1/4	3/8	1/2
Designator	02N/R	04N/R	06N/R	08N/R

Body Material	
SS	316 / 316L SS

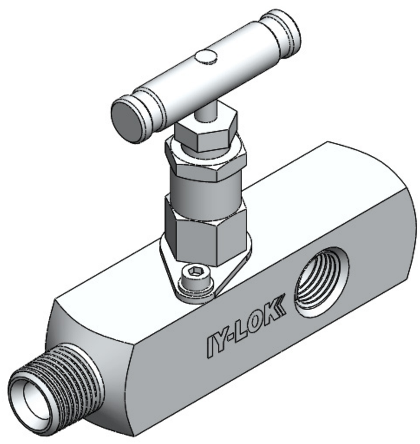
Option	
Nill	
B	Bar Handle

Gauge Valve Series

Sour gas service

Handling slurries or solid impurities

GV/GV2/GRV Series Working Pressure 6000psig



FEATURES

Maximum operation pressure
6000psig@38˚C (340bar@100˚F).

Temperature Rating
53˚C to 232˚C (-65˚F~450˚F) with PTFE packing,
up to 648˚C(1200˚F) with optional Grafoil packing.

1/2 in. Gauge ports standard NPT Female Thread.

Body Material 316 Stainless Steel.

100% Factory tested.

TESTING

Each Valve is 100% Factory tested nitrogen at 1000psig(69bar) for leakage at packing. Seat test is preformed to a maximum allowable leak rate of 0.1SCCM

Hydrostatic shell test is performed at 1.5times the working pressure. (OPTION)

Materials of Construction

No.	Description	Material
1	Body	316 SS
2	Stem	316 SS
3	Bonnet	316 SS
4	Packing	PTFE / GRAFOIL(Optional)
5	Gland	316 SS
6	Packing Nut	316 SS
7	Handle	316 SS

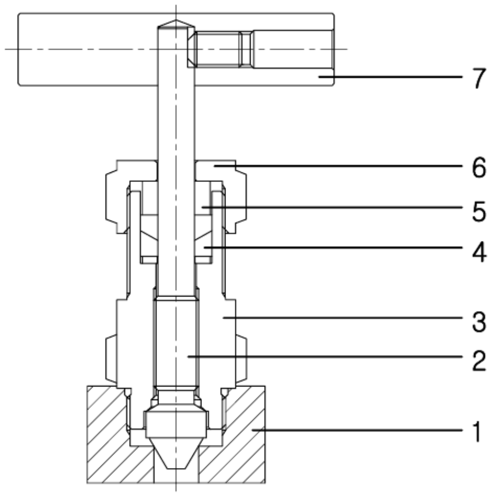
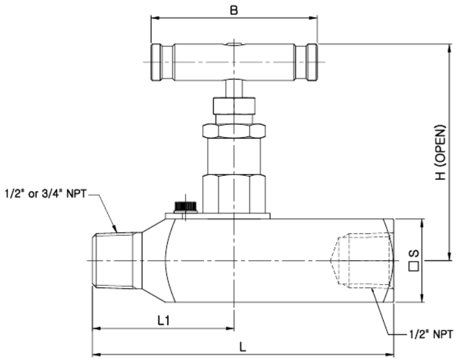
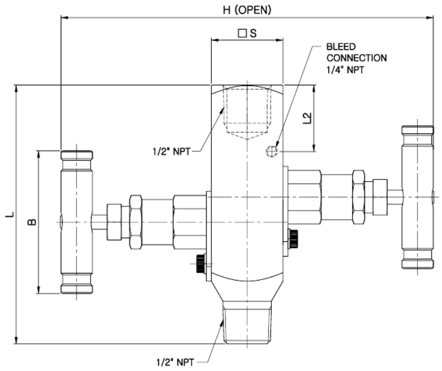
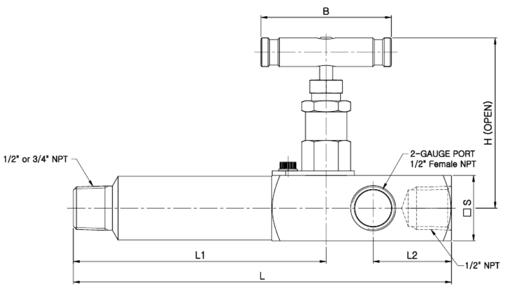


Table of Dimensions







Part No.	End Connection		Dimensions (mm)		
	Inlet	Outlet	L	O(open)	S(square)
GV-M08N	1/2" Male NPT	1/2" Female NPT	78	69	32
GV-M12N	3/4" Male NPT				
GV2-M08N	1/2" Male NPT		95.5	138	32
GRV-M08N	1/2" Male NPT		136	69	32
GRV-M12N	3/4" Male NPT				

* All dimensions are in millimeter for reference only. Dimensions shown with IY-LOK nuts in finger-tight position, where applicable

Ordering System

GV - **M08N** - **Nill** - **SS**

- GV: Valve Series
- M08N: End Connection Type
- Nill: Packing Material
- SS: Body Material

Valve Series	
GV	Gauge Valve
GV2	2 Gauge Valve
GRV	Gauge Root Valve

Pipe Thread Designation (NPT or ISO7/1(PT))		
Thread Size	Male 1/2"	Male 3/4"
Designator	M08N	M12N

Stem Tip	
Nill	Vee Stem
R	Regulating Stem

Packing Material	
Nill	PTFE
G	Grafoil

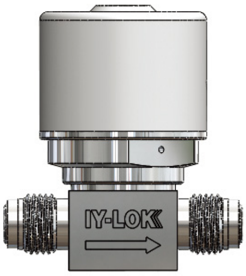
Body Material	
SS	316L SS

※All dimensions are in millimeter for reference only. Dimensions shown with IY-LOK nuts in finger-tight position, where applicable.

