SEKISUI

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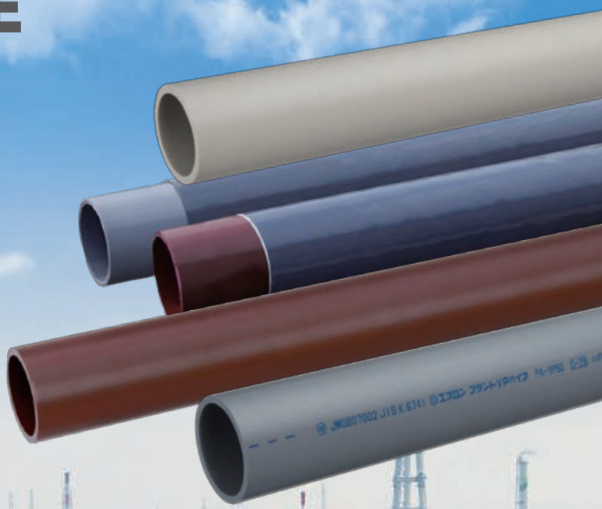
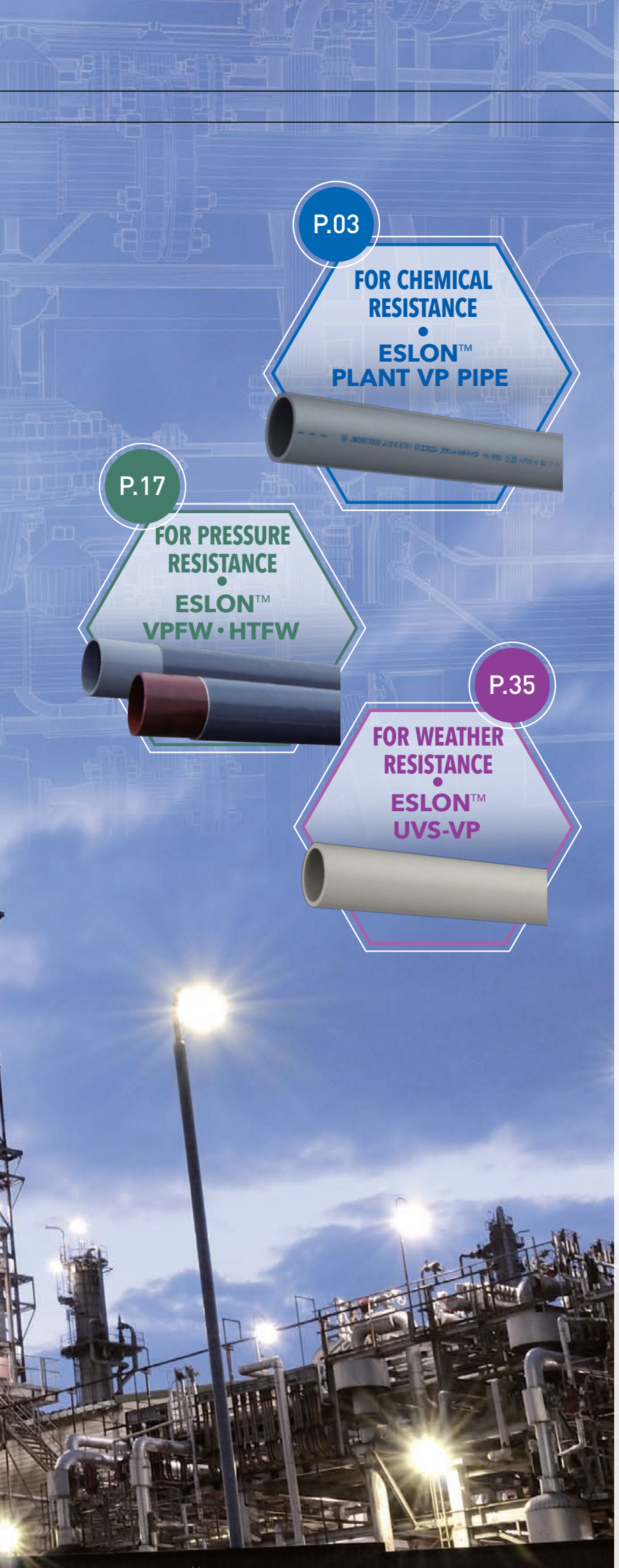
Industrial Piping Systems

ESLON™ PLANT PIPE MATERIALS CATALOGUE

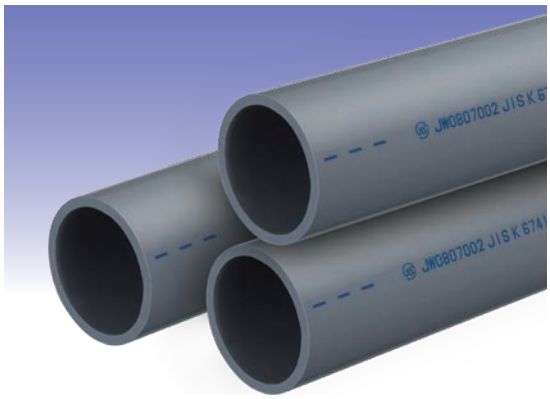


Sekisui Chemical's plastic plant pipe boasts excellent resistance to corrosion and chemicals. We offer a wide selection to achieve highly reliable pipe lines.



Contents

ESLON™ PLANT VP PIPE



- VP Pipe is specialized for chemicals, achieving an optimal composition that is highly resistant against corrosion and impact.
- Complies with the Food Sanitation Law and RoHS (Restriction of Hazardous Substances).
- Compliant with Japanese Industrial Standard JIS K6741. (PVC Pipe Standards (JIS Standard for General Fluid Transport Pipes))
- Can be used with ESLON TS Fittings highly chemical resistant pipe lines.

Use with TS Fittings.

Recommended solvent cements

NO.73S

*250A and up can also be used with the following.

NO.95C

*Refer to page 60 to confirm usability with other solvent cements.

Chemical resistance (pipe and fittings immersion test)

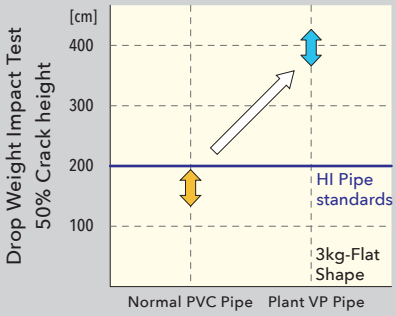
Plant VP and ESLON TS Fittings are highly resistant to chemicals.

Chemical	Blank State	Hydrochloric Acid	Sulfuric Acid	Nitric Acid	Chromic Acid
Concentration		35%	90%	60%	50%
Immersion Period		180 Days			
Plant VP Pipe					
Normal PVC Pipe					
ESLON TS Fittings					
Normal PVC Fittings					

<Test method> 2mm-thick pressed samples of each pipe and fitting are immersed in a chemical at 55˚C, with the surface then examined via microscope.

Impact strength

Impact resistance complies with that of HIVP pipe (impact resistant PVC pipe).



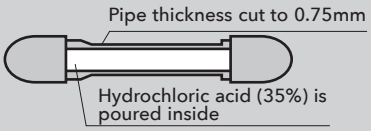
<Test method> Diameter Size: 50A, Weight: 3kg flat shape, Temperature: 0°C

Chemical resistance (permeation test by hydrochloric acid)

Permeation in pipes with hydrochloric acid is dramatically suppressed.

Test sample

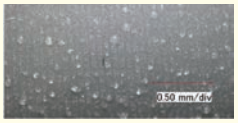
Actual image



Cross section diagram

Sample surface examined through microscope

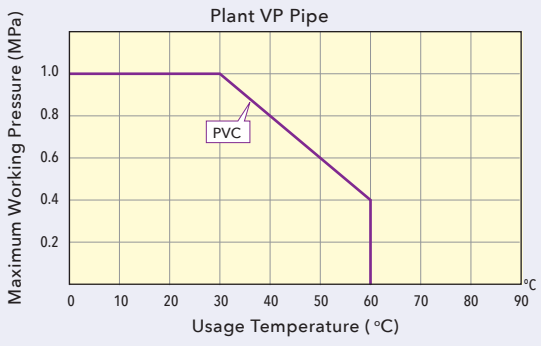
Plant VP Pipe

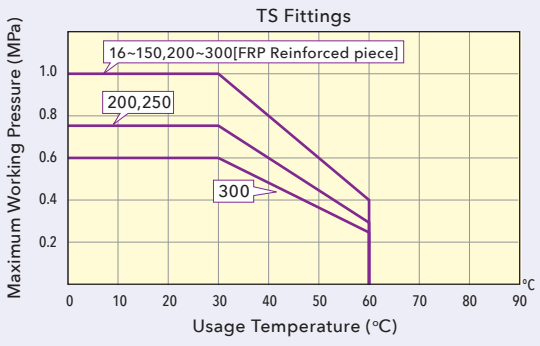


Normal PVC Pipe

<Test method> Hydrochloric acid (35%) is poured into a pipe cut at a set thickness and left for 26 days at 55˚C. It is then removed and the surface is examined via microscope.

Plant VP Pipe and TS Fittings Pipe Usage Temperature and Maximum Working Pressure

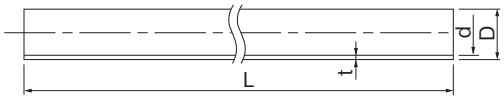




PLANT VP PIPE · TS FITTINGS SPECIFICATIONS

PLANT VP PIPE

Pipe



Unit:mm

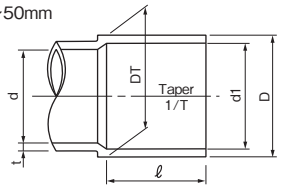
Size A	Size B	φD	t	φd	L	Weight (kg/m)	Item No.
16	1/2	22±0.2	2.7+0.6	16	4000±10	0.256	PVP164J
20	3/4	26±0.2	2.7+0.6	20	4000±10	0.310	PVP204J
25	1	32±0.2	3.1+0.8	25	4000±10	0.448	PVP254J
30	1·1/4	38±0.2	3.1+0.8	31	4000±10	0.542	PVP304J
40	1·1/2	48±0.2	3.6+0.8	40	4000±10	0.791	PVP404J
50	2	60±0.2	4.1+0.8	51	4000±10	1.122	PVP504J
65	2·1/2	76±0.3	4.1+0.8	67	4000±10	1.445	PVP654J
75	3	89±0.3	5.5+0.8	77	4000±10	2.202	PVP754J
100	4	114±0.4	6.6+1.0	100	4000±10	3.409	PVP1H4J
125	5	140±0.5	7.0+1.0	125	4000±10	4.464	PVP1Q4J
150	6	165±0.5	8.9+1.4	146	4000±10	6.701	PVP1F4J
200	8	216±0.7	10.3+1.4	194	4000±10	10.129	PVP2H4J
250	10	267±0.9	12.7+1.8	240	4000±10	15.481	PVP2F4J
300	12	318±1.0	15.1+2.2	286	4000±10	21.962	PVP3H4J

Notes : 1.the reference weight is the standard value.
2.The tolerance for D is average.

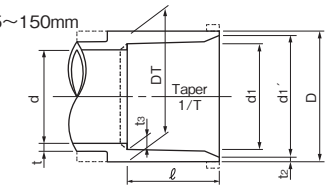
TS Fitting (JIS K6743)

Socket Dimension

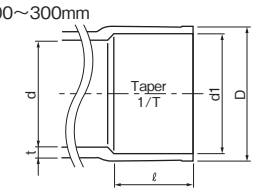
13~50mm



65~150mm



200~300mm



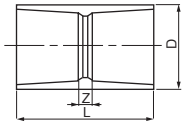
Unit:mm

Size	d1 Basic dimension	d1 Tolerance	1/T	ℓ	d1´ (Min.)	d (Min.)	Outer dia. D	Outer dia. DT	Outer dia. Tolerance	t2	t3	t2,t3 Tolerance	t Basic dimension	t Tolerance
13	18.40	±0.20	1/30	26.0	—	13	24.0	24.0	−0.6	—	—	—	3.0	−0.3
16	22.40	±0.20	1/34	30.0	—	16	29.0	29.0	−0.7	—	—	—	3.5	−0.3
20	26.45	±0.20	1/34	35.0	—	20	33.0	33.0	−0.8	—	—	—	3.5	−0.3
25	32.55	±0.25	1/34	40.0	—	25	40.0	40.0	−1.0	—	—	—	4.0	−0.4
30	38.60	±0.25	1/34	44.0	—	31	46.0	46.0	−1.0	—	—	—	4.0	−0.4
40	48.70	±0.30	1/37	55.0	—	40	57.0	57.0	−1.2	—	—	—	4.5	−0.4
50	60.80	±0.30	1/37	63.0	—	51	70.0	70.0	−1.5	—	—	—	5.0	−0.5
65	76.60	±0.30	1/48	61.0	76.90	67	87.0	88.5	−1.5	5.0	6.6	−0.5	6.6	−0.5
75	89.60	±0.30	1/49	64.0	89.90	77	102.0	104.5	−1.5	6.0	8.0	−0.5	8.0	−0.5
100	114.70	±0.30	1/56	84.0	115.00	100	130.0	133.5	−1.8	7.5	10.0	−0.6	10.0	−0.6
125	140.85	±0.35	1/58	104.0	141.20	125	157.0	161.0	−1.8	8.0	11.0	−0.6	11.0	−0.6
150	166.00	±0.40	1/63	132.0	166.40	146	186.0	190.0	−2.0	10.0	13.0	−0.8	13.0	−0.8
200	217.40	±0.70	1/50	145.0	—	196	243.0	—	—	—	—	—	13.0	−0
250	268.60	±0.70	1/50	175.0	—	242	300.0	—	—	—	—	—	14.5	−0
300	319.80	±0.80	1/50	185.0	—	288	356.0	—	—	—	—	—	16.0	−0

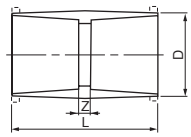
Notes : 1. The tolerance for ℓ is +4 and -0.5 mm.
2. The shape represented by the dotted line is also available.
3. There is no limit to the tolerance for the plus side of D, DT, t, t2, and t3.

Coupling

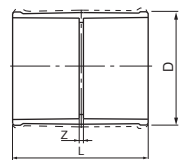
13~50mm



65~150mm



200~300mm



Unit:mm

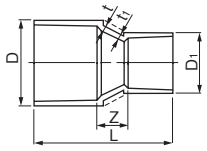
Size	D	L	Z (Ref.)	Weight (kg/pc)	Item No.
13	24.0	57	5	0.018	TSS13
16	29.0	67	7	0.028	TSS16
20	33.0	77	7	0.040	TSS20
25	40.0	87	7	0.061	TSS25
30	46.0	95	7	0.078	TSS30
40	57.0	117	7	0.142	TSS40
50	70.0	133	7	0.210	TSS50
65	87.0	145	23	0.366	TSS65
75	102.0	155	27	0.515	TSS75
100	130.0	200	32	1.077	TSS1H
125	157.0	240	24	1.715	TSS1Q
150	186.0	300	36	2.846	TSS1F
200	243.0	300	10	3.400	TSS2H6K
250	300.0	384	34	6.900	TSS2F6K
300	356.0	408	38	9.100	TSS3H6K

Notes : The tolerance for L is ±4 mm.

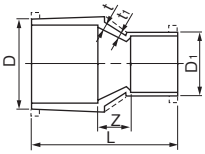
Reducing Coupling

Unit:mm

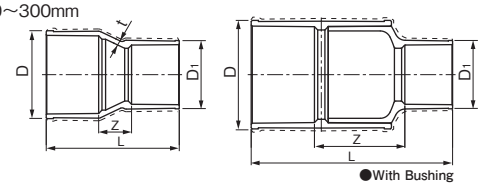
13~50mm



65~150mm



200~300mm



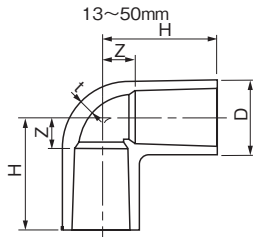
Size	D	t	D1	t1	L	Z (Ref.)	Weight (kg/pc)	Item No.
16×13	29.0	3.5	24.0	3.0	61	5	0.024	TSS161
20×13	33.0	3.5	24.0	3.0	68	7	0.031	TSS202
20×16	33.0	3.5	29.0	3.5	71	6	0.036	TSS201
25×13	40.0	4.0	24.0	3.0	86	20	0.046	TSS253
25×16	40.0	4.0	29.0	3.5	85	15	0.048	TSS252
25×20	40.0	4.0	33.0	3.5	84	9	0.053	TSS251
30×13	46.0	4.0	24.0	3.0	95	25	0.058	TSS304
30×20	46.0	4.0	33.0	3.5	93	14	0.060	TSS302
30×25	46.0	4.0	40.0	4.0	93	9	0.071	TSS301
40×20	57.0	4.5	33.0	3.5	113	23	0.095	TSS404
40×25	57.0	4.5	40.0	4.0	114	19	0.110	TSS403
40×30	57.0	4.5	46.0	4.0	114	15	0.118	TSS402
50×20	70.0	6.5	33.0	6.5	116	18	0.180	TSS505
50×25	70.0	5.0	40.0	4.0	140	37	0.180	TSS504
50×30	70.0	5.0	46.0	4.0	136	29	0.167	TSS503
50×40	70.0	5.0	57.0	4.5	136	18	0.185	TSS501
65×50	87.0	6.6	70.0	5.0	149	25	0.336	TSS651
75×50	102.0	8.0	70.0	5.0	165	38	0.450	TSS752
75×65	102.0	8.0	87.0	6.6	159	34	0.487	TSS751
100×75	130.0	10.0	102.0	8.0	190	42	0.890	TSS1H1
125×100	157.0	11.0	130.0	10.0	229	41	1.531	TSS1Q1
150×100	186.0	13.0	130.0	10.0	295	79	2.348	TSS1F2
150×125	186.0	13.0	157.0	11.0	272	36	2.369	TSS1F1
200×150	243.0	13.0	186.0	13.0	368	91	3.900	TSS2H16
※250×150	300.0	14.5	186.0	—	557	250	12.100	TSS2F26
250×200	300.0	14.5	243.0	14.5	400	80	6.100	TSS2F16
※300×150	356.0	16.0	186.0	—	605	288	35.100	TSS3H36
※300×200	356.0	16.0	243.0	—	601	271	16.400	TSS3H26
300×250	356.0	16.0	300.0	16.0	435	75	9.100	TSS3H16

Notes : The tolerance for L is ±4 mm.
※With Bushing

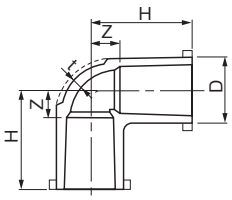
Elbow

Unit:mm

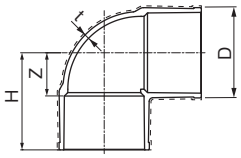
13~50mm



65~150mm



200~300mm



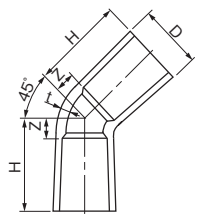
Size	D	t	H	Z (Ref.)	Weight (kg/pc)	Item No.
13	24.0	3.0	36	10	0.022	TSL13
16	29.0	3.5	43	13	0.036	TSL16
20	33.0	3.5	50	15	0.050	TSL20
25	40.0	4.0	58	18	0.076	TSL25
30	46.0	4.0	65	21	0.105	TSL30
40	57.0	4.5	82	27	0.201	TSL40
50	70.0	5.0	96	33	0.309	TSL50
65	87.0	6.6	110	49	0.536	TSL65
75	102.0	8.0	120	56	0.803	TSL75
100	130.0	10.0	155	71	1.653	TSL1H
125	157.0	11.0	187	83	2.760	TSL1Q
150	186.0	13.0	230	98	4.584	TSL1F
200	243.0	13.0	262	117	6.600	TSL2H6K
250	300.0	14.5	318	143	10.800	TSL2F6K
300	356.0	16.0	355	170	15.500	TSL3H6K

Notes : The tolerance for H is +5 and -1 mm.

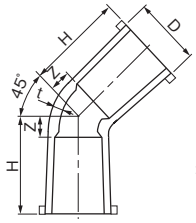
45° Elbow

Unit:mm

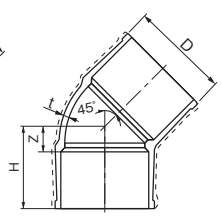
13~50mm



65~150mm



200~300mm



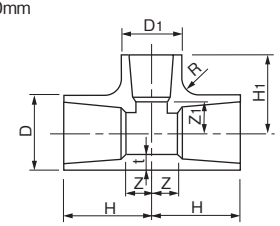
Size	D	t	H	Z (Ref.)	Weight (kg/pc)	Item No.
13	24.0	3.0	33	7	0.018	TS4L13
20	33.0	3.5	44	9	0.039	TS4L20
25	40.0	4.0	51	11	0.068	TS4L25
30	46.0	4.0	56	12	0.084	TS4L30
40	57.0	4.5	69	14	0.142	TS4L40
50	70.0	5.0	81	18	0.245	TS4L50
65	87.0	8.0	94	33	0.515	TS4L65
75	102.0	8.0	98	34	0.660	TS4L75
100	130.0	10.0	123	39	1.262	TS4L1H
125	160.0	11.0	149	44	1.970	TS4L1Q
150	190.0	13.5	184	51	3.445	TS4L1F
200	243.0	13.0	205	60	5.600	TS4L2H6
250	300.0	14.5	254	79	9.000	TS4L2F6
300	356.0	16.0	280	95	13.600	TS4L3H6

Notes : The tolerance for H is +5 and 0 mm.

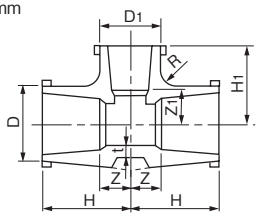
Tee/Reducing Tee

Unit:mm

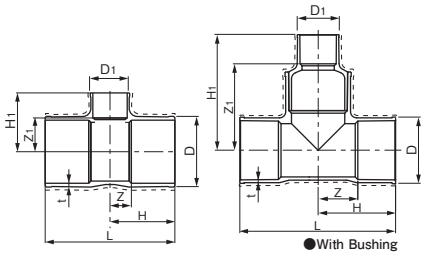
13~50mm



65~150mm



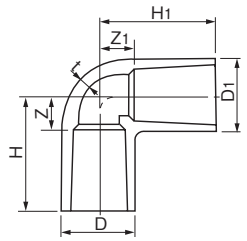
200~300mm



Size	D	t	H	D1	H1	Z (Ref.)	Z1	Weight (kg/pc)	Item No.
13× 13	24.0	3.0	36	24.0	36	10	10	0.030	TST13
16× 13	29.0	3.5	41	24.0	38	11	12	0.045	TST161
16× 16	29.0	3.5	43	29.0	43	13	13	0.050	TST16
20× 13	33.0	3.5	46	24.0	40	11	14	0.059	TST202
20× 16	33.0	3.5	48	29.0	45	13	15	0.059	TST201
20× 20	33.0	3.5	50	33.0	50	15	15	0.070	TST20
25× 13	40.0	4.0	51	24.0	43	11	17	0.078	TST253
25× 16	40.0	4.0	53	29.0	48	13	18	0.086	TST252
25× 20	40.0	4.0	55	33.0	53	15	18	0.091	TST251
25× 25	40.0	4.0	58	40.0	58	18	18	0.119	TST25
30× 13	46.0	4.0	55	24.0	46	11	20	0.099	TST304
30× 16	46.0	4.0	57	29.0	51	13	21	0.106	TST303
30× 20	46.0	4.0	59	33.0	56	15	21	0.111	TST302
30× 25	46.0	4.0	62	40.0	61	18	21	0.132	TST301
30× 30	46.0	4.0	65	46.0	65	21	21	0.145	TST30
40× 13	57.0	4.5	66	24.0	52	11	26	0.152	TST406
40× 16	57.0	4.5	68	29.0	57	13	27	0.173	TST405
40× 20	57.0	4.5	70	33.0	62	15	27	0.182	TST404
40× 25	57.0	4.5	73	40.0	67	18	27	0.208	TST403
40× 30	57.0	4.5	76	46.0	71	21	27	0.200	TST402
40× 40	57.0	4.5	82	57.0	82	27	27	0.276	TST40
50× 13	70.0	5.0	74	24.0	58	11	32	0.227	TST507
50× 16	70.0	5.0	76	29.0	63	13	33	0.258	TST506
50× 20	70.0	5.0	78	33.0	68	15	33	0.280	TST505
50× 25	70.0	5.0	81	40.0	73	18	33	0.283	TST504
50× 30	70.0	5.0	84	46.0	77	21	33	0.297	TST503
50× 40	70.0	5.0	90	57.0	88	27	33	0.345	TST501
50× 50	70.0	5.0	96	70.0	96	34	34	0.443	TST50
65× 50	87.0	6.6	101	70.0	104	40	41	0.616	TST651
65× 65	87.0	6.6	110	87.0	110	49	49	0.769	TST65
75× 25	102.0	8.0	93	40.0	88	29	48	0.670	TST756
75× 40	102.0	8.0	100	57.0	102	36	47	0.816	TST753
75× 50	102.0	8.0	105	70.0	110	41	47	0.907	TST752
75× 65	102.0	8.0	113	87.0	117	49	56	1.012	TST751
75× 75	102.0	8.0	120	102.0	120	56	56	1.158	TST75
100× 50	130.0	10.0	125	70.0	122	41	59	1.486	TST1H3
100× 75	130.0	10.0	140	102.0	132	56	68	1.818	TST1H1
100×100	130.0	10.0	152	130.0	152	68	68	2.254	TST1H
125×100	157.0	11.0	173	130.0	167	69	83	3.317	TST1Q1
125×125	157.0	11.0	187	157.0	187	83	83	3.980	TST1Q
150× 75	186.0	13.0	195	102.0	158	63	94	4.246	TST1F3
150×100	186.0	13.0	208	130.0	182	76	98	4.954	TST1F2
150×125	186.0	13.0	217	157.0	201	85	97	5.125	TST1F1
150×150	186.0	13.0	230	186.0	230	98	98	6.365	TST1F
200×75	243.0	13.0	201	102.0	180	56	116	5.600	TST2H46
200×100	243.0	13.0	218	130.0	200	73	116	6.500	TST2H36
200×150	243.0	13.0	245	186.0	257	100	125	8.400	TST2H16
200×200	243.0	13.0	267	243.0	267	122	122	8.200	TST2H6K
250×75	300.0	14.5	246	102.0	210	71	146	8.800	TST2F56
250×100	300.0	14.5	267	130.0	225	92	141	9.800	TST2F46
※250×150	300.0	14.5	355	186.0	524	180	392	24.100	TST2F26
250×200	300.0	14.5	335	243.0	335	160	190	16.100	TST2F16
250×250	300.0	14.5	355	300.0	355	180	180	18.800	TST2F6K
300×75	356.0	16.0	260	102.0	236	75	172	12.900	TST3H66
300×100	356.0	16.0	266	130.0	257	81	173	13.400	TST3H56
※300×150	356.0	16.0	375	186.0	561	190	429	30.800	TST3H36
※300×200	356.0	16.0	410	243.0	599	225	454	37.700	TST3H26
300×250	356.0	16.0	375	300.0	392	190	217	25.500	TST3H16
300×300	356.0	16.0	410	356.0	375	225	225	30.400	TST3H6K

Notes : The tolerance for H is +5 and -1 mm.
※With Bushing

Reducing Elbow

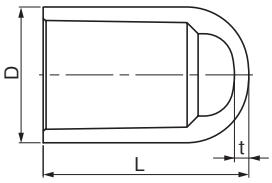


Unit:mm

Size	D	H	Z (Ref.)	D1	H1	Z1 (Ref.)	t	Weight (kg/pc)	Item No.
20× 13	33.0	46	11	24.0	40	14	3.0	0.035	TSL202
25× 13	40.0	51	11	24.0	43	17	3.0	0.048	TSL253
25× 20	40.0	55	15	33.0	53	18	3.5	0.064	TSL251

Notes : The tolerance for H is +5 and -1 mm.

