



SUPERLOK®

Bite Type Tube Fittings (JIS B2351)



	BUS Straight Union	164P		BMRT Male Run Tee	174P		BHME Hose Male Elbow	182P
	BUE Union Elbow	164P		BCF Female Connector	175P		BHFE Hose Female Elbow	182P
	BUT Union Tee	165P		BBCF Bulkhead Female Connector	175P		BHBME Hose Bulkhead Male Elbow	183P
	BUC Union Cross	165P		BFGC Gauge Connector	176P		BHBFE Hose Bulkhead Female Elbow	183P
	BBHU Bulkhead Union	166P		BFE Female Elbow	176P		BWC Welding Connector	184P
	BBUE Bulkhead Union Elbow	166P		BFBT Female Branch Tee	177P		BWBU Welding Bulkhead Union	184P
	BCM-R Male Connector	167P		BFRT Female Run Tee	177P		BAP-R Adapter	185P
	BCM-G Male Connector (For Copper Gasket)	168P		BC Cap	178P		BAP-G Adapter	185P
	BCM-GO Male Connector (For O-Ring)	169P		BPL Plug	178P		BRD Reducer	186P
	BLCM Long Male Connector	170P		BNT Nut	179P		BAE Adjustable Elbow	186P
	BME Male Elbow	171P		BCR Sleeve	179P		BABT Adjustable Branch Tee	187P
	BLME Long Male Elbow	172P		BHMU Hose Male Union	180P		BART Adjustable Run Tee	187P
	BPME Positionable Male Elbow	172P		BHFU Hose Female Union	180P		BAPV Air Purge Valve (Tube End)	188P
	BBE Banjo Elbow	173P		BHBMU Hose Bulkhead Male Union	181P		BAPV-R Air Purge Valve (Thread End)	188P
	BMBT Male Branch Tee	173P		BHBFU Hose Bulkhead Female Union	181P			

SUPERLOK Bite Type Fitting is manufactured to JIS B2351& KS B1535 under strict ISO 9001 procedure

Standard of SUPERLOK Bite Type Fitting

Bite type fitting consists of three parts : BODY, SLEEVE and NUT, and is designed to work over medium and heavy wall tubing. See Fig.1

BODY, SHOULDER, SLEEVE, NUT & TUBE

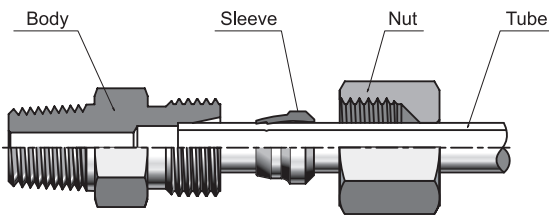


Fig.1

The sleeve is driven forward on the tube by the nut. As the sleeve moves forward it meets the seal seat angle of the body which causes the sleeve to cam inward into the tube. The sleeve then bites into the tube causing a small ridge of tube material to be pushed up in front of the biting edge of the sleeve. See Fig.2

Internal ridge on Tube

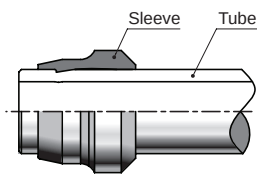


Fig.2

The make up of the fitting is critical in that the tube must be bottomed against the tube stop in the body or presetting tool during make up. If it is not bottomed the tube will move forward with the sleeve and a bite will not be achieved.

Make sure the tube is bottomed. A check is possible to see if the tube was bottomed during make up. To make this check look at the end of the tube, and notice if a circular appearing ring has been impressed into the tube end face. This impression will be caused by the tube stop which has a slight reverse angle rather than a flat face.

Pressure Range & Working Temperature

Material			Carbon Steel	Stainless Steel	Brass
Pressure (Kgf/cm ²)	O.D (mm)	4-15	500		250
		16-22	400		210
		25-28	350		170
		30-38	250		150
		40-50	210		120
Temperature			-40℃ to 120℃ (DIN 3859)	-60℃ to 400℃ (DIN 17440)	-60℃ to 175℃

Material Specifications

Parts	Carbon Steel	Stainless Steel	Brass
Forged Body	JIS G4051 S20C-S48C	SUS316,SUS304	JIS H3250 C3771
Bar Stock Body	JIS G4051 S20C-S48C	SUS316,SUS304	JIS H3250 C3604
Cold Formed Nut	JIS G4051 S10C-S20C		
Bar Stock Nut	JIS G4051 S20C-S48C	SUS316,SUS304	JIS H3250 C3604
Sleeve	JIS G4051 S10C	SUS316,SUS304	JIS H3250 C3604

Tubing Selection

Carbon Steel :

Seamless, welded, fully annealed and redrawn tube suitable for bending with maximum hardness Rockwell B72.

Stainless Steel :

Seamless, welded, fully annealed and redrawn tube suitable for bending with maximum hardness Rockwell B90

Copper :

For seamless coils, soft or light annealed, maximum hardness Rockwell F55.

For straight lengths, light drawn and general purpose, maximum hardness 60 on Rockwell 30T scale.

Assembly Instructions

Step 1. Cutting the tube :

Cut tube squarely and lightly de-burr the end internally and externally.

Step 2. Sleeve placement :

Set a nut and sleeve on the tube. Make sure the sleeve and the nut are facing the fitting.

Step 3. Lubrication :

Lightly lubricate threads on tool or body as well as the tail and lead end of the sleeve with an extreme friction lubricant.

Step 4. Pre-setting :

Insert tube end into tool or fitting until it bottoms against the shoulder(to hold tube motionless during pre-setting operation) and screw nut down finger tight.

Step 5. Final setting :

Wrench nut down 1-1/2 turns to pre-set the sleeve reliable make up of all flareless tube fittings is dependent upon the sleeve traveling a prescribed distance into the tapered fitting throat in order to bite into the tube and effect a positive grip and seal.

Reassembly Instructions

Fitting can be used many times. To ensure this, parts must be clean and free of defects.

Step 1. Insert the tube into fitting body until sleeve seats firmly in the fitting and hand-tighten the nut.

Step 2. Tighten the nut with a wrench by holding the fitting body with a backup wrench until a sharp rise in torque is felt.

Further tighten the nut 1/4 to 1/2 turn.

Pre-Set Inspection

All SUPERLOK fitting presets must be disassembled and inspected for proper sleeve pre-set before final installation for service. The following detailed inspection procedures must be followed regardless of the method used to pre-set the sleeve to the tube. (See Fig.3)

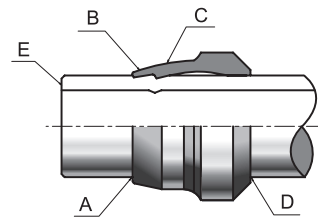


Fig.3

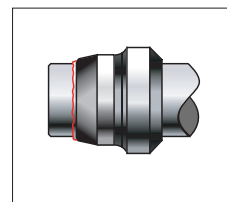
1. A ridge of metal (A) has been raised above the tube surface to a height of at least 50% of the thickness of the sleeve leading edge, completely around the tube.
2. While the leading edge of the sleeve may be coined flat (B) there is a slight bow to the balance of the pilot section (C).
3. The tail or back end of the sleeve is snug against the tube (D).
4. There is a slight indentation around the end of the tube (E) that indicates the tube was bottomed in the tool or fitting during pre-setting (if evidence of this complete contact is not visible the sleeve may not be properly pre-set).
5. Avoid rotating the sleeve. Steel sleeve should not be capable of moving back and forth along the tube beyond

the bite area (a stainless steel sleeve will move more than steel because of it's spring back characteristics).

Trouble Shooting Guide

Problems with bite type fittings are most of ten traced to faulty Pre-Set/Assembly procedure.

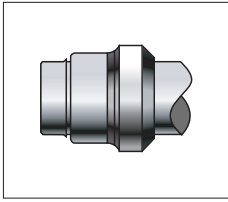
1. Tube not bottomed



Remedy:

Check for the indentation on the tube end or compare the length from the end of the tube to the front end of the sleeve of a known good assembly to that of the assembly in question. This assembly should be scrapped.

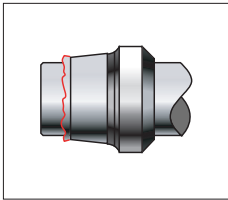
2. Shallow bite



Remedy:

Inspect for turned up ridge of material. A failure to achieve this ridge can be traced either to the nut not being tightened enough or the tube not being bottomed against the stop which allowed the tube to travel forward with the sleeve. In some instances this assembly may be re-worked.

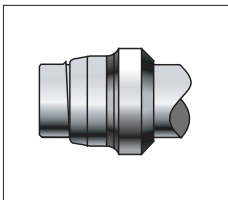
3. Over-set sleeve



Remedy:

Too much pressure or more than 1-3/4 turns from finger tight were used to pre-set sleeve, or the nut was severely over-tightened in final assembly. This assembly should be scrapped.

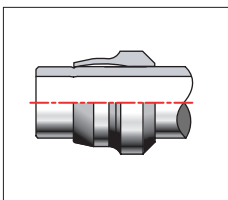
4. Sleeve cocked on tube



Remedy:

The sleeve may become cocked on the tube when the tube end is not properly lined up with the body. Generally, this condition is caused by faulty tube bending. All bent tube assemblies should drop into the fitting body prior to make up. This assembly should be scrapped.

5. No bite



Remedy:

If all of the prior checks have been made and the sleeve still shows no sign of biting the tube, it may be that the tube is too hard. This assembly should be scrapped.

Ordering Information

Example 1

B **CM** - **08** - **02** **R**
 1 2 3 4 5

Example 2

B **US** - **12**
 1 2 3

1. SUPERLOK Bite Type Fitting

2. Name of Fitting

3. Tube and Pipe Designations

Metric Tube	Out dia.	4	6	8	10	12..... 38	40	50
	Designation	04	06	08	10	12..... 38	40	50
SCH, PIPE	Nominal dia.	1/8	1/4	3/8	1/2	3/4	1	1 1/4
	Out dia.	10.5	13.8	17.3	21.7	27.2	34.0	42.7
	Designation	6A	8A	10A	15A	20A	25A	32A

4. Pipe Thread Designations

Thread	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Designation	01	02	03	04	06	08	10	12	16

5. Thread Symbols

Type	Symbol	Specification
Taper Threads	R	JIS B 0203(PT), ISO 7/1
	N	ANSI B 1.20.1(NPT)
Parallel Threads	G	JIS B 0202(PF), ISO 228/1

Material Indication System

- C = Carbon Steel
- SS = 316 Stainless Steel
- 304 = 304 Stainless Steel
- B = Brass

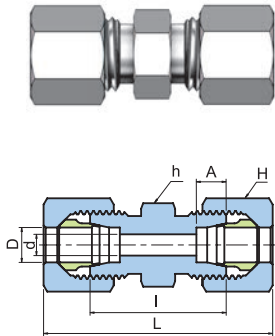
Example

BCM - 08 - 02 R - B

Brass

BUS

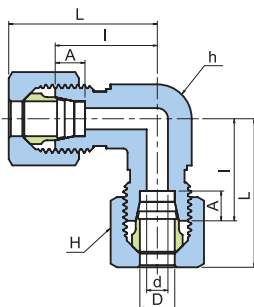
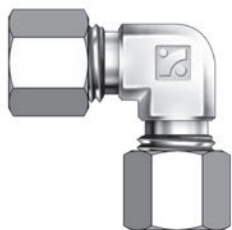
Straight Union



Part Number	Tube O.D. D	Dimension					
		d	A	H	h	I	L
BUS-04	4	2.5	6	12	12	20	35
BUS-06	6	4	7	14	14	30	51
BUS-08	8	6	7	17	17	31	52
BUS-10	10	8	7	19	17	31	54
BUS-12	12	10	7	22	19	31	54
BUS-15	15	12	7.5	27	24	36	61
BUS-16	16	13	7.5	30	27	36	61
BUS-18	18	14	8	32	27	36	61
BUS-20	20	17	8	36	30	38	63
BUS-22	22	18	9	36	32	38	63
BUS-25	25	20	10	41	36	39	66
BUS-28	28	22	10	46	41	43	71
BUS-30	30	25	10	46	41	43	72
BUS-32	32	26	11	50	46	44	73
BUS-35	35	28	11	55	46	44	79
BUS-38	38	32	12	60	50	46	85
BUS-40	40	32	12	60	55	55	94
BUS-42	42	34	12	60	55	55	94
BUS-50	50	40	12	75	65	60	103
BUS-6A	1/8 10.5	8	7	19	17	31	54
BUS-8A	1/4 13.8	11	7.5	24	22	36	60
BUS-10A	3/8 17.3	14	8	32	27	36	61
BUS-15A	1/2 21.7	18	9	36	32	38	63
BUS-20A	3/4 27.2	22	10	46	41	43	71
BUS-25A	1 34.0	28	11	55	46	44	79
BUS-32A	1 1/4 42.7	34	12	65	60	57	98
BUS-40A	1 1/2 48.6	40	12	75	65	60	103

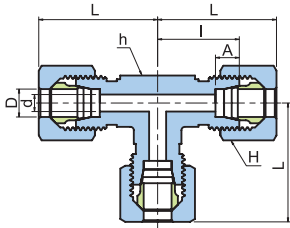
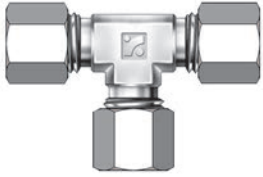
BUE

Union Elbow

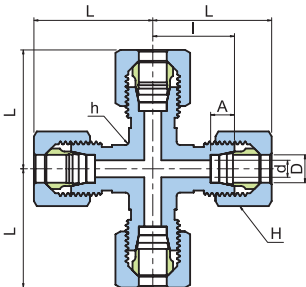
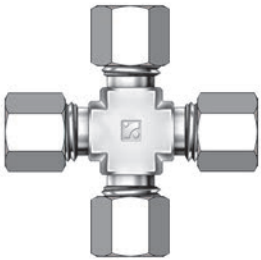


Part Number	Tube O.D. D	Dimension					
		d	A	H	h	I	L
BUE-04	4	2.5	6	12	12	15	22.5
BUE-06	6	4	7	14	14	20	30.5
BUE-08	8	6	7	17	17	23	33.5
BUE-10	10	8	7	19	17	23	34.5
BUE-12	12	10	7	22	19	24	35.5
BUE-15	15	12	7.5	27	24	29	41.5
BUE-16	16	13	7.5	30	27	32	44.5
BUE-18	18	14	8	32	27	32	44.5
BUE-20	20	17	8	36	30	33	45.5
BUE-22	22	18	9	36	32	34	46.5
BUE-25	25	20	10	41	36	36	49.5
BUE-28	28	22	10	46	41	41	55
BUE-30	30	25	10	46	41	41	55.5
BUE-32	32	26	11	50	46	45	59.5
BUE-35	35	28	11	55	46	46	63.5
BUE-38	38	32	12	60	50	50	69.5
BUE-40	40	32	12	60	55	55	74.5
BUE-42	42	34	12	60	55	55	74.5
BUE-50	50	40	12	75	65	62	83.5
BUE-6A	1/8 10.5	8	7	19	17	23	34.5
BUE-8A	1/4 13.8	11	7.5	24	22	28	40
BUE-10A	3/8 17.3	14	8	32	27	32	44.5
BUE-15A	1/2 21.7	18	9	36	32	34	46.5
BUE-20A	3/4 27.2	22	10	46	41	41	55
BUE-25A	1 34.0	28	11	55	46	46	63.5
BUE-32A	1 1/4 42.7	34	12	65	60	57	77.5
BUE-40A	1 1/2 48.6	40	12	75	65	62	83.5

* All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change
 * Dimensions given approximate length with tightened nut.

