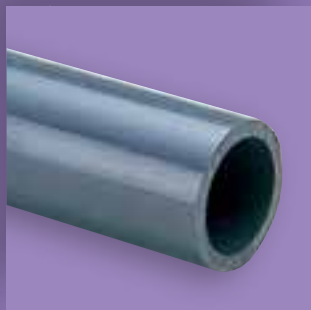


High Purity Pipe & Fittings

High Purity Resistance Polyvinyl Chloride Pipe (HP-PVC)	P.086
High Purity Resistance Polyvinyl Chloride Fittings (HP-PVC)	P.087
Flange	P.098
Prefab Joint	P.099
Multi-Joint	P.100
Joint Equipment	P.104
Technical Document	P.105



Precision

PRODUCT MODEL CODE LIST

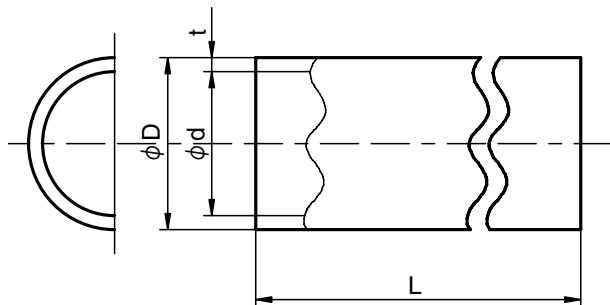
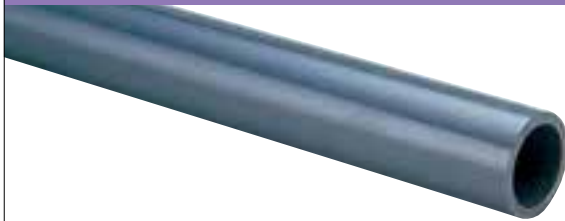
High Purity

Type	Field	Material	Standard/Wall Thickness	Standard	Type	Size	Length
P	N	2	PP	J	N	***	04
P Pipe	N Standard	2 High Purity	PP Straight Pipe VP	J JIS	N Standard	013 13mm 300 300mm	04 4m

Straight Pipe (VP)

PRODUCT MODEL CODE

P N 2 PP J N Size 04



High Purity PVC Pipe Allowable Pressure by Temperature MPa (kgf/cm²)

Temperature	20°C	30°C	40°C	50°C
Size				
13 – 300 mm	1.0 {10.2}	0.9 {9.2}	0.7 {7.1}	0.3 {3.1}

Notes: This data is based on high purity water.

Dimensions Table

(Unit: mm)

Size	D			t		d	L
	Outer Diameter			Wall Thickness			
	Basic Dimension	Max/Min. Tolerance	Average Tolerance	Min.	Tolerance	Approximate Inner Diameter (Reference)	Length
13	18	±0.2	±0.2	2.2	+0.6	13	4000±10
16	22	±0.2	±0.2	2.7	+0.6	16	4000±10
20	26	±0.2	±0.2	2.7	+0.6	20	4000±10
25	32	±0.2	±0.2	3.1	+0.8	25	4000±10
30	38	±0.3	±0.2	3.1	+0.8	31	4000±10
40	48	±0.3	±0.2	3.5	+0.8	40	4000±10
50	60	±0.4	±0.2	4.1	+0.8	51	4000±10
65	76	±0.5	±0.3	4.1	+0.8	67	4000±10
75	89	±0.5	±0.3	5.5	+0.8	77	4000±10
100	114	±0.6	±0.4	6.6	+1.0	100	4000±10
125	140	±0.8	±0.5	7.0	+1.0	125	4000±10
150	165	±1.0	±0.5	8.9	+1.4	146	4000±10
200	216	±1.3	±0.7	10.3	+1.4	194	4000±10
250	267	±1.6	±0.9	12.7	+1.8	240	4000±10
300	318	±1.9	±1.0	15.1	+2.2	286	4000±10

Notes: 1. Length tolerance shall be ±10 mm.

2. Maximum/minimum outer dimensional tolerance is the allowed difference of measured outer diameter at any location.

3. Average outer dimensional tolerance is the allowed difference of arithmetic mean value of measured outer diameters in 2 directions perpendicular to each other at any location.

PRODUCT MODEL CODE LIST

High Purity

Type	Field	Material	Model	Standard	Type	Size
T	N	2	**	J	N	***
⋮	⋮	⋮	⋮	⋮	⋮	⋮
T TS Fitting	N Standard	2 High Purity	9L Elbow 4L 45° Elbow SO Socket TE Tee VS Valve Socket (Metal not contained) CP Cap FL Faucet Elbow (Metal not contained) FS Faucet Socket (Metal not contained)	J JIS	N Standard	013 13mm 150 150mm 016013 16×13mm 150125 150×125mm

High Purity Bend

Type	Field	Material	Model	Standard	Others	Size
B	N	2	45	V	N	***
⋮	⋮	⋮	⋮	⋮	⋮	⋮
B Bend	N None Color	2 High Purity	45 45° Bend	V AV	N Normal Color	040 40mm 150 150mm

High Purity Large-Size Bend

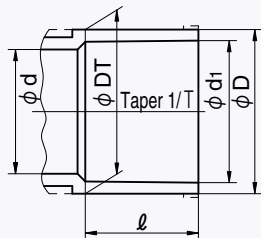
Type	Field	Material	Model	Standard	Others	Size
B	*	2	**	V	N	***
⋮	⋮	⋮	⋮	⋮	⋮	⋮
B Bend	N None Color F FRP (SU) G FRP (GU)	2 High Purity	45 45° Bend 90 90° Bend	V AV	N Normal Color	200 200mm 300 300mm

High Purity Large-Size Fitting

Type	Field	Material	Model	Standard	Others	Size
T	*	2	**	V	N	***
⋮	⋮	⋮	⋮	⋮	⋮	⋮
T TS Fitting	N None Color F FRP (SU) G FRP (GU)	2 High Purity	9L 90° Elbow SO Socket TE Tee	V AV	N Normal Color	200 200mm 300 300mm 200075 200×75mm 300250 300×250mm

AVTS Fitting Socket Common Dimensions

Size 13 – 150 mm



High Purity PVC Fitting Allowable Pressure by Temperature MPa (kgf/cm²)

Temperature	20°C	30°C	40°C	50°C
Size (mm)				
13 – 150 mm	1.0	0.9	0.7	0.3

Notes: 1. This data is based on high purity water.

Dimensions Table

(Unit: mm)

Size	d ₁	d ₁ Tolerance	ℓ	1/T	D	DT	D and DT Tolerance	d (Min.)	Applicable Pipe Outer Diameter
13	18.40	±0.20	26	1/30	24	24.0	-0.6	13	18
16	22.40	±0.20	30	1/34	29	29.0	-0.7	16	22
20	26.45	±0.20	35	1/34	33	33.0	-0.8	20	26
25	32.55	±0.25	40	1/34	40	40.0	-1.0	25	32
30	38.60	±0.25	44	1/34	46	46.0	-1.0	31	38
40	48.70	±0.30	55	1/37	57	57.0	-1.2	40	48
50	60.80	±0.30	63	1/37	70	70.0	-1.5	51	60
* 65	76.60	±0.30	61	1/48	87	88.5	-1.5	67	76
75	89.60	±0.30	64	1/49	102	104.5	-1.5	77	89
100	114.70	±0.30	84	1/56	130	133.5	-1.8	100	114
* 125	140.85	±0.35	104	1/58	157	161.0	-1.8	125	140
150	166.00	±0.40	132	1/63	186	190.0	-2.0	146	165

Notes: 1. ℓ tolerance shall be ⁺⁴_{-0.5} mm.

2. * The marked ones conform to the AV standard and the JPPFA standard.