Cap



Unit:mm

Size	D	t	L	Weight (kg/pc)	Item No.
13	24.0	3.0	36.5	0.011	TSC13X
16	29.0	3.5	43.0	0.017	TSC16X
20	33.0	3.5	50.0	0.025	TSC20X
25	40.0	4.0	58.5	0.039	TSC25X
30	46.0	4.0	65.5	0.053	TSC30X
40	57.0	4.5	82.0	0.091	TSC40X
50	70.0	5.0	96.5	0.146	TSC50X
75	102.0	8.0	105.0	0.442	TSC75
100	130.0	10.0	138.0	0.775	TSC1H
150	186.0	13.0	205.0	1.745	TSC1F

Notes : The tolerance for H is +5 and 0 mm.

APPLYING ESLON PLANT VP PIPE • TS FITTINGS / ESLON PLANT HT PIPE AND FITTINGS

Installation Method (TS)

Pipe Tools and Materials

• PVC Pipe Saw • File (Flat Coarse File for Iron Work) • Tape Measure • Oil-Based Marker
• ESLON Solvent Cement • Shop Cloth • Industrial Alcohol • Wire Rope Sling or Insertion Fixture Tool
• ESLON Insertion Device or Cargo Fastener • Electric Saw

Cutting pipe

Accurately measure the area to be cut and mark a right angle on the pipe with an oil-based marker. Use a PVC pipe saw or electric saw to make the cut.

⚠Precaution Make sure to file off any scrapes or warps in the pipe.

⚠Precaution Use sufficient caution when handling the electric saw to avoid injury.

Chamfer the pipe opening

Use a file to chamfer the inside and outside of the pipe opening. Once cut, pay particular attention to ensure that there are no burrs or flash on the edge of the pipe.

⚠Precaution If not performed properly, the solvent cement on the pipe spigot will scrape off when connecting and may disconnect. Be sure to properly chamfer the edge.

Mark the insertion line

Lightly insert the pipe spigot into the fitting socket. Verify that the pipe stops at a position (at the zero point) roughly 1/3-2/3 into the length of the socket (ℓ).*For sizes under 40, mark an insertion line at the point that the spigot inserts into the socket. For sizes over 50, mark an insertion line, adding 1/3 the length of the socket to the zero point.

*If the zero point is out of range, alter the configuration of the fitting with the connecting pipe.

Units: mm

Size		13	16	20	25	30	40	50	65	75	100	125	150
TS Fittings・TS Flange	ℓ	26	30	35	40	44	55	63	61	64	84	104	132
	ℓ×1/3	–	–	–	–	–	–	21	20	21	28	35	44
HT Fittings	ℓ	22	27	33	38	42	47	52	70	75	94	104	132
	ℓ×1/3	–	–	–	–	–	–	17	23	25	31	35	44

Size		200	250	300
Large Diameter TS Fittings	ℓ	145	175	185
	ℓ×1/3	48	58	61
TS Flange	ℓ	155	185	185
	ℓ×1/3	51	61	61

Clean the pipe spigot and socket

Carefully wipe off any dust, dirt, or water that has adhered to the spigot or socket using a shop cloth.

*If there is any oil adhered to the joint area, clean the area using a small amount of industrial alcohol.

⚠Precaution Any dust, water, or oil adhered to the connection area may decrease adhesive strength and lead to disconnection.

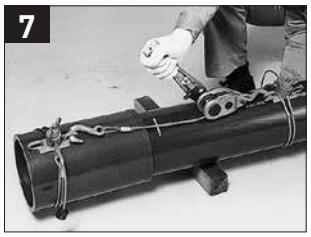
Mount wire rope and insertion device

Under favorable conditions, connection for sizes under 50 can be performed by hand without requiring use of an insertion device. Use an ESLON Insertion Device or a cargo fastener for sizes over 65.

Coat solvent cement

Use a dedicated solvent cement suitable for the pipe type. Use a sufficient amount of solvent cement to evenly coat the entire surface of the fitting interior followed by the pipe exterior.

⚠Precaution Apply a thin coat to the entire surface of the fitting interior.



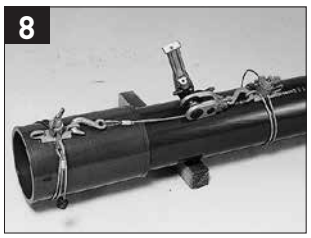
Pipe insertion

Place the insertion tool around the axis of the pipe spigot and fitting socket and insert to the marked position.

⚠Precaution Insert as quickly as possible after applying the solvent cement coat. Wipe off any protruding solvent cement.

⚠Precaution Insert in one single, swift motion. Do not stop midway. (Do not twist while inserting.)

⚠Precaution Be sure not to pound the pipe or insert diagonally, as this may cause leaks.



Hold and cure

Maintain pressure and hold together as per the diagram below. Make sure the pipes do not separate after reducing pressure.

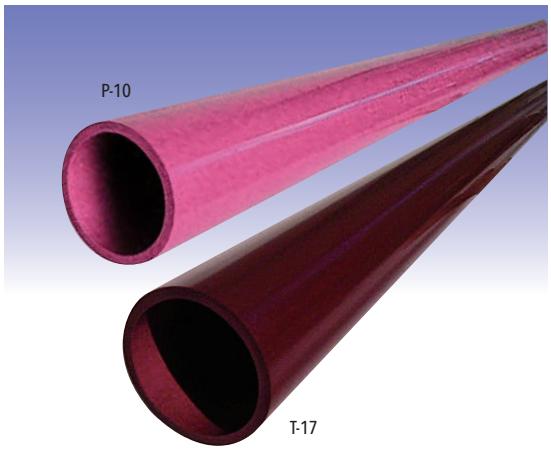
Temperature (season)	Size	
	Under 50	Above 65
Summertime	More Than 30 Seconds	More Than 1 Minute
Wintertime		More Than 2 Minutes

Remove solvent vapor

⚠ Warning After connecting the pipes, be sure to ventilate with air in order to remove adhesive solvent vapor inside.

ESLON™ PLANT HT PIPE

P-10 (Corrosive Chemical Resistance) T-17 (Acid Resistance)



- PLANT HT Pipe is specialized for plant use, with an optimal composition of modifying agents and additives that make it highly resistant to corrosion and chemicals.
- Two different types are available depending on the chemicals used
  - •P-10 type reduces stiffening caused by caustic chemicals, which until now was a point of weakness for sodium hydroxide lines.
  - •The balanced T-17 type suppresses chemical penetration when used in salt water lines (for general acid and soda plant pipes).

Recommended solvent cement

*13-300A
NO.100S

*Above 250A
NO.110

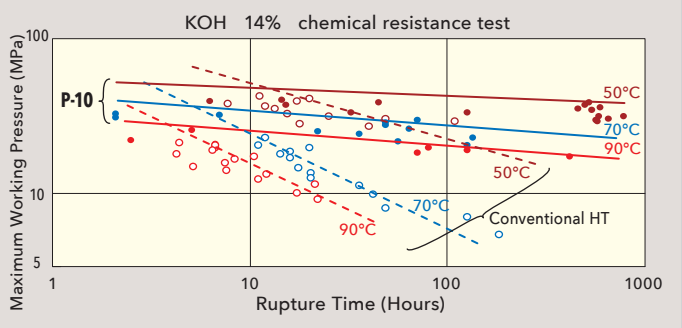
*Refer to page 60 to confirm usability with other solvent cements.

Use a HT Fitting for connection. For application method, refer to Connection Method (TS) on page 8.

P-10 test

■ESCR test in KOH

P-10 dramatically improves resistance against caustic chemicals. Durability is improved by keeping applied stress within a set level.



<Test method> A lander-type stress cracking tester is used. The sample is immersed in a chemical, with fixed amounts of weight applied until the pipe ruptures. Rupture time is measured.

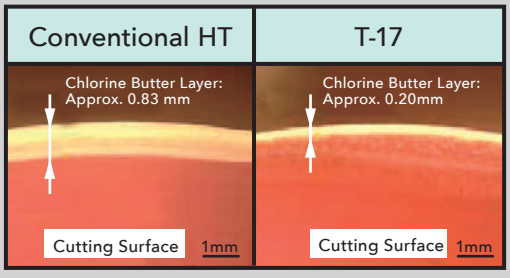
■Results from Actual Pipes Used in Soda Electrolysis Lines

While the contact area is bleached, the penetration depth is low, and there is little reduction seen in the elongation at break (an indicator of material deterioration conditions).

		Sample 1	Sample 2	Blank State
Usage Conditions	Size	40A	50A	
	Chemical	35% NaOH	35% NaOH	
	Usage Temperature	85°C	85°C	
	Usage Pressure	No Pressure	No Pressure	
	Test Period	1 Year	1 Year	
Tensile Strength (MPa)		45	48	45~50
Elongation at Break (%)		98	117	80~130
Whitening depth (mm)		0.1	0.1	–
Photo after test				

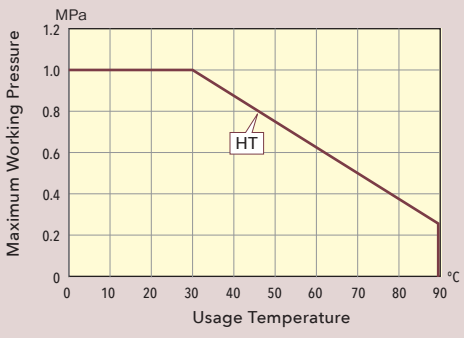
T-17 Salt water test

Compared to conventional HT pipes (in-house product), T-17 pipes reduce chemical corrosion within the pipe, and delay growth of chlorine butter.



<Immersion conditions> Saturated Salt Solution NaCl: 20wt%, Pressure: 0.2MPa, Immersion Temperature: 85°C, Immersion Time: 8 Weeks

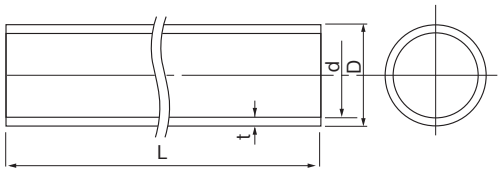
■Plant HT Pipe Usage Temperature and Maximum Working Pressure



PLANT HT PIPE AND FITTINGS SPECIFICATIONS

PLANT HT PIPE

Pipe



Unit:mm

Size		φD	t	φd	L	Weight (kg/m)	Item No.	
A	B						T-17	P-10
13	3/8	18±0.10	2.5±0.20	13	4000±10	0.180	★HT134P	–
16	1/2	22±0.10	3.0±0.30	16		0.265	★HT164P	HT164PV
20	3/4	26±0.10	3.0±0.30	20		0.321	★HT204P	HT204PV
25	1	32±0.10	3.5±0.30	25		0.464	★HT254P	HT254PV
30	1・1/4	38±0.10	3.5±0.30	31		0.561	★HT304P	HT304PV
40	1・1/2	48±0.10	4.0±0.30	40		0.818	★HT404P	HT404PV
50	2	60±0.15	4.5±0.40	51		1.161	★HT504P	HT504PV
65	2・1/2	76±0.20	5.0±0.50	67		1.651	HT654P	HT654PV
75	3	89±0.25	5.8±0.50	77		2.244	HT754P	HT754PV
100	4	114±0.25	7.0±0.60	100		3.483	HT1H4P	HT1H4PV
125	5	140±0.40	8.2±0.60	125		5.025	HT1Q4P	HT1Q4PV
150	6	165±0.45	9.7±0.70	146		7.004	HT1F4P	HT1F4PV
200	8	216±0.80	11.0+1.30 −0.70	194		10.485	HT2H4P	HT2H4PV
250	10	267±1.00	13.6+1.50 −0.90	240		16.023	HT2F4P	HT2F4PV
300	12	318±1.10	16.2+1.70 −1.10	286		22.732	HT3H4P	HT3H4PV

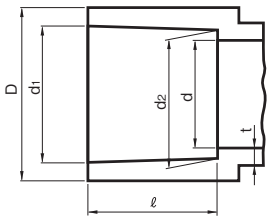
Notes : ★ JIS standard

HT Fitting

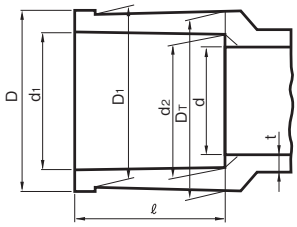
Socket Dimension

A-Type(Injection molded article)

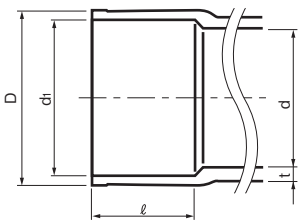
13~50mm



65~150mm



200~300mm



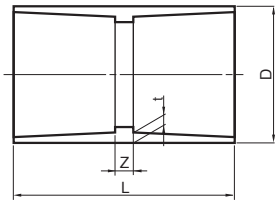
Unit:mm

Size	d_1	ℓ	d_2	d	D	D_1	D_T	t
★13	18.30	22	17.55	14	26	—	—	3.5
★16	22.35	27	21.55	17	29	—	—	3.5
★20	26.35	33	25.50	21	34	—	—	4.0
★25	32.50	38	31.40	26	41	—	—	4.0
★30	38.50	42	37.45	34	46	—	—	4.5
★40	48.50	47	47.45	40	56	—	—	4.5
★50	60.50	52	59.45	50	69	—	—	5.0
65	76.70	70	75.25	67	91	87	88.5	6.1
75	89.70	75	88.25	77	106	102	104.5	7.5
100	114.85	94	113.15	100	134	130	133.5	9.4
125	140.80	104	139.01	125	166	157	161.0	10.4
150	166.00	132	163.90	146	189	186	190.0	12.2
200	216.90	145	—	196	243.0	—	—	13.0
250	268.10	175	—	242	300.0	—	—	14.5
300	319.40	185	—	288	356.0	—	—	16.0

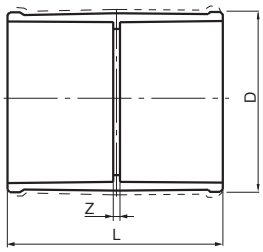
Notes : ★ JIS standard

Coupling

13~150mm



200~300mm



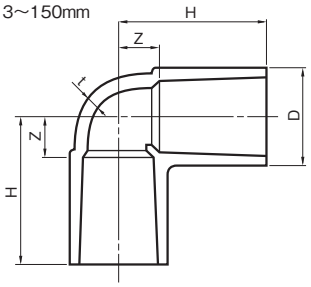
Unit:mm

Size		D	t	L	Z	Weight (kg/pc)	Item No.
A	B						
★13	3/8	26	49	3.5	5	0.024	THS13
★16	1/2	29	59	3.5	5	0.033	THS16
★20	3/4	34	71	4.0	5	0.058	THS20
★25	1	41	82	4.0	6	0.077	THS25
★30	1･1/4	46	89	4.5	5	0.083	THS30
★40	1･1/2	56	99	4.5	5	0.146	THS40
★50	2	69	109	5.0	5	0.195	THS50
65	2･1/2	91	145	6.1	5	0.980	THS65
75	3	106	154	7.5	8	0.493	THS75
100	4	134	200	9.4	12	1.102	THS1H
125	5	166	232	10.4	24	1.840	THS1QY
150	6	189	300	12.2	36	3.068	THS1FY
200	8	243	300	13.0	10	3.400	HTS2H6K
250	10	300	384	14.5	34	6.900	HTS2F6K
300	12	356	408	16.0	38	9.100	HTS3H6K

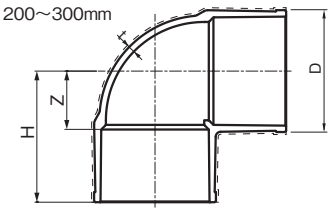
Notes : ★ JIS standard

90° Elbow

13~150mm



200~300mm



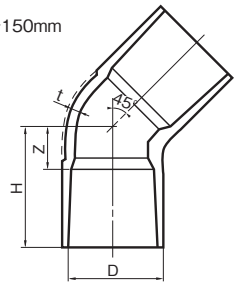
Unit:mm

Size		D	t	H	Z	Weight (kg/pc)	Item No.
A	B						
★13	3/8	26	3.5	34.0	12.0	0.029	THL13
★16	1/2	29	3.5	41.0	14.0	0.041	THL16
★20	3/4	34	4.0	53.0	20.0	0.069	THL20
★25	1	41	4.0	58.0	20.0	0.094	THL25
★30	1･1/4	46	4.5	64.0	22.0	0.122	THL30
★40	1･1/2	56	4.5	74.0	27.0	0.183	THL40
★50	2	69	5.0	85.0	33.0	0.272	THL50
65	2･1/2	91	6.1	114.0	44.0	0.551	THL65Y
75	3	106	7.5	123.5	44.5	0.856	THL75Y
100	4	134	9.4	156.0	63.0	1.740	THL1HY
125	5	166	10.4	189.0	83.0	2.970	THL1Q
150	6	189	12.2	230.0	98.0	5.047	THL1F
200	8	243	13.0	261.5	116.5	6.600	HTL2H6K
250	10	300	14.5	317.8	142.8	10.800	HTL2F6K
300	12	356	16.0	355.0	170.0	15.500	HTL3H6K

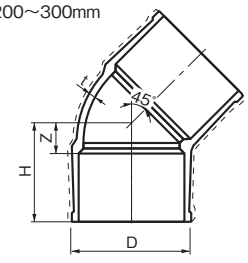
Notes : ★ JIS standard

45° Elbow

13~150mm



200~300mm



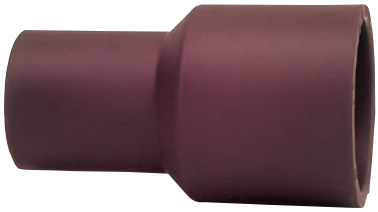
Unit:mm

Size		D	t	H	Z	Weight (kg/pc)	Item No.
A	B						
13	3/8	26	3.5	27	5	0.030	TH4L13
16	1/2	29	3.5	33	6	0.041	TH4L16
20	3/4	34	4.0	44	11	0.067	TH4L20
25	1	41	4.0	50	12	0.090	TH4L25
30	1･1/4	46	4.5	53	11	0.110	TH4L30
40	1･1/2	56	4.5	61	14	0.155	TH4L40
50	2	69	5.0	80	28	0.296	TH4L50
65	2･1/2	91	6.1	94	24	0.495	TH4L65Y
75	3	106	7.5	98	23	0.740	TH4L75
100	4	134	9.4	123	29	1.330	TH4L1H
125	5	166	11.0	149	44	2.140	TH4L1Q
150	6	189	13.5	184	51	3.740	TH4L1F
200	8	243	13.0	205	60	5.6	HT4L2H6
250	10	300	14.5	254	79	9.0	HT4L2F6
300	12	356	16.0	280	95	13.6	HT4L3H6

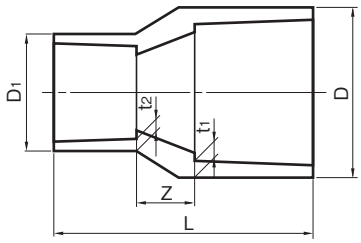
Notes : ★ JIS standard

Reducing Coupling/Bush

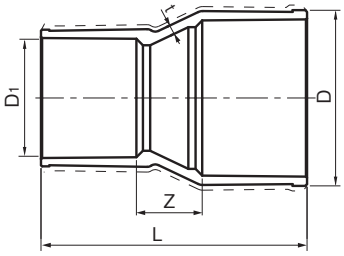
Reducing Coupling(A-I)



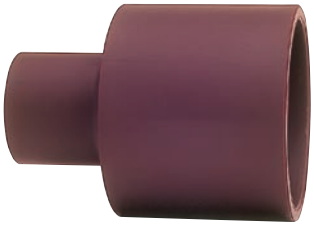
13~150mm

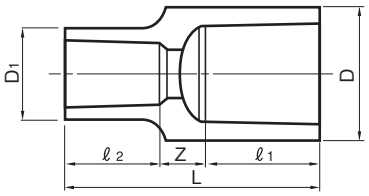


200~300mm



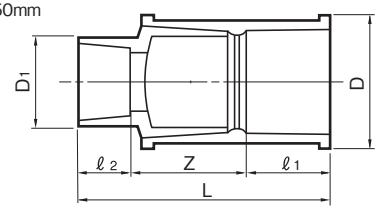
Reducing Coupling/Bush(A-II)



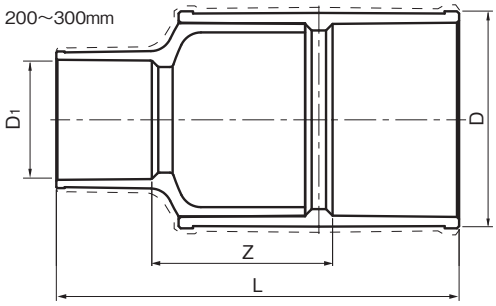


Reducing Coupling(Coupling+Reducing Coupling(A-I))

13~150mm



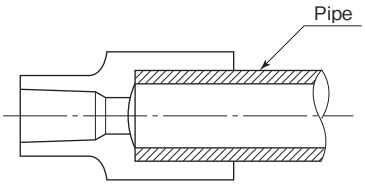
200~300mm



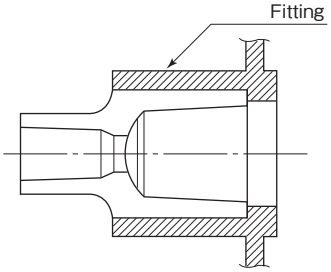
●With Bushing

Reducing Coupling/Bush(A-II)

