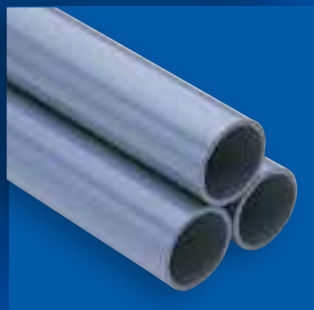


PVC Pipe & Fittings

Unplasticized Polyvinyl Chloride Pipe	P.012
Tap Water Unplasticized Polyvinyl Chloride Pipe	P.014
Agricultural Water Service Wall-Thickness Unplasticized Polyvinyl Chloride Pipe	P.015
Unplasticized Polyvinyl Chloride Pipe Fitting	P.016
AV Bend/Large-Size Fitting	P.026
Rubber Ring Hard Polyvinyl Chloride Pipe Fitting	P.033
Flange	P.035
Unplasticized Polyvinyl Chloride Pipe Fitting (DV Fitting)	P.038
VU Fitting	P.043
VU Large Fitting	P.047
Expansion Joint/Prefab Joint	P.049
Multi-Joint	P.051
Technical Document	P.055




General

PRODUCT MODEL CODE LIST


Type	Field	Material	Standard/Wall Thickness	Standard	Type	Size	Length
P	N	*	**	*	*	***	**
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
P Pipe	N Standard	U U-PVC I HI-PVC	PP Straight Pipe VP UP Straight Pipe VU P5 Bonding Socket VP U5 Bonding Socket VU P7 Rubber Ring Socket VP M1 Rubber Ring Socket VM U1 Rubber Ring Socket VU WP Tap Water Straight Pipe W7 Tap Water Rubber Ring Socket H7 Rubber Ring Socket VH P6 Perforated Pipe VP U6 Perforated Pipe VU	J JIS V AV	N Standard U Perforated Pipe	013 13 mm I 500 500 mm	04 4m 05 5m

Straight Pipe

Abbreviation: VP VU HIVP Unplasticized Polyvinyl Chloride Pipe (JIS K 6741)



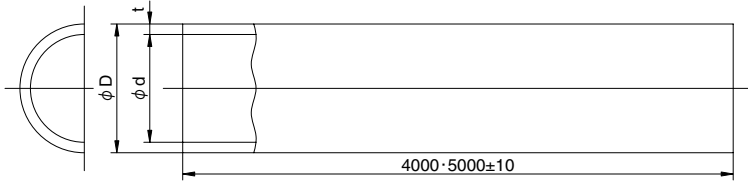
VP, VU
U-PVC



HIVP
HI-PVC

Maximum Working Pressure (Normal Temperature)

VP	1.0MPa
VU	0.6MPa
HIVP	1.0MPa



Dimensions Table

(Unit: mm)

Size	VP	VU	HI VP	VP • HIVP						VU								
				D (Outer Diameter)			t (Thickness)		d	Weight per 1m (Reference) (kg)		D (Outer Diameter)			t (Thickness)		d	Weight per 1m (Reference) (kg)
				Basic Dimension	Max/Min. Outer Dimensional Tolerance	Average Outer Dimensional Tolerance	Min Dimension	Tolerance		Approximate Inner Diameter	VP	HI-VP	Basic Dimension	Average Outer Dimensional Tolerance	Min Dimension	Tolerance		
									Dimension								Tolerance	Dimension
40	○	○	—	48	±0.3	±0.2	3.6	+0.8	40	0.791	—	48	±0.2	1.8	+0.4	44	0.413	
50	○	○	—	60	±0.4	±0.2	4.1	+0.8	51	1.122	—	60	±0.2	1.8	+0.4	56	0.521	
65	○	○	—	76	±0.5	±0.3	4.1	+0.8	67	1.445	—	76	±0.3	2.2	+0.6	71	0.825	
75	○	○	—	89	±0.5	±0.3	5.5	+0.8	77	2.202	—	89	±0.3	2.7	+0.6	83	1.159	
100	○	○	—	114	±0.6	±0.4	6.6	+1.0	100	3.409	—	114	±0.4	3.1	+0.8	107	1.737	
125	○	○	—	140	±0.8	±0.5	7.0	+1.0	125	4.464	—	140	±0.5	4.1	+0.8	131	2.739	
150	○	○	—	165	±1.0	±0.5	8.9	+1.4	146	6.701	—	165	±0.5	5.1	+0.8	154	3.941	
200	○	○	□	216	±1.3	±0.7	10.3	+1.4	194	10.129	9.913	216	±0.7	6.5	+1.0	202	6.572	
250	○	○	□	267	±1.6	±0.9	12.7	+1.8	240	15.481	15.052	267	±0.9	7.8	+1.2	250	9.758	
300	○	○	□	318	±1.9	±1.0	15.1	+2.2	286	21.962	21.252	318	±1.0	9.2	+1.4	298	13.701	
350	—	○	—	—	—	—	—	—	—	—	—	370	±1.2	10.5	+1.4	348	18.051	
400	—	○	—	—	—	—	—	—	—	—	—	420	±1.3	11.8	+1.6	395	23.059	
450	—	○	—	—	—	—	—	—	—	—	—	470	±1.5	13.2	+1.8	442	28.875	
500	—	○	—	—	—	—	—	—	—	—	—	520	±1.6	14.6	+2.0	489	35.346	

(Note) 1. ○ are accordance with JIS K 6741. 2. □ conform to the AV standard.

Bonding Socket Single-Side Straight Pipe

Abbreviation: **VP** **VU**

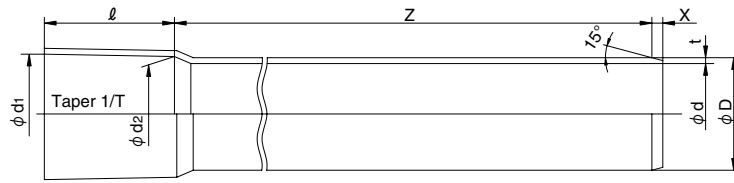
Unplasticized Polyvinyl Chloride Pipe (JIS K 6741)

PRODUCT MODEL CODE

VP ▶ P N U P5 J N Size Length
VU ▶ P N U U5 J N Size Length



VP, VU
U-PVC



Maximum Working Pressure (Normal Temperature)	
VP	1.0MPa
VU	0.6MPa

Dimensions Table

(Unit: mm)

Size	Common						VP			VU		
	d ₁	d ₂	l	Taper 1/T	D	Z	d	t	X (Reference)	d	t	X (Reference)
○ 40	48.7 ±0.3	47.21	55 ⁺⁴ _{-0.5}	1/37	48 ±0.2	4000 ±15	40	3.6 +0.8	8	—	—	—
○ 50	60.8 ±0.3	59.10	63 ⁺⁴ _{-0.5}	1/37	60 ±0.2	4000 ±15	51	4.1 +0.8	9	56	1.8 +0.4	4
○ 65	76.6 ±0.3	75.33	61 ⁺⁴ _{-0.5}	1/48	76 ±0.2	4000 ±15	67	4.1 +0.8	9	71	2.2 +0.6	5
75	89.6 ±0.3	88.3 ±0.3	64 ⁺⁵ ₀	1/49	89 ±0.3	4000 ±15	77	5.5 +0.8	12	83	2.7 +0.6	6
100	114.7 ±0.3	113.2 ±0.3	84 ⁺⁵ ₀	1/56	114 ±0.4	4000 ±15	100	6.6 +1.0	14	107	3.1 +0.8	7
125	140.9 ±0.4	139.1 ±0.4	104 ⁺⁵ ₀	1/58	140 ±0.5	4000 ±15	125	7.0 +1.0	15	131	4.1 +0.8	9
150	166.0 ±0.5	163.9 ±0.5	132 ⁺⁵ ₀	1/63	165 ±0.5	4000 ±15	146	8.9 +1.4	19	154	5.1 +0.8	11
200	217.9 ±0.8	213.9 ±0.8	200 ⁺¹⁰ ₀	1/50	216 ±0.7	4000 ±15	194	10.3 +1.4	22	202	6.5 +1.0	14
250	269.3 ±0.9	264.3 ±0.9	250 ⁺¹⁰ ₀	1/50	267 ±0.9	4000 ±15	240	12.7 +1.8	27	250	7.8 +1.2	17
300	320.7 ±1.0	314.7 ±1.0	300 ⁺¹⁰ ₀	1/50	318 ±1.0	4000 ±15	286	15.1 +2.2	32	298	9.2 +1.4	20
350	373.1 ±1.0	366.1 ±1.0	350 ⁺¹⁰ ₀	1/50	370 ±1.2	4000 ±15	—	—	—	348	10.5 +1.4	22
400	423.6 ±1.2	415.6 ±1.2	400 ⁺¹⁰ ₀	1/50	420 ±1.3	4000 ±15	—	—	—	395	11.8 +1.6	25
450	474.0 ±1.2	465.0 ±1.2	450 ⁺¹⁰ ₀	1/50	470 ±1.5	4000 ±15	—	—	—	442	13.2 +1.8	28
500	524.5 ±1.3	514.5 ±1.3	500 ⁺¹⁰ ₀	1/50	520 ±1.6	4000 ±15	—	—	—	489	14.6 +2.0	31

Notes: 1. Taper 1/T for 75 to 500 mm are reference value. 2. d₂ dimension for 40 to 65 mm are reference value. 3. ○ are accordance with JIS K 6741.

Rubber Ring Single-Side Socket Straight Pipe (RR Pipe)

Abbreviation: **VP** **VM** **VU**

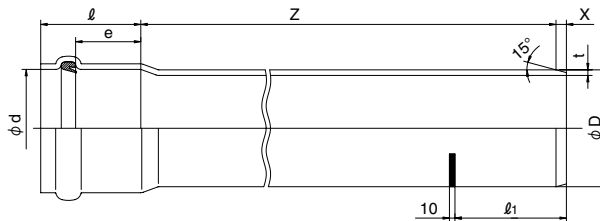
Unplasticized Polyvinyl Chloride Pipe (JIS K 6741)

PRODUCT MODEL CODE

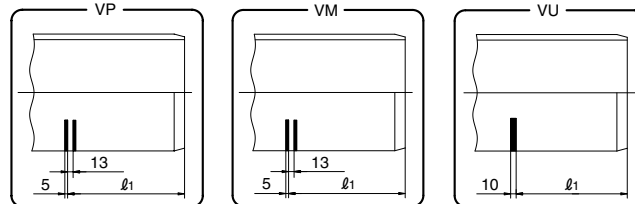
VP ▶ P N U P7 J N Size Length
VM ▶ P N U M1 J N Size Length
VU ▶ P N I U1 J N Size Length



VP, VM, VU
U-PVC



Maximum Working Pressure (Normal Temperature)	
VP	1.0MPa
VM	0.8MPa
VU	0.6MPa



Dimensions Table

(Unit: mm)

Size	Common				VP				VM				VU			
	d (Min.)	e (Min.)	l (Max.)	D	Z	t	X (Reference)	l ₁	Z	t	X (Reference)	l ₁ (Reference)	Z	t	X (Reference)	l ₁ (Reference)
50	60.3	58	115	60±0.2	5000 ±15	4.1 +0.8	8	107 +5	—	—	—	—	—	—	—	—
75	89.5	61	130	89±0.3	5000 ±15	5.5 +0.8	11	120 +5	—	—	—	—	4000	2.7 +0.6	6	131
100	114.5	64	145	114±0.4	5000 ±15	6.6 +1.0	13	132 +5	—	—	—	—	4000	3.1 +0.8	7	144
125	140.6	67	150	140±0.5	5000 ±15	7.0 +1.0	14	138 +5	—	—	—	—	4000	4.1 +0.8	9	154
150	165.7	70	165	165±0.5	5000 ±15	8.9 +1.4	18	152 +5	—	—	—	—	4000	5.1 +0.8	11	167
200	216.9	76	190	216±0.7	5000 ±15	10.3 +1.4	21	179 +5	—	—	—	—	4000	6.5 +1.0	14	184
250	268.1	82	210	267±0.9	5000 ±15	12.7 +1.8	25	197 +5	—	—	—	—	4000	7.8 +1.2	17	202
300	319.3	88	235	318±1.0	5000 ±15	15.1 +2.2	30	217 +5	—	—	—	—	4000	9.2 +1.4	20	220
350	371.5	89	245	370±1.2	—	—	—	—	4000	14.3 +2.0	27	231	4000	10.5 +1.4	22	242
400	421.7	91	265	420±1.3	—	—	—	—	4000	16.2 +2.2	30	244	4000	11.8 +1.6	25	260
450	471.9	94	290	470±1.5	—	—	—	—	4000	18.1 +2.6	34	263	4000	13.2 +1.8	28	283
500	522.1	96	305	520±1.6	—	—	—	—	4000	20.0 +2.8	37	276	4000	14.6 +2.0	31	306

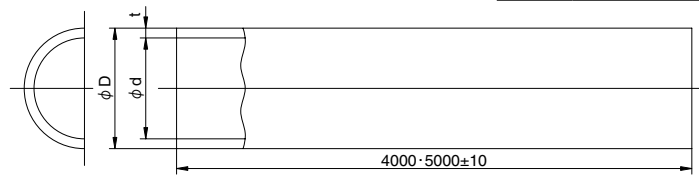
Straight Pipe

Abbreviation: **VPW** **HIVPW** Tap Water Unplasticized Polyvinyl Chloride Pipe (JIS K 6742)

PRODUCT MODEL CODE	VP	P	N	U	WP	J	N	Size	Length
	HIVPW	P	N	I	WP	J	N	Size	Length



Maximum Working Pressure (Hydrostatic pressure)	
VPW	0.75MPa
HIVPW	



Dimensions Table

(Unit: mm)

Size	Outer Diameter			Thickness		Overall Length		Reference Weight per 1m (kg/m)	
	Basic Dimension	Max/Min. Tolerance	Average Tolerance	Basic Dimension	Tolerance			VPW	HIVPW
13	18.0	±0.2	±0.2	2.5	±0.2	4000	—	0.174	0.170
16	22.0	±0.2	±0.2	3.0	±0.3	4000	—	0.256	0.251
20	26.0	±0.2	±0.2	3.0	±0.3	4000	—	0.310	0.303
25	32.0	±0.2	±0.2	3.5	±0.3	4000	—	0.448	0.439
30	38.0	±0.3	±0.2	3.5	±0.3	4000	—	0.542	0.531
40	48.0	±0.3	±0.2	4.0	±0.3	4000	5000	0.791	0.774
50	60.0	±0.4	±0.2	4.5	±0.4	4000	5000	1.122	1.098
● 65	76.0	±0.5	±0.2	4.5	±0.4	4000	5000	1.445	1.415
75	89.0	±0.5	±0.2	5.9	±0.4	4000	5000	2.202	2.156
100	114.0	±0.6	±0.2	7.1	±0.5	4000	5000	3.409	3.338
● 125	140.0	±0.8	±0.3	7.5	±0.5	4000	5000	4.464	4.370
150	165.0	±1.0	±0.3	9.6	±0.6	4000	5000	6.701	6.561

Notes: 1. Maximum/minimum outer dimensional tolerance is the difference between measured maximum and minimum values (maximum/minimum outer diameter) of any sectional outer diameter and the basic dimension. 2. Average outer dimensional tolerance is the difference between the average (average outer diameter) of measured values of outer diameters in 2 directions with an equal distance and the basic dimension. 3. The mass per 1m shown as reference is calculated using the pipe dimension as the basic dimension and setting the density of material for the pipe as 1.43g/cm³ for unplasticized polyvinyl chloride pipe and 1.40g/cm³ for impact-resistant unplasticized polyvinyl chloride pipe. It is not part of the standard. 4. Length tolerance shall be ⁺³⁰/₋₁₀ mm. 5. ● conform to the JPPFA standard (JPPFA AS20).

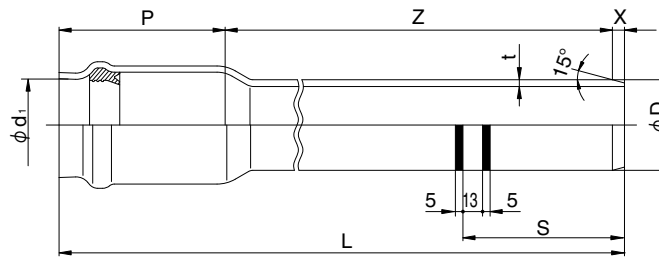
Tap Water Rubber Ring Socket Single-Side Straight Pipe (RR Pipe)

Abbreviation: **VPW** **HIVPW** Tap Water Rubber Ring Impact-Resistant Unplasticized Polyvinyl Chloride Pipe (JWWA K 129)

PRODUCT MODEL CODE	VPW	P	N	U	W7	J	N	Size	Length
	HIVPW	P	N	I	W7	J	N	Size	Length



Maximum Working Pressure (Hydrostatic pressure)	
VPW	0.75MPa
HIVPW	



Dimensions Table

(Unit: mm)

Size	Port and Straight Part						Socket Part						Effective Length Z	Overall Length L	Reference Weight (kg/piece)	
	Outer Diameter D			Thickness t (Min.)	Chamfer Width X	Gauge Line S	Inner Diameter d ₁			Socket Depth P		VP			HIVP	
	Basic Dimension	Max/Min. Tolerance	Average Tolerance				Basic Dimension	Max/Min. Tolerance	Average Tolerance	Basic Dimension	Tolerance					
50	60.0	±0.4	±0.2	4.1	8	107	60.9	±0.9	±0.6	110	±5	5000	5118	⁺³⁰ / ₋₁₀	5.8	5.7
75	89.0	±0.5	±0.2	5.5	11	120	90.2	±1.2	±0.7	120	±5	5000	5131	⁺³⁰ / ₋₁₀	11.5	11.3
100	114.0	±0.6	±0.2	6.6	13	132	115.3	±1.2	±0.7	130	±5	5000	5143	⁺³⁰ / ₋₁₀	17.9	17.5
● 125	140.0	±0.8	±0.3	7.0	14	138	141.4	±1.4	±0.8	135	±5	5000	5149	⁺³⁰ / ₋₁₀	23.5	23.0
150	165.0	±1.0	±0.3	9.0	18	152	166.6	±1.4	±0.8	145	±5	5000	5163	⁺³⁰ / ₋₁₀	35.2	34.5

Notes: 1. ● conform to the JPPFA standard (JPPFA AS33 standard). 2. Maximum/minimum outer dimensional tolerance is the difference between measured maximum or minimum outer diameter of any section and the basic dimension. 3. Average outer dimensional tolerance is the difference between the circumference of any section divided by the circumference ratio (3.142) or the arithmetic mean value of measured outer diameters in 2 directions with an equal distance to each other and the basic dimension.

Rubber Ring Socket Single-Side Straight Pipe (RR Pipe)

Abbreviation: **VH** Agricultural Water Service Wall-Thickness Unplasticized Polyvinyl Chloride Pipe (JPPFA AS60)

PRODUCT MODEL CODE

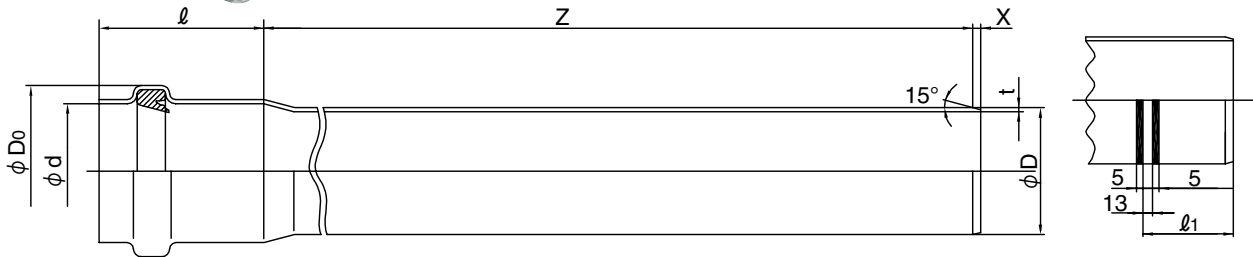
VH ▶ P N U H7 J N Size Length



VH
U-PVC

Maximum Working Pressure
(Normal Temperature)

VH 1.25MPa



Dimensions Table

(Unit: mm)

Size	D			t	X	d (Min.)	ℓ	Do	ℓ ₁	Z	Overall Length	Reference Weight (kg/piece)
	Basic Dimension	Max/Min. Outer Dimensional Tolerance	Average Outer Dimensional Tolerance									
50	60.0	±0.4	±0.2	4.6 ^{+0.8} ₋₀	8	60.3	110±5	85	107	5000±15	5118	6.5
75	89.0	±0.5	±0.3	6.2 ^{+0.8} ₋₀	11	89.5	120±5	122	120	5000±15	5131	13.0
100	114.0	±0.6	±0.4	7.6 ^{+1.0} ₋₀	13	114.6	130±5	152	132	5000±15	5143	20.5
150	165.0	±1.0	±0.5	10.5 ^{+1.4} ₋₀	18	165.8	145±5	210	152	5000±15	5163	41.0
200	216.0	±1.3	±0.7	12.1 ^{+1.9} ₋₀	21	217.0	170±10	268	175	5000±15	5191	63.1
250	267.0	±1.6	±0.9	15.0 ^{+2.3} ₋₀	25	268.1	185±10	328	194	5000±15	5210	96.8
300	318.0	±1.9	±1.0	17.8 ^{+2.7} ₋₀	30	319.4	200±10	391	214	5000±15	5230	135.0

Notes: Dimensions without tolerance are reference value.

