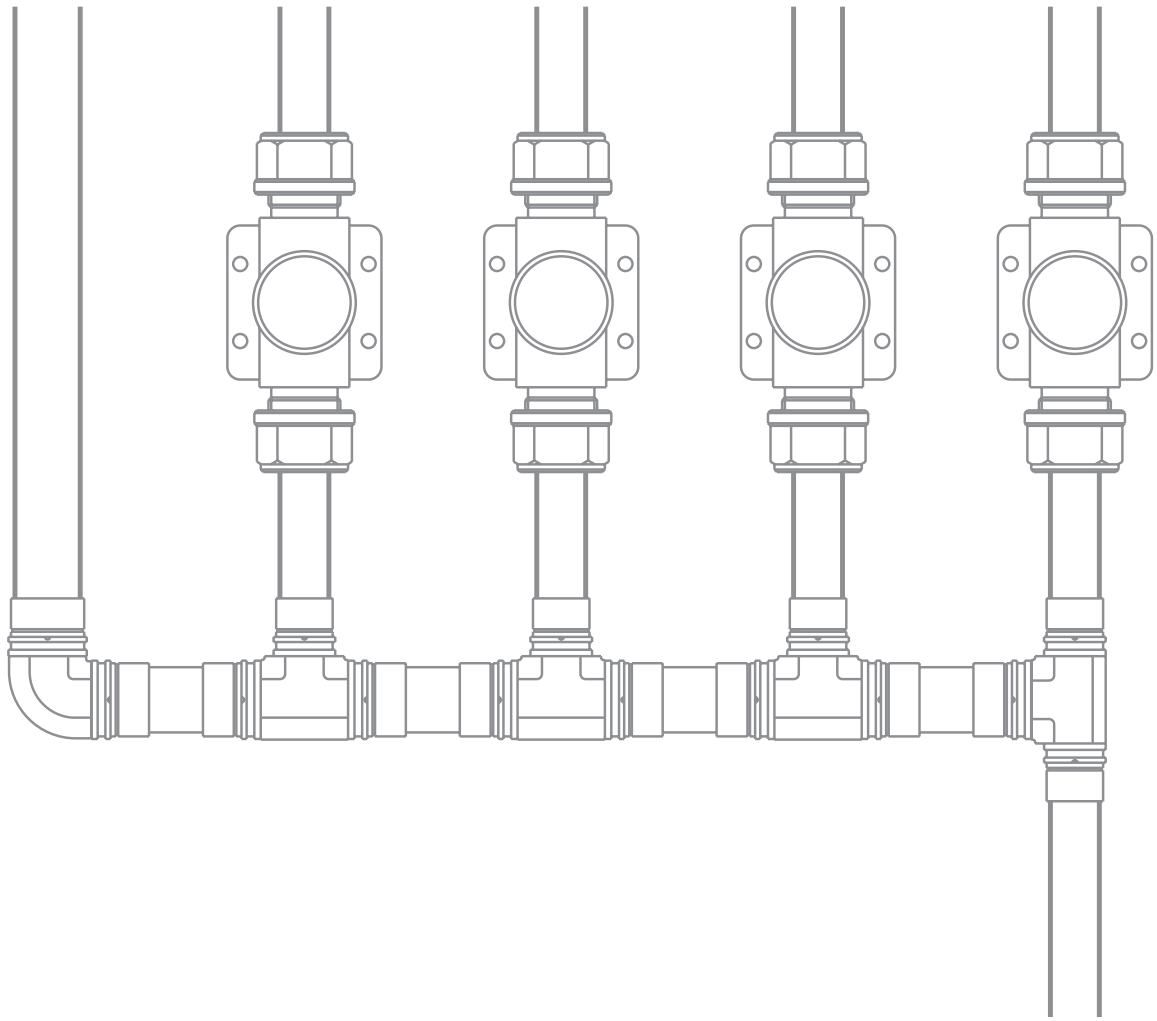
F-LOCK
70 SERIES
TUBE FITTINGS

Flowell

Fluororesin
Weld Fitting

70 SERIES

http://www.flowell.co.jp/



Features

1. **New welding system**
   We have developed a new “full-circumference socket welding” system, which performs heating, melting and joining from the circumference of the tube fitting by inserting a PFA tube into the fitting. Compared to conventional butt welded joints, the wider welding area, and thicker welding thickness have helped to enhance the mechanical strength.
   Also, the employment of a socket type helps to prevent center misalignment of the tube fitting and tube.