● Reducing Coupling



● Bush



Unit:mm

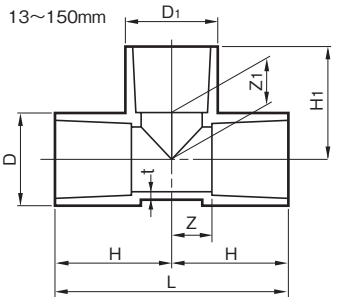
Reducing Coupling	Bush	D	D_1	L	ℓ_1	ℓ_2	t_1	t_2	Z	Notes	Weight (kg/pc)	Item No.
★16×13	—	29	26	53	—	—	3.5	3.5	4	A-Ⅰ	0.032	THS161
★20×13	—	34	26	61.5	—	—	4.0	3.5	6.5	A-Ⅰ	0.045	THS202
★20×16	—	34	29	66	—	—	4.0	3.5	6	A-Ⅰ	0.049	THS201
★25×13	—	41	26	73	—	—	4.0	3.5	13	A-Ⅰ	0.054	THS253
★25×16	—	41	29	76	—	—	4.0	3.5	11	A-Ⅰ	0.039	THS252
★25×20	—	41	34	80.5	—	—	4.0	4.0	9.5	A-Ⅰ	0.072	THS251
★30×20	—	46	34	85	—	—	4.5	4.0	10	A-Ⅰ	0.041	THS302
★30×25	—	46	41	90	—	—	4.5	4.0	10	A-Ⅰ	0.088	THS301
★40×20	—	56	34	98	—	—	4.5	4.0	18	A-Ⅰ	0.111	THS404
★40×25	—	56	41	100	—	—	4.5	4.0	15	A-Ⅰ	0.116	THS403
★40×30	—	56	46	97	—	—	4.5	4.5	8	A-Ⅰ	0.130	THS402
★50×25	—	69	41	110	—	—	5.0	4.0	20	A-Ⅰ	0.155	THS504
★50×30	—	69	46	110	—	—	5.0	4.5	16	A-Ⅰ	0.154	THS503
★50×40	—	69	56	110	—	—	5.0	4.5	11	A-Ⅰ	0.165	THS501
50×13	65×13	76	26	99	63	20	—	—	16	A-Ⅱ	0.229	HTS506Y
50×16	65×16	76	31	103	63	30	—	—	10	A-Ⅱ	0.231	HTS505Y
50×20	65×20	76	33	109	63	35	—	—	11	A-Ⅱ	0.243	HTS504Y
50×25	65×25	76	40	113	63	40	—	—	10	A-Ⅱ	0.250	HTS503Y
50×30	65×30	76	48	113	63	40	—	—	10	A-Ⅱ	0.265	HTS502Y
50×40	65×40	76	57	128	63	45	—	—	20	A-Ⅱ	0.287	HTS501Y
50×50	65×50	76	70	137	63	50	—	—	24	A-Ⅱ	0.310	HTS500Y
65×20	75×20	89	33	113	61	35	—	—	17	A-Ⅱ	0.265	HTS655Y
65×25	75×25	89	40	119	61	40	—	—	18	A-Ⅱ	0.275	HTS654Y
65×30	75×30	89	48	119	61	40	—	—	18	A-Ⅱ	0.285	HTS653Y
65×40	75×40	89	57	134	61	45	—	—	28	A-Ⅱ	0.310	HTS652Y
65×50	75×50	89	70	142	61	50	—	—	31	A-Ⅱ	0.330	HTS651Y
65×65	75×65	89	87	141	61	61	—	—	19	A-Ⅱ	0.365	HTS650Y
75×20	100×20	114	36	132	72	35	—	—	25	A-Ⅱ	0.672	HTS756Y
75×25	100×25	114	40	138	72	40	—	—	26	A-Ⅱ	0.680	HTS755Y
75×30	100×30	114	48	138	72	40	—	—	26	A-Ⅱ	0.690	HTS754Y
75×40	100×40	114	57	142	72	45	—	—	25	A-Ⅱ	0.700	HTS753Y
75×50	100×50	114	70	148	72	50	—	—	26	A-Ⅱ	0.710	HTS752Y
75×65	100×65	114	87	161	72	61	—	—	28	A-Ⅱ	0.755	HTS751Y
75×75	100×75	114	101	177	72	72	—	—	33	A-Ⅱ	0.820	HTS750Y
100×20	125×20	140	36	144	92	35	—	—	17	A-Ⅱ	1.040	HTS1H7Y
100×25	125×25	140	42	150	92	40	—	—	18	A-Ⅱ	1.050	HTS1H6Y
100×50	125×50	140	70	160	92	50	—	—	18	A-Ⅱ	1.090	HTS1H3Y
100×65	125×65	140	87	170	92	61	—	—	17	A-Ⅱ	1.110	HTS1H2Y
100×75	125×75	140	101	184	92	72	—	—	20	A-Ⅱ	1.300	HTS1H1Y
100×100	125×100	140	130	203	92	92	—	—	19	A-Ⅱ	1.400	HTS1H0Y
125×20	150×20	165	36	175	104	35	—	—	36	A-Ⅱ	1.620	HTS1Q8Y
125×25	150×25	165	42	180	104	40	—	—	36	A-Ⅱ	1.630	HTS1Q7Y
125×75	150×75	165	101	219	104	72	—	—	43	A-Ⅱ	1.680	HTS1Q2Y
125×100	150×100	165	130	233	104	92	—	—	37	A-Ⅱ	1.900	HTS1Q1Y
125×125	150×125	165	157	244	104	104	—	—	36	A-Ⅱ	2.000	HTS1Q0Y
150×125	—	189	157	412	132	104	—	—	176	○	5.068	HTS1F1
200×150	—	243	189	368	—	—	13.0	13.0	91		3.900	HTS2H16
※250×150	—	300	189	557	—	—	14.5	13.0	250		12.100	HTS2F26
250×200	—	300	243	400	—	—	14.5	13.0	80		6.100	HTS2F16
※300×150	—	356	189	605	—	—	16.0	13.0	288		35.100	HTS3H36
※300×200	—	356	243	601	—	—	16.0	13.0	271		16.400	HTS3H26
300×250	—	356	300	435	—	—	16.0	14.5	75		9.100	HTS3H16

Notes : ★ JIS standard ○ Production to order

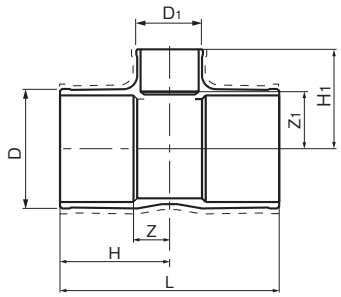
Tee

Tee • Reducing Tee

13~150mm



200~300mm



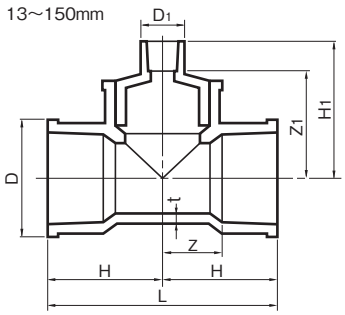
Unit:mm

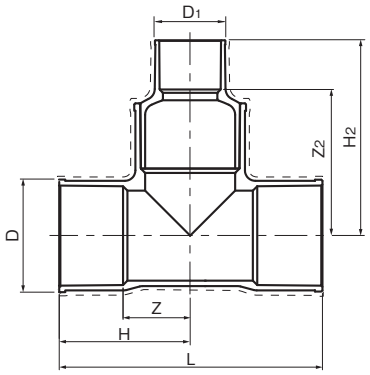
Size A	D	t	L	H	D1	H1	Z	Z1	Weight (kg/pc)	Item No.
★13	26	3.5	68	34	26	34	12	12	0.042	THT13
★16	29	3.5	82	41	29	41	14	14	0.055	THT16
★16×13	29	3.5	78	39	26	36	12	14	0.052	THT161
★20	34	4.0	106	53	34	53	20	20	0.087	THT20
★20×13	34	4.0	90	45	26	38	12	16	0.079	THT202
★20×16	34	4.0	94	47	29	43	14	14	0.085	THT201
★25	41	4.0	116	58	41	58	20	20	0.136	THT25
★25×13	41	4.0	98	49	26	41	11	19	0.101	THT253
★25×16	41	4.0	104	52	29	46	14	19	0.106	THT252
★25×20	41	4.0	108	54	34	52	16	19	0.122	THT251
★30	46	4.5	128	64	46	64	22	22	0.154	THT30
★30×13	46	4.5	108	54	26	44	12	22	0.117	THT304A
★30×16	46	4.5	112	56	29	49	14	22	0.124	THT303A
★30×20	46	4.5	116	58	34	55	16	22	0.140	THT302A
★30×25	46	4.5	120	60	41	60	18	22	0.156	THT301A
★40	56	4.5	150	75	56	75	28	28	0.300	THT40
★40×13	56	4.5	124	62	26	49	15	27	0.169	THT406A
★40×16	56	4.5	126	63	29	54	16	27	0.179	THT405A
★40×20	56	4.5	130	65	34	60	18	27	0.193	THT404A
★40×25	56	4.5	136	68	41	65	21	27	0.205	THT403A
★40×30	56	4.5	144	72	46	69	25	27	0.220	THT402A
★50	69	5.0	174	87	69	87	35	35	0.382	THT50
★50×13	69	5.0	138	69	26	55	17	33	0.239	THT507A
★50×16	69	5.0	140	70	29	60	18	33	0.250	THT506A
★50×20	69	5.0	144	72	34	70	20	37	0.275	THT505A
★50×25	69	5.0	150	75	41	75	23	37	0.304	THT504A
★50×30	69	5.0	158	79	46	75	27	33	0.303	THT503A
★50×40	69	5.0	164	82	56	80	30	33	0.363	THT502A
65	91	6.1	228	114	91	114	44	44	0.822	THT65Y
75	106	7.5	247	123.5	106	123.5	48.5	48.5	1.112	THT75Y
100	134	9.4	312	156	134	156	62	62	2.348	THT1HY
125	166	10.4	378	189	166	189	85	85	4.200	THT1QY
150	189	12.2	460	230	189	230	98	98	6.280	THT1FY
200	243	13.0	533	267	243	267	122	122	8.200	HTT2H6K
200×75	243	13.0	402	201	102	180	56	116	5.600	HTT2H46
200×100	243	13.0	436	218	130	200	73	116	6.500	HTT2H36
200×150	243	13.0	490	245	186	257	100	125	8.400	HTT2H16
250	300	14.5	710	355	300	355	180	180	18.800	HTT2F6K
250×75	300	14.5	492	246	102	210	71	146	8.800	HTT2F56
250×100	300	14.5	534	267	130	225	92	141	9.800	HTT2F46
250×200	300	14.5	670	335	243	335	160	190	16.100	HTT2F16
300	356	16.0	820	410	356	375	225	225	30.400	HTT3H6K
300×75	356	16.0	520	260	102	236	75	172	12.900	HTT3H66
300×100	356	16.0	532	266	130	257	81	173	13.400	HTT3H56
300×250	356	16.0	750	375	300	392	190	217	25.500	HTT3H16

Notes : ★ JIS standard

Tee

Tee(Tee+Reducing Coupling)





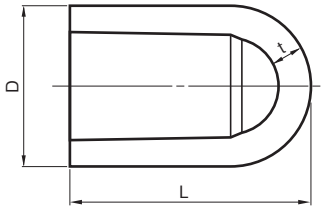
●With Bushing

Unit:mm

Size A	D	t	L	H	D1	H1	Z	Z1	Weight (kg/pc)	Item No.
65×13	91	6.1	228	114	26	143	44	123	1.051	HTT657
65×16	91	6.1	228	114	31	147	44	117	1.053	HTT656
65×20	91	6.1	228	114	33	153	44	118	1.065	HTT655
65×25	91	6.1	228	114	40	157	44	117	1.072	HTT654
65×30	91	6.1	228	114	48	157	44	117	1.087	HTT653
65×40	91	6.1	228	114	57	172	44	127	1.109	HTT652
65×50	91	6.1	228	114	70	181	44	131	1.132	HTT651
75×20	106	7.5	247	123.5	33	161.5	48.5	126.5	1.337	HTT756
75×25	106	7.5	247	123.5	40	167.5	48.5	127.5	1.387	HTT755
75×30	106	7.5	247	123.5	48	167.5	48.5	127.5	1.397	HTT754
75×40	106	7.5	247	123.5	57	182.5	48.5	137.5	1.422	HTT753
75×50	106	7.5	247	123.5	70	190.5	48.5	140.5	1.442	HTT752
75×65	106	7.5	247	123.5	87	189.5	48.5	128.5	1.477	HTT751
100×20	134	9.4	312	156	36	194	62	159	3.020	HTT1H8
100×25	134	9.4	312	156	40	200	62	160	3.028	HTT1H7
100×30	134	9.4	312	156	48	200	62	160	3.038	HTT1H6
100×40	134	9.4	312	156	57	204	62	159	3.048	HTT1H4
100×50	134	9.4	312	156	70	210	62	160	3.058	HTT1H3
100×65	134	9.4	312	156	87	223	62	162	3.103	HTT1H2
100×75	134	9.4	312	156	101	239	62	167	3.168	HTT1H1
○ 125×20	166	10.4	378	189	36	229	85	194	5.240	HTT1Q8
○ 125×25	166	10.4	378	189	42	235	85	195	5.250	HTT1Q7
○ 125×50	166	10.4	378	189	70	245	85	195	5.290	HTT1Q4
○ 125×65	166	10.4	378	189	87	255	85	194	5.310	HTT1Q3
○ 125×75	166	10.4	378	189	101	269	85	197	5.500	HTT1Q2
○ 125×100	166	10.4	378	189	130	288	85	196	5.600	HTT1Q1
○ 150×20	189	12.2	460	230	36	273	98	238	7.900	HTT1F9
○ 150×25	189	12.2	460	230	42	278	98	238	7.910	HTT1F8
○ 150×75	189	12.2	460	230	101	317	98	245	7.960	HTT1F3
○ 150×100	189	12.2	460	230	130	331	98	239	8.180	HTT1F2
○ 150×125	189	12.2	460	230	157	342	98	238	8.280	HTT1F1
○ 250×150	300	14.5	710	355	186	524	180	392	24.100	HTT2F26
○ 300×150	356	16.0	750	375	186	561	190	429	30.800	HTT3H36
○ 300×200	356	16.0	820	410	243	599	225	454	37.700	HTT3H26

Notes : ○ Production to order

Cap



Unit:mm

Size A	Size B	D	L	t	Weight (kg/pc)	Item No.
★13	3/8	26	32.5	3.5	0.016	THC13
★16	1/2	29	39.5	3.5	0.021	THC16
★20	3/4	34	52	4.0	0.037	THC20
★25	1	41	60	4.0	0.055	THC25
★30	1･1/4	46	63.5	4.5	0.064	THC30
★40	1･1/2	56	73.5	4.5	0.096	THC40
★50	2	69	85	5.0	0.138	THC50

Notes : ★ JIS standard

ESLON™ VPFW·HTFW

- The outside of the PVC pipe is reinforced with FRP, making for a highly pressure and heat resistant pipe.
- ST and EX type available depending on usage pressure and temperature. (Shared Across 16-40A)
- VPFW uses 16-300A Plant VP Pipe for high resistance against chemicals and corrosion. 350-600A uses ESLON Pipe VU.
- HTFW PVC uses Plant CPVC Pipe, which is highly resistant to corrosion and chemicals. HT comes in two types, T-17 and P-10 depending on the chemical.
  (Standard type: T-17)
- Lightweight and easy to handle compared to metal pipes.

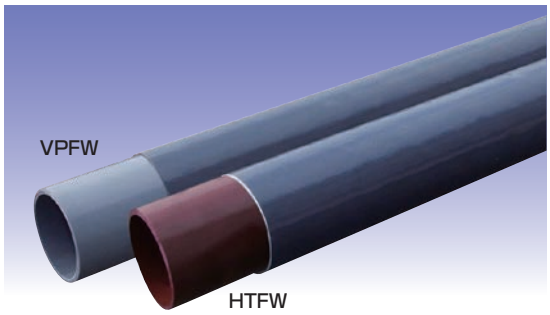
Recommended solvent cements

NO.110

*16-50A can also be used with the following.

NO.100S

*Refer to page 60 to confirm usability with other solvent cements.



VPFW/HTFW Applications

Plant Piping

Soda, plating, steel soaking, nonferrous refining, fiber, paper, pulp, compost, pharmaceuticals, foods, various chemicals, other chemical industrial fields

Marine Piping

Aquaculture, experimental stations for fisheries, laboratories, salt production, desalination plants, seawater transport such as seawater cooling for power plants and aquariums, etc.

VPFW-ST Type (16-600A)

Maximum Working Temperature: 90°C
PVC + FRP Reinforced Standard Pipe

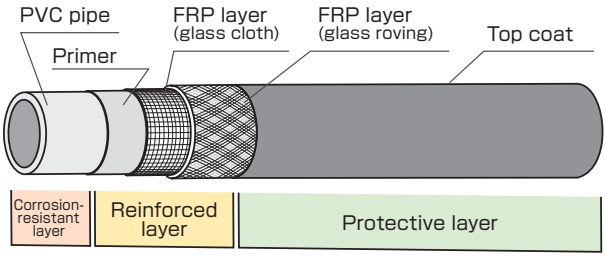
VPFW-EX Type (16-600A)

Maximum Working Temperature: 95°C
FRP layer is further reinforced for rigidity and high-pressure.

HTFW (16-300A)

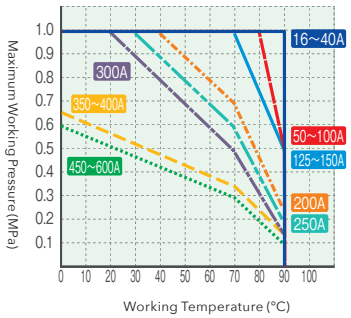
Maximum Working Temperature: 100°C
High temperature resistance performs excellently with chlorine gas and other electrolytic lines.

VPFW/HTFW Pipe Structure

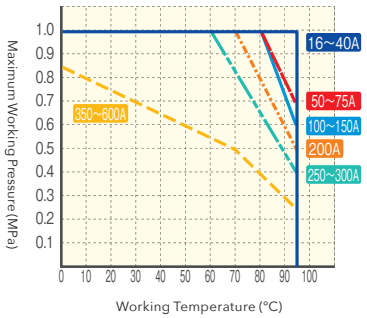


Working Pressure for VPFW/HTFW Types

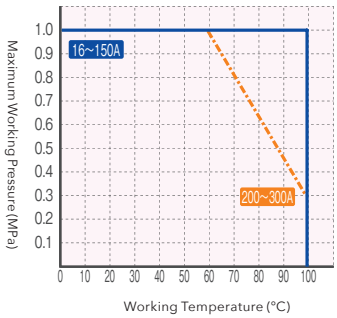
VPFW-ST Type Maximum Working Temperature: 90°C



VPFW-EX Type Maximum Working Temperature: 95°C



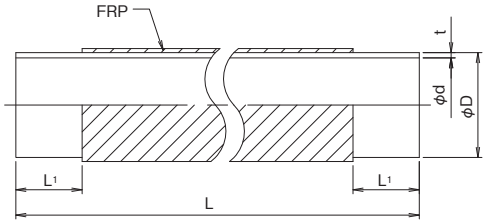
HTFW Maximum Working Temperature: 100°C



VPFW SPECIFICATIONS

VPFW PIPE

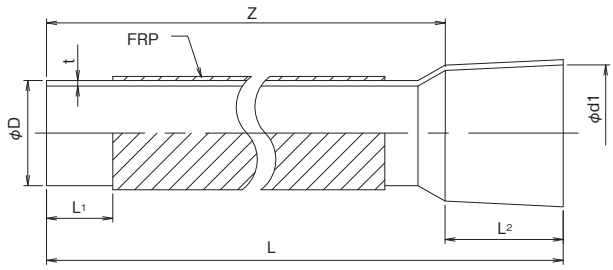
Pipe



Unit:mm

Size	φD	φd	t	L1	L	Weight (kg/m)		Item No.	
						ST	EX	ST	EX
16	22±0.2	16	2.7	40+10/-0	4000±10	0.45		FWV164E	
20	26±0.2	20	2.7	45+10/-0		0.55		FWV204E	
25	32±0.2	25	3.1	50+10/-0		0.75		FWV254E	
30	38±0.2	31	3.1	55+10/-0		0.80		FWV304E	
40	48±0.2	40	3.6	65+10/-0		1.20		FWV404E	
50	60±0.2	51	4.1	75+10/-0		1.60	1.85	FWV504S	FWV504E
65	76±0.3	67	4.1	75+10/-0		2.00	2.38	FWV654S	FWV654E
75	89±0.3	77	5.5	80+10/-0		2.95	3.35	FWV754S	FWV754E
100	114±0.4	100	6.6	100+10/-0		4.25	4.88	FWV1H4S	FWV1H4E
125	140±0.5	125	7.0	120+10/-0		5.63	6.33	FWV1Q4S	FWV1Q4E
150	165±0.5	146	8.9	150+10/-0		7.98	10.45	FWV1F4S	FWV1F4E
200	216±0.7	194	10.3	175+10/-5		12.00	14.98	FWV2H4S	FWV2H4E
250	267±0.9	240	12.7	205+10/-5		17.90	21.55	FWV2F4S	FWV2F4E
300	318±1.0	286	15.1	220+10/-5		24.83	29.40	FWV3H4S	FWV3H4E
350	370±1.2	348	10.5	270+10/-5		20.25	22.93	FWV3FA	FWV3FB
400	420±1.3	395	11.8	320+10/-5		25.50	29.50	FWV4HA	FWV4HB
450	470±1.5	442	13.2	370+10/-5		31.50	36.50	FWV4FA	FWV4FB
500	520±1.6	489	14.6	370+15/-5		38.25	46.00	FWV5HA	FWV5HB
600	630±3.2	592	17.8	420+15/-5		56.00	66.00	FWV6HA	FWV6HB

One sleeve end pipe



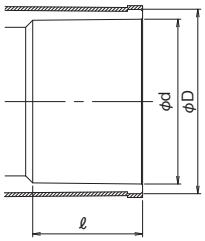
Unit:mm

Size	φD	φd1	t	L1	L2	Z	L	Weight(kg/pc)		Item No.	
								ST	EX	ST	EX
16	22±0.2	22.11±0.20	2.7	40+10/-0	20+4/-0.5	3970	3990±20	1.8		FWV16SE	
20	26±0.2	26.11±0.20	2.7	45+10/-0	24+4/-0.5	3966	3990±20	2.2		FWV20SE	
25	32±0.2	32.16±0.25	3.1	50+10/-0	27+4/-0.5	3963	3990±20	3.0		FWV25SE	
30	38±0.2	38.17±0.25	3.1	55+10/-0	30+4/-0.5	3955	3985±20	3.2		FWV30SE	
40	48±0.2	48.20±0.30	3.6	65+10/-0	37+4/-0.5	3948	3985±20	4.8		FWV40SE	
50	60±0.2	60.45±0.30	4.1	75+10/-0	50+4/-0.5	3935	3985±20	6.4	7.4	FWV50SS	FWV50SE
65	76±0.3	76.37±0.30	4.1	75+10/-0	50+4/-0.5	3935	3985±20	8.0	9.5	FWV65SS	FWV65SE
75	89±0.3	89.31±0.30	5.5	80+10/-0	50+4/-0.5	3935	3985±20	11.8	13.4	FWV75SS	FWV75SE
100	114±0.4	114.29±0.30	6.6	100+10/-0	61+4/-0.5	3919	3980±20	17.0	19.5	FWV1HSS	FWV1HSE
125	140±0.5	140.35±0.35	7.0	120+10/-0	75+4/-0.5	3905	3980±20	22.5	25.3	FWV1QSS	FWV1QSE
150	165±0.5	165.41±0.40	8.9	150+10/-0	95+4/-0.5	3885	3980±20	31.9	41.8	FWV1FSS	FWV1FSE
200	216±0.7	217.40±0.60	10.3	175+10/-5	155±5	3820	3975±30	48.0	59.9	FWV2HSS	FWV2HSE
250	267±0.9	268.60±0.60	12.7	205+10/-5	185±5	3790	3975±30	71.6	86.2	FWV2FSS	FWV2FSE
300	318±1.0	319.00±0.70	15.1	220+10/-5	185±5	3790	3975±30	99.3	117.6	FWV3HSS	FWV3HSE

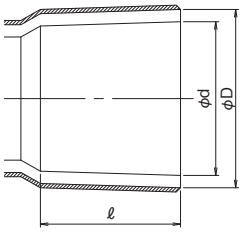
VPFW Fitting

Socket Dimension

A:Molding



B:Fabricated



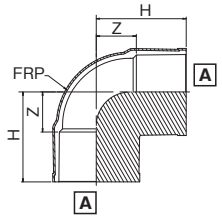
A:Molding Unit:mm

Size	φD	φd	ℓ
16	29	22.40±0.20	30
20	33	26.45±0.20	35
25	40	32.55±0.25	40
30	46	38.60±0.25	44
40	57	48.70±0.30	55
50	70	60.80±0.30	63
65	87	76.60±0.30	61
75	102	89.60±0.30	64
100	130	114.70±0.30	84
125	157	140.85±0.35	104
150	186	166.00±0.40	132
200	243	217.40±0.70	145
250	300	268.60±0.70	175
300	356	319.80±0.80	185

B:Fabricated Unit:mm

Size	φD	φd	ℓ
16	29	22.40±0.20	30
20	33	26.45±0.20	35
25	40	32.55±0.25	40
30	46	38.60±0.25	44
40	57	48.70±0.30	55
50	70	60.80±0.30	63
65	87	76.60±0.30	61
75	102	89.60±0.30	64
100	130	114.70±0.30	84
125	157	140.85±0.35	104
150	186	166.00±0.40	132
200	243	217.40±0.70	145
250	300	268.60±0.70	175
300	356	319.80±0.80	185
350	391	372.00±0.70	250
400	444	422.30±0.80	300
450	497	472.60±0.90	350
500	550	522.80±0.90	350
600	667	633.20±1.10	400

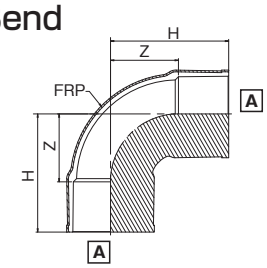
90° Elbow



Unit:mm

Size	H	Z	Weight (kg/pc)		Item No.		Socket Dimension
			ST	EX	ST	EX	
16	43	13	0.09		FTL16		A-A
20	50	15	0.12		FTL20		A-A
25	58	18	0.15		FTL25		A-A
30	65	21	0.20		FTL30		A-A
40	82	27	0.31		FTL40		A-A
50	96	33	0.53	0.53	FTL50	FTL50E	A-A
65	110	49	0.86	0.86	FTL65	FTL65E	A-A
75	120	56	1.29	1.29	FTL75	FTL75E	A-A
100	155	71	2.39	2.39	FTL1H	FTL1HE	A-A
125	187	83	4.26	4.26	FTL1Q	FTL1QE	A-A
150	230	98	7.06	7.06	FTL1F	FTL1FE	A-A
200	262	117	10.77	10.77	FTL2H	FTL2HE	A-A
250	318	143	17.39	17.39	FTL2F	FTL2FE	A-A
300	355	170	25.20	25.20	FTL3H	FTL3HE	A-A