High Purity PVC Pipe & Fittings Standard Table

Product Name Size (mm)	Pipe	L	S	T	45L	TS Flange	Q Flange	90° Bend	FL	VS	FS	C	Prefab Joint
13	○	○	○	○	—	○	—	—	○	○	○	○	○
16	○	○	○	○	—	○	○	—	○	○	○	○	○
20	○	○	○	○	○	○	○	—	○	○	○	○	○
25	○	○	○	○	○	○	○	—	○	○	○	○	○
30	○	○	○	○	—	○	○	—	—	○	—	—	○
40	○	○	○	○	○	○	○	—	—	○	—	○	○
50	○	○	○	○	○	○	○	—	—	○	—	○	○
65	○	○	○	○	○	○	○	—	—	○	—	○	○
75	○	○	○	○	○	○	○	—	—	○	—	○	○
100	○	○	○	○	○	○	○	—	—	○	—	○	○
125	○	○	○	○	○	○	○	—	—	—	—	—	—
150	○	○	○	○	○	○	○	—	—	—	—	—	—
200	○	○	○	○	○	○	—	○	—	—	—	—	—
250	○	○	○	○	○	○	—	○	—	—	—	—	—
300	○	○	○	○	○	○	—	○	—	—	—	—	—

High Purity PVC Reducer Fitting Standard Table

Product Name Size (mm)	T	S	Product Name Size (mm)	T	S	Product Name Size (mm)	T	S
16x13	○	—	40x30	○	○	100x 75	○	○
20x13	○	○	50x13	○	—	125x 75	○	—
20x16	○	○	50x16	○	—	125x100	○	—
25x13	○	○	50x20	○	○	150x 75	○	—
25x16	○	○	50x25	○	○	150x100	○	—
25x20	○	○	50x30	○	—	150x125	○	○
30x13	○*	○*	50x40	○	○	200x 75	○	—
30x16	○	—	65x40	○	—	200x100	○	—
30x20	○	○*	65x50	○	○	200x150	○	○
30x25	○	○	75x25	○	—	250x 75	○	—
40x13	○	—	75x40	○	—	250x100	○	—
40x16	○*	—	75x50	○	○	250x200	○	○
40x20	○	○	75x65	—	○	300x250	—	○
40x25	○	○	100x50	○	—			

* Cannot perform welding connection.

High Purity PVC Fitting Allowable Pressure by Temperature

Temperature Size (mm)	20°C	30°C	40°C	50°C
13 – 150	1.0 {10.2}	0.9 {9.2}	0.7 {7.1}	0.3 {3.1}
200	0.75 {7.7}	0.6 {6.1}	0.5 {5.1}	0.25 {2.6}
250	0.6 {6.1}	0.5 {5.1}	0.4 {4.1}	0.2 {2.0}
300	0.4 {4.1}	0.4 {4.1}	0.3 {3.1}	0.1 {1.1}

Elbow

Abbreviation: **L**

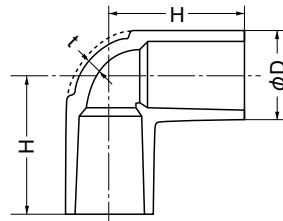
PRODUCT
MODEL CODE

TS ▶ T N 2 9L J N Size

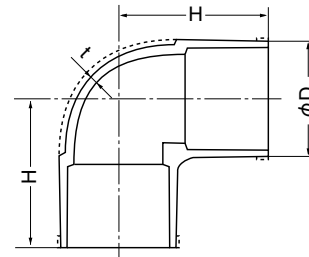


TS **High Purity PVC**

Size 13 – 50mm



Size 65 – 150mm



Maximum Working Pressure (20°C)

TS 1.0MPa

Dimensions Table

(Unit: mm)

Size	TS	D	t	H
13	○	24.0	3.0	36
16	○	29.0	3.5	43
20	○	33.0	3.5	50
25	○	40.0	4.0	58
30	○	46.0	4.0	65
40	○	57.0	4.5	82

Size	TS	D	t	H
50	○	70.0	5.0	96
65	●	87.0	6.6	110
75	●	102.0	8.0	120
100	●	130.0	10.0	153
125	●	157.0	11.0	188
150	●	186.0	13.0	230

Notes: 1. H tolerance shall be ± 0.5 mm. 2. ● conform to the JPPFA standard. 3. ○ are accordance with JIS K6743.

45° Elbow

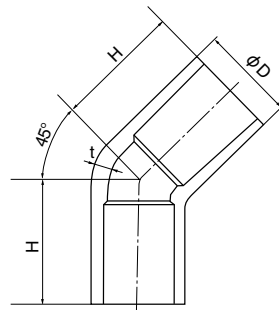
Abbreviation: **45L**

PRODUCT
MODEL CODE

TS ▶ P N 2 4L J N Size



TS **High Purity PVC**



Maximum Working Pressure (20°C)

TS 1.0MPa

Dimensions Table

(Unit: mm)

Size	TS	D	t	H
20	○	33.0	3.5	44
25	○	40.0	4.0	51

Notes: 1. H tolerance shall be ± 0.5 mm.
2. ○ are accordance with JIS K6743.

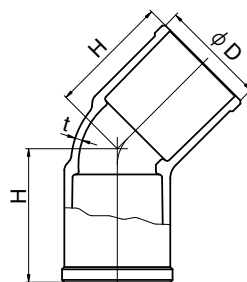
45° Bend

PRODUCT
MODEL CODE

TS ▶ B N 2 45 V N Size



TS **High Purity PVC**



Maximum Working Pressure (20°C)

TS 1.0MPa

Dimensions Table

(Unit: mm)

Size	TS	D	t	H
40	○	57	4.5	69
50	○	70	5	80
65	○	87	6.6	81
75	□	101	6	97
100	□	129	7.3	122
125	□	156	7.7	149
150	□	185	10	184

Notes: 1. □ conform to the AV standard.
2. ○ are accordance with JIS K6743.

Socket

Abbreviation: **S**

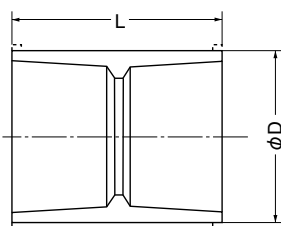
PRODUCT MODEL CODE

TS ▶ T N 2 SO J N Size

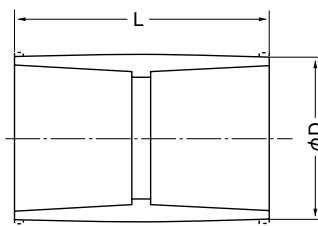


TS **High Purity PVC**

Size 13 – 50mm



Size 65 – 150mm



Maximum Working Pressure (20°C)

TS 1.0MPa

Dimensions Table

(Unit: mm)

Size	TS	D	L	Size	TS	D	L
13	○	24.0	57	50	○	70.0	133
16	○	29.0	67	65	●	87.0	145
20	○	33.0	77	75	○	102.0	155
25	○	40.0	87	100	○	130.0	200
30	○	46.0	95	125	●	157.0	240
40	○	57.0	117	150	○	186.0	300

Notes :1. L tolerance shall be ±4.0 mm. 2. ● conform to the JPPFA standard. 3. ○ are accordance with JIS K6743.

Reducing Socket

Abbreviation: **RS**

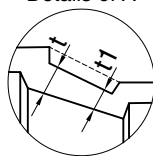
PRODUCT MODEL CODE

TS ▶ T N 2 SO J N Size

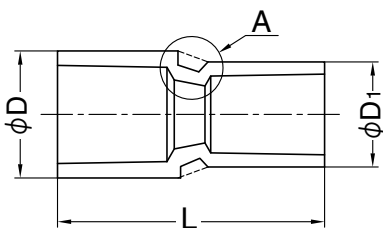


TS **High Purity PVC**

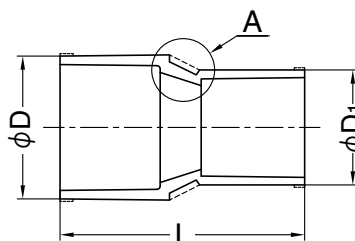
Details of A



Size 13 – 50mm



Size 65 – 150mm



Maximum Working Pressure (20°C)

TS 1.0MPa

Dimensions Table

(Unit: mm)

Size	TS	D	t	D ₁	t ₁	L	Size	TS	D	t	D ₁	t ₁	L
20×13	○	33.0	3.5	24.0	3.0	68	50×20	●	70.0	5.0	33.0	3.5	116
20×16	○	33.0	3.5	29.0	3.5	71	50×25	●	70.0	5.0	40.0	4.0	140
25×13	○	40.0	4.0	24.0	3.0	86	50×40	○	70.0	5.0	57.0	4.5	136
25×16	○	40.0	4.0	29.0	3.5	85	65×50	●	87.0	6.6	70.0	5.0	149
25×20	○	40.0	4.0	33.0	3.5	84	75×50	○	102.0	8.0	70.0	5.0	165
※ 30×13	□	48.2	—	28.2	—	73.2	75×65	●	102.0	8.0	87.0	6.6	159
※ 30×20	□	48.2	—	36.2	—	83	100×75	○	130.0	10.0	102.0	8.0	190
30×25	○	46.0	4.0	40.0	4.0	93	125×100	●	157.0	11.0	130.0	10.0	229
40×20	●	57.0	4.5	33.0	3.5	113	150×125	○	186.0	13.0	157.0	11.0	272
40×25	○	57.0	4.5	40.0	4.0	114							
40×30	○	57.0	4.5	46.0	4.0	114							

Notes :1. L tolerance shall be ±4.0 mm. 2. ● conform to the JPPFA standard. 3. □ conform to the AV standard.