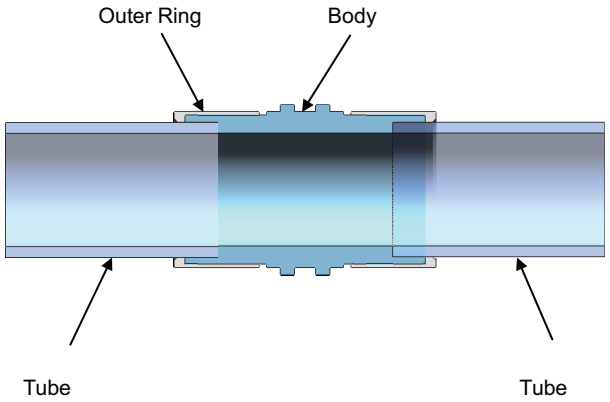
2. **Flat inner welding surface for smooth fluid flow**
   Realizes a "bead-free structure" with inner beads formed in conventional butt welded joints reduced to a minimal extent.
   Level differences and gaps in the piping, which are the causes of bubbles and liquid trapping, are minimized to reduce stress on the fluid.

3. **Firm welding**
   With the special fully-automated welding machine, welding can be performed securely by any user with the touch of a button.
   This eliminates inconsistency among the operators, and allows even beginners to perform work at ease.
   Also, the welding machine comes with a fluorine gas absorption filter.

4. **Enables work in a small space**
   Comprising a power unit and a heating head, the welding machine comes in a portable size.
   This allows welding work to be performed inside a device, which was not possible before.

5. **Compact design and light weight**
   Compared to conventional mechanical seal tube fittings, the 70 series tube fittings have a very compact design.
   This allows for integrated piping in a small space or reduction in the weight of the piping.

Construction



How to Order

When placing an order for the 70 series products, please specify the part number.

70 — 19.05 U — P

Series No.	Tube Size(O.D.)	Configuration	Body Materials

-P : Molded Body
-PH : Machined Body
-BH : Special Molded Body

Tube Size (O.D.×I.D.)	Notation
6.35 × 4.35 (1/4" × 11/64")	6.3
9.53 × 6.35 (3/8" × 1/4")	9.5
12.7 × 9.53 (1/2" × 3/8")	12.7
19.05 × 15.88 (3/4" × 5/8")	19.05
25.4 × 22.23 (1" × 7/8")	25.4
31.8 × 28 (1-1/4" × 1-1/10")	31.8
38.1 × 33.7 (1-1/2" × 1-21/64")	38.1

*Also available in 2" size. Please contact us or our distributor for more information.

Specifications

1. **Max. operating pressure:** see diagram below
2. **Max. operating temperature:** 200℃ (392℉)
3. **Material:** PFA fluororesin
4. **Applicable tube:** PFA fruororesin tube
5. **Applicable tube size:** Refer to the table below.

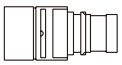
Applicable Tube Size & Maximum Operating Pressure

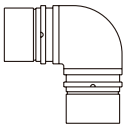
Tube Size (O.D.×I.D.)	Max. Operating Pressure			
	25°C (77°F)		200°C (392°F)	
	MPa	psig	MPa	psig
6.35 × 4.35 (1/4" × 11/64")	1.2	174	0.47	68.2
9.53 × 6.35 (3/8" × 1/4")	1.2	174	0.47	68.2
12.7 × 9.53 (1/2" × 3/8")	1.2	174	0.47	68.2
19.05 × 15.88 (3/4" × 5/8")	0.9	130.5	0.35	50.8
25.4 × 22.23 (1" × 7/8")	0.7	101.5	0.27	39.2
31.8 × 28 (1-1/4" × 1-1/10")	0.7	101.5	0.27	39.2
38.1 × 33.7 (1-1/2" × 1-21/64")	0.7	101.5	0.27	39.2

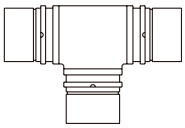
※ The breaking strength of the welded part and welding joint is higher than that of the tube.