BUT**Union Tee**

Part Number	Tube O.D. D	Dimension					
		d	A	H	h	I	L
BUT-04	4	2.5	6	12	12	15	22.5
BUT-06	6	4	7	14	14	20	30.5
BUT-08	8	6	7	17	17	23	33.5
BUT-10	10	8	7	19	17	23	34.5
BUT-12	12	10	7	22	19	24	35.5
BUT-15	15	12	7.5	27	24	29	41.5
BUT-16	16	13	7.5	30	27	32	44.5
BUT-18	18	14	8	32	27	32	44.5
BUT-20	20	17	8	36	30	33	45.5
BUT-22	22	18	9	36	32	34	46.5
BUT-25	25	20	10	41	36	36	49.5
BUT-28	28	22	10	46	41	41	55
BUT-30	30	25	10	46	41	41	55.5
BUT-32	32	26	11	50	46	45	59.5
BUT-35	35	28	11	55	46	46	63.5
BUT-38	38	32	12	60	50	50	69.5
BUT-40	40	32	12	60	55	55	74.5
BUT-42	42	34	12	60	55	55	74.5
BUT-50	50	40	12	75	65	62	83.5
BUT-6A	1/8 10.5	8	7	19	17	23	34.5
BUT-8A	1/4 13.8	11	7.5	24	22	28	40
BUT-10A	3/8 17.3	14	8	32	27	32	44.5
BUT-15A	1/2 21.7	18	9	36	32	34	46.5
BUT-20A	3/4 27.2	22	10	46	41	41	55
BUT-25A	1 34.0	28	11	55	46	46	63.5
BUT-32A	1 1/4 42.7	34	12	65	60	57	77.5
BUT-40A	1 1/2 48.6	40	12	75	65	62	83.5

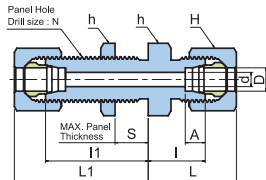
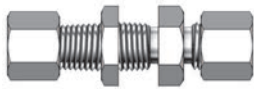
BUC**Union Cross**

Part Number	Tube O.D. D	Dimension					
		d	A	H	h	I	L
BUC-06	6	4	7	14	17	23	33.5
BUC-08	8	6	7	17	17	23	33.5
BUC-10	10	8	7	19	19	24	35.5
BUC-12	12	10	7	22	19	24	35.5
BUC-15	15	12	7.5	27	27	32	44.5
BUC-16	16	13	7.5	30	27	32	44.5
BUC-18	18	14	8	32	30	33	45.5
BUC-20	20	17	8	36	30	33	45.5
BUC-25	25	20	10	41	36	36	49.5
BUC-30	30	25	10	46	46	45	59.5
BUC-32	32	26	11	50	46	45	59.5

• All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change
 • Dimensions given approximate length with tightened nut.

BBHU

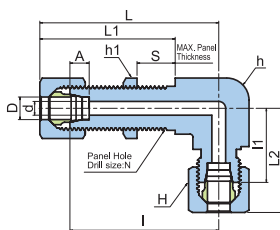
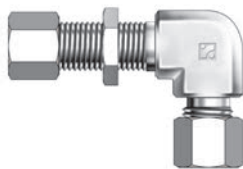
Bulkhead Union



Part Number	Tube O.D. D	Dimension									
		d	A	H	h	I	I1	L	L1	S	N
BBHU-04	4	2.5	6	12	14	14	25	21.5	32.5	13	10.5
BBHU-06	6	4	7	14	17	19	32	29.5	42.5	13	12.5
BBHU-08	8	6	7	17	19	19	32	29.5	42.5	13	14.5
BBHU-10	10	8	7	19	22	20	32	31.5	43.5	13	16.5
BBHU-12	12	10	7	22	24	20	32	31.5	43.5	13	18.5
BBHU-15	15	12	7.5	27	27	22	37	34.5	49.5	15	22.5
BBHU-16	16	13	7.5	30	30	24	37	36.5	49.5	15	24.5
BBHU-18	18	14	8	32	32	24	39	36.5	51.5	15	26.5
BBHU-20	20	17	8	36	32	24	39	36.5	51.5	15	28.5
BBHU-22	22	18	9	36	36	25	39	37.5	51.5	15	30.5
BBHU-25	25	20	10	41	41	25	39	38.5	52.5	15	35.5
BBHU-28	28	22	10	46	46	28	41	42	55	15	38.5
BBHU-30	30	25	10	46	46	28	41	42.5	55.5	15	40.5
BBHU-32	32	26	11	50	50	30	43	44.5	57.5	15	42.5
BBHU-35	35	28	11	55	50	30	43	47.5	60.5	15	45.5
BBHU-38	38	32	12	60	55	31	45	50.5	64.5	15	48.5
BBHU-40	40	32	12	60	60	37	50	56.5	69.5	15	52.5
BBHU-50	50	40	12	75	70	43	50	64.5	71.5	15	64.5
BBHU-6A	1/8 10.5	8	7	19	22	20	32	31.5	43.5	13	16.5
BBHU-8A	1/4 13.8	11	7.5	24	27	22	37	34	49	15	20.5
BBHU-10A	3/8 17.3	14	8	32	32	24	39	36.5	51.5	15	26.5
BBHU-15A	1/2 21.7	18	9	36	36	25	39	37.5	51.5	15	30.5
BBHU-20A	3/4 27.2	22	10	46	46	28	41	42	55	15	38.5
BBHU-25A	1 34.0	28	11	55	50	30	43	47.5	60.5	15	45.5
BBHU-32A	1 1/4 42.7	34	12	65	65	40	50	60.5	70.5	15	56.5
BBHU-40A	1 1/2 48.6	40	12	75	70	43	50	64.5	71.5	15	64.5

BBUE

Bulkhead Union Elbow

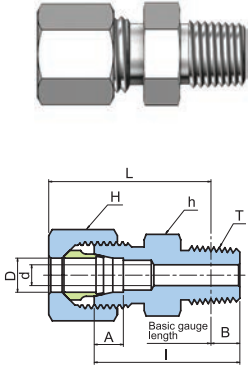


Part Number	Tube O.D. D	Dimension											
		d	A	h1	H	A	I	I1	L	L1	L2	S	N
BBUE-06	6	4	17	17	14	7	45	23	55.5	42.5	33.5	13	12.5
BBUE-08	8	6	19	19	17	7	46	24	56.5	42.5	34.5	13	14.5
BBUE-10	10	8	22	22	19	7	48	26	59.5	43.5	37.5	13	16.5
BBUE-12	12	10	24	24	22	7	49	27	60.5	43.5	38.5	13	18.5
BBUE-15	15	12	27	27	27	7.5	57	31	69.5	49.5	43.5	15	22.5
BBUE-16	16	13	30	30	30	7.5	59	33	71.5	49.5	45.5	15	24.5
BBUE-18	18	14	32	32	32	8	63	33	75.5	51.5	45.5	15	26.5
BBUE-20	20	17	32	36	36	8	65	33	77.5	51.5	45.5	15	28.5
BBUE-22	22	18	36	36	36	9	65	36	77.5	51.5	48.5	15	30.5
BBUE-25	25	20	41	41	41	10	68	39	81.5	52.5	52.5	15	35.5
BBUE-28	28	22	41	46	46	10	70	41	84	55	55	15	38.5
BBUE-30	30	25	46	46	46	10	74	46	88.5	55.5	60.5	15	40.5

* All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change
 * Dimensions given approximate length with tightened nut.

BCM-R

Male Connector

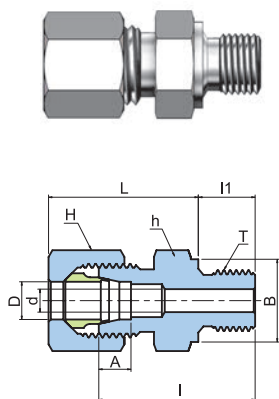


Part Number	Tube O.D. D	Dimension							
		d	A	B	H	h	I	L	T
BCM-04-01R	4	2.5	6	3.97	12	12	22	25.5	PT 1/8
BCM-06-01R	6	4	7	3.97	14	14	28	34.5	PT 1/8
BCM-06-02R	6	4	7	6.01	14	17	33	37.5	PT 1/4
BCM-08-01R	8	4	7	3.97	17	17	29	35.5	PT 1/8
BCM-08-02R	8	6	7	6.01	17	17	33	37.5	PT 1/4
BCM-10-02R	10	7	7	6.01	19	17	33	38.5	PT 1/4
BCM-10-03R	10	8	7	6.35	19	19	34	39	PT 3/8
BCM-10-04R	10	8	7	8.16	19	22	39	42.5	PT 1/2
BCM-12-02R	12	7	7	6.01	22	19	33	38.5	PT 1/4
BCM-12-03R	12	9	7	6.35	22	19	34	39	PT 3/8
BCM-12-04R	12	10	7	8.16	22	24	39	42.5	PT 1/2
BCM-15-03R	15	9	7.5	6.35	27	24	37	43	PT 3/8
BCM-15-04R	15	12	7.5	8.16	27	24	41	45.5	PT 1/2
BCM-16-03R	16	9	7.5	6.35	30	27	37	43	PT 3/8
BCM-16-04R	16	12	7.5	8.16	30	27	41	45.5	PT 1/2
BCM-18-03R	18	9	8	6.35	32	27	37	43	PT 3/8
BCM-18-04R	18	12	8	8.16	32	27	41	45.5	PT 1/2
BCM-20-04R	20	12	8	8.16	36	30	43	47.5	PT 1/2
BCM-20-06R	20	16	8	9.53	36	30	45	48	PT 3/4
BCM-22-04R	22	12	9	8.16	36	32	43	47.5	PT 1/2
BCM-22-06R	22	16	9	9.53	36	32	45	48	PT 3/4
BCM-25-06R	25	16	10	9.53	41	36	46	50	PT 3/4
BCM-25-08R	25	20	10	10.39	41	36	49	52	PT 1
BCM-28-06R	28	16	10	9.53	46	41	48	52.5	PT 3/4
BCM-28-08R	28	22	10	10.39	46	41	51	54.5	PT 1
BCM-30-08R	30	22	10	10.39	46	41	51	55	PT 1
BCM-30-10R	30	25	10	12.70	46	46	55	57	PT 1 1/4
BCM-32-10R	32	26	11	12.70	50	46	55	57	PT 1 1/4
BCM-35-10R	35	28	11	12.70	55	46	55	60	PT 1 1/4
BCM-38-12R	38	32	12	12.70	60	50	57	64	PT 1 1/2
BCM-40-12R	40	32	12	12.70	60	55	62	69	PT 1 1/2
BCM-42-12R	42	34	12	12.70	60	55	62	69	PT 1 1/2
BCM-50-16R	50	40	12	15.88	75	65	71	76.5	PT 2
BCM-6A-01R	1/8 10.5	4	7	3.97	19	17	29	36.5	PT 1/8
BCM-6A-02R	1/8 10.5	7	7	6.01	19	17	33	38.5	PT 1/4
BCM-8A-02R	1/4 13.8	7	7.5	6.01	24	22	36	42	PT 1/4
BCM-8A-03R	1/4 13.8	9	7.5	6.35	24	22	37	42.5	PT 3/8
BCM-10A-03R	3/8 17.3	9	8	6.35	32	27	37	43	PT 3/8
BCM-10A-04R	3/8 17.3	12	8	8.16	32	27	41	45.5	PT 1/2
BCM-15A-04R	1/2 21.7	12	9	8.16	36	32	43	47.5	PT 1/2
BCM-15A-06R	1/2 21.7	16	9	9.53	36	32	45	48	PT 3/4
BCM-20A-06R	3/4 27.2	16	10	9.53	46	41	48	52.5	PT 3/4
BCM-20A-08R	3/4 27.2	22	10	10.39	46	41	51	54.5	PT 1
BCM-25A-08R	1 34.0	22	11	10.39	55	46	52	59	PT 1
BCM-25A-10R	1 34.0	28	11	12.70	55	46	55	60	PT 1 1/4
BCM-32A-10R	1 1/4 42.7	31	12	12.70	65	60	64	72	PT 1 1/4
BCM-32A-12R	1 1/4 42.7	34	12	12.70	65	60	64	72	PT 1 1/2
BCM-40A-12R	1 1/2 48.6	36	12	12.70	75	65	67	76	PT 1 1/2
BCM-40A-16R	1 1/2 48.6	40	12	15.88	75	65	71	76.5	PT 2

• All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change
 • Dimensions given approximate length with tightened nut.

BCM-G

Male Connector
(For Copper
Gasket)



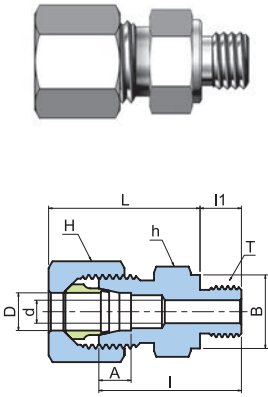
Part Number	Tube O.D. D	Dimension								
		d	A	B	H	h	I	I1	L	T
BCM-04-01G	4	2.5	6	14	12	14	23	8	22.5	PF1/8
BCM-06-01G	6	4	7	14	14	14	28	8	30.5	PF1/8
BCM-06-02G	6	4	7	18	14	19	33	12	31.5	PF1/4
BCM-08-01G	8	4	7	14	17	17	28	8	30.5	PF1/8
BCM-08-02G	8	6	7	18	17	19	33	12	31.5	PF1/4
BCM-10-02G	10	6	7	18	19	19	33	12	32.5	PF1/4
BCM-10-03G	10	8	7	21.5	19	22	34	12	33.5	PF3/8
BCM-12-02G	12	6	7	18	22	19	33	12	32.5	PF1/4
BCM-12-03G	12	8	7	21.5	22	22	34	12	33.5	PF3/8
BCM-12-04G	12	10	7	25.5	22	27	39	14	36.5	PF1/2
BCM-15-03G	15	8	7.5	21.5	27	24	37	12	37.5	PF3/8
BCM-15-04G	15	12	7.5	25.5	27	27	41	14	39.5	PF1/2
BCM-16-04G	16	12	7.5	25.5	30	27	41	14	39.5	PF1/2
BCM-18-04G	18	12	8	25.5	32	27	41	14	39.5	PF1/2
BCM-20-06G	20	16	8	31.5	36	32	46	16	42.5	PF3/4
BCM-22-04G	22	12	9	25.5	36	32	43	14	41.5	PF1/2
BCM-22-06G	22	16	9	31.5	36	32	46	16	42.5	PF3/4
BCM-25-06G	25	16	10	31.5	41	36	46	16	43.5	PF3/4
BCM-25-08G	25	20	10	38	41	41	50	18	45.5	PF1
BCM-28-08G	28	22	10	38	46	41	52	18	48	PF1
BCM-30-08G	30	22	10	38	46	41	52	18	48.5	PF1
BCM-30-10G	30	25	10	48.5	46	50	57	20	51.5	PF1 1/4
BCM-32-10G	32	26	11	48.5	50	50	57	20	51.5	PF1 1/4
BCM-35-10G	35	28	11	48.5	55	50	57	20	54.5	PF1 1/4
BCM-38-12G	38	32	12	53.5	60	55	58	21	56.5	PF1 1/2
BCM-40-12G	40	32	12	53.5	60	55	62	21	60.5	PF1 1/2
BCM-42-12G	42	34	12	53.5	60	55	62	21	60.5	PF1 1/2
BCM-50-16G	50	40	12	66	75	70	73	25	69.5	PF2
BCM-6A-01G	1/8 10.5	4	7	14	19	17	29	8	32.5	PF1/8
BCM-6A-02G	1/8 10.5	6	7	18	19	19	33	12	32.5	PF1/4
BCM-8A-02G	1/4 13.8	6	7.5	18	24	22	36	12	36	PF1/4
BCM-8A-03G	1/4 13.8	8	7.5	21.5	24	22	36	12	36	PF3/8
BCM-10A-03G	3/8 17.3	8	8	21.5	32	27	38	12	38.5	PF3/8
BCM-10A-04G	3/8 17.3	12	8	25.5	32	27	41	14	39.5	PF1/2
BCM-15A-04G	1/2 21.7	12	9	25.5	36	32	43	14	41.5	PF1/2
BCM-15A-06G	1/2 21.7	16	9	31.5	36	32	46	16	42.5	PF3/4
BCM-20A-06G	3/4 27.2	16	10	31.5	46	41	50	16	48	PF3/4
BCM-20A-08G	3/4 27.2	22	10	38	46	41	52	18	48	PF1
BCM-25A-08G	1 34.0	22	11	38	55	46	54	18	53.5	PF1
BCM-25A-10G	1 34.0	28	11	48.5	55	50	57	20	54.5	PF1 1/4
BCM-32A-10G	1 1/4 42.7	31	12	48.5	65	60	63	20	63.5	PF1 1/4
BCM-32A-12G	1 1/4 42.7	34	12	53.5	65	60	64	21	63.5	PF1 1/2
BCM-40A-12G	1 1/2 48.6	36	12	53.5	75	65	65	21	65.5	PF1 1/2
BCM-40A-16G	1 1/2 48.6	40	12	66	75	70	73	25	69.5	PF2

* All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change

* Dimensions given approximate length with tightened nut.

