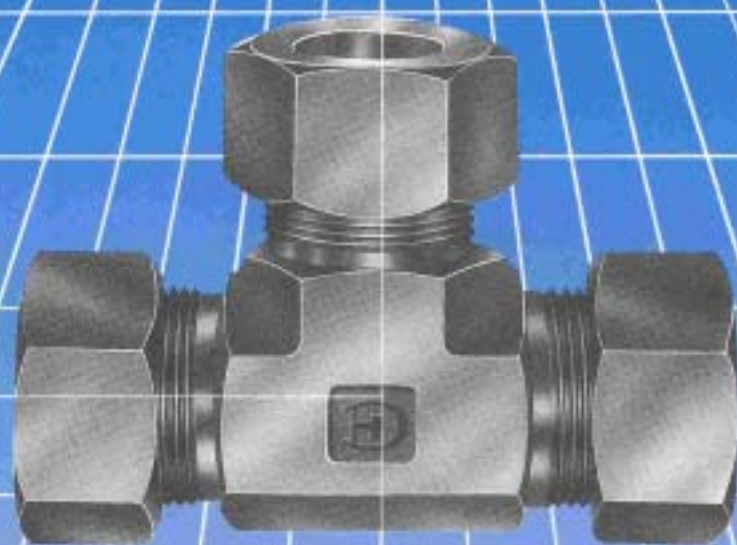


# Bite Type fittings

for JIS & KS



Catalog No. H-220 TF  
Jul. 2000















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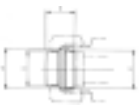
## INDEX

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	Straight Union <b>BU</b>	PAGE 9
	Union Elbow <b>BL</b>	10
	Union Tee <b>BT</b>	11
	Union Cross <b>BC</b>	12
	Straight Bulkhead Union <b>BBU</b>	13
	Bulkhead Elbow <b>BBL</b>	14
	Male Connector <b>BMC-R</b>	15
	Long Male Connector <b>BLMC</b>	16
	Male Connector (For Copper Gasket) <b>BMC-G</b>	17
	Male Connector(For O-Seal) <b>BOM</b>	18
	Male Elbow <b>BLM</b>	19
	Long Male Elbow <b>BLLM</b>	20

---

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	O-Seal Male Elbow <b>BOLM</b>	PAGE 21
	Stud Elbow <b>BSLM</b>	22
	Male Branch Tee <b>BBTM</b>	23
	Male Run Tee <b>BRTM</b>	24
	Female Connector <b>BFC</b>	25
	Bulkhead Female Connector <b>BBFC</b>	26
	Gauge Connector <b>BGC</b>	27
	Female Elbow <b>BLF</b>	28
	Female Branch Tee <b>BBTF</b>	29
	Female Run Tee <b>BRTF</b>	30
	Cap <b>BCA</b>	31
	Plug <b>BP</b>	32

---

	Jig <b>BJ</b>	PAGE 33		Welding Bulkhead Union <b>BBUW</b>	PAGE 44
	Nut <b>BN</b>	34		Adapter <b>BA-R</b>	45
	Sleeve <b>BS</b>	34		Adapter <b>BA-G</b>	46
	Hose Male Union <b>BHUM</b>	35		Reducer <b>BR</b>	47
	Hose Female Union <b>BHUF</b>	36		Adjustable Elbow <b>BLA</b>	48
	Hose Bulkhead Male Union <b>BHBM</b>	37		Adjustable Branch Tee <b>BETA</b>	49
	Hose Bulkhead Female Union <b>BHBF</b>	38		Adjustable Run Tee <b>BRTA</b>	50
	Hose Male Elbow <b>BHLM</b>	39		Air Purge Valve <b>BAP-1</b>	51
	Hose Female Elbow <b>BHLF</b>	40		Air Purge Valve <b>BAP-2</b>	52
	Hose Bulkhead Male Elbow <b>BHBLM</b>	41			
	Hose Bulkhead Female Elbow <b>BHBLF</b>	42			
	Welding Connector <b>BCW</b>	43			

## GENERAL INFORMATION FOR OUR BITE TYPE TUBE FITTINGS.

Hy-Lok Corp. bite type tube fittings are precision machined, under strict quality control.

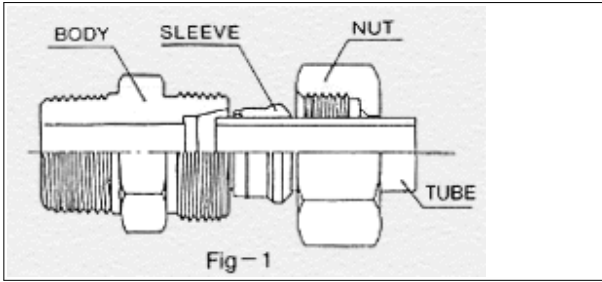
Hy-Lok Corp. bite type tube fittings are the flareless tube fitting with the visible bite.

This added safety feature makes Hy-Lok Corp. bite type the preferred fitting for non-flared tube connections.

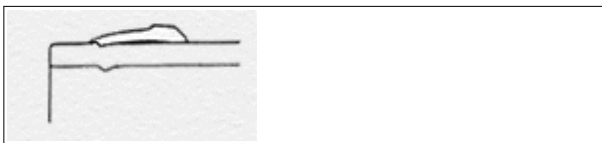
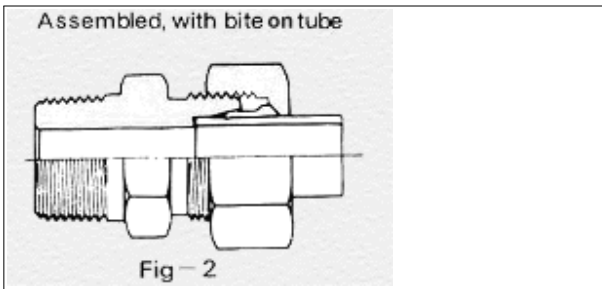
### How Do They Work?

The bite type flareless hydraulic tube fitting was designed to work on medium to heavy wall tubing which was hard to flare and has three parts :

1. body, 2. sleeve, 3. nut. (As shown in 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. (As shown in Fig-2 & 3)



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 slight reverse angle rather than a flat face.

### Material Specifications

	Steel	Stainless	Brass
Forged Bodies	S20C - S48C	SUS316, 304	C3771
Barstock Bodies	S20C - S48C	SUS316, 304	C3604
Cold Formed Nuts	S10C - S20C		
Barstock Nuts	S20C - S48C	SUS316, 304	C3604
Sleeves	S10C	SUS316, 304	C3604

### Applicable Pressure Rating

Our standard specifications of the fittings, which are shown in the catalog, are as below :

Fitting size (applicable Tube O.D.)	4 ~15	16 ~22	25 ~28	30 ~38	40 ~50
Rated Pressure (kgf/cm)	500	400	350	250	210
Max. working temperature (°C)	300				

The Rated Pressure for the fittings are determined based on the results of severe repetitively conducted tests and the design calculation ; precisely, the rated pressures are determined for each size of fittings while the safety factor of as much as 4 is taken into account in the design.

### Suitable Tubing Materials

Common material of tubing best suited for industrial service, and in accordance with various Industry Standards and recommendations of tubing manufactures, include :

**Steel** - Seamless, fully annealed, also welded and redrawn type suitable for bending. Maximum hardness, Rockwell B72.

The Applicable Tubes to the fittings entered in the catalog and which we recommend are follows :

Carbon Steel Precision Tubes for Hydraulic Line Service, JOHS-102, OST-2 (The Oil Hydraulic Association Standards) or Equivalent Refer to page 54 this catalog for the comparison chart between this Standard and other Standards for easy selection.

**Stainless Steel** -Seamless, fully annealed, and welded redrawn, fully annealed suitable for bending Maximum hardness, Rockwell B90.

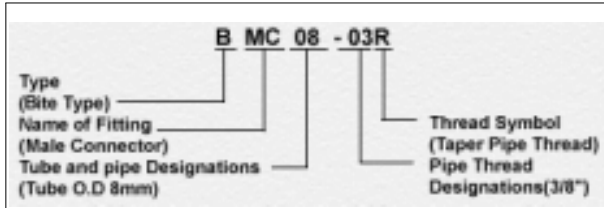
**Copper** - Seamless coils, soft or light annealed, maximum hardness Rockwell F55. Straight lengths, light drawn and general purpose, maximum hardness of 60 on Rockwell 30T scale.

## DESIGNATION PART NUMBER SYSTEM

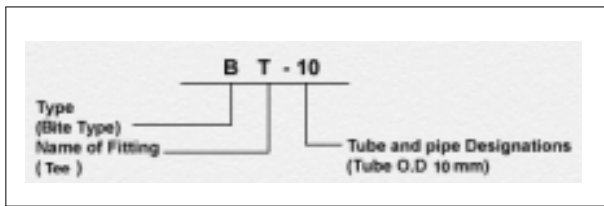
The symbols in the designation column on each page represent the shapes and sized of individual fittings.

### Part Number Example

Example : 1



Example : 2



### Tube and Pipe Designation

METRIC TUBE	Out dia.	4	6	8	10.....30.....50				
	Designation	04	06	08	10.....30.....50				
SCH. PIPE	Nominal dia.	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2
	Out dia.	10.5	13.8	17.3	21.7	27.2	34.0	42.7	48.6
	Designation	81	82	83	84	85	86	87	88

### 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

### Thread Symbols

R : Taper Pipe Threads (PT JIS B0203, ISO 7/1)

G : Parallel Pipe Threads (PF JIS B0202, ISO 228/1)

N : American National Standard Taper Pipe Threads(NPT ANSI B1.20.1)

### Material Indication System

Specify material by part number suffix letter :

• STEL = Carbon • S316 = 316Stainless • BRAS= Brass

Example : 1 BMC08 - 03R -STEL(Carbon Steel)

Example : 2 BT - 08 -S316(316Stainless Steel)  
(S 304 :304 Stainless Steel)

Example : 3 BU - 08 -BRAS(Brass)

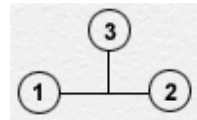
Part numbers listed are for complete fitting (body, nut and sleeve)

## HOW TO ORDER

1) When placing an order with us, be sure to specify the fittings with their symbols given in the designation column on each page

Example : BMC08 - 03R STEL

2) For the fittings with different sizes



(1) represents a diameter larger than diameter(2), which is aligned with (1),and (3) is a diameter other than (1) and (2).

3) For fittings other than those mentioned in the catalog specify the following details :

- Type of fluid to be applied
- Working Pressure
- Working Temperature
- Material (Carbon Steel, Stainless Steel, Brass.)
- Shape (Union, Tee, Elbow, etc.)
- Size (Up to 50mm tube O.D. in metric or inch)
- Any other conditions in tubing

4) Gaskets mentioned in the catalog are not normally furnished for the fittings. If gaskets are required, these designation symbols shall be used to order.

5) The fitting specifications are sometimes subject to change due to continuous improvements of quality and performance.

### Special Fitting

If there is any possibility of question as to the fitting desired, particularly for special fitting configurations, it is suggested that a sketch be submitted with the fitting order.

# Bite Type Tube Fittings

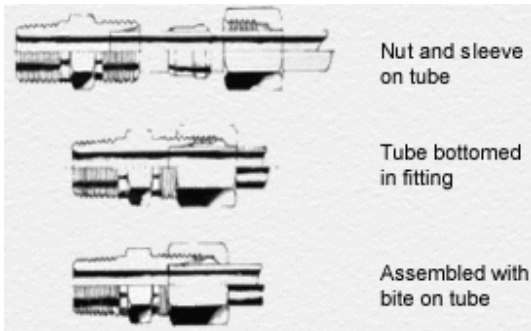
## ASSEMBLY INSTRUCTIONS

### Cutting The Tube

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

### Sleeve Placement

Slip nut and sleeve onto tubing. Be sure the long, straight end of the sleeve point toward tube end.



### Lubrication

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

### 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.

### Final Setting

Wrench nut down 1-1/4 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.

## REASSEMBLE FOR FINAL INSTALLATION

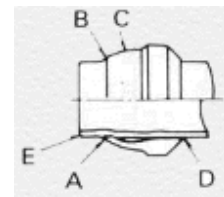
Insert the tube into the fitting body and wrench the nut down easily until a sudden increase in torque is evident. From this point turn the nut an additional 1/4 to 1/3 turn (1-1/2 to 2 wrench flats) to again spring sleeve into place to seal against the tubing and the fitting body.

## INSPECTION OF BITE

All Hy-Lok Corp. bite type tube fittings must be disassembled and inspected for proper make-up before final assembly. Detailed inspection procedures are outlined below and must be followed regardless of the method used to pre-set the sleeve to the tube.

## You Should Make Certain That

1. A ridge of metal has been raised above the tube surfaces, to a height of at least of the of the sleeve leading edge, completely around the tube (A).
2. While the leading edge of the sleeve may be coined flat (B) there is a 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 all around the end of the tube (E) that indicates the tube bottomed in the tool or fitting during pre-setting(unless evidence of this complete contact is visible the sleeve cannot be considered properly pre-set).



5. Avoid rotating the sleeve. Steel sleeve should not be capable of moving back and forth along tube, beyond the bite area (stainless steel sleeve will move than steel because of its spring back characteristics).

## TROUBLE SHOOTING

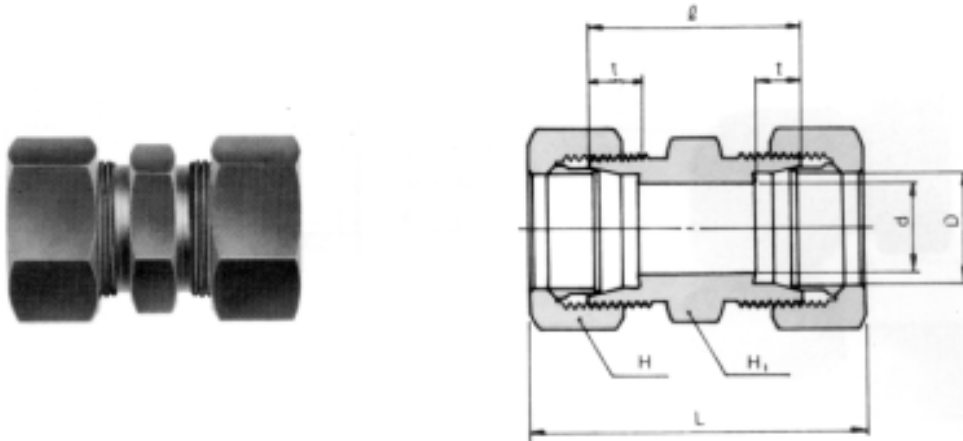
Problems with bite type hydraulic fittings are most often traced to faulty make up procedures. Look for the following;

1. **Tube not bottomed** - check for the indentation on the tube end or compare length from end of tube to the front end of the sleeve of a known good assembly to that of the assembly in question.
2. **Lack of bite** - Inspect for turned up ridge of material. A failure to achieve this ridge can be traced either to the fact that the nut was not tightened enough or that the tube was not bottomed against the stop which allowed the tube to travel forward with the sleeve
3. **Sleeve cocked on tube** - The sleeve is cocked on the tube when the tube assembly is off axis with that of 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.
4. **No bite** - If all of the above checks have been made and the sleeve still shows no sign of biting the tube, it may be that the tube is too hard.

## Bite Type Tube Fittings

### STRAIGHT UNION

#### BU



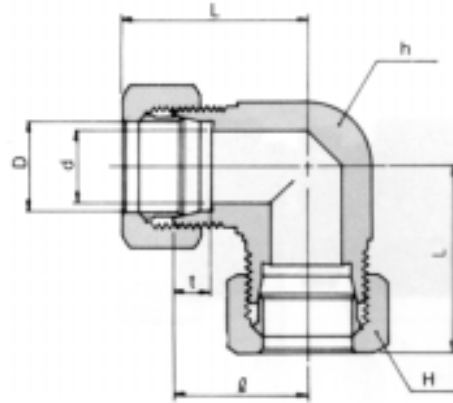
Designations	Tube O.D.		d	Width across flat		t	l	Approx. L
		D		H1	H			
BU - 04	4	2.5	12	12	6	20	35	
BU - 06	6	4	14	14	7	30	51	
BU - 08	8	6	17	17	7	31	52	
BU - 10	10	8	17	19	7	31	54	
BU - 12	12	10	19	22	7	31	54	
BU - 15	15	12	24	27	7.5	36	61	
BU - 16	16	13	27	30	7.5	36	61	
BU - 18	18	14	27	32	8	36	61	
BU - 20	20	17	30	36	8	38	63	
BU - 22	22	18	32	36	9	38	63	
BU - 25	25	20	36	41	10	39	66	
BU - 28	28	22	41	46	10	43	71	
BU - 30	30	25	41	46	10	43	72	
BU - 32	32	26	46	50	11	44	73	
BU - 35	35	28	46	55	11	44	79	
BU - 38	38	32	50	60	12	46	85	
BU - 40	40	32	55	60	12	55	94	
BU - 42	42	34	55	60	12	55	94	
BU - 50	50	40	65	75	12	60	103	
BU - 81	1/8	10.5	8	17	7	31	54	
BU - 82	1/4	13.8	11	22	7.5	36	60	
BU - 83	3/8	17.3	14	27	8	36	61	
BU - 84	1/2	21.7	18	32	9	38	63	
BU - 85	3/4	27.2	22	41	10	43	71	
BU - 86	1	34.0	28	46	11	44	79	
BU - 87	1 1/4	42.7	34	60	12	57	98	
BU - 88	1 1/2	48.6	40	65	12	60	103	

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## Bite Type Tube Fittings

### UNION ELBOW

#### BL



Designations	Tube O.D.		d	Width across flat		t	l	Approx. L
	D			h	H			
BL - 04	4		2.5	12	12	6	15	22.5
BL - 06	6		4	14	14	7	20	30.5
BL - 08	8		6	17	17	7	23	33.5
BL - 10	10		8	17	19	7	23	34.5
BL - 12	12		10	19	22	7	24	35.5
BL - 15	15		12	24	27	7.5	29	41.5
BL - 16	16		13	27	30	7.5	32	44.5
BL - 18	18		14	27	32	8	32	44.5
BL - 20	20		17	30	36	8	33	45.5
BL - 22	22		18	32	36	9	34	46.5
BL - 25	25		20	36	41	10	36	49.5
BL - 28	28		22	41	46	10	41	55
BL - 30	30		25	41	46	10	41	55.5
BL - 32	32		26	46	50	11	45	59.5
BL - 35	35		28	46	55	11	46	63.5
BL - 38	38		32	50	60	12	50	69.5
BL - 40	40		32	55	60	12	55	74.5
BL - 42	42		34	55	60	12	55	74.5
BL - 50	50		40	65	75	12	62	83.5
BL - 81	1/8	10.5	8	17	19	7	23	34.5
BL - 82	1/4	13.8	11	22	24	7.5	28	40
BL - 83	3/8	17.3	14	27	32	8	32	44.5
BL - 84	1/2	21.7	18	32	36	9	34	46.5
BL - 85	3/4	27.2	22	41	46	10	41	55
BL - 86	1	34.0	28	46	55	11	46	63.5
BL - 87	1 1/4	42.7	34	60	65	12	57	77.5
BL - 88	1 1/2	48.6	40	65	75	12	62	83.5

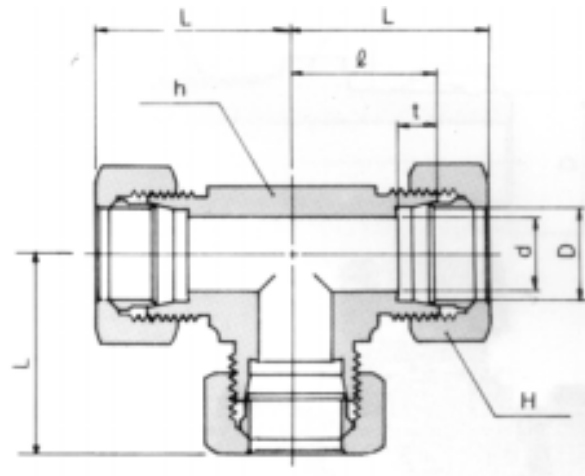
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## Bite Type Tube Fittings