Diaphragm Valve

UHP VALVE
ULTRA HIGH PURITY
Low Pressure - Pneumatic Actuating Operation

Diaphragm Valve Pneumatic Actuating Operation



Features

Body Material
316L Stainless Steel – Single and Double Melt.

Compact Design - Minimum Dead Space.
Maximum Flow Capacity.
Cleaning Process in a Certified Clean Room.
Diaphragm Material Elgiloy .
Electro Polishing Processing.
Seat Material PCTFE
Excellent Chemical and Thermal Resistance.

Long Cycle Life.

Specifications

Size	1/4"	3/8", 1/2"
Orifice (mm)	4.5	7
Cv	0.3	0.7
Max. Working Pressure	145 psi (10 bar)	
Actuator Pressure Range	4 ~ 6 bar (58 ~ 87 psi)	
Max. Working Temperature	14˚F ~ 176˚F (-10˚C ~ 80˚C)	

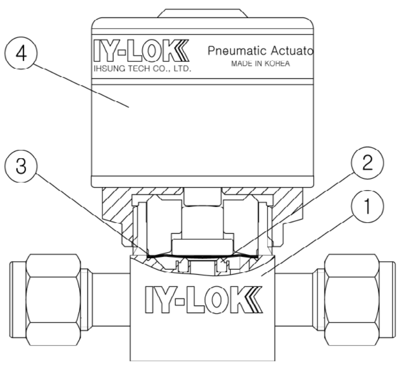
Leak Rate

Internal Leakage (He)	≤1*10^-9 atm.cc/sec
External Leakage (He)	≤1*10^-9 atm.cc/sec

Grade

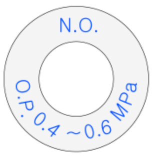
Designator	Surface Finish Level (μm)	
	Max	Average
BA	<1.6	<0.4
EP	<0.4	<0.125

Materials of Constructon



NO.	PART NAME	MATERIAL
①	BODY	316L SS
②	SEAT	PCTFE / PFA / PI
③	DIAPHRAGM	Ni-CO Alloy
④	ACTUATOR	AL

Actuator Configuration



Normal Open

Normal Close

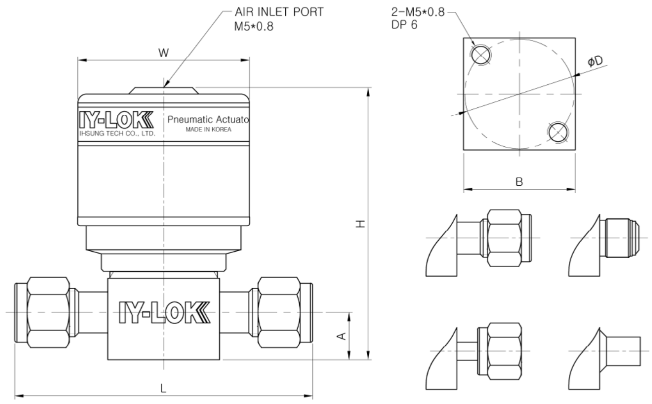


Table of Dimensions

Part No.	Orifice mm	Cv	End Connection Inlet	End Connection Outlet	L	H	A	W	B	D
DVL1-I	4.3	0.3	1/4" IY-LOK		69.3	63.2	11	40	26	25.4
DVL1-M			1/4" Male ICR		57	63.2	11	40	26	25.4
DVL1-F			1/4" Female ICR		70.6	63.2	11	40	26	25.4
DVL1-BW			1/4" Tube Butt Weld		54	63.2	11	40	26	25.4
DVL2-I	7	0.7	3/8" IY-LOK		82.5	84	16	55	37	28
DVL2-M			3/8" Male ICR		76.2	84	16	55	37	28
DVL2-F			3/8" Female ICR		83	84	16	55	37	28
DVL2-BW			3/8" Tube Butt Weld		69	84	16	55	37	28
DVL2-I			1/2" IY-LOK		91	84	16	55	37	28
DVL2-M			1/2" Male ICR		76.2	84	16	55	37	28
DVL2-F			1/2" Female ICR		83	84	16	55	37	28
DVL2-BW			1/2" Tube Butt Weld		69	84	16	55	37	28

Ordering System

DVL1	-	I	-	04T	-	NC	-	SM	-		-	EP
Valve Series		End Connection Type		End Connection Size		Operation Type		Body Material		Seat Material		Grade

Valve Series	
DVL1	Diaphragm Valve Low Pressure 1Series
DVL2	Diaphragm Valve Low Pressure 2Series

End Connection Type	
I	IY-LOK Tube Fitting
M	Male ICR Thread
F	Female ICR Thread
BW	Tube Butt Weld

End Connection Size Tube O.D. Designation				
Inch Tube	Tube O.D (inch)	1/4	3/8	1/2
	Designator	04T	06T	08T

ICR (Metal Face Seal) Size Designator			
Thread Size	1/4″	3/8″	1/2″
Designator	04	06	08

Operation Type	
NC	Pneumatic Actuator - Normal Close
NO	Pneumatic Actuator - Normal Open

Body Material	
SM	Single Melting - 316L SS
DM	Double Melting – 316L SS
SS	316L SS

Seat Material	
Nill	PCTFE
PF	PFA
PI	PI

Grade	
BA	Bright Annealing
EP	Electro Polished

※All dimensions are in millimeter for reference only. Dimensions shown with IY-LOK nuts in finger-tight position, where applicable.