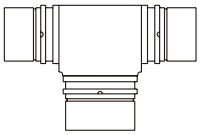
Configurations


UNION ..... U 5


REDUCING UNION ..... RU 5

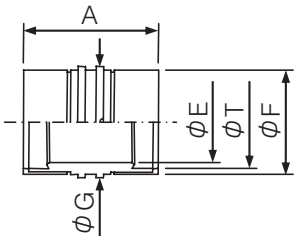

UNION ELBOW ..... UE 5


UNION TEE ..... UT 6


REDUCING UNION BURANCH TEE ..... RUBT 6


REDUCER ..... R 7

U UNION

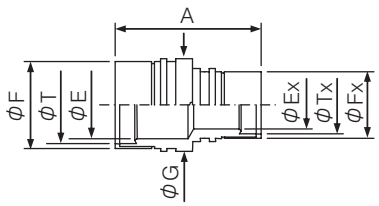


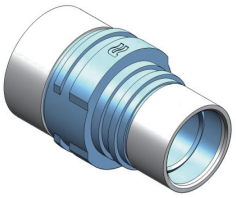



Molded Product (P) Special Molded Product (BH)

Model	ϕ T	A	ϕ E	ϕ F	ϕ G
70-6.3U-P	6.35 × 4.35	33	4.3	9.25	10.9
70-9.5U-P	9.53 × 6.35	33	6.3	12.5	15
70-12.7U-P	12.7 × 9.53	33	9.5	16	18
70-19.05U-P	19.05 × 15.88	37	15.9	22	24
70-25.4U-P	25.4 × 22.23	37	22.2	28.5	30.5
70-31.8U-BH	31.8 × 28	42	28	35	36.8
70-38.1U-BH	38.1 × 33.7	42	33.7	41.5	43

RU REDUCING UNION

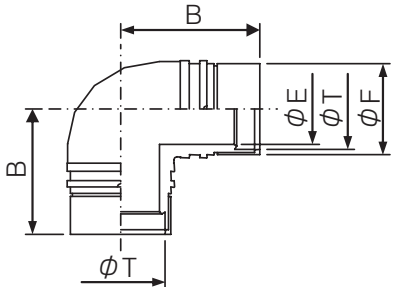


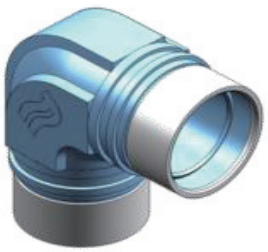


Molded Product (P)

Model	ϕ T	ϕ Tx	A	ϕ E	ϕ Ex	ϕ F	ϕ Fx	ϕ G
70-19.05RU12.7-P	19.05×15.88	12.7×9.53	46.5	15.9	9.5	22	16	24
70-25.4RU19.05-P	25.4×22.23	19.05×15.88	48.5	22.2	15.9	28.5	22	30.5

UE UNION ELBOW





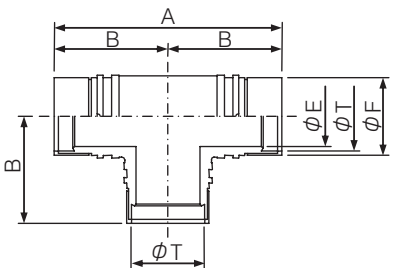
Molded Product (P)