### UNION TEE

#### BT



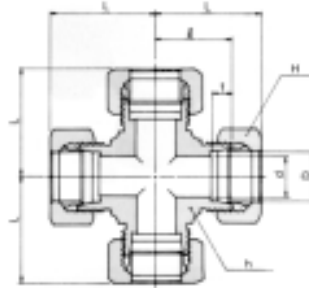
Designations	Tube O.D.		d	Width across flat		t	l	Approx. L
		D		h	H			
BT - 04	4		2.5	12	12	6	15	22.5
BT - 06	6		4	14	14	7	20	30.5
BT - 08	8		6	17	17	7	23	33.5
BT - 10	10		8	17	19	7	23	34.5
BT - 12	12		10	19	22	7	24	35.5
BT - 15	15		12	24	27	7.5	29	41.5
BT - 16	16		13	27	30	7.5	32	44.5
BT - 18	18		14	27	32	8	32	44.5
BT - 20	20		17	30	36	8	33	45.5
BT - 22	22		18	32	36	9	34	46.5
BT - 25	25		20	36	41	10	36	49.5
BT - 28	28		22	41	46	10	41	55
BT - 30	30		25	41	46	10	41	55.5
BT - 32	32		26	46	50	11	45	59.5
BT - 35	35		28	46	55	11	46	63.5
BT - 38	38		32	50	60	12	50	69.5
BT - 40	40		32	55	60	12	55	74.5
BT - 42	42		34	55	60	12	55	74.5
BT - 50	50		40	65	75	12	62	83.5
BT - 81	1/8	10.5	8	17	19	7	23	34.5
BT - 82	1/4	13.8	11	22	24	7.5	28	40
BT - 83	3/8	17.3	14	27	32	8	32	44.5
BT - 84	1/2	21.7	18	32	36	9	34	46.5
BT - 85	3/4	27.2	22	41	46	10	41	55
BT - 86	1	34.0	28	46	55	11	46	63.5
BT - 87	1 1/4	42.7	34	60	65	12	57	77.5
BT - 88	1 1/2	48.6	40	65	75	12	62	83.5

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## Bite Type Tube Fittings

### UNION CROSS

BC



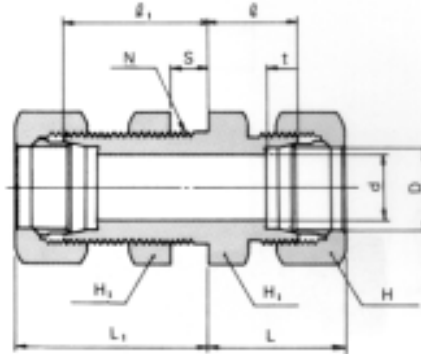
Designations	Tube O.D.		Width across flat		t	l	Approx. L
	D	d	h	H			
BT - 04	4	2.5	12	12	6	15	22.5
BT - 06	6	4	14	14	7	20	30.5
BT - 08	8	6	17	17	7	23	33.5
BT - 10	10	8	17	19	7	23	34.5
BT - 12	12	10	19	22	7	24	35.5
BT - 15	15	12	24	27	7.5	29	41.5
BT - 16	16	13	27	30	7.5	32	44.5
BT - 18	18	14	27	32	8	32	44.5
BT - 20	20	17	30	36	8	33	45.5
BT - 22	22	18	32	36	9	34	46.5
BT - 25	25	20	36	41	10	36	49.5
BT - 28	28	22	41	46	10	41	55
BT - 30	30	25	41	46	10	41	55.5
BT - 32	32	26	46	50	11	45	59.5
BT - 35	35	28	46	55	11	46	63.5
BT - 38	38	32	50	60	12	50	69.5
BT - 40	40	32	55	60	12	55	74.5
BT - 42	42	34	55	60	12	55	74.5
BT - 50	50	40	65	75	12	62	83.5
BT - 81	1/8	10.5	8	17	7	23	34.5
BT - 82	1/4	13.8	11	22	7.5	28	40
BT - 83	3/8	17.3	14	27	8	32	44.5
BT - 84	1/2	21.7	18	32	9	34	46.5
BT - 85	3/4	27.2	22	41	10	41	55
BT - 86	1	34.0	28	46	11	46	63.5
BT - 87	1 1/4	42.7	34	60	12	57	77.5
BT - 88	1 1/2	48.6	40	65	12	62	83.5

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## Bite Type Tube Fittings

### STRAIGHT BULKHEAD UNION

#### BBU



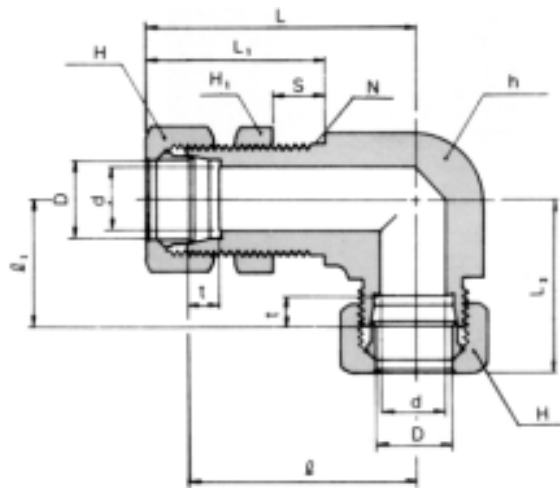
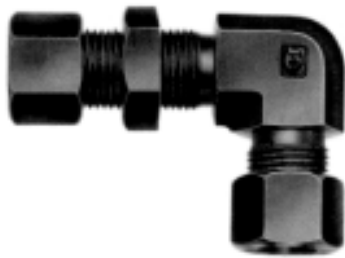
Designations	Tube O.D.		Width across flat		t	l1	l	Approx.		Panel hole Drill size N	Max. panel thickness S	
	D	d	H1	H				L	L1			
BBU - 04	4	2.5	14	12	6	25	14	32.5	21.5	10.5	13	
BBU - 06	6	4	17	14	7	32	19	42.5	29.5	12.5	13	
BBU - 08	8	6	19	17	7	32	19	42.5	29.5	14.5	13	
BBU - 10	10	8	22	19	7	32	20	43.5	31.5	16.5	13	
BBU - 12	12	10	24	22	7	32	20	43.5	31.5	18.5	13	
BBU - 15	15	12	27	27	7.5	37	22	49.5	34.5	22.5	15	
BBU - 16	16	13	30	30	7.5	37	24	49.5	36.5	24.5	15	
BBU - 18	18	14	32	32	8	39	24	51.5	36.5	26.5	15	
BBU - 20	20	17	32	36	8	39	24	51.5	36.5	28.5	15	
BBU - 22	22	18	36	36	9	39	25	51.5	37.5	30.5	15	
BBU - 25	25	20	41	41	10	39	25	52.5	38.5	35.5	15	
BBU - 28	28	22	46	46	10	41	28	55	42	38.5	15	
BBU - 30	30	25	46	46	10	41	28	55.5	42.5	40.5	15	
BBU - 32	32	26	50	50	11	43	30	57.5	44.5	42.5	15	
BBU - 35	35	28	50	50	11	43	30	60.5	47.5	45.5	15	
BBU - 38	38	32	55	60	12	45	31	64.5	50.5	48.5	15	
BBU - 40	40	32	60	60	12	50	37	69.5	56.5	52.5	15	
BBU - 50	50	40	70	75	12	50	43	71.5	64.5	64.5	15	
BBU - 81	1/8	10.5	8	22	19	7	32	20	43.5	31.5	16.5	13
BBU - 82	1/4	13.8	11	27	24	7.5	37	22	49	34	20.5	15
BBU - 83	3/8	17.3	14	32	32	8	39	24	51.5	36.5	26.5	15
BBU - 84	1/2	21.7	18	36	36	9	39	25	51.5	37.5	30.5	15
BBU - 85	3/4	27.2	22	46	46	10	41	28	55	42	38.5	15
BBU - 86	1	34.0	28	50	55	11	43	30	60.5	47.5	45.5	15
BBU - 87	1 1/4	42.7	34	65	65	12	50	40	70.5	60.5	56.5	15
BBU - 88	1 1/2	48.6	40	70	75	12	50	43	71.5	64.5	64.5	15

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## Bite Type Tube Fittings

### BULKHEAD ELBOW

#### BBL



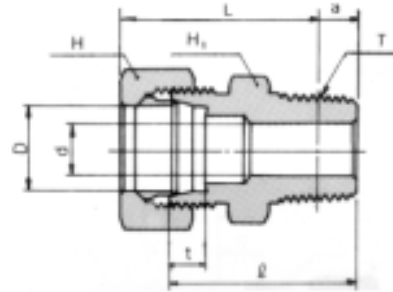
Designations	Tube O.D	d	Width across flat			t	l1	l	Approx.			Panel Hole Drill size N	Max Panel thick ness S
	D		h	H1	H				L1	L2	L		
BBL - 06	6	4	17	17	14	7	23	45	42.5	33.5	55.5	12.5	13
BBL - 08	8	6	19	19	17	7	24	46	42.5	34.5	56.5	14.5	13
BBL - 10	10	8	22	22	19	7	26	48	43.5	37.5	59.5	16.5	13
BBL - 12	12	10	24	24	22	7	27	49	43.5	38.5	60.5	18.5	13
BBL - 25	15	12	27	27	27	7.5	31	57	49.5	43.5	69.5	22.5	15
BBL - 16	16	13	30	30	30	7.5	33	59	49.5	45.5	71.5	24.5	15
BBL - 18	18	14	32	32	32	8	33	63	51.5	45.5	75.5	26.5	15
BBL - 20	20	17	32	32	36	8	33	65	51.5	45.5	77.5	28.5	15
BBL - 22	22	18	36	36	36	9	36	65	51.5	48.5	77.5	30.5	15
BBL - 25	25	20	41	41	41	10	39	68	52.5	52.5	81.5	35.5	15
BBL - 28	28	22	41	46	46	10	41	70	55	55	84	38.5	1515
BBL - 30	30	25	46	46	46	10	46	74	55.5	60.5	88.5	40.5	

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## Bite Type Tube Fittings

### MALE CONNECTOR

#### BMC-R



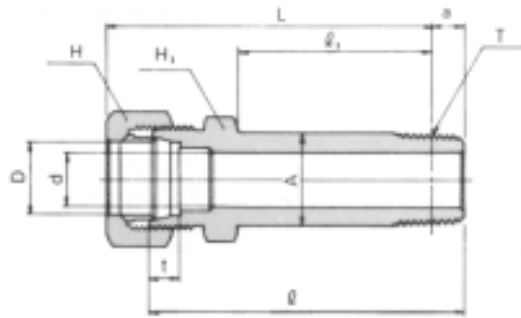
Designations	Tube O.D.		(PT)T	d	Basic gauge length a	Width across flat		t	l	Approx. L
	D					H1	H			
BMC 04 - 01R	4		1/8	2.5	3.97	12	12	6	22	25.5
BMC 06 - 01R	6		1/8	4	3.97	14	14	7	28	34.5
BMC 06 - 02R	6		1/4	4	6.01	17	14	7	33	37.5
BMC 08 - 01R	8		1/8	4	3.97	17	17	7	29	35.5
BMC 08 - 02R	8		1/4	6	6.01	17	17	7	33	37.5
BMC 10 - 02R	10		1/4	7	6.01	17	19	7	33	38.5
BMC 10 - 03R	10		3/8	8	6.35	19	19	7	34	39
BMC 10 - 04R	10		1/2	8	8.16	22	19	7	39	42.5
BMC 12 - 02R	12		1/4	7	6.01	19	22	7	33	38.5
BMC 12 - 03R	12		3/8	9	6.35	19	22	7	34	39
BMC 12 - 04R	12		1/2	10	8.16	24	22	7	39	42.5
BMC 15 - 03R	15		3/8	9	6.35	24	27	7.5	37	43
BMC 15 - 04R	15		1/2	12	8.16	24	27	7.5	41	45.5
BMC 16 - 03R	16		3/8	9	6.35	27	30	7.5	37	43
BMC 16 - 04R	16		1/2	12	8.16	27	30	7.5	41	45.5
BMC 18 - 03R	18		3/8	9	6.35	27	32	8	37	43
BMC 18 - 04R	18		1/2	12	8.16	27	32	8	41	45.5
BMC 20 - 04R	20		1/2	12	8.16	30	36	8	43	47.5
BMC 20 - 06R	20		3/4	16	9.53	30	36	8	45	48
BMC 22 - 04R	22		1/2	12	8.16	32	36	9	43	47.5
BMC 22 - 06R	22		3/4	16	9.53	32	36	9	45	48
BMC 25 - 06R	25		3/4	16	9.53	36	41	10	46	50
BMC 25 - 08R	25		1	20	10.39	36	41	10	49	52
BMC 28 - 06R	28		3/4	16	9.53	41	46	10	48	52.5
BMC 28 - 08R	28		1	22	10.39	41	46	10	51	54.5
BMC 30 - 08R	30		1	22	10.39	41	46	10	51	55
BMC 30 - 10R	30		1 1/4	25	12.70	46	46	10	55	57
BMC 32 - 10R	32		1 1/4	26	12.70	46	50	11	55	57
BMC 35 - 10R	35		1 1/4	28	12.70	46	55	11	55	60
BMC 38 - 12R	38		1 1/2	32	12.70	50	60	12	57	64
BMC 40 - 12R	40		1 1/2	32	12.70	55	60	12	62	69
BMC 42 - 12R	42		1 1/2	34	12.70	55	60	12	62	69
BMC 50 - 16R	50		2	40	15.88	65	75	12	71	76.5
BMC 81 - 01R	1/8	10.5	1/8	4	3.97	17	19	7	29	36.5
BMC 81 - 02R	1/8	10.5	1/4	7	6.01	17	19	7	33	38.5
BMC 82 - 02R	1/4	13.8	1/4	7	6.01	22	24	7.5	36	42
BMC 82 - 03R	1/4	13.8	3/8	9	6.35	22	24	7.5	37	42.5
BMC 83 - 03R	3/8	17.3	3/8	9	6.35	27	32	8	37	43
BMC 83 - 04R	3/8	17.3	1/2	12	8.16	27	32	8	41	45.5
BMC 84 - 04R	1/2	21.7	1/2	12	8.16	32	36	9	43	47.5
BMC 84 - 06R	1/2	21.7	3/4	16	9.53	32	36	9	45	48
BMC 85 - 06R	3/4	27.2	3/4	16	9.53	41	46	10	48	52.5
BMC 85 - 08R	3/4	27.2	1	22	10.39	41	46	10	51	54.5
BMC 86 - 08R	1	34.0	1	22	10.39	46	55	11	52	59
BMC 86 - 10R	1	34.0	1 1/4	28	12.70	46	55	11	55	60
BMC 87 - 10R	1 1/4	42.7	1 1/4	31	12.70	60	65	12	64	72
BMC 87 - 12R	1 1/4	42.7	1 1/2	34	12.70	60	65	12	64	72
BMC 88 - 12R	1 1/2	48.6	1 1/2	36	12.70	65	75	12	67	76
BMC 88 - 16R	1 1/2	48.6	2	40	15.88	65	75	12	71	76.5

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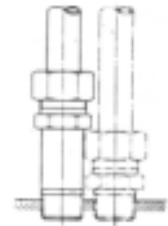
## Bite Type Tube Fittings

### LONG MALE CONNECTOR

#### BLMC



Applied View



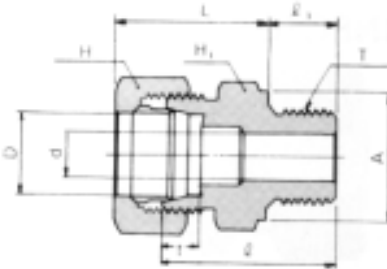
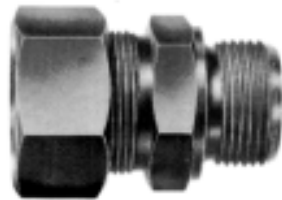
Designations	Tube O.D.	(PT)	d	Basic gauge length a	Width across flat		t	A	l	1	Approx. L
	D	T			H1	H					
BLMC 04 - 01R	4	1/8	2.5	3.97	12	12	6	10.5	46	30	49.5
BLMC 06 - 01R	6	1/8	4	3.97	14	14	7	10.5	63	41	69.5
BLMC 08 - 02R	8	1/4	6	6.01	17	17	7	14	70	45	74.5
BLMC 10 - 02R	10	1/4	7	6.01	17	19	7	14	71	46	76.5
BLMC 10 - 03R	10	3/8	8	6.35	19	19	7	17.5	72	46.5	77
BLMC 12 - 02R	12	1/4	7	6.01	19	22	7	14	71	46	76.5
BLMC 12 - 03R	12	3/8	9	6.35	19	22	7	17.5	72	46.5	77
BLMC 15 - 03R	15	3/8	9	6.35	24	27	7.5	17.5	81	52.5	87
BLMC 15 - 04R	15	1/2	12	8.16	24	27	7.5	22	86	56	90.5
BLMC 16 - 04R	16	1/2	12	8.16	27	30	7.5	22	86	56	90.5
BLMC 18 - 04R	18	1/2	12	8.16	27	32	8	22	86	56	90.5
BLMC 20 - 06R	20	3/4	16	9.53	30	36	8	27.5	92	58.5	95
BLMC 22 - 06R	22	3/4	16	9.53	32	36	9	27.5	93	59.5	96
BLMC 25 - 08R	25	1	20	10.39	36	41	10	34	99	63.5	102
BLMC 28 - 08R	28	1	22	10.39	41	46	10	34	104	66.5	107.5
BLMC 30 - 10R	30	1 1/4	25	12.70	46	46	10	42.5	109	68.5	111
BLMC 32 - 10R	32	1 1/4	26	12.70	46	50	11	42.5	110	69.5	112
BLMC 81 - 02R	1/8	10.5	1/4	7	6.01	17	19	7	14	71	46
BLMC 82 - 03R	1/4	13.8	3/8	9	6.35	22	24	7.5	17.5	81	52.5
BLMC 83 - 03R	3/8	17.3	3/8	9	6.35	27	32	8	17.5	81	52.5
BLMC 83 - 04R	3/8	17.3	1/2	12	8.16	27	32	8	22	86	56
BLMC 84 - 06R	1/2	21.7	3/4	16	9.53	32	36	9	27.5	93	59.5
BLMC 85 - 08R	3/4	27.2	1	22	10.39	41	46	10	34	104	66.5

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## Bite Type Tube Fittings

### MALE CONNECTOR (FOR COPPER GASKET)

#### BMC-G



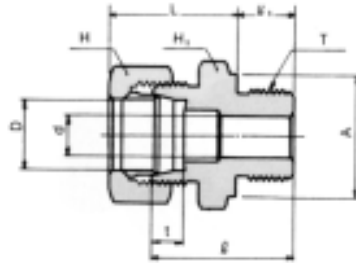
Designations	Tube O.D.	(PF) T	d	Width across flat		t	A	I1	I	Approx. L
	D			H1	H1					
BMC 04 - 01G	4	1/8	2.5	14	12	6	14	8	23	22.5
BMC 06 - 01G	6	1/8	4	14	14	7	14	8	28	30.5
BMC 06 - 02G	6	1/4	4	19	14	7	18	12	33	31.5
BMC 08 - 01G	8	1/8	4	17	17	7	14	8	28	30.5
BMC 08 - 02G	8	1/4	6	19	17	7	18	12	33	31.5
BMC 10 - 02G	10	1/4	6	19	19	7	18	12	33	32.5
BMC 10 - 03G	10	3/8	8	22	19	7	21.5	12	34	33.5
BMC 12 - 02G	12	1/4	6	19	22	7	18	12	33	32.5
BMC 12 - 03G	12	3/8	8	22	22	7	21.5	12	34	33.5
BMC 12 - 04G	12	1/2	10	27	22	7	25.5	14	39	36.5
BMC 15 - 03G	15	3/8	8	24	27	7.5	21.5	12	37	37.5
BMC 15 - 04G	15	1/2	12	27	27	7.5	25.5	14	41	39.5
BMC 16 - 04G	16	1/2	12	27	30	7.5	25.5	14	41	39.5
BMC 18 - 04G	18	1/2	12	27	32	8	25.5	14	41	39.5
BMC 20 - 06G	20	3/4	16	32	36	8	31.5	16	46	42.5
BMC 22 - 04G	22	1/2	12	32	36	9	25.5	14	43	41.5
BMC 22 - 06G	22	3/4	16	32	36	9	31.5	16	46	42.5
BMC 25 - 06G	25	3/4	16	36	41	10	31.5	16	46	43.5
BMC 25 - 08G	25	1	20	41	41	10	38	18	50	45.5
BMC 28 - 08G	28	1	22	41	46	10	38	18	52	48
BMC 30 - 08G	30	1	22	41	46	10	38	18	52	48.5
BMC 30 - 10G	30	1 1/4	25	50	46	10	48.5	20	57	51.5
BMC 32 - 10G	32	1 1/4	26	50	50	11	48.5	20	57	51.5
BMC 35 - 10G	35	1 1/4	28	50	55	11	48.5	20	57	54.5
BMC 38 - 12G	38	1 1/2	32	55	60	12	53.5	21	58	56.5
BMC 40 - 12G	40	1 1/2	32	55	60	12	53.5	21	62	60.5
BMC 42 - 12G	42	1 1/2	34	55	60	12	53.5	21	62	60.5
BMC 50 - 16G	50	2	40	70	75	12	66	25	73	69.5
BMC 81 - 01G	1/8	10.5	1/8	4	17	19	7	14	8	29
BMC 81 - 02G	1/8	10.5	1/4	6	19	19	7	18	12	33
BMC 82 - 02G	1/4	13.8	1/4	6	22	24	7.5	18	12	36
BMC 82 - 03G	1/4	13.8	3/8	8	22	24	7.5	21.5	12	36
BMC 83 - 03G	3/8	17.3	3/8	8	27	32	8	21.5	12	38
BMC 83 - 04G	3/8	17.3	1/2	12	27	32	8	25.5	14	41
BMC 84 - 04G	1/2	21.7	1/2	12	32	36	9	25.5	14	43
BMC 84 - 06G	1/2	21.7	3/4	16	32	36	9	31.5	16	46
BMC 85 - 06G	3/4	27.2	3/4	16	41	46	10	31.5	16	50
BMC 85 - 08G	3/4	27.2	1	22	41	46	10	38	18	52
BMC 86 - 08G	1	34.0	1	22	46	55	11	38	18	54
BMC 86 - 10G	1	34.0	1 1/4	28	50	55	11	48.5	20	57
BMC 87 - 10G	1 1/4	42.7	1 1/4	31	60	65	12	48.5	20	63
BMC 87 - 12G	1 1/4	42.7	1 1/2	34	60	65	12	53.5	21	64
BMC 88 - 12G	1 1/2	48.6	1 1/2	36	65	75	12	53.5	21	65
BMC 88 - 16G	1 1/2	48.6	2	40	70	75	12	66	25	73