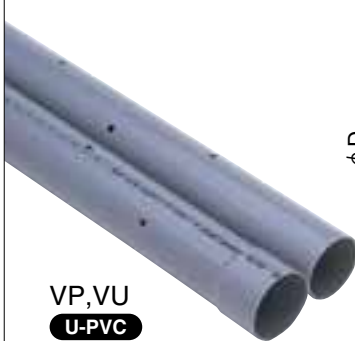
Perforated Pipe

Abbreviation: **VP** **VU** Perforated Unplasticized Polyvinyl Chloride Pipe (JPPFA AS13)

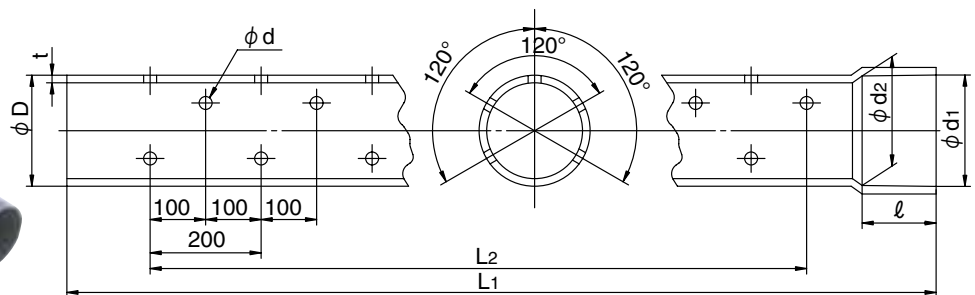
PRODUCT MODEL CODE

VP ▶ P N U P6 J U Size 04

VU ▶ P N U U6 J U Size 04



VP, VU
U-PVC



Dimensions Table

(Unit: mm)

Size	d ₁ (Min.)	d ₂ (Min.)	ℓ (Min.)	D	t		d	Number of Holes	L ₁	L ₂
					VP	VU				
50	60.2	59.2	40	60±0.2	4.1+0.8	1.8±0.4	7	95	3,950	3,700
65	76.3	75.1	40	76±0.3	4.1+0.8	2.2±0.6	7	95	3,950	3,700
75	89.3	88.0	40	89±0.3	5.5+0.8	2.7±0.6	12	95	3,950	3,700
100	114.4	112.8	50	114±0.4	6.6+1.0	3.1±0.8	12	95	3,950	3,700
125	140.5	138.7	60	140±0.5	7.0+1.0	4.1±0.8	12	95	3,950	3,700
150	165.5	163.4	75	165±0.5	8.9+1.4	5.1±0.8	20	95	3,950	3,700
200	216.7	214.0	100	216±0.7	10.3+1.4	6.5±1.0	20	95	3,950	3,700
250	267.9	264.8	125	267±0.9	12.7+1.8	7.8±1.2	20	90	3,950	3,500

PRODUCT MODEL CODE LIST

Type	Field	Material	Model	Standard	Type	Size
T	N	*	**	J	N	***
⋮	⋮	⋮	⋮	⋮	⋮	⋮
T TS Fitting	N Standard	U U-PVC I HI-PVC	9L 90° Elbow 4L 45° Elbow SO Socket TE Tee FL Faucet Elbow (Metal not contained) KL Faucet Elbow (Metal contained) FT Faucet Tee (Metal not contained) KT Faucet Tee (Metal not contained) FS Faucet Socket (Metal not contained) KS Faucet Socket (Metal contained) VS Valve Socket (Metal not contained) US Union Socket CP Cap	J JIS	N Standard	010 10mm 150 150mm 016013 16×13mm 150125 150×125mm

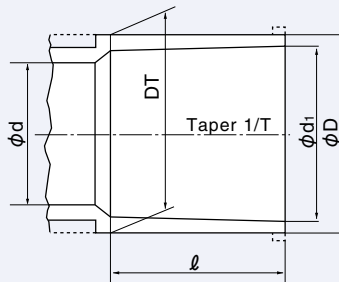
TS·HITS Fitting Common Dimensions

JISK6743

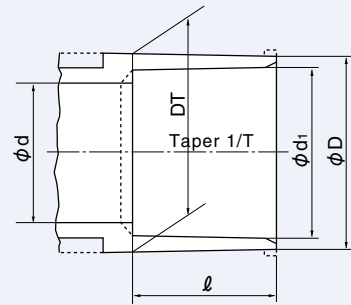
TS··Unplasticized Polyvinyl Chloride Pipe Fitting

HITS··Impact-Resistant Unplasticized Polyvinyl Chloride Pipe Fitting

Socket Common Dimensions
Size 13 – 50 mm



Socket Common Dimensions
Size 65 – 150 mm



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
□ 10	15.40	±0.20	22.0	1/25	21.0	21.0	-0.5	10	15
13	18.40	±0.20	26.0	1/30	24.0	24.0	-0.6	13	18
16	22.40	±0.20	30.0	1/34	29.0	29.0	-0.7	16	22
20	26.45	±0.20	35.0	1/34	33.0	33.0	-0.8	20	26
25	32.55	±0.25	40.0	1/34	40.0	40.0	-1.0	25	32
30	38.60	±0.25	44.0	1/34	46.0	46.0	-1.0	31	38
40	48.70	±0.30	55.0	1/37	57.0	57.0	-1.2	40	48
50	60.80	±0.30	63.0	1/37	70.0	70.0	-1.5	51	60
● 65	76.60	±0.30	61.0	1/48	87.0	88.5	-1.5	67	76
75	89.60	±0.30	64.0	1/49	102.0	104.5	-1.5	77	89
100	114.70	±0.30	84.0	1/56	130.0	133.5	-1.8	100	114
● 125	140.85	±0.35	104.0	1/58	157.0	161.0	-1.8	125	140
150	166.00	±0.40	132.0	1/63	186.0	190.0	-2.0	146	165

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

2. D and DT tolerance and t tolerance on the plus side are not restricted.

3. □ conform to the AV standard.

4. ● conform to the JPPFA standard.

Elbow

Abbreviation: **L**

Unplasticized Polyvinyl Chloride Pipe Fitting (JIS K6743)

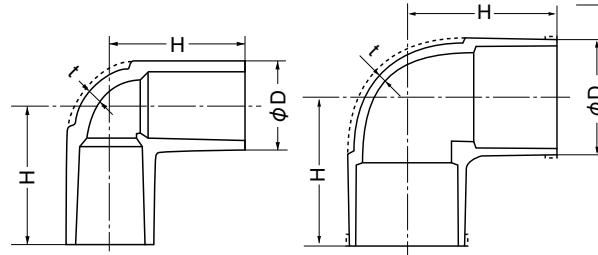
PRODUCT MODEL CODE	TS	T	N	U	9L	J	N	Size
	HITS	T	N	I	9L	J	N	Size



Size 13 – 50 mm

Size 65 – 150 mm

Max. Working Pressure (Hydrostatic pressure)
TS • HITS 0.75MPa



Dimensions Table

(Unit: mm)

Size	TS	HITS	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	HITS	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

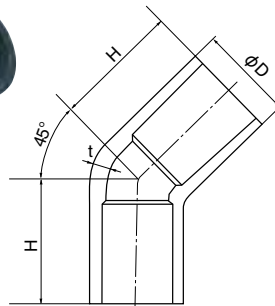
Notes: 1. H tolerance shall be $^{+5}_{-1}$ mm. 2. ● conform to the JPPFA standard. 3. ○ are accordance with JIS K6743.

45° Elbow

Abbreviation: **45L**

Unplasticized Polyvinyl Chloride Pipe Fitting (JIS K6743)

PRODUCT MODEL CODE	TS	T	N	U	4L	J	N	Size
	HITS	T	N	I	4L	J	N	Size



Max. Working Pressure (Hydrostatic pressure)
TS • HITS 0.75MPa

Dimensions Table

(Unit: mm)

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

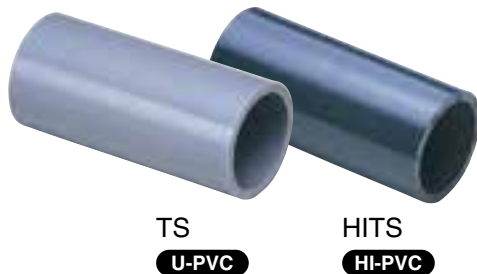
Notes: 1. H tolerance shall be $^{+5}_{-1}$ mm.
2. ○ are accordance with JIS K6743.

Socket

Abbreviation: **S**

Unplasticized Polyvinyl Chloride Pipe Fitting (JIS K6743)

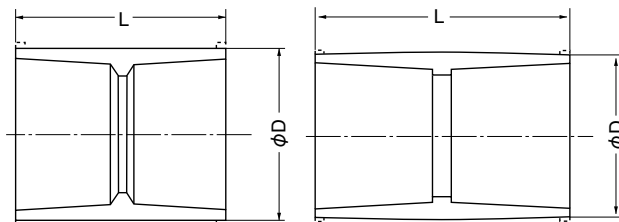
PRODUCT MODEL CODE	TS	T	N	U	SO	J	N	Size
	HITS	T	N	I	SO	J	N	Size



Size 13 – 50 mm

Size 65 – 150 mm

Max. Working Pressure (Hydrostatic pressure)
TS • HITS 0.75MPa



Dimensions Table

(Unit: mm)

Size	TS	HITS	D	L
13	○	○	24.0	57
16	○	○	29.0	67
20	○	○	33.0	77
25	○	○	40.0	87
30	○	○	46.0	95
40	○	○	57.0	117

Size	TS	HITS	D	L
50	○	○	70.0	133
65	●	●	87.0	145
75	○	○	102.0	155
100	○	○	130.0	200
125	●	●	157.0	240
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**

Unplasticized Polyvinyl Chloride Pipe Fitting (JIS K6743)

PRODUCT
MODEL CODE

TS ▶ T N U SO J N Size

HITS ▶ T N I SO J N Size



TS **U-PVC**



HITS **HI-PVC**

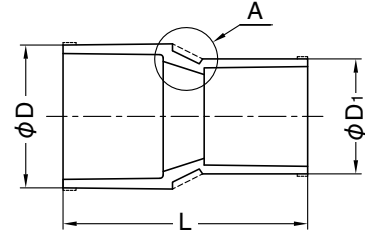
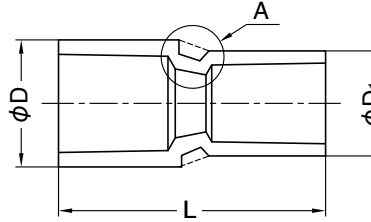
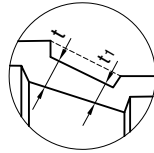
Maximum Working Pressure
(Hydrostatic pressure)

TS · HITS 0.75MPa

Size 13 – 50 mm

Size 65 – 150 mm

Detail of part A



Dimensions Table

(Unit: mm)

Size	TS	HITS	D	t	D ₁	t ₁	L
16×13	○	○	29.0	3.5	24.0	3.0	61
20×13	○	○	33.0	3.5	24.0	3.0	68
20×16	○	○	33.0	3.5	29.0	3.5	71
25×13	○	○	40.0	4.0	24.0	3.0	86
25×16	○	○	40.0	4.0	29.0	3.5	85
25×20	○	○	40.0	4.0	33.0	3.5	84
30×20	○	○	46.0	4.0	33.0	3.5	93
30×25	○	○	46.0	4.0	40.0	4.0	93
40×20	●	●	57.0	4.5	33.0	3.5	113
40×25	○	○	57.0	4.5	40.0	4.0	114
40×30	○	○	57.0	4.5	46.0	4.0	114

Size	TS	HITS	D	t	D ₁	t ₁	L
50×20	●	●	70.0	5.0	33.0	3.5	116
50×25	●	●	70.0	5.0	40.0	4.0	140
50×30	○	○	70.0	5.0	46.0	4.0	136
50×40	○	○	70.0	5.0	57.0	4.5	136
▲ 65×40	□	□	87.0	6.6	57.0	4.5	145
65×50	●	●	87.0	6.6	70.0	5.0	149
▲ 75×40	□	□	102.0	8.0	57.0	4.5	153
75×50	○	○	102.0	8.0	70.0	5.0	165
75×65	●	●	102.0	8.0	87.0	6.6	159
100×75	○	○	130.0	10.0	102.0	8.0	190
125×100	●	●	157.0	11.0	130.0	10.0	229
▲ 150×100	○	○	186.0	13.0	130.0	10.0	295
150×125	○	○	186.0	13.0	157.0	11.0	272

Notes: 1. L tolerance shall be ±4.0 mm. 2. ● conform to the JPPFA standard. 3. □ conform to the AV standard.
4. ▲ are stock products. 5. ○ are accordance with JIS K6743.

Tee

Abbreviation: **T**

Unplasticized Polyvinyl Chloride Pipe Fitting (JIS K6743)

PRODUCT
MODEL CODE

TS ▶ T N U TE J N Size

HITS ▶ T N I TE J N Size



TS **U-PVC**



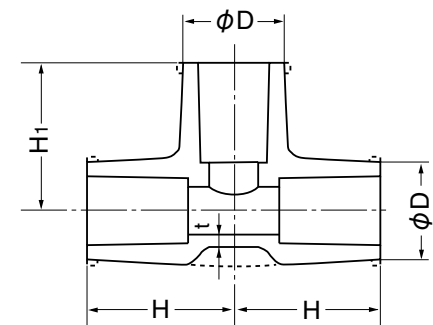
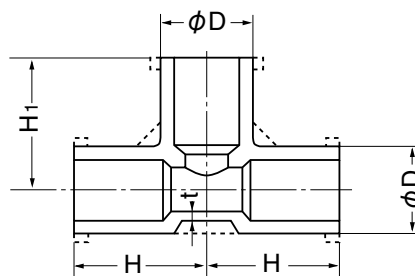
HITS **HI-PVC**

Maximum Working Pressure
(Hydrostatic pressure)

TS · HITS 0.75MPa

Size 13 – 50 mm

Size 65 – 150 mm



Dimensions Table

(Unit: mm)

Size	TS	HITS	D	t	H	H ₁
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	HITS	D	t	H	H ₁
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

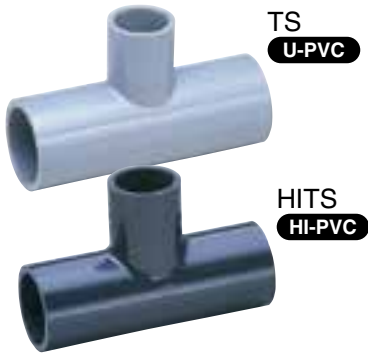
Notes: 1. H tolerance shall be ± 0.5 mm. 2. ● conform to the JPPFA standard. 3. ○ are accordance with JIS K6743.

Reducing Tee

Abbreviation: **T**

Unplasticized Polyvinyl Chloride Pipe Fitting (JIS K6743)

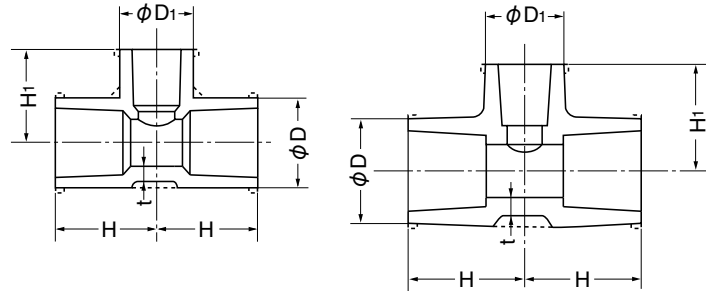
PRODUCT MODEL CODE	TS	T	N	U	TE	J	N	Size
	HITS	T	N	I	TE	J	N	Size



Size 13 – 50 mm

Size 65 – 150 mm

Maximum Working Pressure (Hydrostatic pressure)
TS • HITS 0.75MPa



Dimensions Table

(Unit: mm)

Size	TS	HITS	D	t	H	D ₁	H ₁
16×13	○	○	29.0	3.5	41	24.0	38
20×13	○	○	33.0	3.5	46	24.0	40
20×16	○	○	33.0	3.5	48	29.0	45
25×13	○	○	40.0	4.0	51	24.0	43
25×16	○	○	40.0	4.0	53	29.0	48
25×20	○	○	40.0	4.0	55	33.0	53
▲ 30×13	○	○	46.0	4.0	55	24.0	46
30×16	○	○	46.0	4.0	57	29.0	51
30×20	○	○	46.0	4.0	59	33.0	56
30×25	○	○	46.0	4.0	62	40.0	61

Size	TS	HITS	D	t	H	D ₁	H ₁
40×13	○	○	57.0	4.5	66	24.0	52
▲ 40×16	○	○	57.0	4.5	68	29.0	57
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

Size	TS	HITS	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
▲ 75× 65	●	●	102.0	8.0	113	87.0	117

Size	TS	HITS	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

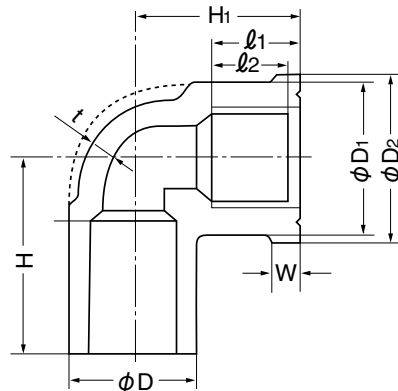
Notes: 1. H and H₁ tolerance shall be ± 0.5 mm. 2. ● conform to the JPPFA standard.
3. ▲ are stock products. (PVC (30×13) are our products.) 4. ○ are accordance with JIS K6743.

Faucet Elbow

Abbreviation: **FL**

Unplasticized Polyvinyl Chloride Pipe Fitting (JIS K6743)

PRODUCT MODEL CODE	TS	T	N	U	FL	J	N	Size
	HITS	T	N	I	FL	J	N	Size



Maximum Working Pressure (Hydrostatic pressure)
TS • HITS 0.75MPa

<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	HITS	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 ± 0.5 mm.
3. H₁ tolerance shall be ± 0.5 mm. 4. □ conform to the AV standard. 5. l₂ tolerance shall be ± 1 mm.

Metal-Containing Faucet Elbow

Abbreviation: **KFL**

Unplasticized Polyvinyl Chloride Pipe Fitting (JIS K6743)

PRODUCT
MODEL CODE

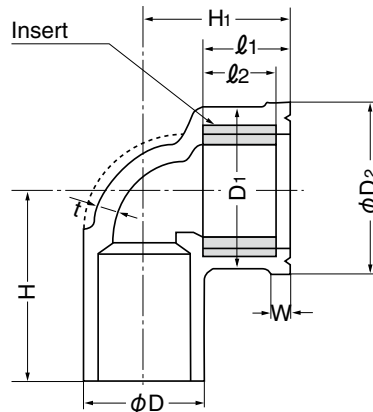
TS ▶ T N U KL J N Size

HITS ▶ T N I KL J N Size



TS U-PVC

HITS HI-PVC



Maximum Working Pressure
(Hydrostatic pressure)

TS • HITS 0.75MPa

<Use Precautions>

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

Dimensions Table

(Unit: mm)

Size	TS	HITS	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
16×13	○	○	29.0	3.0	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
20×13	○	○	33.0	3.5	30	34	17	14	4	47	33	Rp1/2

Notes: 1. Insert shall be free-cutting brass of JIS H3250 (copper and copper alloy rod). 2. Threaded end shall be parallel female thread of JIS B0203 (taper threaded end for pipes). 3. H tolerance shall be ± 0.5 mm. 4. H₁ tolerance shall be ± 0.5 mm. 5. l₂ tolerance shall be ± 1 mm. 6. ○ are accordance with JIS K6743.

Faucet Tee

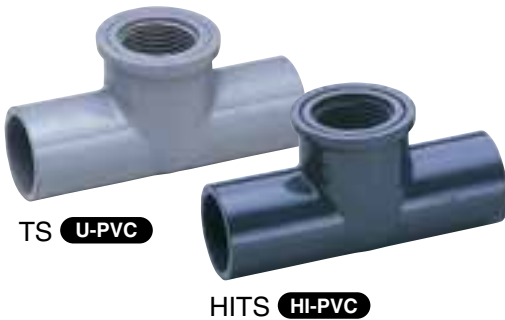
Abbreviation: **FT**

Unplasticized Polyvinyl Chloride Pipe Fitting (JIS K6743)

PRODUCT
MODEL CODE

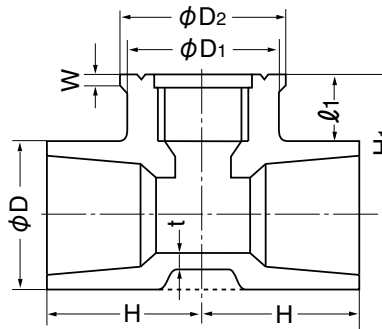
TS ▶ T N U FT J N Size

HITS ▶ T N I FT J N Size



TS U-PVC

HITS HI-PVC



Maximum Working Pressure
(Hydrostatic pressure)

TS • HITS 0.75MPa

<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 a tee using a retainer.

Dimensions Table

(Unit: mm)

Size	TS	HITS	D	t	D ₁	D ₂	l ₁	W	H	H ₁	Female Thread Size
▲ 13	□	□	24.0	3.0	28	34	17	4	38	29	Rp1/2
20	□	□	33.0	3.5	37	42	19	4	51	36	Rp3/4
25	□	□	40.0	4.0	46	52	21	5	59	42	Rp1
▲16×13	□	□	29.0	3.5	28	34	17	4	43	32	Rp1/2
20×13	□	□	33.0	3.5	30	34	17	4	47	34	Rp1/2
25×13	□	□	40.0	4.0	30	34	17	4	52	38	Rp1/2
25×20	□	□	40.0	4.0	37	42	19	4	56	40	Rp3/4

Notes: 1. Threaded end shall be parallel female thread of JIS B 0203 (taper threaded end for pipes). 2. H tolerance shall be ± 0.5 mm. 3. H₁ tolerance shall be ± 0.5 mm. 4. □ conform to the AV standard. 5. ▲ are stock products.

Metal-Containing Faucet Tee

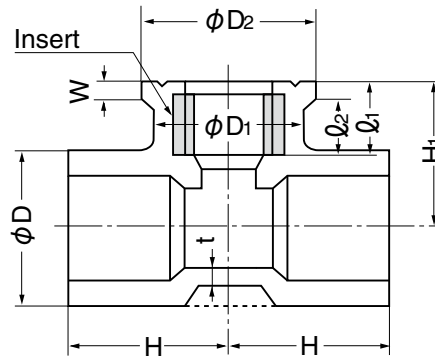
Abbreviation: **KFT**

Unplasticized Polyvinyl Chloride Pipe Fitting (JIS K6743)

PRODUCT
MODEL CODE

TS ▶ T N U KT J N Size

HITS ▶ T N I KT J N Size



Maximum Working Pressure
(Hydrostatic pressure)

TS • HITS 0.75MPa

<Use Precautions>

- * Use both seal tape and gasket for connection of threaded ends.
- * Do not use them for connecting faucet with a taper threaded end and steel pipe.
- * Fix the area around a tee using a retainer.

Dimensions Table

(Unit: mm)

Size	TS	HITS	D	t	D ₁	D ₂	l ₁	l ₂	W	H	H ₁	Female Thread Size
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	42	Rp1
20×13	○	○	33.0	3.5	30	34	17	14	4	47	34	Rp1/2
25×13	○	○	40.0	4.0	30	34	17	14	4	52	38	Rp1/2
25×20	○	○	40.0	4.0	37	42	19	16	4	56	40	Rp3/4

Notes: 1. Insert shall be free-cutting brass of JIS H3250 (copper and copper alloy rod). 2. Threaded end shall be parallel female thread of JIS B0203 (taper threaded end for pipes). 3. l₂ tolerance shall be ±1 mm. 4. H tolerance shall be ⁺⁵ mm. 5. H₁ tolerance shall be ⁺⁵ mm. 6. ○ are accordance with JIS K6743.