IY-LOK

Always together, Always, success

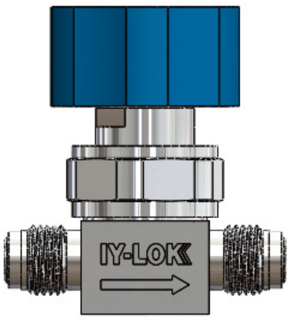
Diaphragm Valve

UHP VALVE

ULTRA HIGH PURITY

Low Pressure - Manual Operation

Diaphragm Valve Manual Operation



Features

Body Material
316L Stainless Steel – Single and Double Melt.

Compact Design - Minimum Dead Space.

Maximum Flow Capacity.

Cleaning Process in a Certified Clean Room.

Diaphragm Material Elgiloy.

Electro Polishing Processing.

Seat Material PCTFE
Excellent Chemical and Thermal Resistance.

Long Cycle Life.

Specifications

Size	1/4"	3/8", 1/2"
Orifice (mm)	4.5	7
Cv	0.3	0.7
Max. Working Pressure	145 psi (10 bar)	
Max. Working Temperature	14˚F ~ 176˚F (-10˚C ~ 80˚C)	

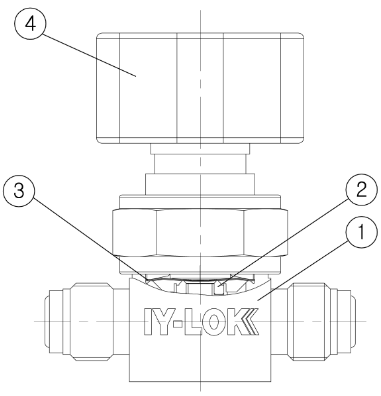
Leak Rate

Internal Leakage (He)	≤1*10^-9 atm.cc/sec
External Leakage (He)	≤1*10^-9 atm.cc/sec

Grade

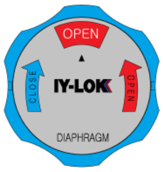
Designator	Surface Finish Level (μm)	
	Max	Average
BA	<1.6	<0.4
EP	<0.4	<0.125

Materials of Constructon

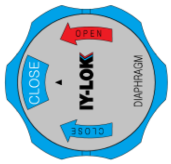


NO.	PART NAME	MATERIAL
①	BODY	316L SS
②	SEAT	PCTFE / PFA / PI
③	DIAPHRAGM	Ni-CO Alloy
④	HANDLE	AL

Manual Operation



Open



Close

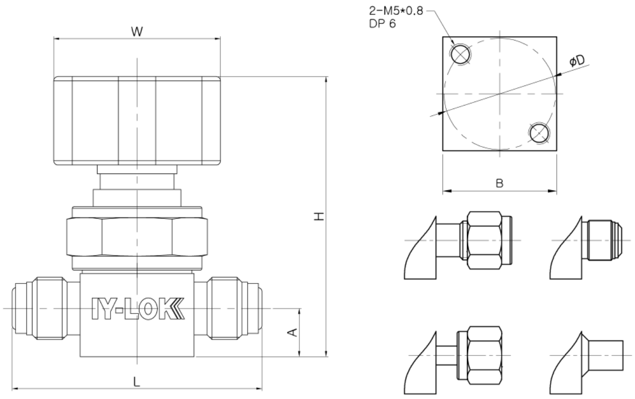


Table of Dimensions

Part No.	Orifice	Cv	End Connection		Dimensions (mm)					
	mm		Inlet	Outlet	L	H	A	W	B	D
DVLM1-I	4.3	0.3	1/4" IY-LOK		69.3	64.3	11	38.1	26	25.4
DVLM1-M			1/4" Male ICR		57	64.3	11	38.1	26	25.4
DVLM1-F			1/4" Female ICR		70.6	64.3	11	38.1	26	25.4
DVLM1-BW			1/4" Tube Butt Weld		54	64.3	11	38.1	26	25.4
DVLM2-I	7	0.7	3/8" IY-LOK		82.5	76.8	16	38.1	37	28
DVLM2-M			3/8" Male ICR		76.2	76.8	16	38.1	37	28
DVLM2-F			3/8" Female ICR		83	76.8	16	38.1	37	28
DVLM2-BW			3/8" Tube Butt Weld		69	76.8	16	38.1	37	28
DVLM2-I			1/2" IY-LOK		91	76.8	16	38.1	37	28
DVLM2-M			1/2" Male ICR		76.2	76.8	16	38.1	37	28
DVLM2-F			1/2" Female ICR		83	76.8	16	38.1	37	28
DVLM2-BW			1/2" Tube Butt Weld		69	76.8	16	38.1	37	28

Ordering System

DVLM1 - I - 04T - [ ] - SM - [ ] - EP

Valve Series — End Connection Type — End Connection Size — Operation Type — Body Material — Seat Material — Grade

Valve Series	
DVLM1	Diaphragm Valve Low Pressure 1Series
DVLM2	Diaphragm Valve Low Pressure 2Series

End Connection Type	
I	IY-LOK Tube Fitting
M	Male ICR Thread
F	Female ICR Thread
BW	Tube Butt Weld

End Connection Size				
Tube O.D. Designation				
Inch Tube	Tube O.D (inch)	1/4	3/8	1/2
	Designator	04T	06T	08T

ICR (Metal Face Seal) Size Designator			
Thread Size	1/4"	3/8"	1/2"
Designator	04	06	08

Operation Type	
NC	Pneumatic Actuator - Normal Close
NO	Pneumatic Actuator - Normal Open

Body Material	
SM	Single Melting - 316L SS
DM	Double Melting – 316L SS
SS	316L SS