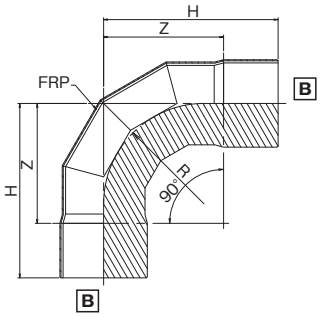
90° Bend



Unit:mm

Size	H	Z	Weight (kg/pc)		Item No.		Socket Dimension
			ST	EX	ST	EX	
200	341	196	7.9	10.1	FVL2HA	FVL2HB	A-A
250	428	253	13.2	15.5	FVL2FA	FVL2FB	A-A
300	441	256	15.0	17.7	FVL3HA	FVL3HB	A-A

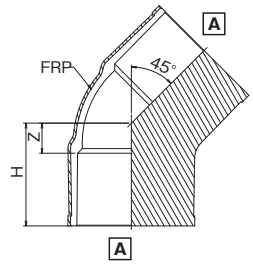
90° Miter Bend



Unit:mm

Size	H	Z	R	Weight (kg/pc)		Item No.		Socket Dimension
				ST	EX	ST	EX	
350	800	550	460	38	40	FVL3FA	FVL3FB	B-B
400	900	600	510	53	56	FVL4HA	FVL4HB	B-B
450	970	620	530	72	76	FVL4FA	FVL4FB	B-B
500	1030	680	560	87	92	FVL5HA	FVL5HB	B-B
600	1170	770	660	146	154	FVL6HA	FVL6HB	B-B

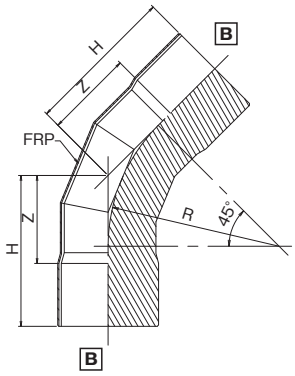
45° Elbow



Unit:mm

Size	H	Z	Weight (kg/pc)		Item No.		Socket Dimension
			ST	EX	ST	EX	
20	44	9	0.1		F4L20		A-A
25	51	11	0.1		F4L25		A-A
30	56	12	0.1		F4L30		A-A
40	69	14	0.3		F4L40		A-A
50	81	18	0.3	0.3	F4L50	F4L50E	A-A
65	94	33	0.7	0.7	F4L65	F4L65E	A-A
75	98	34	0.8	0.8	F4L75	F4L75E	A-A
100	123	39	1.5	1.5	F4L1H	F4L1HE	A-A
125	149	44	2.7	2.7	F4L1Q	F4L1QE	A-A
150	184	51	4.5	4.5	F4L1F	F4L1FE	A-A
200	205	60	8.2	8.2	F4L2HA	F4L2HB	A-A
250	254	79	13.9	13.9	F4L2FA	F4L2FB	A-A
300	280	95	20.8	20.8	F4L3HA	F4L3HB	A-A

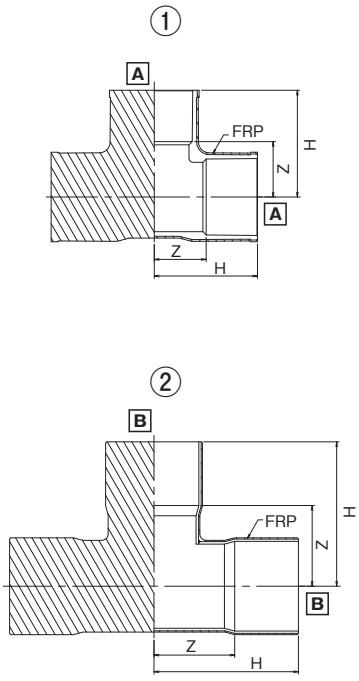
45° Miter Bend



Unit:mm

Size	H	Z	R	Weight (kg/pc)		Item No.		Socket Dimension
				ST	EX	ST	EX	
350	600	350	680	32	34	F4L3FA	F4L3FB	B-B
400	670	370	740	46	48	F4L4HA	F4L4HB	B-B
450	750	400	800	63	66	F4L4FA	F4L4FB	B-B
500	790	440	860	67	71	F4L5HA	F4L5HB	B-B
600	880	480	980	124	130	F4L6HA	F4L6HB	B-B

Tee

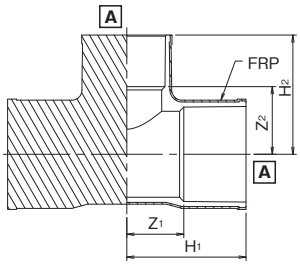


Unit:mm

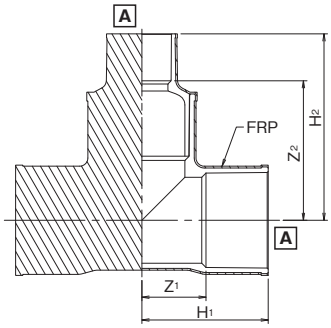
Size	H	Z	Weight (kg/pc)		Item No.		Socket Dimension	Drawing No.
			ST	EX	ST	EX		
16	43	13	0.12		FTT16		A-A	①
20	50	15	0.15		FTT20		A-A	①
25	58	18	0.19		FTT25		A-A	①
30	65	21	0.23		FTT30		A-A	①
40	82	27	0.41		FTT40		A-A	①
50	96	34	0.73	0.73	FTT50	FTT50E	A-A	①
65	110	49	1.15	1.15	FTT65	FTT65E	A-A	①
75	120	56	1.73	1.73	FTT75	FTT75E	A-A	①
100	152	68	3.33	3.33	FTT1H	FTT1HE	A-A	①
125	187	83	5.97	5.97	FTT1Q	FTT1QE	A-A	①
150	230	98	9.57	9.57	FTT1F	FTT1FE	A-A	①
200	267	122	8.8	11.2	FVT2HA	FVT2HB	A-A	①
250	355	180	14.1	16.2	FVT2FA	FVT2FB	A-A	①
300	410	225	17.6	21.1	FVT3HA	FVT3HB	A-A	①
350	600	350	45.0	48.0	FVT3FA	FVT3FB	B-B	②
400	680	380	64.0	67.0	FVT4HA	FVT4HB	B-B	②
450	760	410	83.0	88.0	FVT4FA	FVT4FB	B-B	②
500	810	460	85.0	90.0	FVT5HA	FVT5HB	B-B	②
600	930	530	140.0	148.0	FVT6HA	FVT6HB	B-B	②

Reducing Tee

①



②



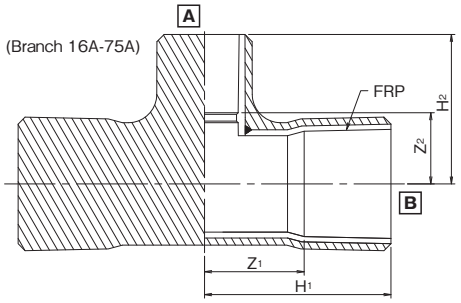
Unit:mm

Size	H1	Z1	H2	Z2	Weight (kg/pc)		Item No.		Socket Dimension	Drawing No.
					ST	EX	ST	EX		
20×16	48	13	45	15	0.15		FTT202		A-A	①
25×16	53	13	48	16	0.21		FTT252		A-A	①
25×20	55	15	53	18	0.21		FTT251		A-A	①
30×16	57	13	51	22	0.23		FTT303		A-A	①
30×20	59	15	56	20	0.23		FTT302		A-A	①
30×25	62	18	61	21	0.21		FTT301		A-A	①
40×16	68	13	57	25	0.40		FTT405		A-A	①
40×20	70	17	62	27	0.40		FTT404		A-A	①
40×25	73	18	67	27	0.34		FTT403		A-A	①
40×30	76	21	71	27	0.29		FTT402		A-A	①
50×16	76	13	63	33	0.66	0.66	FTT506	FTT506E	A-A	①
50×20	78	15	68	33	0.66	0.66	FTT505	FTT505E	A-A	①
50×25	81	18	73	33	0.43	0.43	FTT504	FTT504E	A-A	①
50×30	84	21	77	33	0.39	0.39	FTT503	FTT503E	A-A	①
50×40	90	27	88	33	0.57	0.57	FTT501	FTT501E	A-A	①
65×16	116	55	80	50	0.66	0.66	FTT656	FTT656E	A-B	③
65×20	121	60	85	50	0.73	0.73	FTT655	FTT655E	A-B	③
65×25	126	65	90	50	0.81	0.81	FTT654	FTT654E	A-B	③
65×30	126	65	94	50	0.91	0.91	FTT653	FTT653E	A-B	③
65×40	131	70	105	50	0.95	0.95	FTT652	FTT652E	A-B	③
65×50	101	40	104	41	1.01	1.01	FTT651	FTT651E	A-A	①
75×16	124	60	85	55	0.75	0.75	FTT758	FTT758E	A-B	③
75×20	129	65	90	55	0.85	0.85	FTT757	FTT757E	A-B	③
75×25	93	29	88	48	1.10	1.10	FTT756	FTT756E	A-A	①
75×30	134	70	99	55	1.10	1.10	FTT754	FTT754E	A-B	③
75×40	100	36	102	47	1.17	1.17	FTT753	FTT753E	A-A	①
75×50	105	41	110	47	1.48	1.48	FTT752	FTT752E	A-A	①
75×65	113	49	117	56	1.51	1.51	FTT751	FTT751E	A-A	①
100×16	149	65	100	70	0.90	0.90	FTT1H8	FTT1H8E	A-B	③
100×20	154	70	105	70	1.00	1.00	FTT1H7	FTT1H7E	A-B	③
100×25	159	75	110	70	1.10	1.10	FTT1H6	FTT1H6E	A-B	③
100×30	159	75	114	70	1.20	1.20	FTT1H5	FTT1H5E	A-B	③
100×40	164	80	125	70	1.40	1.40	FTT1H4	FTT1H4E	A-B	③
100×50	125	41	122	59	2.04	2.04	FTT1H3	FTT1H3E	A-A	①
100×65	179	95	131	70	1.80	1.80	FTT1H2	FTT1H2E	A-B	③
100×75	140	56	132	68	2.71	2.71	FTT1H1	FTT1H1E	A-A	①
125×16	174	70	110	80	2.40	2.40	FTT1Q9	FTT1Q9E	A-B	③
125×20	174	70	115	80	2.50	2.50	FTT1Q8	FTT1Q8E	A-B	③
125×25	179	75	120	80	2.70	2.70	FTT1Q7	FTT1Q7E	A-B	③
125×30	184	80	124	80	3.00	3.00	FTT1Q6	FTT1Q6E	A-B	③
125×40	189	85	135	80	3.30	3.30	FTT1Q5	FTT1Q5E	A-B	③
125×50	194	90	143	80	3.60	3.60	FTT1Q4	FTT1Q4E	A-B	③
125×65	204	100	141	80	4.10	4.10	FTT1Q3	FTT1Q3E	A-B	③

Unit:mm

Size	H1	Z1	H2	Z2	Weight (kg/pc)		Item No.		Socket Dimension	Drawing No.
					ST	EX	ST	EX		
125×75	209	105	144	80	4.50	4.50	FTT1Q2	FTT1Q2E	A-B	③
125×100	173	69	167	83	4.98	4.98	FTT1Q1	FTT1Q1E	A-A	①
150×16	212	80	125	95	4.90	4.90	FTT1F10	FTT1F0E	A-B	③
150×20	212	80	130	95	5.20	5.20	FTT1F9	FTT1F9E	A-B	③
150×25	217	85	135	95	5.50	5.50	FTT1F8	FTT1F8E	A-B	③
150×30	217	85	139	95	6.10	6.10	FTT1F7	FTT1F7E	A-B	③
150×40	222	90	150	95	6.40	6.40	FTT1F6	FTT1F6E	A-B	③
150×50	232	100	158	95	6.70	6.70	FTT1F5	FTT1F5E	A-B	③
150×65	237	105	156	95	7.10	7.10	FTT1F4	FTT1F4E	A-B	③
150×75	195	63	158	94	6.40	6.40	FTT1F3	FTT1F3E	A-A	①
150×100	208	76	182	98	7.44	7.44	FTT1F2	FTT1F2E	A-A	①
150×125	217	85	201	97	7.69	7.69	FTT1F1	FTT1F1E	A-A	①
200×16	240	85	150	120	5.3	5.6	FT2H12A	FT2H12B	A-B	③
200×20	240	85	155	120	5.6	5.9	FT2H11A	FT2H11B	A-B	③
200×25	245	90	160	120	5.9	6.2	FT2H10A	FT2H10B	A-B	③
200×30	250	95	164	120	6.2	6.5	FVT2H9A	FVT2H9B	A-B	③
200×40	255	100	175	120	6.6	6.9	FVT2H8A	FVT2H8B	A-B	③
200×50	260	105	183	120	6.9	7.3	FVT2H7A	FVT2H7B	A-B	③
200×65	270	115	181	120	7.3	7.6	FVT2H6A	FVT2H6B	A-B	③
200×75	275	120	184	120	7.6	8.0	FVT2H5A	FVT2H5B	A-B	③
200×100	218	73	200	116	7.7	9.8	FVT2H4A	FVT2H4B	A-A	①
200×125	300	145	274	170	8.5	8.9	FVT2H3A	FVT2H3B	B-B	④
200×150	245	100	257	125	9.8	10.3	FVT2H2A	FVT2H2B	A-A	①
250×16	280	95	175	145	7.9	8.3	FT2F12A	FT2F12B	A-B	③
250×20	285	100	180	145	8.3	8.7	FT2F11A	FT2F11B	A-B	③
250×25	285	100	185	145	8.7	9.2	FT2F10A	FT2F10B	A-B	③
250×30	290	105	189	145	9.2	9.7	FVT2F9A	FVT2F9B	A-B	③
250×40	295	110	200	145	9.7	10.2	FVT2F8A	FVT2F8B	A-B	③
250×50	300	115	208	145	10.2	10.7	FVT2F7A	FVT2F7B	A-B	③
250×65	310	125	206	145	10.7	11.3	FVT2F6A	FVT2F6B	A-B	③
250×75	315	130	209	145	11.3	11.9	FVT2F5A	FVT2F5B	A-B	③
250×100	246	91	225	141	11.9	12.5	FVT2F4A	FVT2F4B	A-A	①
250×125	340	155	299	195	12.5	13.2	FVT2F3A	FVT2F3B	B-B	④
250×150	355	180	524	392	13.2	13.9	FVT2F2A	FVT2F2B	A-A	②
250×200	335	160	335	190	13.9	14.6	FVT2F1A	FVT2F1B	A-A	①
300×16	290	105	200	170	10.2	10.7	FT3H13A	FT3H13B	A-B	③
300×20	295	110	205	170	10.7	11.5	FT3H12A	FT3H12B	A-B	③
300×25	295	110	210	170	11.5	12.5	FT3H11A	FT3H11B	A-B	③
300×30	300	115	214	170	12.1	12.6	FT3H10A	FT3H10B	A-B	③
300×40	305	120	225	170	12.6	13.3	FVT3H9A	FVT3H9B	A-B	③
300×50	310	125	233	170	13.3	14.0	FVT3H8A	FVT3H8B	A-B	③
300×65	320	135	231	170	14.5	14.7	FVT3H7A	FVT3H7B	A-B	③
300×75	325	140	234	170	14.7	15.5	FVT3H6A	FVT3H6B	A-B	③

③



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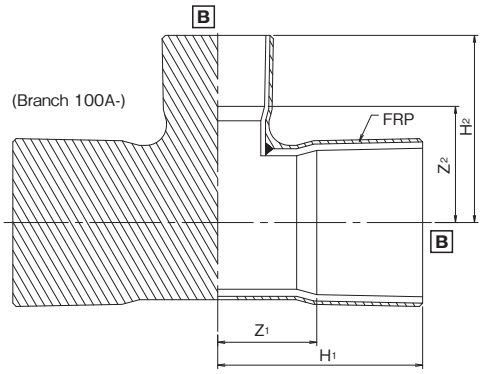


Unit:mm

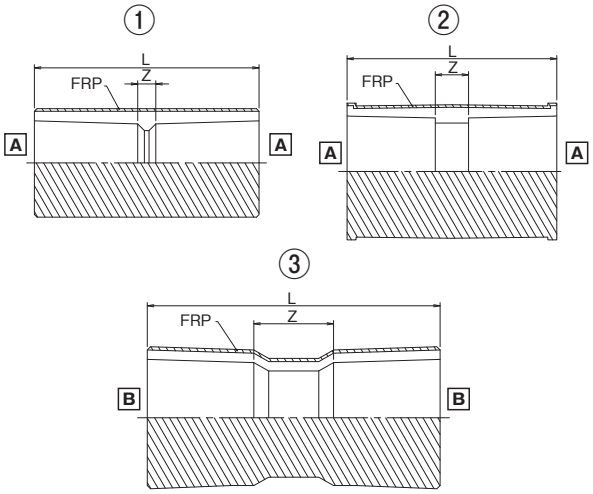
Size	H1	Z1	H2	Z2	Weight (kg/pc)		Item No.		Socket Dimension	Drawing No.
					ST	EX	ST	EX		
300×100	340	155	299	215	15.5	16.3	FVT3H5A	FVT3H5B	B-B	④
300×125	350	165	324	220	16.3	17.1	FVT3H4A	FVT3H4B	B-B	④
300×150	375	190	561	429	17.1	18.1	FVT3H3A	FVT3H3B	A-A	②
300×200	410	255	599	454	18.1	19.0	FVT3H2A	FVT3H2B	A-A	②
300×250	375	190	392	217	19.0	20.0	FVT3H1A	FVT3H1B	A-A	①
350×16	335	85	225	195	16.1	16.9	FT3F14A	FT3F14B	A-B	③
350×20	340	90	230	195	16.9	17.8	FT3F13A	FT3F13B	A-B	③
350×25	340	90	235	195	17.8	18.8	FT3F12A	FT3F12B	A-B	③
350×30	345	95	239	195	18.8	19.8	FT3F11A	FT3F11B	A-B	③
350×40	350	100	250	195	19.8	20.8	FT3F10A	FT3F10B	A-B	③
350×50	355	105	258	195	20.8	21.9	FVT3F9A	FVT3F9B	A-B	③
350×65	365	115	256	195	22.5	23.5	FVT3F8A	FVT3F8B	A-B	③
350×75	370	120	259	195	23.5	24.3	FVT3F7A	FVT3F7B	A-B	③
350×100	405	155	324	240	24.3	25.5	FVT3F6A	FVT3F6B	B-B	④
350×125	415	165	349	245	25.5	26.9	FVT3F5A	FVT3F5B	B-B	④
350×150	430	180	387	255	26.9	28.3	FVT3F4A	FVT3F4B	B-B	④
350×200	455	205	435	280	28.3	29.4	FVT3F3A	FVT3F3B	B-B	④
350×250	480	230	475	290	29.4	31.4	FVT3F2A	FVT3F2B	B-B	④
350×300	505	255	485	300	29.5	31.4	FVT3F1A	FVT3F1B	B-B	④
400×16	390	90	250	220	28.9	28.9	FT4H15A	FT4H15B	A-B	③
400×20	395	95	255	220	29.2	29.2	FT4H14A	FT4H14B	A-B	③
400×25	400	100	260	220	29.7	29.7	FT4H13A	FT4H13B	A-B	③
400×30	400	100	264	220	29.7	29.7	FT4H12A	FT4H12X	A-B	③
400×40	405	105	275	220	30.2	30.2	FT4H11A	FT4H11B	A-B	③
400×50	410	110	283	220	30.6	30.6	FT4H10A	FT4H10B	A-B	③
400×65	420	120	281	220	31.6	31.6	FVT4H9A	FVT4H9B	A-B	③
400×75	425	125	284	220	32.1	32.1	FVT4H8A	FVT4H8B	A-B	③
400×100	460	160	354	270	35.3	35.3	FVT4H7A	FVT4H7B	B-B	④
400×125	470	170	374	270	37.0	37.0	FVT4H6A	FVT4H6B	B-B	④
400×150	485	185	412	280	39.1	39.1	FVT4H5A	FVT4H5B	B-B	④
400×200	510	210	460	305	43.6	43.6	FVT4H4A	FVT4H4B	B-B	④
400×250	535	235	500	315	49.4	49.4	FVT4H3A	FVT4H3B	B-B	④
400×300	560	260	510	325	55.3	55.3	FVT4H2A	FVT4H2B	B-B	④
400×350	585	285	555	305	57.1	57.1	FVT4H1A	FVT4H1B	B-B	④
450×16	460	110	275	245	43.0	43.0	FT4F16A	FT4F16B	A-B	③
450×20	465	115	280	245	43.5	43.5	FT4F15A	FT4F15B	A-B	③
450×25	465	115	285	245	43.6	43.6	FT4F14A	FT4F14B	A-B	③
450×30	470	120	289	245	44.1	44.1	FT4F13A	FT4F13B	A-B	③
450×40	475	125	300	245	44.6	44.6	FT4F12A	FT4F12B	A-B	③
450×50	480	130	308	245	45.2	45.2	FT4F11A	FT4F11B	A-B	③
450×65	490	140	306	245	46.4	46.4	FT4F10A	FT4F10B	A-B	③
450×75	495	145	309	245	47.0	47.0	FVT4F9A	FVT4F9B	A-B	③
450×100	515	165	379	295	49.5	49.5	FVT4F8A	FVT4F8B	B-B	④

Unit:mm

Size	H1	Z1	H2	Z2	Weight (kg/pc)		Item No.		Socket Dimension	Drawing No.
					ST	EX	ST	EX		
450×125	525	175	399	295	51.4	51.4	FVT4F7A	FVT4F7B	B-B	④
450×150	540	190	437	305	53.9	53.9	FVT4F6A	FVT4F6B	B-B	④
450×200	565	215	485	330	58.8	58.8	FVT4F5A	FVT4F5B	B-B	④
450×250	590	240	525	340	65.3	65.3	FVT4F4A	FVT4F4B	B-B	④
450×300	615	265	535	350	71.8	71.8	FVT4F3A	FVT4F3B	B-B	④
450×350	640	290	580	330	74.0	74.0	FVT4F2A	FVT4F2B	B-B	④
450×400	665	315	635	335	81.3	81.3	FVT4F1A	FVT4F1B	B-B	④
500×16	465	115	300	270	52.4	52.4	FT5H17A	FT5H17B	A-B	③
500×20	470	120	305	270	53.0	53.0	FT5H16A	FT5H16B	A-B	③
500×25	470	120	310	270	53.0	53.0	FT5H15A	FT5H15B	A-B	③
500×30	475	125	314	270	53.6	53.6	FT5H14A	FT5H14X	A-B	③
500×40	480	130	325	270	54.3	54.3	FT5H13A	FT5H13B	A-B	③
500×50	490	140	333	270	55.5	55.5	FT5H12A	FT5H12B	A-B	③
500×65	495	145	331	270	56.3	56.3	FT5H11A	FT5H11B	A-B	③
500×75	505	155	334	270	57.6	57.6	FT5H10A	FT5H10B	A-B	③
500×100	555	205	404	320	63.9	63.9	FVT5H9A	FVT5H9B	B-B	④
500×125	570	220	424	320	66.6	66.6	FVT5H8A	FVT5H8B	B-B	④
500×150	585	235	462	330	69.4	69.4	FVT5H7A	FVT5H7B	B-B	④
500×200	610	260	510	355	75.0	75.0	FVT5H6A	FVT5H6B	B-B	④
500×250	640	290	550	365	82.5	82.5	FVT5H5A	FVT5H5B	B-B	④
500×300	660	310	560	375	89.1	89.1	FVT5H4A	FVT5H4B	B-B	④
500×350	685	335	605	355	91.8	91.8	FVT5H3A	FVT5H3B	B-B	④
500×400	710	360	660	360	99.6	99.6	FVT5H2A	FVT5H2B	B-B	④
500×450	735	385	715	365	109.1	109.1	FVT5H1A	FVT5H1B	B-B	④
600×16	535	135	355	325	89.7	89.7	FT6H18A	FT6H18B	A-B	③
600×20	540	140	360	325	90.6	90.6	FT6H17A	FT6H17B	A-B	③
600×25	540	140	365	325	90.6	90.6	FT6H16A	FT6H16B	A-B	③
600×30	545	145	369	325	91.5	91.5	FT6H15A	FT6H15B	A-B	③
600×40	550	150	380	325	92.5	92.5	FT6H14A	FT6H14B	A-B	③
600×50	555	155	388	325	93.5	93.5	FT6H13A	FT6H13B	A-B	③
600×65	565	165	386	325	95.5	95.5	FT6H12A	FT6H12B	A-B	③
600×75	575	175	389	325	97.3	97.3	FT6H11A	FT6H11B	A-B	③
600×100	625	225	499	415	106.6	106.6	FT6H10A	FT6H10B	B-B	④
600×125	640	240	519	415	110.3	110.3	FVT6H9A	FVT6H9B	B-B	④
600×150	650	250	557	425	113.2	113.2	FVT6H8A	FVT6H8B	B-B	④
600×200	675	275	585	430	120.3	120.3	FVT6H7A	FVT6H7B	B-B	④
600×250	700	300	625	440	129.1	129.1	FVT6H6A	FVT6H6B	B-B	④
600×300	725	325	635	450	138.0	138.0	FVT6H5A	FVT6H5B	B-B	④
600×350	755	355	680	430	142.9	142.9	FVT6H4A	FVT6H4B	B-B	④
600×400	780	380	735	435	152.3	152.3	FVT6H3A	FVT6H3B	B-B	④
600×450	805	405	790	440	164.7	164.7	FVT6H2A	FVT6H2B	B-B	④
600×500	830	430	815	465	176.0	176.0	FVT6H1A	FVT6H1B	B-B	④