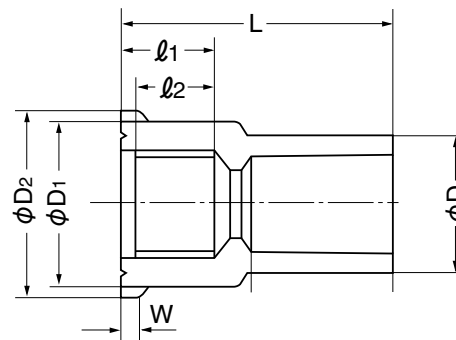
Faucet Socket

Abbreviation: **FS**

PRODUCT
MODEL CODE

TS ▶ T N U FS J N Size

HITS ▶ T N I FS J N Size



Maximum Working Pressure
(Hydrostatic pressure)

TS • HITS 0.75MPa

<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	HITS	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 mm. 3. l₂ tolerance shall be ±1 mm. 4. □ conform to the AV standard.

Metal-Containing Faucet Socket

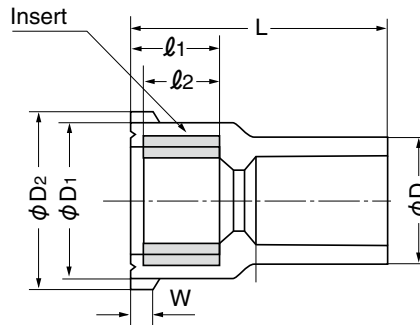
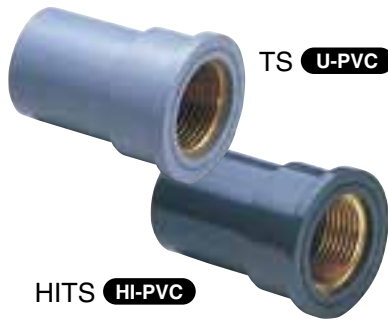
Abbreviation: **KFS**

Unplasticized Polyvinyl Chloride Pipe Fitting (JIS K6743)

PRODUCT
MODEL CODE

TS ▶ T N U KS J N Size

HITS ▶ T N I KS J N Size



Maximum Working Pressure
(Hydrostatic pressure)

TS · HITS 0.75MPa

<Use Precautions>

- * Use both seal tape and gasket for connection of threaded ends.
- * Do not use them for connecting faucet with a taper threaded end and steel pipe.

Dimensions Table

(Unit: mm)

Size	TS	HITS	D	D1	D2	l ₁	l ₂	W	L	Female Thread Size
13	○	○	24.0	30	34	17	14	4	47	Rp1/2
16×13	○	○	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
20×13	○	○	33.0	30	34	17	14	4	57	Rp1/2

Notes: 1. Insert shall be free-cutting brass of JIS H3250 (copper and copper alloy rod). 2. Threaded end shall be parallel female thread of JIS B0203 (taper threaded end for pipes). 3. L tolerance shall be $^{+5}$ mm. 4. l₂ tolerance shall be ± 1 mm. 5. ○ are accordance with JIS K6743.

Valve Socket

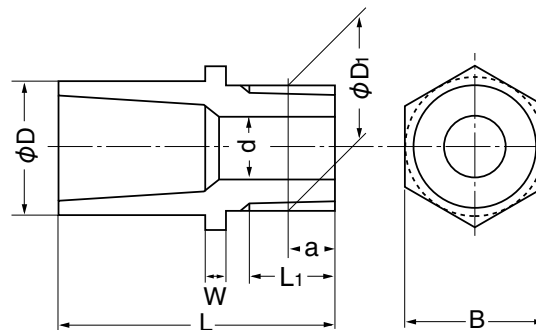
Abbreviation: **VS**

Unplasticized Polyvinyl Chloride Pipe Fitting (JIS K6743)

PRODUCT
MODEL CODE

TS ▶ T N U VS J N Size

HITS ▶ T N I VS J N Size



Maximum Working Pressure
(Hydrostatic pressure)

TS · HITS 0.75MPa

<Use Precautions>

- * Avoid screwing in and removing repeatedly.
- * 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	HITS	D	d	Thread Nominal	Basic Diameter Outer Diameter D1	Thread Number of Threads/Inch	Basic Diameter Position a	L ₁ (Min.)	W	L	B
10	□	—	21.0	10	R3/8	16.662	19	6.35	12	6	43	21
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
125	□	—	157.0	119	R5	138.430	11	28.58	44	20	186	157
▲150	□	—	185.0	142	R6	163.830	11	28.58	44	25	220	185

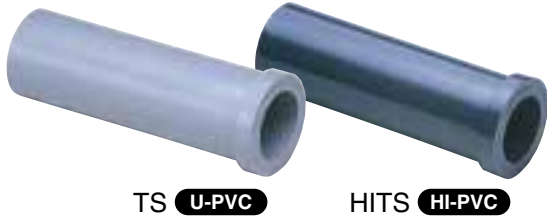
Notes: 1. Threaded end shall conform to taper male threaded end of JIS B0203 (taper threaded end for pipes). 2. L tolerance shall be $^{+5}$ mm. 3. ● conform to the JPPFA standard. 4. □ conform to the AV standard. 5. B tolerance shall conform to D tolerance. 6. Products with the threaded part containing metal are also available for the size 13 mm. 7. ▲ are stock products. 8. ○ are accordance with JIS K6743.

Union Socket

Abbreviation: **US**

Unplasticized Polyvinyl Chloride Pipe Fitting (JIS K6743)

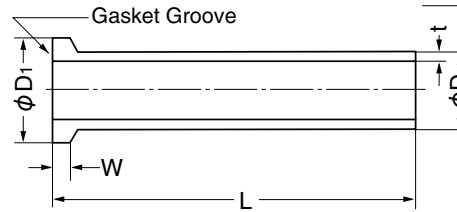
PRODUCT MODEL CODE	TS	T	N	U	US	J	N	Size
	HITS	T	N	I	US	J	N	Size



TS **U-PVC**

HITS **HI-PVC**

Maximum Working Pressure (Hydrostatic pressure)
TS • HITS 0.75MPa



Dimensions Table

Size	TS	HITS	D	t	D1	W	L
13	○	○	18.0	2.5	23.0	5	80
▲16	○	○	22.0	3.0	27.5	5	85
20	○	○	26.0	3.0	29.5	6	90
25	○	○	32.0	3.5	36.5	7	100

Size	TS	HITS	D	t	D1	W	L
▲30	○	○	38.0	3.5	42.0	8	110
▲40	○	○	48.0	4.0	53.0	8	120
▲50	○	○	60.0	4.5	71.0	9	130

(Unit: mm)

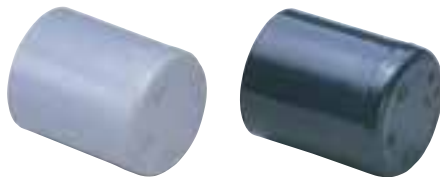
Notes: 1. L tolerance shall be $^{+5}$ mm. 2. ▲ are stock products. 3. ○ are accordance with JIS K6743.

Cap

Abbreviation: **C**

Unplasticized Polyvinyl Chloride Pipe Fitting (JIS K6743)

PRODUCT MODEL CODE	TS	T	N	U	CP	J	N	Size
	HITS	T	N	I	CP	J	N	Size

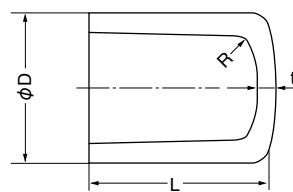


TS **U-PVC**

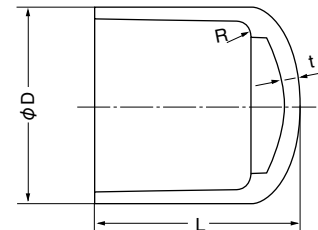
HITS **HI-PVC**

Maximum Working Pressure (Hydrostatic pressure)
TS • HITS 0.75MPa

Size 13 – 50 mm



Size 65 – 150 mm



Dimensions Table

Size	TS	HITS	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
30	○	○	46.0	4.0	48.0
40	○	○	57.0	4.5	59.5

Size	TS	HITS	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
150	○	○	186.0	13.0	205.0

(Unit: mm)

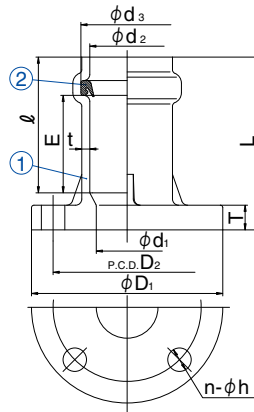
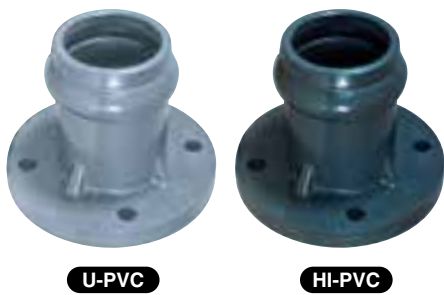
Notes: 1. L tolerance shall be $^{+5}$ mm. 2. ● conform to the AV standard and the JPPFA standard. 3. R tolerance shall be 1 to 5 mm. 4. ○ are accordance with JIS K6743.

PRODUCT MODEL CODE LIST

Type	Field	Material	Model	Standard	Type	Size
R	N	*	MF	*	*	***
⋮	⋮	⋮	⋮	⋮	⋮	⋮
R RR Fitting	N None Color	U U-PVC I HI-PVC R FRP	MF RR-MF Joint	J JIS W Waterworks	I Casted Product S Bonded Product	040 40 mm I 300 300 mm

RR-MF Joint (Casted Product)

PRODUCT MODEL CODE	U-PVC Waterworks	R	N	U	MF	W	I	Size
	HI-PVC Waterworks	R	N	I	MF	W	I	Size
	U-PVC 10K	R	N	U	MF	J	I	Size
	HI-PVC 10K	R	N	I	MF	J	I	Size



No.	Description	pcs.	Material
①	MF Joint	1	U-PVC, HI-PVC
②	Rubber Ring	1	SBR

Dimensions Table

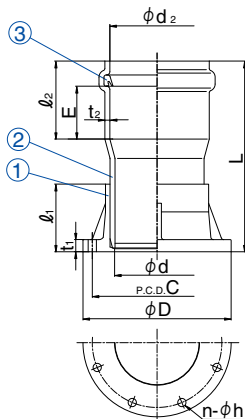
(Unit: mm)

Size	d ₁	JIS B 2062 Waterworks				JIS 10K				T	d ₂	d ₃	E (Min.)	ℓ	t	L
		D ₁	D ₂	n	h	D ₁	D ₂	n	h							
40	40	140	105	4	19	140	105	4	19	16	48.5	58	54	100	5	120
50	50	155	120	4	19	155	120	4	19	20	60.5	75	56	110	6.5	140
80 (75)	78	211	168	4	19	185	150	8	19	22	90.2	109	61	120	9	160
100	100	238	195	4	19	210	175	8	19	24	115.3	136	64	130	10.5	175
125	125	263	220	6	19	250	210	8	23	24	140.6	164	68	140	12	190
150	148	290	247	6	19	280	240	8	23	24	166.6	191	70	145	14	200

Notes: D₁, D₂, n and h for 40 mm and 50 mm are accordance with the JIS 10K standard.

AV RR-MF Joint (Bonded Product)

PRODUCT MODEL CODE	U-PVC Waterworks	R	N	U	MF	W	S	Size
	U-PVC 10K	R	N	U	MF	J	S	Size



No.	Description	pcs.	Material
①	TS Flange	1	U-PVC
②	RR Short Pipe	1	U-PVC
③	Rubber Ring	1	SBR

Dimensions Table

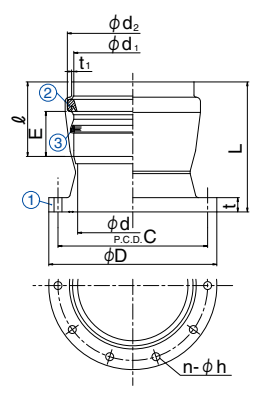
(Unit: mm)

Size	d	JIS B 2062 Waterworks				JIS 10K				t ₁	ℓ ₁	d ₂	E (Min.)	ℓ ₂	t ₂	L
		D	C	n	h	D	C	n	h							
200	196	342	299	8	19	330	290	12	23	28	156	218.0±1.1	76	170±5	10.3±1.4	440
250	247	410	360	8	23	400	355	12	25	30	167	269.3±1.2	82	185±5	12.7±1.8	515
300	298	464	414	10	23	445	400	16	25	30	167	320.7±1.4	88	200±5	15.1±2.2	535

FRP RR-MF Joint <Used for both VU and VM with Retainer>

FRP RR-MF JOINT

R N R MF W I Size



Maximum Working Pressure (Normal Temperature)	
VU	0.8MPa
VM	0.6MPa

No.	Description	pcs.	Material
①	MF Joint	1	FRP
②	Rubber Ring	1	SBR
③	Ring	1	SUS

■ Dimensions Table

(Unit: mm)

Size	d	JIS B 2062 Waterworks				t	d1 (Mn.)	d2	ℓ	E (Min.)	t1 (Min.)	L
		D	C	n	h							
350	348	530	472	10	25	45	371.5	413	235	132	6.9	410
400	395	582	524	12	25	47	421.7	470	255	153	7.9	460
450	442	652	585	12	27	49	471.9	525	280	166	8.9	512
500	489	706	639	12	27	51	522.1	586	300	175	10.0	570

PRODUCT MODEL CODE LIST

Type	Field	Material	Model	Standard	Others	Size
*	N	*	**	V	N	***
⋮	⋮	⋮	⋮	⋮	⋮	⋮
B Bend T TS Fitting	N Standard	U U-PVC I HI-PVC	90 90° Bend 45 45° Bend 9L 90° Elbow SO Socket TE Tee	V AV	N Normal Color	200 200 mm I 300 300 mm

AV90° Bend

PRODUCT MODEL CODE

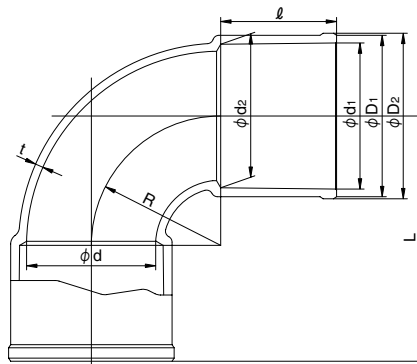
TS ▶ B N U 90 V N Size

HITS ▶ B N I 90 V N Size



TS U-PVC

HITS HI-PVC



Maximum Working Pressure (Normal Temperature)

75 – 150 mm	1.0MPa
200mm	0.75MPa
U-PVC 250mm	0.6MPa
HI-PVC 250mm	0.75MPa
300mm	0.4MPa

Dimensions Table

(Unit: mm)

Size	TS	HITS	d ₁	d ₂	ℓ	D ₁ (Min.)	D ₂ (Reference)	d	t (Min.)	L	R
75	<input type="checkbox"/>	-	89.80	88.13	72	101	104	78	6	137	65
100	<input type="checkbox"/>	-	115.00	112.89	92	129	132	100	7.3	172	80
125	<input type="checkbox"/>	-	141.20	138.72	112	156	160	125	7.7	237	125
150	<input type="checkbox"/>	-	166.50	163.39	140	185	189	148	9.8	260	120
200	<input type="checkbox"/>	<input type="checkbox"/>	217.00	214.10	145	240	244	196	15	341	196
250	<input type="checkbox"/>	<input type="checkbox"/>	268.20	265.00	155	293	298	247	16	402	247
300	<input type="checkbox"/>	<input type="checkbox"/>	318.70	315.88	155	337	341	298	10	395	240

Notes: 1. conform to the AV standard.

AV45° Bend

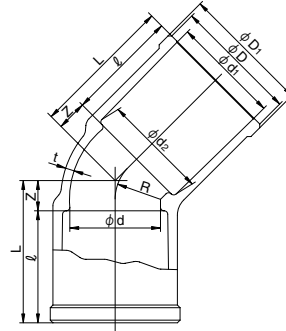
PRODUCT MODEL CODE	TS	▶	B	N	U	45	V	N	Size
	HITS	▶	B	N	I	45	V	N	Size



TS **U-PVC**



HITS **HI-PVC**



Dimensions Table

(Unit: mm)

Size	TS	HITS	d ₁	d ₂	ℓ	D (Min.)	D ₁ (Reference)	d	t (Min.)	Z	L	R
40	<input type="checkbox"/>	<input type="checkbox"/>	48.70	47.21	55	57	60	40	4.5	14	69	20
50	<input type="checkbox"/>	<input type="checkbox"/>	60.80	59.10	63	70	73	51	5	17	80	25.5
65	<input type="checkbox"/>	<input type="checkbox"/>	76.60	75.33	61	87	90	67	6.6	20	81	34
75	<input type="checkbox"/>	<input type="checkbox"/>	89.80	88.13	72	101	104	78	6	25	97	39
100	<input type="checkbox"/>	<input type="checkbox"/>	115.00	112.89	92	129	132	100	7.3	30	122	50
125	<input type="checkbox"/>	<input type="checkbox"/>	141.20	138.71	112	156	160	125	7.7	37	149	62.5
150	<input type="checkbox"/>	<input type="checkbox"/>	166.50	163.39	140	185	189	148	10	44	184	74
200	<input type="checkbox"/>	<input type="checkbox"/>	217.00	214.10	145	240	244	196	15	48	193	98
250	<input type="checkbox"/>	<input type="checkbox"/>	268.20	265.00	155	293	298	247	16	58	213	123.5
300	<input type="checkbox"/>	<input type="checkbox"/>	318.70	315.88	155	337	341	298	10	70	225	149

Notes: 1. conform to the AV standard.

Short Elbow

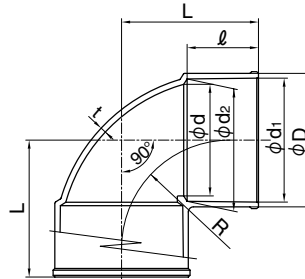
PRODUCT MODEL CODE	TS	▶	T	N	U	9L	V	N	Size
	HITS	▶	T	N	I	9L	V	N	Size



TS **U-PVC**



HITS **HI-PVC**



Dimensions Table

(Unit: mm)

Size	TS	HITS	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

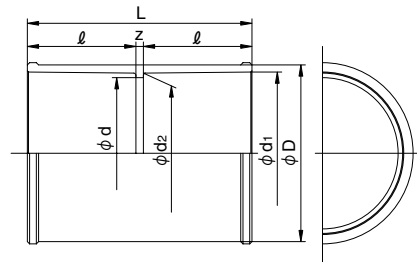
PRODUCT MODEL CODE	TS	▶	T	N	U	SO	V	N	Size
	HITS	▶	T	N	I	SO	V	N	Size



TS **U-PVC**



HITS **HI-PVC**



Dimensions Table

(Unit: mm)

Size	TS	HITS	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

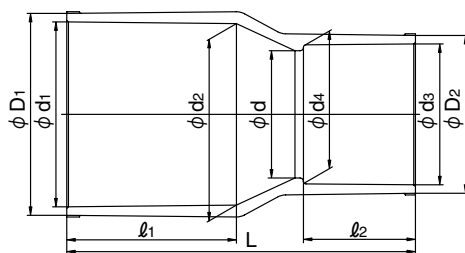
PRODUCT MODEL CODE
 TS ▶ T N U SO V N Size
 HITS ▶ T N I SO V N Size



TS
U-PVC



HITS
HI-PVC



Dimensions Table

(Unit: mm)

Size	TS	HITS	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

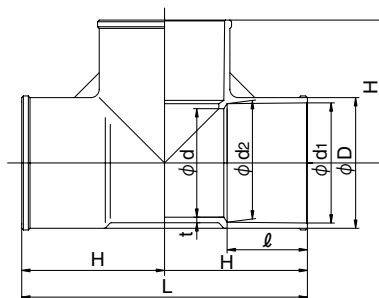
PRODUCT MODEL CODE
 TS ▶ T N U TE V N Size
 HITS ▶ T N I TE V N Size



TS
U-PVC



HITS
HI-PVC



Dimensions Table

(Unit: mm)

Size	TS	HITS	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

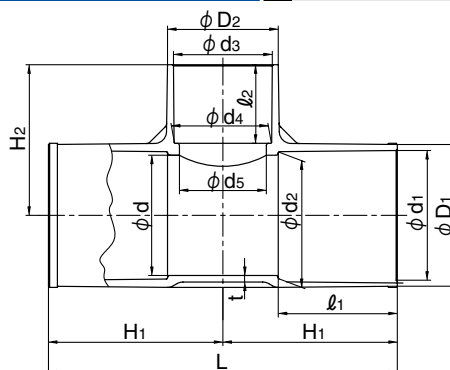
PRODUCT MODEL CODE
 TS ▶ T N U TE V N Size
 HITS ▶ T N I TE V N Size



TS
U-PVC



HITS
HI-PVC



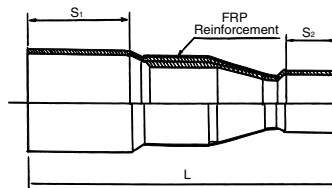
Dimensions Table

(Unit: mm)

Size	TS	HITS	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.

Reducing Socket (Crucial Part FRP Reinforcement Product)



■ Dimensions Table

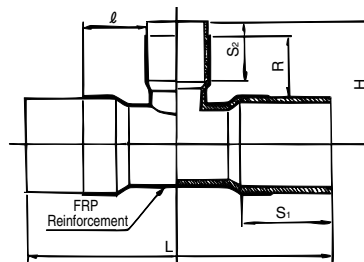
(Unit: mm)

Size	S ₁	S ₂	L	Size	S ₁	S ₂	L	Size	S ₁	S ₂	L
200×100	200	84	550	300×125	300	104	890	350×250	350	250	920
200×125	200	104	560	300×150	300	132	880	350×300	350	300	880
250×100	250	84	690	300×200	300	200	850	400×200	400	200	1100
250×125	250	104	690	300×250	300	250	790	400×250	400	250	1060
250×150	250	132	690	350×150	350	132	970	400×300	400	300	1040
300×100	300	84	890	350×200	350	200	960	400×350	400	350	980

Notes: 1. L dimension tolerance shall be ± 30 mm.

2. Dimensions other than the normal dimensions above are also available. For details, please contact our nearest office.

Reducing Tee (Crucial Part FRP Reinforcement Product)



■ Dimensions Table

(Unit: mm)

Size	S ₁	S ₂	H	L	Size	S ₁	S ₂	H	L
200×125	200	104	270	690	350×250	350	250	515	1150
250×125	250	104	300	790	350×300	350	300	565	1200
250×150	250	132	320	810	350×350	350	350	685	1370
300×100	300	84	310	880	400×75	400	64	340	1050
300×125	300	104	340	900	400×100	400	84	360	1070
300×150	300	132	370	940	400×125	400	104	390	1110
300×200	300	200	435	990	400×150	400	132	430	1150
300×250	300	250	485	1050	400×200	400	200	485	1200
350×75	350	64	320	950	400×250	400	250	545	1250
350×100	350	84	330	960	400×300	400	300	595	1300
350×125	350	104	360	990	400×350	400	350	650	1350
350×150	350	132	390	1030	400×400	400	400	760	1520
350×200	350	200	455	1080					

Notes: 1. L dimension tolerance shall be ± 30 mm.