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## Bite Type Tube Fittings

### MALE CONNECTOR(FOR O - SEAL)

#### BOM



Designations	Tube O.D.		(PF) T	d	Width across flat		t	A	l1	l	Approx. L
	D				H1	H1					
BOM 04 - 01G	4		1/8	2.5	14	12	6	14	8	23	22.5
BOM 06 - 01G	6		1/8	4	14	14	7	14	8	28	30.5
BOM 06 - 02G	6		1/4	4	19	14	7	19	12	33	31.5
BOM 08 - 01G	8		1/8	4	17	17	7	14	8	28	30.5
BOM 08 - 02G	8		1/4	6	19	17	7	19	12	33	31.5
BOM 10 - 02G	10		1/4	6	19	19	7	19	12	33	32.5
BOM 10 - 03G	10		3/8	8	22	19	7	22	12	34	33.5
BOM 12 - 02G	12		1/4	6	19	22	7	19	12	33	32.5
BOM 12 - 03G	12		3/8	8	22	22	7	22	12	34	33.5
BOM 12 - 04G	12		1/2	10	27	22	7	27	14	39	36.5
BOM 15 - 03G	15		3/8	8	24	27	7.5	22	12	37	37.5
BOM 15 - 04G	15		1/2	12	27	27	7.5	27	14	41	39.5
BOM 16 - 04G	16		1/2	12	27	30	7.5	27	14	41	39.5
BOM 18 - 04G	18		1/2	12	27	32	8	27	14	41	39.5
BOM 20 - 06G	20		3/4	16	36	36	8	36	16	46	42.5
BOM 22 - 04G	22		1/2	12	32	36	9	27	14	43	41.5
BOM 22 - 06G	22		3/4	16	32	36	9	36	16	46	42.5
BOM 25 - 06G	25		3/4	16	36	41	10	36	16	46	43.5
BOM 25 - 08G	25	1	1	20	41	41	10	41	18	50	45.5
BOM 28 - 08G	28		1	22	41	46	10	41	18	52	48
BOM 30 - 08G	30		1	22	41	46	10	41	18	52	48.5
BOM 30 - 10G	30		1 1/4	25	50	46	10	50	20	57	51.5
BOM 32 - 10G	32		1 1/4	26	50	50	11	50	20	57	51.5
BOM 35 - 10G	35		1 1/4	28	50	55	11	50	20	57	54.5
BOM 38 - 12G	38		1 1/2	32	55	60	12	55	21	58	56.5
BOM 40 - 12G	40		1 1/2	32	55	60	12	55	21	62	60.5
BOM 42 - 12G	42		1 1/2	34	55	60	12	55	21	62	60.5
BOM 50 - 16G	50		2	40	70	75	12	75	25	73	69.5
BOM 81 - 01G	1/8	10.5	1/8	4	17	19	7	14	8	29	32.5
BOM 81 - 02G	1/8	10.5	1/4	6	19	19	7	19	12	33	32.5
BOM 82 - 02G	1/4	13.8	1/4	6	22	24	7.5	19	12	36	36
BOM 82 - 03G	1/4	13.8	3/8	8	22	24	7.5	22	12	36	36
BOM 83 - 03G	3/8	17.3	3/8	8	27	32	8	22	12	38	38.5
BOM 83 - 04G	3/8	17.3	1/2	12	27	32	8	27	14	41	39.5
BOM 84 - 04G	1/2	21.7	1/2	12	32	36	9	27	14	43	41.5
BOM 84 - 06G	1/2	21.7	3/4	16	36	36	9	36	16	46	42.5
BOM 85 - 06G	3/4	27.2	3/4	16	41	46	10	36	16	50	48
BOM 85 - 08G	3/4	27.2	1	22	41	46	10	41	18	52	48
BOM 86 - 08G	1	34.0	1	22	46	55	11	41	18	54	53.5
BOM 86 - 10G	1	34.0	1 1/4	28	50	55	11	50	20	57	54.5
BOM 87 - 10G	1 1/4	42.7	1 1/4	31	60	65	12	50	20	63	63.5
BOM 87 - 12G	1 1/4	42.7	1 1/2	34	60	65	12	55	21	64	63.5
BOM 88 - 12G	1 1/2	48.6	1 1/2	36	65	75	12	55	21	65	65.5
BOM 88 - 16G	1 1/2	48.6	2	40	75	75	12	75	25	73	69.5

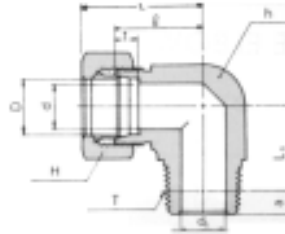
All dimensions are in millimeters. Dimensions are for reference only, subject to change.



## Bite Type Tube Fittings

### MALE ELBOW

#### BLM



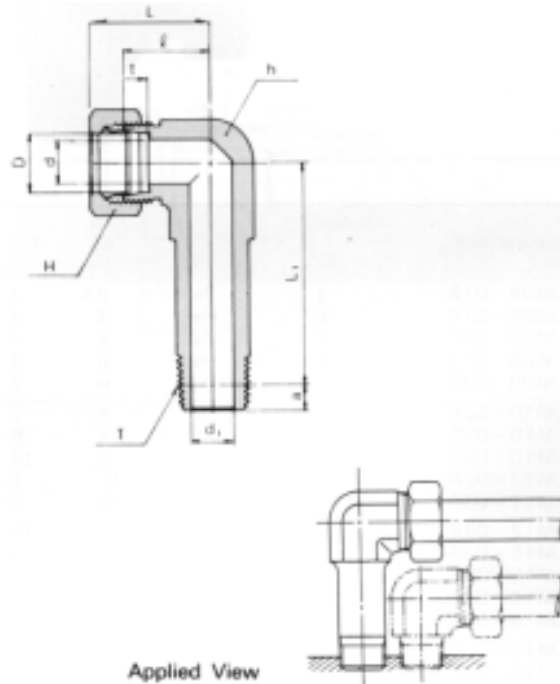
Designations	Tube O.D.	(PF)	d	d1	Basic gauge length a	Width across flat		t	l	Approx.		
	D	T				h	H			L	L1	
BLM 04 - 01R	4	1/8	2.5	4	3.97	12	12	6	15	22.5	13	
BLM 06 - 01R	6	1/8	4	4	9.97	14	14	7	20	30.5	14	
BLM 06 - 02R	6	1/4	4	7	6.01	17	14	7	23	33.5	17	
BLM 08 - 01R	8	1/8	6	4	3.97	17	17	7	23	33.5	16	
BLM 08 - 02R	8	1/4	6	7	6.01	17	17	7	23	33.5	18	
BLM 10 - 02R	10	1/4	8	7	6.01	17	19	7	23	34.5	19	
BLM 10 - 03R	10	3/8	8	9	6.35	19	19	7	24	35.5	19.5	
BLM 10 - 04R	10	1/2	8	12	8.16	22	19	7	29	40.5	26	
BLM 12 - 02R	12	1/4	10	7	6.01	19	22	7	24	35.5	20	
BLM 12 - 03R	12	3/8	10	9	6.35	19	22	7	24	35.5	20.5	
BLM 12 - 04R	12	1/2	10	12	8.16	24	22	7	29	40.5	26	
BLM 15 - 03R	15	3/8	12	9	6.35	24	27	7.5	29	41.5	23.5	
BLM 15 - 04R	15	1/2	12	12	8.16	24	27	7.5	29	41.5	26	
BLM 16 - 03R	16	3/8	13	9	6.35	27	30	7.5	32	44.5	25.5	
BLM 16 - 04R	16	1/2	13	12	8.16	27	30	7.5	32	44.5	27	
BLM 18 - 03R	18	3/8	14	9	6.35	27	32	8	32	44.5	27.5	
BLM 18 - 04R	18	1/2	14	12	8.16	27	32	8	32	44.5	30	
BLM 20 - 04R	20	1/2	17	12	8.16	30	36	8	33	45.5	32	
BLM 20 - 06R	20	3/4	17	16	9.53	30	36	8	33	45.5	30.5	
BLM 22 - 04R	22	1/2	18	12	8.16	32	36	9	34	46.5	32	
BLM 22 - 06R	22	3/4	18	16	9.53	32	36	9	34	46.5	32.5	
BLM 25 - 06R	25	3/4	20	16	9.53	36	41	10	36	49.5	33.5	
BLM 25 - 08R	25	1	20	22	10.39	36	41	10	36	49.5	35.5	
BLM 28 - 06R	28	3/4	22	16	9.53	41	46	10	41	55	37.5	
BLM 28 - 08R	28	1	22	22	10.39	41	46	10	41	55	39.5	
BLM 30 - 08R	30	1	25	22	10.39	41	46	10	41	55.5	39.5	
BLM 30 - 10R	30	1 1/4	25	31	12.70	46	46	10	46	60.5	42.5	
BLM 32 - 10R	32	1 1/4	26	31	12.70	46	50	11	46	60.5	43.5	
BLM 35 - 10R	35	1 1/4	28	31	12.70	46	55	11	46	63.5	45.5	
BLM 38 - 12R	38	1 1/2	32	36	12.70	50	60	12	50	69.5	48.5	
BLM 40 - 12R	40	1 1/2	32	36	12.70	55	60	12	55	74.5	49.5	
BLM 42 - 12R	42	1 1/2	34	36	12.70	55	60	12	55	74.5	49.5	
BLM 50 - 16R	50	2	40	46	15.88	65	75	12	62	83.5	58	
BLM 81 - 01R	1/8	10.5	1/8	8	4	3.97	17	19	7	23	34.5	17
BLM 81 - 02R	1/8	10.5	1/4	8	7	6.01	17	19	7	23	34.5	19
BLM 82 - 02R	1/4	13.8	1/4	11	7	6.01	22	24	7.5	28	40	22
BLM 82 - 03R	1/4	13.8	3/8	11	9	6.35	22	24	7.5	28	40	22.5
BLM 83 - 03R	3/8	17.3	3/8	14	9	6.35	27	32	8	32	44.5	27.5
BLM 83 - 04R	3/8	17.3	1/2	14	12	8.16	27	32	8	32	44.5	30
BLM 84 - 04R	1/2	21.7	1/2	18	12	8.16	32	36	9	34	46.5	32
BLM 84 - 06R	1/2	21.7	3/4	18	16	9.53	32	36	9	34	46.5	32.5
BLM 85 - 06R	3/4	27.2	3/4	22	16	9.53	41	46	10	41	55	37.5
BLM 85 - 08R	3/4	27.2	1	22	22	10.39	41	46	10	41	55	39.5
BLM 86 - 08R	1	34.0	1	28	22	10.39	46	55	11	46	63.5	44.5
BLM 86 - 10R	1	34.0	1 1/4	28	31	12.70	46	55	11	46	63.5	45.5
BLM 87 - 10R	1 1/4	42.7	1 1/4	34	31	12.70	60	65	12	57	77.5	51.5
BLM 87 - 12R	1 1/4	42.7	1 1/2	34	36	12.70	60	75	12	57	77.5	51.5
BLM 88 - 12R	1 1/2	48.6	1 1/2	40	36	12.70	65	75	12	62	83.5	57.5
BLM 88 - 16R	1 1/2	48.6	2	40	46	15.88	65	75	12	62	83.5	58

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## Bite Type Tube Fittings

### LONG MALE ELBOW

#### BLLM



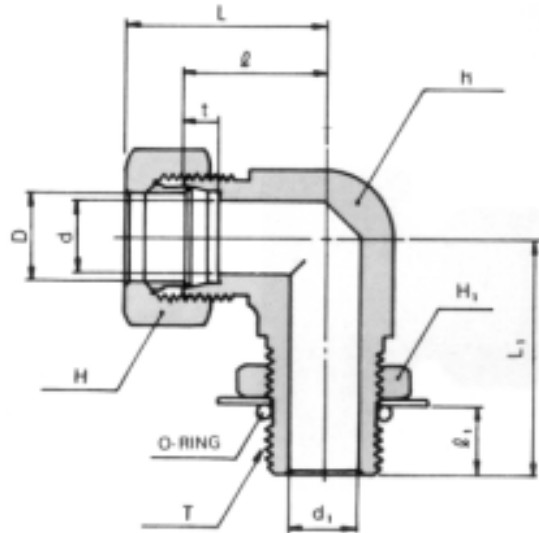
Designations	Tube O.D.	(PT) T	d	d1	Basic gauge length a	Width across flat		t	l	Approx.	
	D					h	H			L	L1
BLLM 06 - 01R	6	1/8	4	4	3.97	14	14	7	20	30.5	36
BLLM 08 - 02R	8	1/4	6	7	6.01	17	17	7	23	33.5	43
BLLM 10 - 02R	10	1/4	8	7	6.01	17	19	7	23	35.5	46
BLLM 12 - 02R	12	1/4	10	7	6.01	19	22	7	24	35.5	52
BLLM 12 - 03R	12	3/8	10	9	6.35	19	22	7	24	35.5	53
BLLM 15 - 03R	15	3/8	12	9	6.35	24	27	7.5	29	41.5	61.5
BLLM 15 - 04R	15	1/2	12	12	8.16	24	27	7.5	29	41.5	67
BLLM 16 - 04R	16	1/2	13	12	8.16	27	30	7.5	32	44.5	70
BLLM 18 - 04R	18	1/2	14	12	8.16	27	32	8	32	44.5	77
BLLM 20 - 06R	20	3/4	17	16	9.53	30	36	8	33	45.5	82.5
BLLM 22 - 06R	22	3/4	18	16	9.53	32	36	9	34	46.5	83.5
BLLM 25 - 06R	25	3/4	20	16	9.53	36	41	10	36	49.5	90.5
BLLM 25 - 08R	25	1	20	22	10.39	36	41	10	36	49.5	91.5
BLLM 28 - 08R	28	1	22	22	10.39	41	46	10	41	55	104.5
BLLM 30 - 10R	30	1 1/4	25	31	12.70	46	46	10	46	60.5	104.5
BLLM 32 - 10R	32	1 1/4	26	31	12.70	46	50	11	46	60.5	104.5
BLLM 35 - 10R	35	1 1/4	28	31	12.70	46	55	11	46	63.5	121.5

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## Bite Type Tube Fittings

### O - SEAL MALE ELBOW

#### BOLM



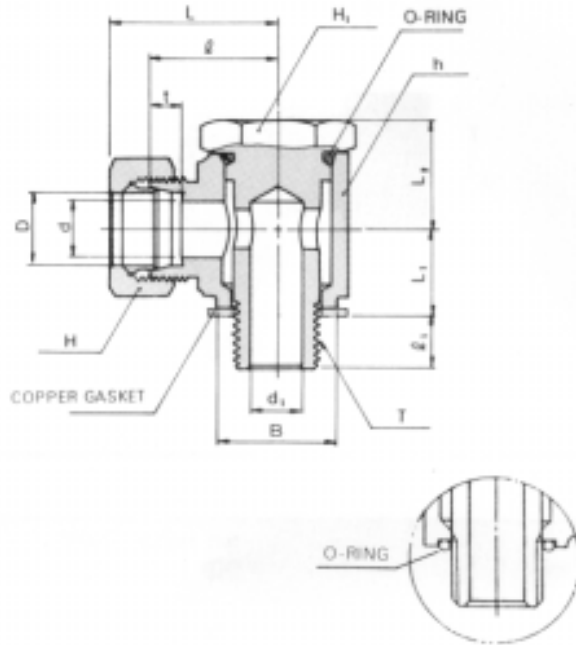
Designations	Tube O.D.	(PT) T	d	d1	Width across flat			t	l1	l	Approx	
	D				h	H1	H				L1	L
BOLM 06 - 01G	6	1/8	4	4	14	14	14	7	10	20	30	30.5
BOLM 08 - 02G	8	1/4	6	6	17	19	17	7	12	23	34	33.5
BOLM 10 - 02G	10	1/4	8	6	17	19	19	7	12	23	35	34.5
BOLM 12 - 02G	12	1/4	10	6	19	19	22	7	12	24	36	35.5
BOLM 12 - 03G	12	3/8	10	9	19	22	22	7	12	24	36	35.5
BOLM 12 - 04G	12	1/2	10	12	24	27	22	7	16	24	46	35.5
BOLM 15 - 03G	15	3/8	12	9	24	22	27	7.5	12	29	40	41.5
BOLM 15 - 04G	15	1/2	12	12	24	27	27	7.5	16	29	46	41.5
BOLM 16 - 04G	16	1/2	13	12	24	27	30	7.5	16	32	46	44.5
BOLM 18 - 04G	18	1/2	14	12	30	27	32	8	16	32	52	44.5
BOLM 20 - 06G	20	3/4	17	16	30	36	36	8	17	33	52	45.5
BOLM 22 - 06G	22	3/4	18	16	32	36	36	9	17	34	52	46.5
BOLM 25 - 06G	25	3/4	20	16	36	36	41	10	17	36	60	49.5
BOLM 25 - 08G	25	1	20	22	36	41	41	10	21	36	62	49.5
BOLM 28 - 08G	28	1	22	22	41	41	46	10	21	41	62	55
BOLM 30 - 08G	30	1	25	22	41	41	46	10	21	41	66	55.5
BOLM 30 - 10G	30	1 1/4	25	31	46	50	46	10	21	44	66	58.5
BOLM 32 - 10G	32	1 1/4	26	31	46	50	50	11	21	46	66	60.5
BOLM 35 - 10G	35	1 1/4	28	31	46	50	55	11	21	46	66	63.5
BOLM 38 - 12G	38	1 1/2	32	36	50	55	60	12	21	50	73	69.5

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## Bite Type Tube Fittings

### STUD ELBOW

#### BSLM



For O-ring seal

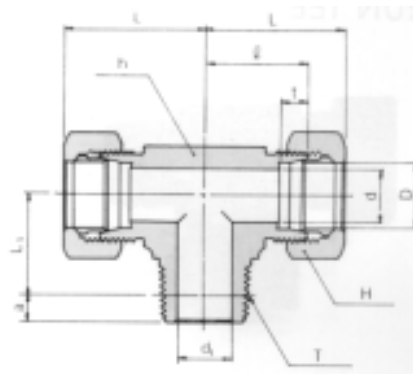
Designations	Tube O.D.		d	d1	Width across flat			t	l1	l	Approx			B	O-ring	
	D	(PT) T			h	H1	H				L1	L2	L			
BSLM 06 - 01G	6	1/8	4	4	17	17	14	7	8	23	13	14	33.5	14	P10	
BSLM 08 - 02G	8	1/4	7	6	22	22	17	7	12	25	16	17	35.5	18	P12	
BSLM 10 - 02G	10	1/4	7	8	22	22	19	7	12	25	16	17	36.5	18	P12	
BSLM 12 - 03G	12	3/8	9	10	27	27	22	7	12	29	19	22	40.5	21.5	P18	
BSLM 15 - 04G	15	1/2	12	12	36	30	27	7.5	14	36	24	28	48.5	25.5	P22	
BSLM 16 - 04G	16	1/2	12	13	36	30	30	7.5	14	36	24	28	48.5	25.5	P22	
BSLM 18 - 04G	18	1/2	12	14	36	30	32	8	14	36	24	28	48.5	25.5	P22	
BSLM 20 - 06G	20	3/4	16	17	41	41	36	8	16	38	28	32	50.5	31.5	P28	
BSLM 22 - 06G	22	3/4	16	18	42	41	36	9	16	38	28	32	50.5	31.5	P28	
BSLM 25 - 08G	25	1	22	20	50	50	41	10	18	42	37	38	55.5	38	P36	
BSLM 28 - 08G	28	1	22	22	50	50	46	10	18	42	37	38	56	38	P36	
BSLM 81 - 02G	1/8	10.5	1/4	7	8	22	22	19	7	12	25	16	17	36.5	18	P12
BSLM 82 - 03G	1/4	13.8	3/8	9	11	27	27	24	7.5	12	29	19	22	41	21.5	P18
BSLM 83 - 04G	3/8	17.3	1/2	12	14	36	30	32	8	14	36	24	28	48.5	25.5	P22
BSLM 84 - 06G	1/2	21.7	3/4	16	18	41	41	36	9	16	38	28	32	50.5	31.5	P28
BSLM 85 - 08G	3/4	27.2	1	22	22	50	50	46	10	18	42	37	38	56	38	P36