BCM-GO

Male Connector (For O-Ring)

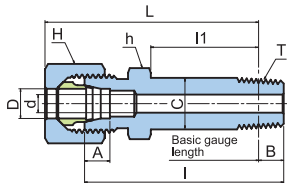


Part Number	Tube O.D. D		Dimension								
			d	A	B	H	h	l	l1	L	T
BCM-04-01GO	4		2.5	6	14	12	14	23	8	22.5	PF 1/8
BCM-06-01GO	6		4	7	14	14	14	28	8	30.5	PF 1/8
BCM-06-02GO	6		4	7	19	14	19	33	12	31.5	PF 1/4
BCM-08-01GO	8		4	7	14	17	17	28	8	30.5	PF 1/8
BCM-08-02GO	8		6	7	19	17	19	33	12	31.5	PF 1/4
BCM-10-02GO	10		6	7	19	19	19	33	12	32.5	PF 1/4
BCM-10-03GO	10		8	7	22	19	22	34	12	33.5	PF 3/8
BCM-12-02GO	12		6	7	19	22	19	33	12	32.5	PF 1/4
BCM-12-03GO	12		8	7	22	22	22	34	12	33.5	PF 3/8
BCM-12-04GO	12		10	7	27	22	27	39	14	36.5	PF 1/2
BCM-15-03GO	15		8	7.5	22	27	24	37	12	37.5	PF 3/8
BCM-15-04GO	15		12	7.5	27	27	27	41	14	39.5	PF 1/2
BCM-16-04GO	16		12	7.5	27	30	27	41	14	39.5	PF 1/2
BCM-18-04GO	18		12	8	27	32	27	41	14	39.5	PF 1/2
BCM-20-06GO	20		16	8	36	36	36	46	16	42.5	PF 3/4
BCM-22-04GO	22		12	9	27	36	32	43	14	41.5	PF 1/2
BCM-22-06GO	22		16	9	36	36	36	46	16	42.5	PF 3/4
BCM-25-06GO	25		16	10	36	41	36	46	16	43.5	PF 3/4
BCM-25-08GO	25		20	10	41	41	41	50	18	45.5	PF 1
BCM-28-08GO	28		22	10	41	46	41	52	18	48	PF 1
BCM-30-08GO	30		22	10	41	46	41	52	18	48.5	PF 1
BCM-30-10GO	30		25	10	50	46	50	57	20	51.5	PF 1 1/4
BCM-32-10GO	32		26	11	50	50	50	57	20	51.5	PF 1 1/4
BCM-35-10GO	35		28	11	50	55	50	57	20	54.5	PF 1 1/4
BCM-38-12GO	38		32	12	55	60	55	58	21	56.5	PF 1 1/2
BCM-40-12GO	40		32	12	55	60	55	62	21	60.5	PF 1 1/2
BCM-42-12GO	42		34	12	55	60	55	62	21	60.5	PF 1 1/2
BCM-50-16GO	50		40	12	75	75	70	73	25	69.5	PF 2
BCM-6A-01GO	1/8	10.5	4	7	14	19	17	29	8	32.5	PF 1/8
BCM-6A-02GO	1/8	10.5	6	7	19	19	19	33	12	32.5	PF 1/4
BCM-8A-02GO	1/4	13.8	6	7.5	19	24	22	36	12	36	PF 1/4
BCM-8A-03GO	1/4	13.8	8	7.5	22	24	22	36	12	36	PF 3/8
BCM-10A-03GO	3/8	17.3	8	8	22	32	27	38	12	38.5	PF 3/8
BCM-10A-04GO	3/8	17.3	12	8	27	32	27	41	14	39.5	PF 1/2
BCM-15A-04GO	1/2	21.7	12	9	27	36	32	43	14	41.5	PF 1/2
BCM-15A-06GO	1/2	21.7	16	9	36	36	36	46	16	42.5	PF 3/4
BCM-20A-06GO	3/4	27.2	16	10	36	46	41	50	16	48	PF 3/4
BCM-20A-08GO	3/4	27.2	22	10	41	46	41	52	18	48	PF 1
BCM-25A-08GO	1	34.0	22	11	41	55	46	54	18	53.5	PF 1
BCM-25A-10GO	1	34.0	28	11	50	55	50	57	20	54.5	PF 1 1/4
BCM-32A-10GO	1 1/4	42.7	31	12	50	65	60	63	20	63.5	PF 1 1/4
BCM-32A-12GO	1 1/4	42.7	34	12	55	65	60	64	21	63.5	PF 1 1/2
BCM-40A-12GO	1 1/2	48.6	36	12	55	75	65	65	21	65.5	PF 1 1/2
BCM-40A-16GO	1 1/2	48.6	40	12	75	75	75	73	25	69.5	PF 2

• All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change
 • Dimensions given approximate length with tightened nut.

BLCM

Long Male Connector

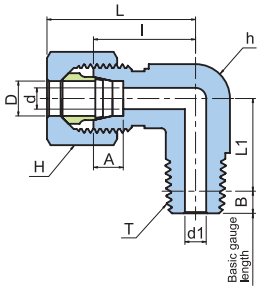


Part Number	Tube O.D. D	Dimension									
		d	A	B	C	H	h	I	I1	L	T
BLCM-04-01R	4	2.5	6	3.97	10.5	12	12	46	30	49.5	PT 1/8
BLCM-06-01R	6	4	7	3.97	10.5	14	14	63	41	69.5	PT 1/8
BLCM-08-02R	8	6	7	6.01	14	17	17	70	45	74.5	PT 1/4
BLCM-10-02R	10	7	7	6.01	14	19	17	71	46	76.5	PT 1/4
BLCM-10-03R	10	8	7	6.35	17.5	19	19	72	46.5	77	PT 3/8
BLCM-12-02R	12	7	7	6.01	14	22	19	71	46	76.5	PT 1/4
BLCM-12-03R	12	9	7	6.35	17.5	22	19	72	46.5	77	PT 3/8
BLCM-15-03R	15	9	7.5	6.35	17.5	27	24	81	52.5	87	PT 3/8
BLCM-15-04R	15	12	7.5	8.16	22	27	24	86	56	90.5	PT 1/2
BLCM-16-04R	16	12	7.5	8.16	22	30	27	86	56	90.5	PT 1/2
BLCM-18-04R	18	12	8	8.16	22	32	27	86	56	90.5	PT 1/2
BLCM-20-06R	20	16	8	9.53	27.5	36	30	92	58.5	95	PT 3/4
BLCM-22-06R	22	16	9	9.53	27.5	36	32	93	59.5	96	PT 3/4
BLCM-25-08R	25	20	10	10.39	34	41	36	99	63.5	102	PT 1
BLCM-28-08R	28	22	10	10.39	34	46	41	104	66.5	107.5	PT 1
BLCM-30-10R	30	25	10	12.70	42.5	46	46	109	68.5	111	PT 1 1/4
BLCM-32-10R	32	26	11	12.70	42.5	50	46	110	69.5	112	PT 1 1/4
BLCM-6A-02R	1/8 10.5	7	7	6.01	14	19	17	71	46	76.5	PT 1/4
BLCM-8A-03R	1/4 13.8	9	7.5	6.35	17.5	24	22	81	52.5	86.5	PT 3/8
BLCM-10A-03R	3/8 17.3	9	8	6.35	17.5	32	27	81	52.5	87	PT 3/8
BLCM-15A-04R	3/8 17.3	12	8	8.16	22	32	27	86	56	90.5	PT 1/2
BLCM-20A-06R	1/2 21.7	16	9	9.53	27.5	36	32	93	59.5	96	PT 3/4
BLCM-25A-08R	3/4 27.2	22	10	10.39	34	46	41	104	66.5	107.5	PT 1

* All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change
 * Dimensions given approximate length with tightened nut.

BME

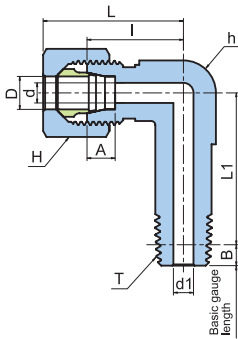
Male Elbow



Part Number	Tube O.D. D		Dimension									
			d	d1	A	B	H	h	I	L	L1	T
BME-04-01R	4		2.5	4	6	3.97	12	12	15	22.5	13	PT 1/8
BME-06-01R	6		4	4	7	3.97	14	14	20	30.5	14	PT 1/8
BME-06-02R	6		4	7	7	6.01	14	17	23	33.5	17	PT 1/4
BME-08-01R	8		6	4	7	3.97	17	17	23	33.5	16	PT 1/8
BME-08-02R	8		6	7	7	6.01	17	17	23	33.5	18	PT 1/4
BME-10-02R	10		8	7	7	6.01	19	17	23	34.5	19	PT 1/4
BME-10-03R	10		8	9	7	6.35	19	19	24	35.5	19.5	PT 3/8
BME-10-04R	10		8	12	7	8.16	19	22	29	40.5	26	PT 1/2
BME-12-02R	12		10	7	7	6.01	22	19	24	35.5	20	PT 1/4
BME-12-03R	12		10	9	7	6.35	22	19	24	35.5	20.5	PT 3/8
BME-12-04R	12		10	12	7	8.16	22	24	29	40.5	26	PT 1/2
BME-15-03R	15		12	9	7.5	6.35	27	24	29	41.5	23.5	PT 3/8
BME-15-04R	15		12	12	7.5	8.16	27	24	29	41.5	26	PT 1/2
BME-16-03R	16		13	9	7.5	6.35	30	27	32	44.5	25.5	PT 3/8
BME-16-04R	16		13	12	7.5	8.16	30	27	32	44.5	27	PT 1/2
BME-18-03R	18		14	9	8	6.35	32	27	32	44.5	27.5	PT 3/8
BME-18-04R	18		14	12	8	8.16	32	27	32	44.5	30	PT 1/2
BME-20-04R	20		17	12	8	8.16	36	30	33	45.5	32	PT 1/2
BME-20-06R	20		17	16	8	9.53	36	30	33	45.5	30.5	PT 3/4
BME-22-04R	22		18	12	9	8.16	36	32	34	46.5	32	PT 1/2
BME-22-06R	22		18	16	9	9.53	36	32	34	46.5	32.5	PT 3/4
BME-25-06R	25		20	16	10	9.53	41	36	36	49.5	33.5	PT 3/4
BME-25-08R	25		20	22	10	10.39	41	36	36	49.5	35.5	PT 1
BME-28-06R	28		22	16	10	9.53	46	41	41	55	37.5	PT 3/4
BME-28-08R	28		22	22	10	10.39	46	41	41	55	39.5	PT 1
BME-30-08R	30		25	22	10	10.39	46	41	41	55.5	39.5	PT 1
BME-30-10R	30		25	31	10	12.70	46	46	46	60.5	42.5	PT 1 1/4
BME-32-10R	32		26	31	11	12.70	50	46	46	60.5	43.5	PT 1 1/4
BME-35-10R	35		28	31	11	12.70	55	46	46	63.5	45.5	PT 1 1/4
BME-38-12R	38		32	36	12	12.70	60	50	50	69.5	48.5	PT 1 1/2
BME-40-12R	40		32	36	12	12.70	60	55	55	74.5	49.5	PT 1 1/2
BME-42-12R	42		34	36	12	12.70	60	55	55	74.5	49.5	PT 1 1/2
BME-50-16R	50		40	46	12	15.88	75	65	62	83.5	58	PT 2
BME-6A-01R	1/8	10.5	8	4	7	3.97	19	17	23	34.5	17	PT 1/8
BME-6A-02R	1/8	10.5	8	7	7	6.01	19	17	23	34.5	19	PT 1/4
BME-8A-02R	1/4	13.8	11	7	7.5	6.01	24	22	28	40	22	PT 1/4
BME-8A-03R	1/4	13.8	11	9	7.5	6.35	24	22	28	40	22.5	PT 3/8
BME-10A-03R	3/8	17.3	14	9	8	6.35	32	27	32	44.5	27.5	PT 3/8
BME-10A-04R	3/8	17.3	14	12	8	8.16	32	27	32	44.5	30	PT 1/2
BME-15A-04R	1/2	21.7	18	12	9	8.16	36	32	34	46.5	32	PT 1/2
BME-15A-06R	1/2	21.7	18	16	9	9.53	36	32	34	46.5	32.5	PT 3/4
BME-20A-06R	3/4	27.2	22	16	10	9.53	46	41	41	55	37.5	PT 3/4
BME-20A-08R	3/4	27.2	22	22	10	10.39	46	41	41	55	39.5	PT 1
BME-25A-08R	1	34.0	28	22	11	10.39	55	46	46	63.5	44.5	PT 1
BME-25A-10R	1	34.0	28	31	11	12.70	55	46	46	63.5	45.5	PT 1 1/4
BME-32A-10R	1 1/4	42.7	34	31	12	12.70	65	60	57	77.5	51.5	PT 1 1/4
BME-32A-12R	1 1/4	42.7	34	36	12	12.70	75	60	57	77.5	51.5	PT 1 1/2
BME-40A-12R	1 1/2	48.6	40	36	12	12.70	75	65	62	83.5	57.5	PT 1 1/2
BME-40A-16R	1 1/2	48.6	40	46	12	15.88	75	65	62	83.5	58	PT 2

BLME

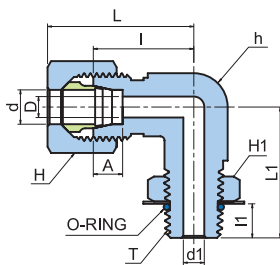
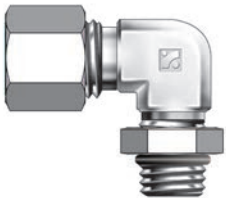
Long Male Elbow



Part Number	Tube O.D. D	Dimension									
		d	d1	A	B	H	h	I	L	L1	T
BLME-06-01R	6	4	4	7	3.97	14	14	20	30.5	36	PT 1/8
BLME-08-02R	8	6	7	7	6.01	17	17	23	33.5	43	PT 1/4
BLME-10-02R	10	8	7	7	6.01	19	17	23	34.5	46	PT 1/4
BLME-12-02R	12	10	7	7	6.01	22	19	24	35.5	52	PT 1/4
BLME-12-03R	12	10	9	7	6.35	22	19	24	35.5	53	PT 3/8
BLME-15-03R	15	12	9	7.5	6.35	27	24	29	41.5	61.5	PT 3/8
BLME-15-04R	15	12	12	7.5	8.16	27	24	29	41.5	67	PT 1/2
BLME-16-04R	16	13	12	7.5	8.16	30	27	32	44.5	70	PT 1/2
BLME-18-04R	18	14	12	8	8.16	32	27	32	44.5	77	PT 1/2
BLME-20-06R	20	17	16	8	9.53	36	30	33	45.5	82.5	PT 3/4
BLME-22-06R	22	18	16	9	9.53	36	32	34	46.5	83.5	PT 3/4
BLME-25-06R	25	20	16	10	9.53	41	36	36	49.5	90.5	PT 3/4
BLME-25-08R	25	20	22	10	10.39	41	36	36	49.9	91.5	PT 1
BLME-28-08R	28	22	22	10	10.39	46	41	41	55	104.5	PT 1
BLME-30-10R	30	25	31	10	12.70	46	46	46	60.5	104.5	PT 1 1/4
BLME-32-10R	32	26	31	11	12.70	50	46	46	60.5	104.5	PT 1 1/4
BLME-35-10R	35	28	31	11	12.70	55	46	46	63.5	121.5	PT 1 1/4

BPME

Positionable Male Elbow



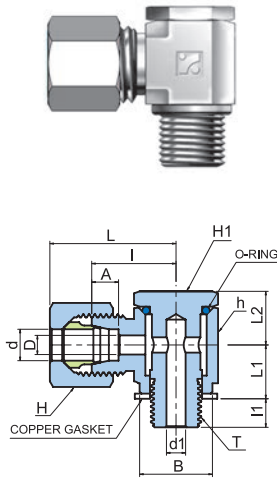
Part Number	Tube O.D. D	Dimension										
		d	d1	A	H	H1	h	I	I1	L	L1	T
BPME-06-01G	6	4	4	7	14	14	14	20	10	30.5	30	PF 1/8
BPME-08-02G	8	6	6	7	17	19	17	23	12	33.5	34	PF 1/4
BPME-10-02G	10	8	6	7	19	19	17	23	12	34.5	35	PF 1/4
BPME-12-02G	12	10	6	7	22	19	19	24	12	35.5	36	PF 1/4
BPME-12-03G	12	10	9	7	22	22	19	24	12	35.5	36	PF 3/8
BPME-12-04G	12	10	12	7	22	27	24	24	16	35.5	46	PF 1/2
BPME-15-03G	15	12	9	7.5	27	22	24	29	12	41.5	40	PF 3/8
BPME-15-04G	15	12	12	7.5	27	27	24	29	16	41.5	46	PF 1/2
BPME-16-04G	16	13	12	7.5	30	27	24	32	16	44.5	46	PF 1/2
BPME-18-04G	18	14	12	8	32	27	30	32	16	44.5	52	PF 1/2
BPME-20-06G	20	17	16	8	36	36	30	33	17	45.5	52	PF 3/4
BPME-22-06G	22	18	16	9	36	36	32	34	17	46.5	52	PF 3/4
BPME-25-06G	25	20	16	10	41	36	36	36	17	49.5	60	PF 3/4
BPME-25-08G	25	20	22	10	41	41	36	36	21	49.5	62	PF 1
BPME-28-08G	28	22	22	10	46	41	41	41	21	55	62	PF 1
BPME-30-08G	30	25	22	10	46	41	41	41	21	55.5	66	PF 1
BPME-30-10G	30	25	31	10	46	50	46	44	21	58.5	66	PF 1 1/4
BPME-32-10G	32	26	31	11	50	50	46	46	21	60.5	66	PF 1 1/4
BPME-35-10G	35	28	31	11	55	50	46	46	21	63.5	66	PF 1 1/4
BPME-38-12G	38	32	36	12	60	55	50	50	21	69.5	73	PF 1 1/2

* All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change

* Dimensions given approximate length with tightened nut.