W = Max. Width

Model	ϕ T	B	ϕ E	ϕ F	W
70-6.3UE-P	6.35 × 4.35	27.5	4.3	9.25	11
70-9.5UE-P	9.53 × 6.35	29.5	6.3	12.5	15
70-12.7UE-P	12.7 × 9.53	31.5	9.5	16	18
70-19.05UE-P	19.05 × 15.88	36.5	15.9	22	24
70-25.4UE-P	25.4 × 22.23	39.5	22.2	28.5	31
70-31.8UE-P	31.8 × 28	44.5	28	35	37
70-38.1UE-P	38.1 × 33.7	48	33.7	41.5	44

- All dimensions are for reference only.
- Units : mm

UT UNION TEE



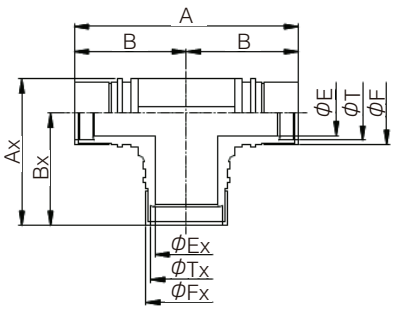


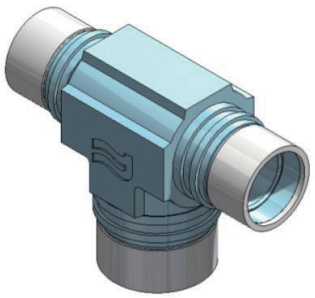
Molded Product (P)

W = Max. Width

Model	ϕ T	A	B	ϕ E	ϕ F	W
70-6.3UT-P	6.35 × 4.35	55	28.5	4.3	9.25	11
70-9.5UT-P	9.53 × 6.35	59	29.5	6.3	12.5	15
70-12.7UT-P	12.7 × 9.53	63	31.5	9.5	16	18
70-19.05UT-P	19.05 × 15.88	73	36.5	15.9	22	24
70-25.4UT-P	25.4 × 22.23	79	39.5	22.2	28.5	30.5
70-31.8UT-P	31.8 × 28	89	44.5	28	35	38
70-38.1UT-P	38.1 × 33.7	96	48	33.7	41.5	44

RUBT REDUCING UNION BRANCH TEE





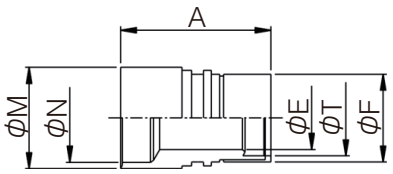
Molded Product (P)

W = Max. Width

Model	ϕ T	ϕ Tx	A	Ax	B	Bx	ϕ E	ϕ Ex	ϕ F	ϕ Fx	W
70-19.05RUBT25.4-P	19.05×15.88	25.4×22.23	79	51.5	39.5	39.5	15.9	22.2	22	28.5	31
70-25.4RUBT19.05-P	25.4×22.23	19.05×15.88	79	55	39.5	39.5	22.2	15.9	28.5	22	31

- All dimensions are for reference only.
- Units : mm

R REDUCER





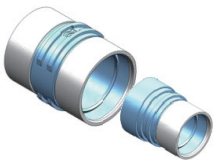
Machined Product (-PH)