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## Bite Type Tube Fittings

### MALE BRANCH TEE

#### BBTM



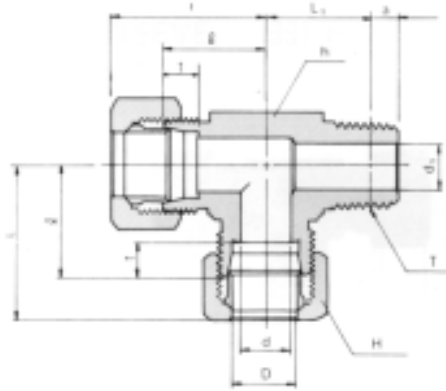
Designations	Tube O.D.		(PT) T	d	d1	Basic gauge length a	Width across flat		t	l	Approx	
	D						h	H			L	L1
BBTM 04 - 01R	4		1/8	2.5	4	3.97	12	12	6	15	22.5	13
BBTM 06 - 01R	6		1/8	4	4	3.97	14	14	7	20	30.5	14
BBTM 06 - 02R	6		1/4	4	7	6.01	17	14	7	23	33.5	17
BBTM 08 - 01R	8		1/8	6	4	3.97	17	17	7	23	33.5	16
BBTM 08 - 02R	8		1/4	6	7	6.01	17	17	7	23	33.5	18
BBTM 10 - 02R	10		1/4	8	7	6.01	17	19	7	23	34.5	19
BBTM 10 - 03R	10		3/8	8	9	6.35	19	19	7	24	35.5	19.5
BBTM 12 - 02R	12		1/4	10	7	6.01	19	22	7	24	35.5	18
BBTM 12 - 03R	12		3/8	10	9	6.35	19	22	7	24	35.5	20.5
BBTM 15 - 03R	15		3/8	12	9	6.35	24	27	7.5	29	41.5	23.5
BBTM 15 - 04R	15		1/2	12	12	8.16	24	27	7.5	29	41.5	26
BBTM 16 - 04R	16		1/2	13	12	8.16	27	30	7.5	32	44.5	27
BBTM 18 - 04R	18		1/2	14	12	8.16	27	32	8	32	44.5	30
BBTM 20 - 06R	20		3/4	17	16	9.53	30	36	8	33	45.5	30.5
BBTM 22 - 06R	22		3/4	18	16	9.53	32	36	9	34	46.5	32.5
BBTM 25 - 06R	25		3/4	20	16	9.53	36	41	10	36	49.5	33.5
BBTM 25 - 08R	25		1	20	22	10.39	36	41	10	36	49.5	35.5
BBTM 28 - 08R	28		1	22	22	10.39	41	46	10	41	55	39.5
BBTM 30 - 08R	30		1	25	22	10.39	41	46	10	41	55.5	39.5
BBTM 30 - 10R	30		1 1/4	25	31	12.70	46	46	10	46	60.5	42.5
BBTM 32 - 10R	32		1 1/4	26	31	12.70	46	50	11	46	60.5	43.5
BBTM 35 - 10R	35		1 1/4	28	31	12.70	46	55	11	46	63.5	45.5
BBTM 38 - 12R	38		1 1/2	32	36	12.70	50	60	12	50	69.5	48.5
BBTM 40 - 12R	40		1 1/2	32	36	12.70	55	60	12	55	74.5	49.5
BBTM 50 - 16R	50		2	40	46	15.88	65	75	12	62	83.5	58
BBTM 81 - 02R	1/8	10.5	1/4	8	7	6.01	17	19	7	23	34.5	19
BBTM 82 - 03R	1/4	13.8	3/8	11	9	6.35	22	24	7.5	28	40	22.5
BBTM 83 - 04R	3/8	17.3	1/2	14	12	8.16	27	32	8	32	44.5	30
BBTM 84 - 06R	1/2	21.7	3/4	18	16	9.53	32	36	9	34	46.5	32.5
BBTM 85 - 08R	3/4	27.2	1	22	22	10.39	41	46	10	41	55	39.5
BBTM 86 - 10R	1	34.0	1 1/4	28	31	12.70	46	55	11	46	63.5	45.5
BBTM 87 - 12R	1 1/4	42.7	1 1/2	34	36	12.70	60	65	12	57	77.5	51.5
BBTM 88 - 16R	1 1/2	48.6	2	40	46	15.88	65	75	12	62	83.5	58

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## Bite Type Tube Fittings

### MALE RUN TEE

#### BRTM



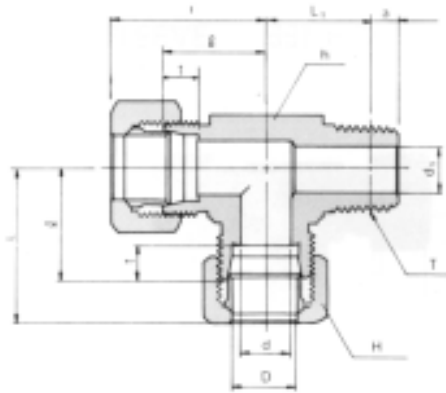
Designations	Tube O.D.		(PT) T	d	d1	Basic gauge length a	Width across flat		t	l	Approx	
	D						h	H			L	L1
BRTM 04 - 01R	4		1/8	2.5	4	3.97	12	12	6	15	22.5	13
BRTM 06 - 01R	6		1/8	4	4	3.97	14	14	7	20	30.5	14
BRTM 06 - 02R	6		1/4	4	7	6.01	17	14	7	23	33.5	17
BRTM 08 - 01R	8		1/8	6	4	3.97	17	17	7	23	33.5	16
BRTM 08 - 02R	8		1/4	6	7	6.01	17	17	7	23	33.5	18
BRTM 10 - 02R	10		1/4	8	7	6.01	17	19	7	23	34.5	19
BRTM 10 - 03R	10		3/8	8	9	6.35	19	19	7	24	35.5	19.5
BRTM 12 - 02R	12		1/4	10	7	6.01	19	22	7	24	35.5	18
BRTM 12 - 03R	12		3/8	10	9	6.35	19	22	7	24	35.5	20.5
BRTM 15 - 03R	15		3/8	12	9	6.35	24	27	7.5	29	41.5	23.5
BRTM 15 - 04R	15		1/2	12	12	8.16	24	27	7.5	29	41.5	26
BRTM 16 - 04R	16		1/2	13	12	8.16	27	30	7.5	32	44.5	27
BRTM 18 - 04R	18		1/2	14	12	8.16	27	32	8	32	44.5	30
BRTM 20 - 06R	20		3/4	17	16	9.53	30	36	8	33	45.5	30.5
BRTM 22 - 06R	22		3/4	18	16	9.53	32	36	9	34	46.5	32.5
BRTM 25 - 06R	25		3/4	20	16	9.53	36	41	10	36	49.5	33.5
BRTM 25 - 08R	25		1	20	22	10.39	36	41	10	36	49.5	35.5
BRTM 28 - 08R	28		1	22	22	10.39	41	46	10	41	55	39.5
BRTM 30 - 08R	30		1	25	22	10.39	41	46	10	41	55.5	39.5
BRTM 30 - 10R	30		1 1/4	25	31	12.70	46	46	10	46	60.5	42.5
BRTM 32 - 10R	32		1 1/4	26	31	12.70	46	50	11	46	60.5	43.5
BRTM 35 - 10R	35		1 1/4	28	31	12.70	46	55	11	46	63.5	45.5
BRTM 38 - 12R	38		1 1/2	32	36	12.70	50	60	12	50	69.5	48.5
BRTM 40 - 12R	40		1 1/2	32	36	12.70	55	60	12	55	74.5	49.5
BRTM 50 - 16R	50		2	40	46	15.88	65	75	12	62	83.5	58
BRTM 81 - 02R	1/8	10.5	1/4	8	79	6.01	17	19	7	23	34.5	19
BRTM 82 - 03R	1/4	13.8	3/8	11	12	6.35	22	24	7.5	28	40	22.5
BRTM 83 - 04R	3/8	17.3	1/2	14	16	8.16	27	32	8	32	44.5	30
BRTM 84 - 06R	1/2	21.7	3/4	18	22	9.53	32	36	9	34	46.5	32.5
BRTM 85 - 08R	3/4	27.2	1	22	22	10.39	41	46	10	41	55	39.5
BRTM 86 - 10R	1	34.0	1 1/4	28	31	12.70	46	55	11	46	63.5	45.5
BRTM 87 - 12R	1 1/4	42.7	1 1/2	34	36	12.70	60	65	12	57	77.5	51.5
BRTM 88 - 16R	1 1/2	48.6	2	40	46	15.88	65	75	12	62	83.5	58

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## Bite Type Tube Fittings

### MALE RUN TEE

#### BRTM



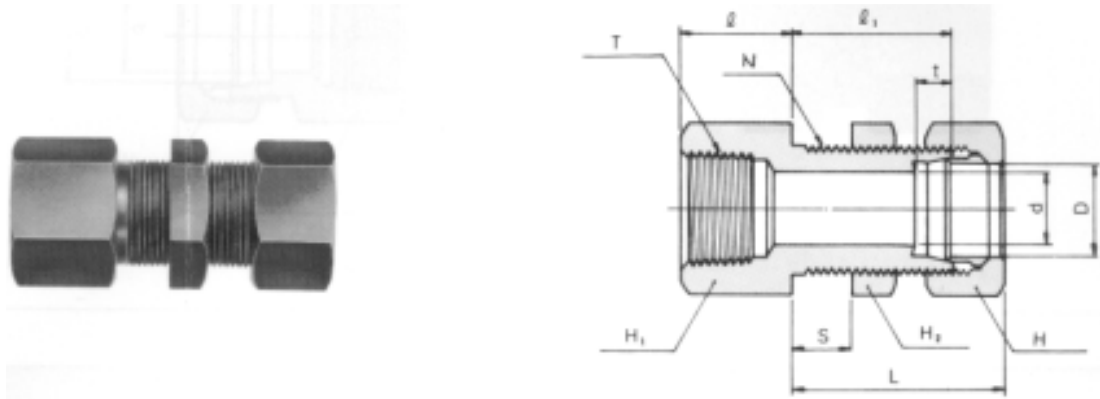
Designations	Tube O.D.		(PT) T	d	d1	Basic gauge length a	Width across flat		t	l	Approx	
	D						h	H			L	L1
BRTM 04 - 01R	4		1/8	2.5	4	3.97	12	12	6	15	22.5	13
BRTM 06 - 01R	6		1/8	4	4	3.97	14	14	7	20	30.5	14
BRTM 06 - 02R	6		1/4	4	7	6.01	17	14	7	23	33.5	17
BRTM 08 - 01R	8		1/8	6	4	3.97	17	17	7	23	33.5	16
BRTM 08 - 02R	8		1/4	6	7	6.01	17	17	7	23	33.5	18
BRTM 10 - 02R	10		1/4	8	7	6.01	17	19	7	23	34.5	19
BRTM 10 - 03R	10		3/8	8	9	6.35	19	19	7	24	35.5	19.5
BRTM 12 - 02R	12		1/4	10	7	6.01	19	22	7	24	35.5	18
BRTM 12 - 03R	12		3/8	10	9	6.35	19	22	7	24	35.5	20.5
BRTM 15 - 03R	15		3/8	12	9	6.35	24	27	7.5	29	41.5	23.5
BRTM 15 - 04R	15		1/2	12	12	8.16	24	27	7.5	29	41.5	26
BRTM 16 - 04R	16		1/2	13	12	8.16	27	30	7.5	32	44.5	27
BRTM 18 - 04R	18		1/2	14	12	8.16	27	32	8	32	44.5	30
BRTM 20 - 06R	20		3/4	17	16	9.53	30	36	8	33	45.5	30.5
BRTM 22 - 06R	22		3/4	18	16	9.53	32	36	9	34	46.5	32.5
BRTM 25 - 06R	25		3/4	20	16	9.53	36	41	10	36	49.5	33.5
BRTM 25 - 08R	25		1	20	22	10.39	36	41	10	36	49.5	35.5
BRTM 28 - 08R	28		1	22	22	10.39	41	46	10	41	55	39.5
BRTM 30 - 08R	30		1	25	22	10.39	41	46	10	41	55.5	39.5
BRTM 30 - 10R	30		1 1/4	25	31	12.70	46	46	10	46	60.5	42.5
BRTM 32 - 10R	32		1 1/4	26	31	12.70	46	50	11	46	60.5	43.5
BRTM 35 - 10R	35		1 1/4	28	31	12.70	46	55	11	46	63.5	45.5
BRTM 38 - 12R	38		1 1/2	32	36	12.70	50	60	12	50	69.5	48.5
BRTM 40 - 12R	40		1 1/2	32	36	12.70	55	60	12	55	74.5	49.5
BRTM 50 - 16R	50		2	40	46	15.88	65	75	12	62	83.5	58
BRTM 81 - 02R	1/8	10.5	1/4	8	79	6.01	17	19	7	23	34.5	19
BRTM 82 - 03R	1/4	13.8	3/8	11	12	6.35	22	24	7.5	28	40	22.5
BRTM 83 - 04R	3/8	17.3	1/2	14	16	8.16	27	32	8	32	44.5	30
BRTM 84 - 06R	1/2	21.7	3/4	18	22	9.53	32	36	9	34	46.5	32.5
BRTM 85 - 08R	3/4	27.2	1	22	22	10.39	41	46	10	41	55	39.5
BRTM 86 - 10R	1	34.0	1 1/4	28	31	12.70	46	55	11	46	63.5	45.5
BRTM 87 - 12R	1 1/4	42.7	1 1/2	34	36	12.70	60	65	12	57	77.5	51.5
BRTM 88 - 16R	1 1/2	48.6	2	40	46	15.88	65	75	12	62	83.5	58

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## Bite Type Tube Fittings

### BULKHEAD FEMALE CONNECTOR

#### BBFC



Designations	Tube O.D.	(PT) T	d	Width across flat			t	l1	l	Approx. L	Panel Hole Drill size N	Max. Panel thick ness S
	D			H1	H2	H						
BBFC 06 - 01R	6	1/8	4	17	17	14	7	32	13	42.5	12.5	13
BBFC 08 - 02R	8	1/4	6	19	19	17	7	32	18	42.5	14.5	13
BBFC 10 - 02R	10	1/4	8	19	22	19	7	32	18	43.5	16.5	13
BBFC 10 - 03R	10	3/8	8	24	22	19	7	32	20	43.5	16.5	13
BBFC 12 - 02R	12	1/4	10	19	24	22	7	32	18	43.5	18.5	13
BBFC 12 - 03R	12	3/8	10	24	24	22	7	32	20	43.5	18.5	13
BBFC 15 - 03R	15	3/8	12	24	27	27	7.5	37	20	49.5	22.5	15
BBFC 15 - 04R	15	1/2	12	30	27	27	7.5	37	25	49.5	22.5	15
BBFC 16 - 04R	16	1/2	13	30	30	30	7.5	37	25	49.5	24.5	15
BBFC 18 - 04R	18	1/2	14	30	32	38	8	39	25	51.5	26.5	15
BBFC 20 - 06R	20	3/4	17	36	32	36	8	39	27	51.5	28.5	15
BBFC 22 - 06R	22	3/4	18	36	36	36	9	39	27	51.5	30.5	15
BBFC 25 - 06R	25	3/4	20	41	41	41	10	39	27	52.5	35.5	15
BBFC 25 - 08R	25	1	20	46	41	41	10	39	31	52.5	35.5	15
BBFC 28 - 08R	28	1	22	46	46	46	10	41	31	55	38.5	15
BBFC 30 - 08R	30	1	25	46	46	46	10	41	31	55.5	40.5	15
BBFC 30 - 10R	30	1 1/4	25	55	46	46	10	41	35	55.5	40.5	15
BBFC 32 - 10R	32	1 1/4	26	55	46	50	11	43	35	57.5	42.5	15

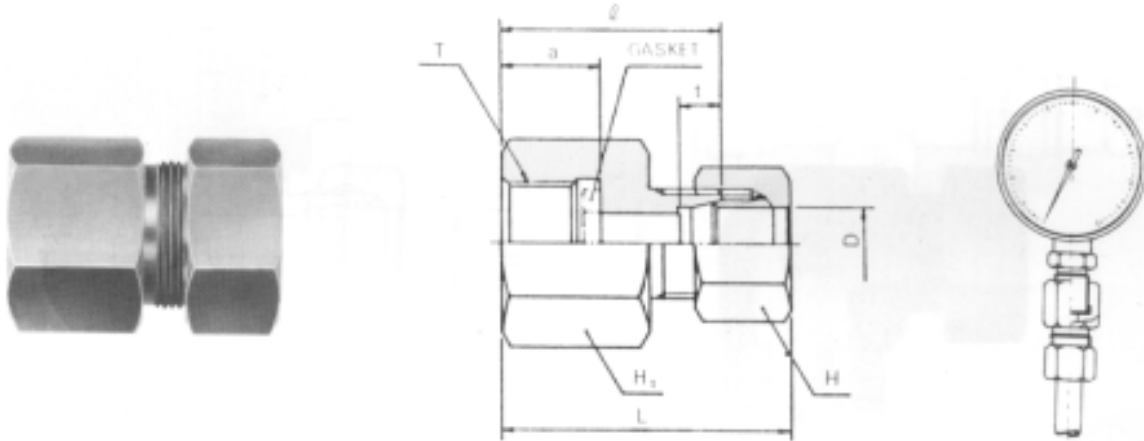
All dimensions are in millimeters. Dimensions are for reference only, subject to change.