BBE

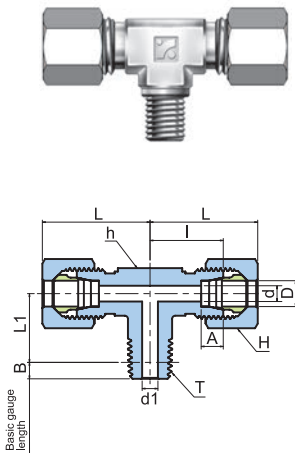
Banjo Elbow



Part Number	Tube O.D. D		Dimension													
			d	d1	A	B	H	H1	h	I	I1	L	L1	L2	O-Ring	T
BBE-06-01G	6		4	4	7	14	14	17	17	23	8	33.5	13	14	P10	PF1/8
BBE-08-02G	8		6	7	7	18	17	22	22	25	12	35.5	16	17	P12	PF1/4
BBE-10-02G	10		8	7	7	18	19	22	22	25	12	36.5	16	17	P12	PF1/4
BBE-12-03G	12		10	9	7	21.5	22	27	27	29	12	40.5	19	22	P18	PF3/8
BBE-15-04G	15		12	12	7.5	25.5	27	30	36	36	14	48.5	24	28	P22	PF1/2
BBE-16-04G	16		13	12	7.5	25.5	30	30	36	36	14	48.5	24	28	P22	PF1/2
BBE-18-04G	18		14	12	8	25.5	32	30	36	36	14	48.5	24	28	P22	PF1/2
BBE-20-06G	20		17	16	8	31.5	36	41	41	38	16	50.5	28	32	P28	PF3/4
BBE-22-06G	22		18	16	9	31.5	36	41	42	38	16	50.5	28	32	P28	PF3/4
BBE-25-08G	25		20	22	10	38	41	50	50	42	18	55.5	37	38	P36	PF1
BBE-28-08G	28		22	22	10	38	46	50	50	42	18	56	37	38	P36	PF1
BBE-6A-02G	1/8	10.5	8	7	7	18	19	22	22	25	12	36.5	16	17	P12	PF1/4
BBE-8A-03G	1/4	13.8	11	9	7.5	21.5	24	27	27	29	12	41	19	22	P18	PF3/8
BBE-10A-04G	3/8	17.3	14	12	8	25.5	32	30	36	36	14	48.5	24	28	P22	PF1/2
BBE-15A-06G	1/2	21.7	18	16	9	31.5	36	41	41	38	16	50.5	28	32	P28	PF3/4
BBE-20A-08G	3/4	27.2	22	22	10	38	46	50	50	42	18	56	37	38	P36	PF1

BMBT

Male Branch Tee

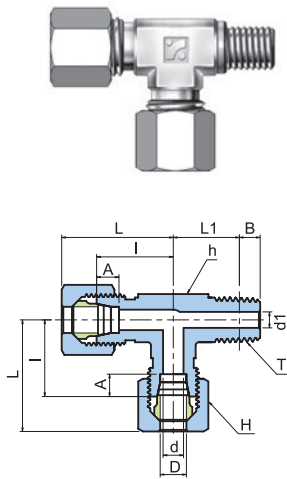


Part Number	Tube O.D. D		Dimension									
			d	d1	A	B	H	h	I	L	L1	T
BMBT-04-01R	4		2.5	4	6	3.97	12	12	15	22.5	13	PT 1/8
BMBT-06-01R	6		4	4	7	3.97	14	14	20	30.5	14	PT 1/8
BMBT-06-02R	6		4	7	7	6.01	14	17	23	33.5	17	PT 1/4
BMBT-08-01R	8		6	4	7	3.97	17	17	23	33.5	16	PT 1/8
BMBT-08-02R	8		6	7	7	6.01	17	17	23	33.5	18	PT 1/4
BMBT-10-02R	10		8	7	7	6.01	19	17	23	34.5	19	PT 1/4
BMBT-10-03R	10		8	9	7	6.35	19	19	24	35.5	19.5	PT 3/8
BMBT-12-02R	12		10	7	7	6.01	22	19	24	35.5	18	PT 1/4
BMBT-12-03R	12		10	9	7	6.35	22	19	24	35.5	20.5	PT 3/8
BMBT-15-03R	15		12	9	7.5	6.35	27	24	29	41.5	23.5	PT 3/8
BMBT-15-04R	15		12	12	7.5	8.16	27	24	29	41.5	26	PT 1/2
BMBT-16-04R	16		13	12	7.5	8.16	30	27	32	44.5	27	PT 1/2
BMBT-18-04R	18		14	12	8	8.16	32	27	32	44.5	30	PT 1/2
BMBT-20-06R	20		17	16	8	9.53	36	30	33	45.5	30.5	PT 3/4
BMBT-22-06R	22		18	16	9	9.53	36	32	34	46.5	32.5	PT 3/4
BMBT-25-06R	25		20	16	10	9.53	41	36	36	49.5	33.5	PT 3/4
BMBT-25-08R	25		20	22	10	10.39	41	36	36	49.5	35.5	PT 1
BMBT-28-08R	28		22	22	10	10.39	46	41	41	55	39.5	PT 1
BMBT-30-08R	30		25	22	10	10.39	46	41	41	55.5	39.5	PT 1
BMBT-30-10R	30		25	31	10	12.70	46	46	46	60.5	42.5	PT 1 1/4
BMBT-32-10R	32		26	31	11	12.70	50	46	46	60.5	43.5	PT 1 1/4
BMBT-35-10R	35		28	31	11	12.70	55	46	46	63.5	45.5	PT 1 1/4
BMBT-38-12R	38		32	36	12	12.70	60	50	50	69.5	48.5	PT 1 1/2
BMBT-40-12R	40		32	36	12	12.70	60	55	55	74.5	49.5	PT 1 1/2
BMBT-50-16R	50		40	46	12	15.88	75	65	62	83.5	58	PT 2
BMBT-6A-02R	1/8	10.5	8	7	7	6.01	19	17	23	34.5	19	PT 1/4
BMBT-8A-03R	1/4	13.8	11	9	7.5	6.35	24	22	28	40	22.5	PT 3/8
BMBT-10A-04R	3/8	17.3	14	12	8	8.16	32	27	32	44.5	30	PT 1/2
BMBT-15A-06R	1/2	21.7	18	16	9	9.53	36	32	34	46.5	32.5	PT 3/4
BMBT-20A-08R	3/4	27.2	22	22	10	10.39	46	41	41	55	39.5	PT 1
BMBT-25A-10R	1	34.0	28	31	11	12.70	55	46	46	63.5	45.5	PT 1 1/4
BMBT-32A-12R	1 1/4	42.7	34	36	12	12.70	65	60	57	77.5	51.5	PT 1 1/2
BMBT-40A-16R	1 1/2	48.6	40	46	12	15.88	75	65	62	83.5	58	PT 2

• All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change
 • Dimensions given approximate length with tightened nut.

BMRT

Male Run Tee



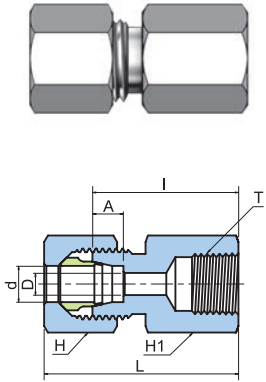
Part Number	Tube O.D. D		Dimension									
			d	d1	A	B	H	h	I	L	L1	T
BMRT-04-01R	4		2.5	4	6	3.97	12	12	15	22.5	13	PT 1/8
BMRT-06-01R	6		4	4	7	3.97	14	14	20	30.5	14	PT 1/8
BMRT-06-02R	6		4	7	7	6.01	14	17	23	33.5	17	PT 1/4
BMRT-08-01R	8		6	4	7	3.97	17	17	23	33.5	16	PT 1/8
BMRT-08-02R	8		6	7	7	6.01	17	17	23	33.5	18	PT 1/4
BMRT-10-02R	10		8	7	7	6.01	19	17	23	34.5	19	PT 1/4
BMRT-10-03R	10		8	9	7	6.35	19	19	24	35.5	19.5	PT 3/8
BMRT-12-02R	12		10	7	7	6.01	22	19	24	35.5	18	PT 1/4
BMRT-12-03R	12		10	9	7	6.35	22	19	24	35.5	20.5	PT 3/8
BMRT-15-03R	15		12	9	7.5	6.35	27	24	29	41.5	23.5	PT 3/8
BMRT-15-04R	15		12	12	7.5	8.16	27	24	29	41.5	26	PT 1/2
BMRT-16-04R	16		13	12	7.5	8.16	30	27	32	44.5	27	PT 1/2
BMRT-18-04R	18		14	12	8	8.16	32	27	32	44.5	30	PT 1/2
BMRT-20-06R	20		17	16	8	9.53	36	30	33	45.5	30.5	PT 3/4
BMRT-22-06R	22		18	16	9	9.53	36	32	34	46.5	32.5	PT 3/4
BMRT-25-06R	25		20	16	10	9.53	41	36	36	49.5	33.5	PT 3/4
BMRT-25-08R	25		20	22	10	10.39	41	36	36	49.5	35.5	PT 1
BMRT-28-08R	28		22	22	10	10.39	46	41	41	55	39.5	PT 1
BMRT-30-08R	30		25	22	10	10.39	46	41	41	55.5	39.5	PT 1
BMRT-30-10R	30		25	31	10	12.70	46	46	46	60.5	42.5	PT 1 1/4
BMRT-32-10R	32		26	31	11	12.70	50	46	46	60.5	43.5	PT 1 1/4
BMRT-35-10R	35		28	31	11	12.70	55	46	46	63.5	45.5	PT 1 1/4
BMRT-38-12R	38		32	36	12	12.70	60	50	50	69.5	48.5	PT 1 1/2
BMRT-40-12R	40		32	36	12	12.70	60	55	55	74.5	49.5	PT 1 1/2
BMRT-50-16R	50		40	46	12	15.88	75	65	62	83.5	58	PT 2
BMRT-6A-02R	1/8	10.5	8	7	7	6.01	19	17	23	34.5	19	PT 1/4
BMRT-8A-03R	1/4	13.8	11	9	7.5	6.35	24	22	28	40	22.5	PT 3/8
BMRT-10A-04R	3/8	17.3	14	12	8	8.16	32	27	32	44.5	30	PT 1/2
BMRT-15A-06R	1/2	21.7	18	16	9	9.53	36	32	34	46.5	32.5	PT 3/4
BMRT-20A-08R	3/4	27.2	22	22	10	10.39	46	41	41	55	39.5	PT 1
BMRT-25A-10R	1	34.0	28	31	11	12.70	55	46	46	63.5	45.5	PT 1 1/4
BMRT-32A-12R	1 1/4	42.7	34	36	12	12.70	65	60	57	77.5	51.5	PT 1 1/2
BMRT-40A-16R	1 1/2	48.6	40	46	12	15.88	75	65	62	83.5	58	PT 2

* All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change

* Dimensions given approximate length with tightened nut.

BCF

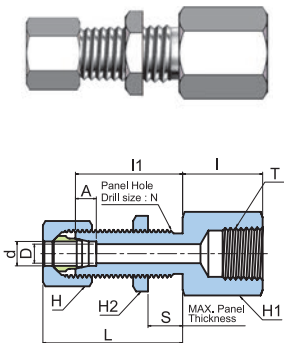
Female Connector



Part Number	Tube O.D. D	Dimension						
		d	A	H	H1	I	L	T
BCF-06-01R	6	4	7	14	17	25	35.5	PT 1/8
BCF-08-02R	8	6	7	17	19	30	40.5	PT 1/4
BCF-10-02R	10	8	7	19	19	30	41.5	PT 1/4
BCF-10-03R	10	8	7	19	24	32	43.5	PT 3/8
BCF-12-02R	12	10	7	22	19	30	41.5	PT 1/4
BCF-12-03R	12	10	7	22	24	32	43.5	PT 3/8
BCF-15-03R	15	12	7.5	27	24	34	46.5	PT 3/8
BCF-15-04R	15	12	7.5	27	30	39	51.5	PT 1/2
BCF-16-04R	16	13	7.5	30	30	39	51.5	PT 1/2
BCF-18-04R	18	14	8	32	30	39	51.5	PT 1/2
BCF-20-06R	20	17	8	36	36	41	53.5	PT 3/4
BCF-22-06R	22	18	9	36	36	41	53.5	PT 3/4
BCF-25-06R	25	20	10	41	36	41	54.5	PT 3/4
BCF-25-08R	25	20	10	41	46	45	58.5	PT 1
BCF-28-08R	28	22	10	46	46	47	61	PT 1
BCF-30-08R	30	25	10	46	46	47	61.5	PT 1
BCF-30-10R	30	25	10	46	55	51	65.5	PT 1 1/4
BCF-32-10R	32	26	11	50	55	51	65.5	PT 1 1/4
BCF-35-10R	35	28	11	55	55	51	68.5	PT 1 1/4
BCF-38-12R	38	32	12	60	65	51	70.5	PT 1 1/2
BCF-40-12R	40	32	12	60	65	55	74.5	PT 1 1/2
BCF-42-12R	42	34	12	60	65	55	74.5	PT 1 1/2
BCF-50-16R	50	40	12	75	80	60	81.5	PT 2
BCF-6A-02R	1/8 10.5	8	7	19	19	30	41.5	PT 1/4
BCF-8A-03R	1/4 13.8	11	7.5	24	24	34	46	PT 3/8
BCF-10A-04R	3/8 17.3	14	8	32	30	39	51.5	PT 1/2
BCF-15A-06R	1/2 21.7	18	9	36	36	41	53.5	PT 3/4
BCF-20A-08R	3/4 27.2	22	10	46	46	47	61	PT 1
BCF-25A-10R	1 34.0	28	11	55	55	51	68.5	PT 1 1/4
BCF-32A-12R	1 1/4 42.7	34	12	65	65	55	78.5	PT 1 1/2
BCF-40A-16R	1 1/2 48.6	40	12	75	80	60	81.5	PT 2

BBCF

Bulkhead Female Connector

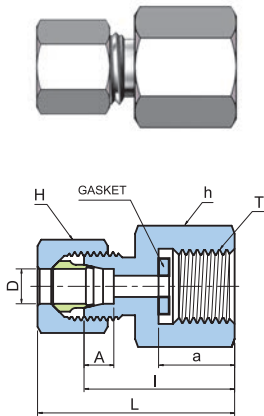


Part Number	Tube O.D. D	Dimension										
		d	A	H	H1	H2	I	I1	L	S	N	T
BBCF-06-01R	6	4	7	14	17	17	13	32	42.5	13	12.5	PT 1/8
BBCF-08-02R	8	6	7	17	19	19	18	32	42.5	13	14.5	PT 1/4
BBCF-10-02R	10	8	7	19	19	22	18	32	43.5	13	16.5	PT 1/4
BBCF-10-03R	10	8	7	19	24	22	20	32	43.5	13	16.5	PT 3/8
BBCF-12-02R	12	10	7	22	19	24	18	32	43.5	13	18.5	PT 1/4
BBCF-12-03R	12	10	7	22	24	24	20	32	43.5	13	18.5	PT 3/8
BBCF-15-03R	15	12	7.5	27	24	27	20	37	49.5	15	22.5	PT 3/8
BBCF-15-04R	15	12	7.5	27	30	27	25	37	49.5	15	22.5	PT 1/2
BBCF-16-04R	16	13	7.5	30	30	30	25	37	49.5	15	24.5	PT 1/2
BBCF-18-04R	18	14	8	32	30	32	25	39	51.5	15	26.5	PT 1/2
BBCF-20-06R	20	17	8	36	36	32	27	39	51.5	15	28.5	PT 3/4
BBCF-22-06R	22	18	9	36	36	36	27	39	51.5	15	30.5	PT 3/4
BBCF-25-06R	25	20	10	41	41	41	27	39	52.5	15	35.5	PT 3/4
BBCF-25-08R	25	20	10	41	46	41	31	39	52.5	15	35.5	PT 1
BBCF-28-08R	28	22	10	46	46	46	31	41	55	15	38.5	PT 1
BBCF-30-08R	30	25	10	46	46	46	31	41	55.5	15	40.5	PT 1
BBCF-30-10R	30	25	10	46	55	46	35	41	55.5	15	40.5	PT 1 1/4
BBCF-32-10R	32	26	11	50	55	46	35	43	57.5	15	42.5	PT 1 1/4

• All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change
 • Dimensions given approximate length with tightened nut.