4. ○ are accordance with JIS K6743. 5. ※ conform that's not available to welding connection.

Tee

Abbreviation: **T**

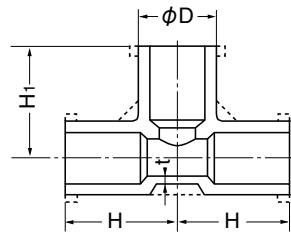
PRODUCT
MODEL CODE

TS ▶ T N 2 TE J N Size

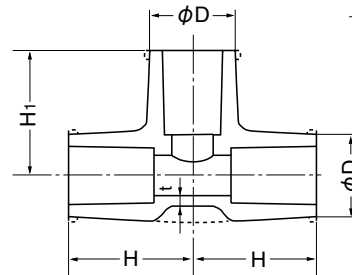


TS **High Purity PVC**

Size 13 – 50mm



Size 65 – 150mm



Maximum Working Pressure (20°C)

TS 1.0MPa

Dimensions Table

Size	TS	D	t	H	H1
13	○	24.0	3.0	36	36
16	○	29.0	3.5	43	43
20	○	33.0	3.5	50	50
25	○	40.0	4.0	58	58
30	○	46.0	4.0	65	65
40	○	57.0	4.5	82	82

Size	TS	D	t	H	H1
50	○	70.0	5.0	96	96
65	●	87.0	6.6	110	110
75	○	102.0	8.0	120	120
100	○	130.0	10.0	152	152
125	●	157.0	11.0	187	187
150	○	186.0	13.0	230	230

(Unit: mm)

Notes : 1. H tolerance shall be ± 0.5 mm. 2. ● conform to the JPPFA standard. 3. ○ are accordance with JIS K6743.

Reducing Tee

Abbreviation: **T**

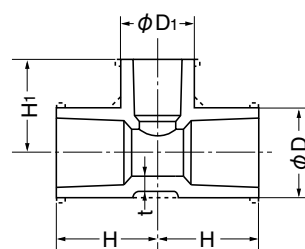
PRODUCT
MODEL CODE

TS ▶ T N 2 TE J N Size

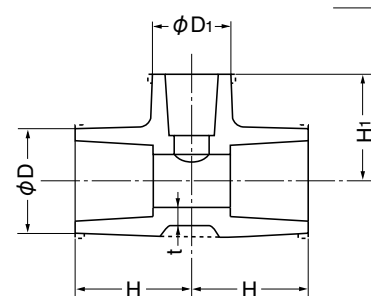


TS **High Purity PVC**

Size 13 – 50mm



Size 65 – 150mm



Maximum Working Pressure (20°C)

TS 1.0MPa

Dimensions Table

Size	TS	D	t	H	D ₁	H ₁
16×13	○	29.0	3.5	41	24.0	38.0
20×13	○	33.0	3.5	46	24.0	40.0
20×16	○	33.0	3.5	48	29.0	45.0
25×13	○	40.0	4.0	51	24.0	43.0
25×16	○	40.0	4.0	53	29.0	48.0
25×20	○	40.0	4.0	55	33.0	53.0
※ 30×13	□	48.2	6.5	54.7	28.2	44.0
30×16	○	46.0	4.0	57	29.0	51.0
30×20	○	46.0	4.0	59	33.0	56.0
30×25	○	46.0	4.0	62	40.0	61.0

Size	TS	D	t	H	D ₁	H ₁
40×13	○	57.0	4.5	66	24.0	52
※ 40×16	□	58.4	5.2	62.4	30.9	52.5
40×20	○	57.0	4.5	70	33.0	62
40×25	○	57.0	4.5	73	40.0	67
40×30	○	57.0	4.5	76	46.0	71
50×13	○	70.0	5.0	74	24.0	58
50×16	○	70.0	5.0	76	29.0	63
50×20	○	70.0	5.0	78	33.0	68
50×25	○	70.0	5.0	81	40.0	73
50×30	○	70.0	5.0	84	46.0	77
50×40	○	70.0	5.0	90	57.0	88

(Unit: mm)

Dimensions Table

Size	TS	D	t	H	D ₁	H ₁
65×40	●	87.0	6.6	100	57.0	95
65×50	●	87.0	6.6	101	70.0	104
75×25	○	102.0	8.0	93	40.0	88
75×40	○	102.0	8.0	100	57.0	102
75×50	○	102.0	8.0	105	70.0	110

Size	TS	D	t	H	D ₁	H ₁
100×50	○	130.0	10.0	125	70.0	122
100×75	○	130.0	10.0	140	102.0	132
125×75	●	157.0	11.0	160	102.0	147
125×100	●	157.0	11.0	173	130.0	167
150×75	○	186.0	13.0	195	102.0	158
150×100	○	186.0	13.0	208	130.0	182
150×125	●	186.0	13.0	217	157.0	201

(Unit: mm)

Notes : 1. H and H1 tolerance shall be ± 0.5 mm. 2. ● conform to the JPPFA standard. 3. □ conform to the AV standard.

4. ○ are accordance with JIS K6743. 5. ※ conform that's not available to welding connection.

Faucet Elbow

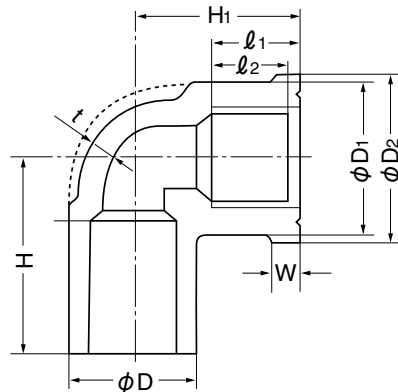
Abbreviation: **FL**

PRODUCT MODEL CODE

TS ▶ T N 2 FL J N Size



TS **High Purity PVC**



Maximum Working Pressure (20°C)

TS 1.0MPa

<Use Precautions>

- * Use both seal tape and gasket for connection of threaded ends.
- * Do not use them for connecting steel pipe and PVC pipe.
- * Fix the area around an elbow using a retainer.

Dimensions Table

(Unit: mm)

Size	TS	D	t	D ₁	D ₂	l ₁	l ₂	W	H	H ₁	Female Thread Size
13	□	24.0	3.0	30	34	17	14	4	38	29	Rp1/2
16	□	29.0	3.5	30	34	17	14	4	43	32	Rp1/2
20	□	33.0	3.5	37	42	19	16	4	51	36	Rp3/4
25	□	40.0	4.0	46	52	21	18	5	59	40	Rp1

Notes: 1. Threaded end shall be parallel female thread of JIS B 0203 (taper threaded end for pipes). 2. H tolerance shall be $^{+5}_{-1}$ mm. 3. H₁ tolerance shall be $^{+5}_{-2}$ mm. 4. □ conform to the AV standard. 5. l₂ tolerance shall be ±1 mm.

Faucet Socket

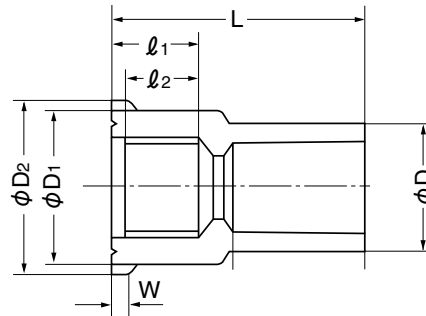
Abbreviation: **FS**

PRODUCT
MODEL CODE

TS ▶ T N 2 FS J N Size



TS High Purity PVC



Maximum Working Pressure (20°C)

TS 1.0MPa

<Use Precautions>

- * Use both seal tape and gasket for connection of threaded ends.
- * Do not use them for connecting steel pipe and PVC pipe.