## Bite Type Tube Fittings

### GAUGE CONNECTOR

#### BGC

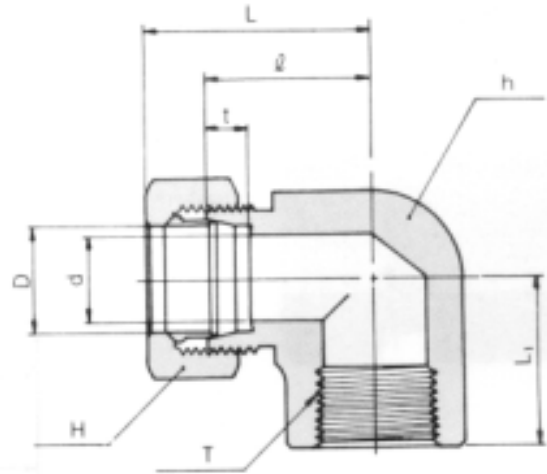


Designations	Tube O.D.	(PF) T	d	Width across flat		t	l	Approx. L	Gasket part No
	D			H1	H				
BGC- 02G	4	1/4	14	19	12	6	29	36.5	-01
BGC- 03G	4	3/8	15	24	12	6	30	37.5	-02
BGC- 02G	6	1/4	14	19	14	7	32	42.5	-01
BGC- 03G	6	3/8	15	24	14	7	34	44.5	-02
BGC- 04G	6	1/2	16	30	14	7	36	46.5	-03
BGC- 02G	8	1/4	14	19	17	7	32	42.5	-01
BGC- 03G	8	3/8	15	24	17	7	34	44.5	-02
BGC- 04G	8	1/2	16	30	17	7	36	46.5	-03
BGC- 02G	10	1/4	14	19	19	7	32	43.5	-01
BGC- 03G	10	3/8	15	24	19	7	34	45.5	-02
BGC- 04G	10	1/2	16	30	19	7	36	47.5	-03

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

# FEMALE ELBOW

## BLF



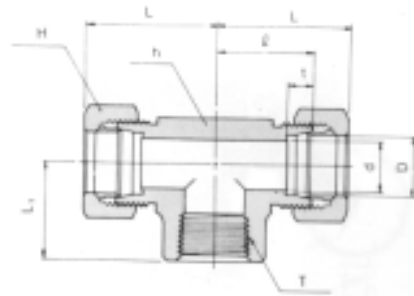
Designations	Tube O.D.	(PT) T	d	Width across flat		t	L	Approx	
	D			h	H			L	L1
BLF- 02R	8	1/4	6	19	17	7	24	24	34.5
BLF- 02R	10	1/4	8	19	19	7	24	24	35.5
BLF- 02R	12	1/4	10	19	22	7	24	24	35.5
BLF- 03R	12	3/8	10	24	22	7	29	29	40.5
BLF- 03R	15	3/8	12	24	27	7.5	29	29	41.5
BLF- 04R	15	1/2	12	30	27	7.5	33	33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

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## Bite Type Tube Fittings

### FEMALE BRANCH TEE

#### BBTF



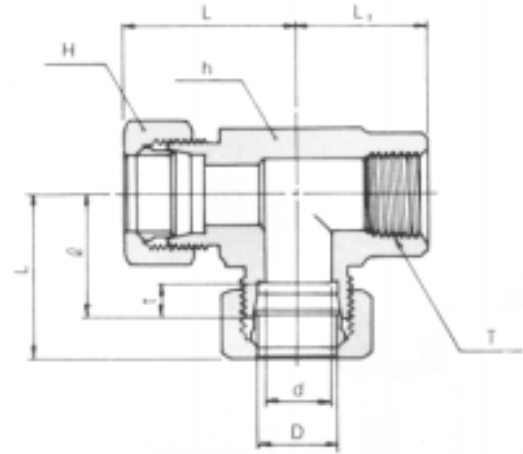
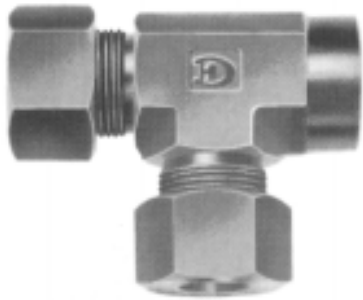
Designations	Tube O.D.		(PT) T	d	Width across flat		t	ℓ	Approx.	
		D			h	H			L	L1
BBTF08-02R	8	1/4	6	19	17	7	24	34.5	24	
BBTF10-02R	10	1/4	8	19	19	7	24	35.5	24	
BBTF12-02R	12	1/4	10	19	22	7	24	35.5	24	
BBTF12-03R	12	3/8	10	24	22	7	29	40.5	29	
BBTF15-03R	15	3/8	12	24	27	7.5	29	41.5	29	
BBTF15-04R	15	1/2	12	30	27	7.5	33	45.5	33	
BBTF16-04R	16	1/2	13	30	30	7.5	33	45.5	33	
BBTF18-04R	18	1/2	14	30	32	8	33	45.5	33	
BBTF20-06R	20	3/4	17	36	36	8	36	48.5	36	
BBTF22-06R	22	3/4	18	36	36	9	36	48.5	36	
BBTF25-06R	25	3/4	20	36	41	10	36	49.5	36	
BBTF25-08R	25	1	20	46	41	10	46	59.5	46	
BBTF28-08R	28	1	22	46	46	10	46	60	46	
BBTF30-08R	30	1	25	46	46	10	46	60.5	46	
BBTF30-10R	30	1 1/4	25	55	46	10	55	69.5	55	
BBTF32-10R	32	1 1/4	26	55	50	11	55	69.5	55	
BBTF35-10R	35	1 1/4	28	55	55	11	55	72.5	55	
BBTF81-02R	1/8	10.5	1/4	8	19	19	7	24	35.5	24
BBTF82-03R	1/4	13.8	3/8	11	24	24	7.5	29	41	29
BBTF83-04R	3/8	17.3	1/2	14	30	32	8	33	45.5	33
BBTF84-06R	1/2	21.7	3/4	18	36	36	9	36	48.5	36
BBTF85-08R	3/4	27.2	1	22	46	46	10	46	60	46
BBTF86-10R	1	34.0	1 1/4	28	55	55	11	55	72.5	55

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## Bite Type Tube Fittings

### FEMALE RUN TEE

#### BRTF



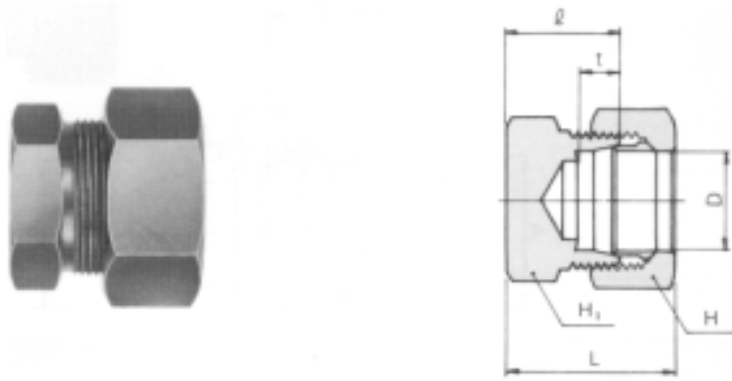
Designations	Tube O.D.		(PT) T	d	Width across flat		t	l	Approx.	
		D			h	H			L	L1
BRTF08-02R	8		1/4	6	19	17	7	24	34.5	24
BRTF10-02R	10		1/4	8	19	19	7	24	35.5	24
BRTF12-02R	12		1/4	10	19	22	7	24	35.5	24
BRTF12-03R	12		3/8	10	24	22	7	29	40.5	29
BRTF15-03R	15		3/8	12	24	27	7.5	29	41.5	29
BRTF15-04R	15		1/2	12	30	27	7.5	33	45.5	33
BRTF16-04R	16		1/2	13	30	30	7.5	33	45.5	33
BRTF18-04R	18		1/2	14	30	32	8	33	45.5	33
BRTF20-06R	20		3/4	17	36	36	8	36	48.5	36
BRTF22-06R	22		3/4	18	36	36	9	36	48.5	36
BRTF25-06R	25		3/4	20	36	41	10	36	49.5	36
BRTF25-08R	25		1	20	46	41	10	46	59.5	46
BRTF28-08R	28		1	22	46	46	10	46	60	46
BRTF30-08R	30		1	25	46	46	10	46	60.5	46
BRTF30-10R	30		1 1/4	25	55	46	10	55	69.5	55
BRTF32-10R	32		1 1/4	26	55	50	11	55	69.5	55
BRTF35-10R	35		1 1/4	28	55	55	11	55	72.5	55
BRTF81-02R	1/8	10.5	1/4	8	19	19	7	24	35.5	24
BRTF82-03R	1/4	13.8	3/8	11	24	24	7.5	29	41	29
BRTF83-04R	3/8	17.3	1/2	14	30	32	8	33	45.5	33
BRTF84-06R	1/2	21.7	3/4	18	36	36	9	36	48.5	36
BRTF85-08R	3/4	27.2	1	22	46	46	10	46	60	46
BRTF86-10R	1	34.0	1 1/4	28	55	55	11	55	72.5	55

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## Bite Type Tube Fittings

### FEMALE RUN TEE

#### BCA

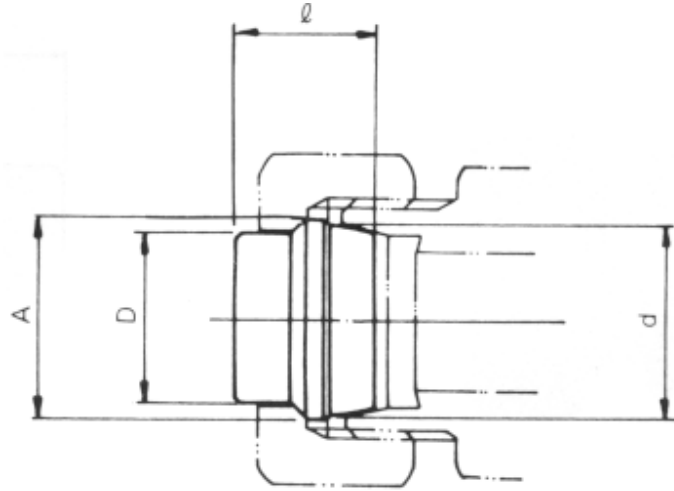


Designations	Tube O.D.	Width across flat		t	ℓ	Approx. L
	D	h	H			
BCA - 06	6	14	14	7	18	28.5
BCA - 08	8	17	17	7	19	29.5
BCA - 10	10	17	19	7	20	31.5
BCA - 12	12	19	22	7	20	31.5
BCA - 15	15	24	27	7.5	22	34.5
BCA - 16	16	27	30	7.5	24	36.5
BCA - 18	18	27	32	8	24	36.5
BCA - 20	20	30	36	8	24	36.5
BCA - 22	22	32	36	9	25	37.5
BCA - 25	25	36	41	10	25	38.5
BCA - 28	28	41	46	10	28	42
BCA - 30	30	41	46	10	28	42.5
BCA - 32	32	46	50	11	30	44.5

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## Bite Type Tube Fittings

PLUG  
BP

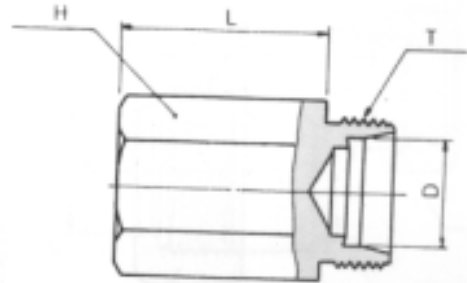
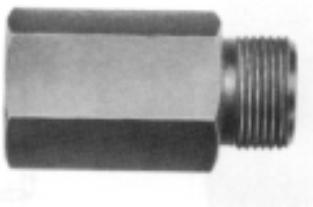


Designations	Tube O.D.		A	l
	D	d		
BP - 06	6	8	9	13.5
BP - 08	8	10	11	13.5
BP - 10	10	12	13	14.5
BP - 12	12	14	15	14.5
BP - 15	15	17	18	16
BP - 16	16	18	19	16
BP - 18	18	20	21	17.5
BP - 20	20	22	23	17.5
BP - 22	22	24	25	17.5
BP - 25	25	27.4	28.5	19
BP - 28	28	30.4	31.5	19
BP - 30	30	32.4	33.5	20
BP -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

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## Bite Type Tube Fittings

JIG  
BJ

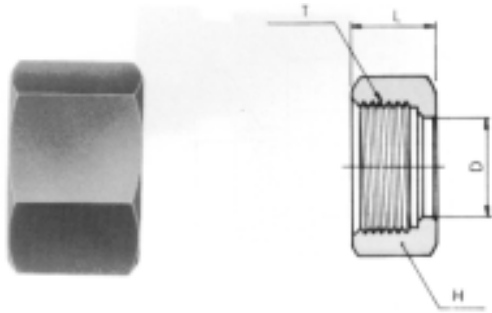


Designations	Tube O.D.		L	H	T
		D			
BJ - 06	6		40	17	M12×1.5
BJ - 08	8		40	17	M14×1.5
BJ - 10	10		40	17	M16×1.5
BJ - 12	12		40	27	M18×1.5
BJ - 15	15		40	27	M22×1.5
BJ - 16	16		40	27	M24×1.5
BJ - 18	18		40	27	M26×1.5
BJ - 20	20		40	41	M28×1.5
BJ - 22	22		40	41	M30×1.5
BJ - 25	25		40	41	M35×1.5
BJ - 28	28		40	41	M38×1.5
BJ - 30	30		40	41	M40×1.5
BJ - 32	32		40	55	M42×1.5
BJ - 35	35		40	55	M45×1.5
BJ - 38	38		50	55	M48×1.5
BJ - 40	40		50	55	M52×1.5
BJ - 42	42		50	55	M52×1.5
BJ - 50	50		50	65	M64×1.5
BJ - 81	1/8	10.5	40	17	M16×1.5
BJ - 82	1/4	13.8	40	27	M20×1.5
BJ - 83	3/8	17.3	40	27	M26×1.5
BJ - 84	1/2	21.7	40	41	M30×1.5
BJ - 85	3/4	27.2	40	41	M38×1.5
BJ - 86	1	34.0	40	55	M45×1.5
BJ - 87	1 1/4	42.7	50	65	M56×1.5
BJ - 88	1 1/2	48.6	50	65	M64×1.5

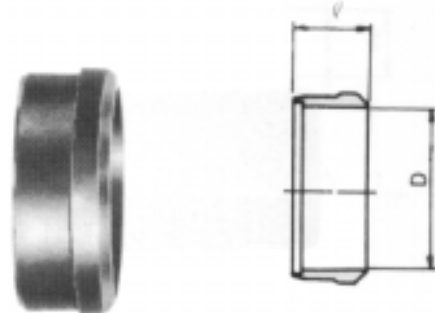
All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## Bite Type Tube Fittings

### NUT BN



### SLEEVE BS



Designations	Tube O.D.		T	Width across flat		L
		D			H	
BN - 04		4	M10X1.25	12	10.5	
BN - 06		6	M12 X 1.5	14	15	
BN - 08		8	M14 X 1.5	17	15	
BN - 10		10	M16 X 1.5	19	16	
BN - 12		12	M18 X 1.5	22	16	
BN - 15		15	M22 X 1.5	27	19	
BN - 16		16	M24 X 1.5	30	19	
BN - 18		18	M26 X 1.5	32	19	
BN - 20		20	M28 X 1.5	36	19	
BN - 22		22	M30 X 1.5	36	19	
BN - 25		25	M35 X 1.5	41	20	
BN - 28		28	M38 X 1.5	46	21	
BN - 30		30	M40 X 1.5	46	22	
BN - 32		32	M42 X 1.5	50	22	
BN - 35		35	M45 X 1.5	55	25	
BN - 38		38	M48 X 1.5	60	27	
BN - 40		40	M52	60	29.5	
BN - 42		42	M52	60	29.5	
BN - 50		50	M64	75	31.5	
BN - 81	1/8	10.5	M16 X 1.5	19	16	
BN - 82	1/4	13.8	M20 X 1.5	24	18	
BN - 83	3/8	17.3	M26 X 1.5	32	19	
BN - 84	1/2	21.7	M30 X 1.5	36	19	
BN - 85	3/4	27.2	M38 X 1.5	46	21	
BN - 86	1	34.0	M45 X 1.5	55	25	
BN - 87	1 1/4	42.7	M56 X 2	65	30.5	
BN - 88	1 1/2	48.6	M64 X 2	75	31.5	

Designations	Tube O.D.		ℓ
		D	
BS - 04		4	7
BS - 06		6	9
BS - 08		8	9
BS - 10		10	10
BS - 12		12	10
BS - 15		15	10
BS - 16		16	10
BS - 18		18	10
BS - 20		20	10
BS - 22		22	10
BS - 25		25	11
BS - 28		28	11
BS - 30		30	11
BS - 32		32	11
BS - 35		35	14
BS - 38		38	14
BS - 40		40	14
BS - 42		42	14
BS - 50		50	14
BS - 81	1/8	10.5	10
BS - 82	1/4	13.8	10
BS - 83	3/8	17.3	10
BS - 84	1/2	21.7	10
BS - 85	3/4	27.2	11
BS - 86	1	34.0	14
BS - 87	1 1/4	42.7	14
BS - 88	1 1/2	48.6	14

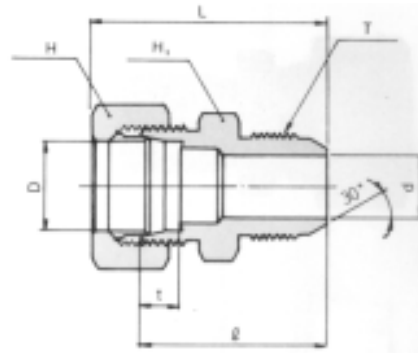
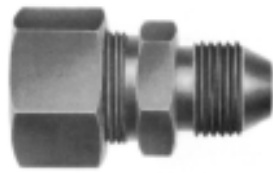
All dimensios are in millimeters. Dimensions are for reference only, subject to change.



## Bite Type Tube Fittings

### HOSE MALE UNION

#### BHUM

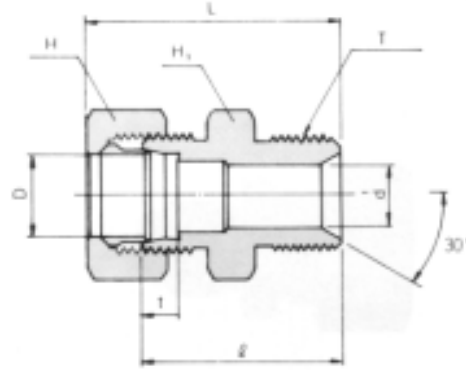


Designations	Tube O.D. D	(PF) T	d	Width across flat		t	ℓ	Approx. L
				H <sub>1</sub>	H			
BHUM08 - 02G	8	1/4	6	17	17	7	35	45.5
BHUM08 - 03G	8	3/8	6	19	17	7	37	47.5
BHUM10 - 02G	10	1/4	6	17	19	7	35	46.5
BHUM10 - 03G	10	3/8	8	19	19	7	37	48.5
BHUM10 - 04G	10	1/2	8	22	19	7	40	51.5
BHUM12 - 02G	12	1/4	6	19	22	7	35	46.5
BHUM12 - 03G	12	3/8	9	19	22	7	37	48.5
BHUM12 - 04G	12	1/2	10	22	22	7	40	51.5
BHUM15 - 03G	15	3/8	9	24	27	7.5	40	52.5
BHUM15 - 04G	15	1/2	12	24	27	7.5	42	54.5
BHUM16 - 03G	16	3/8	9	27	30	7.5	40	52.5
BHUM16 - 04G	16	1/2	12	27	30	7.5	42	54.5
BHUM18 - 04G	18	1/2	12	27	32	8	42	54.5
BHUM20 - 06G	20	3/4	16	30	36	8	46	58.5
BHUM22 - 04G	22	1/2	12	32	36	9	44	56.5
BHUM22 - 06G	22	3/4	16	32	36	9	46	58.5
BHUM25 - 06G	25	3/4	16	36	41	10	47	60.5
BHUM25 - 08G	25	1	20	36	41	10	49	62.5
BHUM28 - 06G	28	3/4	16	41	46	10	49	63
BHUM28 - 08G	28	1	22	41	46	10	51	65
BHUM30 - 06G	30	3/4	16	41	46	10	49	63.5
BHUM30 - 08G	30	1	22	41	46	10	51	65.5
BHUM32 - 08G	32	1	22	46	50	11	52	66.5
BHUM32 - 10G	32	1/4	28	46	50	11	56	70.5

All dimensios are in millimeters. Dimensions are for reference only, subject to change.