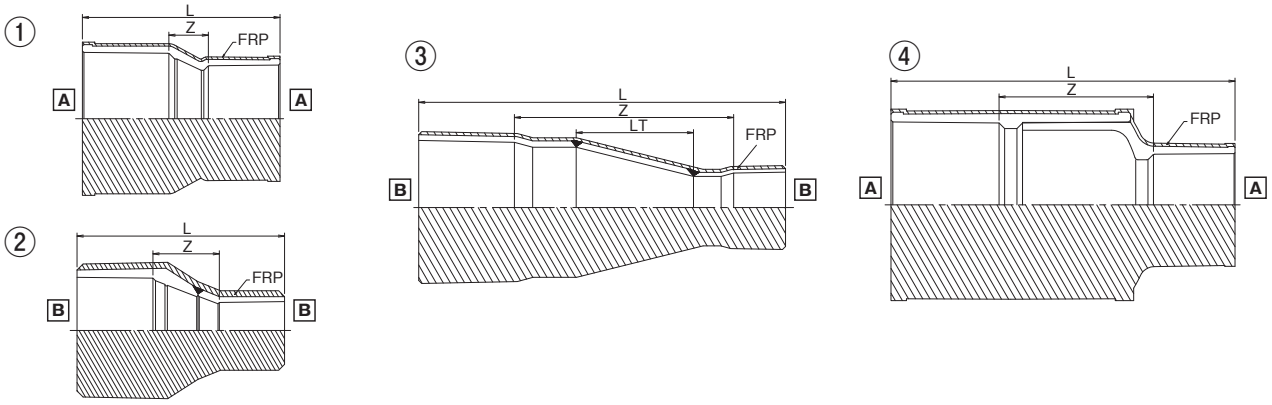
Coupling

Unit:mm



Size	L	Z	Weight (kg/pc)		Item No.		Socket Dimension	Drawing No.
			ST	EX	ST	EX		
16	67	7	0.07		FTS16		A-A	①
20	77	7	0.09		FTS20		A-A	①
25	87	7	0.11		FTS25		A-A	①
30	95	7	0.14		FTS30		A-A	①
40	117	7	0.23		FTS40		A-A	①
50	133	7	0.31	0.31	FTS50	FTS50E	A-A	①
65	145	23	0.51	0.51	FTS65	FTS65E	A-A	②
75	155	27	0.73	0.73	FTS75	FTS75E	A-A	②
100	200	32	1.47	1.47	FTS1H	FTS1HE	A-A	②
125	240	32	2.66	2.66	FTS1Q	FTS1QE	A-A	②
150	300	36	4.32	4.32	FTS1F	FTS1FE	A-A	②
200	300	10	4.00	5.00	FVS2HA	FVS2HB	A-A	②
250	384	34	6.00	7.00	FVS2FA	FVS2FB	A-A	②
300	408	38	7.70	9.00	FVS3HA	FVS3HB	A-A	②
350	610	110	17.00	18.00	FVS3FA	FVS3FB	B-B	③
400	720	120	24.00	26.00	FVS4HA	FVS4HB	B-B	③
450	830	130	32.00	34.00	FVS4FA	FVS4FB	B-B	③
500	830	130	36.00	38.00	FVS5HA	FVS5HB	B-B	③
600	930	130	59.00	62.00	FVS6HA	FVS6HB	B-B	③

Reducing Coupling



Unit:mm

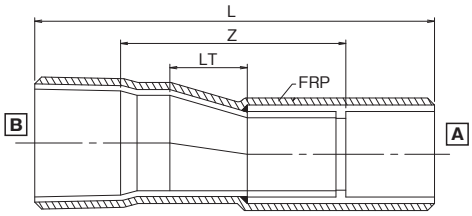
Size	L	Z	LT	Weight (kg/pc)		Item No.		Socket Dimension	Drawing No.
				ST	EX	ST	EX		
20×16	71	6	-	0.11		FTS201		A-A	①
25×16	85	15	-	0.10		FTS252		A-A	①
25×20	84	9	-	0.11		FTS251		A-A	①
30×16	94	20	-	0.11		FTS303		B-B	②
30×20	93	14	-	0.14		FTS302		A-A	①
30×25	93	9	-	0.11		FTS301		A-A	①
40×16	114	29	-	0.15		FTS405		B-B	②
40×20	113	23	-	0.23		FTS404		A-A	①
40×25	114	19	-	0.20		FTS403		A-A	①
40×30	114	15	-	0.19		FTS402		A-A	①
50×20	116	18	-	0.25	0.25	FTS505	FTS505E	A-A	①
50×25	140	37	-	0.29	0.29	FTS504	FTS504E	A-A	①
50×30	136	29	-	0.26	0.26	FTS503	FTS503E	A-A	①
50×40	136	18	-	0.31	0.31	FTS501	FTS501E	A-A	①
65×25	163	62	-	0.40	0.40	FTS654	FTS654E	B-B	②
65×30	159	54	-	0.45	0.45	FTS653	FTS653E	B-B	②
65×40	159	43	-	0.65	0.65	FTS652	FTS652E	B-B	②
65×50	149	25	-	0.53	0.53	FTS651	FTS651E	A-A	①
75×30	175	67	-	0.60	0.60	FTS754	FTS754E	B-B	②
75×40	175	56	-	0.65	0.65	FTS753	FTS753E	B-B	②
75×50	165	38	-	0.71	0.71	FTS752	FTS752E	A-A	①
75×65	159	34	-	0.72	0.72	FTS751	FTS751E	A-A	①
100×40	237	98	-	0.80	0.80	FTS1H4	FTS1H4E	B-B	②
100×50	227	80	-	0.95	0.95	FTS1H3	FTS1H3E	B-B	②
100×65	221	76	-	1.10	1.10	FTS1H2	FTS1H2E	B-B	②
100×75	190	42	-	1.26	1.26	FTS1H1	FTS1H1E	A-A	①
125×50	288	121	-	1.50	1.50	FTS1Q4	FTS1Q4E	B-B	②
125×65	282	117	-	1.80	1.80	FTS1Q3	FTS1Q3E	B-B	②
125×75	251	83	-	2.00	2.00	FTS1Q2	FTS1Q2E	B-B	②
125×100	229	41	-	2.13	2.13	FTS1Q1	FTS1Q1E	A-A	①
150×65	348	155	-	3.10	3.10	FTS1F4	FTS1F4E	B-B	②
150×75	317	121	-	3.30	3.30	FTS1F3	FTS1F3E	B-B	②
150×100	295	79	-	3.57	3.57	FTS1F2	FTS1F2E	A-A	①

Unit:mm

Size	L	Z	LT	Weight (kg/pc)		Item No.		Socket Dimension	Drawing No.
				ST	EX	ST	EX		
150×125	272	36	-	3.61	3.61	FTS1F1	FTS1F1E	A-A	①
200×75	609	390	237	11.5	13.5	FVS2H4A	FVS2H4B	B-B	③
200×100	594	355	190	10.5	11.5	FVS2H3A	FVS2H3B	B-B	③
200×125	574	315	142	9.5	11.5	FVS2H2A	FVS2H2B	B-B	③
200×150	368	91	-	7.5	8.5	FVS2H1A	FVS2H1B	A-A	①
250×100	734	465	286	20.5	22.5	FVS2F4A	FVS2F4B	B-B	③
250×125	714	425	237	17.5	20.5	FVS2F3A	FVS2F3B	B-B	③
250×150	557	250	-	15.5	17.5	FVS2F2A	FVS2F2B	A-A	④
250×200	400	80	-	14.5	15.5	FVS2F1A	FVS2F1B	A-A	①
300×125	824	535	332	32.5	35.5	FVS3H4A	FVS3H4B	B-B	③
300×150	605	288	-	28.5	31.5	FVS3H3A	FVS3H3B	A-A	④
300×200	601	271	-	25.5	28.5	FVS3H2A	FVS3H2B	A-A	④
300×250	435	75	-	22.5	25.5	FVS3H1A	FVS3H1B	A-A	①
350×150	992	610	383	33.5	36.5	FVS3F4A	FVS3F4B	B-B	③
350×200	945	540	287	30.5	33.5	FVS3F3A	FVS3F3B	B-B	③
350×250	895	460	192	27.5	30.5	FVS3F2A	FVS3F2B	B-B	③
350×300	820	385	97	25.0	27.5	FVS3F1A	FVS3F1B	B-B	③
400×200	1105	650	381	23.5	23.5	FVS4H4A	FVS4H4B	B-B	③
400×250	1055	570	286	28.7	28.7	FVS4H3A	FVS4H3B	B-B	③
400×300	980	495	190	33.7	33.7	FVS4H2A	FVS4H2B	B-B	③
400×350	970	420	93	36.5	36.5	FVS4H1A	FVS4H1B	B-B	③
450×250	1205	670	379	34.5	34.5	FVS4F4A	FVS4F4B	B-B	③
450×300	1125	590	284	40.4	40.4	FVS4F3A	FVS4F3B	B-B	③
450×350	1120	520	187	44.8	44.8	FVS4F2A	FVS4F2B	B-B	③
450×400	1095	445	93	52.0	52.0	FVS4F1A	FVS4F1B	B-B	③
500×300	1235	700	377	44.1	44.1	FVS5H4A	FVS5H4B	B-B	③
500×350	1220	620	280	49.1	49.1	FVS5H3A	FVS5H3B	B-B	③
500×400	1200	550	187	57.4	57.4	FVS5H2A	FVS5H2B	B-B	③
500×450	1165	465	93	66.3	66.3	FVS5H1A	FVS5H1B	B-B	③
600×350	1485	835	485	73.4	73.4	FVS6H4A	FVS6H4B	B-B	③
600×400	1470	770	392	84.0	84.0	FVS6H3A	FVS6H3B	B-B	③
600×450	1425	675	299	94.2	94.2	FVS6H2A	FVS6H2B	B-B	③
600×500	1350	600	205	103.8	103.8	FVS6H1A	FVS6H1B	B-B	③

Eccentric Reducer

①



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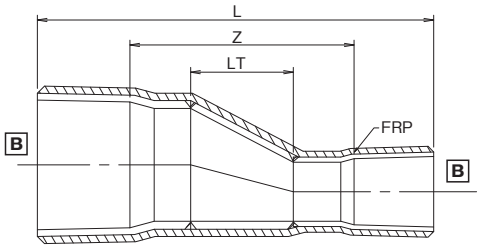


Unit:mm

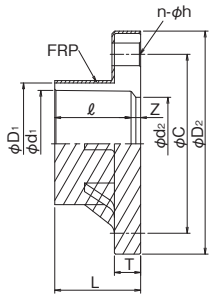
Size	L	Z	LT	Weight (kg/pc)		Item No.		Socket Dimension	Drawing No.
				ST	EX	ST	EX		
20×16	120	55	15	0.1		FTE201		A-B	①
25×16	145	75	37	0.1		FTE252		A-B	①
25×20	140	65	22	0.1		FTE251		A-B	①
30×20	164	85	44	0.2		FTE302		A-B	①
30×25	154	70	22	0.2		FTE301		A-B	①
40×16	185	100	45	0.2		FTE404		B-B	②
40×20	185	95	38	0.2		FTE403		B-B	②
40×25	204	109	59	0.3		FTE402		A-B	①
40×30	184	85	37	0.3		FTE401		A-B	①
50×20	218	120	59	0.3	0.3	FTE504	FTE504E	B-B	②
50×25	218	115	49	0.3	0.3	FTE503	FTE503E	B-B	②
50×30	242	135	81	0.5	0.5	FTE502	FTE502E	A-B	①
50×40	223	105	44	0.6	0.6	FTE501	FTE501E	A-B	①
65×25	246	145	76	0.6	0.6	FTE654	FTE654E	B-B	②
65×30	245	140	66	0.6	0.6	FTE653	FTE653E	B-B	②
65×40	281	165	103	0.8	0.8	FTE652	FTE652E	A-B	①
65×50	249	125	55	0.9	0.9	FTE651	FTE651E	A-B	①
75×30	278	170	88	0.9	0.9	FTE754	FTE754E	B-B	②
75×40	274	155	71	0.9	0.9	FTE753	FTE753E	B-B	②
75×50	307	180	110	1.3	1.3	FTE752	FTE752E	A-B	①
75×65	255	130	47	1.2	1.2	FTE751	FTE751E	A-B	①
100×40	344	205	114	1.5	1.5	FTE1H4	FTE1H4E	B-B	②
100×50	337	190	94	1.6	1.6	FTE1H3	FTE1H3E	B-B	②
100×65	375	230	139	2.2	2.2	FTE1H2	FTE1H2E	A-B	①
100×75	338	190	91	2.2	2.2	FTE1H1	FTE1H1E	A-B	①
125×50	412	245	139	2.8	2.8	FTE1Q4	FTE1Q4E	B-B	②
125×65	385	220	111	3.0	3.0	FTE1Q3	FTE1Q3E	B-B	②
125×75	458	290	188	4.1	4.1	FTE1Q2	FTE1Q2E	A-B	①
125×100	403	215	95	4.3	4.3	FTE1Q1	FTE1Q1E	A-B	①
150×65	468	275	154	4.3	4.3	FTE1F4	FTE1F4E	B-B	②
150×75	456	260	132	4.7	4.7	FTE1F3	FTE1F3E	B-B	②
150×100	526	310	188	6.4	6.4	FTE1F2	FTE1F2E	A-B	①
150×125	451	215	90	6.1	6.1	FTE1F1	FTE1F1E	A-B	①

Unit:mm

Size	L	Z	LT	Weight (kg/pc)		Item No.		Socket Dimension	Drawing No.
				ST	EX	ST	EX		
200×75	589	370	220	7.9	7.9	FTE2H4A	FTE2H4B	B-B	②
200×100	579	340	177	8.5	8.5	FTE2H3A	FTE2H3B	B-B	②
200×125	679	420	283	11.7	11.7	FTE2H2A	FTE2H2B	A-B	①
200×150	642	355	187	12.0	12.0	FTE2H1A	FTE2H1B	A-B	①
250×100	714	445	265	13.7	13.7	FTE2F4A	FTE2F4B	B-B	②
250×125	694	405	220	15.0	15.0	FTE2F3A	FTE2F3B	B-B	②
250×150	867	550	377	21.9	21.9	FTE2F2A	FTE2F2B	A-B	①
250×200	675	335	181	18.2	18.2	FTE2F1A	FTE2F1B	A-B	①
300×125	799	510	308	20.4	20.4	FTE3H4A	FTE3H4B	B-B	②
300×150	797	480	265	22.7	22.7	FTE3H3A	FTE3H3B	B-B	②
300×200	865	525	376	30.5	30.5	FTE3H2A	FTE3H2B	A-B	①
300×250	690	320	185	27.6	27.6	FTE3H1A	FTE3H1B	A-B	①
350×150	962	580	355	22.0	22.0	FTE3F4A	FTE3F4B	B-B	②
350×200	925	520	267	24.4	24.4	FTE3F3A	FTE3F3B	B-B	②
350×250	880	445	178	27.6	27.6	FTE3F2A	FTE3F2B	B-B	②
350×300	810	375	90	30.6	30.6	FTE3F1A	FTE3F1B	B-B	②
400×200	1075	620	353	31.9	31.9	FTE4H4A	FTE4H4B	B-B	②
400×250	1035	550	265	35.8	35.8	FTE4H3A	FTE4H3B	B-B	②
400×300	965	480	177	39.5	39.5	FTE4H2A	FTE4H2B	B-B	②
400×350	965	415	87	41.5	41.5	FTE4H1A	FTE4H1B	B-B	②
450×250	1180	645	352	45.3	45.3	FTE4F4A	FTE4F4B	B-B	②
450×300	1105	570	263	49.2	49.2	FTE4F3A	FTE4F3B	B-B	②
450×350	1105	505	173	52.0	52.0	FTE4F2A	FTE4F2B	B-B	②
450×400	1090	440	87	58.0	58.0	FTE4F1A	FTE4F1B	B-B	②
500×300	1210	675	350	57.6	57.6	FTE5H4A	FTE5H4B	B-B	②
500×350	1200	600	260	60.6	60.6	FTE5H3A	FTE5H3B	B-B	②
500×400	1185	535	173	67.3	67.3	FTE5H2A	FTE5H2B	B-B	②
500×450	1160	460	87	74.7	74.7	FTE5H1A	FTE5H1B	B-B	②
600×350	1450	800	450	96.3	96.3	FTE6H4A	FTE6H4B	B-B	②
600×400	1440	740	364	104.2	104.2	FTE6H3A	FTE6H3B	B-B	②
600×450	1405	655	277	112.0	112.0	FTE6H2A	FTE6H2B	B-B	②
600×500	1335	585	191	118.6	118.6	FTE6H1A	FTE6H1B	B-B	②

TS Flange

①



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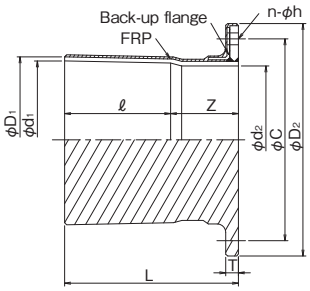


● JIS10K

Unit:mm

Size	φD1	φd1	ℓ	L	Z	φC	φD2		φd2	T		n-φh	Weight (kg/pc)		Item No.		Drawing No.
							ST	EX		ST	EX		ST	EX	ST	EX	
15	31	22.4	30	35	5	70	100	100	17	17	17	4-15	0.2		FTSF15		①
20	35	26.5	35	40	5	75	105	105	21	17	17	4-15	0.2		FTSF20		①
25	42	32.6	40	45	5	90	130	130	25	17	17	4-19	0.3		FTSF25		①
32	48	38.6	44	50	6	100	140	140	31	19	19	4-19	0.4		FTSF30		①
40	61	48.7	55	61	6	105	147	147	41	20	20	4-19	0.5		FTSF40		①
50	73	60.8	63	70	7	120	162	162	52	24	24	4-19	0.7	0.7	FTSF50	FTSF50E	①
65	88	76.6	61	70	9	140	182	182	67	26	26	4-19	0.9	0.9	FTSF65	FTSF65E	①
80	102	89.6	64	72	8	150	192	192	78	26	26	8-19	1.0	1.0	FTSF75	FTSF75E	①
100	132	114.7	84	90	6	175	219	219	100	27	27	8-19	1.5	1.5	FTSF1H	FTSF1HE	①
125	158	140.9	104	114	10	210	261	261	125	30	30	8-23	2.4	2.4	FTSF1Q	FTSF1QE	①
150	186	166.0	132	142	10	240	291	291	146	32	32	8-23	3.5	3.5	FTSF1F	FTSF1FE	①
200	238	217.5	155	166	11	290	339	339	196	33	33	12-23	5.5	5.8	FVF2HA	FVF2HB	①
250	289	268.8	185	198	13	355	409	409	247	35	35	12-25	8.3	8.7	FVF2FA	FVF2FB	①
300	344	319.0	185	203	18	400	454	454	298	37	37	16-25	11.1	11.6	FVF3HA	FVF3HB	①
350	391	372.0	250	410	160	445	496	498	348	29	32	16-25	12.0	13.0	FVF3FA	FVF3FB	②
400	444	422.3	300	470	170	510	566	568	395	29	32	16-27	26.0	27.0	FVF4HA	FVF4HB	②
450	497	472.6	350	530	180	565	626	630	442	29	33	20-27	34.0	35.0	FVF4FA	FVF4FB	②
500	550	522.8	350	540	190	620	681	685	489	34	38	20-27	43.0	44.0	FVF5HA	FVF5HB	②
600	667	633.2	400	610	210	730	802	807	592	40	44	24-33	62.0	64.0	FVF6HA	FVF6HB	②

● ANSI

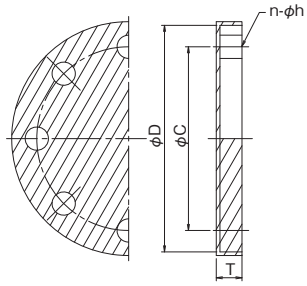
Unit:mm

Size	L	Z	φC	φD2		φd2	T		n-φh	Weight (kg/pc)		Item No.		Drawing No.
				ST	EX		ST	EX		ST	EX	ST	EX	
15	35	5	60.5	94	94	17	17	17	4-16	0.20		FTSFA15		①
20	40	5	70.0	104	104	21	17	17	4-16	0.20		FTSFA20		①
25	45	5	79.5	113	113	25	17	17	4-16	0.30		FTSFA25		①
32	50	6	89.0	123	123	31	19	19	4-16	0.39		FTSFA30		①
40	61	6	98.5	134	134	41	20	20	4-16	0.50		FTSFA40		①
50	70	7	120.0	159	159	52	24	24	4-20	0.70	0.70	FTSFA50	FVFA50E	①
65	70	9	139.5	185	185	67	26	26	4-20	0.91	0.91	FTSFA65	FVFA65E	①
80	72	8	152.5	198	198	78	26	26	4-20	0.96	0.96	FTSFA75	FVFA75E	①
100	90	6	190.5	238	238	100	27	27	8-20	1.45	1.45	FTSFA1H	FVFA1HE	①
125	114	10	216.0	261	261	125	30	30	8-22	2.39	2.39	FTSFA1Q	FVFA1QE	①
150	142	10	241.5	291	291	146	32	32	8-22	3.49	3.49	FTSFA1F	FVFA1FE	①
200	166	11	298.5	352	352	196	33	33	8-22	5.50	5.80	FVFA2HA	FVFA2HB	①
250	198	13	362.0	415	415	247	35	35	12-26	8.30	8.70	FVFA2FA	FVFA2FB	①
300	203	18	432.0	492	492	298	37	37	12-26	11.10	11.60	FVFA3HA	FVFA3HB	①
350	410	160	176.0	541	543	348	29	32	12-28	12.00	13.00	※	※	②
400	470	170	540.0	601	603	395	29	32	16-28	26.00	27.00	※	※	②
450	530	180	578.0	641	645	442	29	33	16-32	34.00	35.00	※	※	②
500	540	190	635.0	706	710	489	34	38	20-32	43.00	44.00	※	※	②
600	610	210	749.5	822	827	592	40	44	20-35	62.00	64.00	※	※	②

※Please contact us.

Blind Flange

①



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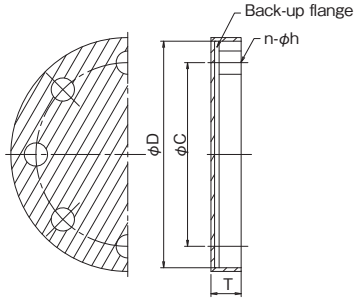


● JIS10K

Unit:mm

Size	φC	φD	T		n-φh	Weight (kg/pc)		Item No.		Drawing No.
			ST	EX		ST	EX	ST	EX	
15	70	95	16	16	4-15	0.21		FFSB15		①
20	75	100	18	18	4-15	0.23		FFSB20		①
25	90	125	18	18	4-19	0.32		FFSB25		①
32	100	135	20	20	4-19	0.40		FFSB30		①
40	105	140	20	20	4-19	0.51		FFSB40		①
50	120	155	21	21	4-19	0.65	0.65	FFSB50	FFSB50E	①
65	140	175	24	24	4-19	0.92	0.92	FFSB65	FFSB65E	①
80	150	185	24	24	8-19	0.96	0.96	FFSB80	FFSB80E	①
100	175	210	27	27	8-19	1.27	1.27	FFSB1H	FFSB1HE	①
125	210	250	29	29	8-23	2.08	2.08	FFSB1Q	FFSB1QE	①
150	240	280	33	33	8-23	2.91	2.91	FFSB1F	FFSB1FE	①
200	290	330	32	32	12-23	6.00	6.30	FFSB2HA	FFSB2HB	②
250	355	400	34	34	12-25	9.55	10.30	FFSB2FA	FFSB2FB	②
300	400	445	34	34	16-25	12.70	13.30	FFSB3HA	FFSB3HB	②
350	445	490	29	32	16-25	15.39	16.16	FFSB3FA	FFSB3FB	②
400	510	560	29	32	16-27	20.07	21.07	FFSB4HA	FFSB4HB	②
450	565	620	29	33	20-27	25.07	26.32	FFSB4FA	FFSB4FB	②
500	620	675	34	38	20-27	32.49	34.11	FFSB5HA	FFSB5HB	②
600	730	795	40	44	24-33	49.98	52.48	FFSB6HA	FFSB6HB	②

● ANSI

Unit:mm

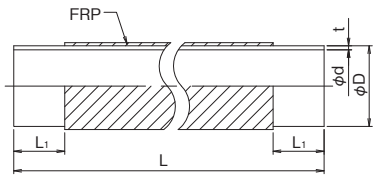
Size	φC	φD	T		n-φh	Weight (kg/pc)		Item No.		Drawing No.
			ST	EX		ST	EX	ST	EX	
15	60.3	89	16	16	4-16	0.21		FFSB15U		①
20	70.0	98	17	17	4-16	0.23		FFSB20U		①
25	79.5	108	19	19	4-16	0.32		FFSB25U		①
32	89.0	117	20	20	4-16	0.40		FFSB30U		①
40	98.5	127	22	22	4-16	0.51		FFSB40U		①
50	120.0	152	23	23	4-19	0.65	0.65	FFSB50U	FSB50UE	①
65	140.0	178	28	28	4-19	0.92	0.92	FFSB65U	FSB65UE	①
80	152.5	191	30	30	4-20	0.96	0.96	FFSB80U	FSB80UE	①
100	190.5	229	33	33	8-20	1.27	1.27	FFSB1HU	FSB1HUE	①
125	216.0	254	35	35	8-22	2.08	2.08	FFSB1QU	FSB1QUE	①
150	240.0	282	37	37	8-22	2.91	2.91	FFSB1FU	FSB1FUE	①
200	298.5	343	38	38	8-22	6.00	6.30	FSB2HUA	FSB2HUB	②
250	362.0	406	38	38	12-26	9.55	10.03	FSB2FUA	FSB2FUB	②
300	432.0	483	38	38	12-26	12.70	13.30	FSB3HUA	FSB3HUB	②
350	476.0	533	29	32	12-28	15.39	16.00	※	※	②
400	540.0	597	29	32	16-28	20.07	21.07	※	※	②
450	578.0	635	29	33	16-32	25.07	26.32	※	※	②
500	635.0	699	34	38	20-32	32.49	34.11	※	※	②
600	749.5	813	40	44	20-35	47.98	52.48	※	※	②

※Please contact us.