Seat Material	
Nill	PCTFE
PF	PFA
PI	PI

Grade	
BA	Bright Annealing
EP	Electro Polished

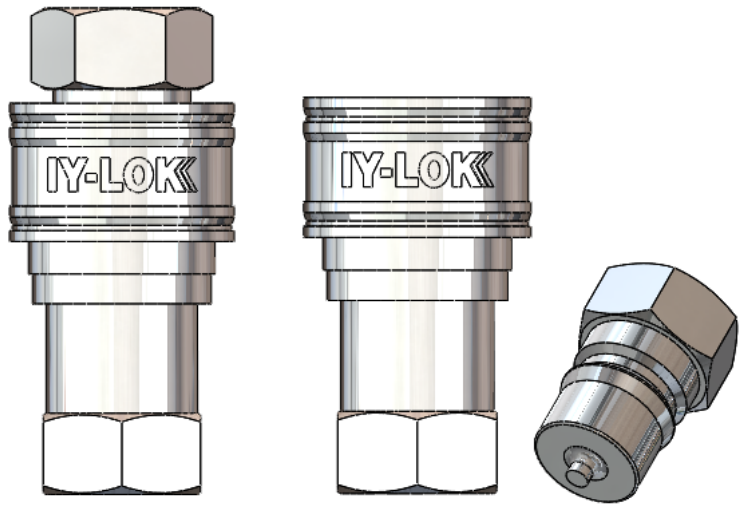
※All dimensions are in millimeter for reference only. Dimensions shown with IY-LOK nuts in finger-tight position, where applicable.

SP Coupler

Application

Industrial hydraulic lines, Water and coolant lines, chemical processing

SP Coupler



Quick Coupler Conform to ISO 7241-B standard.

O-Ring Seal

FKM is standard and can be changed to NBR upon request.

Compatible

PARKER 60, FASTER HNV, NITTO SP

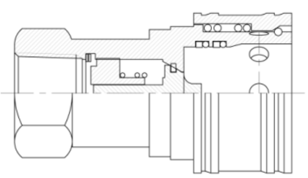
Quick coupler with double closure. 100% Factory tested.

Working Pressure Max.								
Size (inch.)								
1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
50 kgf/cm² 711 psi49 bar						40 kgf/cm² 568 psi39 bar		30 kgf/cm² 426 psi 29 bar

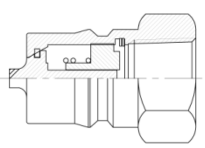
O-Ring Operating Temperature	
Material	
Viton	NBR
-20˚C~+130˚C	-20˚C~+80˚C

Material

Part No. SCB



Part No. SCP



Part Name	Part No.	Material
SP Coupler Body	SCB	303 SS*
		316 SS
		BRASS
SP Couple Plug	SCP	303 SS*
		316 SS
		BRASS

Pressure / Flow Rate

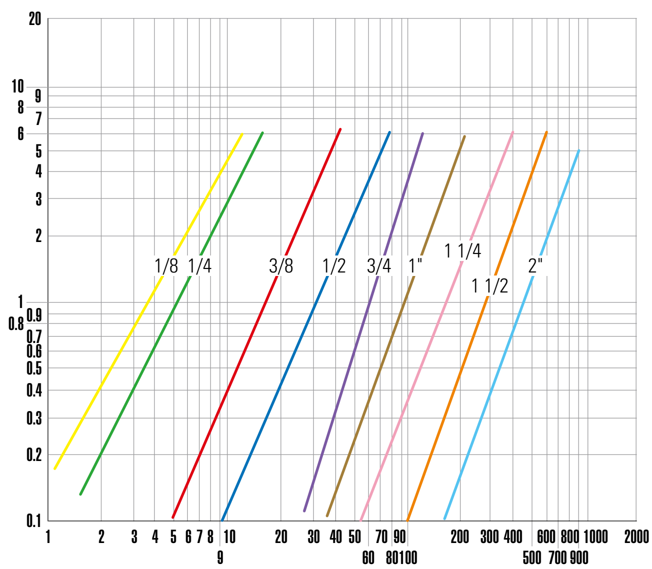
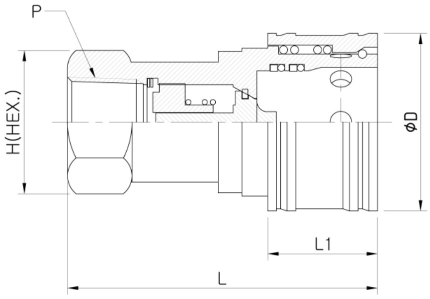


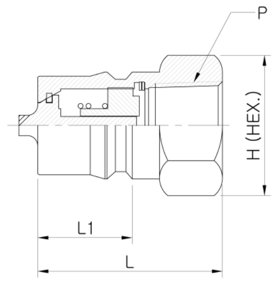
Table of Dimension

SCB



Part No.	P (Thread-ISO 7/1)	D	L	L_1	H (Hex.)
SCB-02R	1/8" - 28	24	48	17.5	17
SCB-04R	1/4" - 19	28	585	17.5	19
SCB-06R	3/8" - 19	34.5	65	20	22
SCB-08R	1/2" - 14	41.5	72	25.5	29
SCB-12R	3/4" - 14	49.5	88	30	35
SCB-16R	1" - 11	59.5	102	32	41
SCB-20R	1-1/4" - 11	74.5	115	34	54
SCB-24R	1-1/2" - 11	84	124	39	62
SCB-32R	2"	109	140	39	76

SCP



Part No.	P (Thread-ISO 7/1)	D	L	L_1	H (Hex.)
SCP-02R	1/8" - 28	24	48	17.5	17
SCP-04R	1/4" - 19	28	585	17.5	19
SCP-06R	3/8" - 19	34.5	65	20	22
SCP-08R	1/2" - 14	41.5	72	25.5	29
SCP-12R	3/4" - 14	49.5	88	30	35
SCP-16R	1" - 11	59.5	102	32	41
SCP-20R	1-1/4" - 11	74.5	115	34	54
SCP-24R	1-1/2" - 11	84	124	39	62
SCP-32R	2"	109	140	39	76