Dimensions Table

(Unit: mm)

Size	TS	D	D ₁	D ₂	l ₁	l ₂	W	L	Female Thread Size
13	□	24.0	30	34	17	14	4	47	Rp1/2
16	□	29.0	30	34	17	14	4	52	Rp1/2
20	□	33.0	37	42	19	16	4	59	Rp3/4
25	□	40.0	46	52	21	18	5	68	Rp1

- Notes: 1. Threaded end shall be parallel female thread of JIS B 0203 (taper threaded end for pipes).
 2. L tolerance shall be $^{+5}_{-1}$ mm.
 3. l₂ tolerance shall be ± 1 mm.
 4. □ conform to the AV standard.

Valve Socket

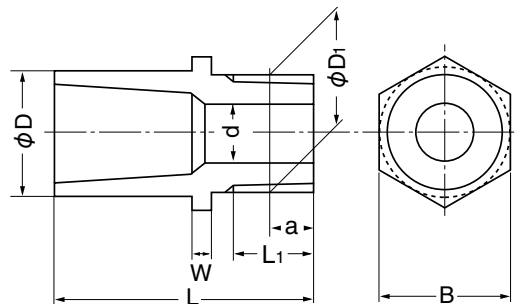
Abbreviation: **VS**

PRODUCT
MODEL CODE

TS ▶ T N 2 VS J N Size



TS High Purity PVC



Maximum Working Pressure (20°C)

TS 1.0MPa

<Use Precautions>

- * Avoid screwing in and removing repeatedly.
- * Do not connect threaded parts using seal tape.
- * Do not use them for connecting with steel pipe.
- * Do not use them for buried pipe.
- * Do not use them for the area where an external force such as bending and vibration is applied.

Dimensions Table

(Unit: mm)

Size	TS	D	d	Thread Nominal	Basic Diameter Outer Diameter D ₁	Thread Number of Threads/Inch	Basic Diameter Position a	L ₁ (Min.)	W	L	B
13	○	24.0	13	R1/2	20.955	14	8.16	13.16	6	50	24
16	○	29.0	13	R1/2	20.955	14	8.16	13.16	6	54	29
20	○	33.0	18	R3/4	26.441	14	9.53	14.53	8	64	33
25	○	40.0	23	R1	33.249	11	10.39	16.79	8	71	40
30	○	46.0	31	R1 1/4	41.910	11	12.70	19.10	10	80	46
40	○	57.0	37	R1 1/2	47.803	11	12.70	19.10	10	92	57
50	○	70.0	48	R2	59.614	11	15.88	23.38	12	106	70
65	□	87.0	62	R2 1/2	75.184	11	17.46	30	15	118	87
75	□	102.0	72	R3	87.884	11	20.64	34	16	127	102
100	□	130.0	96	R4	113.030	11	25.40	40	18	157	130

- Notes: 1. Threaded end shall conform to taper male threaded end of JIS B0203 (taper threaded end for pipes).
 2. L tolerance shall be $^{+5}_{-2}$ mm.
 3. ○ are accordance with JIS K6743.
 4. □ conform to the AV standard.
 5. B tolerance shall conform to D tolerance.

Cap

Abbreviation: **C**

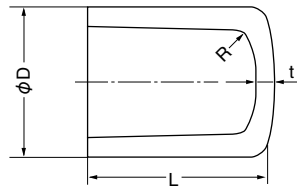
PRODUCT MODEL CODE

TS ▶ T N 2 CP J N Size

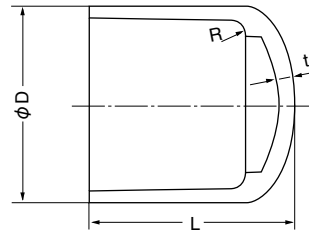


TS **High Purity PVC**

Size 13 – 50 mm



Size 65 – 150 mm



Maximum Working Pressure (20°C)

TS 1.0MPa

Dimensions Table

(Unit: mm)

Size	TS	D	t	L
13	○	24.0	3.0	29.0
16	○	29.0	3.5	33.5
20	○	33.0	3.5	38.5
25	○	40.0	4.0	44.0
40	○	57.0	4.5	59.5

Size	TS	D	t	L
50	○	70.0	5.0	68.0
65	●	87.0	6.6	96.0
75	○	102.0	8.0	105.0
100	●	130.0	10.0	138.0

Notes: 1. L tolerance shall be $^{+5}$ mm. 2. ● conform to the AV standard and the JPPFA standard.
3. R tolerance shall be 1 to 5 mm. 4. ○ are accordance with JIS K6743.

AV45° Bend

PRODUCT MODEL CODE

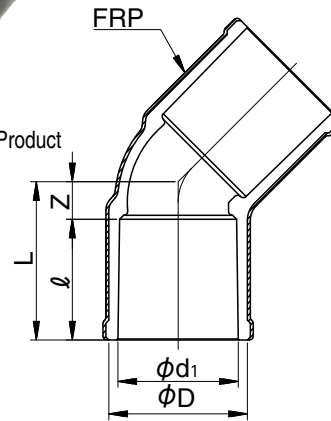
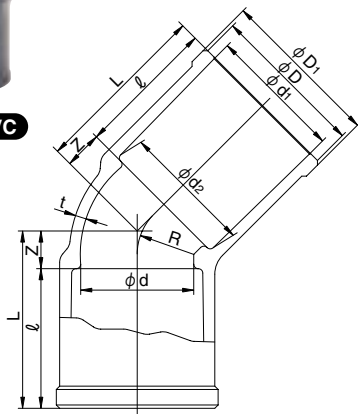
TS ▶ B N 2 45 V N Size
FRP (SU) ▶ B F 2 45 V N Size
FRP (GU) ▶ B G 2 45 V N Size



TS **High Purity PVC**



FRP Reinforcement Product (SU, GU)



Maximum Working Pressure (20°C)

200mm TS 0.75MPa
250mm TS 0.6MPa
300mm TS 0.4MPa
FRP Reinforcement Product 1.0MPa

Dimensions Table

(Unit: mm)

Size	TS	FRP	d ₁	d ₂	ℓ	D (Min.)	D ₁ (Reference)	d	t (Min.)	Z	L	R
200	□	□	217.00	214.10	145	240	244	196	15	48	193	98
250	□	□	268.20	265.00	155	293	298	247	16	58	213	123.5
300	□	□	318.70	315.88	155	337	341	298	10	70	225	149

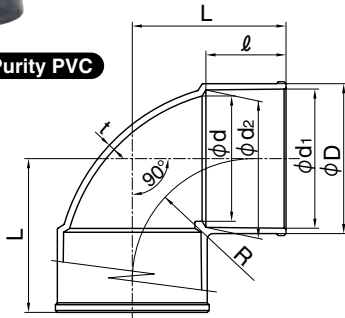
Notes: 1. □ conform to the AV standard.

Elbow (L)

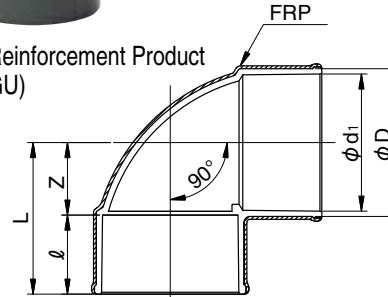
PRODUCT MODEL CODE	TS	T	N	2	9L	V	N	Size
	FRP (SU)	T	F	2	9L	V	N	Size
	FRP (GU)	T	G	2	9L	V	N	Size



TS High Purity PVC



FRP Reinforcement Product (SU, GU)



Maximum Working Pressure (20°C)

200mm TS	0.75MPa
250mm TS	0.6MPa
300mm TS	0.4MPa
FRP Reinforcement Product	1.0MPa

Dimensions Table

(Unit: mm)

Size	TS	FRP	d ₁	d ₂	l	D	d	t	L	R
200	<input type="checkbox"/>	<input type="checkbox"/>	217.0	214.1	145	240	201	15	265	190
250	<input type="checkbox"/>	<input type="checkbox"/>	268.2	265.0	155	295	247	16	311	235
300	<input type="checkbox"/>	<input type="checkbox"/>	319.6	315.5	175	347	298	18	350	170

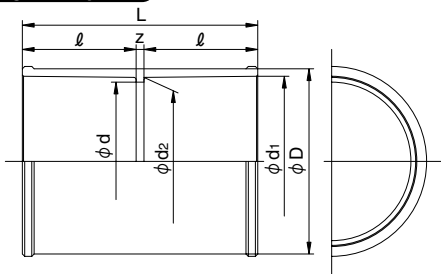
Notes: 1. conform to the AV standard.