HTFW SPECIFICATIONS

HTFW PIPE

■ Pipe

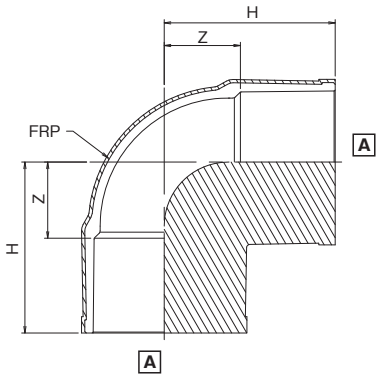


Unit:mm

Size	φD	φd	t	L1	L	Weight (kg/pc)	Item No.	
							T-17	P-10
16	22 ±0.1	16	3.0	40 10/-0	4000±10	0.49	FWT164H	FWP164H
20	26 ±0.1	20	3.0	45 10/-0	4000±10	0.59	FWT204H	FWP204H
25	32 ±0.1	25	3.5	50 10/-0	4000±10	0.82	FWT254H	FWP254H
30	38 ±0.1	31	3.5	55 10/-0	4000±10	0.87	FWT304H	FWP304H
40	48 ±0.1	40	4.0	60 10/-0	4000±10	1.28	FWT404H	FWP404H
50	60 ±0.15	51	4.5	75 10/-0	4000±10	1.69	FWT504H	FWP504H
65	76 ±0.2	67	5.0	80 10/-0	4000±10	2.23	FWT654H	FWP654H
75	89 ±0.25	77	5.8	90 10/-0	4000±10	3.07	FWT754H	FWP754H
100	114 ±0.25	100	7.0	110 10/-0	4000±10	4.45	FWT1H4H	FWP1H4H
125	140 ±0.4	125	8.2	130 10/-0	4000±10	6.39	FWT1Q4H	FWP1Q4H
150	165 ±0.45	146	9.7	155 10/-0	4000±10	9.43	FWT1F4H	FWP1F4H
200	216 ±0.8	194	11.0	175 10/-5	4000±10	13.08	FWH2H4N	FWP2H4H
250	267 ±1.0	240	13.6	205 10/-5	4000±10	19.14	FWH2F4N	FWP2F4H
300	318 ±1.1	286	16.2	220 10/-5	4000±10	27.22	FWH3H4N	FWP3H4H

HTFW Fitting

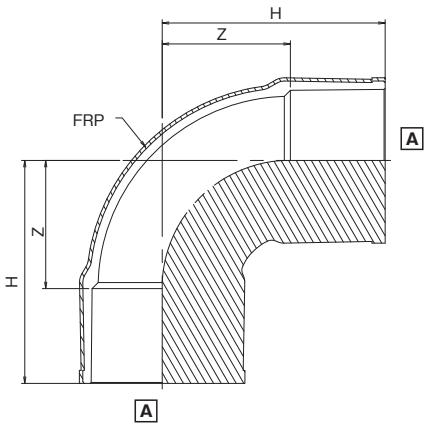
■ 90° Elbow



Unit:mm

Size	H	Z	Weight (kg/pc)	Item No.
16	41.0	14.0	0.09	FHTL16
20	53.0	20.0	0.12	FHTL20
25	58.0	20.0	0.15	FHTL25
30	64.0	22.0	0.20	FHTL30
40	74.0	27.0	0.30	FHTL40
50	85.0	33.0	0.48	FHTL50
65	114.0	44.0	0.85	FHTL65
75	123.5	44.5	1.31	FHTL75
100	156.0	63.0	2.58	FHTL1H
125	189.0	83.0	4.43	FHTL1Q
150	230.0	98.0	7.52	FHTL1F
200	261.5	116.5	11.60	FWTSL2H
250	317.8	142.8	19.40	FWTSL2F
300	355.0	170.0	28.60	FWTSL3H

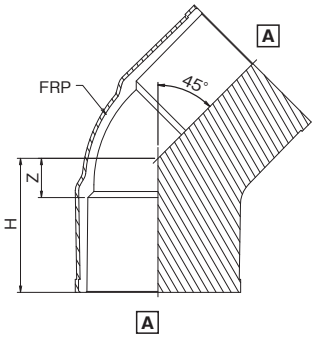
■ 90° Bend



Unit:mm

Size	H	Z	Weight (kg/pc)	Item No.
200	341	196	15.94	FWTL2H
250	428	253	26.77	FWTL2F
300	441	256	39.22	FWTL3H

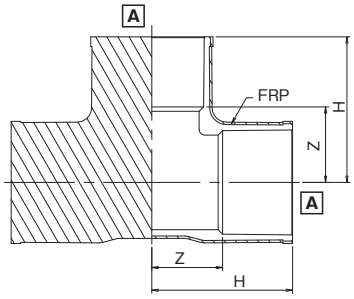
45° Elbow



Unit:mm

Size	H	Z	Weight (kg/pc)	Item No.
16	33	6	0.06	FHT4L16
20	44	11	0.10	FHT4L20
25	50	12	0.14	FHT4L25
30	53	11	0.16	FHT4L30
40	61	14	0.23	FHT4L40
50	80	28	0.42	FHT4L50
65	94	24	0.67	FHT4L65
75	98	23	0.88	FHT4L75
100	123	29	1.56	FHT4L1H
125	149	45	3.15	FHT4L1Q
150	184	52	5.19	FHT4L1F
200	205	60	12.19	FWT4L2H
250	254	79	21.11	FWT4L2F
300	280	95	30.66	FWT4L3H

Tee

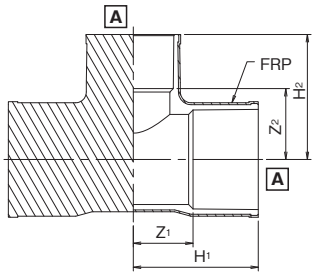


Unit:mm

Size	H	Z	Weight (kg/pc)	Item No.
16	41	14	0.12	FHTT16
20	53	20	0.15	FHTT20
25	58	20	0.21	FHTT25
30	64	22	0.23	FHTT30
40	75	28	0.40	FHTT40
50	87	35	0.66	FHTT50
65	114	44	1.25	FHTT65
75	124	49	1.69	FHTT75
100	156	62	3.42	FHTT1H
125	189	85	6.35	FHTT1Q
150	230	98	9.49	FHTT1F
200	267	122	17.77	FWTT2H
250	355	180	35.10	FWTT2F
300	410	225	55.14	FWTT3H

■ Reducing Tee

①



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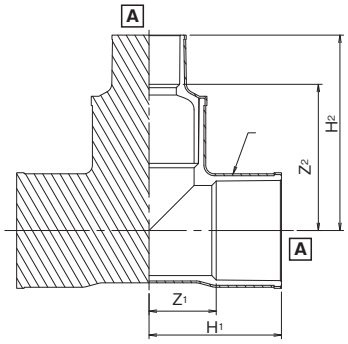

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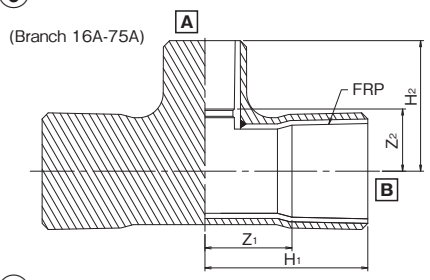

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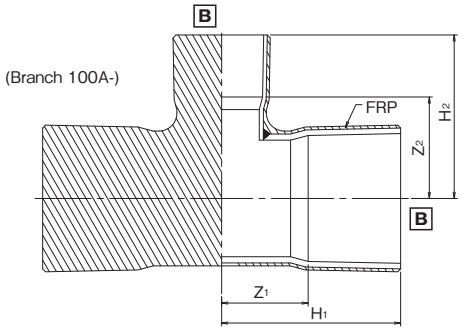


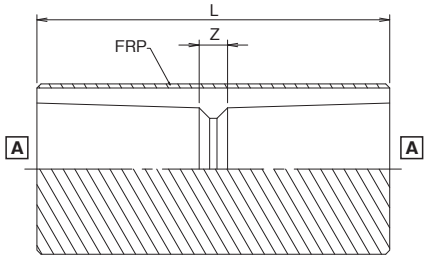
Unit:mm

Size	H_1	Z_1	H_2	Z_2	Weight (kg/pc)	Item No.	Socket Dimension	Drawing No.
20×16	47	14	43	14	0.15	FHTT201	A-A	①
25×16	52	14	46	19	0.21	FHTT252	A-A	①
25×20	54	16	52	19	0.21	FHTT251	A-A	①
30×16	56	14	49	22	0.23	FHTT303	A-A	①
30×20	58	16	55	22	0.23	FHTT302	A-A	①
30×25	60	18	60	22	0.20	FHTT301	A-A	①
40×16	63	16	54	27	0.26	FHTT405	A-A	①
40×20	65	18	60	27	0.28	FHTT404	A-A	①
40×25	68	21	65	27	0.35	FHTT403	A-A	①
40×30	72	25	69	27	0.31	FHTT402	A-A	①
50×16	70	18	60	33	0.53	FHTT506	A-A	①
50×20	72	20	70	37	0.53	FHTT505	A-A	①
50×25	75	23	75	37	0.53	FHTT504	A-A	①
50×30	79	27	75	33	0.48	FHTT503	A-A	①
50×40	82	30	80	33	0.63	FHTT502	A-A	①
65×16	114	44	147	117	1.25	FHTT657	A-A	②
65×20	114	44	153	118	1.28	FHTT656	A-A	②
65×25	114	44	157	117	1.28	FHTT655	A-A	②
65×30	114	44	157	117	1.28	FHTT654	A-A	②
65×40	114	44	172	127	1.30	FHTT652	A-A	②
65×50	114	44	181	131	1.34	FHTT651	A-A	②
75×20	124	49	162	127	1.65	FHTT757	A-A	②
75×25	124	49	168	128	1.78	FHTT756	A-A	②
75×30	124	49	168	128	1.78	FHTT755	A-A	②
75×40	124	49	183	138	1.80	FHTT753	A-A	②
75×50	124	49	191	141	1.84	FHTT752	A-A	②
75×65	124	49	190	129	1.80	FHTT751	A-A	②
100×20	156	62	194	159	3.65	FHTT1H8	A-A	②
100×25	156	62	200	160	3.65	FHTT1H7	A-A	②
100×30	156	62	200	160	3.65	FHTT1H6	A-A	②
100×40	156	62	204	159	3.68	FHTT1H4	A-A	②
100×50	156	62	210	160	3.71	FHTT1H3	A-A	②
100×65	156	62	223	162	3.40	FHTT1H2	A-A	②
100×75	156	62	239	167	3.80	FHTT1H1	A-A	②
125×20	189	85	229	194	5.70	FHTT1Q8	A-A	②
125×25	189	85	235	195	5.70	FHTT1Q7	A-A	②
125×50	189	85	245	195	5.80	FHTT1Q4	A-A	②
125×65	189	85	255	194	5.90	FHTT1Q3	A-A	②
125×75	189	85	269	197	6.10	FHTT1Q2	A-A	②
125×100	189	85	288	196	6.20	FHTT1Q1	A-A	②
150×20	230	98	273	238	8.60	FHTT1F9	A-A	②

Unit:mm

Size	H_1	Z_1	H_2	Z_2	Weight (kg/pc)	Item No.	Socket Dimension	Drawing No.
150×25	230	98	278	238	8.60	FHTT1F8	A-A	②
150×75	230	98	317	245	8.90	FHTT1F3	A-A	②
150×100	230	98	331	239	9.20	FHTT1F2	A-A	②
150×125	230	98	342	238	9.40	FHTT1F1	A-A	②
200×16	240	85	152	125	6.00	FWT2H11	A-B	③
200×20	240	85	158	125	6.00	FWT2H10	A-B	③
200×25	245	90	163	125	6.20	FWT2H9	A-B	③
200×30	250	95	167	125	6.30	FWTT2H8	A-B	③
200×40	255	100	172	125	6.50	FWTT2H7	A-B	③
200×50	260	105	177	125	6.00	FWTT2H6	A-B	③
200×65	270	115	200	130	6.60	FWTT2H5	A-B	③
200×75	275	120	205	130	7.20	FWTT2H4	A-B	③
200×100	218	73	200	116	7.98	FWTT2H2	A-A	①
200×125	295	140	282	170	8.70	FWTT2H3	B-B	④
200×150	245	100	257	125	6.16	FWTT2H1	A-A	①
250×16	280	95	177	150	10.70	FWT2F12	A-B	③
250×20	285	100	183	150	10.90	FWT2F11	A-B	③
250×25	285	100	188	150	10.90	FWT2F10	A-B	③
250×30	290	105	192	150	11.10	FWTT2F9	A-B	③
250×40	295	110	197	150	11.30	FWTT2F8	A-B	③
250×50	300	115	202	150	11.60	FWTT2F7	A-B	③
250×65	310	125	225	155	12.10	FWTT2F6	A-B	③
250×75	315	130	235	160	12.37	FWTT2F5	A-B	③
250×100	330	145	282	190	13.35	FWTT2F4	B-B	④
250×125	340	155	307	195	14.30	FWTT2F3	B-B	④
250×150	355	180	524	392	14.28	FWTT2F2	A-A	②
250×200	335	160	335	190	15.00	FWTT2F1	A-A	①
300×16	290	105	202	175	15.50	FWT3H13	A-B	③
300×20	295	110	208	175	15.80	FWT3H12	A-B	③
300×25	295	110	213	175	15.80	FWT3H11	A-B	③
300×30	300	115	217	175	16.10	FWT3H10	A-B	③
300×40	305	120	222	175	16.40	FWTT3H9	A-B	③
300×50	310	125	227	175	16.70	FWTT3H8	A-B	③
300×65	320	135	250	180	17.40	FWTT3H7	A-B	③
300×75	325	140	260	185	17.75	FWTT3H6	A-B	③
300×100	340	155	307	215	19.00	FWTT3H5	B-B	④
300×125	350	165	332	220	20.00	FWTT3H4	B-B	④
300×150	375	190	561	429	20.50	FWTT3H3	A-A	②
300×200	410	225	599	454	22.50	FWTT3H2	A-A	②
300×250	375	190	392	217	33.12	FWTT3H1	A-A	①

Coupling

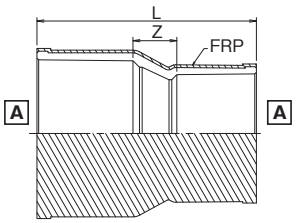


Unit:mm

Size	L	Z	Weight (kg/pc)	Item No.
16	59	5	0.07	FHTS16
20	71	5	0.09	FHTS20
25	82	6	0.11	FHTS25
30	89	5	0.13	FHTS30
40	99	5	0.22	FHTS40
50	109	5	0.27	FHTS50
65	145	5	0.48	FHTS65
75	154	8	0.79	FHTS75
100	200	12	1.73	FHTS1H
125	232	24	2.73	FHTS1Q
150	300	36	4.54	FHTS1F
200	300	10	6.20	FWTS2H
250	384	34	11.65	FWTS2F
300	408	38	15.52	FWTS3H

Reducing Coupling

①



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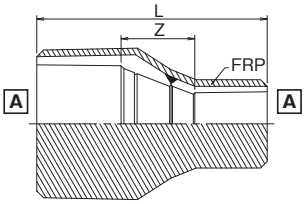

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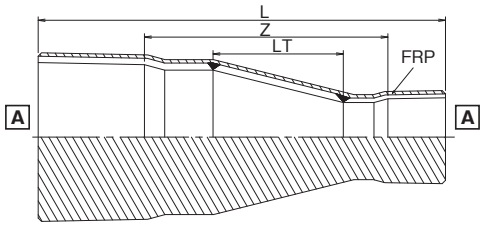

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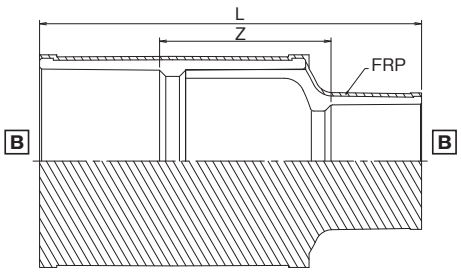


Unit:mm

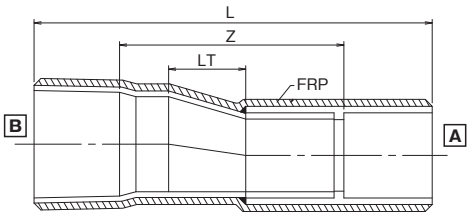
Size	L	Z	LT	Weight (kg/pc)	Item No.	Socket Dimension	Drawing No.
20×16	66	6	-	0.09	FHTS201	A-A	①
25×16	76	11	-	0.11	FHTS252	A-A	①
25×20	80.5	9.5	-	0.11	FHTS251	A-A	①
30×20	85	10	-	0.14	FHTS302	A-A	①
30×25	90	10	-	0.14	FHTS301	A-A	①
40×20	98	18	-	0.20	FHTS404	A-A	①
40×25	100	15	-	0.17	FHTS403	A-A	①
40×30	97	8	-	0.19	FHTS402	A-A	①
50×16	103	10	-	0.30	FHTS505	A-A	②
50×20	109	11	-	0.32	FWTS505	A-A	②
50×25	110	20	-	0.26	FHTS504	A-A	①
50×30	110	16	-	0.31	FHTS503	A-A	①
50×40	110	11	-	0.31	FHTS501	A-A	①
65×20	113	17	-	0.40	FHTS655	A-A	②
65×25	119	18	-	0.40	FHTS653	A-A	②
65×30	119	18	-	0.50	FHTS654	A-A	②
65×40	134	28	-	0.62	FHTS652	A-A	②
65×50	142	31	-	0.36	FHTS651	A-A	②
75×20	132	25	-	0.80	FHTS756	A-A	②
75×25	138	26	-	0.80	FHTS755	A-A	②
75×30	138	26	-	0.80	FHTS754	A-A	②
75×40	142	25	-	0.97	FHTS753	A-A	②
75×50	148	26	-	0.98	FHTS752	A-A	②
75×65	161	28	-	0.56	FHTS751	A-A	②
100×20	144	17	-	1.30	FHTS1H8	A-A	②

Unit:mm

Size	L	Z	LT	Weight (kg/pc)	Item No.	Socket Dimension	Drawing No.
100×25	150	18	-	1.68	FHTS1H7	A-A	②
100×50	160	18	-	0.89	FHTS1H3	A-A	②
100×65	170	17	-	0.76	FHTS1H2	A-A	②
100×75	184	20	-	0.76	FHTS1H1	A-A	②
125×20	175	36	-	2.00	FHTS1Q8	A-A	②
125×25	180	36	-	2.00	FHTS1Q7	A-A	②
125×75	219	43	-	2.20	FHTS1Q2	A-A	②
125×100	233	37	-	1.62	FHTS1Q1	A-A	②
150×20	343	176	-	3.30	FHTS1F9	A-A	③
150×25	348	176	-	3.30	FHTS1F8	A-A	③
150×75	387	183	-	9.33	FHTS1F3	A-A	③
150×100	401	177	-	9.64	FHTS1F2	A-A	③
150×125	412	176	-	9.90	FHTS1F1	A-A	③
200×75	617	390	237	7.60	FWTS2H4	B-B	④
200×100	602	355	190	7.85	FWTS2H2	B-B	④
200×125	582	315	142	8.10	FWTS2H3	B-B	④
200×150	368	91	-	9.34	FWTS2H1	A-A	③
250×100	742	465	286	13.30	FWTS2F4	B-B	④
250×125	722	425	237	13.50	FWTS2F3	B-B	④
250×150	557	250	-	16.80	FWTS2F2	A-A	②
250×200	400	80	-	15.30	FWTS2F1	A-A	③
300×125	832	535	332	20.50	FWTS3H4	B-B	④
300×150	605	288	-	32.70	FWTS3H3	A-A	②
300×200	601	271	-	29.55	FWTS3H2	A-A	②
300×250	435	75	-	21.70	FWTS3H1	A-A	③

■ TS Eccentric Reducer

①



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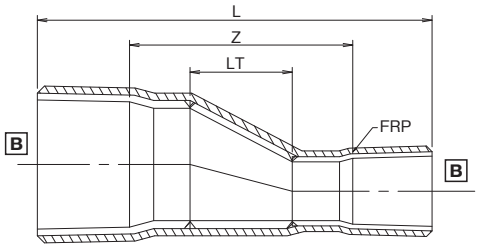
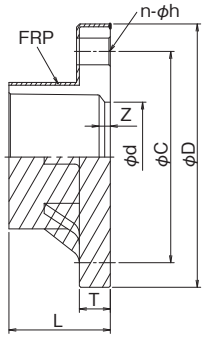


Unit:mm

Size	L	Z	LT	Weight (kg/pc)	Item No.	Socket Dimension	Drawing No.
20×16	115	55	15	0.10	FTES201	A-B	①
25×20	136	65	22	0.11	FTES251	A-B	①
30×25	150	70	22	0.10	FTES301	A-B	①
40×16	174	100	45	0.20	FTES404	B-B	②
40×20	175	95	38	0.20	FTES403	B-B	②
40×25	175	90	28	0.20	FTES402	B-B	②
40×30	174	85	37	0.20	FTES401	A-B	①
50×20	205	120	59	0.30	FTES504	B-B	②
50×25	205	115	49	0.33	FTES503	B-B	②
50×30	194	100	38	0.30	FTES502	B-B	②
50×40	204	105	44	0.50	FTES501	A-B	①
65×25	252	145	76	0.60	FTES654	B-B	②
65×30	251	140	66	0.60	FTES653	B-B	②
65×40	236	120	49	0.70	FTES652	B-B	②
65×50	246	125	55	0.80	FTES651	A-B	①
75×30	284	170	88	0.90	FTES754	B-B	②
75×40	274	155	71	0.90	FTES753	B-B	②
75×50	259	135	50	0.98	FTES752	B-B	②
75×65	272	130	47	1.00	FTES751	A-B	①
100×40	344	205	114	1.50	FTES1H4	B-B	②
100×50	334	190	94	1.50	FTES1H3	B-B	②
100×65	331	170	66	1.60	FTES1H2	B-B	②
100×75	357	190	91	1.78	FTES1H1	A-B	①
125×50	409	245	139	3.10	FTES1Q4	B-B	②
125×65	401	220	111	3.10	FTES1Q3	B-B	②
125×75	394	210	88	3.30	FTES1Q2	B-B	②
125×100	421	215	95	3.70	FTES1Q1	A-B	①
150×65	484	275	154	4.60	FTES1F4	B-B	②
150×75	472	260	132	4.60	FTES1F3	B-B	②
150×100	462	230	88	4.90	FTES1F2	B-B	②
150×125	459	215	90	5.20	FTES1F1	A-B	①
200×75	597	370	220	8.30	FTES2H4	B-B	②
200×100	587	340	177	8.30	FTES2H3	B-B	②
200×125	572	305	134	9.10	FTES2H2	B-B	②
200×150	650	363	187	9.95	FTES2H1	A-B	①
250×100	722	445	265	14.60	FTES2F4	B-B	②
250×125	702	405	220	14.60	FTES2F3	B-B	②
250×150	700	375	177	16.80	FTES2F2	B-B	②
250×200	675	335	181	15.57	FTES2F1	A-B	①
300×125	807	510	308	22.40	FTES3H4	B-B	②
300×150	805	480	265	22.70	FTES3H3	B-B	②
300×200	750	410	177	23.90	FTES3H2	B-B	②
300×250	720	350	185	22.90	FTES3H1	A-B	①