Ordering System

SC - **F** - **04R** - **S3** - ☐

SC	F	04R	S3	
Coupler Part Names	End Connection Type	End Connection Size	Body Material	O-Ring Material

Coupler Part Names	
SC	SP Coupler
SCB	SP Coupler Body
SCP	SP Coupler Plug

SC : SCB/SCP SET

End Connection Type	
F	Female

End Connection Size	
02R	Female 1/8" PT
04R	Female 1/4" PT
06R	Female 3/8" PT
08R	Female 1/2" PT
12R	Female 3/4" PT
16R	Female 1" PT
20R	Female 1-1/4" PT
24R	Female 1-1/2" PT
32R	Female 2" PT

Body Material	
S3	303 SS
SS	316 SS
B	Brass

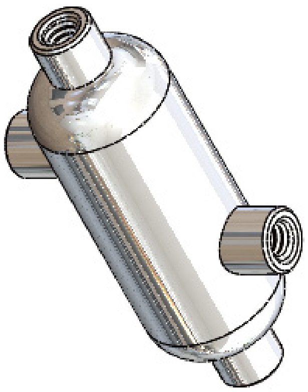
O-Ring Material	
None	Viton
NBR	Buna N

Condensate Pot

Application

Oil and Gas, On/Off Shore, Chemical Plant, Petrochemical.

Condensate Pot Use Process instrument impulse lines



Technical Data

Working pressure up to

Class 2500 as per ASME B16.34

Socket weld connection as per ASME B16.11

Butt welding ends as per ASME B16.9

NPT, PT as per ASME B1.20.1, ISO 7/1 taper pipe thread.

Standard material of construction

316 SS, 304 SS, Carbon steel, P11, P22

Pipe schedule

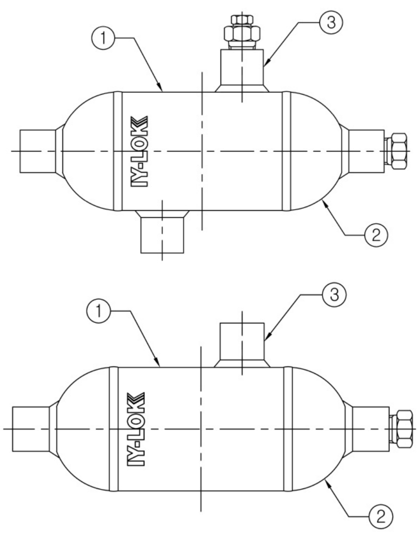
20, 40, 80, 160

Pipe Out Diameter is Standard 3" (76.2mm).

Available 4" (101.6mm) Out Diameter on request.

100% Factory tested.

Materials of Construction



No.	Description	Materials
①	SML'S Pipe	316 SS
		304 SS
		Carbon Steel
		P11
		P22
②	Cap	316 SS
		304 SS
		Carbon Steel
		P11
		P12
③	Socket	316 SS
		304 SS
		Carbon Steel
		P11
		P22

Ordering System

CDSP	-	4A	-	F	-	08N	-	40	-	SS	-	
Part Name		Configuration		End Connection Size		Size Designator		Pipe Schedule		Body Material		Test

Valve Series	
CDSP	Condensate Pot

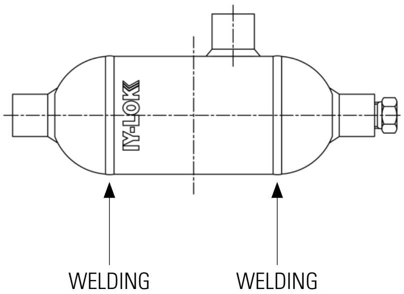
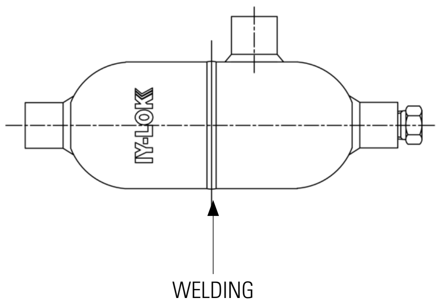
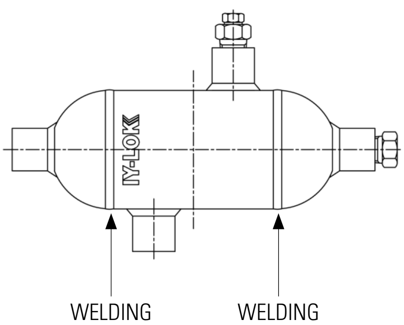
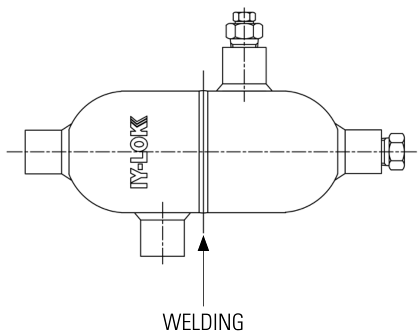
End Connection Type	
F	Female Pipe Thread

Pipe Schedule
20
40
80
160

Body Material	
SS	316 SS
S4	304 SS
CS	Carbon Steel
P1	P11
P2	P12

Test	
None	Hydro
P	PT(NDE)
R	RT(NDE)

Configuration

Part No.	Schematic	Part No.	Schematic
3A		3B	
4A		4B	

Size Designator

Pipe thread designations – NPT/ISO

Size	1/4"	3/8"	1/2"	3/4"	1"
Designations	04N/R	06N/R	08N/R	12N/R	16N/R

AIR Distribution ManiFolds

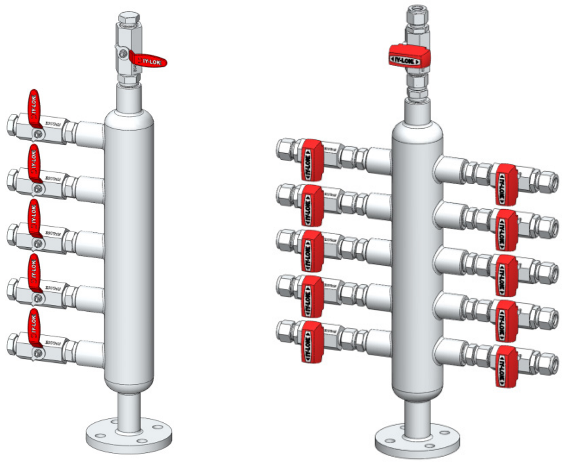
AIR Distribution ManiFolds

Variety Material and Wall Thickness availiable.