BFGC

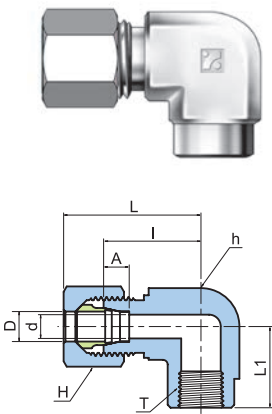
Female Gauge Connector



Part Number	Tube O.D. D	a	A	H	h	l	L	T
BFGC-04-02G	4	14	6	12	19	29	36.5	PF 1/4
BFGC-04-03G	4	15	6	12	24	30	37.5	PF 3/8
BFGC-06-02G	6	14	7	14	19	32	42.5	PF 1/4
BFGC-06-03G	6	15	7	14	24	34	44.5	PF 3/8
BFGC-06-04G	6	16	7	14	30	36	46.5	PF 1/2
BFGC-08-02G	8	14	7	17	19	32	42.5	PF 1/4
BFGC-08-03G	8	15	7	17	24	34	44.5	PF 3/8
BFGC-08-04G	8	16	7	17	30	36	46.5	PF 1/2
BFGC-10-02G	10	14	7	19	19	32	43.5	PF 1/4
BFGC-10-03G	10	15	7	19	24	34	45.5	PF 3/8
BFGC-10-04G	10	16	7	19	30	36	47.5	PF 1/2
BFGC-12-02G	12	14	7	22	19	32	43.5	PF 1/4
BFGC-12-03G	12	15	7	22	24	34	45.5	PF 3/8
BFGC-12-04G	12	16	7	22	30	36	47.5	PF 1/2

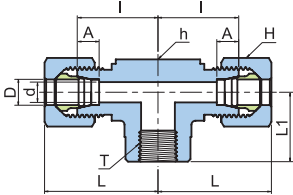
BFE

Female Elbow

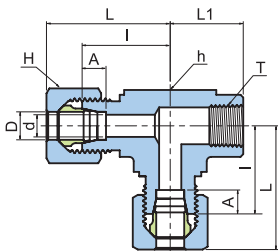


Part Number	Tube O.D. D	d	A	H	h	l	L	L1	T
BFE-08-02R	8	6	7	17	19	24	34.5	24	PT 1/4
BFE-10-02R	10	8	7	19	19	24	35.5	24	PT 1/4
BFE-12-02R	12	10	7	22	19	24	35.5	24	PT 1/4
BFE-12-03R	12	10	7	22	24	29	40.5	29	PT 3/8
BFE-15-03R	15	12	7.5	27	24	29	41.5	29	PT 3/8
BFE-15-04R	15	12	7.5	27	30	33	45.5	33	PT 1/2
BFE-16-04R	16	13	7.5	30	30	33	45.5	33	PT 1/2
BFE-18-04R	18	14	8	32	30	33	45.5	33	PT 1/2
BFE-20-06R	20	17	8	36	36	36	48.5	36	PT 3/4
BFE-22-06R	22	18	9	36	36	36	48.5	36	PT 3/4
BFE-25-06R	25	20	10	41	36	36	49.5	36	PT 3/4
BFE-25-08R	25	20	10	41	46	46	59.5	46	PT 1
BFE-28-08R	28	22	10	46	46	46	60	46	PT 1
BFE-30-10R	30	25	10	46	55	55	69.5	55	PT 1 1/4
BFE-32-10R	32	26	11	50	55	55	69.5	55	PT 1 1/4
BFE-35-10R	35	28	11	55	55	55	72.5	55	PT 1 1/4

* All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change
 * Dimensions given approximate length with tightened nut.

BFBT**Female Branch Tee**

Part Number	Tube O.D. D	d	A	H	h	l	L	L1	T
BFBT-08-02R	8	6	7	17	19	24	34.5	24	PT 1/4
BFBT-10-02R	10	8	7	19	19	24	35.5	24	PT 1/4
BFBT-12-02R	12	10	7	22	19	24	35.5	24	PT 1/4
BFBT-12-03R	12	10	7	22	24	29	40.5	29	PT 3/8
BFBT-15-03R	15	12	7.5	27	24	29	41.5	29	PT 3/8
BFBT-15-04R	15	12	7.5	27	30	33	45.5	33	PT 1/2
BFBT-16-04R	16	13	7.5	30	30	33	45.5	33	PT 1/2
BFBT-18-04R	18	14	8	32	30	33	45.5	33	PT 1/2
BFBT-20-06R	20	17	8	36	36	36	48.5	36	PT 3/4
BFBT-22-06R	22	18	9	36	36	36	48.5	36	PT 3/4
BFBT-25-06R	25	20	10	41	36	36	49.5	36	PT 3/4
BFBT-25-08R	25	20	10	41	46	46	59.5	46	PT 1
BFBT-28-08R	28	22	10	46	46	46	60	46	PT 1
BFBT-30-08R	30	25	10	46	46	46	60.5	46	PT 1
BFBT-30-10R	30	25	10	46	55	55	69.5	55	PT 1 1/4
BFBT-32-10R	32	26	11	50	55	55	69.5	55	PT 1 1/4
BFBT-35-10R	35	28	11	55	55	55	72.5	55	PT 1 1/4
BFBT-6A-02R	1/8 10.5	8	7	19	19	24	35.5	24	PT 1/4
BFBT-8A-03R	1/4 13.8	11	7.5	24	24	29	41	29	PT 3/8
BFBT-10A-04R	3/8 17.3	14	8	32	30	33	45.5	33	PT 1/2
BFBT-15A-06R	1/2 21.7	18	9	36	36	36	48.5	36	PT 3/4
BFBT-20A-08R	3/4 27.2	22	10	46	46	46	60	46	PT 1
BFBT-25A-10R	1 34.0	28	11	55	55	55	72.5	55	PT 1 1/4

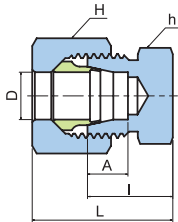
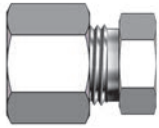
BFRT**Female Run Tee**

Part Number	Tube O.D. D	d	A	H	h	l	L	L1	T
BFRT-08-02R	8	6	7	17	19	24	34.5	24	PT 1/4
BFRT-10-02R	10	8	7	19	19	24	35.5	24	PT 1/4
BFRT-12-02R	12	10	7	22	19	24	35.5	24	PT 1/4
BFRT-12-03R	12	10	7	22	24	29	40.5	29	PT 3/8
BFRT-15-03R	15	12	7.5	27	24	29	41.5	29	PT 3/8
BFRT-15-04R	15	12	7.5	27	30	33	45.5	33	PT 1/2
BFRT-16-04R	16	13	7.5	30	30	33	45.5	33	PT 1/2
BFRT-18-04R	18	14	8	32	30	33	45.5	33	PT 1/2
BFRT-20-06R	20	17	8	36	36	36	48.5	36	PT 3/4
BFRT-22-06R	22	18	9	36	36	36	48.5	36	PT 3/4
BFRT-25-06R	25	20	10	41	36	36	49.5	36	PT 3/4
BFRT-25-08R	25	20	10	41	46	46	59.5	46	PT 1
BFRT-28-08R	28	22	10	46	46	46	60	46	PT 1
BFRT-30-08R	30	25	10	46	46	46	60.5	46	PT 1
BFRT-30-10R	30	25	10	46	55	55	69.5	55	PT 1 1/4
BFRT-32-10R	32	26	11	50	55	55	69.5	55	PT 1 1/4
BFRT-35-10R	35	28	11	55	55	55	72.5	55	PT 1 1/4
BFRT-6A-02R	1/8 10.5	8	7	19	19	24	35.5	24	PT 1/4
BFRT-8A-03R	1/4 13.8	11	7.5	24	24	29	41	29	PT 3/8
BFRT-10A-04R	3/8 17.3	14	8	32	30	33	45.5	33	PT 1/2
BFRT-15A-06R	1/2 21.7	18	9	36	36	36	48.5	36	PT 3/4
BFRT-20A-08R	3/4 27.2	22	10	46	46	46	60	46	PT 1
BFRT-25A-10R	1 34.0	28	11	55	55	55	72.5	55	PT 1 1/4

• All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change
 • Dimensions given approximate length with tightened nut.

BC

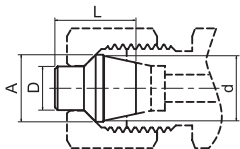
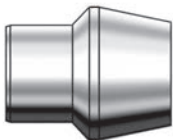
Cap



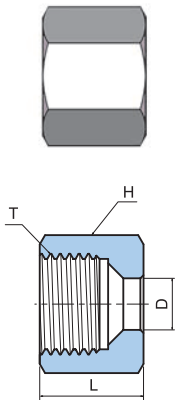
Part Number	Tube O.D. D	A	H	h	I	L
BC-06	6	7	14	14	18	28.5
BC-08	8	7	17	17	19	29.5
BC-10	10	7	19	17	20	31.5
BC-12	12	7	22	19	20	31.5
BC-15	15	7.5	27	24	22	34.5
BC-16	16	7.5	30	27	24	36.5
BC-18	18	8	32	27	24	36.5
BC-20	20	8	36	30	24	36.5
BC-22	22	9	36	32	25	37.5
BC-25	25	10	41	36	25	38.5
BC-28	28	10	46	41	28	42
BC-30	30	10	46	41	28	42.5
BC-32	32	11	50	46	30	44.5

BPL

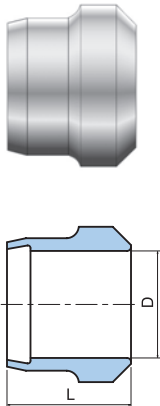
Plug



Part Number	Tube O.D. D	A	d	L
BPL-06	6	9	8	13.5
BPL-08	8	11	10	13.5
BPL-10	10	13	12	14.5
BPL-12	12	15	14	14.5
BPL-15	15	18	17	16
BPL-16	16	19	18	16
BPL-18	18	21	20	17.5
BPL-20	20	23	22	17.5
BPL-22	22	25	24	17.5
BPL-25	25	28.5	27.4	19
BPL-28	28	31.5	30.4	19
BPL-30	30	33.5	32.4	20
BPL-32	32	35.5	34.4	20

BNT**Nut**

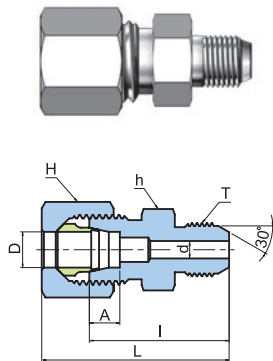
Part Number	Tube O.D. D		H	L	T
BNT-04	4		12	10.5	M10X1.25
BNT-06	6		14	15	M12X1.5
BNT-08	8		17	15	M14X1.5
BNT-10	10		19	16	M16X1.5
BNT-12	12		22	16	M18X1.5
BNT-15	15		27	19	M22X1.5
BNT-16	16		30	19	M24X1.5
BNT-18	18		32	19	M26X1.5
BNT-20	20		36	19	M28X1.5
BNT-22	22		36	19	M30X1.5
BNT-25	25		41	20	M35X1.5
BNT-28	28		46	21	M38X1.5
BNT-30	30		46	22	M40X1.5
BNT-32	32		50	22	M42X1.5
BNT-35	35		55	25	M45X1.5
BNT-38	38		60	27	M48X1.5
BNT-40	40		60	29.5	M52X2
BNT-42	42		60	29.5	M52X2
BNT-50	50		75	31.5	M64X2
BNT-6A	1/8	10.5	19	16	M16X1.5
BNT-8A	1/4	13.8	24	18	M20X1.5
BNT-10A	3/8	17.3	32	19	M26X1.5
BNT-15A	1/2	21.7	36	19	M30X1.5
BNT-20A	3/4	27.2	46	21	M38X1.5
BNT-25A	1	34.0	55	25	M45X1.5
BNT-32A	1 1/4	42.7	65	30.5	M56X2
BNT-40A	1 1/2	48.6	75	31.5	M64X2

BCR**Sleeve**

Part Number	Tube O.D. D		L	Part Number	Tube O.D. D		L
BCR-04	4		7	BS-35	35		14
BCR-06	6		9	BS-38	38		14
BCR-08	8		9	BS-40	40		14
BCR-10	10		10	BS-42	42		14
BCR-12	12		10	BS-50	50		14
BCR-15	15		10	BS-6A	1/8	10.5	10
BCR-16	16		10	BS-8A	1/4	13.8	10
BCR-18	18		10	BS-10A	3/8	17.3	10
BCR-20	20		10	BS-15A	1/2	21.7	10
BCR-22	22		10	BS-20A	3/4	27.2	11
BCR-25	25		11	BS-25A	1	34.0	14
BCR-28	28		11	BS-30A	1 1/4	42.7	14
BCR-30	30		11	BS-40A	1 1/2	48.6	14
BCR-32	32		11				

BHMU

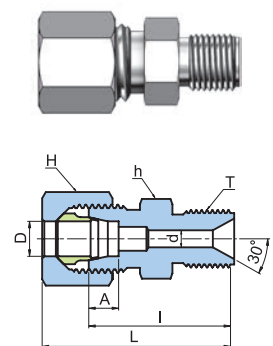
Hose Male Union



Part Number	Tube O.D. D	d	A	H	h	l	L	T
BHMU-08-02G	8	6	7	17	17	35	45.5	PF 1/4
BHMU-08-03G	8	6	7	17	19	37	47.5	PF 3/8
BHMU-10-02G	10	6	7	19	17	35	46.5	PF 1/4
BHMU-10-03G	10	8	7	19	19	37	48.5	PF 3/8
BHMU-10-04G	10	8	7	19	22	40	51.5	PF 1/2
BHMU-12-02G	12	6	7	22	19	35	46.5	PF 1/4
BHMU-12-03G	12	9	7	22	19	37	48.5	PF 3/8
BHMU-12-04G	12	10	7	22	22	40	51.5	PF 1/2
BHMU-15-03G	15	9	7.5	27	24	40	52.5	PF 3/8
BHMU-15-04G	15	12	7.5	27	24	42	54.5	PF 1/2
BHMU-16-03G	16	9	7.5	30	27	40	52.5	PF 3/8
BHMU-16-04G	16	12	7.5	30	27	42	54.5	PF 1/2
BHMU-18-04G	18	12	8	32	27	42	54.5	PF 1/2
BHMU-20-06G	20	16	8	36	30	46	58.5	PF 3/4
BHMU-22-04G	22	12	9	36	32	44	56.5	PF 1/2
BHMU-22-06G	22	16	9	36	32	46	58.5	PF 3/4
BHMU-25-06G	25	16	10	41	36	47	60.5	PF 3/4
BHMU-25-08G	25	20	10	41	36	49	62.5	PF 1
BHMU-28-06G	28	16	10	46	41	49	63	PF 3/4
BHMU-28-08G	28	22	10	46	41	51	65	PF 1
BHMU-30-06G	30	16	10	46	41	49	63.5	PF 3/4
BHMU-30-08G	30	22	10	46	41	51	65.5	PF 1
BHMU-32-08G	32	22	11	50	46	52	66.5	PF 1
BHMU-32-10G	32	28	11	50	46	56	70.5	PF 1 1/4