Socket

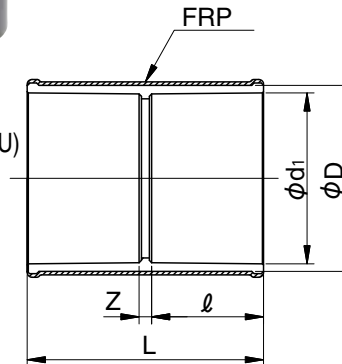
PRODUCT MODEL CODE	TS	T	N	2	SO	V	N	Size
	FRP (SU)	T	F	2	SO	V	N	Size
	FRP (GU)	T	G	2	SO	V	N	Size



TS High Purity PVC



FRP Reinforcement Product (SU, GU)



Maximum Working Pressure (20°C)

200mm TS	0.75MPa
250mm TS	0.6MPa
300mm TS	0.4MPa
FRP Reinforcement Product	1.0MPa

Dimensions Table

(Unit: mm)

Size	TS	FRP	d ₁	d ₂	l	D	d	Z	L
200	<input type="checkbox"/>	<input type="checkbox"/>	217.0	214.1	145	238	202	15	305
250	<input type="checkbox"/>	<input type="checkbox"/>	268.2	265.0	155	295	247	42	352
300	<input type="checkbox"/>	<input type="checkbox"/>	319.6	315.5	175	336	298	10	360

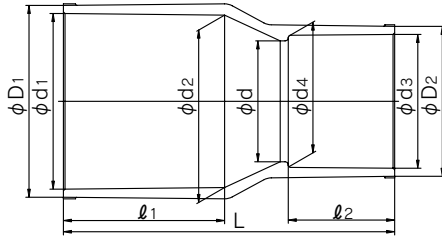
Notes: 1. conform to the AV standard.

Reducing Socket

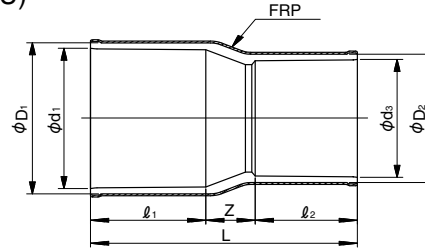
PRODUCT MODEL CODE	TS	T	N	2	SO	V	N	Size
	FRP (SU)	T	F	2	SO	V	N	Size
	FRP (GU)	T	G	2	SO	V	N	Size



TS High Purity PVC



FRP Reinforcement Product (SU, GU)



Maximum Working Pressure (20°C)	
200mm TS	0.75MPa
250mm TS	0.6MPa
300mm TS	0.4MPa
FRP Reinforcement Product	1.0MPa

Dimensions Table

(Unit: mm)

Size	TS	FRP	d_1	d_2	l_1	d_3	d_4	l_2	D_1	D_2	d	L
200×150	<input type="checkbox"/>	<input type="checkbox"/>	217.0	214.1	145	166.0	163.9	132	240	188	146	356
250×200	<input type="checkbox"/>	<input type="checkbox"/>	268.2	265.0	155	217.0	214.1	145	292	240	194	380
300×250	<input type="checkbox"/>	<input type="checkbox"/>	319.6	315.5	175	268.2	265.0	155	347	295	247	405

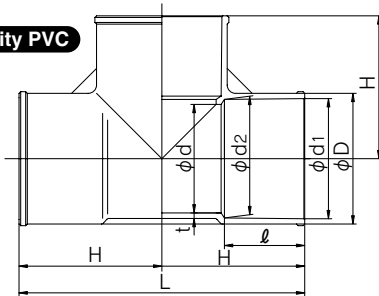
Notes: 1. conform to the AV standard.

Tee

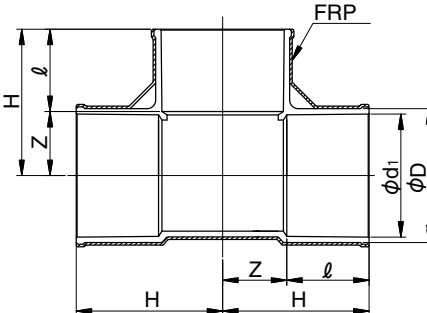
PRODUCT MODEL CODE	TS	T	N	2	TE	V	N	Size
	FRP (SU)	T	F	2	TE	V	N	Size
	FRP (GU)	T	G	2	TE	V	N	Size



TS High Purity PVC



FRP Reinforcement Product (SU, GU)



Maximum Working Pressure (20°C)	
200mm TS	0.75MPa
250mm TS	0.6MPa
300mm TS	0.4MPa
FRP Reinforcement Product	1.0MPa

Dimensions Table

(Unit: mm)

Size	TS	FRP	d_1	d_2	l	D	d	t	L	H
200	<input type="checkbox"/>	<input type="checkbox"/>	217.0	214.1	145	240	196	15	532	266
250	<input type="checkbox"/>	<input type="checkbox"/>	268.2	265.0	155	295	247	16	662	331
300	<input type="checkbox"/>	<input type="checkbox"/>	319.6	315.5	175	337	298	10	680	340

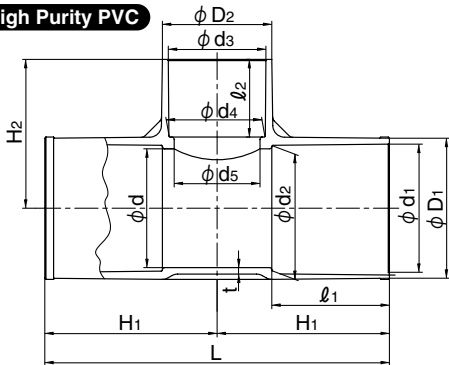
Notes: 1. conform to the AV standard.

Reducing Tee

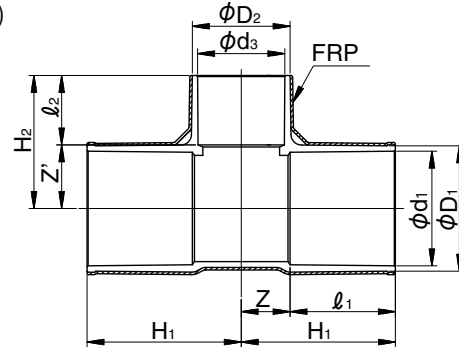
PRODUCT MODEL CODE	TS	T	N	2	TE	V	N	Size
	FRP (SU)	T	F	2	TE	V	N	Size
	FRP (GU)	T	G	2	TE	V	N	Size



TS High Purity PVC



FRP Reinforcement Product (SU, GU)



Maximum Working Pressure (20°C)

200mm TS	0.75MPa
250mm TS	0.6MPa
300mm TS	0.4MPa
FRP Reinforcement Product	1.0MPa

Dimensions Table

(Unit: mm)

Size	TS	FRP	d ₁	d ₂	l ₁	d ₃	d ₄	l ₂	D ₁	D ₂	d	d ₅	t	L	H ₁	H ₂
200×75	<input type="checkbox"/>	<input type="checkbox"/>	217.0	214.1	145	89.6	88.29	64	240	107.2	199	77	15	402	201	180
200×100	<input type="checkbox"/>	<input type="checkbox"/>	217.0	214.1	145	114.7	113.20	84	240	130	199	100	15	430	215	200
200×150	<input type="checkbox"/>	<input type="checkbox"/>	217.0	214.1	145	166.0	163.91	132	240	188	199	146	15	476	238	253
250×75	<input type="checkbox"/>	<input type="checkbox"/>	268.2	265.0	155	89.6	88.29	64	295	108	247	77	16	452	226	210
250×100	<input type="checkbox"/>	<input type="checkbox"/>	268.2	265.0	155	114.7	113.20	84	295	136	247	100	16	492	246	225
250×200	<input type="checkbox"/>	<input type="checkbox"/>	268.2	265.0	155	217.0	214.10	145	295	245	247	194	16	608	304	310
300×75	<input type="checkbox"/>	<input type="checkbox"/>	320.7	314.7	300	89.60	88.29	64	343	102	298	77	17	722	361	236

Notes: 1. conform to the AV standard.