## Bite Type Tube Fittings

### HOSE FEMALE UNION BHUF



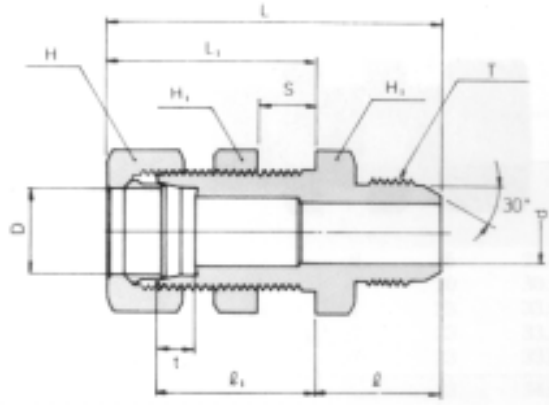
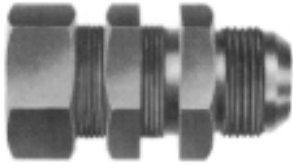
Designations	Tube O.D. D	(PF) T	d	Width across flat		t	ℓ	Approx. L
				H <sub>1</sub>	H			
BHUF08 - 02G	8	1/4	6	17	17	7	33	43.5
BHUF08 - 03G	8	3/8	6	19	17	7	34	44.5
BHUF10 - 02G	10	1/4	6	17	19	7	33	44.5
BHUF10 - 03G	10	3/8	8	19	19	7	34	45.5
BHUF10 - 04G	10	1/2	8	22	19	7	38	49.5
BHUF12 - 02G	12	1/4	6	19	22	7	33	44.5
BHUF12 - 03G	12	3/8	9	19	22	7	34	45.5
BHUF12 - 04G	12	1/2	10	22	22	7	38	49.5
BHUF15 - 03G	15	3/8	9	24	27	7.5	37	49.5
BHUF15 - 04G	15	1/2	12	24	27	7.5	40	52.5
BHUF16 - 03G	16	3/8	9	27	30	7.5	37	49.5
BHUF16 - 04G	16	1/2	12	27	30	7.5	40	52.5
BHUF18 - 04G	18	1/2	12	27	32	8	40	52.5
BHUF20 - 06G	20	3/4	16	30	36	8	43	55.5
BHUF22 - 04G	22	1/2	12	32	36	9	42	54.5
BHUF22 - 06G	22	3/4	16	32	36	9	43	55.5
BHUF25 - 06G	25	3/4	16	36	41	10	44	57.5
BHUF25 - 08G	25	1	20	36	41	10	46	59.5
BHUF28 - 06G	28	3/4	16	41	46	10	46	60
BHUF28 - 08G	28	1	22	41	46	10	48	62
BHUF30 - 06G	30	3/4	16	41	46	10	46	60.5
BHUF30 - 08G	30	1	22	41	46	10	48	62.5
BHUF32 - 08G	32	1	22	46	50	11	49	63.5
BHUF32 - 10G	32	1 1/4	28	46	50	11	55	69.5
BHUF38 - 12G	38	1 1/2	32	50	60	12	57	76.5
BHUF40 - 12G	40	1 1/2	32	55	60	12	62	81.5
BHUF50 - 16G	50	2	40	65	75	12	70	91.5

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## Bite Type Tube Fittings

### HOSE BULKHEAD MALE UNION

#### BHBM

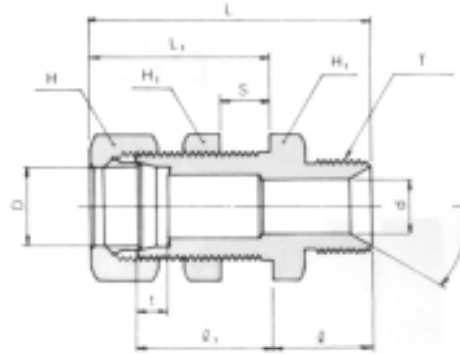
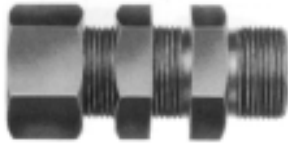


Designations	Tube O.D. D	(PF) T	d	Width across flat		t	l <sub>1</sub>	l	Approx.		Panel Hole Drill size	Max. Panel thickness S
				H <sub>1</sub>	H				L <sub>1</sub>	L		
BHBM08 - 02G	8	1/4	6	19	17	7	32	23	42.5	65.5	14.5	13
BHBM08 - 03G	8	3/8	6	19	17	7	32	25	42.5	67.5	14.5	13
BHBM10 - 02G	10	1/4	6	22	19	7	32	24	43.5	67.5	16.5	13
BHBM10 - 03G	10	3/8	8	22	19	7	32	26	43.5	69.5	16.5	13
BHBM10 - 04G	10	1/2	8	22	19	7	32	28	43.5	71.5	16.5	13
BHBM12 - 02G	12	1/4	6	24	22	7	32	24	43.5	67.5	18.5	13
BHBM12 - 03G	12	3/8	9	24	22	7	32	26	43.5	69.5	18.5	13
BHBM12 - 04G	12	1/2	10	24	22	7	32	28	43.5	71.5	18.5	13
BHBM15 - 03G	15	3/8	9	27	27	7.5	37	26	49.5	75.5	22.5	15
BHBM15 - 04G	15	1/2	12	27	27	7.5	37	28	49.5	77.5	22.5	15
BHBM16 - 03G	16	3/8	9	30	30	7.5	37	28	49.5	77.5	24.5	15
BHBM16 - 04G	16	1/2	12	30	30	7.5	37	30	49.5	79.5	24.5	15
BHBM18 - 04G	18	1/2	12	32	32	8	39	30	51.5	81.5	26.5	15
BHBM20 - 06G	20	3/4	16	32	36	8	39	32	51.5	83.5	28.5	15
BHBM22 - 04G	22	1/2	12	36	36	9	39	31	51.5	82.5	30.5	15
BHBM22 - 06G	22	3/4	16	36	36	9	39	33	51.5	84.5	30.5	15
BHBM25 - 06G	25	3/4	16	41	41	10	39	33	52.5	87.5	35.5	15
BHBM25 - 08G	25	1	20	41	41	10	39	35	52.5	89.5	35.5	15
BHBM28 - 06G	28	3/4	16	46	46	10	41	34	55	89	38.5	15
BHBM28 - 08G	28	1	22	46	46	10	41	36	55	91	38.5	15
BHBM30 - 06G	30	3/4	16	46	46	10	41	34	55.5	89.5	40.5	15
BHBM30 - 08G	30	1	22	46	46	10	41	36	55.5	91.5	40.5	15
BHBM32 - 08G	32	1	22	50	50	11	43	38	57.5	95.5	42.5	15
BHBM32 - 10G	32	1 1/4	28	50	50	11	43	42	57.5	99.5	42.5	15

All dimensios are in millimeters. Dimensions are for reference only, subject to change.

## Bite Type Tube Fittings

### HOSE BULKHEAD FEMALE UNION BHBF



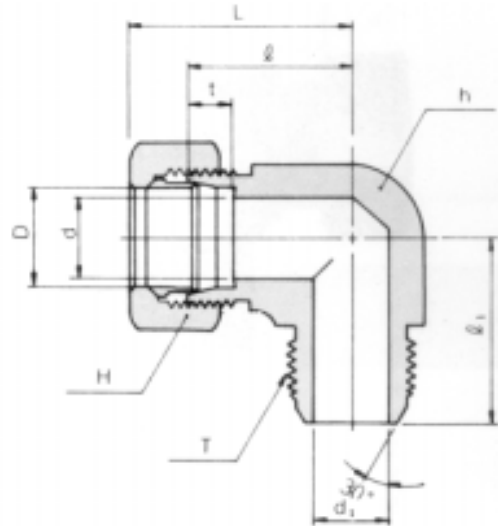
Designations	Tube O.D. D	(PF) T	d	Width across flat		t	l <sub>1</sub>	l	Approx.		Panel Hole Drill size	Max. Panel thickness S
				H1	H				L1	L		
BHBF08 - 02G	8	1/4	6	19	17	7	32	21	42.5	63.5	14.5	13
BHBF08 - 03G	8	3/8	6	19	17	7	32	22	42.5	64.5	14.5	13
BHBF10 - 02G	10	1/4	6	22	19	7	32	22	43.5	65.5	16.5	13
BHBF10 - 03G	10	3/8	8	22	19	7	32	23	43.5	66.5	16.5	13
BHBF10 - 04G	10	1/2	8	22	19	7	32	26	43.5	69.5	16.5	13
BHBF12 - 02G	12	1/4	6	24	22	7	32	22	43.5	65.5	18.5	13
BHBF12 - 03G	12	3/8	9	24	22	7	32	23	43.5	66.5	18.5	13
BHBF12 - 04G	12	1/2	10	24	22	7	32	26	43.5	69.5	18.5	13
BHBF15 - 03G	15	3/8	9	27	27	7.5	37	23	49.5	72.5	22.5	15
BHBF15 - 04G	15	1/2	12	27	27	7.5	37	26	49.5	75.5	22.5	15
BHBF16 - 03G	16	3/8	9	30	30	7.5	37	25	49.5	77.5	24.5	15
BHBF16 - 04G	16	1/2	12	30	30	7.5	37	28	49.5	79.5	24.5	15
BHBF18 - 04G	18	1/2	12	32	32	8	39	28	51.5	81.5	26.5	15
BHBF20 - 06G	20	3/4	16	32	36	8	39	29	51.5	83.5	28.5	15
BHBF22 - 04G	22	1/2	12	36	36	9	39	29	51.5	82.5	30.5	15
BHBF22 - 06G	22	3/4	16	36	36	9	39	30	51.5	81.5	30.5	15
BHBF25 - 06G	25	3/4	16	41	41	10	39	30	52.5	82.5	35.5	15
BHBF25 - 08G	25	1	20	41	41	10	39	32	52.5	84.5	35.5	15
BHBF28 - 06G	28	3/4	16	46	46	10	41	31	55	86	38.5	15
BHBF28 - 08G	28	1	22	46	46	10	41	33	55	88	38.5	15
BHBF30 - 06G	30	3/4	16	46	46	10	41	31	55.5	86.5	40.5	15
BHBF30 - 08G	30	1	22	46	46	10	41	33	55.5	88.5	40.5	15
BHBF32 - 08G	32	1	22	50	50	11	43	35	57.5	92.5	42.5	15
BHBF32 - 10G	32	1 1/4	28	50	50	11	43	41	57.5	98.5	42.5	15
BHBF38 - 12G	38	1 1/2	31	55	60	12	45	42	64.5	106.5	48.5	15
BHBF40 - 12G	40	1 1/2	32	60	60	12	50	44	69.5	113.5	52.5	15
BHBF50 - 16G	50	2	40	70	75	12	50	53	71.5	124.5	64.5	15

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## Bite Type Tube Fittings

### HOSE MALE ELBOW

#### BHLM



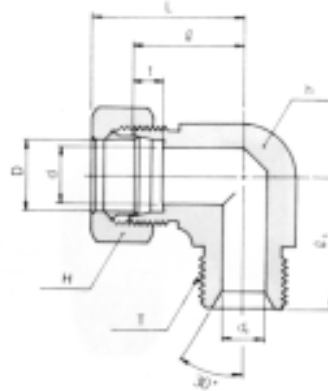
Designations	Tube O.D. D	(PF) T	d	d1	Width across flat		t	l1	l	Approx. L
					h	H				
BHUF08 - 02G	8	1/4	6	6	17	17	7	25	23	33.5
BHUF08 - 03G	8	3/8	6	9	19	17	7	28	24	34.5
BHUF10 - 02G	10	1/4	8	6	19	19	7	28	24	35.5
BHUF10 - 03G	10	3/8	8	9	19	19	7	28	24	35.5
BHUF10 - 04G	10	1/2	8	12	24	19	7	34	29	40.5
BHUF12 - 02G	12	1/4	10	6	19	22	7	28	24	35.5
BHUF12 - 03G	12	3/8	10	9	19	22	7	28	24	35.5
BHUF12 - 04G	12	1/2	10	12	24	22	7	34	29	40.5
BHUF15 - 03G	15	3/8	12	9	24	27	7.5	33	29	41.5
BHUF15 - 04G	15	1/2	12	12	24	27	7.5	34	29	41.5
BHUF16 - 03G	16	3/8	13	9	27	30	7.5	36	32	44.5
BHUF16 - 04G	16	1/2	13	12	27	30	7.5	38	32	44.5
BHUF18 - 04G	18	1/2	14	12	27	32	8	38	32	44.5
BHUF20 - 06G	20	3/4	17	16	30	36	8	41	33	45.5
BHUF22 - 04G	22	1/2	18	12	32	36	9	40	34	46.5
BHUF22 - 06G	22	3/4	18	16	32	36	9	42	34	46.5
BHUF25 - 06G	25	3/4	20	16	36	41	10	44	36	49.5
BHUF25 - 08G	25	1	20	20	36	41	10	46	36	49.5
BHUF28 - 06G	28	3/4	22	16	41	46	10	47	41	55
BHUF28 - 08G	28	1	22	22	41	46	10	49	41	55
BHUF30 - 06G	30	3/4	25	16	41	46	10	47	41	55.5
BHUF30 - 08G	30	1	25	22	41	46	10	49	41	55.5
BHUF32 - 08G	32	1	26	22	46	50	11	54	46	60.5
BHUF32 - 10G	32	1 1/4	26	22	46	50	11	54	46	60.5
BHUF38 - 12G	32	1 1/4	26	28	46	50	11	56	46	60.5

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## Bite Type Tube Fittings

### HOSE FEMALE ELBOW

#### BHLF

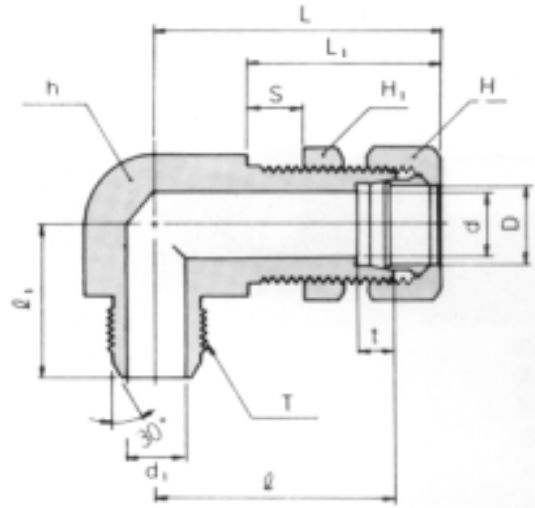
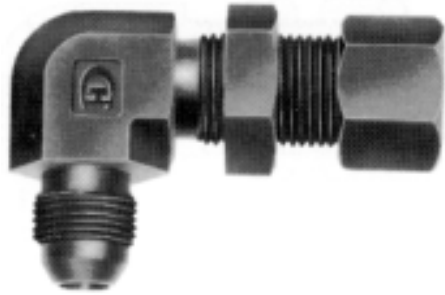


Designations	Tube O.D. D	(PF) T	d	d1	Width across flat		t	ℓ1	ℓ	Approx. L
					h	H				
BHLF08 - 02G	8	1/4	6	6	17	17	7	25	23	33.5
BHLF08 - 03G	8	3/8	6	9	19	17	7	28	24	34.5
BHLF10 - 02G	10	1/4	8	6	19	19	7	28	24	35.5
BHLF10 - 03G	10	3/8	8	9	19	19	7	28	24	35.5
BHLF10 - 04G	10	1/2	8	12	24	19	7	34	29	40.5
BHLF12 - 02G	12	1/4	10	6	19	22	7	28	24	35.5
BHLF12 - 03G	12	3/8	10	9	19	22	7	28	24	35.5
BHLF12 - 04G	12	1/2	10	12	24	22	7	34	29	40.5
BHLF15 - 03G	15	3/8	12	9	24	27	7.5	33	29	41.5
BHLF15 - 04G	15	1/2	12	12	24	27	7.5	34	29	41.5
BHLF16 - 03G	16	3/8	13	9	27	30	7.5	36	32	44.5
BHLF16 - 04G	16	1/2	13	12	27	30	7.5	38	32	44.5
BHLF18 - 04G	18	1/2	14	12	27	32	8	38	32	44.5
BHLF20 - 06G	20	3/4	17	16	30	36	8	41	33	45.5
BHLF22 - 04G	22	1/2	18	12	32	36	9	40	34	46.5
BHLF22 - 06G	22	3/4	18	16	32	36	9	42	34	46.5
BHLF25 - 06G	25	3/4	20	16	36	41	10	44	36	49.5
BHLF25 - 08G	25	1	20	20	36	41	10	46	36	49.5
BHLF28 - 06G	28	3/4	22	16	41	46	10	47	41	55
BHLF28 - 08G	28	1	22	22	41	46	10	49	41	55
BHLF30 - 06G	30	3/4	25	16	41	46	10	47	41	55.5
BHLF30 - 08G	30	1	25	22	41	46	10	49	41	55.5
BHLF32 - 08G	32	1	26	22	46	50	11	54	46	60.5
BHLF32 - 10G	32	1 1/4	26	28	46	50	11	56	46	60.5
BHLF38 - 12G	38	1 1/2	32	34	50	60	12	61	50	69.5
BHLF40 - 12G	40	1 1/2	32	34	55	60	12	62	55	74.5
BHLF50 - 16G	50	2	40	46	65	75	12	72	62	83.5

All dimensions are in millimeters. Dimensions are for reference only, subject to change.

## Bite Type Tube Fittings

### Hose BULKHEAD MALE ELBOW BHBLM

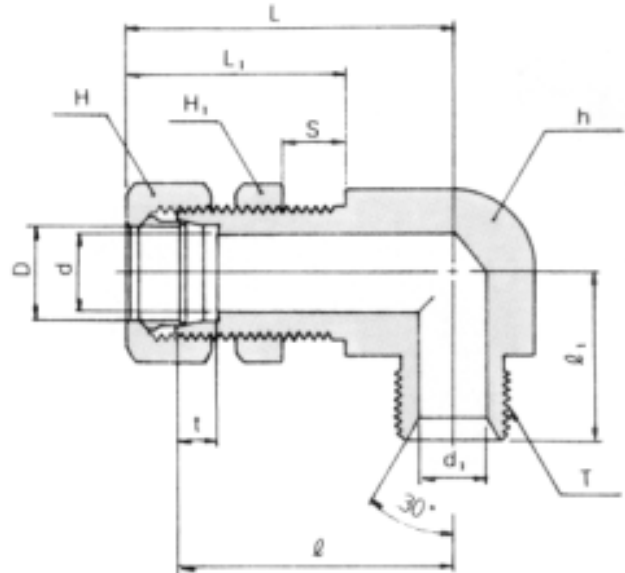
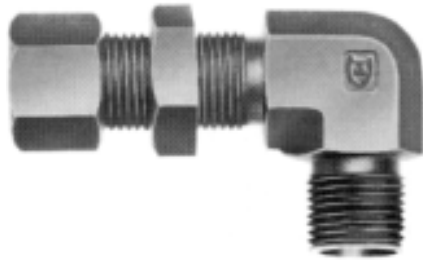


Designations	Tube O.D. (PF)		d	d <sub>1</sub>	Width across flat			t	ℓ <sub>1</sub>	ℓ	Approx		Panel Hole Drill size	Max Panel thickness S
	D	T			h	H <sub>1</sub>	H				L <sub>1</sub>	L		
BHBLM08 - 02G	8	1/4	6	6	19	19	17	7	28	46	42.5	56.5	14.5	13
BHBLM08 - 03G	8	3/8	6	9	19	19	17	7	30	46	42.5	56.5	14.5	13
BHBLM10 - 02G	10	1/4	8	6	22	22	19	7	28	48	43.5	59.5	16.5	13
BHBLM10 - 03G	10	3/8	8	9	22	22	19	7	30	48	43.5	59.5	16.5	13
BHBLM10 - 04G	10	1/2	8	12	24	22	19	7	35	49	43.5	60.5	16.5	13
BHBLM 12 - 02G	12	1/4	10	6	24	24	22	7	31	49	43.5	60.5	18.5	13
BHBLM 12 - 03G	12	3/8	10	9	24	24	22	7	33	49	43.5	60.5	18.5	13
BHBLM 12 - 04G	12	1/2	10	12	24	24	22	7	35	49	43.5	60.5	18.5	13
BHBLM 15 - 03G	15	3/8	12	9	27	27	27	7.5	36	57	49.5	69.5	22.5	15
BHBLM 15 - 04G	15	1/2	12	12	27	27	27	7.5	37	57	49.5	69.5	22.5	15
BHBLM 16 - 03G	16	3/8	13	9	30	30	30	7.5	37	59	49.5	71.5	24.5	15
BHBLM 16 - 04G	16	1/2	13	12	30	30	30	7.5	38	59	49.5	71.5	24.5	15
BHBLM 18 - 04G	18	1/2	14	12	32	32	32	8	39	63	51.5	75.5	26.5	15
BHBLM 20 - 06G	20	3/4	16	16	32	32	36	8	40	65	51.5	77.5	28.5	15
BHBLM 22 - 04G	22	1/2	18	12	36	36	36	9	40	65	51.5	77.5	30.5	15
BHBLM 22 - 06G	22	3/4	18	16	36	36	38	9	40	65	51.5	77.5	30.5	15
BHBLM 25 - 06G	25	3/4	20	16	41	41	41	10	43	68	52.5	81.5	35.5	15
BHBLM 25 - 08G	25	1	20	20	41	41	41	10	43	68	52.5	81.5	35.5	15
BHBLM 28 - 06G	28	3/4	22	16	46	46	46	10	48	74	55	88	38.5	15
BHBLM 28 - 08G	28	1	22	22	46	46	46	10	48	74	55	88	38.5	15
BHBLM 30 - 06G	30	3/4	25	16	46	46	46	10	48	74	55.5	88.5	40.5	15
BHBLM 30 - 08G	30	1	25	22	46	46	46	10	48	74	55.5	88.5	40.5	15

All dimensions are in millimeters. Dimensions are for reference only. Subject to change.