BHFU

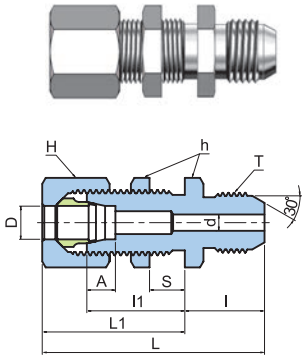
Hose Female Union



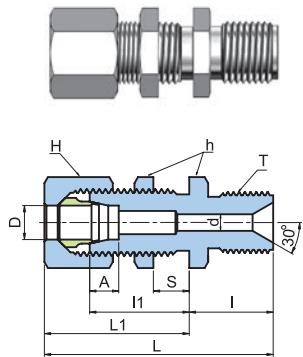
Part Number	Tube O.D. D	d	A	H	h	l	L	T
BHFU-08-02G	8	6	7	17	17	33	43.5	PF 1/4
BHFU-08-03G	8	6	7	17	19	34	44.5	PF 3/8
BHFU-10-02G	10	6	7	19	17	33	44.5	PF 1/4
BHFU-10-03G	10	8	7	19	19	34	45.5	PF 3/8
BHFU-10-04G	10	8	7	19	22	38	49.5	PF 1/2
BHFU-12-02G	12	6	7	22	19	33	44.5	PF 1/4
BHFU-12-03G	12	9	7	22	19	34	45.5	PF 3/8
BHFU-12-04G	12	10	7	22	22	38	49.5	PF 1/2
BHFU-15-03G	15	9	7.5	27	24	37	49.5	PF 3/8
BHFU-15-04G	15	12	7.5	27	24	40	52.5	PF 1/2
BHFU-16-03G	16	9	7.5	30	27	37	49.5	PF 3/8
BHFU-16-04G	16	12	7.5	30	27	40	52.5	PF 1/2
BHFU-18-04G	18	12	8	32	27	40	52.5	PF 1/2
BHFU-20-06G	20	16	8	36	30	43	55.5	PF 3/4
BHFU-22-04G	22	12	9	36	32	42	54.5	PF 1/2
BHFU-22-06G	22	16	9	36	32	43	55.5	PF 3/4
BHFU-25-06G	25	16	10	41	36	44	57.5	PF 3/4
BHFU-25-08G	25	20	10	41	36	46	59.5	PF 1
BHFU-28-06G	28	16	10	46	41	46	60	PF 3/4
BHFU-28-08G	28	22	10	46	41	48	62	PF 1
BHFU-30-06G	30	16	10	46	41	46	60.5	PF 3/4
BHFU-30-08G	30	22	10	46	41	48	62.5	PF 1
BHFU-32-08G	32	22	11	50	46	49	63.5	PF 1
BHFU-32-10G	32	28	11	50	46	55	69.5	PF 1 1/4
BHFU-38-12G	38	32	12	60	50	57	76.5	PF 1 1/2
BHFU-40-12G	40	32	12	60	55	62	81.5	PF 1 1/2
BHFU-50-16G	50	40	12	75	65	70	91.5	PF 2

* All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change

* Dimensions given approximate length with tightened nut.

BHBMU**Hose Bulkhead
Male Union**

Part Number	Tube O.D. D	d	A	H	h	I	I1	L	L1	Panel Hole Drill Size	Max. Panel Thickness S	T
BHBMU-08-02G	8	6	7	17	19	23	32	65.5	42.5	14.5	13	PF 1/4
BHBMU-08-03G	8	6	7	17	19	25	32	67.5	42.5	14.5	13	PF 3/8
BHBMU-10-02G	10	6	7	19	22	24	32	67.5	43.5	16.5	13	PF 1/4
BHBMU-10-03G	10	8	7	19	22	26	32	69.5	43.5	16.5	13	PF 3/8
BHBMU-10-04G	10	8	7	19	22	28	32	71.5	43.5	16.5	13	PF 1/2
BHBMU-12-02G	12	6	7	22	24	24	32	67.5	43.5	18.5	13	PF 1/4
BHBMU-12-03G	12	9	7	22	24	26	32	69.5	43.5	18.5	13	PF 3/8
BHBMU-12-04G	12	10	7	22	24	28	32	71.5	43.5	18.5	13	PF 1/2
BHBMU-15-03G	15	9	7.5	27	27	26	37	75.5	49.5	22.5	15	PF 3/8
BHBMU-15-04G	15	12	7.5	27	27	28	37	77.5	49.5	22.5	15	PF 1/2
BHBMU-16-03G	16	9	7.5	30	30	28	37	77.5	49.5	24.5	15	PF 3/8
BHBMU-16-04G	16	12	7.5	30	30	30	37	79.5	49.5	24.5	15	PF 1/2
BHBMU-18-04G	18	12	8	32	32	30	39	81.5	51.5	26.5	15	PF 1/2
BHBMU-20-06G	20	16	8	36	32	32	39	83.5	51.5	28.5	15	PF 3/4
BHBMU-22-04G	22	12	9	36	36	31	39	82.5	51.5	30.5	15	PF 1/2
BHBMU-22-06G	22	16	9	36	36	33	39	84.5	51.5	30.5	15	PF 3/4
BHBMU-25-06G	25	16	10	41	41	33	39	87.5	52.5	35.5	15	PF 3/4
BHBMU-25-08G	25	20	10	41	41	35	39	89.5	52.5	35.5	15	PF 1
BHBMU-28-06G	28	16	10	46	46	34	41	89	55	38.5	15	PF 3/4
BHBMU-28-08G	28	22	10	46	46	36	41	91	55	38.5	15	PF 1
BHBMU-30-06G	30	16	10	46	46	34	41	89.5	55.5	40.5	15	PF 3/4
BHBMU-30-08G	30	22	10	46	46	36	41	91.5	55.5	40.5	15	PF 1
BHBMU-32-08G	32	22	11	50	50	38	43	95.5	57.5	42.5	15	PF 1
BHBMU-32-10G	32	28	11	50	50	42	43	99.5	57.5	42.5	15	PF 1 1/4

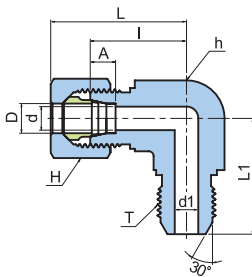
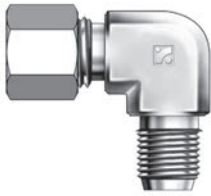
BHBFU**Hose Bulkhead
Female Union**

Part Number	Tube O.D. D	d	A	H	h	I	I1	L	L1	Panel Hole Drill Size	Max. Panel Thickness S	T
BHBFU-08-02G	8	6	7	17	19	21	32	63.5	42.5	14.5	13	PF 1/4
BHBFU-08-03G	8	6	7	17	19	22	32	64.5	42.5	14.5	13	PF 3/8
BHBFU-10-02G	10	6	7	19	22	22	32	65.5	43.5	16.5	13	PF 1/4
BHBFU-10-03G	10	8	7	19	22	23	32	66.5	43.5	16.5	13	PF 3/8
BHBFU-10-04G	10	8	7	19	22	26	32	69.5	43.5	16.5	13	PF 1/2
BHBFU-12-02G	12	6	7	22	24	22	32	65.5	43.5	18.5	13	PF 1/4
BHBFU-12-03G	12	9	7	22	24	23	32	66.5	43.5	18.5	13	PF 3/8
BHBFU-12-04G	12	10	7	22	24	26	32	69.5	43.5	18.5	13	PF 1/2
BHBFU-15-03G	15	9	7.5	27	27	23	37	72.5	49.5	22.5	15	PF 3/8
BHBFU-15-04G	15	12	7.5	27	27	26	37	75.5	49.5	22.5	15	PF 1/2
BHBFU-16-03G	16	9	7.5	30	30	25	37	74.5	49.5	24.5	15	PF 3/8
BHBFU-16-04G	16	12	7.5	30	30	28	37	77.5	49.5	24.5	15	PF 1/2
BHBFU-18-04G	18	12	8	32	32	28	39	79.5	51.5	26.5	15	PF 1/2
BHBFU-20-06G	20	16	8	36	32	29	39	80.5	51.5	28.5	15	PF 3/4
BHBFU-22-04G	22	12	9	36	36	29	39	80.5	51.5	30.5	15	PF 1/2
BHBFU-22-06G	22	16	9	36	36	30	39	81.5	51.5	30.5	15	PF 3/4
BHBFU-25-06G	25	16	10	41	41	30	39	82.5	52.5	35.5	15	PF 3/4
BHBFU-25-08G	25	20	10	41	41	32	39	84.5	52.5	35.5	15	PF 1
BHBFU-28-06G	28	16	10	46	46	31	41	86	55	38.5	15	PF 3/4
BHBFU-28-08G	28	22	10	46	46	33	41	88	55	38.5	15	PF 1
BHBFU-30-06G	30	16	10	46	46	31	41	86.5	55.5	40.5	15	PF3/4
BHBFU-30-08G	30	22	10	46	46	33	41	88.5	55.5	40.5	15	PF 1
BHBFU-32-08G	32	22	11	50	50	35	43	92.5	57.5	42.5	15	PF 1
BHBFU-32-10G	32	28	11	50	50	41	43	98.5	57.5	42.5	15	PF 1 1/4
BHBFU-38-12G	38	31	12	60	55	42	45	106.5	64.5	48.5	15	PF 1 1/2
BHBFU-40-12G	40	32	12	60	60	44	50	113.5	69.5	52.5	15	PF 1 1/2
BHBFU-50-16G	50	40	12	75	70	53	50	124.5	71.5	64.5	15	PF 2

- All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change
- Dimensions given approximate length with tightened nut.

BHME

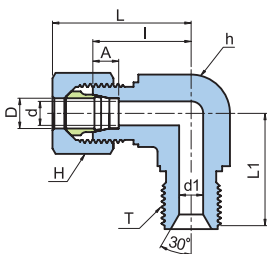
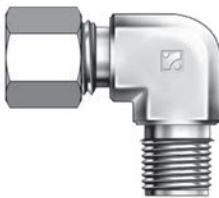
Hose Male Elbow



Part Number	Tube O.D. D	d	d1	A	H	h	I	L	L1	T
BHME-08-02G	8	6	6	7	17	17	23	33.5	25	PF 1/4
BHME-08-03G	8	6	9	7	17	19	24	34.5	28	PF 3/8
BHME-10-02G	10	8	6	7	19	19	24	35.5	28	PF 1/4
BHME-10-03G	10	8	9	7	19	19	24	35.5	28	PF 3/8
BHME-10-04G	10	8	12	7	19	24	29	40.5	34	PF 1/2
BHME-12-02G	12	10	6	7	22	19	24	35.5	28	PF 1/4
BHME-12-03G	12	10	9	7	22	19	24	35.5	28	PF 3/8
BHME-12-04G	12	10	12	7	22	24	29	40.5	34	PF 1/2
BHME-15-03G	15	12	9	7.5	27	24	29	41.5	33	PF 3/8
BHME-15-04G	15	12	12	7.5	27	24	29	41.5	34	PF 1/2
BHME-16-03G	16	13	9	7.5	30	27	32	44.5	36	PF 3/8
BHME-16-04G	16	13	12	7.5	30	27	32	44.5	38	PF 1/2
BHME-18-04G	18	14	12	8	32	27	32	44.5	38	PF 1/2
BHME-20-06G	20	17	16	8	36	30	33	45.5	41	PF 3/4
BHME-22-04G	22	18	12	9	36	32	34	46.5	40	PF 1/2
BHME-22-06G	22	18	16	9	36	32	34	46.5	42	PF 3/4
BHME-25-06G	25	20	16	10	41	36	36	49.5	44	PF 3/4
BHME-25-08G	25	20	20	10	41	36	36	49.5	46	PF 1
BHME-28-06G	28	22	16	10	46	41	41	55	47	PF 3/4
BHME-28-08G	28	22	22	10	46	41	41	55	49	PF 1
BHME-30-06G	30	25	16	10	46	41	41	55.5	47	PF 3/4
BHME-30-08G	30	25	22	10	46	41	41	55.5	49	PF 1
BHME-32-08G	32	26	22	11	50	46	46	60.5	54	PF 1
BHME-32-10G	32	26	28	11	50	46	46	60.5	56	PF 1 1/4

BHFE

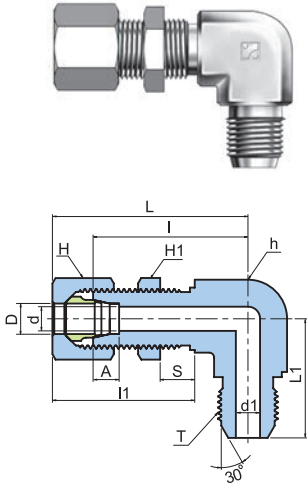
Hose Female Elbow



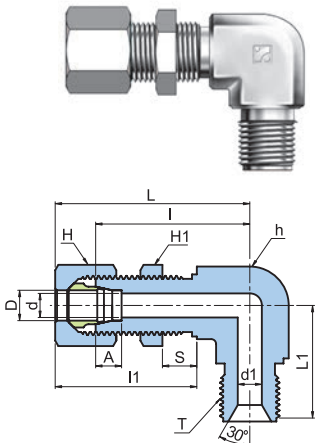
Part Number	Tube O.D. D	d	d1	A	H	h	I	L	L1	T
BHFE-08-02G	8	6	6	7	17	17	23	33.5	25	PF 1/4
BHFE-08-03G	8	6	9	7	17	19	24	34.5	27	PF 3/8
BHFE-10-02G	10	8	6	7	19	19	24	35.5	26	PF 1/4
BHFE-10-03G	10	8	9	7	19	19	24	35.5	27	PF 3/8
BHFE-10-04G	10	8	12	7	19	24	29	40.5	33	PF 1/2
BHFE-12-02G	12	10	6	7	22	19	24	35.5	26	PF 1/4
BHFE-12-03G	12	10	9	7	22	19	24	35.5	27	PF 3/8
BHFE-12-04G	12	10	12	7	22	24	29	40.5	33	PF 1/2
BHFE-15-03G	15	12	9	7.5	27	24	29	41.5	30	PF 3/8
BHFE-15-04G	15	12	12	7.5	27	24	29	41.5	33	PF 1/2
BHFE-16-03G	16	13	9	7.5	30	27	32	44.5	33	PF 3/8
BHFE-16-04G	16	13	12	7.5	30	27	32	44.5	36	PF 1/2
BHFE-18-04G	18	14	12	8	32	27	32	44.5	36	PF 1/2
BHFE-20-06G	20	17	16	8	36	30	33	45.5	38	PF 3/4
BHFE-22-04G	22	18	12	9	36	32	34	46.5	38	PF 1/2
BHFE-22-06G	22	18	16	9	36	32	34	46.5	39	PF 3/4
BHFE-25-06G	25	20	16	10	41	36	36	49.5	41	PF 3/4
BHFE-25-08G	25	20	20	10	41	36	36	49.5	43	PF 1
BHFE-28-06G	28	22	16	10	46	41	41	55	44	PF 3/4
BHFE-28-08G	28	22	22	10	46	41	41	55	46	PF 1
BHFE-30-06G	30	25	16	10	46	41	41	55.5	44	PF 3/4
BHFE-30-08G	30	25	22	10	46	41	41	55.5	46	PF 1
BHFE-32-08G	32	26	22	11	50	46	46	60.5	51	PF 1
BHFE-32-10G	32	26	28	11	50	46	46	60.5	57	PF 1 1/4
BHFE-38-12G	38	32	34	12	60	50	50	69.5	61	PF 1 1/2
BHFE-40-12G	40	32	34	12	60	55	55	74.5	62	PF 1 1/2
BHFE-50-16G	50	40	46	12	75	65	62	83.5	72	PF 2

* All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change

* Dimensions given approximate length with tightened nut.