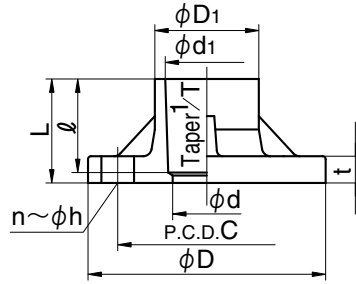
PRODUCT MODEL CODE LIST

Type	Field	Model	Material	Standard	Size
F	N	*	2	1	***
⋮	⋮	⋮	⋮	⋮	⋮
F Flange	N None Color	T TS Flange Q Blind Flange	2 High Purity PVC	1 JIS10K	013 13mm 300 300mm

TS Flange

PRODUCT MODEL CODE

JIS 10K ▶ F N T 2 1 Size



Maximum Working Pressure (Normal Temperature)

JIS 10K 13 – 300 mm 1.0MPa

Dimensions Table

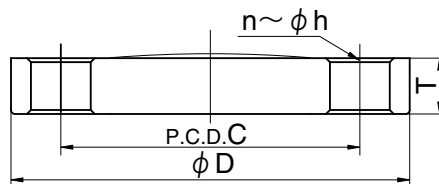
(Unit: mm)

Size		d	JIS 10K				d_1	Taper 1/T	D_1	t	$\phi \begin{smallmatrix} +4.0 \\ -0.5 \end{smallmatrix}$	L
mm	inch		D	C	n	h						
13	3/8	15	90	65	4	15	18.40±0.20	1/30	25.5	14	26	30.0
15	1/2	18	95	70	4	15	22.40±0.20	1/34	31.0	14	30	35.0
20	3/4	22	100	75	4	15	26.45±0.20	1/34	35.0	15	35	40.0
25	1	25	125	90	4	19	32.55±0.25	1/34	42.5	15	40	46.0
32	1 1/4	30	135	100	4	19	38.60±0.25	1/34	48.5	16	44	50.5
40	1 1/2	41	140	105	4	19	48.70±0.30	1/37	60.5	16	55	61.5
50	2	52	155	120	4	19	60.80±0.30	1/37	73.0	20	63	71.0
65	2 1/2	67	175	140	4	19	76.60±0.30	1/48	90.0	22	61	70.0
80 (75)	3	78	185	150	8	19	89.60±0.30	1/49	105.0	22	64	73.0
100	4	100	210	175	8	19	114.70±0.30	1/56	131.0	22	84	93.0
125	5	125	250	210	8	23	140.85±0.35	1/58	158.0	24	104	114.0
150	6	146	280	240	8	23	166.00±0.40	1/63	185.0	26	132	142.0
200	8	196	330	290	12	23	217.00±1.00	1/50	238.0	28	145	156.0
250	10	247	400	355	12	25	268.20±1.00	1/55	300.0	30	155	167.0
300	12	298	445	400	16	25	318.00±1.80	1/55	341.0	30	155	167.0

Blind Flange

PRODUCT MODEL CODE

JIS 10K ▶ F N Q 2 1 Size



Maximum Working Pressure (Normal Temperature)

JIS 10K 13 – 150mm 1.0MPa

Notes: This is for closing the pipe end.

Dimensions Table

(Unit: mm)

Size		d	JIS 10K				t
mm	inch		D	C	n	h	
15	1/2	18	90	70	4	15	12
20	3/4	22	100	75	4	15	14
25	1	25	125	90	4	19	14
32	1 1/4	30	135	100	4	19	16
40	1 1/2	41	140	105	4	19	16
50	2	52	155	120	4	19	16
65	2 1/2	67	175	140	4	19	18
80 (75)	3	78	185	150	8	19	18
100	4	100	210	175	8	19	18
125	5	125	250	210	8	23	20
150	6	146	280	240	8	23	22

PRODUCT MODEL CODE LIST

Model	Material	Rubber	Connection	Standard	Size
JPF	2	*	*	J	***
⋮	⋮	⋮	⋮	⋮	⋮
JPF Prefab Joint	2 High Purity PVC	E EPDM V FKM F Viflon®F/FKM-F C Viflon®C/FKM-C	T Socket N Threaded	J JIS	013 13mm I 100 100mm

Prefab Joint



Features

- Installation is extremely simple and it can be done quickly and certainly. (Especially necessary for sleeve bonding/screw-in piping)
- Installable on piping where suitable and easy cleaning inside pipes.
- After installing piping, the valve parts can be removed by just loosening the union nut. It is suitable for pipelines requiring regular removals such as temporary piping and slurry piping.

Prefab Joint Standard Table

Body Material	Connection Method	13	16	20	25	30	40	50	65	75	100
U-PVC	Socket End	○	○	○	○	○	○	○	○	○	○
	Threaded End	○	○	○	○	○	○	○	—	—	—

Parts Table

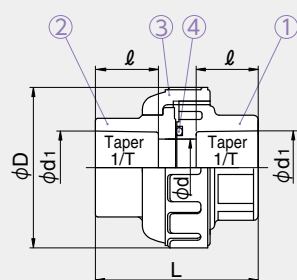
No.	Description	pcs.	Material
①	Body	1	U-PVC
②	End Connector	1	U-PVC
③	Union Nut	1	U-PVC
④	O-Ring	1	EPDM, FKM, Viflon®F/FKM-F, Viflon®C/FKM-C

Main Specification

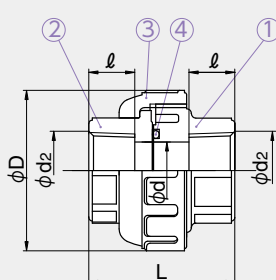
Material	Made of Unplasticized Polyvinyl Chloride (U-PVC)
Working Temperature	0 – 50°C
Maximum Working Pressure	1.0MPa{10.2kg/cm ² }

Dimensions Diagram

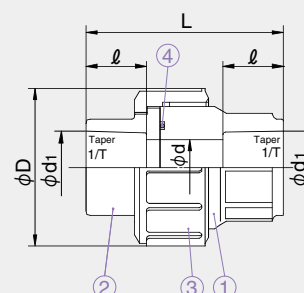
Socket End (13 – 50 mm)



Threaded End (13 – 50 mm)



Socket End (65 – 100 mm)



Dimensions Table

(Unit: mm)

Size	d	Socket end				Threaded end			D
		d ₁	ℓ	1/T	L	d ₂	ℓ	L	
13	13	18.13	18	1/30	46	Rc ³ / ₈	15	43	48
16	15	22.11	20	1/34	46	Rc ¹ / ₂	15	43	48
20	20	26.13	24	1/34	61	Rc ³ / ₄	17	57	60
25	25	32.16	27	1/34	70	Rc1	20	63	70
30	31	38.19	30	1/34	77	Rc1 ¹ / ₄	22	71	82
40	40	48.21	37	1/37	95	Rc1 ¹ / ₂	25	82	100
50	51	60.25	42	1/37	107	Rc2	28	96	106
65	65	76.60	61	1/48	164	—	—	—	133
75	77	89.60	64	1/49	189.5	—	—	—	152
100	100	114.70	84	1/56	245	—	—	—	210

PRODUCT MODEL CODE LIST

Threaded End TYPE L 20 – 30 mm

Type/Field	Material	Model 1	Model 2	Standard	Size of Special Connection Parts	Size
WM	2	*	*	*	*	***
WM Multi J	2 High Purity PVC (Lubricant Free Product)	1 Threaded Welding 2 Threaded Bonding	L TYPE L T TYPE T	R RC Thread End N NPT Threaded End	2 1/4 3 3/8	020 20mm I 030 30mm

Threaded End TYPE L 40 – 200 mm

Type/Field	Material	Model 1	Model 2	Standard	Size of Special Connection Parts	Size
WM	2	*	L	*	*	***
WM Multi J	2 High Purity PVC (Lubricant Free Product)	N Threaded Cast Product 2 Threaded Bonding 4 Bonding FRP Reinforcement	L TYPE L	R RC Thread End N NPT Threaded End	2 1/4 3 3/8 4 1/2 6 3/4	040 40mm I 150 150mm 200 200mm

200 mm is processed product.

Threaded End TYPE T 20 – 30 mm

Type/Field	Material	Model 1	Model 2	Standard	Size of Special Connection Parts	Size
WM	2	*	*	*	*	***
WM Multi J	2 High Purity PVC (Lubricant Free Product)	1 Threaded Welding 2 Threaded Bonding	L TYPE L T TYPE T	R RC Thread End N NPT Threaded End	2 1/4 3 3/8	020 20mm I 030 30mm

Threaded End TYPE T 40 – 200 mm

Type/Field	Material	Model 1	Model 2	Standard	Size of Special Connection Parts	Size
WM	2	*	T	*	*	***
WM Multi J	2 High Purity PVC (Lubricant Free product)	1 Welding 2 Threaded Bonding 3 Welding FRP Reinforcement 4 Bonding FRP Reinforcement	T TYPE T	R RC Thread End N NPT Threaded End	2 1/4 3 3/8 4 1/2 6 3/4	040 40mm I 200 200mm

Welding FRP reinforcement and bonding reinforcement are only available with 200 mm.