## Bite Type Tube Fittings

### Hose BULKHEAD FEMALE ELBOW BHBLF



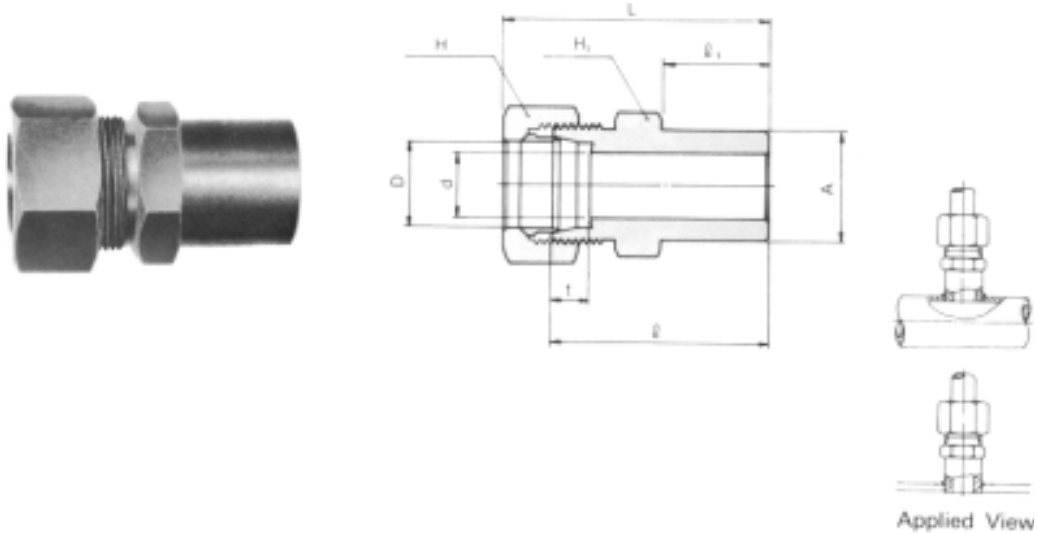
Designations	Tube O.D. (PF)		d	d <sub>1</sub>	Width across flat			t	l <sub>1</sub>	l	Approx.		Panel Hole Drill size	Max Panel thickness S
	D	T			h	H <sub>1</sub>	H				L <sub>1</sub>	L		
BHBLF08 - 02G	8	1/4	6	6	19	19	17	7	28	46	42.5	56.5	14.5	13
BHBLF08 - 03G	8	3/8	6	9	19	19	17	7	30	46	42.5	56.5	14.5	13
BHBLF10 - 02G	10	1/4	8	6	22	22	19	7	28	48	43.5	59.5	16.5	13
BHBLF10 - 03G	10	3/8	8	9	22	22	19	7	30	48	43.5	59.5	16.5	13
BHBLF10 - 04G	10	1/2	8	12	24	22	19	7	35	49	43.5	60.5	16.5	13
BHBLF 12 - 02G	12	1/4	10	6	24	24	22	7	31	49	43.5	60.5	18.5	13
BHBLF 12 - 03G	12	3/8	10	9	24	24	22	7	33	49	43.5	60.5	18.5	13
BHBLF 12 - 04G	12	1/2	10	12	24	24	22	7	35	49	43.5	60.5	18.5	13
BHBLF 15 - 03G	15	3/8	12	9	27	27	27	7.5	36	57	49.5	69.5	22.5	15
BHBLF 15 - 04G	15	1/2	12	12	27	27	27	7.5	37	57	49.5	69.5	22.5	15
BHBLF 16 - 03G	16	3/8	13	9	30	30	30	7.5	37	59	49.5	71.5	24.5	15
BHBLF 16 - 04G	16	1/2	13	12	30	30	30	7.5	38	59	49.5	71.5	24.5	15
BHBLF 18 - 04G	18	1/2	14	12	32	32	32	8	39	63	51.5	75.5	26.5	15
BHBLF 20 - 06G	20	3/4	16	16	32	32	36	8	40	65	51.5	77.5	28.5	15
BHBLF 22 - 04G	22	1/2	18	12	36	36	36	9	40	65	51.5	77.5	30.5	15
BHBLF 22 - 06G	22	3/4	18	16	36	36	38	9	40	65	51.5	77.5	30.5	15
BHBLF 25 - 06G	25	3/4	20	16	41	41	41	10	43	68	52.5	81.5	35.5	15
BHBLF 25 - 08G	25	1	20	20	41	41	41	10	43	68	52.5	81.5	35.5	15
BHBLF 28 - 06G	28	3/4	22	16	46	46	46	10	48	74	55	88	38.5	15
BHBLF 28 - 08G	28	1	22	22	46	46	46	10	48	74	55	88	38.5	15
BHBLF 30 - 06G	30	3/4	25	16	46	46	46	10	48	74	55.5	88.5	40.5	15
BHBLF 30 - 08G	30	1	25	22	46	46	46	10	48	74	55.5	88.5	40.5	15

All dimensions are in millimeters. Dimensions are for reference only. Subject to change.



## Bite Type Tube Fittings

### WELDING CONNECTOR BCW



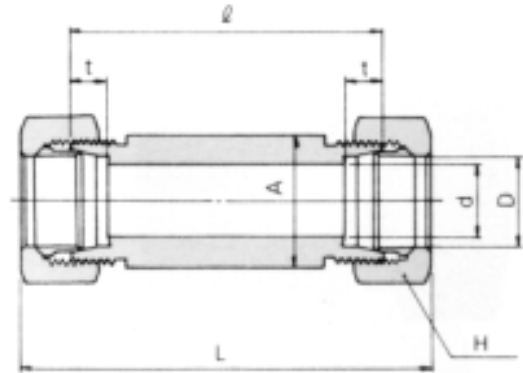
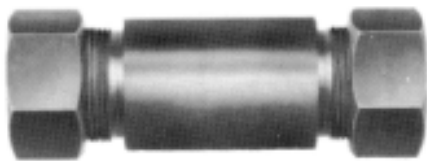
Designations	Tube O.D.		A	d	Width across flat		t	$l_1$	$l$	Approx. L
		D			H <sub>1</sub>	H				
BCW - 06		6	12	4	14	14	7	11	29	39.5
BCW - 08		8	14	6	17	17	7	15	34	44.5
BCW - 10		10	16	8	17	19	7	15	34	45.5
BCW - 12		12	1/8	10	19	22	7	15	34	45.5
BCW - 15		15	21	12	24	27	7.5	18	40	52.5
BCW - 16		16	22	13	27	30	7.5	22	44	56.5
BCW - 18		18	25	14	27	32	8	22	44	56.5
BCW - 20		20	28	17	30	36	8	22	46	58.5
BCW - 25		25	33	20	36	41	10	26	51	64.5
BCW - 28		28	36	22	41	46	10	28	55	69
BCW - 30		30	39	25	41	46	10	28	55	69.5
BCW - 32		32	40	26	46	50	11	28	56	70.5
BCW - 35		35	43	28	46	55	11	28	56	73.5
BCW - 38		38	45	32	50	60	12	28	58	77.5
BCW - 40		40	46	32	55	60	12	30	65	84.5
BCW - 50		50	57	40	65	75	12	30	70	91.5
BCW - 81	1/8	10.5	16	8	17	19	7	15	34	42.5
BCW - 82	1/4	13.8	19	11	22	24	7.5	18	40	52
BCW - 83	3/8	17.3	24	14	27	32	8	22	44	56.5
BCW - 84	1/2	21.7	28	18	32	36	9	22	46	58.5
BCW - 85	3/4	27.2	33	22	41	46	10	25	52	66
BCW - 86	1	34.0	40	28	46	55	11	28	56	73.5
BCW - 87	1 1/4	42.7	47	34	60	65	12	28	65	85.5
BCW - 88	1 1/2	48.6	55	40	65	75	12	30	70	91.5

All dimensions are in millimeters. Dimensions are for reference only. Subject to change.

## Bite Type Tube Fittings

### WELDING BULKHEAD UNION

#### BBUW

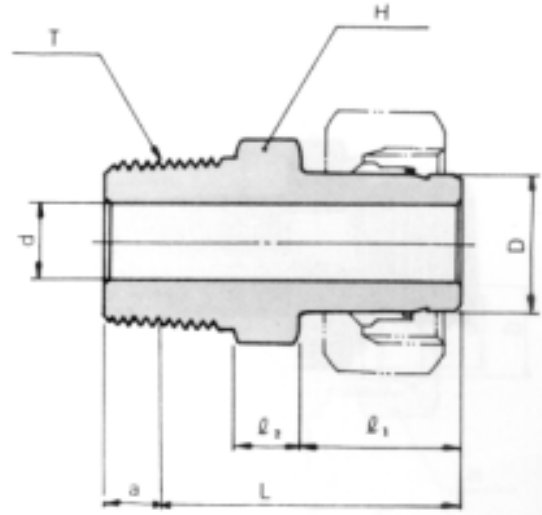
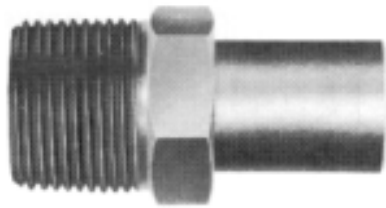


Designations	Tube O.D.		d	A	Width across flat H	t	l	Approx. L
		D						
BBUW - 06		6	4	16	14	7	74	95
BBUW - 08		8	6	16	17	7	74	95
BBUW - 10		10	8	19	19	7	74	97
BBUW - 12		12	10	20	22	7	74	97
BBUW - 15		15	12	25	27	7.5	78	103
BBUW - 16		16	13	28	30	7.5	78	103
BBUW - 18		18	14	28	32	8	78	103
BBUW - 10		20	17	32	36	8	78	103
BBUW - 20		22	18	32	36	9	78	103
BBUW - 25		25	20	38	41	10	78	105
BBUW - 28		28	22	39	46	10	82	110
BBUW - 30		30	25	46	46	10	82	111
BBUW - 32		32	26	46	50	11	82	111
BBUW - 35		35	28	46	55	11	82	117
BBUW - 38		38	32	55	60	12	82	121
BBUW - 40		40	32	55	60	12	90	129
BBUW - 50		50	40	65	75	12	90	133
BBUW - 81	1/8	10.5	8	19	19	7	74	97
BBUW - 82	1/4	13.8	11	24	24	7.5	78	102
BBUW - 83	3/8	17.3	14	32	32	8	78	103
BBUW - 84	1/2	21.7	18	36	36	9	78	103
BBUW - 85	3/4	27.2	22	46	46	10	82	110
BBUW - 86	1	34.0	28	55	55	11	82	117
BBUW - 87	1 1/4	42.7	34	65	65	12	90	131
BBUW - 88	1 1/2	48.6	40	75	75	12	90	133

All dimensions are in millimeters. Dimensions are for reference only. Subject to change.

## Bite Type Tube Fittings

### ADAPTER BA-R

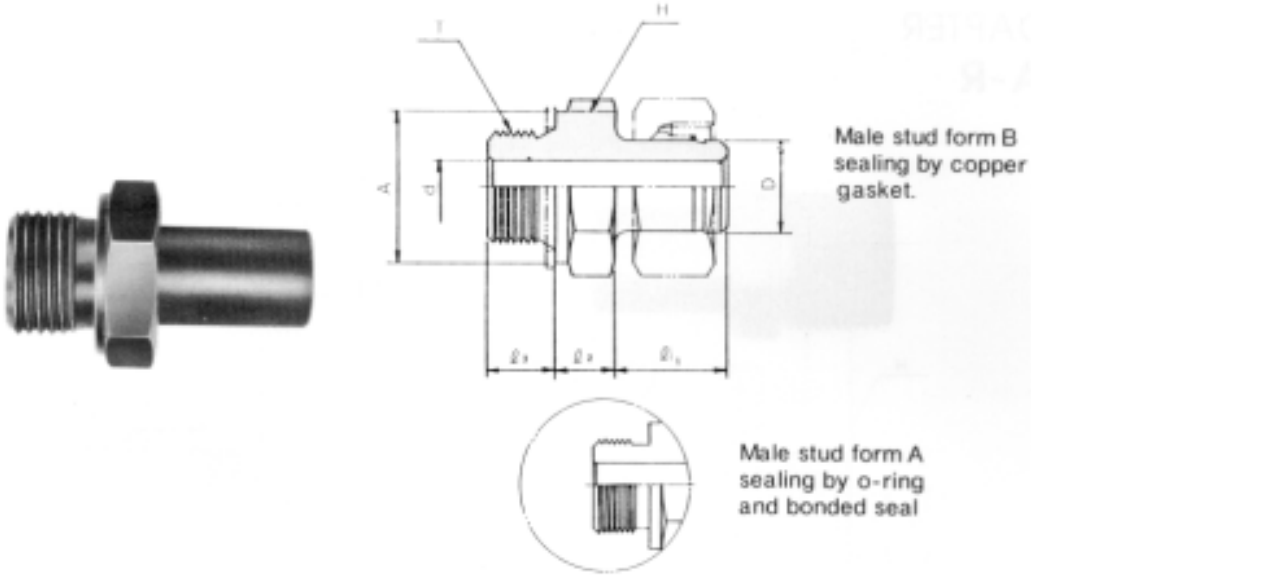


Designations	Tube O.D. D	(PT) T	d	Basic Gauge length a	Width across flat H	$l_1$	$l_2$	Approx. L	
BA06-01R	6	1/8	3	3.97	12	20	6	32	
BA08-02R	8	1/4	5	6.01	14	20	7	35	
BA10-02R	10	1/4	6	6.01	14	21	7	36	
BA10-03R	10	3/8	6	6.35	19	21	7	36.5	
BA12-02R	12	1/4	7	6.01	14	22	7	37	
BA12-03R	12	3/8	8	6.35	19	22	7	37.5	
BA15-03R	15	3/8	8	6.35	19	24	8	40.5	
BA15-04R	15	1/2	10	8.16	22	24	8	43	
BA16-04R	16	1/2	11	8.16	22	24	8	43	
BA18-04R	18	1/2	12	8.16	22	24	8	43	
BA20-06R	20	3/4	14	9.53	27	25	10	46.5	
BA22-06R	22	3/4	14	9.53	27	26	10	47.5	
BA25-06R	25	3/4	16	9.53	27	28	10	49.5	
BA25-08R	25	1	17	10.39	36	28	11	52.5	
BA28-08R	28	1	18	10.39	36	28	11	52.5	
BA30-08R	30	1	20	10.39	36	29	11	53.5	
BA30-10R	30	1 1/4	20	12.70	46	29	12	55	
BA32-10R	32	1 1/4	22	12.70	46	30	12	56	
BA38-12R	38	1 1/2	26	12.70	50	36	14	64.5	
BA40-12R	40	1 1/2	28	12.70	50	36	14	64	
BA50-16R	50	2	34	15.88	65	34	20	72	
BA81-02R	1/8	10.5	1/4	6	6.01	14	21	7	36
BA82-03R	1/4	13.8	3/8	9	6.35	19	22	8	38.5
BA83-04R	3/8	17.3	1/2	11	8.16	22	24	8	43
BA84-06R	1/2	21.7	3/4	14	9.53	27	26	10	47.5
BA85-08R	3/4	27.2	1	18	10.39	36	28	11	52.5
BA86-10R	1	34.0	1 1/4	23	12.70	46	33	12	59
BA87-12R	1 1/4	42.7	1 1/2	29	12.70	50	36	17	67
BA88-16R	1 1/2	48.6	2	33	15.88	65	37	20	72

All dimensions are in millimeters. Dimensions are for reference only. Subject to change.

## Bite Type Tube Fittings

### ADAPTER BA-G



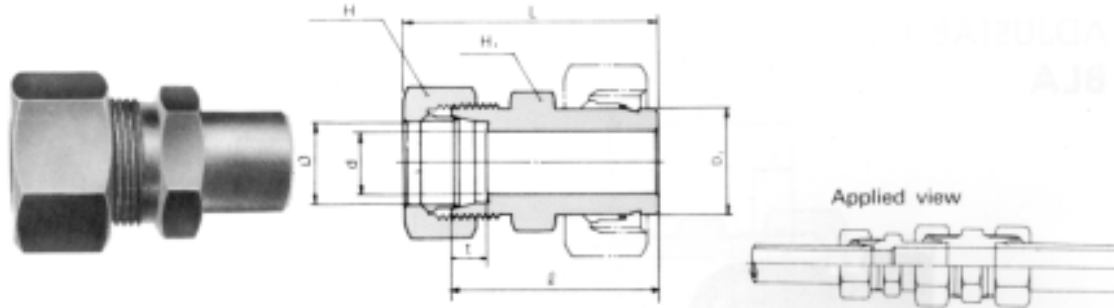
Designations	Tube O.D.		(PT) T	d	Width across flat		A	Approx.		
		D			H			$l_1$	$l_2$	$l_3$
BA06-01G		6	1/8	3	14	14	20	8	8	
BA08-02G		8	1/4	5	19	18	20	9	12	
BA10-02G		10	1/4	6	19	18	21	9	12	
BA10-03G		10	3/8	6	22	21.5	21	10	12	
BA12-02G		12	1/4	7	19	18	22	9	12	
BA12-03G		12	3/8	8	22	21.5	22	10	12	
BA15-03G		15	3/8	8	22	21.5	24	10	12	
BA15-04G		15	1/2	10	27	25.5	24	13	14	
BA16-04G		16	1/2	11	27	25.5	24	13	14	
BA18-04G		18	1/2	12	27	25.5	24	13	14	
BA20-06G		20	3/4	14	32	31.5	25	16	16	
BA22-06G		22	3/4	14	32	31.5	26	16	16	
BA25-06G		25	3/4	16	32	31.5	28	16	16	
BA25-08G		25	1	17	41	38	28	18	18	
BA28-08G		28	1	18	41	38	28	18	18	
BA30-08G		30	1	20	41	38	29	21	18	
BA30-10G		30	1 1/4	20	50	48.5	29	21	20	
BA32-10G		32	1 1/4	22	50	48.5	30	21	20	
BA38-12G		38	1 1/2	26	55	53.5	36	21	21	
BA40-12G		40	1 1/2	28	55	53.5	36	21	21	
BA50-16G		50	2	34	70	66	34	28	24	
BA81-02G	1/8	10.5	1/4	6	19	18	21	9	12	
BA82-03G	1/4	13.8	3/8	9	22	21.5	22	10	12	
BA83-04G	3/8	17.3	1/2	11	27	25.5	24	13	14	
BA84-06G	1/2	21.7	3/4	14	32	31.5	26	16	16	
BA85-08G	3/4	27.2	1	18	41	38	28	18	18	
BA86-10G	1	34.0	1 1/4	23	50	48.5	33	21	20	
BA87-12G	1 1/4	42.7	1 1/2	29	55	53.5	36	23	21	
BA88-16G	1 1/2	48.6	2	33	70	66	37	28	24	

All dimensions are in millimeters. Dimensions are for reference only. Subject to change.

## Bite Type Tube Fittings

### REDUCER

#### BR

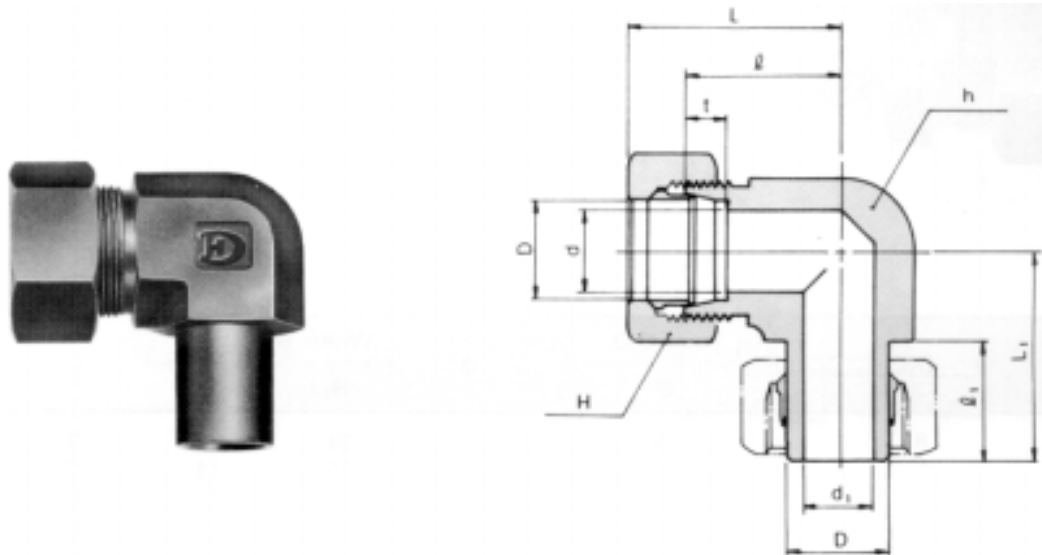


Designations	D <sub>1</sub>	Tube O.D.		d	Width across flat		t	ℓ	Approx. L
		D			H <sub>1</sub>	H			
BR08x06	8		6	4	14	14	7	39	49.5
BR10x06	10		6	4	14	14	7	40	50.5
BR10x08	10		8	6	17	17	7	40	50.5
BR12x06	12		6	4	14	14	7	41	51.5
BR12x08	12		8	6	17	17	7	41	51.5
BR12x10	12		10	8	17	19	7	41	52.5
BR15x08	15		8	6	17	17	7	43	53.5
BR15x10	15		10	8	17	19	7	43	54.5
BR16x06	16		6	4	17	14	7	43	53.5
BR16x10	16		10	8	17	19	7	43	54.5
BR16x12	16		12	10	19	22	7	43	54.5
BR18x10	18		10	8	19	19	7	44	55.5
BR18x15	18		15	12	24	27	7.5	45	57.5
BR20x06	20		6	4	22	14	7	45	55.5
BR20x12	20		12	10	22	22	7	45	56.5
BR20x16	20		16	13	27	30	7.5	47	59.5
BR22x15	22		15	12	24	27	7.5	48	60.5
BR22x18	22		18	14	27	32	8	48	60.5
BR25x16	25		16	13	27	30	7.5	50	62.5
BR25x20	25		20	17	30	36	8	52	64.5
BR28x18	28		18	14	30	32	8	52	64.5
BR28x22	28		22	18	32	36	9	52	64.5
BR30x20	30		20	17	32	36	8	53	65.5
BR30x25	30		25	20	36	41	10	54	67.5
BR32x25	32		25	20	36	41	10	55	68.5
BR35x22	35		22	18	36	36	9	58	70.5
BR35x28	35		28	22	41	46	10	60	74
BR38x25	38		25	20	41	41	10	61	74.5
BR38x30	38		30	25	41	46	10	63	77.5
BR82x81	1/4	13.8	1/8	10.5	8	17	7	41	52.5
BR83x81	3/8	17.3	1/8	10.5	8	19	7	44	55.5
BR83x82	3/8	17.3	1/4	13.8	11	22	7.5	46	58
BR84x82	1/2	21.3	1/4	13.8	11	24	7.5	48	60
BR84x83	1/2	21.7	3/8	17.3	14	27	8	48	60.5
BR85x83	3/4	27.2	3/8	17.3	14	30	8	52	64.5
BR85x84	3/8	27.2	1/2	21.7	18	32	9	52	64.5
BR86x84	1	34.0	1/2	21.7	18	36	9	58	70.5
BR86x85	1	34.0	3/4	27.2	22	41	10	60	74

All dimensions are in millimeters. Dimensions are for reference only. Subject to change.