2. Dimensions other than the normal dimensions above are also available. For details, please contact our nearest office.

PRODUCT MODEL CODE LIST

Type	Field	Material	Model	Standard	Others	Size
B	N	U	**	*	N	***
⋮	⋮	⋮	⋮	⋮	⋮	⋮
B Bend	N None Color	U U-PVC	FT Short Flanged End FB Flanged Bend	1 JIS10K 5 JIS5K	N Normal Color	075 75 mm 150 150 mm 100 100 mm 200 200 mm

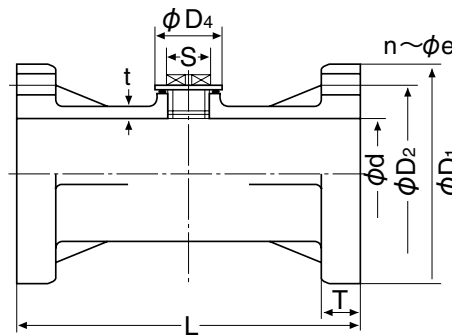
Short Flanged End

PRODUCT MODEL CODE

B N U FT Standard N Size



U-PVC



Provided G female threads (3/4 inch) offer a wide variety of usages such as installing a pressure gauge on the pump discharge side and a sample collection port, drainage, air-bleeding or thermometer at a chemical plant.

Dimensions Table

(Unit: mm)

Size	d	D ₁	D ₂	t	T	L	n	e	S	D ₄
75	78	185	150	7.7	22	250	8	19	24	42
100	100	210	175	9.2	22	300	8	19	24	42
150	148	280	240	12.5	26	300	8	23	24	42

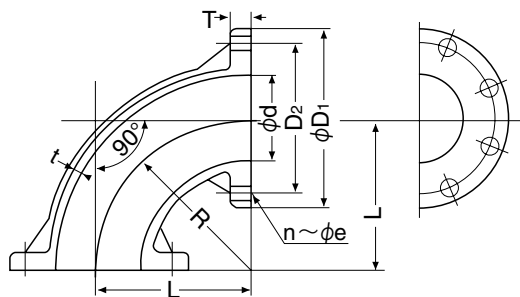
Flanged Bend

PRODUCT MODEL CODE

B N U FB Standard N Size



U-PVC



AV flanged bend is designed with an ideal "R" so that the degree of abrasion caused by fluid slurry containing is extremely low. This is also ideal for processes requiring cleaning of pipelines such as food-related, slurry-related and excreta disposal treatment-related with easy installation and removal.

Dimensions Table

(Unit: mm)

Size	d	D ₁	D	T	t	n	e	L	R
100	100	210	175	22	8.5	8	19	180	180
150	148	280	240	26	11.5	8	23	250	250
200	196	330	290	30	13.2	12	23	300	300

PRODUCT MODEL CODE LIST

Type	Field	Material	Model	Standard	Others	Size
W	N	*	**	J	N	***
⋮	⋮	⋮	⋮	⋮	⋮	⋮
W Bend	N None Color	U U-PVC I HI-PVC	9P 90°TS Normal Bend 4P 45°TS Normal Bend 2P 2 1/2°TS Normal Bend 1P 1 1/4°TS Normal Bend 5P 5 5/8°TS Normal Bend	J JIS	N Normal Color	040 40 mm I 300 300 mm

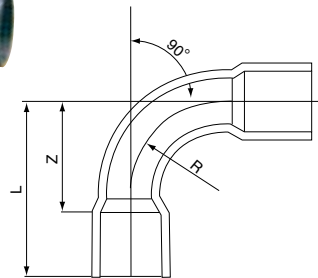
90° TS Normal Bend

Unplasticized Polyvinyl Chloride Pipe Fitting (JIS K6743)

PRODUCT MODEL CODE

TS ▶ W N U 9P J N Size

HITS ▶ W N I 9P J N Size



Maximum Working Pressure (Normal Temperature)

40 – 150 mm	1.0MPa
200 – 300 mm	0.75MPa
350 – 400 mm	0.6MPa

Dimensions Table

(Unit: mm)

Size	TS	HITS	Classification	Z	L	R	Size	TS	HITS	Classification	Z	L	R
40	○	—	VP	140	195	110	150	○	□	VP	538	670	475
50	○	□	VP	187	250	150	200	□	—	VP	800	1000	700
65	●	—	VP	249	310	200	250	□	—	VP	1100	1350	1000
75	○	□	VP	306	370	250	300	□	—	VP	1300	1600	1200
100	○	□	VP	361	445	300	350	□	—	VU	1500	1850	1400
125	●	—	VP	461	565	400	400	□	—	VU	1900	2300	1700

Notes: 1. ● conform to the JPPFA standard. 2. □ conform to the AV standard. 3. ○ are accordance with JIS K6743.

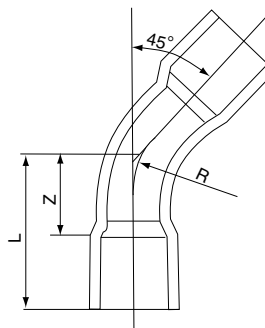
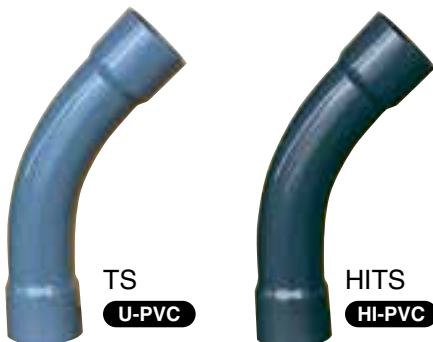
45° TS Normal Bend

Unplasticized Polyvinyl Chloride Pipe Fitting (JIS K6743)

PRODUCT MODEL CODE

TS ▶ W N U 4P J N Size

HITS ▶ W N I 4P J N Size



Maximum Working Pressure (Normal Temperature)

40 – 150 mm	1.0MPa
200 – 300 mm	0.75MPa
350 – 400 mm	0.6MPa

Dimensions Table

(Unit: mm)

Size	TS	HITS	Classification	Z	L	R	Size	TS	HITS	Classification	Z	L	R
40	○	—	VP	76	131	110	150	○	○	VP	260	392	475
50	○	○	VP	99	162	150	200	□	—	VP	400	600	700
65	●	—	VP	132	193	200	250	□	—	VP	500	750	1000
75	○	○	VP	160	224	250	300	□	—	VP	600	900	1200
100	○	○	VP	185	269	300	350	□	—	VU	700	1050	1400
125	●	—	VP	227	331	400	400	□	—	VU	800	1200	1700

Notes: 1. ● conform to the JPPFA standard. 2. □ conform to the AV standard. 3. ○ are accordance with JIS K6743.

22 1/2° TS Normal Bend

Unplasticized Polyvinyl Chloride Pipe Fitting (JIS K6743)

PRODUCT MODEL CODE

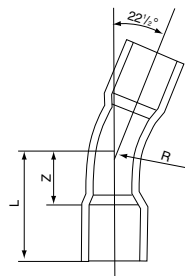
TS	▶	W	N	U	2P	J	N	Size
HITS	▶	W	N	I	2P	J	N	Size



TS
U-PVC



HITS
HI-PVC



Maximum Working Pressure (Normal Temperature)

40 – 150 mm	1.0MPa
200 – 300 mm	0.75MPa
350 – 400 mm	0.6MPa

Dimensions Table

(Unit: mm)

Size	TS	HITS	Classification	Z	L	R	Size	TS	HITS	Classification	Z	L	R
40	○	—	VP	52	107	110	150	○	○	VP	157	289	475
50	○	○	VP	67	130	150	200	□	—	VP	250	450	700
65	●	—	VP	89	150	200	250	□	—	VP	300	550	1000
75	○	○	VP	106	170	250	300	□	—	VP	350	650	1200
100	○	○	VP	121	205	300	350	□	—	VU	400	750	1400
125	●	—	VP	141	245	400	400	□	—	VU	450	850	1700

Notes: 1. ● conform to the JPPFA standard. 2. □ conform to the AV standard. 3. ○ are accordance with JIS K6743.

11 1/4° TS Normal Bend

Unplasticized Polyvinyl Chloride Pipe Fitting (JIS K6743)

PRODUCT MODEL CODE

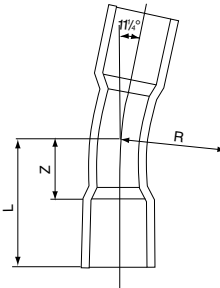
TS	▶	W	N	U	1P	J	N	Size
HITS	▶	W	N	I	1P	J	N	Size



TS
U-PVC



HITS
HI-PVC



Maximum Working Pressure (Normal Temperature)

40 – 150 mm	1.0MPa
200 – 300 mm	0.75MPa
350 – 400 mm	0.6MPa

Dimensions Table

(Unit: mm)

Size	TS	HITS	Classification	Z	L	R	Size	TS	HITS	Classification	Z	L	R
40	○	—	VP	41	96	110	150	○	○	VP	110	242	475
50	○	○	VP	52	115	150	200	□	—	VP	150	350	700
65	●	—	VP	67	128	200	250	□	—	VP	200	450	1000
75	○	○	VP	81	145	250	300	□	—	VP	200	500	1200
100	○	○	VP	91	175	300	350	□	—	VU	250	600	1400
125	●	—	VP	97	201	400	400	□	—	VU	300	700	1700

Notes: 1. ● conform to the JPPFA standard. 2. □ conform to the AV standard. 3. ○ are accordance with JIS K6743.

5 5/8° TS Normal Bend

Unplasticized Polyvinyl Chloride Pipe Fitting (JIS K6743)

PRODUCT MODEL CODE

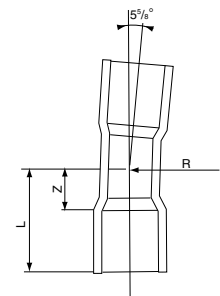
TS	▶	W	N	U	5P	J	N	Size
HITS	▶	W	N	I	5P	J	N	Size



TS
U-PVC



HITS
HI-PVC



Maximum Working Pressure (Normal Temperature)

40 – 150 mm	1.0MPa
200 – 300 mm	0.75MPa
350 – 400 mm	0.6MPa

Dimensions Table

(Unit: mm)

Size	TS	HITS	Classification	Z	L	R	Size	TS	HITS	Classification	Z	L	R
40	○	—	VP	35	90	110	150	○	○	VP	86	218	475
50	○	○	VP	44	107	150	200	□	—	VP	100	300	700
65	●	—	VP	59	120	200	250	□	—	VP	120	370	1000
75	○	○	VP	68	132	250	300	□	—	VP	140	440	1200
100	○	○	VP	76	160	300	350	□	—	VU	160	510	1400
125	●	—	VP	81	185	400	400	□	—	VU	230	630	1700

Notes: 1. ● conform to the JPPFA standard. 2. □ conform to the AV standard. 3. ○ are accordance with JIS K6743.

PRODUCT MODEL CODE LIST

Type	Field	Material	Model	Standard	Others	Size
R	N	*	**	J	N	***
⋮	⋮	⋮	⋮	⋮	⋮	⋮
R RR Fitting	N None Color	U U-PVC I HI-PVC	9B 90° Bend 4B 45° Bend 2B 22°1/2 Bend 1B 11-1/4° Bend 5B 5-5/8° Bend	J JIS	N Normal Color	040 40 mm I 200 200 mm

90° Bend

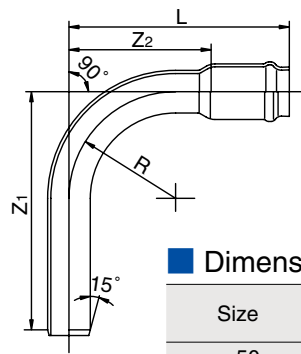
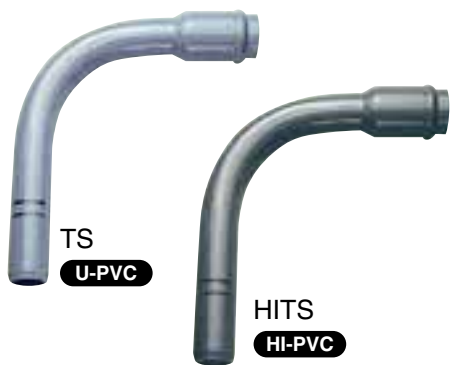
Abbreviation: **90BR**

(JWWA 130)

PRODUCT MODEL CODE

TS ▶ R N U 9B J N Size

HITS ▶ R N I 9B J N Size



Maximum Working Pressure (Normal Temperature)

50 – 150 mm	1.0MPa
200mm	0.75MPa
U-PVC 250mm	0.6MPa
HI-PVC 250mm	0.75MPa
300mm	0.4MPa

Dimensions Table

(Unit: mm)

Size	TS	VH			
		Z ₁	Z ₂	R	L
50	□	333	200	150	310
75	□	448	305	250	425
100	□	502	360	300	490
150	□	686	530	450	675

Dimensions Table

(Unit: mm)

Size	TS	HITS	VP			
			Z ₁	Z ₂	R	L
50	△	△	335	200	150	310
75	△	△	450	305	250	425
100	△	△	505	360	300	490
125	●	●	615	470	400	605
150	△	△	690	530	450	675
200	□	—	925	690	600	860
250	□	—	1065	805	700	990
300	□	—	1255	960	850	1160

Notes: 1. ● conform to the JPPFA standard. 2. □ conform to the AV standard. 3. △ are accordance with the standard of Japan Water Works Association.

45° Bend

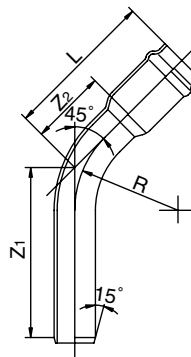
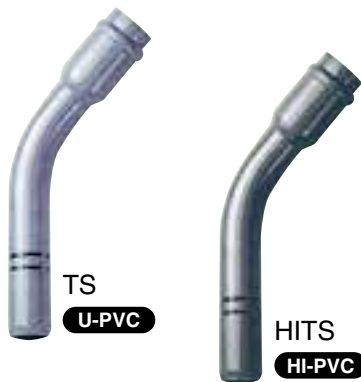
Abbreviation: **45BR**

(JWWA 130)

PRODUCT MODEL CODE

TS ▶ R N U 4B J N Size

HITS ▶ R N I 4B J N Size



Maximum Working Pressure (Normal Temperature)

50 – 150 mm	1.0MPa
200mm	0.75MPa
U-PVC 250mm	0.6MPa
HI-PVC 250mm	0.75MPa
300mm	0.4MPa

Dimensions Table

(Unit: mm)

Size	TS	VH			
		Z ₁	Z ₂	R	L
50	□	245	110	150	220
75	□	302	160	250	280
100	□	326	185	300	315
150	□	422	265	450	410

Dimensions Table

(Unit: mm)

Size	TS	HITS	VP			
			Z ₁	Z ₂	R	L
50	△	△	247	110	150	220
75	△	△	304	160	250	280
100	△	△	329	185	300	315
125	●	●	381	235	400	370
150	△	△	426	265	450	410
200	□	—	575	340	600	510
250	□	—	655	395	700	580
300	□	—	755	460	850	660

Notes: 1. ● conform to the JPPFA standard. 2. □ conform to the AV standard. 3. △ are accordance with the standard of Japan Water Works Association.

22 1/2° Bend

Abbreviation: **22 1/2 BR**

(JWWA 130)

PRODUCT MODEL CODE

TS ▶ R N U 2B J N Size

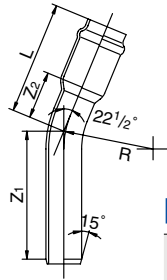
HITS ▶ R N I 2B J N Size



TS
U-PVC



HITS
HI-PVC



Maximum Working Pressure (Normal Temperature)

50 – 150 mm	1.0MPa
200mm	0.75MPa
U-PVC 250mm	0.6MPa
HI-PVC 250mm	0.75MPa
300 mm	0.4MPa

Dimensions Table

(Unit: mm)

Size	TS	VH			
		Z ₁	Z ₂	R	L
50	<input type="checkbox"/>	213	80	150	190
75	<input type="checkbox"/>	248	105	250	225
100	<input type="checkbox"/>	262	120	300	250
150	<input type="checkbox"/>	326	170	450	315

Dimensions Table

(Unit: mm)

Size	TS	HITS	VP			
			Z ₁	Z ₂	R	L
50	△	△	215	80	150	190
75	△	△	250	105	250	225
100	△	△	265	120	300	250
125	●	●	295	150	400	285
150	△	△	330	170	450	315
200	<input type="checkbox"/>	—	445	210	600	380
250	<input type="checkbox"/>	—	505	245	700	430
300	<input type="checkbox"/>	—	575	280	850	480

Notes: 1. ● conform to the JPPFA standard. 2. conform to the AV standard. 3. △ are accordance with the standard of Japan Water Works Association.

11 1/4° Bend

Abbreviation: **11 1/4 BR**

(JWWA 130)

PRODUCT MODEL CODE

TS ▶ R N U 1B J N Size

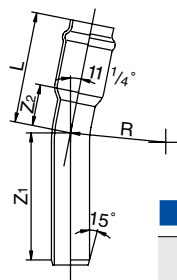
HITS ▶ R N I 1B J N Size



TS
U-PVC



HITS
HI-PVC



Maximum Working Pressure (Normal Temperature)

50 – 150 mm	1.0MPa
200mm	0.75MPa
U-PVC 250mm	0.6MPa
HI-PVC 250mm	0.75MPa
300mm	0.4MPa

Dimensions Table

(Unit: mm)

Size	TS	VH			
		Z ₁	Z ₂	R	L
50	<input type="checkbox"/>	198	65	150	175
75	<input type="checkbox"/>	223	80	250	200
100	<input type="checkbox"/>	232	90	300	220
150	<input type="checkbox"/>	280	125	450	270

Dimensions Table

(Unit: mm)

Size	TS	HITS	VP			
			Z ₁	Z ₂	R	L
50	△	△	200	65	150	175
75	△	△	225	80	250	200
100	△	△	235	90	300	220
125	●	●	254	110	400	245
150	△	△	284	125	450	270
200	<input type="checkbox"/>	—	385	150	600	320
250	<input type="checkbox"/>	—	435	175	700	360
300	<input type="checkbox"/>	—	485	195	850	395

Notes: 1. ● conform to the JPPFA standard. 2. conform to the AV standard. 3. △ are accordance with the standard of Japan Water Works Association.

5 5/8° Bend

Abbreviation: **5 5/8 BR**

(JWWA 130)

PRODUCT MODEL CODE

TS ▶ R N U 5B J N Size

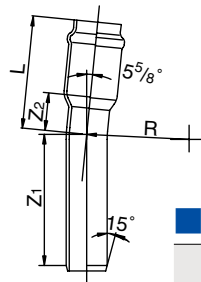
HITS ▶ R N I 5B J N Size



TS
U-PVC



HITS
HI-PVC



Maximum Working Pressure (Normal Temperature)

50 – 150mm	1.0MPa
200mm	0.75MPa
U-PVC 250mm	0.6MPa
HI-PVC 250mm	0.75MPa
300mm	0.4MPa

Dimensions Table

(Unit: mm)

Size	TS	VH			
		Z ₁	Z ₂	R	L
50	<input type="checkbox"/>	190	55	150	165
75	<input type="checkbox"/>	210	65	250	185
100	<input type="checkbox"/>	217	75	300	205
150	<input type="checkbox"/>	258	100	450	245

Dimensions Table

(Unit: mm)

Size	TS	HITS	VP			
			Z ₁	Z ₂	R	L
50	△	△	192	55	150	165
75	△	△	212	65	250	185
100	△	△	220	75	300	205
125	●	●	235	90	400	245
150	△	△	262	100	450	245
200	<input type="checkbox"/>	—	355	120	600	290
250	<input type="checkbox"/>	—	400	140	700	325
300	<input type="checkbox"/>	—	445	150	850	350

Notes: 1. ● conform to the JPPFA standard. 2. conform to the AV standard. 3. △ are accordance with the standard of Japan Water Works Association.

PRODUCT MODEL CODE LIST

Type	Field	Model	Material	Standard	Size
F	N	T	*	*	***
⋮	⋮	⋮	⋮	⋮	⋮
F Flange	N None Color	T TS Flange	U U-PVC I HI-PVC	1 JIS10K 5 JIS5K W Waterworks A ANSI	013 13 mm I 350 350 mm

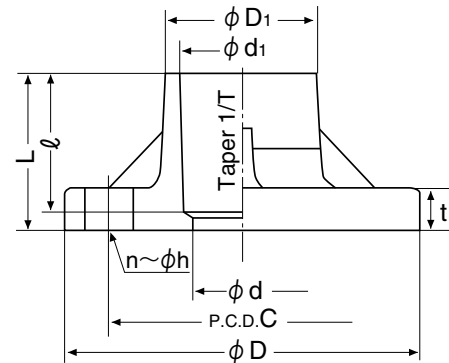
TS Flange

PRODUCT MODEL CODE	U-PVC	JIS 10K	F	N	T	U	1	Size
	HI-PVC	JIS 10K	F	N	T	I	1	Size
	U-PVC	JIS 5K	F	N	T	U	5	Size
	HI-PVC	JIS 5K	F	N	T	I	5	Size



Maximum Working Pressure (Normal Temperature)

JIS 10K	13 – 300mm	1.0MPa
	350mm	0.6MPa
JIS 5K	13 – 350 mm	0.5MPa



U-PVC JIS 10K 13 – 350 mm, JIS 5K 13 – 350 mm
 HI-PVC JIS 10K 13 – 300 mm, JIS 5K 13 – 200 mm

Dimensions Table

(Unit: mm)

Size	d		d ₁		Taper 1/T		ℓ		D ₁		C		D		pcs.		h		t		L	
	10K	5K	10K	5K	10K	5K	10K	5K	10K	5K	10K	5K	10K	5K	10K	5K	10K	5K	10K	5K	10K	5K
13	13.5	15	18.40		1/30		26	25.5	24	65	55	90	75	4	4	15	12	14	9	30	30	
15	16.5	18	22.40		1/34		30	31	29	70	60	95	80	4	4	15	12	14	9	35	35	
20	20.5	22	26.45		1/34		35	35	33	75	65	100	85	4	4	15	12	15	10	40	40	
25	25	25	32.55		1/34		40	42.5	40	90	75	125	95	4	4	19	12	15	10	46	45	
32	30	30	38.60		1/34		44	48.5	46	100	90	135	115	4	4	19	15	16	12	50.5	50	
40	41	41	48.70		1/37		55	60.5	59	105	95	140	120	4	4	19	15	16	12	61.5	61	
50	52	52	60.80		1/37		63	73	70	120	105	155	130	4	4	19	15	20	14	71	72	
65	67	67	76.60	76.80	1/48	1/41	61	69	90	86	140	130	175	155	4	4	19	15	22	14	70	76
80	78	78	89.60	89.80	1/49	1/43	64	72	105	101	150	145	185	180	8	4	19	19	22	14	73	80
100	100	100	114.70	115.00	1/56	1/44	84	92	131	129	175	165	210	200	8	8	19	19	22	16	93	105
125	125	125	140.85	141.20	1/58	1/45	104	112	158	156	210	200	250	235	8	8	23	19	24	16	114	126
150	146	146	166.00	166.50	1/63	1/45	132	140	185	185	240	230	280	265	8	8	23	19	26	18	142	150
200	196	196	217.00		1/50		145	238	238	290	280	330	320	12	8	23	23	28	28	156	156	
250	247	247	268.20		1/55		155	300	300	355	345	400	385	12	12	25	23	30	30	167	167	
300	298	298	318.70		1/55		155	341	341	400	390	445	430	16	12	25	23	30	30	167	167	
350	348	348	371.00		1/60		230	398	398	445	435	490	480	16	12	25	23	34	34	300	300	

Notes: Dimensions for C, D, n and h are accordance with the JIS 10K · 5K standards. Bolt hole dimension for 5K (350 mm) is different from JIS. Use M20 for tightening bolts.