■ TS Flange



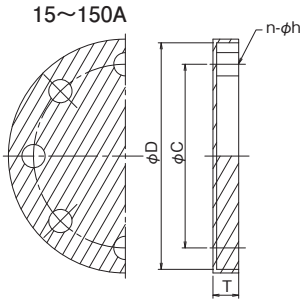
● JIS10K Unit:mm

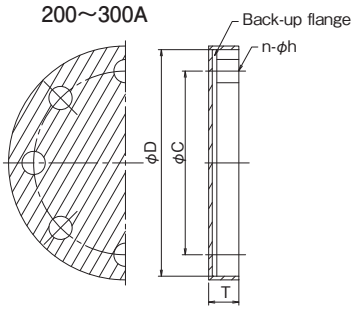
Size	L	Z	φC	φD	φd	T	n-φh	Weight (kg/pc)	Item No.
15	35	5	70	101	17	17	4-15	0.22	FHTF15
20	40	5	75	106	21	17	4-15	0.24	FHTF20
25	45	5	90	131	25	17	4-19	0.32	FHTF25
32	50	6	100	141	31	19	4-19	0.40	FHTF30
40	61	6	105	146	41	21	4-19	0.53	FHTF40
50	70	7	120	161	52	25	4-19	0.75	FHTF50
65	70	9	140	181	67	27	4-19	1.02	FHTF65
80	72	8	150	191	78	27	8-19	1.05	FHTF75
100	90	6	175	216	100	29	8-19	1.55	FHTF1H
125	114	10	210	256	125	33	8-23	2.40	FHTF1Q
150	142	10	240	286	146	35	8-23	3.55	FHTF1F
200	166	11	290	335	196	31	12-23	5.78	FHTF2H
250	198	13	355	405	247	33	12-25	8.82	FHTF2F
300	203	18	400	450	298	35	16-25	14.56	FHTF3H

● ANSI Unit:mm

Size	L	Z	φC	φD	φd	T	n-φh	Weight (kg/pc)	Item No.
15	35	5	60.5	95.0	17	15	4-16	0.22	FHTFA15
20	40	5	70.0	104.0	21	16	4-16	0.24	FHTFA20
25	45	5	79.5	114.0	25	18	4-16	0.32	FHTFA25
32	50	6	89.0	123.5	31	19	4-16	0.40	FHTFA30
40	61	6	98.5	133.0	41	23	4-16	0.53	FHTFA40
50	70	7	120.0	161.0	52	25	4-19	0.75	FHTFA50
65	70	9	140.0	181.0	67	27	4-19	1.02	FHTFA65
80	72	8	152.5	197.0	78	29	4-20	1.05	FHTFA75
100	90	6	190.5	235.0	100	31	8-20	1.55	FHTFA1H
125	114	10	216.0	260.0	125	33	8-22	2.40	FHTFA1Q
150	142	10	240.0	286.0	146	35	8-22	3.55	FHTFA1F
200	166	11	298.5	348.0	196	32	8-22	5.78	FHTFA2H
250	198	13	362.0	411.0	247	34	12-26	8.82	FHTFA2F
300	203	18	432.0	488.0	298	35	12-26	14.56	FHTFA3H

■ Blind Flange





● JIS10K Unit:mm

Size	φC	ΦD	T	n-φh	Weight (kg/pc)	Item No.
15	70	95	14.0	4-15	0.2	FTFB15
20	75	100	16.0	4-15	0.3	FTFB20
25	90	125	16.5	4-19	0.3	FTFB25
32	100	135	19.0	4-19	0.4	FTFB30
40	105	140	19.0	4-19	0.5	FTFB40
50	120	155	21.5	4-19	0.6	FTFB50
65	140	175	23.5	4-19	0.9	FTFB65
80	150	185	23.5	8-19	1.0	FTFB80
100	175	210	23.5	8-19	1.5	FTFB1H
125	210	250	25.5	8-23	2.4	FTFB1Q
150	240	280	27.5	8-23	3.7	FTFB1F
200	290	330	29.5	12-23	4.2	FTFB2H
250	355	400	31.5	12-25	6.6	FTFB2F
300	400	445	29.0	16-25	7.9	FTFB3H

● ANSI Unit:mm

Size	φC	ΦD	T	n-φh	Weight (kg/pc)	Item No.
15	60.5	89	14.5	4-16	0.17	FTFB15U
20	70.0	98	15.5	4-16	0.21	FTFB20U
25	79.5	108	17.5	4-16	0.32	FTFB25U
32	89.0	117	18.5	4-16	0.42	FTFB30U
40	98.5	127	20.5	4-16	0.45	FTFB40U
50	120.5	152	22.0	4-19	0.64	FTFB50U
65	139.5	178	27.0	4-19	0.96	FTFB65U
80	152.5	191	29.0	4-19	1.04	FTFB80U
100	190.5	229	31.5	8-19	1.57	FTFB1HU
125	216.0	254	33.5	8-22	2.33	FTFB1QU
150	241.5	282	37.0	8-22	3.67	FTFB1FU
200	298.5	343	37.0	8-22	6.42	FTFB2HU
250	362.0	406	37.0	12-25	10.18	FTFB2FU
300	432.0	483	37.0	12-25	13.48	FTFB3HU

ESLON VPFW·HTFW INSTALLATION METHOD

Check the application instructions for details.

Cutting Pipe

Confirm the pipe's cutting length, taking the length of the fitting spigot into account. Use a magic marker to mark the pipe's cutting length with a right-angled line on the pipe axis. Use a hacksaw or electric circular saw to cut a right angle, following the cutting line to ensure there are no notches or spaces.

Cutting FRP Layer

Determine the length to be stripped, and mark a right-angled circular line on the pipe axis using a magic marker. To cut the FRP layer, use a hacksaw (machine, circular saw) or angle grinder, going from the marked circular line to the tip of the pipe to diagonally connect the two points. Only cut into the FRP layer. Be careful not to cut the PVC pipe.

Heat FRP Layer

Use a gas burner to quickly and uniformly heat the stripped FRP area, using the diagonal line connecting the circular strip line and the tip of the pipe as a starting point.

Strip FRP Layer

After heating, take needle nose or regular pliers and place at the starting point between the FRP layer. Swiftly strip away the entire FRP layer.

Sand Connection Surface

After stripping off the FRP layer, cleanly remove any leftover primer or FRP layer from the stripped area using sandpaper, a belt sander, or a sanding disk to treat the surface.

Sand FRP Reinforcement Area

Use sandpaper or a belt sander to treat the surface of the FRP reinforcement area between of the pipe and coupling, as this area is highly adhesive.

Chamfer Pipe

Failure to chamfer the tip of the pipe insertion area will cause the solvent cement to scrape off at time of insertion. Use a chamfering tool, flat file, or belt sander to chamfer the surface at a 45 degree angle. Sand, water, dust, or leftover FRP residue in the connection area will decrease the adhesive strength. Clean the area with a shop cloth, followed by an acetone cleaning treatment.

Coat with Solvent Cement

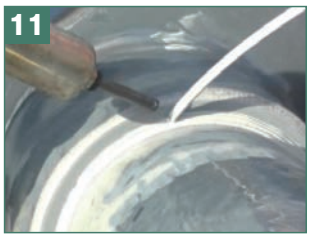
Measure the length of the spigot of the fitting, then mark the pipe with a line. As best as possible, quickly coat both sides of the pipe and fitting with a thin, uniform layer of solvent cement.

Insert Pipe

After coating with solvent cement, quickly insert the pipe in a single motion without stopping. Push the pipe to the insertion line and maintain pressure. Cleanly wipe off any protruding solvent cement with a shop cloth.

Surface Treatment

Any remaining burns marks from the burner or solvent cement on the joint can cause the joint to malfunction or the tip of the joint to lose adhesive strength. Use a scraper, file, or welding gun to remove such protrusions until the surface of the pipe is cleanly exposed. Any dust or dirt stuck to the pipe can decrease adhesive strength. Use acetone to clean the connection area.



PVC Welding Rod

Hold the welding rod at a 45 degree angle at a distance of 10-20 mm from the weld surface. Preheat both the welding rod and the weld surface, then bring the two together once the surface has become viscous. Next, stand the welding rod at a right angle and move the welding gun back and forth to complete the weld, applying heat at a ratio of 6 x 4 (pipe material x welding rod).

Coat Primer

Clean the surface of the reinforced FRP area with acetone. Coat any PVC material protruding from the reinforced FRP area with primer.

FRP Reinforcement

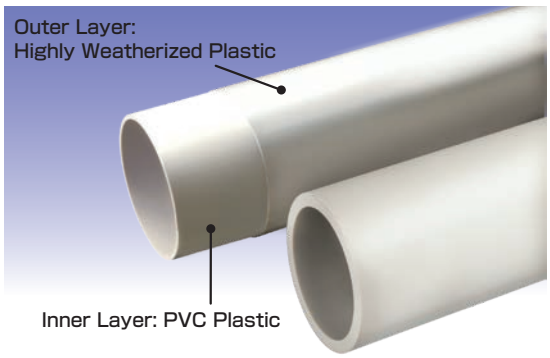
① Coat the entire reinforced area with polyester resin.
② Lay out a cardboard sheet, then set down the glass fiber. Use a brush or roller to coat the polyester resin onto the glass fiber.
③ Wrap the first layer of the glass fiber.
④ Wrap the second layer of the glass fiber.
⑤ Perform a hand lay-up process on the third layer (and all following layers).
⑥ Wrap the tricot tape.
⑦ Wrap the surface mat.

ESLON™ UVS-VP

Outer layer coated with UV resistant weatherproofed plastic achieves high weather resistance for outdoor use.

Reducing the material's susceptibility to UV-degradation increases the product's lifespan.

Highly weatherized plastic and PVC layer creates a durable body that is resistant to peeling. This eliminates the need to maintain the coating.



Recommended solvent cements

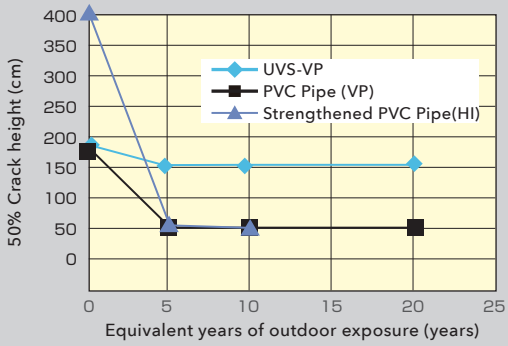
NO.100S

Primer P-810

*Refer to page 60 to confirm usability with other solvent cements.

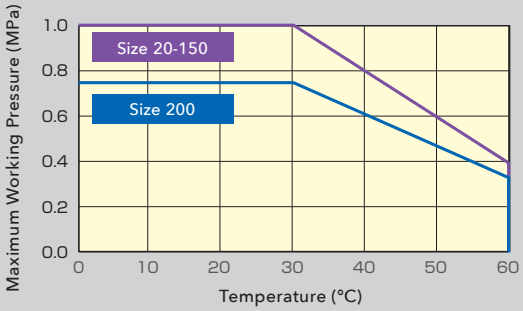
Weatherproof Test (Impact Strength)

Outdoor exposure tests (equivalent to 20 years of exposure) showed an impact strength reduction of approximately 15%.



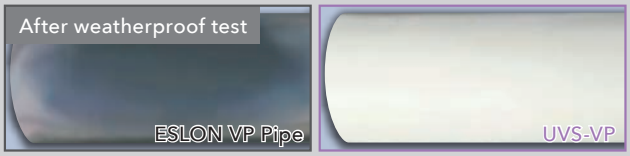
<Test method> Diameter Size: 50A, Weight: 3kg flat shape,Temperature: 0°C

Maximum Working Pressure



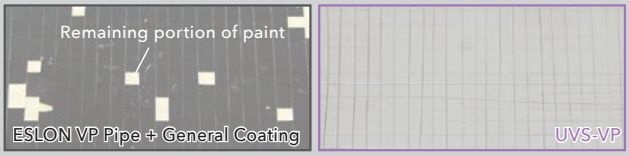
Weatherproof Test (Exterior)

Material degradation and exterior discoloring were reduced.



Peeling Test*

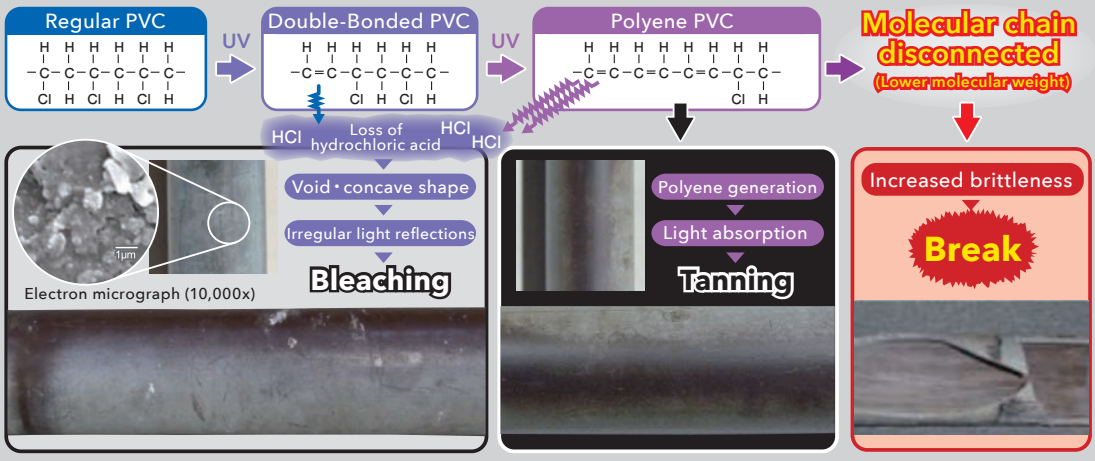
Demonstrates that the weatherproof layer is resistant to peeling.
<Notches are made in the sample, and tape is applied and peeled off 5 times>



Significant peeling　　Absolutely no peeling

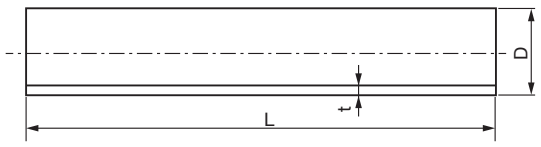
*Reference: JIS K5600-5-6 Crosscut Method Evaluation

UV Degradation Mechanism of PVC exposured Pipe



UVS-VP SPECIFICATIONS

Pipe



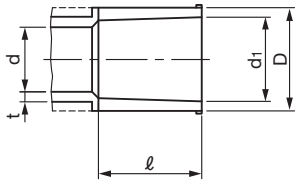
⚠ Important Notes

Please don't use it for water pipe.

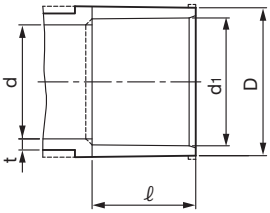
Unit:mm

Size	D	t	L	Weight (kg/m)	Item No.
20	26	2.7	4000±10	0.310	UV204S
25	32	3.1		0.448	UV254S
40	48	3.6		0.791	UV404S
50	60	4.1		1.122	UV504S
65	76	4.1		1.445	UV654S
75	89	5.5		2.202	UV754S
100	114	6.6		3.409	UV1H4S
125	140	7.0		4.464	UV1Q4S
150	165	8.9		6.701	UV1F4S
200	216	10.3		10.129	UV2H4S

Socket Dimension



20～50A

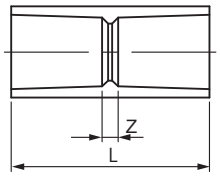


65～200A

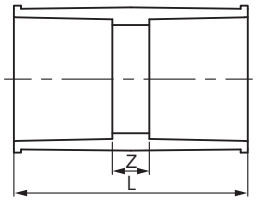
Unit:mm

Size	D	t	d1	ℓ	d
20	33	3.5	26.45	35	20
25	40	4.0	32.55	40	25
40	57	4.5	48.70	55	40
50	70	5.0	60.80	63	51
65	87	6.6	76.60	61	67
75	102	8.0	89.60	64	77
100	130	10.0	114.70	84	100
125	157	11.0	140.85	104	125
150	186	13.0	166.00	132	146
200	243	13.0	217.40	145	196

Coupling



20～50A

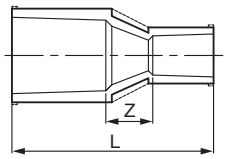


65～200A

Unit:mm

Size	L	Z (Ref.)	Weight (kg/pc)	Item No.
20	77	7	0.040	UVS20
25	87	7	0.061	UVS25
40	117	7	0.142	UVS40
50	133	7	0.210	UVS50
65	145	23	0.366	UVS65
75	155	27	0.515	UVS75
100	200	32	1.077	UVS1H
125	240	24	1.715	UVS1Q
150	300	36	2.846	UVS1F
200	300	10	3.557	UVS2H

Reducing Coupling

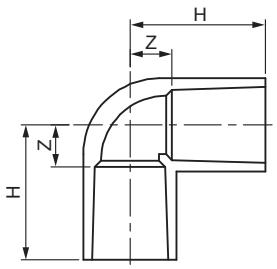


Unit:mm

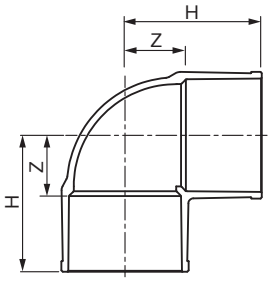
Size	L	Z (Ref.)	Weight (kg/pc)	Item No.
25×20	84	9	0.053	UVS251
40×20	113	23	0.095	UVS404
40×25	114	19	0.110	UVS403
50×20	116	18	0.160	UVS505
50×25	140	37	0.180	UVS504
50×40	136	18	0.185	UVS501
65×50	149	25	0.336	UVS651

Size	L	Z (Ref.)	Weight (kg/pc)	Item No.
75×50	165	38	0.450	UVS752
75×60	159	34	0.487	UVS751
100×75	190	42	0.890	UVS1H1
125×100	229	41	1.531	UVS1Q1
150×100	295	79	2.348	UVS1F2
150×125	272	36	2.369	UVS1F1
200×150	368	91	3.947	UVS2H1

90° Elbow



20～50A

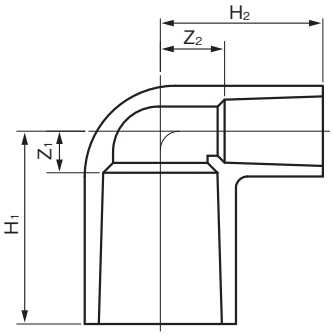


65～200A

Unit：mm

Size	H	Z (Ref.)	Weight (kg/pc)	Item No.
20	50.0	15	0.050	UVL20
25	58.0	18	0.076	UVL25
40	82.0	27	0.201	UVL40
50	96.0	33	0.309	UVL50
65	110.0	49	0.536	UVL65
75	120.0	56	0.803	UVL75
100	155.0	71	1.653	UVL1H
125	187.0	83	2.760	UVL1Q
150	230.0	98	4.584	UVL1F
200	261.5	116	6.600	UVL2H

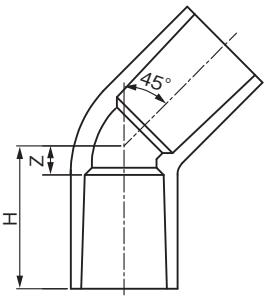
Reducing Elbow



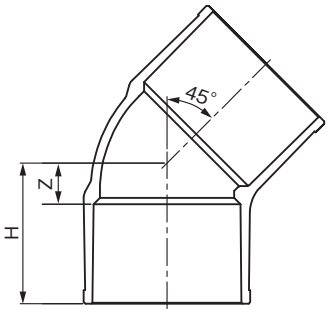
Unit：mm

Size	H_1	Z_1 (Ref.)	H_2	Z_2 (Ref.)	Weight (kg/pc)	Item No.
25×20	55	15	53	18	0.064	UVL251

45° Elbow



20～50A

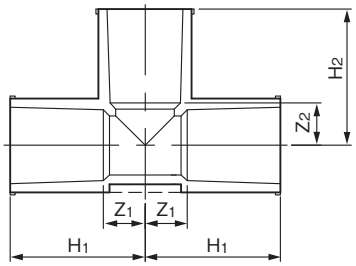


65～200A

Unit：mm

Size	H	Z (Ref.)	Weight (kg/pc)	Item No.
20	44	9	0.039	UV4L20
25	51	11	0.068	UV4L25
40	69	14	0.142	UV4L40
50	81	18	0.245	UV4L50
65	94	33	0.515	UV4L65
75	98	34	0.660	UV4L75
100	123	39	1.262	UV4L1H
125	149	44	1.970	UV4L1Q
150	184	51	3.445	UV4L1F
200	205	60	5.600	UV4L2H

Tee

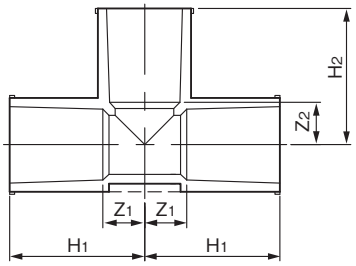


Unit：mm

Size	H_1 ／ H_2	Z_1 ／ Z_2 (Ref.)	Weight (kg/pc)	Item No.
20	50	15	0.070	UVT20
25	58	18	0.119	UVT25
40	82	27	0.276	UVT40
50	96	34	0.443	UVT50
65	110	49	0.769	UVT65
75	120	56	1.158	UVT75
100	152	68	2.254	UVT1H
125	187	83	3.980	UVT1Q
150	230	98	6.365	UVT1F
200	267	122	8.189	UVT2H

Reducing Tee

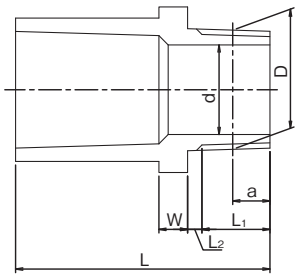
Unit：mm

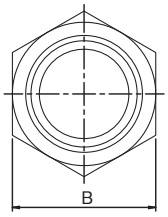


Size	H_1	H_2	Z_1 (Ref.)	Z_2 (Ref.)	Weight (kg/pc)	Item No.
25×20	55	53	15	18	0.091	UVT251
40×20	70	62	17	27	0.182	UVT404
40×25	73	67	18	27	0.208	UVT403
50×20	78	68	15	33	0.280	UVT505
50×25	81	73	18	33	0.283	UVT504
50×40	90	88	27	33	0.345	UVT501
65×50	101	104	40	41	0.616	UVT651
75×25	93	88	29	48	0.670	UVT756
75×40	100	102	36	47	0.816	UVT753
75×50	105	110	41	47	0.907	UVT752
75×65	113	117	49	56	1.012	UVT751
100×50	125	122	41	59	1.486	UVT1H3
100×75	140	132	56	68	1.818	UVT1H1
125×100	173	167	69	83	3.317	UVT1Q1
150×75	195	158	63	94	4.246	UVT1F3
150×100	208	182	76	98	4.954	UVT1F2
150×125	217	201	85	97	5.125	UVT1F1
200×75	201	180	56	116	5.575	UVT2H4
200×100	218	200	73	116	6.500	UVT2H3
200×150	245	257	100	125	8.400	UVT2H1

Male Adapter (Production to order)

Unit:mm

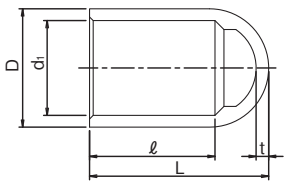




Size	d	Threaded section						L2	W	L	B	Weight (kg/pc)	Item No.
		Nominal	Standard outer dia. D1	Number of screw threads (per 25.4 mm)	Standard dia. position a	Tolerance for a	Effective thread length L1						
20	18	R3/4	26.441	14	9.53	±1.81	17	3.5	8	64	33	0.023	UVVS20
25	23	R1	33.249	11	10.39	±2.31	19	4.0	8	71	40	0.047	UVVS25
40	37	R1·1/2	47.803	11	12.70	±2.31	22	5.0	10	92	57	0.100	UVVS40
50	48	R2	59.614	11	15.88	±2.31	26	5.0	12	106	70	0.168	UVVS50
65	63	R2·1/2	75.184	11	17.50	±6.90	30	6.0	14	119	91	0.272	UVVS65
75	74	R3	87.884	11	20.60	±6.90	34	6.0	16	128	108	0.402	UVVS75
100	96	R4	113.03	11	25.40	±6.90	40	7.0	18	157	135	0.765	UVVS1H

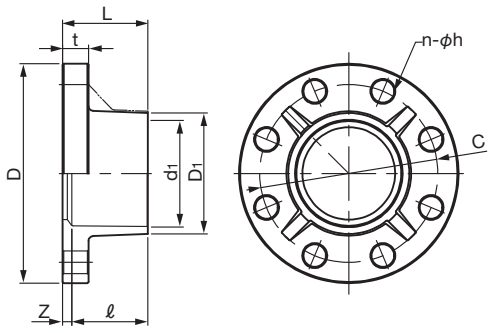
Cap (Production to order)

Unit:mm



Size	D	d1	L	ℓ	t	Weight (kg/pc)	Item No.
20	33.0	26.45	50.0	35.0	3.5	0.025	UVC20
25	40.0	32.55	58.5	40.0	4.0	0.039	UVC25
40	57.0	48.70	82.0	55.0	4.5	0.091	UVC40
50	70.0	60.80	96.5	63.0	5.0	0.146	UVC50
75	102.0	89.60	105.0	64.0	8.0	0.442	UVC75
100	130.0	114.70	138.0	84.0	10.0	0.775	UVC1H