- All dimensions are for reference only.
- Units : mm

Model No. Notation: 70- (Tube Fitting Diameter) R (Tube Diameter) -PH

Model	ϕ T	ϕ E	ϕ F	A	ϕ M	ϕ N
70-6.3R12.7-PH	ϕ6.35×4.35	4.3	12.5	36	12.7	9.5
70-6.3R19.05-PH	ϕ6.35×4.35	4.3	12.5	36	19.05	15.9
70-9.5R19.05-PH	ϕ9.53×6.35	6.3	12.5	36	19.05	15.9
70-12.7R19.05-PH	ϕ12.7×9.53	9.5	16	36	19.05	15.9
70-9.5R25.4-PH	ϕ9.53×6.35	6.3	12.5	36	25.4	22.2
70-12.7R25.4-PH	ϕ12.7×9.53	9.5	16	36	25.4	22.2
70-19.05R25.4-PH	ϕ19.05×15.88	15.9	22	38	25.4	22.2
70-9.5R31.8-PH	ϕ9.53×6.35	6.3	12.5	39.5	31.8	28
70-12.7R31.8-PH	ϕ12.7×9.53	9.5	16	39.5	31.8	28
70-19.05R31.8-PH	ϕ19.05×15.88	15.9	22	41.5	31.8	28
70-25.4R31.8-PH	ϕ25.4×22.23	22.2	28.5	41.5	31.8	28
70-9.5R38.1-PH	ϕ9.53×6.35	6.3	12.5	39.5	38.1	33.7
70-12.7R38.1-PH	ϕ12.7×9.53	9.5	16	39.5	38.1	33.7
70-19.05R38.1-PH	ϕ19.05×15.88	15.9	22	41.5	38.1	33.7
70-25.4R38.1-PH	ϕ25.4×22.23	22.2	28.5	41.5	38.1	33.7
70-31.8R38.1-PH	ϕ31.8×28	28	35	44	38.1	33.7

Reducer Combination (Example)



RU : **Reducing Union**



RUE : **Reducing Union Elbow**

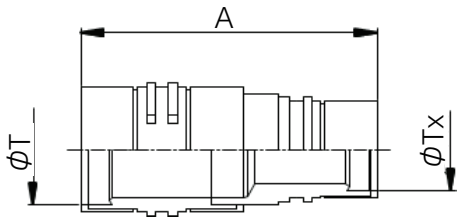


RUBT/RURT : **Reducing Union Tee**

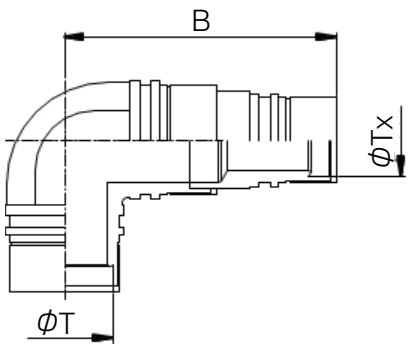
Different tube fitting shapes can be created by welding the reducer to existing molded tube fitting products.
We also offer on-site welding services to produce the type of tube fitting shape required.

Reference Dimensions with Reducer Connected

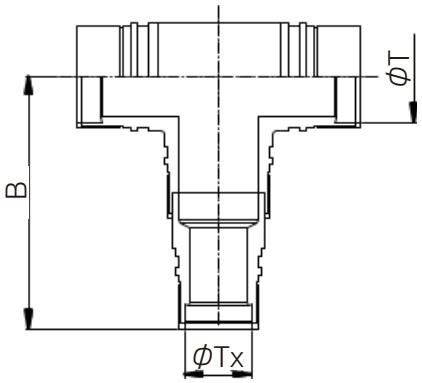
[R + U = Equivalent to RU]



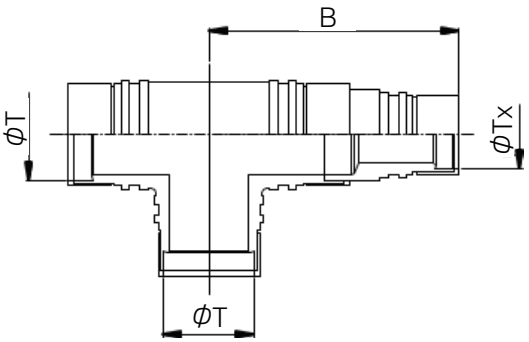
[R + UE = Equivalent to RUE]



[R + UT = Equivalent to RUBT]



[R + UT = Equivalent to RURT]