For U-PVC Waterworks, HI-PVC Waterworks, U-PVC ANSI Standard

PRODUCT MODEL CODE	U-PVC Waterworks	F	N	T	U	W	Size
	HI-PVC Waterworks	F	N	T	I	W	Size
	U-PVC For ANSI Standard	F	N	T	U	A	Size

Maximum Working Pressure (Normal Temperature)

Waterworks	50 – 300 mm	0.75MPa
ANSI	15 – 300 mm	1.0MPa

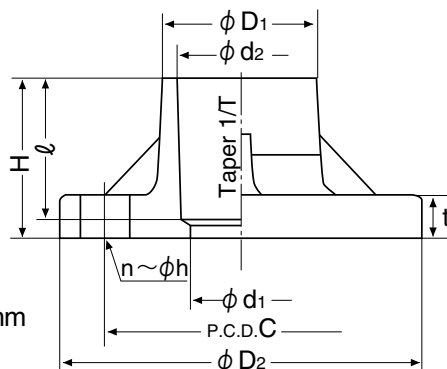


U-PVC



HI-PVC

U-PVC Waterworks 50 – 300 mm HI-PVC Waterworks 75 – 250 mm



Dimensions Table

(Unit: mm)

Size	d1	d2	Taper 1/T	ℓ	D1	C	D2	pcs.	h	t	H
50	52	60.80	1/37	63	73	120	155	4	19	20	71
75(80)	78	89.60	1/49	64	107	168	211	4	19	22	74
100	100	114.70	1/56	84	133	195	238	4	19	24	98
125	125	140.85	1/58	104	159	220	263	6	19	24	118
150	146	166.00	1/63	132	185	247	290	6	19	24	147
200	196	217.00	1/50	145	238	299	342	8	19	28	156
250	247	268.20	1/55	155	300	360	410	8	23	30	167
300	298	318.70	1/55	155	341	414	464	10	23	30	167

Notes: 1. Dimensions for C, D2, n and h of 75 (80) to 300 mm are accordance with the tap water gate valve of JIS B 2062.

2. C, D2, n and h for 50 mm are accordance with the JIS 10K standard.

Use the JIS 10K standard for TS flange to connect to 65 mm gate valve.

For U-PVC ANSI Standard

Dimensions Table

(Unit: mm)

Size	d1	d2	Taper 1/T	ℓ	D1	C	D2	pcs.	h	t	H
15	18	22.40	1/34	30	31	60.5	89	4	16	12	46
20	22	26.45	1/34	35	35	70	98	4	16	13	53
25	25	32.55	1/34	40	42.5	79.5	108	4	16	15	50
32	30	38.60	1/34	44	48.5	89	117.5	4	16	16	54
40	41	48.70	1/37	55	60.5	98.5	127	4	16	18	65
50	52	60.80	1/37	63	73	120.5	152	4	19	20	74
65	67	76.80	1/41	69	90	139.5	178	4	19	23	82
80	78	89.80	1/43	72	105	152.5	190.5	4	19	24	86
100	100	115.00	1/44	92	131	190.5	229	8	19	24	107
125	125	141.20	1/45	112	158	216	254	8	22	24	130
150	146	166.50	1/45	140	185	241.5	280	8	22	26	142
200	196	217.00	1/50	145	238	298.5	343	8	22	28	156
250	247	268.20	1/55	155	300	362	406	12	25	30	167
300	298	318.70	1/55	155	341	432	483	12	25	30	167

Notes: 1. Only C, D2, n and h are accordance with ANSI/ASME B 16.5 CLASS 150.

2. For pipe socket dimension, d1, ℓ and taper 1/T are accordance with the JIS standard. (JIS K 6743)

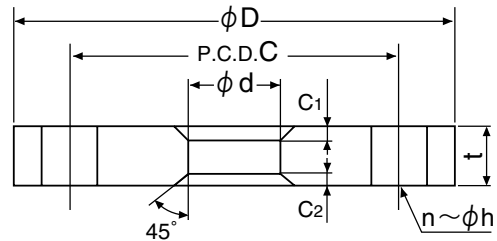
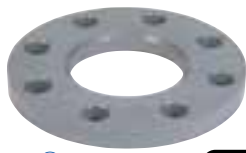
PRODUCT MODEL CODE LIST

Type	Field	Model	Material	Standard	Size
F	N	*	*	*	***
⋮	⋮	⋮	⋮	⋮	⋮
F Flange	N None Color	J J Flange P P Flange Q Q Flange	U U-PVC I HI-PVC	1 JIS 10K 5 JIS 5K	013 13 mm 1 300 300 mm

Welded Flange

PRODUCT MODEL CODE

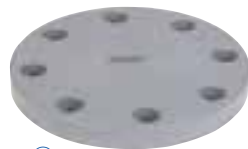
U-PVC	JIS 10K	F	N	J	U	1	Size
U-PVC	JIS 5K	F	N	J	U	5	Size



Blind Flange

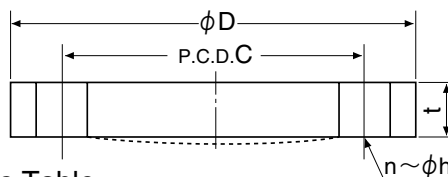
PRODUCT MODEL CODE

U-PVC	P	F	N	P	U	Standard	Size	
U-PVC	JIS 10K	Q	F	N	Q	U	1	Size
HI-PVC	JIS 10K	Q	F	N	Q	I	1	Size
U-PVC	JIS 5K	Q	F	N	Q	U	5	Size



Maximum Working Pressure (Normal Temperature)

JIS 10K	13 – 150 mm	1.0MPa
	200 – 300 mm	0.5MPa
JIS 5K	13 – 300 mm	0.5MPa



Dimensions Table

(Unit: mm)

Size	d	C		D		pcs.		h		t		C ₁	C ₂
		10K	5 K	10K	5 K	10K	5 K	10K	5 K	10K	5 K		
13	18	65	55	90	75	4	4	15	12	12	9	3	3
15	22	70	60	95	80	4	4	15	12	12	9	3	3
20	26	75	65	100	85	4	4	15	12	14	10	3	3
25	32	90	75	125	95	4	4	19	12	14	10	3	3
32	38	100	90	135	115	4	4	19	15	16	12	3	3
40	48	105	95	140	120	4	4	19	15	16	12	3	3
50	60	120	105	155	130	4	4	19	15	16	14	3	4
65	76	140	130	175	155	4	4	19	15	18	14	3	4
80	89	150	145	185	180	8	4	19	19	18	14	3	4
100	114	175	165	210	200	8	8	19	19	18	16	3	4
125	140	210	200	250	235	8	8	23	19	20	16	4	4
150	165	240	230	280	265	8	8	23	19	22	18	4	4
200	216	290	280	330	320	12	8	23	23	22	20	4	4
250	267	355	345	400	385	12	12	25	23	24	22	4	4
300	318	400	390	445	430	16	12	25	23	24	22	4	4

Notes: Dimensions for C, D, n and h are accordance with the JIS 10K · 5K standards.

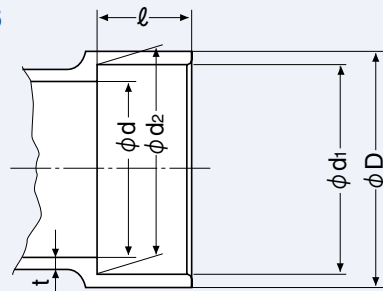
PRODUCT MODEL CODE LIST

Type	Field	Material	Model	Standard	Others	Size
D	N	U	**	J	N	***
D DV Fitting	N None Color	U U-PVC	DL DV-DL 90° Elbow LL DV-LL 90° Large-Bend Elbow 4L DV-45L 45° Elbow DT DV-90Y 90°Y LT DV-LT 90° Large-Bend Y 4Y DV-45Y 45°Y WT DV-WLT 90° Large-bend Both Y DS DV-DS Socket IN DV-IN Increaser	J JIS	N Normal Color	030 30 mm 150 150 mm 040030 40x30 mm 150125 150x125 mm

DV Fitting Socket, Other Common Dimensions

●JIS K6739

Drainage Unplasticized Polyvinyl Chloride Pipe & Fitting



Dimensions Table

(Unit: mm)

Size	d1		d2		l		D	d		t Min Dimension
	Basic Dimension	Tolerance	Basic Dimension	Tolerance	Basic Dimension	Tolerance		Min Dimension	Basic Dimension	
30	38.25	±0.25	37.85	±0.25	18	±1	44	31.0	±0.8	2.7
40	48.30	±0.30	47.80	±0.30	22	±1	54	40.0	±0.9	2.7
50	60.35	±0.30	59.75	±0.30	25	±1	67	51.0	±0.9	3.1
65	76.40	±0.30	75.70	±0.30	35	±1	83	67.0	±0.9	3.1
75	89.45	±0.30	88.65	±0.30	40	±2	97	77.2	±0.9	3.6
100	114.55	±0.35	113.55	±0.35	50	±2	124	98.8	±1.0	4.5
125	140.70	±0.40	139.40	±0.40	65	±2	151	125.0	±1.2	5.4
150	165.85	±0.45	164.25	±0.45	80	±2	178	145.8	±1.3	6.3

90° Elbow

Abbreviation: **DL**

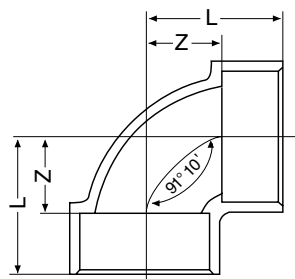
(JIS K 6739)

PRODUCT MODEL CODE

DL ▶ D N U DL J N Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z	L	Size	Z	L
▲ 30	22	40	75	48	88
40	27	49	100	62	112
50	33	58	125	75	140
65	42	77	150	88	168

Notes: 1. Z tolerance shall be ±2 mm. 2. Flow angle 91°10' tolerance shall be ±30'. 3. ▲ are stock products.

90° Large-Bend Elbow

Abbreviation: **LL**

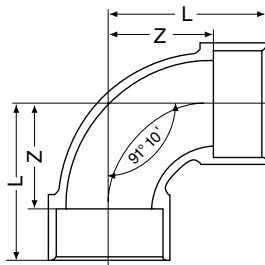
(JIS K 6739)

PRODUCT
MODEL CODE

LL ▶ D N U LL J N Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z	L
40	52	74
50	66	91
65	90	125
75	100	140

Size	Z	L
100	128	178
125	140	205
150	170	250

Notes: 1. Z tolerance shall be ± 2 mm. 2. Flow angle $91^{\circ}10'$ tolerance shall be $\pm 30'$.

45° Elbow

Abbreviation: **45L**

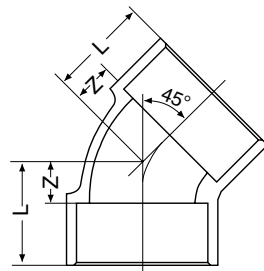
(JIS K 6739)

PRODUCT
MODEL CODE

45L ▶ D N U 4L J N Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z	L
▲ 30	12	30
40	14	36
50	18	43
65	22	57

Size	Z	L
75	25	65
100	30	80
125	38	103
150	44	124

Notes: 1. Z tolerance shall be ± 2 mm. 2. ▲ are stock products.

90°Y

Abbreviation: **DT**

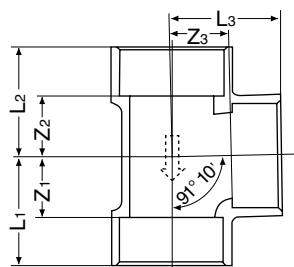
(JIS K 6739)

PRODUCT
MODEL CODE

DT ▶ D N U DT J N Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
▲ 30	22	22	22	40	40	40
40	27	27	27	49	49	49
50	34	34	34	59	59	59
65	42	43	42	77	78	77

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
75	48	49	48	88	89	88
100	62	63	62	112	113	112
125	75	76	75	140	141	140
150	89	90	89	169	170	169

Notes: 1. Tolerance of Z₁, Z₂ and Z₃ shall be ± 2 mm. 2. Flow angle $91^{\circ}10'$ tolerance shall be $\pm 30'$.

3. An arrow to show direction of flow shall be embossed on the surface as shown in the diagram. 4. ▲ are stock products.

Reducing 90°Y

Abbreviation: **DT**

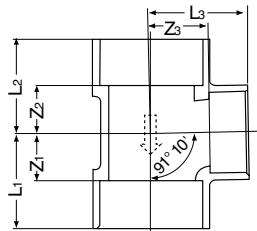
(JIS K 6739)

PRODUCT
MODEL CODE

DT ▶ D N U DT J N Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
▲ 50× 30	22	22	33	47	47	51
▲ 50× 40	27	27	33	52	52	55
▲ 65× 40	27	28	42	62	63	64
65× 50	34	35	42	69	70	67
75× 40	27	28	48	67	68	70
75× 50	34	35	48	74	75	73
75× 65	42	43	48	82	83	83

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
100× 40	27	28	62	77	78	84
100× 50	34	35	62	84	85	87
100× 65	42	43	62	92	93	97
100× 75	48	49	62	98	99	102
□ 125× 75	49	51	75	114	116	115
□ 125×100	62	64	75	127	129	125
□ 150× 75	51	53	88	131	135	128
□ 150×100	62	65	88	142	145	138

Notes: 1. Tolerance of Z₁, Z₂ and Z₃ shall be ±2 mm. 2. Flow angle 91°10' tolerance shall be ±30'.

3. An arrow to show direction of flow shall be embossed on the surface as shown in the diagram. 4. □ conform to the AV standard. 5. ▲ are stock products.

90° Large-Bend Y

Abbreviation: **LT**

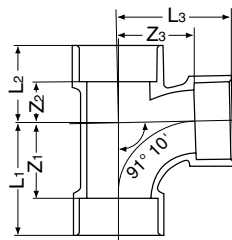
(JIS K 6739)

PRODUCT
MODEL CODE

LT ▶ D N U LT J N Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
40	52	23	52	74	45	74
50	66	26	66	91	51	91
65	90	33	90	125	68	125
75	100	30	100	140	70	140

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
100	128	45	128	178	95	178
125	140	50	140	205	115	205
150	170	65	170	250	145	250

Notes: 1. Tolerance of Z₁, Z₂ and Z₃ shall be ±2 mm. 2. Flow angle 91°10' tolerance shall be ±30'.

Reducing 90° Large-Bend Y

Abbreviation: **LT**

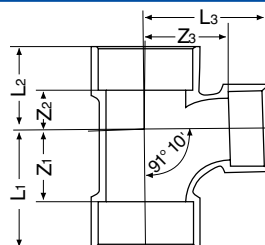
(JIS K 6739)

PRODUCT
MODEL CODE

LT ▶ D N U LT J N Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
50× 40	52	23	57	77	48	79
65× 40	52	24	66	87	59	88
65× 50	66	27	74	101	62	99
75× 40	52	25	71	92	65	93
75× 50	66	29	79	106	69	104
75× 65	90	32	95	130	72	130
100× 40	52	28	82	102	78	104
100× 50	66	32	90	116	82	115
100× 65	90	36	107	140	86	142
100× 75	100	33	110	150	83	150

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
125× 65	90	38	120	155	103	155
125× 75	100	42	124	165	107	164
125×100	128	52	140	193	117	190
150× 65	90	42	130	170	122	165
150× 75	100	45	135	180	125	175
150×100	128	53	152	208	133	202
150×125	140	60	152	220	140	217

Notes: 1. Tolerance of Z₁, Z₂ and Z₃ shall be ±2 mm.

2. Flow angle 91°10' tolerance shall be ±30'.

45°Y

Abbreviation: **Y**

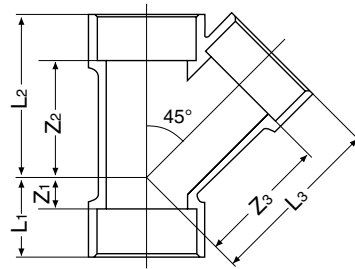
(JIS K 6739)

PRODUCT
MODEL CODE

Y ▶ D N U 4Y J N Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
40	12	58	62	34	80	84
50	20	72	78	45	97	103
65	20	92	98	55	127	133
75	26	106	115	66	146	155

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
100	32	134	144	82	184	194
125	38	172	175	103	237	240
150	44	204	210	124	284	290

Notes: 1. Tolerance of Z₁, Z₂ and Z₃ shall be ±2 mm.

Reducing 45°Y

Abbreviation: **Y**

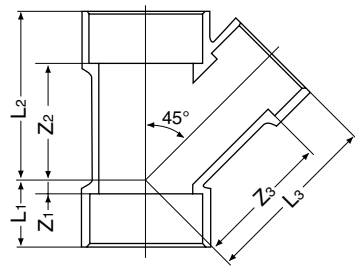
(JIS K 6739)

PRODUCT
MODEL CODE

Y ▶ D N U 4Y J N Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
50× 40	8	62	70	33	87	97
65× 40	-1	72	82	34	107	104
65× 50	8	80	88	43	115	113
75× 40	-6	78	92	34	118	114
75× 50	3	86	98	43	126	123
75× 65	14	98	106	54	138	141

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
100× 40	-14	96	112	36	146	134
100× 50	-8	98	118	42	148	143
100× 65	3	110	125	53	160	160
100× 75	19	118	132	69	168	172
125×100	19	150	171	84	215	221
150×100	6	165	185	86	245	235

Notes: 1. Tolerance of Z₁, Z₂ and Z₃ shall be ±2 mm.

90° Large-Bend Both Y

Abbreviation: **WLT**

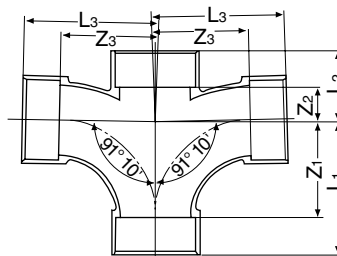
(JIS K 6739)

PRODUCT
MODEL CODE

WLT ▶ D N U WT J N Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
▲ 65	90	33	90	125	68	125
75	100	38	100	140	78	140
100	128	45	128	178	95	178

Notes: 1. Tolerance of Z₁, Z₂ and Z₃ shall be ±2 mm.

2. Flow angle 91°10' tolerance shall be ±30'.

3. ▲ are stock products.

Reducing 90° Large-bend Both Y

Abbreviation: **WLT**

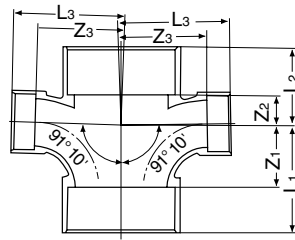
(JIS K 6739)

PRODUCT
MODEL CODE

WLT ▶ D N U WT J N Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
100×75	100	40	110	150	90	150
125×100	128	52	140	193	117	190

Notes: 1. Tolerance of Z₁, Z₂ and Z₃ shall be ±2 mm.
2. Flow angle 91°10' tolerance shall be ±30'.

Socket

Abbreviation: **DS**

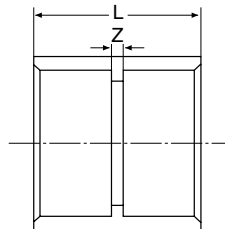
(JIS K 6739)

PRODUCT
MODEL CODE

DS ▶ D N U DS J N Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z	L
40	3	47
50	3	53
65	3	73
75	4	84

Size	Z	L
100	4	104
125	4	134
150	4	164

Notes: 1. Z tolerance shall be ±2 mm.

Increaser

Abbreviation: **IN**

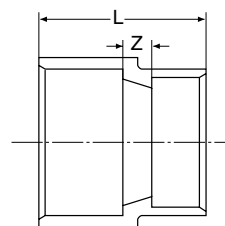
(JIS K 6739)

PRODUCT
MODEL CODE

IN ▶ D N U IN J N Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z	L
▲ 40×30	20	60
50×40	20	67
65×40	20	77
65×50	20	80
▲ 75×40	25	87
75×50	25	90
75×65	25	100
100×40	30	102
▲ 100×50	30	105
100×65	30	115
100×75	30	120

Size	Z	L
▲ □ 125×65	35	135
□ 125×75	35	140
125×100	35	150
□ 150×75	40	160
150×100	40	170
150×125	40	185

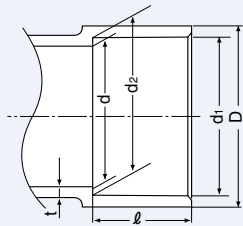
Notes: 1. Z tolerance shall be ±2 mm.
2. □ conform to the AV standard.
3. ▲ are stock products.

PRODUCT MODEL CODE LIST

Type	Field	Material	Model	Standard	Others	Size
D	N	U	**	U	N	***
D VU Fitting	N None Color	U U-PVC	DL VU-DL 90° Elbow 4L VU-45L 45° Elbow DS VU-DS Socket IN VU-IN Increaser DT VU-DT 90°Y LL VU-LL 90° Large-Bend Elbow 4Y VU-Y 45°Y LT VU-LT 90° Large-Bend Y	U VU	N Normal Color	040 40 mm 150 150 mm 050040 50×40 mm 150125 150×125 mm

VU Fitting Socket Common Dimensions

This is used for non-pressurized piping such as drainage and sewer piping.