TS-Style TYPE L TYPE T 40 – 200 mm

Type/Field	Material	Model 1	Model 2	Standard	Size of Special Connection Parts	Size
WM	2	*	*	T	*	***
WM Multi J	2 High Purity PVC (Lubricant Free Product)	1 Welding 2 Bonding 3 Welding FRP Reinforcement 4 Bonding FRP Reinforcement	T TYPE T L TYPE L	T TS-Style	A 016 B 020 C 025 D 040 E 050 F 065 G 075 H 100 I 125	040 40mm I 200 200mm

Welding FRP reinforcement and bonding reinforcement are only available with 200 mm.

Multi-Joint

Main Specification

Material	High Purity Polyvinyl Chloride
Working Temperature	0-50°C

Use Example



Installation of various sensors such as pressure gauge and thermometer.



Installation of valves and cocks for sampling and draining.



Compact pipeline with reduced diameter.

Multi-Joint, TYPE L, Threaded-End Style

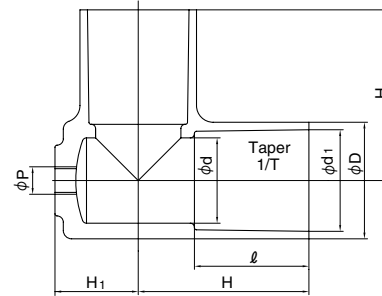
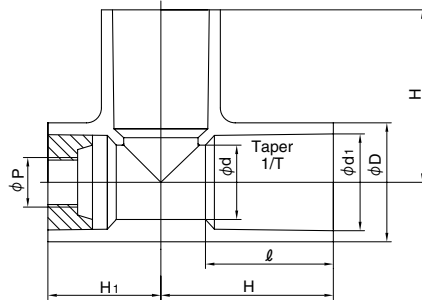
High Purity PVC (Lubricant Free product) ▶ WM 2 N L R Special Fitting Size Size



20 – 30, 200 mm

40 – 150 mm

Maximum Working Pressure (20°C)	
20 – 150mm	1.0MPa
200mm	0.6MPa



Combination Table

Size (mm)	Threaded End							
	Rc				NPT			
	1/4	3/8	1/2	3/4	1/4	3/8	1/2	3/4
20	○	○	-	-	○	○	-	-
25	○	○	-	-	○	○	-	-
30	○	○	-	-	○	○	-	-
40	○	○	○	○	○	○	○	○
50	○	○	○	○	○	○	○	○
65	○	○	○	○	○	○	○	○

Size (mm)	Threaded End							
	Rc				NPT			
	1/4	3/8	1/2	3/4	1/4	3/8	1/2	3/4
75	○	○	○	○	○	○	○	○
100	○	○	○	○	○	○	○	○
125	○	○	○	○	○	○	○	○
150	○	○	○	○	○	○	○	○
200	○	○	○	○	○	○	○	○

Notes: U-PVC (Gray) is not casted product so that the shape varies.

Dimensions Table

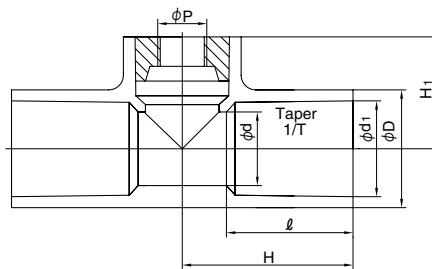
Size	d	d ₁	l	1/T	D	H	H ₁
20	20	26.45	35	1/34	33	50	32
25	25	32.55	40	1/34	40	58	38
30	31	38.60	44	1/34	46	65	43
40	40	48.70	55	1/37	57	82	40
50	51	60.80	63	1/37	70	96	52
65	67	76.60	61	1/48	87	110	68

(Unit: mm)

Size	d	d ₁	l	1/T	D	H	H ₁
75	77	89.60	64	1/49	102	120	74
100	100	114.70	84	1/56	130	152	98
125	125	140.85	104	1/58	157	187	126.5
150	146	166.00	132	1/63	186	230	151.5
200	196	217.00	145	1/50	240	266	193

Multi-Joint, TYPE T, Threaded-End Style

High Purity PVC (Lubricant Free Product) ▶ WM 2 Model 1 T Standard Special Fitting Size Size



Maximum Working Pressure (20°C)	
20 – 150mm	1.0MPa
200mm	0.6MPa

Combination Table

Size (mm)	Threaded End							
	Rc				NPT			
	1/4	3/8	1/2	3/4	1/4	3/8	1/2	3/4
20	○	○	-	-	○	○	-	-
25	○	○	-	-	○	○	-	-
30	○	○	-	-	○	○	-	-
40	○	○	○	○	○	○	○	○
50	○	○	○	○	○	○	○	○
65	○	○	○	○	○	○	○	○

Size (mm)	Threaded End							
	Rc				NPT			
	1/4	3/8	1/2	3/4	1/4	3/8	1/2	3/4
75	○	○	○	○	○	○	○	○
100	○	○	○	○	○	○	○	○
125	○	○	○	○	○	○	○	○
150	○	○	○	○	○	○	○	○
200	○	○	○	○	○	○	○	○

Dimensions Table

Size	d	d ₁	l	1/T	D	H	H ₁
20	20	26.45	35	1/34	33	50	32
25	25	32.55	40	1/34	40	58	38
30	31	38.6	44	1/34	46	65	43
40	40	48.7	55	1/37	57	82	55
50	51	60.8	63	1/37	70	90	61
65	67	76.6	61	1/48	87	100	68

(Unit: mm)

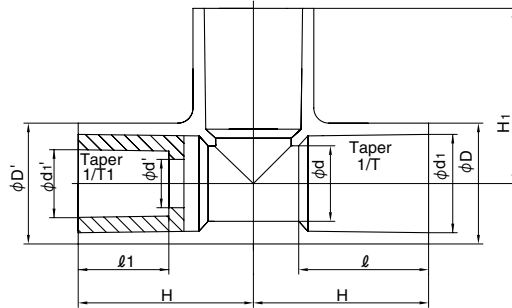
Size	d	d ₁	l	1/T	D	H	H ₁
75	77	89.6	64	1/49	102	100	75
100	100	114.7	84	1/56	130	140	100
125	125	140.85	104	1/58	157	160	115
150	146	166	132	1/63	186	195	126
200	196	217	145	1/50	240	201	148

Multi-Joint, TYPE L, TS-Style

PRODUCT CODE: WM 2 Model 1 L T Special Fitting Size Size

Maximum Working Pressure (20°C)

20 – 150mm	1.0MPa
200mm	0.6MPa



Combination Table

Size (mm)	Model	16	20	25	40	50	65	75	100	125
40	TYPE L	☆	☆	☆						
	TYPE T	☆	★	★						
50	TYPE L	☆	☆	☆						
	TYPE T	★	★	★						
65	TYPE L	☆	☆	☆	☆					
	TYPE T	☆	☆	☆	★					
75	TYPE L	☆	☆	☆	☆	☆				
	TYPE T	☆	☆	★	★	★				
100	TYPE L	☆	☆	☆	☆	☆	☆			
	TYPE T	☆	☆	☆	☆	★	☆			
125	TYPE L	☆	☆	☆	☆	☆	☆	☆		
	TYPE T	☆	☆	☆	☆	☆	☆	★		
150	TYPE L	☆	☆	☆	☆	☆	☆	☆	☆	
	TYPE T	☆	☆	☆	☆	☆	☆	★	★	
200	TYPE L	☆	☆	☆	☆	☆	☆	☆	☆	☆
	TYPE T	☆	☆	☆	☆	☆	☆	★	★	☆

Notes: ★ can be handled with TS fitting.