Welded Body Construction

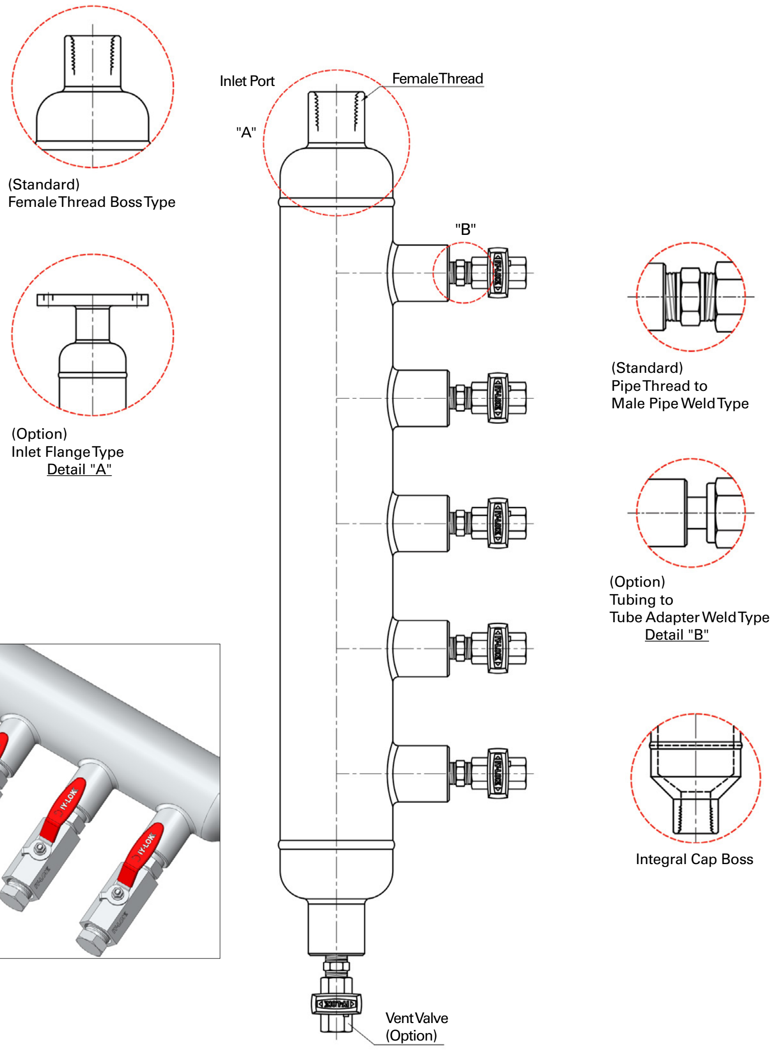
Variety of End Connections

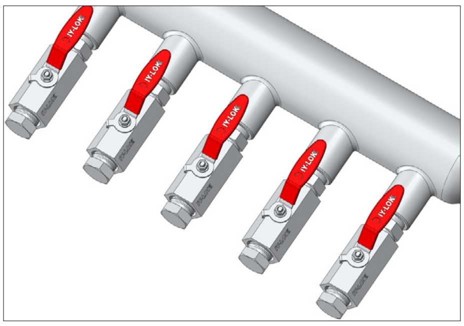
100% Factory Pressure tested.



Standard specification

Maximum applicable pressure : Ball valve - Up to 1000psig, Needle valve - Up to 5000psigOperation
Maximum applicable temperature : Ball valve with PTFE Seat - up to 82°C (180°F)
Needle valve with PEEK Packing - up to 315°C (600°F)





Singgle Air Distribution Manifold

Ordering System

IAM - 16 - A - 3 - RF - 12N - 10D - N - 8N - S316

- **IAM**: Series Designator (Air Manifolds)
- **16**: Pipe Size
- **A**: Pipe Schedule Designator A:Sch.40 B:Sch.80
- **3 - RF**: Inlet Flange Designator Nill: Boss Ends
- **12N**: Inlet Connection Designator
- **10D**: Number of outlet ports Designafor
  5S : single sided 5valves : 5
  10S : single sided 10valves : 10
  5D : double sided 5valves : 10
  10D : double sided 10valves : 20
- **N**: Valve Type Designator N : Needle Valves B : Ball Valves
- **8N**: Outlet, Vent Valve Connections Designator
- **S316**: S316 : 316 Stainless Steel S304 : 304 Stainless Steel STEL : Carbon Steel

Pipe Size	
16	1" Pipe
32	2" Pipe
48	3" Pipe

Pipe Schedule	
A	Sch.40
B	Sch.80

Inlet Flange Designator							
Code	1	2	3	4		5	
Designator	1/2"Flange	3/4"Flange	1"Flange	1 1/4"Flange		1 1/2"Flange	
Code	F			R			
Designator	Flat Face			Raised Face			
Code	F	G	H	I	J	K	L
Designator	150CL	300CL	400CL	600CL	900CL	1500CL	2500CL
Code	O	P	Q	R	S	T	
Designator	JIS 5K	JIS 10K	JIS 16K	JIS 20K	JIS 30K	JIS 40K	