Dimensions Table

(Unit: mm)

Size	d ₁		d ₂		l		d	t	D
	Basic Dimension	Tolerance	Basic Dimension	Tolerance	Basic Dimension	Tolerance	Min Dimension	Min Dimension	Reference Dimension
40	48.3	±0.3	47.8	±0.3	22	±1	44	2.0	54
50	60.5	±0.3	59.5	±0.3	25	±3	56	2.2	67
65	76.6	±0.3	75.4	±0.3	35	±3	71	2.5	83
75	89.6	±0.3	88.3	±0.3	40	±5	83	3.0	97
100	114.8	±0.4	113.2	±0.4	50	±5	107	3.5	124
125	140.9	±0.4	139.1	±0.4	65	±5	131	4.5	151
150	166.1	±0.5	163.9	±0.5	80	±5	154	5.5	178

Notes: 1. d₁ and d₂ shall be the average of measured inner diameters of 2 directions or more perpendicular to each other.

90° Elbow

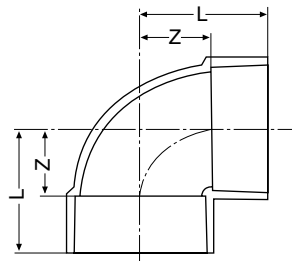
Abbreviation: **VU-DL**

(JPPFA AS38)

VU-DL ▶ D N U DL U N Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z	L	Size	Z	L
□ 40	27	49	● 100	62	112
● 50	33	58	□ 125	75	140
● 65	42	77	● 150	88	168
● 75	48	88			

Notes: 1. Z tolerance shall be ±2 mm. 2. L is the normal dimension. 3. ● conform to the JPPFA standard. 4. □ conform to the AV standard.

45° Elbow

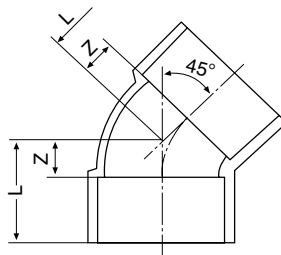
Abbreviation: **VU-45L**

(JPPFA AS38)

VU-45L ▶ D N U 4L U N Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z	L	Size	Z	L
□ 40	14	36	● 100	30	80
● 50	18	43	□ 125	38	103
● 65	22	57	● 150	44	124
● 75	25	65			

Notes: 1. Z tolerance shall be ±2 mm. 2. L is the normal dimension. 3. ● conform to the JPPFA standard. 4. □ conform to the AV standard.

Socket

Abbreviation: **VU-DS**

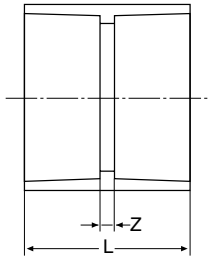
(JPPFA AS38)

PRODUCT MODEL CODE

VU-DS ▶ **D N U DS U N** Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z	L
□ 40	3	47
● 50	3	53
● 65	3	73
● 75	4	84

Size	Z	L
● 100	5	105
□ 125	5	135
● 150	5	165

Notes: 1. Z tolerance shall be ± 2 mm. 2. L is the normal dimension. 3. ● conform to the JPPFA standard. 4. □ conform to the AV standard.

Increaser

Abbreviation: **VU-IN**

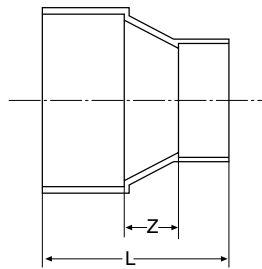
(JPPFA AS38)

PRODUCT MODEL CODE

VU-IN ▶ **D N U IN U N** Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z	L
□ 50x 40	20	67
□ 65x 50	20	80
● 75x 50	25	90
● 75x 65	25	100
● 100x 50	30	105
● 100x 65	30	115
● 100x 75	30	120

Size	Z	L
● 125x100	35	150
● 150x100	40	170
150x125	40	185

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

90°Y

Abbreviation: **VU-DT**

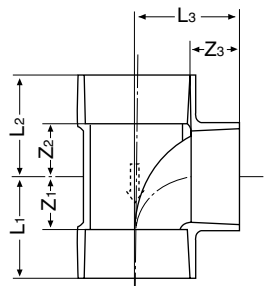
(JPPFA AS38)

PRODUCT MODEL CODE

VU-DT ▶ **D N U DT U N** Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
● 50	34	34	34	59	59	59
● 65	42	43	42	77	78	77
● 75	48	49	48	88	89	88

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
● 100	62	63	62	112	113	112
□ 125	75	76	75	140	141	140
● 150	89	90	89	169	170	169

Notes: 1. Tolerance of Z₁, Z₂ and Z₃ shall be ± 2 mm. 2. An arrow to show direction of flow shall be embossed on the outside as shown in the diagram.
3. ● conform to the JPPFA standard. 4. □ conform to the AV standard.

Reducing 90°Y

Abbreviation: **VU-DT**

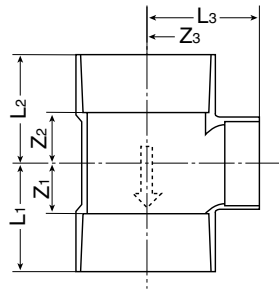
(JPPFA AS38)

PRODUCT
MODEL CODE

VU-DT ▶ D N U DT U N Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
● 75×50	34	35	48	74	75	73
□ 75×65	42	43	48	82	83	83

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
● 100×50	34	35	62	84	85	87
● 100×75	48	49	62	98	99	102
□ 150×100	62	63	88	142	143	138

Notes: 1. Tolerance of Z₁, Z₂ and Z₃ shall be ±2 mm. 2. An arrow to show direction of flow shall be embossed on the outside as shown in the diagram.
3. ● conform to the JPPFA standard. 4. □ conform to the AV standard.

90° Large-Bend Elbow

Abbreviation: **VU-LL**

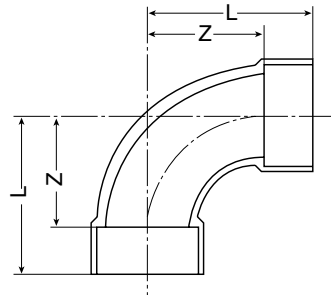
(JPPFA AS38)

PRODUCT
MODEL CODE

VU-LL ▶ D N U LL U N Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z	L
● 50	66	91
● 75	100	140
● 100	128	178

Size	Z	L
● 125	140	205
● 150	170	250

Notes: 1. Z tolerance shall be ±2 mm for the size of 100 or less and ±3 mm for the size of 125 or more. 2. ● conform to the JPPFA standard.

45°Y

Abbreviation: **VU-Y**

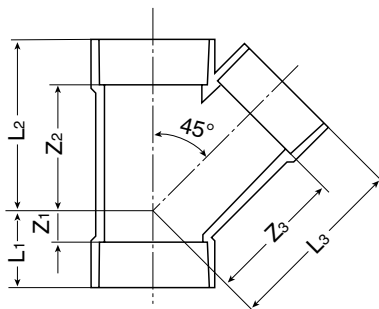
(JPPFA AS38)

PRODUCT
MODEL CODE

VU-Y ▶ D N U 4Y U N Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
● 50	20	72	78	45	97	103
● 75	26	106	115	66	146	155
● 100	32	134	144	82	184	194

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
□ 125	38	172	175	103	237	240
● 150	44	204	210	124	284	290

Notes: 1. Tolerance of Z₁, Z₂ and Z₃ shall be ±2 mm for the size of 100 or less and ±3 mm for the size of 150.
2. ● conform to the JPPFA standard. 3. □ conform to the AV standard.

Reducing 45°Y

Abbreviation: **VU-Y**

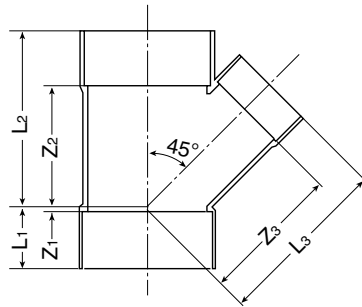
(JPPFA AS38)

PRODUCT
MODEL CODE

VU-Y ▶ D N U 4Y U N Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
● 75×50	3	86	98	43	126	123
● 100×50	-8	98	118	42	148	143
● 100×75	19	118	132	69	168	172

Notes: 1. Tolerance of Z₁, Z₂ and Z₃ shall be ±2 mm.
2. ● conform to the JPPFA standard.

90° Large-Bend Y

Abbreviation: **VU-LT**

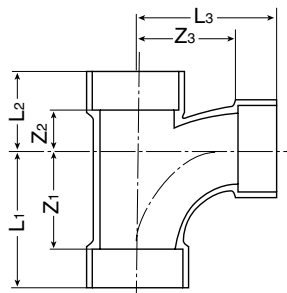
(JPPFA AS38)

PRODUCT
MODEL CODE

VU-LT ▶ D N U LT U N Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
● 50	66	26	66	91	51	91
● 75	100	30	100	140	70	140
● 100	128	45	128	178	95	178

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
● 125	140	50	140	205	115	205
▲● 150	170	65	170	250	145	250

Notes: 1. Tolerance of Z₁, Z₂ and Z₃ shall be ±2 mm for the size of 100 or less and ±3 mm for the size of 125 or more.
2. ● conform to the JPPFA standard. 3. ▲ are stock products.

Reducing 90° Large-Bend Y

Abbreviation: **VU-LT**

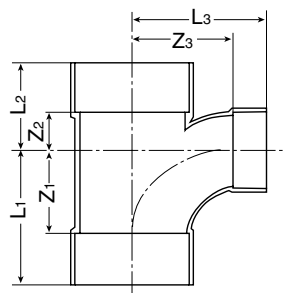
(JPPFA AS38)

PRODUCT
MODEL CODE

VU-LT ▶ D N U LT U N Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
□ 65×50	66	27	74	101	62	99
● 75×50	66	29	79	106	69	104
□ 75×65	90	32	95	130	72	130

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
● 100×50	66	32	90	116	82	115
● 100×75	100	33	110	150	83	150
□ 125×100	128	52	140	193	117	190
● 150×125	140	60	152	220	140	217

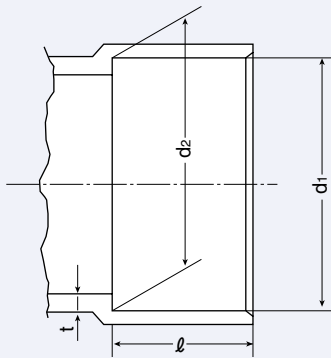
Notes: 1. Tolerance of Z₁, Z₂ and Z₃ shall be ±2 mm for the size of 100 or less and ±3 mm for the size of 125 or more.
2. ● conform to the JPPFA standard. 3. □ conform to the AV standard.

PRODUCT MODEL CODE LIST

Type	Field	Material	Model	Standard	Others	Size
D	N	U	**	U	N	***
⋮	⋮	⋮	⋮	⋮	⋮	⋮
D VU Fitting	N Standard	U U-PVC	DL VU-DL 90° Elbow 4L VU-45L 45° Elbow DS VU-DS Socket DT VU-DT 90°Y	U VU	N Normal Color	200 200 mm 300 300 mm

VU Large Fitting Socket Common Dimensions

This is used for non-pressurized piping such as drainage and sewer piping.



Dimensions Table

(Unit: mm)

Size	d ₁		d ₂		l		t
	Basic Dimension	Tolerance	Basic Dimension	Tolerance	Basic Dimension	Tolerance	Min Dimension
200	217.30	-0.55	214.70	±0.55	110	±2	5.5
250	268.55	-0.60	265.45	±0.60	130	±2	6.0
300	319.75	-0.65	316.25	±0.65	150	±2	7.2

Notes: 1. d₁ and d₂ shall be the average of measured inner diameters of 2 directions or more perpendicular to each other.

AV 90° Elbow

Abbreviation: **VU-DL**

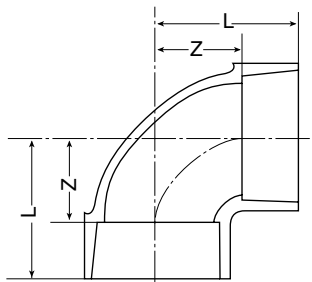
(JPPFA AS12)

PRODUCT MODEL CODE

VU-DL ▶ **D N U DL U N** Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z	L
□ 200	115	225
□ 250	141	271
□ 300	168	318

Notes: 1. □ conform to the AV standard.

AV45° Elbow

Abbreviation: **VU-45L**

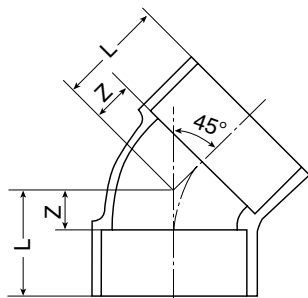
(JPPFA AS12)

PRODUCT MODEL CODE

VU-45L ▶ **D N U 4L U N** Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z	L
● 200	56	166
● 250	68	198
● 300	78	228

Notes: 1. ● conform to the JPPFA Standard.

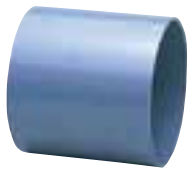
AV Socket

Abbreviation: **VU-DS**

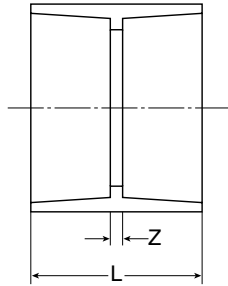
(JPPFA AS12)

PRODUCT
MODEL CODE

VU-DS ▶ D N U DS U N Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z	L
● 200	5	225
● 250	6	266
● 300	7	307

Notes: 1. ● conform to the JPPFA Standard.

AV 90°Y

Abbreviation: **VU-DT**

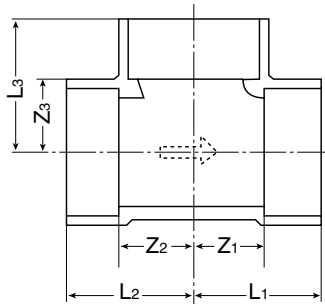
(JPPFA AS12)

PRODUCT
MODEL CODE

VU-DT ▶ D N U DT U N Size



U-PVC



Dimensions Table

(Unit: mm)

Size	Z ₁	Z ₂	Z ₃	L ₁	L ₂	L ₃
□ 200	115	116	115	225	226	225
□ 250	141	144	141	271	274	271
□ 300	168	171	168	318	321	318

Notes: 1. An arrow to show direction of flow shall be embossed on the outside as shown in the diagram. 2. □ conform to the AV standard.

PRODUCT MODEL CODE LIST

Model	Material	Rubber	Connection	Standard	Size
JEP	U	*	T	J	***
⋮	⋮	⋮	⋮	⋮	⋮
JEP Expansion Joint	U U-PVC	E EPDM V FKM F Viflon®F/FKM-F C Viflon®C/FKM-C	T Socket	J JIS	020 20 mm I 100 100 mm

Expansion Joint



Features

- Expansion/contraction absorption margin is large and the thermal stress of piping is absorbed.
- Easy removal from piping by just loosening the union nut.
- No need for a large piping space with the compact design.
- No need for installation of piping expansion U bend.
- No slipping of pipes. (Because stop ring ⑤ is provided)

Dimensions Table

(Unit: mm)

Size		d	d ₁	ℓ ₁	1/T	D ₂	D ₁	D ₃	L		ℓ ₂ Expansion/ Contraction Margin
mm	inch								Max.	Min.	
20	3/4	20	26.13	24	1/34	35	60	35	243	163	80
25	1	25	32.16	27	1/34	43	70	39	250	170	80
30	1 1/4	31	38.19	30	1/34	50	82	47	258	178	80
40	1 1/2	40	48.21	37	1/37	59	100	59	272	192	80
50	2	51	60.25	42	1/37	72	106	72	285	205	80
65	2 1/2	65	76.60	61	1/48	88	133	88	314	234	80
75	3	78	89.60	64	1/49	105	152	105	330	250	80
100	4	100	114.70	84	1/56	132	210	132	422	322	100

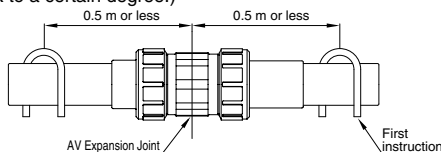
Parts Table

No.	Description	pcs.	Material
①	Body	1	U-PVC
②	End Connector (A)	1	U-PVC
③	End Connector (B)	1	U-PVC
④a	Union Nut (A)	-	U-PVC
④b	Union Nut (B) ¹⁾	1	U-PVC
⑤	Stop Ring	1	U-PVC
⑥	O-Ring (A)	1	EPDM, FKM, Viflon®F (FKM-F), Viflon®C (FKM-C)
⑦	O-Ring (B)	2	EPDM, FKM, Viflon®F (FKM-F), Viflon®C (FKM-C)

1) Use for 65 to 100 mm.

<Use Precautions>

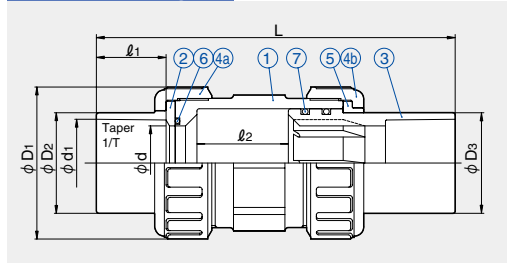
- Make sure to provide the first support (loose support) at 0.5 m or less of an expansion joint on both sides.
- Sufficiently consider the expansion and contraction amounts of piping. (When piping expands: Use the expansion joint being extended to a certain degree.) (When piping contracts: Use the expansion joint being shrunk to a certain degree.)



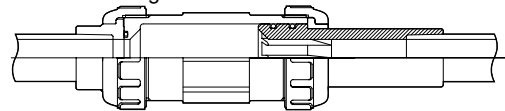
Main Specification

Material	Working Temperature	Maximum Working Pressure (Normal Temperature) MPa(kg/cm ²)	Connection Socket End
Unplasticized Polyvinyl Chloride Pipe (U-PVC)	5-60°C	1.0{10.2}	○

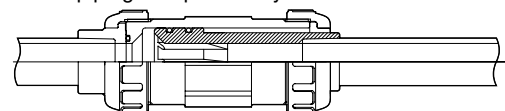
Dimensions Diagram



When installing



When piping is expanded by heat



Pipe Heat Expansion Table

(Unit: mm)

Temperature Difference	Piping Length L								
	5m	10m	20m	30m	40m	50m	60m	70m	80m
10°C	4	7	14	21	28	35	42	49	56
20°C	7	14	28	42	56	70	84	98	112
30°C	11	21	42	63	84	105	126	147	168
40°C	14	28	56	84	112	140	168	196	224
50°C	18	35	70	105	140	175	210	245	280
60°C	21	42	84	126	168	210	252	294	336
70°C	25	49	98	147	196	245	294	343	392
80°C	28	56	112	168	224	280	336	392	448

<Example> How often (every XX m) shall expansion joints be inserted when the size is 75 mm and temperature difference is 20°C?

Calculation Formula $L = \frac{\Delta \ell}{\alpha \Delta t} \dots \dots \dots (1)$

- L: Length of piping that the expansion joint absorbs (mm)
- Δℓ: Piping expansion/contraction length Expansion/contraction margin for 75 mm from the dimensions table ℓ₂=80 mm
- Give margins on both ends 5 mm×2=10 mm Δℓ:=(80-10) mm
- α: Heat expansion coefficient of hard polyvinyl chloride pipe 7×10⁻⁵ (/°C)
- Δt: Temperature difference 20 (°C)

When the value above is assigned to (1) $L = \frac{80-10}{7 \times 10^{-5} \times 20} = 50000 \text{ mm}$

∴ One piece per 50 m.

PRODUCT MODEL CODE LIST

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

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.

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

Parts Table

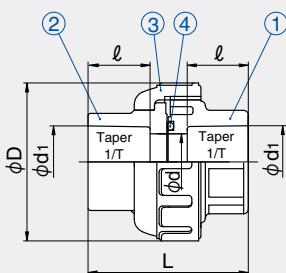
No.	Description	pcs.	Material
①	Body	1	U-PVC
②	End Connector	1	U-PVC
③	Union Nut	1	U-PVC
④	O-Ring	1	EPDM, FKM, Viflon®F (FKM-F), Viflon®C (FKM-C)

Main Specification

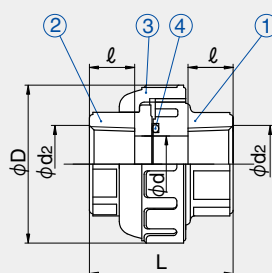
Material	Made of Unplasticized Polyvinyl Chloride (U-PVC)
Working Temperature	0-50°C
Maximum Working Pressure	1.0MPa{10.2kg/cm ² }

Dimensions Diagram

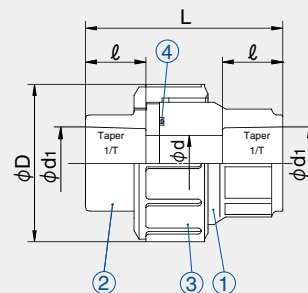
Socket End (13 – 50 mm)



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	Rc ¹ / ₄	22	71	82
40	40	48.21	37	1/37	95	Rc 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	U	*	*	*	*	***
WM Multi J	U U-PVC	1 Threaded Welding 2 Threaded Bonding	L TYPE L T TYPE T	R RC Threaded End N NPT Threaded End	2 1/4 3 3/8	020 20 mm I 030 30 mm

■ Threaded End TYPE L 40 – 200 mm

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

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	U	*	*	*	*	***
WM Multi J	U U-PVC	1 Threaded Welding 2 Threaded Bonding	L TYPE L T TYPE T	R RC Threaded End N NPT Threaded End	2 1/4 3 3/8	020 20 mm I 030 30 mm

■ Threaded End TYPE T 40 – 200 mm

Type/Field	Material	Model 1	Model 2	Standard	Size of Special Connection Parts	Size
WM	U	*	T	*	*	***
WM Multi J	U U-PVC	1 Welding 2 Threaded Bonding 3 Welding FRP Reinforcement 4 Bonding FRP Reinforcement	T TYPE T	R RC Threaded End N NPT Threaded End	2 1/4 3 3/8 4 1/2 6 3/4	040 40 mm I 200 200 mm

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	U	*	*	T	*	***
WM Multi J	U U-PVC	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 40 mm I 200 200 mm

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

Multi-Joint

Main Specification

Material	Made of Unplasticized Polyvinyl Chloride (U-PVC)
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.