BHBME**Hose Bulkhead
Male Elbow**

Part Number	Tube O.D. D	d	d1	A	H	H1	h	I	I1	L	L1	Panel Hole Drill Size	Max. Panel Thickness S	T
BHBME-08-02G	8	6	6	7	17	19	19	46	42.5	56.5	28	14.5	13	PF 1/4
BHBME-08-03G	8	6	9	7	17	19	19	46	42.5	56.5	30	14.5	13	PF 3/8
BHBME-10-02G	10	8	6	7	19	22	22	48	43.5	59.5	28	16.5	13	PF 1/4
BHBME-10-03G	10	8	9	7	19	22	22	48	43.5	59.5	30	16.5	13	PF 3/8
BHBME-10-04G	10	8	12	7	19	22	24	49	43.5	60.5	35	16.5	13	PF 1/2
BHBME-12-02G	12	10	6	7	22	24	24	49	43.5	60.5	31	18.5	13	PF 1/4
BHBME-12-03G	12	10	9	7	22	24	24	49	43.5	60.5	33	18.5	13	PF 3/8
BHBME-12-04G	12	10	12	7	22	24	24	49	43.5	60.5	35	18.5	13	PF 1/2
BHBME-15-03G	15	12	9	7.5	27	27	27	57	49.5	69.5	36	22.5	15	PF 3/8
BHBME-15-04G	15	12	12	7.5	27	27	27	57	49.5	69.5	37	22.5	15	PF 1/2
BHBME-16-03G	16	13	9	7.5	30	30	30	59	49.5	71.5	37	24.5	15	PF 3/8
BHBME-16-04G	16	13	12	7.5	30	30	30	59	49.5	71.5	38	24.5	15	PF 1/2
BHBME-18-04G	18	14	12	8	32	32	32	63	51.5	75.5	39	26.5	15	PF 1/2
BHBME-20-06G	20	16	16	8	36	32	32	65	51.5	77.5	40	28.5	15	PF 3/4
BHBME-22-04G	22	18	12	9	36	36	36	65	51.5	77.5	40	30.5	15	PF 1/2
BHBME-22-06G	22	18	16	9	38	36	36	65	51.5	77.5	40	30.5	15	PF 3/4
BHBME-25-06G	25	20	16	10	41	41	41	68	52.5	81.5	43	35.5	15	PF 3/4
BHBME-25-08G	25	20	20	10	41	41	41	68	52.5	81.5	43	35.5	15	PF 1
BHBME-28-06G	28	22	16	10	46	46	46	74	55	88	48	38.5	15	PF 3/4
BHBME-28-08G	28	22	22	10	46	46	46	74	55	88	48	38.5	15	PF 1
BHBME-30-06G	30	25	16	10	46	46	46	74	55.5	88.5	48	40.5	15	PF 3/4
BHBME-30-08G	30	25	22	10	46	46	46	74	55.5	88.5	48	40.5	15	PF 1

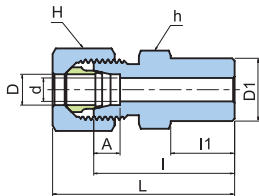
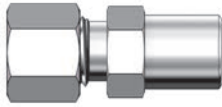
BHBFE**Hose Bulkhead
Female Elbow**

Part Number	Tube O.D. D	d	d1	A	H	H1	h	I	I1	L	L1	Panel Hole Drill Size	Max. Panel Thickness S	T
BHBFE-08-02G	8	6	6	7	17	19	19	46	42.5	56.5	26	14.5	13	PF 1/4
BHBFE-08-03G	8	6	9	7	17	19	19	46	42.5	56.5	27	14.5	13	PF 3/8
BHBFE-10-02G	10	8	6	7	19	22	22	48	43.5	59.5	28	16.5	13	PF 1/4
BHBFE-10-03G	10	8	9	7	19	22	22	48	43.5	59.5	29	16.5	13	PF 3/8
BHBFE-10-04G	10	8	12	7	19	22	24	49	43.5	60.5	33	16.5	13	PF 1/2
BHBFE-12-02G	12	10	6	7	22	24	24	49	43.5	60.5	30	18.5	13	PF 1/4
BHBFE-12-03G	12	10	9	7	22	24	24	49	43.5	60.5	30	18.5	13	PF 3/8
BHBFE-12-04G	12	10	12	7	22	24	24	49	43.5	60.5	33	18.5	13	PF 1/2
BHBFE-15-03G	15	12	9	7.5	27	27	27	57	49.5	69.5	33	22.5	15	PF 3/8
BHBFE-15-04G	15	12	12	7.5	27	27	27	57	49.5	69.5	36	22.5	15	PF 1/2
BHBFE-16-03G	16	13	9	7.5	30	30	30	59	49.5	71.5	34	24.5	15	PF 3/8
BHBFE-16-04G	16	13	12	7.5	30	30	30	59	49.5	71.5	37	24.5	15	PF 1/2
BHBFE-18-04G	18	14	12	8	32	32	32	63	51.5	75.5	37	26.5	15	PF 1/2
BHBFE-20-06G	20	16	16	8	36	32	32	65	51.5	77.5	40	28.5	15	PF 3/4
BHBFE-22-04G	22	18	12	9	36	36	36	65	51.5	77.5	40	30.5	15	PF 1/2
BHBFE-22-06G	22	18	16	9	36	36	36	65	51.5	77.5	40	30.5	15	PF 3/4
BHBFE-25-06G	25	20	16	10	41	41	41	68	52.5	81.5	43	35.5	15	PF 3/4
BHBFE-25-08G	25	20	20	10	41	41	41	68	52.5	81.5	43	35.5	15	PF 1
BHBFE-28-06G	28	22	16	10	46	46	46	74	55	88	48	38.5	15	PF 3/4
BHBFE-28-08G	28	22	22	10	46	46	46	74	55	88	48	38.5	15	PF 1
BHBFE-30-06G	30	25	16	10	46	46	46	74	55.5	88.5	48	40.5	15	PF 3/4
BHBFE-30-08G	30	25	22	10	46	46	46	74	55.5	88.5	48	40.5	15	PF 1

• All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change
 • Dimensions given approximate length with tightened nut.

BWC

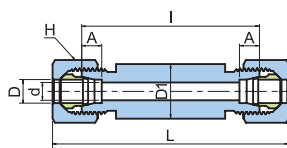
Welding Connector



Part Number	Tube O.D. D		D1	d	A	H	h	I	I1	L
BWC-06	6		12	4	7	14	14	29	11	39.5
BWC-08	8		14	6	7	17	17	34	15	44.5
BWC-10	10		16	8	7	19	17	34	15	45.5
BWC-12	12		18	10	7	22	19	34	15	45.5
BWC-15	15		21	12	7.5	27	24	40	18	52.5
BWC-16	16		22	13	7.5	30	27	44	22	56.5
BWC-18	18		25	14	8	32	27	44	22	56.5
BWC-20	20		28	17	8	36	30	46	22	58.5
BWC-22	22		28	18	9	36	32	46	22	58.5
BWC-25	25		33	20	10	41	36	51	26	64.5
BWC-28	28		36	22	10	46	41	55	28	69
BWC-30	30		39	25	10	46	41	55	28	69.5
BWC-32	32		40	26	11	50	46	56	28	70.5
BWC-35	35		43	28	11	55	46	56	28	73.5
BWC-38	38		45	32	12	60	50	58	28	77.5
BWC-40	40		46	32	12	60	55	65	30	84.5
BWC-50	50		57	40	12	75	65	70	30	91.5
BWC-6A	1/8	10.5	16	8	7	19	17	34	15	45.5
BWC-8A	1/4	13.8	19	11	7.5	24	22	40	18	52
BWC-10A	3/8	17.3	24	14	8	32	27	44	22	56.5
BWC-15A	1/2	21.7	28	18	9	36	32	46	22	58.5
BWC-20A	3/4	27.2	33	22	10	46	41	52	25	66
BWC-25A	1	34.0	40	28	11	55	46	56	28	73.5
BWC-32A	1 1/4	42.7	47	34	12	65	60	65	28	85.5
BWC-40A	1 1/2	48.6	55	40	12	75	65	70	30	91.5

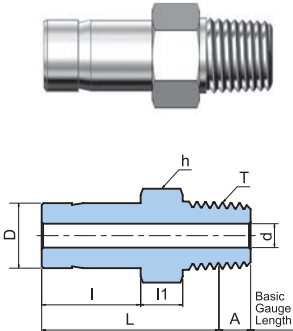
BWBU

Welding Bulkhead Union

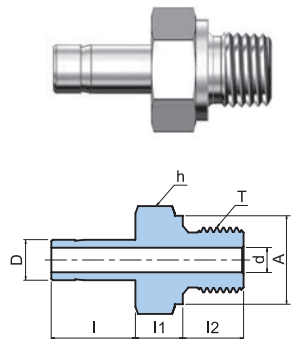


Part Number	Tube O.D. D		d	A	H	D1	I	L
BWBU-06	6		4	7	14	16	74	95
BWBU-08	8		6	7	17	16	74	95
BWBU-10	10		8	7	19	19	74	97
BWBU-12	12		10	7	22	20	74	97
BWBU-15	15		12	7.5	27	25	78	103
BWBU-16	16		13	7.5	30	28	78	103
BWBU-18	18		14	8	32	28	78	103
BWBU-20	20		17	8	36	32	78	103
BWBU-22	22		18	9	36	32	78	103
BWBU-25	25		20	10	41	38	78	105
BWBU-28	28		22	10	46	39	82	110
BWBU-30	30		25	10	46	46	82	111
BWBU-32	32		26	11	50	46	82	111
BWBU-35	35		28	11	55	46	82	117
BWBU-38	38		32	12	60	55	82	121
BWBU-40	40		32	12	60	55	90	129
BWBU-50	50		40	12	75	65	90	133
BWBU-6A	1/8	10.5	8	7	19	19	74	97
BWBU-8A	1/4	13.8	11	7.5	24	22	78	102
BWBU-10A	3/8	17.3	14	8	32	28	78	103
BWBU-15A	1/2	21.7	18	9	36	32	78	103
BWBU-20A	3/4	27.2	22	10	46	39	82	110
BWBU-25A	1	34.0	28	11	55	46	82	117
BWBU-32A	1 1/4	42.7	34	12	65	58	90	131
BWBU-40A	1 1/2	48.6	40	12	75	65	90	133

* All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change
 * Dimensions given approximate length with tightened nut.

BAP-R**Adapter**

Part Number	Tube O.D. D	d	A	h	I	I1	L	T
BAP-06-01R	6	3	3.97	12	20	6	32	PT 1/8
BAP-08-02R	8	5	6.01	14	20	7	35	PT 1/4
BAP-10-02R	10	6	6.01	14	21	7	36	PT 1/4
BAP-10-03R	10	6	6.35	19	21	7	36.5	PT 3/8
BAP-12-02R	12	7	6.01	14	22	7	37	PT 1/4
BAP-12-03R	12	8	6.35	19	22	7	37.5	PT 3/8
BAP-15-03R	15	8	6.35	19	24	8	40.5	PT 3/8
BAP-15-04R	15	10	8.16	22	24	8	43	PT 1/2
BAP-16-04R	16	11	8.16	22	24	8	43	PT 1/2
BAP-18-04R	18	12	8.16	22	24	8	43	PT 1/2
BAP-20-06R	20	14	9.53	27	25	10	46.5	PT 3/4
BAP-22-06R	22	14	9.53	27	26	10	47.5	PT 3/4
BAP-25-06R	25	16	9.53	27	28	10	49.5	PT 3/4
BAP-25-08R	25	17	10.39	36	28	11	52.5	PT 1
BAP-28-08R	28	18	10.39	36	28	11	52.5	PT 1
BAP-30-08R	30	20	10.39	36	29	11	53.5	PT 1
BAP-30-10R	30	20	12.70	46	29	12	55	PT 1 1/4
BAP-32-10R	32	22	12.70	46	30	12	56	PT 1 1/4
BAP-38-12R	38	26	12.70	50	36	14	64.5	PT 1 1/2
BAP-40-12R	40	28	12.70	50	36	14	64	PT 1 1/2
BAP-50-16R	50	34	15.88	65	37	20	72	PT 2
BAP-6A-02R	1/8 10.5	6	6.01	14	21	7	36	PT 1/4
BAP-8A-03R	1/4 13.8	9	6.35	19	22	8	38.5	PT 3/8
BAP-10A-04R	3/8 17.3	11	8.16	22	24	8	43	PT 1/2
BAP-15A-06R	1/2 21.7	14	9.53	27	26	10	47.5	PT 3/4
BAP-20A-08R	3/4 27.2	18	10.39	36	28	11	52.5	PT 1
BAP-25A-10R	1 34.0	23	12.70	46	33	12	59	PT 1 1/4
BAP-32A-12R	1 1/4 42.7	29	12.70	50	36	17	67	PT 1 1/2
BAP-40A-16R	1 1/2 48.6	33	15.88	65	37	20	72	PT 2

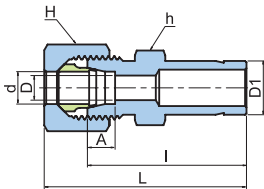
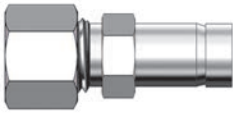
BAP-G**Adapter**

Part Number	Tube O.D. D	d	A	h	I	I1	I2	T
BAP-06-01G	6	3	14	14	20	8	8	PF 1/8
BAP-08-02G	8	5	18	19	20	9	12	PF 1/4
BAP-10-02G	10	6	18	19	21	9	12	PF 1/4
BAP-10-03G	10	6	21.5	22	21	10	12	PF 3/8
BAP-12-02G	12	7	18	19	22	9	12	PF 1/4
BAP-12-03G	12	8	21.5	22	22	10	12	PF 3/8
BAP-15-03G	15	8	21.5	22	24	10	12	PF 3/8
BAP-15-04G	15	10	25.5	27	24	13	14	PF 1/2
BAP-16-04G	16	11	25.5	27	24	13	14	PF 1/2
BAP-18-04G	18	12	25.5	27	24	13	14	PF 1/2
BAP-20-06G	20	14	31.5	32	25	16	16	PF 3/4
BAP-22-06G	22	14	31.5	32	26	16	16	PF 3/4
BAP-25-06G	25	16	31.5	32	28	16	16	PF 3/4
BAP-25-08G	25	17	38	41	28	18	18	PF 1
BAP-28-08G	28	18	38	41	28	18	18	PF 1
BAP-30-08G	30	20	38	41	29	21	18	PF 1
BAP-30-10G	30	20	48.5	50	29	21	20	PF 1 1/4
BAP-32-10G	32	22	48.5	50	30	21	20	PF 1 1/4
BAP-38-12G	38	26	53.5	55	36	21	21	PF 1 1/2
BAP-40-12G	40	28	53.5	55	36	21	21	PF 1 1/2
BAP-50-16G	50	34	66	70	37	28	24	PF 2
BAP-6A-02G	1/8 10.5	6	18	19	21	9	12	PF 1/4
BAP-8A-03G	1/4 13.8	9	21.5	22	22	10	12	PF 3/8
BAP-10A-04G	3/8 17.3	11	25.5	27	24	13	14	PF 1/2
BAP-15A-06G	1/2 21.7	14	31.5	32	26	16	16	PF 3/4
BAP-20A-08G	3/4 27.2	18	38	41	28	18	18	PF 1
BAP-25A-10G	1 34.0	23	48.5	50	33	21	20	PF 1 1/4
BAP-32A-12G	1 1/4 42.7	29	53.5	55	36	23	21	PF 1 1/2
BAP-40A-16G	1 1/2 48.6	33	66	70	37	28	24	PF 2

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 • Dimensions given approximate length with tightened nut.