## Bite Type Tube Fittings

### ADJUSTABLE ELBOW BLA

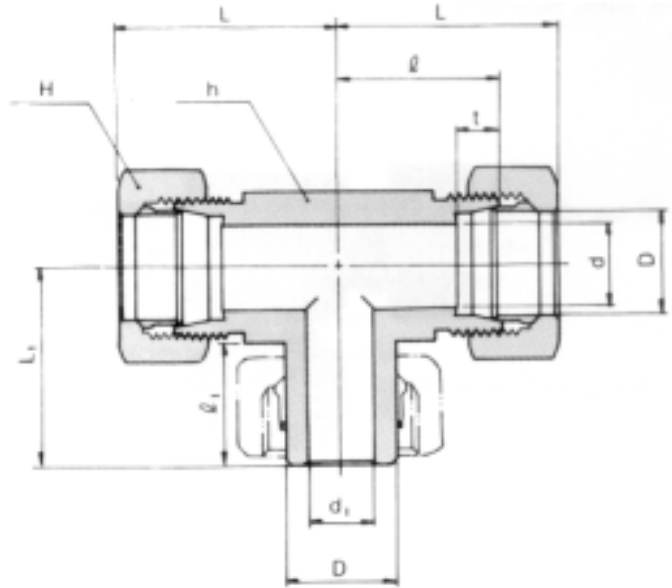


Designations	Tube O.D. D	d	d <sub>1</sub>	Width across flat		t	l	l <sub>1</sub>	Approx.	
				H <sub>1</sub>	H				L	L <sub>1</sub>
BLA-10	10	8	6	17	19	7	23	21	34.5	35
BLA-12	12	10	8	19	22	7	24	22	35.5	37
BLA-15	15	12	10		27	7.5	29	24	44.5	40
BLA-16	16	13	11		30	7.5	32	24	44.5	43
BLA-18	18	14	12	27	32	8	32	24	44.5	43
BLA-20	20	17	14	30	36	8	33	25	45.5	45
BLA-22	22	18	14	32	36	9	34	26	46.5	46
BLA-25	25	20	17	36	41	10	36	28	49.5	49
BLA-28	28	22	18	41	46	10	41	28	55	53
BLA-30	30	25	20	41	46	10	41	29	55.5	54
BLA-32	32	26	22	46	50	11	50	30	64.5	66
BLA-38	38	32	26	50	60	12	50	36	69.5	72

All dimensions are in millimeters. Dimensions are for reference only. Subject to change.

## Bite Type Tube Fittings

### ADJUSTABLE BRANCH TEE BBTA

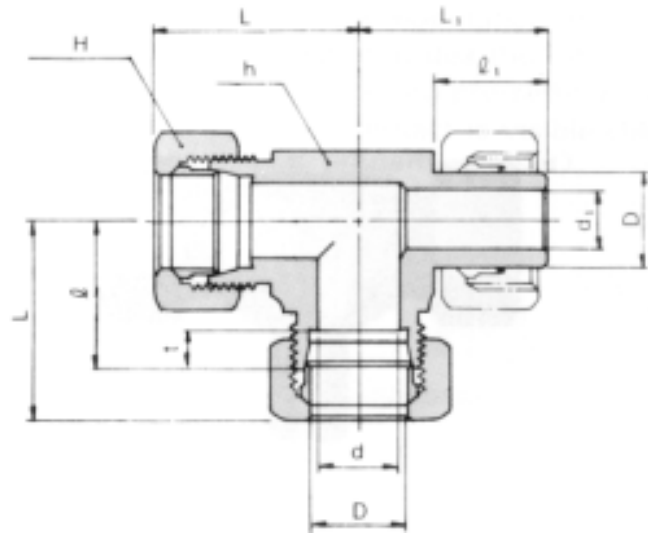


Designations	Tube O.D. D	d	d <sub>1</sub>	Width across flat		t	ℓ	ℓ <sub>1</sub>	Approx.	
				H <sub>1</sub>	H				L	L <sub>1</sub>
BBTA-10	10	8	6	17	19	7	23	21	34.5	35
BBTA-12	12	10	8	19	22	7	24	22	35.5	37
BBTA-15	15	12	10		27	7.5	29	24	44.5	40
BBTA-16	16	13	11		30	7.5	32	24	44.5	43
BBTA-18	18	14	12	27	32	8	32	24	44.5	43
BBTA-20	20	17	14	30	36	8	33	25	45.5	45
BBTA-22	22	18	14	32	36	9	34	26	46.5	46
BBTA-25	25	20	17	36	41	10	36	28	49.5	49

All dimensions are in millimeters. Dimensions are for reference only. Subject to change.

## Bite Type Tube Fittings

### ADJUSTABLE RUN TEE BRTA



Designations	Tube O.D. D	d	d <sub>1</sub>	Width across flat		t	ℓ	ℓ <sub>1</sub>	Approx.	
				H <sub>1</sub>	H				L	L <sub>1</sub>
BRTA-10	10	8	6	17	19	7	23	21	34.5	35
BRTA-12	12	10	8	19	22	7	24	22	35.5	37
BRTA-15	15	12	10	24	27	7.5	29	24	44.5	40
BRTA-16	16	13	11		30	7.5	32	24	44.5	43
BRTA-18	18	14	12	27	32	8	32	24	44.5	43
BRTA-20	20	17	14	30	36	8	33	25	45.5	45
BRTA-22	22	18	14	32	36	9	34	26	46.5	46
BRTA-25	25	20	17	36	41	10	36	28	49.5	49

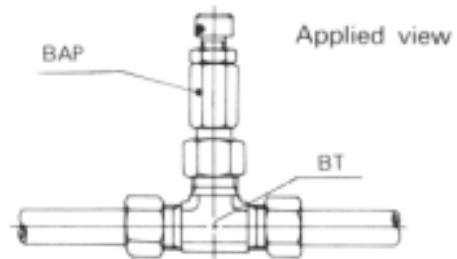
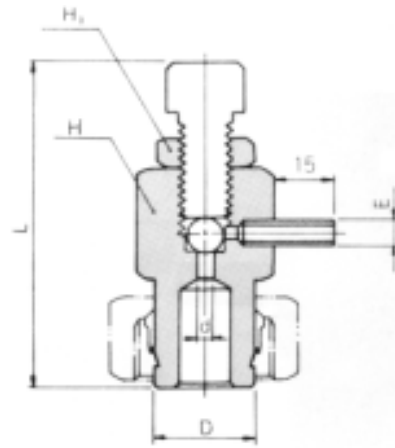
All dimensions are in millimeters. Dimensions are for reference only. Subject to change.



## Bite Type Tube Fittings

### AIR PURGE VALVE

#### BAP-1

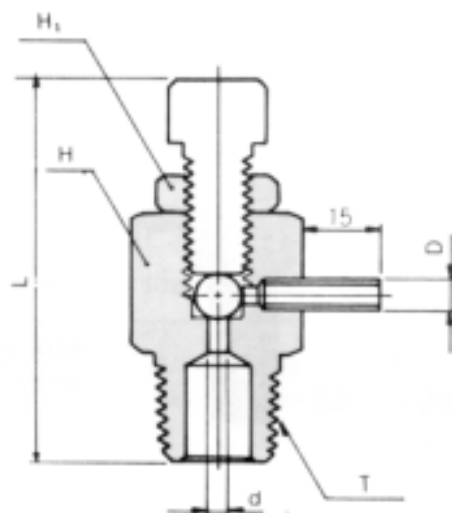


Designations	D	E	d	Width across flat		L	Ball
				H <sub>1</sub>	H		
BAP-06	6	4	3	13	14	56	7/32
BAP-08	8	4	3	13	14	56	7/32
BAP-10	10	4	3	13	14	57	7/32
BAP-12	12	4	3	13	14	58	7/32
BAP-15	15	6	4	19	27	74	5/16
BAP-16	16	6	4	19	27	74	5/16
BAP-18	18	6	4	19	27	74	5/16
BAP-20	20	6	4	19	27	75	5/16
BAP-22	22	6	4	19	27	76	5/16
BAP-25	25	6	4	19	27	78	5/16
BAP-28	28	6	4	19	30	78	5/16
BAP-81	10.5	4	3	13	14	57	7/32
BAP-82	13.8	6	4	19	27	72	5/16
BAP-83	17.3	6	4	19	27	74	5/16
BAP-84	21.7	6	4	19	27	76	5/16
BAP-85	27.2	6	4	19	30	79	5/16

All dimensions are in millimeters. Dimensions are for reference only. Subject to change.

# Bite Type Tube Fittings

## AIR PURGE VALVE BAP-2



Designations	(PT) T	D	d	Width across flat		L	Ball
				H <sub>1</sub>	H		
BAP-01R	1/8	4	3	13	14	51	7/32
BAP-02R	1/4	4	3	13	14	53	7/32
BAP-03R	3/8	6	4	13	14	54	7/32
BAP-04R	1/2	6	4	13	14	69	5/16

All dimensions are in millimeters. Dimensions are for reference only. Subject to change.

# Bite Type Tube Fittings

## MATERIAL COMPARISON LIST

Material	Chemical Compositions					Mechanical Properties			
	C%	Si%	Mn%	P%	S%	Tensile Strength Kgf/mm	Yield Point Kgf/mm	Elongation %	Hardness HB
JIS G4051 S45C	0.42~0.48	0.15~0.45	0.60~0.90	0.030 MAX.	0.035 MAX.	58(MIN.)	35(MIN.)	20(MIN.)	167~229 Normalizing
AISI G1045 & SAE 1045	0.43~0.50	0.10~0.20	0.60~0.90	0.040 MAX.	0.050 MAX.	56	49	15	163
DIN 1652 C45	0.42~0.50	0.15~0.35	0.50~0.80	0.045 MAX.	0.045 MAX.	60(MIN.)	34(MIN.)	18(MIN.)	206(MIN.) Normalizing

Products from hexagon bars are cold drawn, while forged ones are forged.

**APPLICABLE TUBE LIST** : Selection from those below is recommended.

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

Remarks 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

## Bite Type Tube Fittings

### 1) Japanese standards

Relevant standards		for JOHS hydraulic line service		for JIS B2351 bite type fitting		for JIS G3455 carbon Steel pipes for high Pressure service	
Quality characteristic		OST.1	OST.2	STPS.1	STPS.2	STS.35	STS.38
Chemical composition (%)	C	<0.20	0.08~0.18	<0.20	0.08~0.18	0.08~0.18	<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	0.30~0.60	0.30~0.90
	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	<0.20	<0.20
Mechanical Property	Tensile strength (kg/mm <sup>2</sup> )	<45	<45	<45	<45	>35	>38
	Yield point (kg/mm <sup>2</sup> )	>18	>20	>18	>18	>18	>22
	Elongation (%)	>35	>35	>30	>30	>35	>30
	Hardness						
	Bending test	4Dx180°C	4Dx180°C	4Dx180°C	4Dx180°C	6Dx90°C	6Dx90°C
	Flattening test					>20 $H = \frac{(1+e)t}{e+t/D}$	>20 $H = \frac{(1+e)t}{e+t/D}$
Flaring test	1.2xD	1.2xD					
Dimensional tolerance	Outside diameter (mm)	.1022	0.1022	0.1025	0.1025	0.8%, but minmum value is 0.3mm	0.8%, but minmum value is 0.3mm
		28~350.15	28~350.15	30~380.15	30~380.15		
		42~500.20	42~500.20				
	Wall thickness (mm)	0.520%	0.520%	1.00.15	1.00.15	For smaller than 2mm±0.20mm	For smaller than 2mm±0.20mm
1.0~1.515%		1.0~1.515%	1.50.20	1.50.20	For over 2mm±10%	For over 2mm±10%	
Length (mm)	10%2.0	10%2.0	10%2.0	10%2.0			
	6000 <sup>+10</sup> <sub>-0</sub>	6000 <sup>+10</sup> <sub>-0</sub>	6000 <sup>+10</sup> <sub>-0</sub>	6000 <sup>+10</sup> <sub>-0</sub>	greater than specified length	greater than specified length	
Inspection and test	Eddy current flaw detection	O	O	O	O	O	O
	Water pressure test (kg/cm <sup>2</sup> )	50	50	50	50	P=200S t/D	P=200S t/D

Note: In place of the water pressure test, the eddy current test shall be conducted and the result shall be equally guaranteed.

## Bite Type Tube Fittings

### 2) Foreign Standards

	SAE J524b	AMS 5050F(E)	JIC APPENDIX-D	ANSI(NFPA) SMLS	DIN 2391
C	<0.18	<0.15	0.08~0.18	<0.18	0.10
Si					
Mn	0.30~0.60	0.30~0.60	0.30~0.60	0.60~0.60	
P	<0.040	<0.040	<0.050	<0.040	
S	<0.050	<0.050	<0.055	<0.050	
Cu					
Tensile strength (kg/mm)	>31.6		<38.7	<38.7	35~45
Yield point (kg/mm)	>17.6			>17.6	>20.0
Elongation (%)	>35	OD ≤ 12.7 >32 OD > 12.7 >35	>35	>35	>25.0
Hardness	<65		<65	<65	
Flattening test	H=3 x t		H=3 x t	H=3 x t	
Flaring test	1.25xD	t < 7%xD 35% t > 7%xD 45%	1.30 x D	1.30 x D	
Development test				○	
Lengthwise Pressure test					
	≤ 25.4 ±0.102		6.35~12.7 ± 0.076	≤ 12.7 ±0.076	<10.00 ±0.10
Outside diameter (mm)	OVER 25.4~ 38.1 ±0.152 OVER 38.1~ 50.8 ±0.203	AMS2253	OVER 12.7~ 38.1 ± 0.127 OVER 38.1~ 88.9 ± 0.254	OVER 12.7~ 38.1 ±0.127 OVER 38.1~ 88.9 ±0.254	11.00~30.0 ±0.08 32~40 ±0.15
Inside diameter	±15%	AMS2253	6.35~12.7 OVER 12.7~ 38.1 ± 0.127 OVER 38.1~ 88.9 ± 0.254	≤ 12.7 OVER 12.7~ 38.1 ±0.127 OVER 38.1~ 88.9 ± 0.254	
Eddy current flaw detection	○			○	○
Water Pressure test (kg/cm)					

SAE: Society of Automotive Engineers.

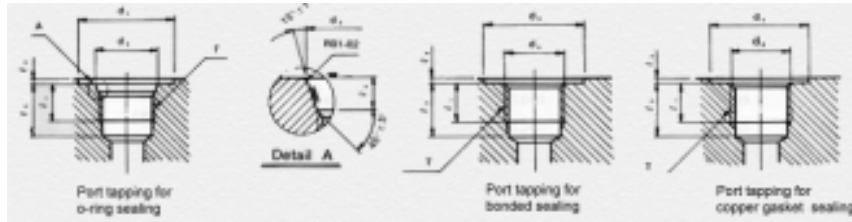
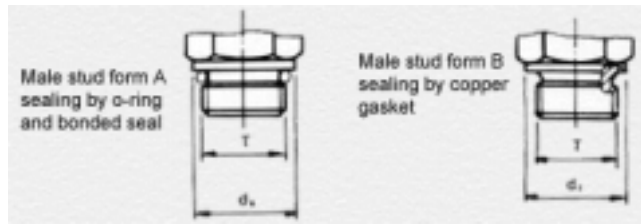
AMS: Aerospace Material Specification.

JIS: The Joint Industrial Congress(JIC Hydraulic STD.)

ANSI: American National Standards Institute.

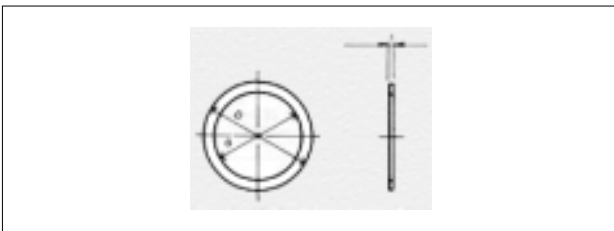
DIN: German Industry Standards.

# Bite Type Tube Fittings



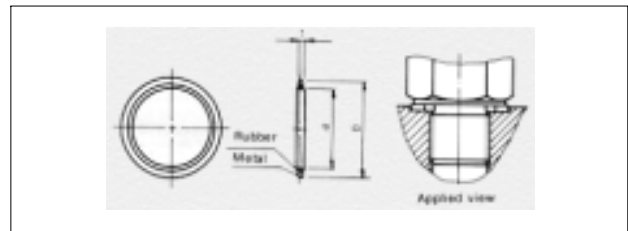
T	d <sub>1</sub>	d <sub>2</sub> <sup>+0.1</sup> <sub>0</sub>	d <sub>3</sub> <sup>+0.3</sup> <sub>0</sub>	Max d <sub>4</sub>	d <sub>5</sub> <sup>+0.3</sup> <sub>0</sub>	d <sub>6</sub>	d <sub>7</sub>	Min l <sub>1</sub>	Max l <sub>2</sub>	Min l <sub>3</sub>	l <sub>4</sub> <sup>+0.4</sup> <sub>0</sub>	l <sub>5</sub>	Suitable Seal		
													O-Ring	Bonded Seal	Copper askel
PF 1/8	18	11.6	17.4	9.7	18.2	14	14	10	1.	15	2	1	P 8	KP-C-01	KP-A-01
PF 1/4	24	15.6	20.9	13.1	22.2	19	18	14	1.5	20	2.5	1	P11	KP-C-02	KP-A-03
PF 3/8	28	18.6	24.4	16.6	26.2	22	21.5	14	2	20	2.5	1	P14	KP-C-03	KP-A-05
PF 1/2	34	22.6	29.4	20.9	32.2	27	25.5	17	2.5	25	2.5	1	P18	KP-C-04	KP-A-07
PF 3/4	45	29.8	34.9	26.4	38.2	36	31.5	19	2.5	27	3.5	1	P24	KP-C-05	KP-A-11
PF 1	51	35.8	41.9	33.2	42.3	41	38	22	2.5	31	3.5	1	P29	KP-C-06	KP-A-16
PF1 1/4	62	44.8	50.9	41.9	53.3	50	48.5	24	2.5	33	3.5	1	P38	KP-C-07	KP-A-20
PF1 1/2	68	50.8	57.4	47.8	60.3	55	53.5	25	2.5	34	3.5	1	P44	KP-C-08	KP-A-23
PF 2	76	67.2	69.4	59.6	72.3	75	66	29	2.5	38	3.5	1	P56	KP-C-09	KP-A-28

## COPPER GASKET



Part No.	Male Thread	d	D	t
KP-A-01	PF 1/8	10	18	2
KP-A-03	PF 1/4	14	22	2
KP-A-05	PF 3/8	17	26	2
KP-A-07	PF 1/2	22	32	2
KP-A-11	PF 3/4	27	38	2
KP-A-16	PF 1	34	42	2
KP-A-20	PF 1 1/4	43	53	2
KP-A-23	PF 1 1/2	49	60	2
KP-A-28	PF 2	61	72	2

## BONDED SEAL



Part No.	Male Thread	d	D	t
KP-C-01	PF 1/8	9.9	17	2
KP-C-02	PF 1/4	13.3	20.5	2
KP-C-03	PF 3/8	16.8	24	2
KP-C-04	PF 1/2	21.1	29	2
KP-C-05	PF 3/4	26.6	34.5	2
KP-C-06	PF 1	33.4	41.5	2.3
KP-C-07	PF 1 1/4	42.1	50.5	2.3
KP-C-08	PF 1 1/2	48.0	57	2.3
KP-C-09	PF 2	59.8	69	2.3