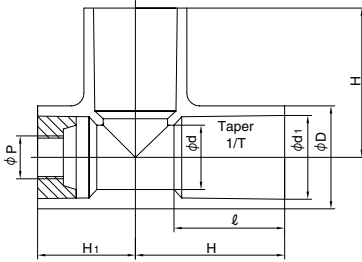
Multi-Joint, TYPE L, Threaded-End Style

PRODUCT MODEL CODE

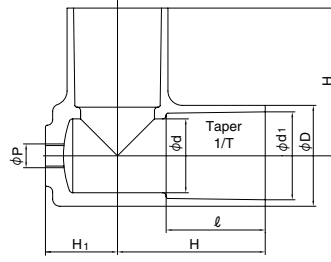
WM U N L R Special Fitting Size Size



20 – 30, 200 mm



40 – 150mm



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	d1	l	1/T	D	H	H1
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

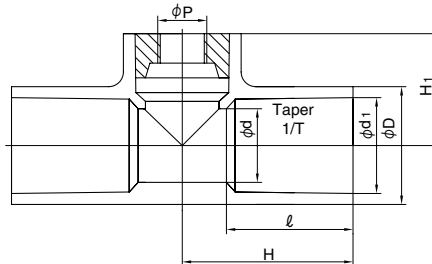
(Unit: mm)

Size	d	d1	l	1/T	D	H	H1
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

PRODUCT MODEL CODE

WM U 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	d1	l	1/T	D	H	H1
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

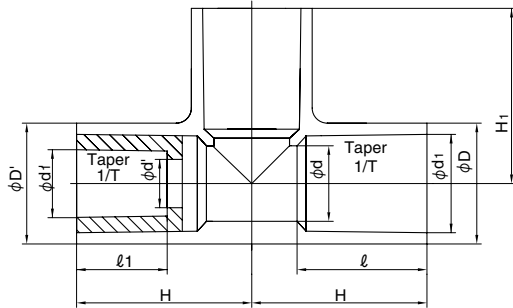
(Unit: mm)

Size	d	d1	l	1/T	D	H	H1
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 MODEL CODE WM U Model 1 L T Special Fitting Size Size

Maximum Working Pressure (20°C)
 20 – 150 mm 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.

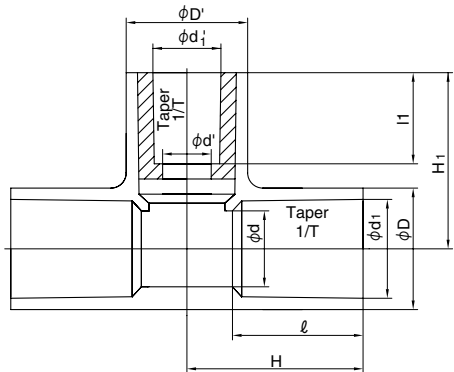
Dimensions Table

(Unit: mm)

Size	d	d1	ℓ	1/T	D	d'	d1'	ℓ'	1/T1	D'	H	H1
40× 16	40	48.70	55	1/37	57	16	22.40	30	1/34	57	82	82
40× 20	40	48.70	55	1/37	57	20	26.45	35	1/34	57	82	82
40× 25	40	48.70	55	1/37	57	25	32.55	40	1/34	57	82	82
50× 16	51	60.80	63	1/37	70	16	22.40	30	1/34	70	96	96
50× 20	51	60.80	63	1/37	70	20	26.45	35	1/34	70	96	96
50× 25	51	60.80	63	1/37	70	25	32.55	40	1/34	70	96	96
65× 16	67	76.60	61	1/48	87	16	22.40	30	1/34	87	110	110
65× 20	67	76.60	61	1/48	87	20	26.45	35	1/34	87	110	110
65× 25	67	76.60	61	1/48	87	25	32.55	40	1/34	87	110	110
65× 40	67	76.60	61	1/48	87	40	48.70	55	1/37	87	110	110
75× 16	77	89.60	64	1/49	102	16	22.40	30	1/34	102	120	120
75× 20	77	89.60	64	1/49	102	20	26.45	35	1/34	102	120	120
75× 25	77	89.60	64	1/49	102	25	32.55	40	1/34	102	120	120
75× 40	77	89.60	64	1/49	102	40	48.70	55	1/37	102	120	120
75× 50	77	89.60	64	1/49	102	51	60.80	63	1/37	102	120	120
100× 16	100	114.70	84	1/56	130	16	22.40	30	1/34	130	152	152
100× 20	100	114.70	84	1/56	130	20	26.45	35	1/34	130	152	152
100× 25	100	114.70	84	1/56	130	25	32.55	40	1/34	130	152	152
100× 40	100	114.70	84	1/56	130	40	48.70	55	1/37	130	152	152
100× 50	100	114.70	84	1/56	130	51	60.80	63	1/37	130	152	152
100× 65	100	114.70	84	1/56	130	67	76.60	61	1/48	130	152	152
125× 16	125	140.85	104	1/58	157	16	22.40	30	1/34	157	187	187
125× 20	125	140.85	104	1/58	157	20	26.45	35	1/34	157	187	187
125× 25	125	140.85	104	1/58	157	25	32.55	40	1/34	157	187	187
125× 40	125	140.85	104	1/58	157	40	48.70	55	1/37	157	187	187
125× 50	125	140.85	104	1/58	157	51	60.80	63	1/37	157	187	187
125× 65	125	140.85	104	1/58	157	67	76.60	61	1/48	157	187	187
125× 75	125	140.85	104	1/58	157	77	89.60	64	1/49	157	187	187
150× 16	146	166.00	132	1/63	186	16	22.40	30	1/34	186	230	230
150× 20	146	166.00	132	1/63	186	20	26.45	35	1/34	186	230	230
150× 25	146	166.00	132	1/63	186	25	32.55	40	1/34	186	230	230
150× 40	146	166.00	132	1/63	186	40	48.70	55	1/37	186	230	230
150× 50	146	166.00	132	1/63	186	51	60.80	63	1/37	186	230	230
150× 65	146	166.00	132	1/63	186	67	76.60	61	1/48	186	230	230
150× 75	146	166.00	132	1/63	186	77	89.60	64	1/49	186	230	230
150×100	146	166.00	132	1/63	186	100	114.70	84	1/56	186	230	230
200× 16	196	217.00	145	1/50	240	16	22.40	30	1/34	240	266	266
200× 20	196	217.00	145	1/50	240	20	26.45	35	1/34	240	266	266
200× 25	196	217.00	145	1/50	240	25	32.55	40	1/34	240	266	266
200× 40	196	217.00	145	1/50	240	40	48.70	55	1/37	240	266	266
200× 50	196	217.00	145	1/50	240	51	60.80	63	1/37	240	266	266
200× 65	196	217.00	145	1/50	240	67	76.60	61	1/48	240	266	266
200× 75	196	217.00	145	1/50	240	77	89.60	64	1/49	240	266	266
200×100	196	217.00	145	1/50	240	100	114.70	84	1/56	240	266	266
200×125	196	217.00	145	1/50	240	125	140.85	104	1/58	240	266	266

Multi-Joint, TYPE T, TS-Style

PRODUCT MODEL CODE WM U 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	d1	l	1/T	D	d'	d1'	l'	1/T1	D'	H	H1
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

Technical Data

1. General Properties

U-PVC (General)
at:23°C

Characteristics	Standard Value	Value	Unit
Specific Gravity	1.40 – 1.45	1.43	–
Water Absorption (24 hr)	0.07 – 0.2	0.07 – 0.1	%
Tensile Yield Stress	45 or more	48 – 62	MPa
Extension Ratio	–	80 or more	%
Impact Value (Izod)	–	3 – 5	kJ/m ²
Compression Strength	83 or more	90	MPa
Bending Strength	98 or more	108	MPa
Rockwell Hardness (R scale)	114 – 116	115	–
Linear Expansion Coefficient	6 – 8	7	10 ⁻⁵ /°C
Heat Deformation Temperature	70 or more	75	°C
Flame Resistance	–	Self-Extinguishing	–
Permittivity	2.8 – 3.1	2.8 – 3.0	10 ⁶ cycles
Sunlight Resistance	–	Favorable	–

U-PVC (For tap water)
at:23°C

Characteristics	Standard Value	Value	Unit
Specific Gravity	1.40 – 1.45	1.43	–
Water Absorption (24 hr)	0.07 – 0.2	0.07 – 0.1	%
Tensile Yield Stress	45 or more	54 – 56	MPa
Extension Ratio	–	80 or more	%
Impact Value (Izod)	–	3 – 4	kJ/m ²
Compression Strength	83 or more	88	MPa
Bending Strength	98 or more	103	MPa
Rockwell Hardness (R scale)	114 – 116	115	–
Linear Expansion Coefficient	6 – 8	7	10 ⁻⁵ /°C
Heat Deformation Temp.	70 or more	73	°C
Flame Resistance	–	Self-Extinguishing	–
Permittivity	2.8 – 3.1	2.8 – 3.0	10 ⁶ cycles
Sunlight Resistance	–	Favorable	–

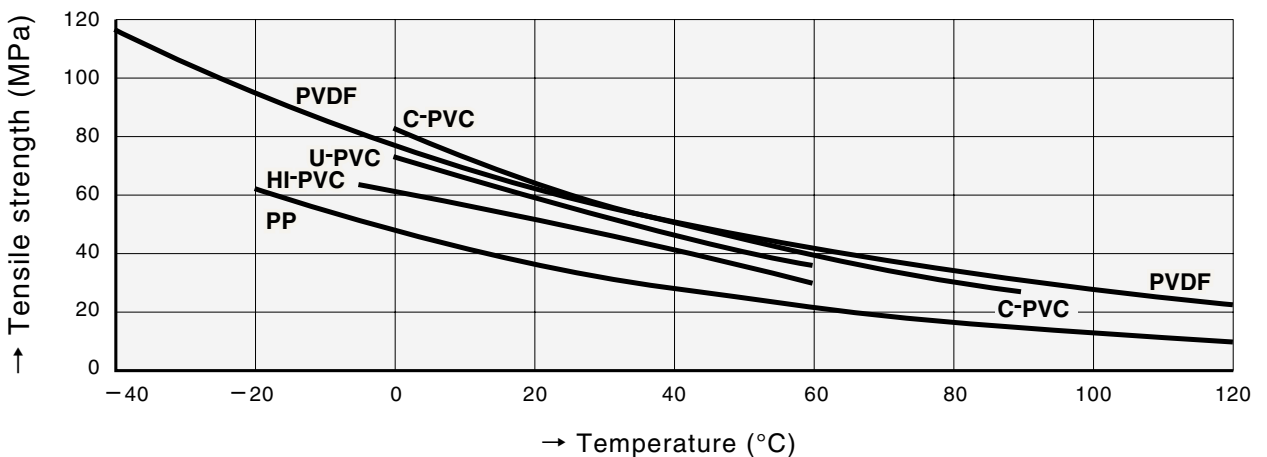
HI-PVC
at:23°C

Characteristics	Standard Value	Value	Unit
Specific Gravity	1.40 – 1.45	1.43	–
Tensile Yield Stress	40 or more	40 – 56	MPa
Extension Ratio	80 or more	80 or more	%
Impact Value (Charpy)	18 or more	19 – 24	kJ/m ²
Compression Strength	59 or more	59 – 78	MPa
Bending Strength	78 or more	78 – 88	MPa
Rockwell Hardness (R scale)	112 – 116	114	–
Linear Expansion Coefficient	7 – 8	7 – 8	10 ⁻⁵ /°C
Vicat Softening Temperature Test	76 or more	80 – 82	°C
Flame Resistance	–	Self-Extinguishing	–
Sunlight Resistance	–	Favorable	–

2. Short-Term Strength Test

Tensile Strength and Temperature Dependency

Relationship of Tensile Strength and Temperature between U-PVC and Other Plastics



Notes: Tension speed.....10 mm/min

3. Short-Term Burst Pressure Test

a. Genera Pipe (VP) JIS K 6741-1995 Temperature Condition: 20°C

Size (mm)	Short-Term Burst Pressure MPa {kgf/cm ² }	Maximum Working Pressure* MPa {kgf/cm ² }
13	13.1 { 133.6}	1.0 { 10.2}
16	13.2 { 134.2}	1.0 { 10.2}
20	10.9 { 111.2}	1.0 { 10.2}
25	10.1 { 102.9}	1.0 { 10.2}
30	8.3 { 85.2}	1.0 { 10.2}
40	7.6 { 77.8}	1.0 { 10.2}
50	6.9 { 70.4}	1.0 { 10.2}
65	5.4 { 54.7}	1.0 { 10.2}
75	6.2 { 63.2}	1.0 { 10.2}
100	5.8 { 58.9}	1.0 { 10.2}
125	4.9 { 50.5}	1.0 { 10.2}
150	5.4 { 54.7}	1.0 { 10.2}
200	4.7 { 48.0}	1.0 { 10.2}
250	4.7 { 47.9}	1.0 { 10.2}
300	4.7 { 47.8}	1.0 { 10.2}

b. Genera Pipe (VU) JIS K-6741-1995 Temperature Condition: 20°C

Size (mm)	Short-Term Burst Pressure MPa {kgf/cm ² }	Maximum Working Pressure* MPa {kgf/cm ² }
40	3.7 {37.4}	0.6 {6.1}
50	2.9 {29.7}	0.6 {6.1}
65	2.8 {28.6}	0.6 {6.1}
75	2.9 {30.0}	0.6 {6.1}
100	2.6 {26.8}	0.6 {6.1}
125	2.8 {28.9}	0.6 {6.1}
150	3.0 {30.6}	0.6 {6.1}
200	2.9 {29.8}	0.6 {6.1}
250	2.8 {28.9}	0.6 {6.1}
300	2.8 {28.6}	0.6 {6.1}
350	2.7 {28.0}	0.6 {6.1}
400	2.7 {27.7}	0.6 {6.1}
450	2.7 {27.7}	0.6 {6.1}
500	2.7 {27.7}	0.6 {6.1}

Notes: 1. Burst pressure value is calculated with the tensile strength specified in the quality section of JIS K 6741 (minimum value 47 N/mm² {480kgf/cm²} at 20°C during test). Therefore, this value is the minimum value and the actual value would be much higher.

2. Short-term burst pressure will be derived from the following Naday formula.

$$P = \frac{2 \times \sigma}{(D/t-1)}$$

P : Working pressure (MPa) {kgf/cm²}
 σ : Design stress (N/mm²) {kgf/cm²}
 D : Outer diameter (mm)
 t : Thickness (mm)

3. For general pressure-transporting pipes, pipes with different sizes are often used in a single conduit. Therefore, the maximum working pressure would be 1.0 MPa {10.2kgf/cm²} for VP, 0.6MPa {6.1kgf/cm²} for VU and 0.8 MPa {8.2kgf/cm²} for VM.

c. Genera Pipe (VM) JIS K6741 Temperature Condition: 20°C

Size (mm)	Short-Term Burst Pressure MPa {kgf/cm ² }	Maximum Working Pressure MPa {kgf/cm ² }
350	3.8 { 38.6}	0.8 { 8.2}

Notes: Maximum Working Pressure is the pressure including the water hammer pressure.
 Do not use them exceeding the maximum working pressure.

4. Relationship between Maximum Working Pressure and Temperature

Unplasticized Polyvinyl Chloride Pipe

VP Unit: MPa {kgf/cm²}

Size (mm)	Temperature				
	0 to 20°C	Up to 30°C	Up to 40°C	Up to 50°C	Up to 60°C
13 to 300	1.0 {10.2}	0.9 {9.2}	0.7 {7.1}	0.3 {3.1}	0.1 {1.0}

VU Unit: MPa {kgf/cm²}

Size (mm)	Temperature				
	0 to 20°C	Up to 30°C	Up to 40°C	Up to 50°C	Up to 60°C
40 to 500	0.6 {6.1}	0.5 {5.1}	0.4 {4.1}	0.2 {2.0}	0.06 {0.6}

Notes: Maximum Working Pressure is the pressure including the water hammer pressure. Do not use them exceeding the maximum working pressure.

Installation of TS Connection



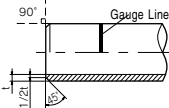
1 Pipe Cutting

Use wide thick paper or tape for the pipe cutting area, put a cutting gauge line with a permanent marker on the entire circumference, and cut perpendicular to the pipe shaft.



2 Chamfer

Lightly chamfer the entire inner/outer perimeters using a tool such as file or chamfer. When a pipe is cut, especially, finish the pipe end surface without burrs and warping.



Notes: Not properly performing chamfering could cause installation failure so please make sure to chamfer.



3 Entry of Gauge Line

For the pipe insertion gauge line of the sizes 13 to 40 mm, measure the fitting socket length ℓ from the pipe end and mark on the pipe body with a marker. For the pipe insertion gauge line for the sizes 50 to 150 mm, it shall be at a position of the zero point plus the bonding margin length in Table 2. Mark the gauge line on the pipe body with a permanent marker.

Table 1. TS Fitting Socket Normal Length Unit: mm

Size	13	16	20	25	30	40	50	65	75	100	125	150
Fitting Socket Length	26	30	35	40	44	55	63	61	64	84	104	132

[Reference] Table 2. Bonding Margin Length Unit: mm

Size	13	16	20	25	30	40	50	65	75	100	125	150
Bonding Margin Length	10	10	15	15	15	20	20	20	25	30	35	45

* Refer to [Explanation] 2.



4 Rinsing

Wipe and clean the inner face of fitting socket and the outer face of pipe insertion port with a cloth. In particular, when oil or water in the connection part, clean by using a small amount of acetone and alcohol.

Notes: Not properly performing rinsing could cause installation failure so please make sure to rinse.



5 Adhesive Application

Use a special adhesive compatible to the type of pipe and apply it evenly in the order of on the inner face of fitting and the outer face of pipe. In particular, apply thinly and evenly to the inner face of fitting. The reference ratio of adhesive application is 7 to 3 for pipe and fitting.

Table 3. Usage of Adhesive per Connection Part (Reference)

Size (mm)	13	16 (15)	20	25	30 (32)	40	50	65	75	100	125	150
Usage (g)	0.9	1.2	1.7	2.0	3.1	5.0	7.1	9.9	12	20	30	44

* Refer to [Explanation] 4.



6 Insertion

After applying adhesive, insert pipe into fitting straight without turning the pipe immediately at once and press it in that condition. Refer to Table 4 for this normal press time.

Table 4. Normal Press Time of TS Connection

Size (mm)	50 or less	65 or more
Normal Press Time (Sec.)	30 or more	60 or more

* Use an inserter for large diameters.

Notes: Due to the relationship of pipe and fitting dimension tolerance, it may not be inserted all the way to the end. In this case, do not insert it forcibly by hammering and such. Inserting forcibly may place a large burden on the fitting and cause damage.



7 Adhesive Treatment

After connection, wipe the protruded adhesive immediately and do not apply forcible stress on the connection part.



8 Removal of Solvent Content

Adhesive contains organic solvent, and the solvent steam needs to be removed after connection. During curing after piping, open both ends of pipe without enclosing and remove the solvent steam. During curing, the steam can be removed more effectively by ventilating inside piping using a ventilator (low-pressure specification) or washing inside piping by filling the water after the adhesive is hardened.

* Refer to [Explanation] 4.

[Explanation]

1 TS connection utilizes the swelling and elasticity of PVC by making the fitting socket tapered and using adhesive. Applying adhesive to the pipe and fitting would create a swelling layer of approximately 0.1 mm thickness on its surface as shown (Figure 1), and this layer makes the insertion of the pipe fluidly. After insertion, respective swelling layers of the pipe and fitting would interact each other, and the bonding surface would be unified.

Figure 1. Installation of TS Connection

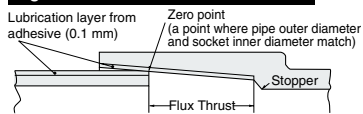
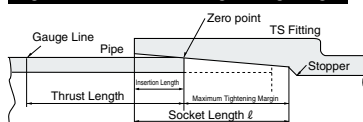


Figure 2. Zero Point and Tightening Margin



2 Based on a result of testing the relationship between the bonding margin length and pressure-resistant strength, it has been confirmed that practically acceptable water pressure strength can be secured by inserting approximately 1/3 of the fitting socket [ℓ] in addition to the insertion length without applying adhesive (zero point).


In regards to insertion margin in TS connection, it is ideal to insert TS fitting to the length of TS fitting gasket (stopper), but considering the tolerance of pipe and fitting dimensions, the length from zero point plus the bonding margin length shown in Table 2 to the stopper in Table 1 is sufficient enough, and inserting to the stopper of the fitting is not necessarily required.

However, if it cannot be inserted due to the adhesive being dried, etc., cut the connection part and reconnect again by using a new socket.


3 Inserting the pipe into the fitting before applying adhesive is to check the zero point. In this case, a combination of pipe and fitting that provide the insertion length of 1/3 to 2/3 ℓ from the pipe end surface (refer to Figure 2) is standard.

4 Be cautious of excessive adhesive (it may cause solvent cracking and damage). Caution is needed in low-temperature installation because solvent steam does not evaporate easily and tends to remain (it may cause solvent cracking and damage). During curing after piping, open both ends of pipe without enclosing and remove the solvent steam. During curing, the steam can be removed more effectively by ventilating inside piping using a ventilator (low-pressure specification) or washing inside piping by filling the water fully after the adhesive is hardened.

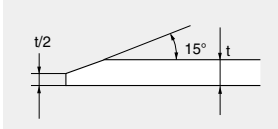
Installation of Rubber Ring Connection




1 Pipe Cutting
Wrap marking tape perpendicular to the pipe shaft, put a cutting section surface on the entire circumference with a permanent marker and cut using a manual saw by avoiding misalignment.



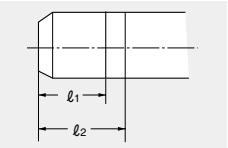
2 Chamfering of Insertion Port
Chamfer the end surface of insertion port with a file, etc.



The diagram shows a cross-section of a pipe with a chamfered end. The chamfer angle is 15 degrees. The thickness of the pipe is labeled as 't', and the chamfered length is labeled as 't/2'.



3 Entry of Gauge Line (Insertion Length)
Mark a gauge line on the insertion port pipe.




The diagram shows a cross-section of a pipe with two gauge lines, labeled l_1 and l_2 .


Size	l_1	l_2
50	94	107
75	107	120
100	119	132
125	125	138
150	139	152




4 Cleaning of Socket Inner Face
Wipe off the soil and sand attached on the rubber ring and groove and the socket inner face with a cloth.



5 Rubber Ring Installation Method
If the rubber ring is removed for cleaning, put it into the groove by squeezing into a heart shape. Check for twisting and misalignment.




6 Cleaning of Insertion Outer Face
Wipe off the soil and sand attached on the insertion port outer side with a cloth.




7 AV Lubricant Application
Apply AV lubricant to inner face of rubber ring and insertion port (especially the chamfered tip area) evenly. (Never use oil, grease, soap, etc.)

Normal Application Amount	g/location				
Size (mm)	50	75	100	125	150
Application Amount	4	5	10	15	20



8 Connection
Insert to between 2 gauge lines. Make sure to avoid the shaft center misalignment and never hammer in by using a hammer.



9 Insertion Depth Check
After connection, check the entire circumference using a check gauge to see if the rubber ring is in a proper condition.