Inlet / Outlet Vent(Valves) connections Designator					
Code	4N	6N	8N	12N	16N
Designator	1/4"NPT Female	3/8"NPT Female	1/2"NPT Female	3/4"NPT Female	1"NPT Female
Code	4T	6T	8T	12T	16T
Designator	1/4"Tubing	3/8"Tubing	1/2"Tubing	3/4"Tubing	1"Tubing
Code	4R	6R	8R	12R	16R
Designator	1/4"BSPT Female	3/8"BSPT Female	1/2"BSPT Female	3/4"BSPT Female	1"BSPT Female
Code	4W	6W	8W	12W	16W
Designator	1/4"Socket Weld	3/8"Socket Weld	1/2"Socket Weld	3/4"Socket Weld	1"Socket Weld

Tubing

Seamless Clean Pipe

반도체 장비 및 고순도 가스와 액체 장비를 위한 Clean Tube들은 대표적으로 E.P 와 B.A 두 가지로 표면 처리되어 사용되고 있습니다.
Clean Tubes for semiconductor equipment and high-purity gas and liquid equipment are typically surface treated with E.P and B.A.

EP	Precision electropolishing bright , smooth and corrosion resistant surface anticorrosion.
BA	Our special cold working,optimum pass schedule and bright-annealing give very fine and lustrous smoothness and good anticorrosion.

PIPE & TUBE

열처리 Annealing — AP

광열처리 Bright Annealing — BA

전해연마 Electro Polishing — EP

GRADE

No.	Description	Materials
AP	Annealed and Pickled	- 열처리한 후 황산, 염산 또는 인산용액에 담궈 산세처리 하는 방법 - 조도는 25㎛ 이하 - 스테인레스 스틸 표면의 크롬산화막을 제거 - Method of pickling treatment by immersing in sulfuric acid, hydrochloric acid or phosphoric acid solution after heat treatment - Illuminance is less than 25㎛ - Removal of chromium oxide film on stainless steel surface
BA	Bright Annealed	- 진공 or 보호가스 속에서 달군 다음 천천히 식히는 방식의 열처리 - 스테인레스 스틸의 Cr 성분이 산화되지 않도록 하는 고급 표면처리방법 - 조도는 3㎛ 이하 - Heat treatment by heating in a vacuum or protective gas and then slowly cooling - Advanced surface treatment method to prevent oxidation of Cr component of stainless steel - Illuminance is less than 3㎛
EP	ElectroPolished	- BA급을 전해질 용액에 넣고 전류를 흘려 표면 이물질 제거 및 미세한 봉우리와 골을 평탄화 하는 방법 - 조도는 0.7㎛ 이하 - A method of putting BA grade in an electrolyte solution and flowing an electric current to remove foreign substances on the surface and flatten fine peaks and valleys - Illuminance is less than 0.7㎛

Ordering System

TSSG	-	08T	-	0.035	-	L6	-	SS	-	AP
Tube		Tube O.D		Wall Thickness		Length (BA/EP : L4)		Body Material 316/316L Stainless steel		Grade

Tube & Pipe Size / Dimension Tolerance

TUBE SIZE INCH	Outer Diameter O.D(mm)	Inner Diameter I.D	Wall Thickness mm	Wall Thickness Inch	Length
1/8"	3.18	1.78	0.71	0.028	6M
1/4"	6.35	4.57	1.0 (0.89)	0.035	
3/8"	9.53	7.75	1.0 (0.89)	0.035	
	9.53	7.75	1.24	0.049	
1/2"	12.7	10.22	1.0 (0.89)	0.035	
	12.7	10.22	1.24	0.049	
	12.7	10.22	1.65	0.065	
3/4"	19.05	15.75	1.24	0.049	
	19.05	15.75	1.65	0.065	
1"	25.4	22.10	1.24	0.049	
	25.4	22.10	1.65	0.065	

(BA / EP : Length 4M)

Inner Surface Roughness		
AP	BA	EP
Ry≤25μm Ra≤100μinch	Ry≤4.5μm	Ry≤1.0μm
	Ry≤3.0μm Ra≤15μinch	Ry≤0.2μm Ra≤15μinch

DIMENSION TOLERANCE

TUBE SIZE INCH	Outer Diameter O.D(MM) O.D(MM)	Outer Diameter EP/BA	Outer Diameter AP	Wall Thickness W.T	Wall Thickness EP	Wall Thickness BA	Wall Thickness AP
1/4"	6.35	± 0.10	± 0.30	0.89	± 0.10~ -0.00	± 0.05	± 0.02
3/8"	9.53			0.89			
1/2"	12.7			1.24	± 0.10~ -0.15	± 0.01	
3/4"	19.05			1.65			
1"	25.4			1.65			

PIPE SIZE

PIPE SIZE A	PIPE SIZE B	Outer Diameter O.D(mm)	Wall Thickness WT=5S	Wall Thickness WT=10S	Length
6A	1/8"	10.5	1.00	1.12	6M
8A	1/4"	13.8	1.20	1.65	
10A	3/8"	17.3	1.20	1.65	
15A	1/2"	21.7	1.65	2.10	
20A	3/4"	27.2	1.65	2.10	
25A	1"	34.0	1.65	2.10	