Dimensions Table

(Unit: mm)

Size	d	d ₁	ℓ	1/T	D	d'	d ₁ '	ℓ'	1/T1	D'	H	H ₁
40x 16	40	48.70	55	1/37	57	16	22.40	30	1/34	57	82	82
40x 20	40	48.70	55	1/37	57	20	26.45	35	1/34	57	82	82
40x 25	40	48.70	55	1/37	57	25	32.55	40	1/34	57	82	82
50x 16	51	60.80	63	1/37	70	16	22.40	30	1/34	70	96	96
50x 20	51	60.80	63	1/37	70	20	26.45	35	1/34	70	96	96
50x 25	51	60.80	63	1/37	70	25	32.55	40	1/34	70	96	96
65x 16	67	76.60	61	1/48	87	16	22.40	30	1/34	87	110	110
65x 20	67	76.60	61	1/48	87	20	26.45	35	1/34	87	110	110
65x 25	67	76.60	61	1/48	87	25	32.55	40	1/34	87	110	110
65x 40	67	76.60	61	1/48	87	40	48.70	55	1/37	87	110	110
75x 16	77	89.60	64	1/49	102	16	22.40	30	1/34	102	120	120
75x 20	77	89.60	64	1/49	102	20	26.45	35	1/34	102	120	120
75x 25	77	89.60	64	1/49	102	25	32.55	40	1/34	102	120	120
75x 40	77	89.60	64	1/49	102	40	48.70	55	1/37	102	120	120
75x 50	77	89.60	64	1/49	102	51	60.80	63	1/37	102	120	120
100x 16	100	114.70	84	1/56	130	16	22.40	30	1/34	130	152	152
100x 20	100	114.70	84	1/56	130	20	26.45	35	1/34	130	152	152
100x 25	100	114.70	84	1/56	130	25	32.55	40	1/34	130	152	152
100x 40	100	114.70	84	1/56	130	40	48.70	55	1/37	130	152	152
100x 50	100	114.70	84	1/56	130	51	60.80	63	1/37	130	152	152
100x 65	100	114.70	84	1/56	130	67	76.60	61	1/48	130	152	152
125x 16	125	140.85	104	1/58	157	16	22.40	30	1/34	157	187	187
125x 20	125	140.85	104	1/58	157	20	26.45	35	1/34	157	187	187
125x 25	125	140.85	104	1/58	157	25	32.55	40	1/34	157	187	187
125x 40	125	140.85	104	1/58	157	40	48.70	55	1/37	157	187	187
125x 50	125	140.85	104	1/58	157	51	60.80	63	1/37	157	187	187
125x 65	125	140.85	104	1/58	157	67	76.60	61	1/48	157	187	187
125x 75	125	140.85	104	1/58	157	77	89.60	64	1/49	157	187	187
150x 16	146	166.00	132	1/63	186	16	22.40	30	1/34	186	230	230
150x 20	146	166.00	132	1/63	186	20	26.45	35	1/34	186	230	230
150x 25	146	166.00	132	1/63	186	25	32.55	40	1/34	186	230	230
150x 40	146	166.00	132	1/63	186	40	48.70	55	1/37	186	230	230
150x 50	146	166.00	132	1/63	186	51	60.80	63	1/37	186	230	230
150x 65	146	166.00	132	1/63	186	67	76.60	61	1/48	186	230	230
150x 75	146	166.00	132	1/63	186	77	89.60	64	1/49	186	230	230
150x100	146	166.00	132	1/63	186	100	114.70	84	1/56	186	230	230
200x 16	196	217.00	145	1/50	240	16	22.40	30	1/34	240	266	266
200x 20	196	217.00	145	1/50	240	20	26.45	35	1/34	240	266	266
200x 25	196	217.00	145	1/50	240	25	32.55	40	1/34	240	266	266
200x 40	196	217.00	145	1/50	240	40	48.70	55	1/37	240	266	266
200x 50	196	217.00	145	1/50	240	51	60.80	63	1/37	240	266	266
200x 65	196	217.00	145	1/50	240	67	76.60	61	1/48	240	266	266
200x 75	196	217.00	145	1/50	240	77	89.60	64	1/49	240	266	266
200x100	196	217.00	145	1/50	240	100	114.70	84	1/56	240	266	266
200x125	196	217.00	145	1/50	240	125	140.85	104	1/58	240	266	266

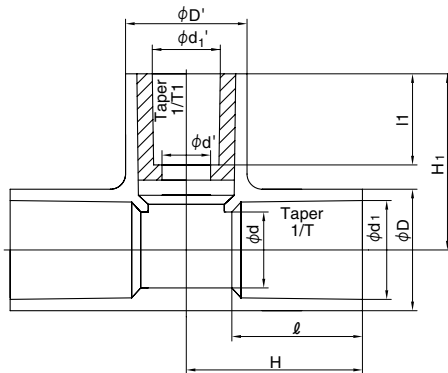
Multi-Joint, TYPE T, TS-Style

High Purity PVC (Lubricant Free product)

WM 2 Model 1 T T Special Fitting Size Size

Maximum Working Pressure (20°C)

20 – 150mm	1.0MPa
200mm	0.6MPa



Combination Table

Size (mm)	Model	16	20	25	40	50	65	75	100	125
40	TYPE L	☆	☆	☆						
	TYPE T	☆	★	★						
50	TYPE L	☆	☆	☆						
	TYPE T	★	★	★						
65	TYPE L	☆	☆	☆	☆					
	TYPE T	☆	☆	☆	★					
75	TYPE L	☆	☆	☆	☆	☆				
	TYPE T	☆	☆	★	★	★				
100	TYPE L	☆	☆	☆	☆	☆	☆			
	TYPE T	☆	☆	☆	☆	★	☆	☆		
125	TYPE L	☆	☆	☆	☆	☆	☆	☆	☆	
	TYPE T	☆	☆	☆	☆	☆	☆	★	☆	
150	TYPE L	☆	☆	☆	☆	☆	☆	☆	☆	☆
	TYPE T	☆	☆	☆	☆	☆	☆	★	★	☆
200	TYPE L	☆	☆	☆	☆	☆	☆	☆	☆	☆
	TYPE T	☆	☆	☆	☆	☆	☆	★	★	☆

Notes: ★ can be handled with TS fitting.

Dimensions Table

(Unit: mm)

Size	d	d ₁	ℓ	1/T	D	d'	d ₁ '	ℓ'	1/T ₁	D'	H	H ₁
40x 16	40	48.70	55	1/37	57	16	22.40	30	1/34	57	82	82
65x 16	67	76.60	61	1/48	87	16	22.40	30	1/34	57	95	95
65x 20	67	76.60	61	1/48	87	20	26.45	35	1/34	57	95	95
65x 25	67	76.60	61	1/48	87	25	32.55	40	1/34	57	95	95
75x 16	77	89.60	64	1/49	102	16	22.40	30	1/34	57	100	102
75x 20	77	89.60	64	1/49	102	20	26.45	35	1/34	57	100	102
100x 16	100	114.70	84	1/56	130	16	22.40	30	1/34	70	125	122
100x 20	100	114.70	84	1/56	130	20	26.45	35	1/34	70	125	122
100x 25	100	114.70	84	1/56	130	25	32.55	40	1/34	70	125	122
100x 40	100	114.70	84	1/56	130	40	48.70	55	1/37	102	140	132
100x 65	100	114.70	84	1/56	130	67	76.60	61	1/48	130	152	152
125x 16	125	140.85	104	1/58	157	16	22.40	30	1/34	102	161	147
125x 20	125	140.85	104	1/58	157	20	26.45	35	1/34	102	161	147
125x 25	125	140.85	104	1/58	157	25	32.55	40	1/34	102	161	147
125x 40	125	140.85	104	1/58	157	40	48.70	55	1/37	102	161	147
125x 50	125	140.85	104	1/58	157	51	60.80	63	1/37	102	161	147
125x 65	125	140.85	104	1/58	157	67	76.60	61	1/48	130	175	167
150x 16	146	166.00	132	1/63	186	16	22.40	30	1/34	102	195	158
150x 20	146	166.00	132	1/63	186	20	26.45	35	1/34	102	195	158
150x 25	146	166.00	132	1/63	186	25	32.55	40	1/34	102	195	158
150x 40	146	166.00	132	1/63	186	40	48.70	55	1/37	102	195	158
150x 50	146	166.00	132	1/63	186	51	60.80	63	1/37	102	195	158
150x 65	146	166.00	132	1/63	186	67	76.60	61	1/48	130	208	182
200x 16	194	217.00	145	1/50	240	16	22.40	30	1/34	102	201	180
200x 20	194	217.00	145	1/50	240	20	26.45	35	1/34	102	201	180
200x 25	194	217.00	145	1/50	240	25	32.55	40	1/34	102	201	180
200x 40	194	217.00	145	1/50	240	40	48.70	55	1/37	102	201	180
200x 50	194	217.00	145	1/50	240	51	60.80	63	1/37	102	201	180
200x 65	194	217.00	145	1/50	240	67	76.60	61	1/48	130	215	200
200x125	194	217.00	145	1/50	240	125	140.85	104	1/58	240	266	266