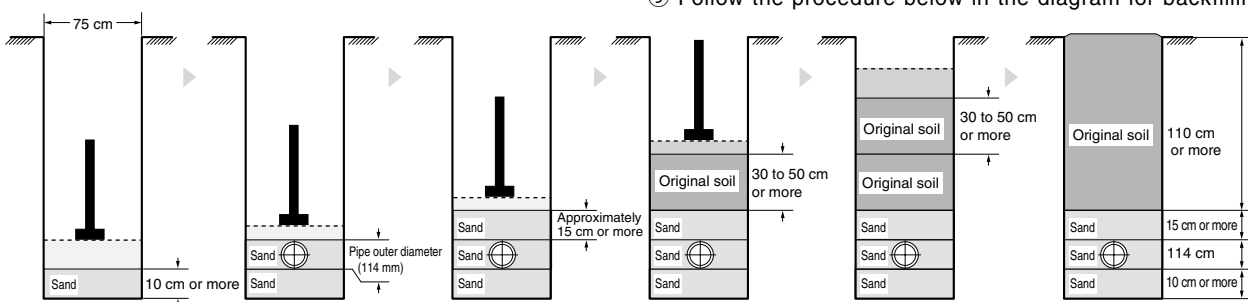
Piping Precautions

- Do not throw around when loading/unloading. Be cautious especially in Winter.
- Store away from direct sunlight and avoid unevenness on the pipe platform. Do not use a transparent sheet because it has no effect and gives a negative influence.
- Do not hammer in when connecting pipes.
- For rubber ring connection, make sure to check the rubber fitting and inspect for twisting and direction. Be cautious of attachment of soil/sand, muddy water, etc.
- Do not clean the rubber ring groove with a slippery item such as lubricant.
- If you notice spring water before backfilling, drain, put sand in a couple of layers and tamper sufficiently.
- Sufficiently fill the area around pipes to avoid any cavity.
- The groove bottom shall be sand, in principle. For weak ground, additionally lay crushed stones underneath or improve the soil quality. Do not have stones and bedrock hit pipes directly.
- Follow the procedure below in the diagram for backfilling.

<Example> In the case of the size 100

Notes: 1. Dotted line shows the position immediately after inserting soil and sand.

Notes: 2. Solid line shows the position after tamping the soil and sand.



TS Fitting

Elbow [L]

Size (mm)	Packing: pcs.
13	170 / 680
16	100 / 400
20	60 / 240
25	35 / 140
30	25 / 100
40	30 / 60
50	15 / 30
65	20
75	15
100	7
125	5
150	3

45° Elbow [45L]

Size (mm)	Packing: pcs.
20	65 / 260
25	40 / 160

Tee [T]

Size (mm)	Packing: pcs.
13	110 / 440
16	60 / 240
20	40 / 160
25	20 / 80
30	15 / 60
40	15 / 30
50	10 / 20
65	14
75	10
100	4
125	3
150	2
16x13	80 / 320
20x13	50 / 200
20x16	50 / 200
25x13	35 / 140
25x16	30 / 120
25x20	25 / 100
30x13	25 / 100
30x16	20 / 80
30x20	20 / 80
30x25	18 / 72
40x13	30 / 60
40x16	28 / 56
40x20	25 / 50
40x25	23 / 46
40x30	23 / 46
50x13	20 / 40
50x16	20 / 40
50x20	17 / 34
50x25	15 / 30
50x30	13 / 26
50x40	11 / 22

65x 40	18
65x 50	18
75x 25	18
75x 40	14
75x 50	12
75x 65	10
100x 50	6
100x 75	5
125x 75	4
125x100	3
150x 75	3
150x100	2
150x125	2

Faucet Elbow [FL]

Size (mm)	Packing: pcs.
13	150 / 600
16	110 / 440
20	70 / 280
25	40 / 160

Metal-Containing Faucet Elbow [KFL]

Size (mm)	Packing: pcs.
13	150 / 300
16	100 / 200
20	60 / 120
25	35 / 70
20x13	80 / 160

Faucet Socket [FS]

Size (mm)	Packing: pcs.
13	200 / 800
16	150 / 600
20	90 / 360
25	50 / 200

Metal-Containing Faucet Socket [KFS]

Size (mm)	Packing: pcs.
13	170 / 340
16	130 / 260
20	90 / 180
25	45 / 90
20x13	90 / 180

Faucet Tee [FT]

Size (mm)	Packing: pcs.
13	100 / 400
20	40 / 160
25	20 / 80
16x13	65 / 260
20x13	50 / 200
25x13	30 / 120
25x20	25 / 100

Metal-Containing Faucet Tee [KFT]

Size (mm)	Packing: pcs.
20	40 / 80
25	20 / 40
20x13	50 / 100
25x13	35 / 70
25x20	30 / 60

Valve Socket [VS]

Size (mm)	Packing: pcs.
10	400 / 1,600
13	250 / 1,000
16	180 / 720
20	110 / 440
25	60 / 240
30	40 / 160
40	50 / 100
50	30 / 60
65	60
75	36
100	18
125	12
150	4

Union Socket [US]

Size (mm)	Packing: pcs.
13	225 / 900
16	150 / 600
20	100 / 400
25	60 / 240
30	40 / 160
40	50 / 100
50	25 / 50

Socket [S]

Size (mm)	Packing: pcs.
13	210 / 840
16	130 / 520
20	85 / 340
25	50 / 200
30	35 / 140
40	40 / 80
50	24 / 48
65	30
75	22
100	10
125	8
150	4
16x13	160 / 640
20x13	120 / 480
20x16	100 / 400
25x13	70 / 280
25x16	65 / 260
25x20	60 / 240
30x20	40 / 160

30x 25	40 / 160
40x 20	50 / 100
40x 25	50 / 100
40x 30	45 / 90
50x 20	40 / 80
50x 25	25 / 50
50x 30	25 / 50
50x 40	25 / 50
65x 40	40
65x 50	40
75x 40	30
75x 50	30
75x 65	30
100x 75	15
125x100	12
150x100	4
150x125	4

Cap [C]

Size (mm)	Packing: pcs.
13	420 / 1,680
16	250 / 1,000
20	170 / 680
25	100 / 400
30	70 / 280
40	80 / 160
50	40 / 80
65	60
75	36
100	18
150	6

Metal-Containing Valve Socket [KVS]

Size (mm)	Packing: pcs.
13	100 / 200

HITS Fitting

Elbow [L]

Size (mm)	Packing: pcs.
13	170 / 680
16	100 / 400
20	60 / 240
25	35 / 140
30	25 / 100
40	30 / 60
50	15 / 30
65	20
75	15
100	7
125	5
150	3

45° Elbow [45L]

Size (mm)	Packing: pcs.
20	65 / 260
25	40 / 160

Tee [T]

Size (mm)	Packing: pcs.
13	110 / 440
16	60 / 240
20	40 / 160
25	20 / 80
30	15 / 60
40	15 / 30
50	10 / 20
65	14
75	10
100	4
125	3
150	2
16x13	80 / 320
20x13	50 / 200
20x16	50 / 200
25x13	35 / 140
25x16	30 / 120
25x20	25 / 100
30x13	25 / 100
30x16	20 / 80
30x20	20 / 80
30x25	18 / 72
40x13	30 / 60
40x16	28 / 56
40x20	25 / 50
40x25	23 / 46
40x30	23 / 46
50x13	20 / 40
50x16	20 / 40
50x20	17 / 34
50x25	15 / 30
50x30	13 / 26
50x40	11 / 22

65x 40	18
65x 50	18
75x 25	18
75x 40	14
75x 50	12
75x 65	4
100x 50	6
100x 75	5
125x 75	4
125x100	3
150x 75	3
150x100	2
150x125	2

Faucet Elbow [FL]

Size (mm)	Packing: pcs.
13	150 / 600
16	110 / 440
20	70 / 280
25	40 / 160

Metal-Containing Faucet Elbow [KFL]

Size (mm)	Packing: pcs.
13	150 / 300
16	100 / 200
20	60 / 120
25	35 / 70
20x13	80 / 160

Faucet Socket [FS]

Size (mm)	Packing: pcs.
13	200 / 800
16	150 / 600
20	90 / 360
25	50 / 200

Metal-Containing Faucet Socket [KFS]

Size (mm)	Packing: pcs.
13	170 / 340
16	130 / 260
20	90 / 180
25	45 / 90
20x13	90 / 180

Faucet Tee [FT]

Size (mm)	Packing: pcs.
13	100 / 400
20	40 / 160
25	20 / 80
16x13	65 / 260
20x13	50 / 200
25x13	30 / 120
25x20	25 / 100

Metal-Containing Faucet Tee [KFT]

Size (mm)	Packing: pcs.
20	40 / 80
25	20 / 40
20x13	50 / 100
25x13	35 / 70
25x20	30 / 60

Valve Socket [VS]

Size (mm)	Packing: pcs.
13	250 / 1,000
16	180 / 720
20	110 / 440
25	60 / 240
30	40 / 160
40	50 / 100
50	30 / 60
65	60
75	36
100	18

Union Socket [US]

Size (mm)	Packing: pcs.
13	225 / 900
16	150 / 600
20	100 / 400
25	60 / 240
30	40 / 160
40	50 / 100
50	25 / 50

Socket [S]

Size (mm)	Packing: pcs.
13	210 / 840
16	130 / 520
20	85 / 340
25	50 / 200
30	35 / 140
40	40 / 80
50	24 / 48
65	30
75	22
100	10
125	8
150	4
16x13	160 / 640
20x13	120 / 480
20x16	100 / 400
25x13	70 / 280
25x16	65 / 260
25x20	60 / 240
30x20	40 / 160
30x25	40 / 160
40x20	50 / 100
40x25	50 / 100

40x 30	45 / 90
50x 20	40 / 80
50x 25	25 / 50
50x 30	25 / 50
50x 40	25 / 50
65x 40	40
65x 50	40
75x 40	30
75x 50	30
75x 65	30
100x 75	15
125x100	12
150x100	4
150x125	4

Cap [C]

Size (mm)	Packing: pcs.
13	420 / 1,680
16	250 / 1,000
20	170 / 680
25	100 / 400
30	70 / 280
40	80 / 160
50	40 / 80
65	60
75	36
100	18
150	6

Metal-Containing Valve Socket [KVS]

Size (mm)	Packing: pcs.
13	100 / 200

DV Fitting

90° Elbow [DL]

Size (mm)	Packing: pcs.
30	300
40	150
50	84
65	36
75	30
100	16
125	8
150	5

90° Large-Bend Elbow [LL]

Size (mm)	Packing: pcs.
40	110
50	56
65	26
75	22
100	10
125	5
150	4

45° Elbow [45L]

Size (mm)	Packing: pcs.
30	340
40	190
50	100
65	46
75	40
100	20
125	10
150	6

90° Y [DT]

Size (mm)	Packing: pcs.
30	180
40	100
50	50
65	24
75	24
100	12
125	6
150	4
50x 30	76
50x 40	66
65x 40	40
65x 50	34
75x 40	34
75x 50	34
75x 65	30
100x 40	24
100x 50	22
100x 65	16
100x 75	14
125x 75	8
125x100	8
150x 75	7
150x100	6

90° Large-Bend Y [LT]

Size (mm)	Packing: pcs.
40	70
50	34
65	18
75	16
100	8
125	4
150	3
50x 40	46
65x 40	30
65x 50	24
75x 40	30
75x 50	26
75x 65	20
100x 40	18
100x 50	14
100x 65	12
100x 75	12
125x 65	6
125x 75	6
125x100	4
150x 65	5
150x 75	5
150x100	4
150x125	3

90° Large-Bend Both Y [WLT]

Size (mm)	Packing: pcs.
65	10
75	8
100	4
100x 75	6
125x100	3

45° Y [Y]

Size (mm)	Packing: pcs.
40	70
50	40
65	20
75	16
100	8
125	4
150	3
50x 40	50
65x 40	30
65x 50	26
75x 40	32
75x 50	26
75x 65	20
100x 40	22
100x 50	16
100x 65	14
100x 75	10
125x100	5
150x100	4

Socket [DS]

Size (mm)	Packing: pcs.
40	280
50	160
65	74
75	70
100	34
125	14
150	12

Increaser [IN]

Size (mm)	Packing: pcs.
40x 30	270
50x 40	150
65x 40	130
65x 50	100
75x 40	120
75x 50	120
75x 65	90
100x 40	54
100x 50	54
100x 65	54
100x 75	48
125x 65	28
125x 75	28
125x100	25
150x 75	20
150x100	20
150x125	18

VU Fitting & Large-Size VU Fitting

90° Elbow [DL]

Size (mm)	Packing: pcs.
40	150
50	84
65	36
75	30
100	16
125	8
150	5

90° Large-Bend Elbow [LL]

Size (mm)	Packing: pcs.
50	56
75	22
100	10
125	5
150	4

45° Elbow [45L]

Size (mm)	Packing: pcs.
40	190
50	100
65	46
75	40
100	20
125	10
150	6

90°Y [DT]

Size (mm)	Packing: pcs.
50	50
65	24
75	24
100	12
125	6
150	4
65x 50	34
75x 50	34
75x 65	30
100x 50	22
100x 75	14
150x100	6

90° Large-Bend Y [LT]

Size (mm)	Packing: pcs.
50	34
75	16
100	8
125	4
150	3
65x 50	24
75x 50	26
75x 65	20
100x 50	14
100x 75	12
125x100	4
150x125	3

45°Y [Y]

Size (mm)	Packing: pcs.
50	40
75	16
100	8
125	4
150	3
75x50	26
100x50	16
100x75	10

Socket [DS]

Size (mm)	Packing: pcs.
40	280
50	160
65	74
75	70
100	34
125	14
150	12

Increaser [IN]

Size (mm)	Packing: pcs.
50x 40	150
65x 50	100
75x 50	120
75x 65	90
100x 50	54
100x 65	54
100x 75	48
125x100	25
150x100	20
150x125	18

AV90° Elbow [VU-DL]

Size (mm)	Packing: pcs.
200	4
250	2
300	1

45° Elbow [VU-45L]

Size (mm)	Packing: pcs.
200	4
250	2
300	1

Socket [VU-DS]

Size (mm)	Packing: pcs.
200	6
250	4
300	2

90°Y [VU-DT]

Size (mm)	Packing: pcs.
200	2
250	1
300	1

Bend & Large-Size Fitting

AV90° Bend

Size (mm)	Packing: pcs.
75	18
100	8
125	6
150	4
200	1
250	1
300	1

AV45° Bend

Size (mm)	Packing: pcs.
40	36
50	18
65	10
75	18
100	9
125	6
150	4
200	2
250	2
300	2

AV Short Elbow

Size (mm)	Packing: pcs.
200	2
250	1
300	1

AV Socket

Size (mm)	Packing: pcs.
200	4
250	2
300	2
200x150	2
250x200	2
300x250	1

AV Tee

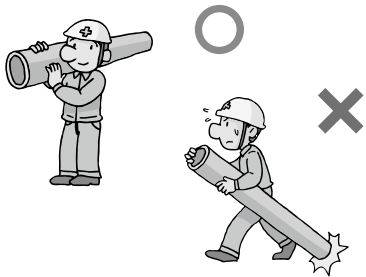
Size (mm)	Packing: pcs.
200	1
250	1
300	1
200x 75	2
200x100	2
200x150	2
250x 75	1
250x100	1
250x200	1
300x 75	1

Piping Design Precautions

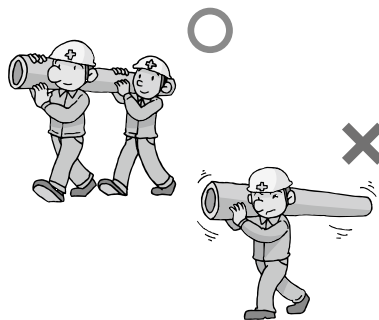
- Select an appropriate material in consideration of use conditions (fluid type, temperature, pressure, etc.) For details, please consult our nearest office in advance.
- Maximum working pressure is the pressure including the water hammer pressure. Do not use them exceeding the maximum working pressure.
- As maximum working pressure differs by size and temperature, design and use within the allowable range.
- Since they are made from plastic, heat expansion/contraction against temperature change is large compared to metals and heat stress is also generated. Therefore, perform piping support or expansion/construction treatment applicable to the use conditions and installation place.
- In the case of using under the positive-pressure gas, a dangerous condition is expected due to the particular reaction force of compressive fluid even when the value is the same as the water pressure. Therefore, implement a safety measure such as covering pipes with a protection material, etc. to protect the surrounding area before use.
- Do not joint with solvent adhesive or welding connection on differential plastic materials (It may cause damage)

Transportation Precautions

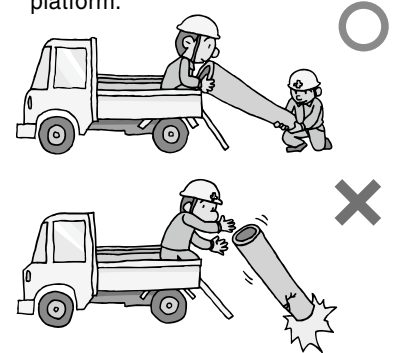
- Do not drag them as it could scratch pipes. Do not drag them as both ends of pipes are easily damaged.



- Two people should handle a pipe with the size of 150 mm or more.

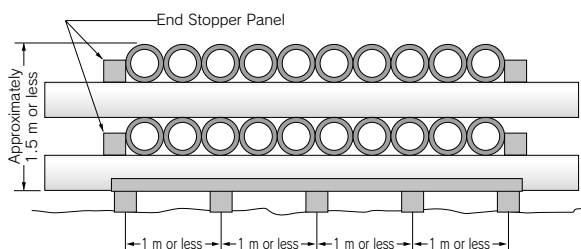


- Do not throw pipes from the truck platform.



Storage Precautions

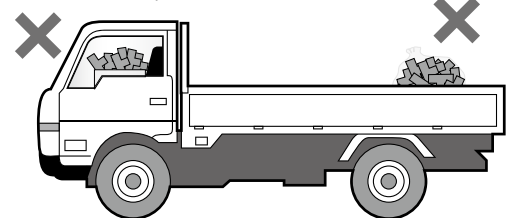
- When storing pipes and fittings outside, avoid direct sunlight and implement a measure such as placing a sheet in a way of avoiding heat accumulation.



- Do not leave fittings in an enclosed condition (inside a vehicle in summer, in an enclosed plastic bag, etc.) under a high temperature atmosphere.

Enclosed vehicle
(may deform due to heat)

Packed products in a
sealed condition



Installation

- Follow our installation procedure to fully exert the work safety and piping performance for installation.
- Make sure to use the specified AV cement for bonding AV PVC pipes.
- Be cautious of excessive adhesive (it may cause solvent cracking and damage). Caution is needed in low-temperature installation because solvent steam does not evaporate easily and tends to remain (it may cause solvent cracking and damage). During curing after piping, open both ends of pipe without enclosing and remove the solvent steam. During curing, it can be removed more effectively by ventilating inside piping using a ventilator (low-pressure specification) or washing inside piping by filling the water fully after the adhesive is hardened.
- Make sure to perform a completion inspection under water pressure. Do not perform an airtightness test by using air (compressed air or positive-pressure gas) as it is extremely dangerous.

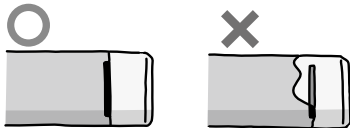
Solvent Cracking (SC) Measure

SC (Solvent Cracking) is a type of stress cracking and specifically distinguishes the cracking phenomenon that occurs when solvent gives an impact inside PVC pipe. SC is caused by the existence of solvent (adhesive, preservative, etc.) It tends to occur more easily due to stress (heat stress, stress of TS connection part, bending, other external stress) and installation during low-temperature like in winter (solvent tends to remain). When piping, implement an SC measure as explained as follows.

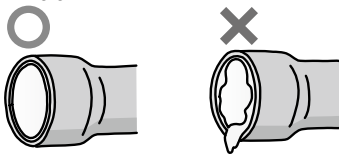
Item	Measure
Adhesive Usage	Apply adhesive compatible to the type of pipe thinly and evenly. Do not apply adhesive extending out from the insertion length on the pipe outer face. In particular, apply thinly and evenly to the inner face of fitting. The reference ratio of adhesive application is 7 to 3 for pipe and fitting.
Wiping of Adhesive	After bonding, make sure to wipe off the protruded adhesive with a cloth after inserting. During application, remove the adhesive spilled on the groove floor.
Opening of pipe on both ends	Fully open valve, air valve, blind flange, etc. for better ventilation and remove the solvent steam (do not enclose).
Utilization of Prefab Method	Prefabricate 2 to 4 pipes in advance, remove the solvent steam by natural ventilation and then connect the pipes.
Ventilation inside Piping	During curing after piping, open both ends of pipe without enclosing and remove the solvent steam (do not enclose). During curing, the steam can be removed more effectively by ventilating inside piping using a ventilator (low-pressure specification).
Washing inside Piping	During curing after piping, open both ends of pipe without enclosing and remove the solvent steam. It is more effective if you fill water all the way and wash after the adhesive is hardened (do not apply the water pressure at this time). • Immediately perform this after leaving 30 minutes for the size of 50 mm or less and approximately 1 hour for the size of 65 mm or more.
Expansion Measure	Implement an expansion/contraction treatment to prevent the heat stress from rising due to temperature differences.
Support	When fixing piping, try to avoid using U-bolts as much as possible and use fixation bands with a wider width. In the case of using U-bolts, provide a cushion such as rubber to prevent piping from touching U-bolts. Be fully cautious not to tighten the fixation bands and U-bolts too much.

Adhesive Usage

Do not apply adhesive extending out from the gauge line.

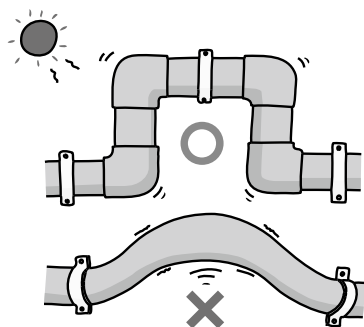


Apply thinly and evenly to the inner face of TS fitting gasket.



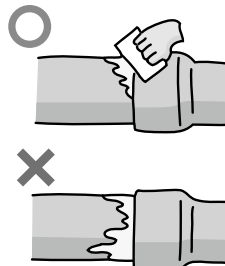
Expansion Measure

Provide expansion/contraction treatment to lower the heat stress.



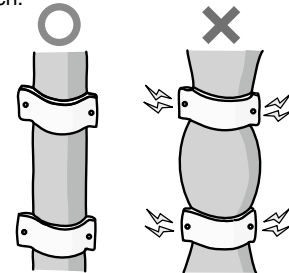
Wiping of Adhesive

Wipe off the protruded adhesive with a cloth after inserting.



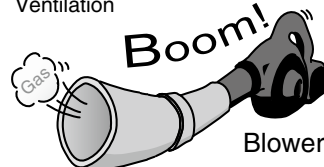
Support

Be cautious not to tighten saddle bands, U-bolts and U-bands too much.



Removal of Solvent and Opening of Pipe on Both Ends

Ventilation



Washing with water



Opening of pipe on both ends