Size of Molded Tube Fitting	Reducer to Connect	ϕ T	ϕ Tx	RU-equivalent Product A A	RUE-equivalent Product RUBT-/RURT-equivalent Product B B
12.7	6.3 R 12.7	12.7×9.53	6.35 × 4.35	62.5	61
19.05	6.3 R 19.05	19.05×15.88	6.35 × 4.35	66	65.5
	9.5 R 19.05	19.05×15.88	9.53×6.35	66	65.5
	12.7 R 19.05	19.05×15.88	12.7×9.53	66	65.5
25.4	9.5 R 25.4	25.4×22.23	9.53×6.35	66	68.5
	12.7 R 25.4	25.4×22.23	12.7×9.53	66	68.5
	19.05 R 25.4	25.4×22.23	19.05×15.88	68	70.5
31.8	9.5 R 31.8	31.8×28	9.53×6.35	72	74.5
	12.7 R 31.8	31.8×28	12.7×9.53	72	74.5
	19.05 R 31.8	31.8×28	19.05×15.88	74	76.5
	25.4 R 31.8	31.8×28	25.4×22.23	74	76.5
38.1	9.5 R 38.1	38.1×33.7	9.53×6.35	72	78
	12.7 R 38.1	38.1×33.7	12.7×9.53	72	78
	19.05 R 38.1	38.1×33.7	19.05×15.88	74	80
	25.4 R 38.1	38.1×33.7	25.4×22.23	74	80
	31.8 R 38.1	38.1×33.7	31.8×28	76.5	82.5

* All dimensions are for reference only.
* Units : mm

Welding Tools

* For details on the work method and precautions to take, please refer to the separate instruction manual.

Welding Machine

For All Sizes

ST70-5PU **Power Unit**



■ External Dimension (Width x Height x Depth)
210mm × 95mm × 135mm
(Including protruding parts)
■ Weight
1.5kg or less
■ Power Unit
AC100 to 240V 50/60Hz 3.5A (Max.)

ST70-5CA **Cable**



■ Total Cable Length
3m

By Tube Size

ST70-5HE-□
Welding Head



ST70-4TH-□
Tube Holder



ST70-4FC-□
Forming Cutter



Tube Size (Outer Diameter x Inner Diameter mm)	Model		
	Welding Head	Tube Holder	Forming Cutter
6.35 × 4.35	ST70-5HE-6.3	ST70-4TH-6.3	ST70-4FC-6.3
9.53 × 6.35	ST70-5HE-9.5	ST70-4TH-9.5	ST70-4FC-9.5
12.7 × 9.53	ST70-5HE-12.7	ST70-4TH-12.7	ST70-4FC-12.7
19.05 × 15.88	ST70-5HE-19.05	ST70-4TH-19.05	ST70-4FC-19.05
25.4 × 22.23	ST70-5HE-25.4	ST70-4TH-25.4	ST70-4FC-25.4
31.8 × 28	ST70-5HE-31.8	ST70-4TH-31.8	ST70-4FC-31.8
38.1 × 33.7	ST70-5HE-38.1	ST70-4TH-38.1	ST70-4FC-38.1

Others

Tube Cutter [Model No. TC-21 and VC-28]

This tube cutter is used exclusively for cutting fluoro resin tubes at a right angle.

1.
Applicable tube size : ϕ 3 to ϕ 25

2.
Applicable tube materials: PFA, PTFE, FEP

※ Caution: Do not use the cutter on hard materials such as PVC (polyvinyl chloride) resin pipes.

TC-21



Manufactured by NIHON PISCO CO., LTD

VC-28



Manufactured by VICTOR CO.,LTD

F-LOCK
70 SERIES
TUBE FITTINGS

Flowell

* We have gathered the necessary information in this catalog in good faith based on our experience and research. However, we are not in a position to manage the conditions under which the products are used by our customers. Thus, in some cases, we may not be able to provide guarantee against the information we have provided herein.
* When using the products with liquid mixtures or special liquids, or under special environments (e.g., high or low temperatures), make sure to select the product to use after conducting the necessary tests or checks.
* Use the products within the range of specifications.
* Specifications and dimensions are subject to change for improvement without prior notice.
* We also accept special orders. For special specifications, please contact us.
* Please read through the instruction manual to ensure proper use of our products.
* We do not accept returned goods in principle.

Flowell

QUALITY ASSURANCE JIC REGISTERED ORGANIZATION No.4821-ISO 9001 MS JAB CM002
フッ素樹脂継手の設計・開発、製造

FLOWELL CORPORATION

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