BRD

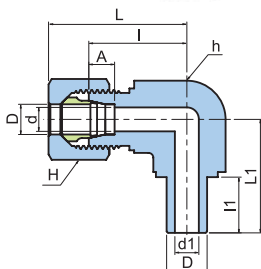
Reducer



Part Number	Tube O.D.				d	A	H	h	l	L
	D		D1							
BRD-06-08	6		8		4	7	14	14	39	49.5
BRD-06-10	6		10		4	7	14	14	40	50.5
BRD-08-10	8		10		6	7	17	17	40	50.5
BRD-06-12	6		12		4	7	14	14	41	51.5
BRD-08-12	8		12		6	7	17	17	41	51.5
BRD-10-12	10		12		8	7	19	17	41	52.5
BRD-08-15	8		15		6	7	17	17	43	53.5
BRD-10-15	10		15		8	7	19	17	43	54.5
BRD-06-16	6		16		4	7	14	17	43	53.5
BRD-10-16	10		16		8	7	19	17	43	54.5
BRD-12-16	12		16		10	7	22	19	43	54.5
BRD-10-18	10		18		8	7	19	19	44	55.5
BRD-15-18	15		18		12	7.5	27	24	45	57.5
BRD-06-20	6		20		4	7	14	22	45	55.5
BRD-12-20	12		20		10	7	22	22	45	56.5
BRD-16-20	16		20		13	7.5	30	27	47	59.5
BRD-15-22	15		22		12	7.5	27	24	48	60.5
BRD-18-22	18		22		14	8	32	27	48	60.5
BRD-16-25	16		25		13	7.5	30	27	50	62.5
BRD-20-25	20		25		17	8	36	30	52	64.5
BRD-18-28	18		28		14	8	32	30	52	64.5
BRD-22-28	22		28		18	9	36	32	52	64.5
BRD-20-30	20		30		17	8	36	32	53	65.5
BRD-25-30	25		30		20	10	41	36	54	67.5
BRD-25-32	25		32		20	10	41	36	55	68.5
BRD-22-35	22		35		18	9	36	36	58	70.5
BRD-28-35	28		35		22	10	46	41	60	74
BRD-25-28	25		38		20	10	41	41	61	74.5
BRD-30-38	30		38		25	10	46	41	63	77.5
BRD-6A-8A	1/8	10.5	1/4	13.8	8	7	19	17	41	52.5
BRD-6A-10A	1/8	10.5	3/8	17.3	8	7	19	19	44	55.5
BRD-8A-10A	1/4	13.8	3/8	17.3	11	7.5	24	22	46	58
BRD-8A-15A	1/4	13.8	1/2	21.7	11	7.5	24	24	48	60
BRD-10A-15A	3/8	17.3	1/2	21.7	14	8	32	27	48	60.5
BRD-10A-20A	3/8	17.3	3/4	27.2	14	8	32	30	52	64.5
BRD-15A-20A	1/2	21.7	3/4	27.2	18	9	36	32	52	64.5
BRD-20A25A	1/2	21.7	1	34.0	18	9	36	36	58	70.5
BRD-25A-32A	3/4	27.2	1	34.0	22	10	46	41	60	74

BAE

Adjustable Elbow

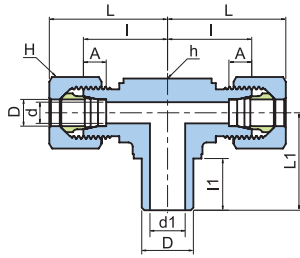


Part Number	Tube O.D. D	d	d1	A	H	h	l	l1	L	L1
BAE-10	10	8	6	7	19	17	23	21	34.5	35
BAE-12	12	10	8	7	22	19	24	22	35.5	37
BAE-15	15	12	10	7.5	27	24	29	24	44.5	40
BAE-16	16	13	11	7.5	30	27	32	24	44.5	43
BAE-18	18	14	12	8	32	27	32	24	44.5	43
BAE-20	20	17	14	8	36	30	33	25	45.5	45
BAE-22	22	18	14	9	36	32	34	26	46.5	46
BAE-25	25	20	17	10	41	36	36	28	49.5	49
BAE-28	28	22	18	10	46	41	41	28	55	53
BAE-30	30	25	20	10	46	41	41	29	55.5	54
BAE-32	32	26	22	11	50	46	50	30	64.5	66
BAE-38	38	32	26	12	60	50	50	36	69.5	72

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 * Dimensions given approximate length with tightened nut.

BABT

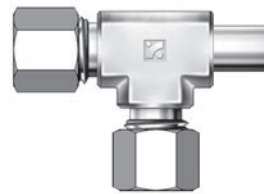
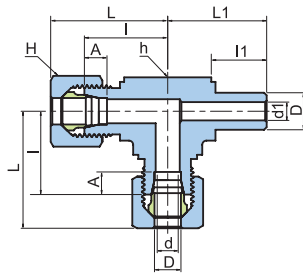
Adjustable Branch Tee



Part Number	Tube O.D. D	d	d1	A	H	h	l	l1	L	L1
BABT-10	10	8	6	7	19	17	23	21	34.5	35
BABT-12	12	10	8	7	22	19	24	22	35.5	37
BABT-15	15	12	10	7.5	27	24	32	24	44.5	43
BABT-16	16	13	11	7.5	30	27	32	24	44.5	43
BABT-18	18	14	12	8	32	27	32	24	44.5	43
BABT-20	20	17	14	8	36	30	33	25	45.5	45
BABT-22	22	18	14	9	36	32	34	26	46.5	46
BABT-25	25	20	17	10	41	36	36	28	49.5	49

BART

Adjustable Run Tee

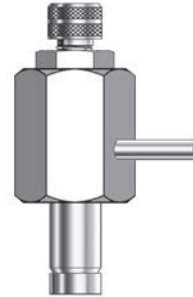
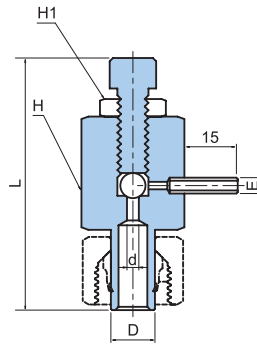


Part Number	Tube O.D. D	d	d1	A	H	h	l	l1	L	L1
BART-10	10	8	6	7	19	17	23	21	34.5	35
BART-12	12	10	8	7	22	19	24	22	35.5	37
BART-15	15	12	10	7.5	27	24	32	24	44.5	43
BART-16	16	13	11	7.5	30	27	32	24	44.5	43
BART-18	18	14	12	8	32	27	32	24	44.5	43
BART-20	20	17	14	8	36	30	33	25	45.5	45
BART-22	22	18	14	9	36	32	34	26	46.5	46
BART-25	25	20	17	10	41	36	36	28	49.5	49

• All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change
 • Dimensions given approximate length with tightened nut.

BAPV

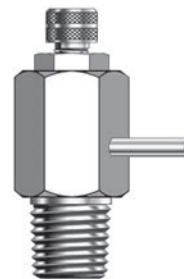
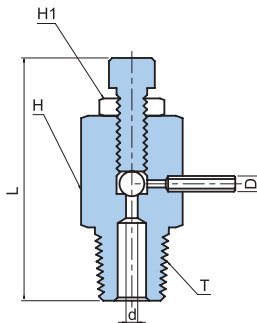
Air Purge Valve (Tube End)



Part Number	Dimension						
	D	E	d	H	H1	L	Ball
BAPV-06	6	4	3	14	13	56	7/32
BAPV-08	8	4	3	14	13	56	7/32
BAPV-10	10	4	3	14	13	57	7/32
BAPV-12	12	4	3	14	13	58	7/32
BAPV-15	15	6	4	27	19	74	5/16
BAPV-16	16	6	4	27	19	74	5/16
BAPV-18	18	6	4	27	19	74	5/16
BAPV-20	20	6	4	27	19	75	5/16
BAPV-22	22	6	4	27	19	76	5/16
BAPV-25	25	6	4	27	19	78	5/16
BAPV-28	28	6	4	30	19	78	5/16
BAPV-6A	10.5	4	3	14	13	57	7/32
BAPV-8A	13.8	6	4	27	19	72	5/16
BAPV-10A	17.3	6	4	27	19	74	5/16
BAPV-15A	21.7	6	4	27	19	76	5/16
BAPV-20A	27.2	6	4	30	19	79	5/16

BAPV-R

Air Purge Valve (Thread End)



Part Number	Dimension						
	D	d	H	H1	L	Ball	T
BAPV-01R	4	3	14	13	51	7/32	PT 1/8
BAPV-02R	4	3	14	13	53	7/32	PT 1/4
BAPV-03R	6	4	19	13	54	7/32	PT 3/8
BAPV-04R	6	4	27	19	69	5/16	PT 1/2

* All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change
 * Dimensions given approximate length with tightened nut.

Material Comparison List

Part Number	Chemical Compositions(%)					Mechanical Properties			
	C	Si	Mn	P	S	Tensile strength (kg/mm ²)	Yield point (kg/mm ²)	Elongation (%)	Hardness
JIS G4051 S45C	0.42~0.48	0.15~0.35	0.60~0.90	0.030MAX.	0.035MAX.	58(MIN.)	35(MIN.)	20(MIN.)	167~229 Normalizing
AISI 1045 & SAE 1045	0.43~0.50	0.10~0.20	0.60~0.90	0.040MAX.	0.050MAX.	56	49	15	163
DIN 1652 C45	0.42~0.50	0.15~0.35	0.50~0.80	0.045MAX.	0.045MAX.	60(MIN.)	34(MIN.)	18(MIN.)	206(MIN.) Normalizing

Applicable Tube List

Selection from those listed below is recommended.

Tube	Thickness Tolerance	0.5 ±0.1	1.0 ±0.15	1.5 ±0.2	2.0 ±0.2	2.5 ±0.25	3.0 ±0.3	3.0 ±0.33	3.5 ±0.35	4.0 ±0.4	4.5 ±0.45	5.0 ±0.5	5.5 ±0.55	6.0 ±0.6	7.0 ±0.7	8.0	9.0
Outside Diameter	Tolerance																
4	±0.1	○	○														
6			○	○													
8			○	○													
10			○	○	○												
12			○	○		○											
15				○		○											
16				○	○		○										
18						○		○									
20					○	○			○								
22					○			○		○							
25							○				○						
28	±0.15					○			○			○					
30						○				○			○				
35								○			○			○			
38						○				○	○				○		
42	±0.2					○				○			○			○	
50								○			○			○			○

Note : 1. The area enclosed by thick line indicates the specified range of tube thickness against the outer diameters. (JOHS-102-1964)

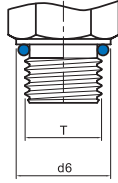
2. Without for some particular reasons, it is recommended to use thickness indicated by O mark.

Carbon Steel Tubing Japanese Standards

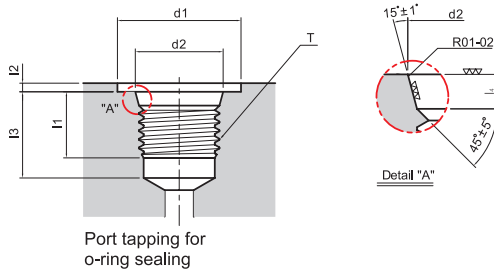
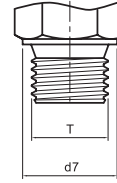
Relevant standards		JOHS hydraulic line service		JIS B2351 bite type fitting		JIS G3455 carbon steel pipes for high pressure service	
Quality characteristic		OST.1	OST.2	STPS.1	STPS.2	STS.40	STS.370
Chemical composition(%)	C	< 0.20	0.08~0.18	< 0.20	0.08~0.18	0 < 0.30	< 0.25
	Si	< 0.035	0.10~0.35	< 0.35	0.10~0.35	0.10~0.35	0.10~0.35
	Mn	0.25~0.60	0.30~0.60	0.25~0.60	0.30~0.60	0.30~1.40	0.30~1.10
	P	< 0.040	< 0.035	< 0.040	< 0.035	< 0.035	< 0.035
	S	< 0.040	< 0.035	< 0.040	< 0.035	< 0.035	< 0.035
	Cu		< 0.20		< 0.20		
Mechanical property	Tensile strength (kg/mm ²)	< 45	< 45	< 45	< 45	> 42	> 38
	Yield point(kg/mm ²)	> 18	> 20	> 18	> 18	> 25	> 22
	Elongation(%)	> 35	> 35	> 30	> 30	> 25	> 30
Dimensional tolerance	Outside diameter (mm)	±0.10 < 22 28~35±0.15 42~50 ±0.20	±0.10<22 28~35+0.15 42~50+0.2	±0.10 < 25 30~38±0.15	±0.10 < 25 30~38±0.15	Under 40mm : ±0.3mm 40mm or Over : ±0.8%	Under 40mm : ±0.3mm 40mm or Over : ±0.8%
	Wall thickness (mm)	0.5 ± 20% 1.0~1.5±15% 10% > 2.0	0.5 ± 20% 1.0~1.5±15% 10% > 2.0	1.0 ± 0.15 1.5 ± 0.20 10% > 2.0	1.0 ± 0.15 1.5 ± 0.20 10% > 2.0	Under 2mm : ±0.2mm 2mm or Over : ±10%	Under 2mm : ±0.2mm 2mm or Over : ±10%
	Length (mm)	< 6000 ⁺¹⁰ ₋₀ > 6000 ⁺¹⁵ ₋₀	< 6000 ⁺¹⁰ ₋₀ > 6000 ⁺¹⁵ ₋₀	< 6000 ⁺¹⁰ ₋₀ > 6000 ⁺¹⁵ ₋₀	< 6000 ⁺¹⁰ ₋₀ > 6000 ⁺¹⁵ ₋₀	greater than specified length	greater than specified length
Inspection and test	Eddy current flaw detection	○	○	○	○	○	○
	Water pressure test(kg/cm ²)	50	50	50	50	P = 200S t/D	P = 200S t/D

Male Stud Form and Sealing

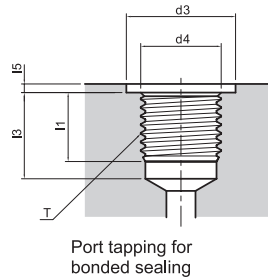
Male stud form A
sealing by o-ring
and bonded seal



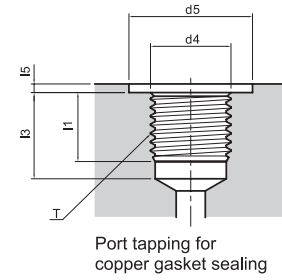
Male stud form B
sealing by copper
gasket.



Port tapping for
o-ring sealing



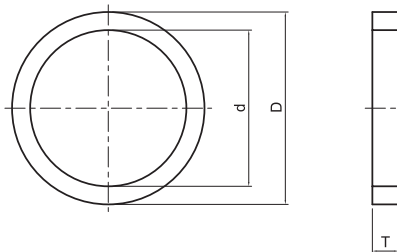
Port tapping for
bonded sealing



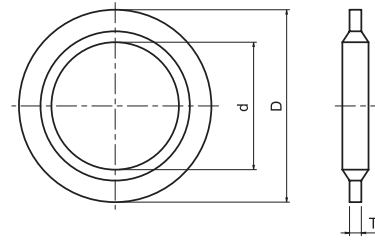
Port tapping for
copper gasket sealing

T	d1	d2 ^{+0.1 0}	d3 ^{+0.3 0}	Max d4	d5 ^{+0.3 0}	d6	d7	Min I1	Max I2	Min I3	I4 ^{+0.4 0}	I5	Suitable Seal		
													O-Ring	Bonded Seal	Copper Gasket
PF 1/8	18	11.6	17.4	9.7	18.2	14	14	10	1.0	15	2.0	1	P 8	BBS-01	BCG-01
PF 1/4	24	15.6	20.9	13.1	22.2	19	18	14	1.5	20	2.5	1	P 11	BBS-02	BCG-02
PF 3/8	28	18.6	24.4	16.6	26.2	22	21.5	14	2.0	20	2.5	1	P 14	BBS-03	BCG-03
PF 1/2	34	22.6	29.4	20.9	32.2	27	25.5	17	2.5	25	2.5	1	P 18	BBS-04	BCG-04
PF 3/4	45	29.8	34.9	26.4	38.2	36	31.5	19	2.5	27	3.5	1	P 24	BBS-06	BCG-06
PF 1	51	35.8	41.9	33.2	42.3	41	38	22	2.5	31	3.5	1	P 29	BBS-08	BCG-08
PF 1 1/4	62	44.8	50.9	41.9	53.3	50	48.5	24	2.5	33	3.5	1	P 38	BBS-10	BCG-10
PF 1 1/2	68	50.8	57.4	47.8	60.3	55	53.5	25	2.5	34	3.5	1	P 44	BBS-12	BCG-12
PF 2	76	67.2	69.4	59.6	72.3	75	66	29	2.5	38	3.5	1	P 56	BBS-16	BCG-16

Copper Gasket



Bonded Seal



Part Number	Male Thread	d	D	T
BCG-01	PF 1/8	10	18	2
BCG-02	PF 1/4	14	22	2
BCG-03	PF 3/8	17	26	2
BCG-04	PF 1/2	22	32	2
BCG-06	PF 3/4	27	38	2
BCG-08	PF 1	34	42	2
BCG-10	PF 1 1/4	43	53	2
BCG-12	PF 1 1/2	49	60	2
BCG-16	PF 2	61	72	2

Part Number	Male Thread	d	D	T
BBS-01	PF 1/8	9.9	17	2
BBS-02	PF 1/4	13.3	20.5	2
BBS-03	PF 3/8	16.8	24	2
BBS-04	PF 1/2	21.1	29	2
BBS-06	PF 3/4	26.6	34.5	2
BBS-08	PF 1	33.4	41.5	2.3
BBS-10	PF 1 1/4	42.1	50.5	2.3
BBS-12	PF 1 1/2	48.0	57	2.3
BBS-16	PF 2	59.8	69	2.3

• All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change
• Dimensions given approximate length with tightened nut.



Bite Type Tube Fittings (JIS B2351)