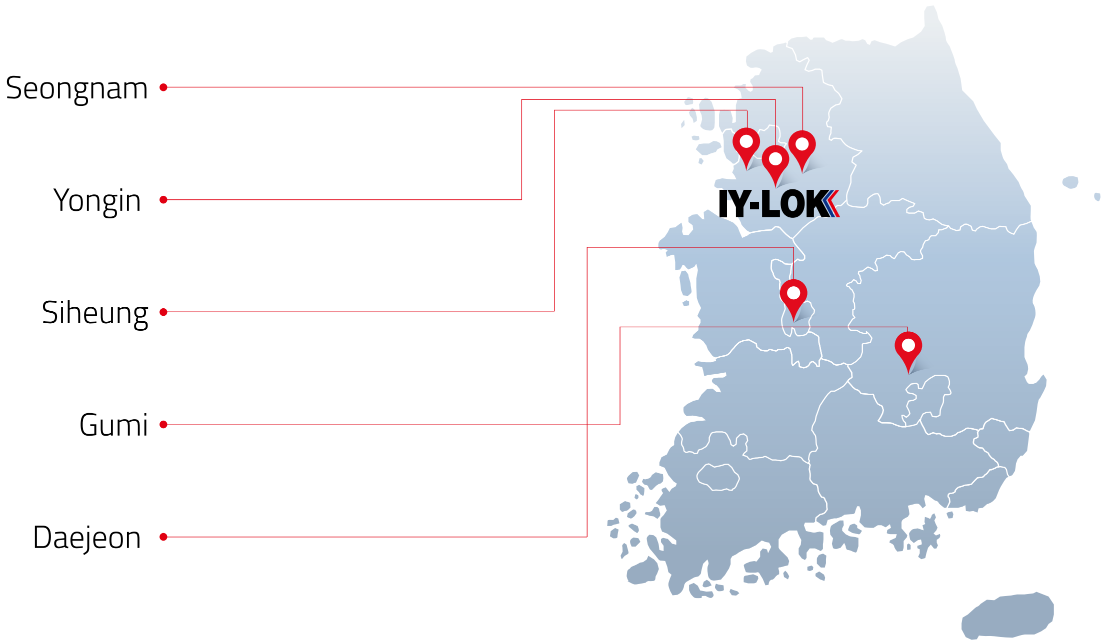
Inner Surface Roughness		
AP	BA	EP
Ry≤25μm Ra≤100μinch	Ry≤3.0μm Ra≤15μinch	Ry≤0.5μm Ra≤10μinch

DIMENSION TOLERANCE

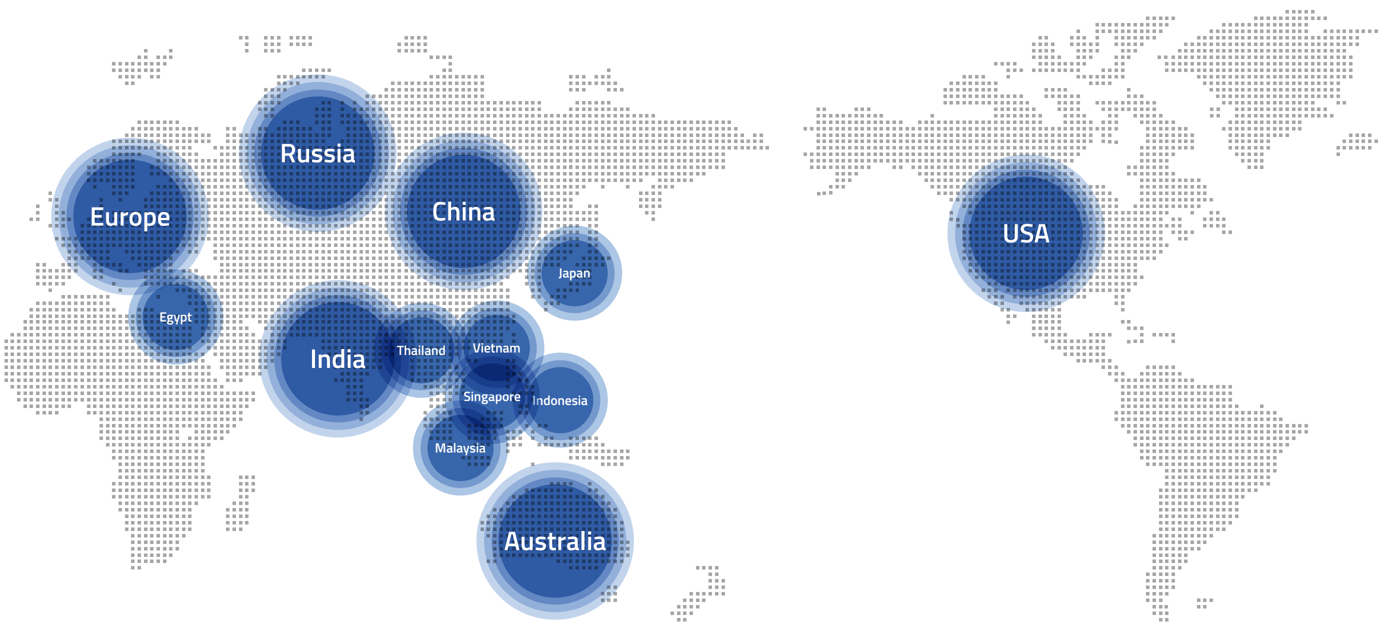
PIPE SIZE A	Outer Diameter O.D(MM) O.D(mm)	Dimension Tolerance EP/BA	Dimension Tolerance AP	Wall Thickness W.T	5S (mm) AP	5S (mm) BA	5S (mm) EP	W.T	10S (mm) AP	10S (mm) BA	10S (mm) EP
8A	13.8	± 0.08	± 0.30	1.2	± 0.02	± 0.12		1.65	± 0.02	± 0.15	
10A	17.3	± 0.10		1.2				1.65			
15A	21.7			1.65		± 0.15		21.10	± 0.10 %	± 0.21	
20A	27.2			1.65				2.10			
25A	34.0		± 0.10 %	1.65				2.80		± 0.28	

Partners

Domestic



Overseas



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