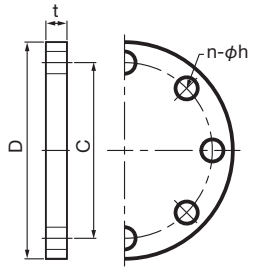
Flange



Unit:mm

Size A	Size B	d1	ℓ	D1	L	Z	C	D	t	n-φh	Weight (kg/pc)	Item No.
20	3/4	26.5	35	35	40	5	75	100	14	4-15	0.150	UVF20
25	1	32.6	40	42	45	5	90	125	14	4-19	0.235	UVF25
40	1-1/2	48.7	55	61	61	6	105	140	16	4-19	0.360	UVF40
50	2	60.8	63	73	70	7	120	155	20	4-19	0.520	UVF50
65	2-1/2	76.6	61	88	70	9	140	175	22	4-19	0.710	UVF65
80	3	89.6	64	102	72	8	150	185	22	8-19	0.745	UVF80
100	4	114.7	84	132	90	6	175	210	22	8-19	1.140	UVF1H
125	5	140.9	104	158	114	10	210	250	24	8-23	1.670	UVF1Q
150	6	166.0	132	186	142	10	240	280	26	8-23	2.530	UVF1F
200	8	217.5	155	238	166	11	290	330	28	12-23	3.620	UVF2H

Blind Flange (Production to order)



Unit:mm

Size A	Size B	D	t	C	n-φh	Applicable Bolt		Weight (kg/pc)	Item No.
20	3/4	100	14	75	4-15	M12	50	0.229	UFSB20
25	1	125	14	90	4-19	M16	55	0.310	UFSB25
40	1-1/2	140	16	105	4-19	M16	60	0.335	UFSB40
50	2	155	16	120	4-19	M16	70	0.417	UFSB50
65	2-1/2	175	18	140	4-19	M16	75	0.606	UFSB65
80	3	185	18	150	8-19	M16	75	0.651	UFSB80
100	4	210	18	175	8-19	M16	80	0.856	UFSB1H
125	5	250	20	210	8-23	M20	80	1.345	UFSB1Q
150	6	280	22	240	8-23	M20	85	1.884	UFSB1F
200	8	330	22	290	12-23	M20	90	2.605	UFSB2H

Use Case

ESLON UVS-VP BASIC PHYSICAL PROPERTIES · HEAD LOSS

Basic Physical Properties

Test item		Standards	Units	ESLON UVS-VP	PVC pipe	Notes
Mecha-nical	Tensile strength (yield strength)	JIS K 6815	MPa	48 ~ 52	48 ~ 52	
	Elongation rate		%	100 ~ 200	100 ~ 200	Elongation at break
	Young's modulus	JIS K7113	MPa	2600 ~ 2900	2600 ~ 2900	
	Poisson's ratio		—	0.38	0.38	
	Charpy impact strength	JIS K 7111	kJ/m^2	3 ~ 7	3 ~ 7	
Ther-mal	Specific heat	JIS K 7123	J/（g·K）	0.8 ~ 2.0	0.8 ~ 2.0	
	Thermal conductivity	Temperature gradient method	W/（m·K）	0.128 ~ 0.163	0.128 ~ 0.163	
	Vicat softening temperature	JIS K 7206	℃	79 ~ 83	79 ~ 83	5 kg load
	Linear expansion coefficient	ASTM D 696	℃$^{-1}$	6 ~ 8×10^{-5}	6 ~ 8×10^{-5}	
Electrical	Volume resistivity	ASTM D 257	Ω·cm	0.2 ~ 0.3×10^{15}以上	0.2 ~ 0.3×10^{15}以上	
	Dialectric strength	ASTM D 149	kV/mm	40kV/mm and up	40kV/mm and up	
Weather	Discoloration (ΔE)	Color difference	ΔE	5≧	20≦	Metal weathering test Equivalent of 10 years

Head Loss

ESLON UVS-VP has an inner layer made from PVC plastic, making it resistant to rust and corrosion. The smooth surface makes it difficult for scaling to occur, giving the material a long lifespan. The friction head loss caused by the flow of water is determined by the total number of deformations in the straight pipe, fittings, and valves.

1) Straight pipe head loss

Friction head loss for straight pipe is determined via the Darcy-Weisbach method (1). Using this formula, the friction head loss for VP UVS-VP pipe is Δh Pa/ m(mAq/m).

$$\Delta h = \lambda \cdot (L/d) \cdot (V^2/2g) \cdots\cdots\cdots\cdots (1)$$

λ: Pipe friction coefficient (0.02) L: Pipe length (m) d: Pipe inner diameter (m)
V: Inner pipe flow speed (m/sec) g: Gravitational acceleration (=9.8 m/sec²)

Flow speed for each pipe can be determined using Q (ℓ/min) with

$$Q=60 \cdot 1000 \cdot \pi \cdot (d/2)^2 \cdot V.$$

Table-1 Unit Conversion Table

m^3/min	m^3/sec	ℓ /sec	ℓ /min
1	0.01667	16.67	1000
60	1	1000	60000
0.06	0.001	1	60
0.001	1.667×10^{-5}	0.01667	1

2) Friction head loss from deformations

Head loss for elbow, tee, and valves are determined via formula (2) and table 2.

$$h=f \cdot V^2/2g \cdots\cdots\cdots\cdots (2)$$

h: head loss (m) V: inner pipe flow speed (m/sec) f: head loss coefficient (according to table 2) g: Gravitational acceleration (=9.8 m/sec²)

In general, the pipe's friction head loss of pipes is determined by using the equivalent lengths in table-3 and adding to the length of straight pipe.

Table-2
Head loss coefficient based on shape of fittings

FITTINGS TYPES	Shape		f
Elbow	45°		0.4
	90°		1.0
Tee	If direct flow		0.35
	Split	If turning 90°	1.2
		If the end is divided into both left/right	1.2
Reducer	(Varies depending on diameter)		0.1 ~ 0.5

Table-3 Equivalent pipe length of fittings and valves

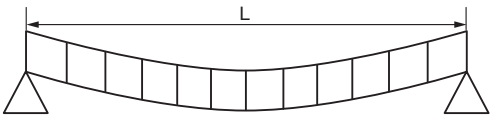
Size (mm)	Equivalent length of fittings(m)※1				Equivalent length of valves (m)※2			
	90° Elbow	45° Elbow	90° Tee (Pipe Junction)	90° Tee (Straight)	Gate valve	Globe valve	Angle valve	Check valve
20	0.88	0.35	1.06	0.31	0.15	6.0	3.6	1.6
25	1.14	0.46	1.37	0.40	0.18	7.5	4.5	2.0
40	1.97	0.79	2.36	0.69	0.30	13.5	6.6	3.1
50	2.61	1.04	3.13	0.91	0.39	16.5	8.4	4.0
65	3.59	1.43	4.30	1.26	0.48	19.5	10.2	4.6
75	4.23	1.69	5.07	1.48	0.63	24.0	12.0	5.7
100	5.70	2.28	6.84	1.99	0.81	37.5	16.5	7.6
125	7.40	2.96	8.88	2.59	0.99	42.0	21.0	10.0
150	8.85	3.54	10.62	3.10	1.20	49.5	24.0	12.0
200	12.33	4.93	14.80	4.32	1.40	70.0	33.0	15.0

*1 Calculated as 1.5m/sec velocity
*2 Citations: Handbook of Air Conditioning Public Health Engineering If foot valve and angle value are the same, and check valve is swing type.

ESLON UVS-VP SUPPORT SPACING · SUPPORT METHOD

Support Interval

Deflection from weight of horizontally placed pipes is calculated using the model in the figure below.



Uniformly distributed load: W

In this instance, deflection amount (δ) is calculated using the formula below.
δ =(5WL⁴)/(384EI)
δ: Deflection (cm) L: Support interval (cm)
W: Unit length/weight (kg/cm) E: Young's modulus (27,500kgf/cm²)
I: Cross section second moment (cm⁴)
= π ((outer diameter of pipe)⁴-(inner diameter of pipe)⁴)/64

Support interval for 3mm and 1mm deflection shown in the following table.

Support Interval for Deflection Across Size

Deflection \ Size	20	25	40	50	65	75	100	125	150	200
1mm	0.8m	0.9m	1.0m	1.2m	1.3m	1.4m	1.5m	1.7m	1.8m	1.9m
3mm	1.1m	1.2m	1.4m	1.5m	1.7m	1.8m	2.1m	2.2m	2.4m	2.5m

<Note> Suspended Support Interval for Horizontal Pipe
Public Building Construction Standards and Specifications, Ministry of Land, Infrastructure and Transport (Machinery and Equipment Work Edition)

Size	15	20	25	32	40	50	65	80	100	125	150	200	250	300
Vinyl or polyethylene pipe	Under 1.0m								Under 2.0m					

Standard Specification for Air-Conditioning and Plumbing Works from The Society of Heating, AirConditioning and Sanitary Engineers of Japan

Size	15	20	25	32	40	50	65	80	100	125	150	200	250	300
PVC pipe	Under 0.8m	Under 1.0m				Under 1.2m	Under 1.5m				Under 2.0m			

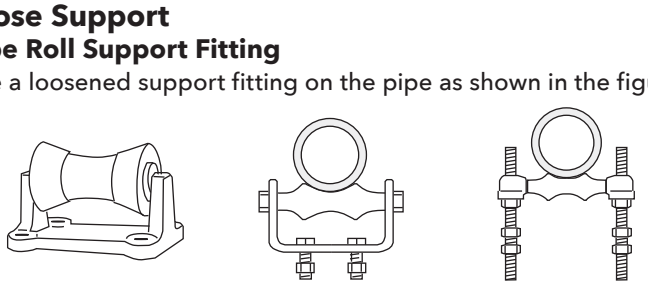
Support Method

There are two support methods: loose support (free-moving) and fixed support. Note that if the support fitting area is tightened too hard, the surface of the pipe may suffer from tensile stress, which may lead to environmental stress cracking (ESC). Due to this, you should be cautious when carrying out each application, clearly distinguishing between the two support methods.

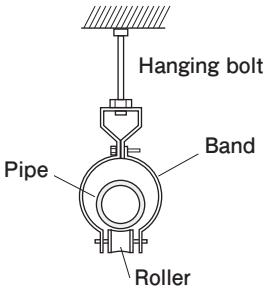
■ Loose Support

(1) Pipe Roll Support Fitting

Use a loosened support fitting on the pipe as shown in the figure below.

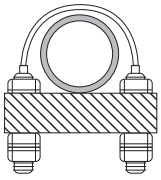


Pipe roll

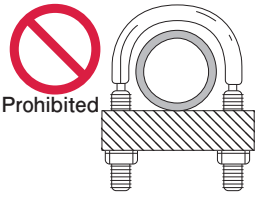


(2) U-band

Be sure to select a u-band that has an inner diameter larger than the pipe's outer diameter. Use two nuts positioned above and below the support jig, and place the u-band in a position suspended slightly above the top of the pipe. Avoid placing pressure onto the support area of the pipe with a single nut. Note that u-bolts should not be used as they concentrate stress.



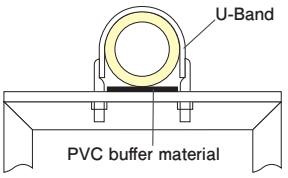
U-band usage example



U-bolt prohibited usage example

■ Fixed Support

For fixed support, use a u-band and a PVC buffer material at the base of the pipe. Be careful not to overtighten the u-band nut in order to avoid flattening the pipe. Do not use a u-bolt, as overtightening will concentrate stress and may break the pipe.



<Note> Fixed support from u-band

APPLYING ESLON UVS-VP

Installation Method

1 Cutting Pipe

Cut the pipe at a right angle facing the tube axis.

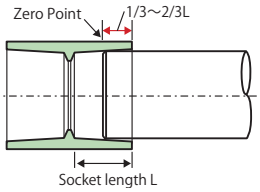
Bond strength is decreased with diagonal or non-complete cuts.

2 Deburring & Bevelling

Lightly chamfer around the cut pipe using a chamfering tool. Create a smooth pipe tip with no burrs or flash.

3 To Determine Zero Point

Lightly insert the pipe into the fitting socket. Check that the pipe stops (zero point) at a position between 1/3 to 2/3 the length (L1) of the socket.



4 Marking Insertion Line

For sizes under 40, mark an insertion line from where the end of the pipe reaches the length of the socket. For sizes over 50, mark an insertion line, adding 1/3 the length of the socket to the zero point (from the tip of the pipe).

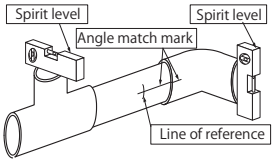
Size	20	25	40	50	65	75	100	125	150	200
L	35	40	55	63	61	64	84	104	132	145
1/3L	—	—	—	21	20	21	28	35	44	48

*For TS Flange 200A, L=155, 1/3L=52

5 Preparation for Inserting

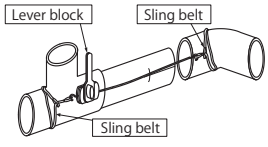
1) Match Angles

Temporarily insert the pipe into the fitting. Use a spirit level to adjust to the target angle. Then mark a line on both the pipe and fitting using an oil-based felt pen. This will serve as your target for insertion.



2) Equip Insertion Fixture (Size 65 and Up)

For sizes 65 and up, coat with solvent cement, then set up an insertion jig to allow for swift insertion.

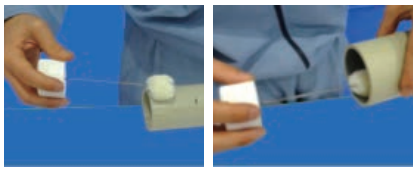


6 Cleaning Pipe and Fittings

Use a dry shop cloth to cleanly wipe off dirt adhered to the connection area (on the inside of the fitting socket and outside of the pipe).

7 Applying Primer

Apply a coat to the pipe and the connection side of the fitting with ESLON P-810 Primer for UVS-VP.



8 Applying Solvent Cement

Apply a coat to the pipe and the connection side of the fitting with ESLON NO.100S Solvent Cement.

9 Inserting

After applying solvent cement, match the marked lines, quickly insert the pipe to the marking, and hold in place. Hold for the target time shown in the below figure. Do not let the pipe and fitting come apart.

Temperature (season)	Size	
	20 ~ 50	65 ~ 200
Summertime	More Than 30 Seconds	More Than 1 Minute
Wintertime		More Than 2 Minutes

10 Wipe Off Protruding Solvent Cement

Wipe off solvent cement protruding from the connection area with a shop cloth.

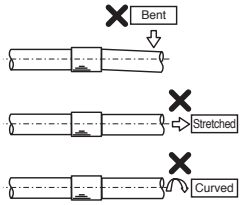
- Get rid of any protruding solvent cement. Leftover organic solvents may lead to cracks and leaks when using the pipe/fitting.

11 Cure

After connecting the pipe, leave in place until the solvent cement dries. Avoid putting any force on the connection area.

Water pressure testing and use may commence once curing is complete.

Standard cure time after connection is over 24 hours at room temperature. Note that cure time increases to over 48 hours during wintertime (low temperatures).



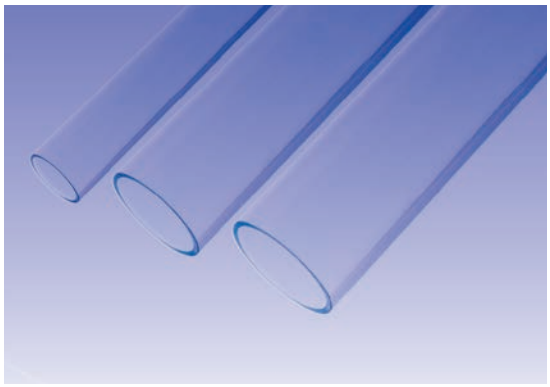
12 Inspection

After connecting the pipes, perform a water pressure check under normal usage conditions. Confirm whether there are any leaks.

- Wait at least 24 hours after final connection before adding additional pressure for water testing.
- When adding pressure, be sure to remove all air from the pipes before increasing the water pressure.
- Dot not add pressure using air. If there are any cracks in the pipe or fitting, the air will expand, causing a violent explosion and possibly resulting in injury.
- Do not use gas leak detection spray, as it may penetrate into the pipe material.

ESLON™ CLEAR PIPE

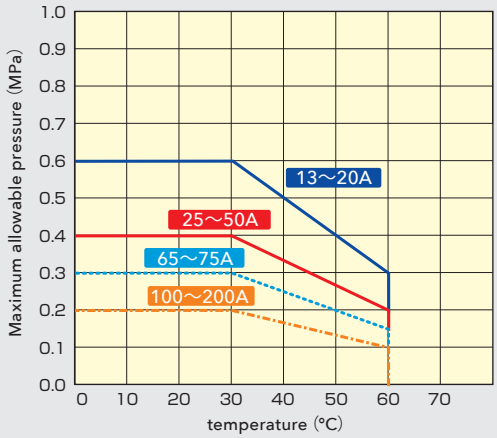
●Excellent transparency PVC pipe.



solvent cement

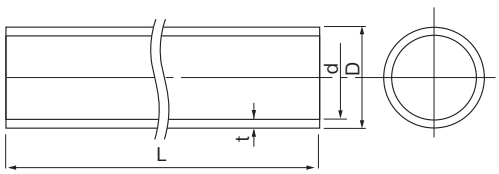
NO.73S

■Maximum allowable pressure and temperature



CLEAR PIPE SPECIFICATIONS

■ Pipe



Unit：mm

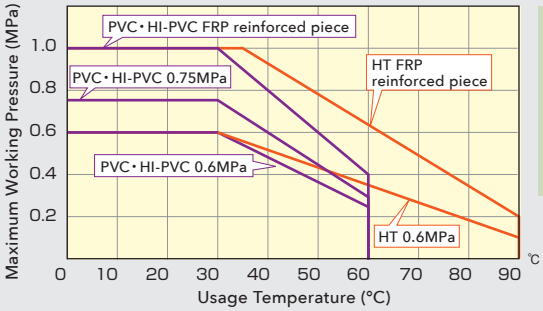
Size	D	t	d	L	Weight (kg/m)	Item No.
13	18±0.2	2.5±0.3	13	4000±10	0.173	TVP134
16	22±0.2	3.0±0.3	16		0.254	TVP164
20	26±0.2	3.0±0.3	20		0.308	TVP204
25	32±0.2	3.0±0.3	26		0.388	TVP254
30	38±0.2	3.0±0.3	32		0.468	TVP304
40	48±0.2	3.5±0.4	41		0.695	TVP404
50	60±0.2	4.0±0.4	52		0.999	TVP504
65	76±0.3	4.0±0.4	68		1.285	TVP654
75	89±0.3	4.5±0.4	80		1.696	TVP754
100	114±0.4	5.5±0.4	103		2.662	TVP1H4
125	140±0.5	6.0±0.5	128		3.587	TVP1Q4
150	165±0.5	7.0±0.5	151		4.934	TVP1F4
200	216±0.7	8.0±0.5	200		7.423	TVP2H4

MEMO

ESLON™ LARGE DIAMETER TS FITTINGS

- Suitable for pressurized pipes and drainage pipes at factories, processing plants, and agricultural facilities.
- Highly resistant to chemicals and corrosion.
- Compact size reduces construction costs.

Usage Temperature and Maximum Working Pressure



Maximum Working Pressure
- 0.6MPa at 20°C
- 0.75MPa at 20°C
- FRPreinforced piece: 1.0MPa at 20°C

Maximum Working Pressure

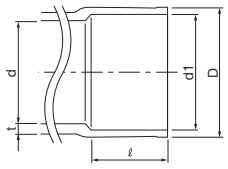
(Room Temperature)

Size \ Material	PVC	HI-PVC	HT(CPVC)
200	0.75MPa	0.75MPa	0.6MPa
250	0.75MPa	0.75MPa	0.6MPa
300	0.6MPa	0.6MPa	0.6MPa

*All FRP reinforced pieces have a 1.0 MPa.

LARGE DIAMETER TS FITTINGS SPECIFICATIONS

Socket Dimensions



200A~300A Unit:mm

Size	D	t	d1 PVC HI-PVC*	d1 HT (CPVC)	ℓ	d
200A	243	13.0	217.4	216.9	145	196
250A	300	14.5	268.6	268.1	175	242
300A	356	16.0	319.8	319.4	185	288

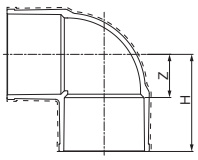
Note: HT (C-PVC) 90° elbow is * dimension.

Reducing Blanch

Size	D	d1	ℓ	d
75A	106	89.6	64	77
100A	134	114.7	84	102
150A	189	166.0	132	146

Unit:mm

90° Elbow



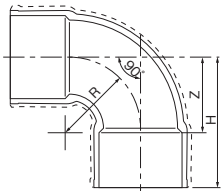
Unit:mm

Size	H	Z	Reference weight (PVC kg/unit)	Item No. TS	HI	HT	FRP Reinforced Piece TS	HI	HT
200A	262	145	6.6	TSL2H6K	HIL2H6K	HTL2H6K	FTSL2H	FHIL2H	FHTL2H
250A	318	175	10.8	TSL2F6K	HIL2F6K	HTL2F6K	FTSL2F	FHIL2F	FHTL2F
300A	355	185	15.5	TSL3H6K	HIL3H6K	HTL3H6K	FTSL3H	FHIL3H	FHTL3H

*Dashed line shows 1.0MPa FRP specifications.

90° Bend

Unit:mm

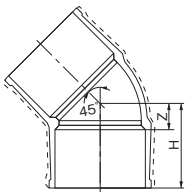


Size	H	Z	R	Weight (PVC kg/pc)	Item No.					
					TS	HI	HT	FRP reinforced type		
								TS	HI	HT
200A	341	196	196	7.6	TSLL2H6	HILL2H6	HTLL2H6	FTSLL2H	FHILL2H	FHTLL2H
250A	428	253	242	14.4	TSLL2F6	HILL2F6	HTLL2F6	FTSLL2F	FHILL2F	FHTLL2F
300A	441	256	242	20.3	TSLL3H6	HILL3H6	HTLL3H6	FTSLL3H	FHILL3H	FHTLL3H

※Dashed Shape for Fiber Reinforced 1.0MPa fitting.

45° Elbow

Unit:mm

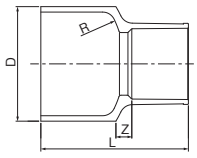


Size	H	Z	Weight (PVC kg/pc)	Item No.					
				TS	HI	HT	FRP reinforced type		
							TS	HI	HT
200A	205	60	5.6	TS4L2H6	HI4L2H6	HT4L2H6	FTS4L2H	FHI4L2H	FHT4L2H
250A	254	79	9.0	TS4L2F6	HI4L2F6	HT4L2F6	FTS4L2F	FHI4L2F	FHT4L2F
300A	280	95	13.6	TS4L3H6	HI4L3H6	HT4L3H6	FTS4L3H	FHI4L3H	FHT4L3H

※Dashed Shape for Fiber Reinforced 1.0MPa fitting.

Bush

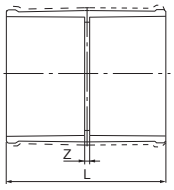
Unit:mm



Size	L	Z	R	D	Weight (PVC kg/pc)	Item No.		
						TS	HI	HT
250A×150A	344	37	242	267	5.27	TSRB2F2	HIRB2F2	HTRB2F2
300A×200A	374	44	288	318	7.28	TSRB3H2	HIRB3H2	HTRB3H2

Coupling

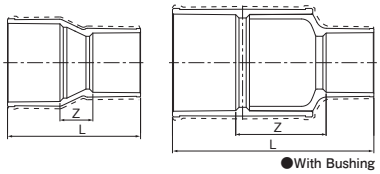
Unit:mm



Size	L	Z	Weight (PVC kg/pc)	Item No.					
				TS	HI	HT	FRP reinforced type		
							TS	HI	HT
200A	300	10	3.4	TSS2H6K	HIS2H6K	HTS2H6K	FTSS2H	FHIS2H	FHTS2H
250A	384	34	6.9	TSS2F6K	HIS2F6K	HTS2F6K	FTSS2F	FHIS2F	FHTS2F
300A	408	38	9.1	TSS3H6K	HIS3H6K	HTS3H6K	FTSS3H	FHIS3H	FHTS3H

※Dashed Shape for Fiber Reinforced 1.0MPa fitting.

Reducing Coupling



●With Bushing

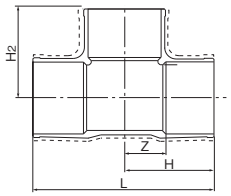
※Dashed Shape for Fiber Reinforced 1.0MPa fitting.

Unit:mm

Size	L	Z	Weight (PVC kg/pc)	Item No.					
				TS	HI	HT	FRP reinforced type		
							TS	HI	HT
200A×150A	368	91	3.9	TSS2H16	HIS2H16	HTS2H16	FTSS2H1	FHIS2H1	FHTS2H1
※250A×150A	557	250	12.1	TSS2F26	HIS2F26	HTS2F26	FTSS2F2	FHIS2F2	FHTS2F2
250A×200A	400	80	6.1	TSS2F16	HIS2F16	HTS2F16	FTSS2F1	FHIS2F1	FHT2F1
※300A×150A	605	288	35.1	TSS3H36	HIS3H36	HTS3H36	FTSS3H3	FHIS3H3	FHTS3H3
※300A×200A	601	271	16.4	TSS3H26	HIS3H26	HTS3H26	FTSS3H2	FHIS3H2	FHTS3H2
300A×250A	435	75	9.1	TSS3H16	HIS3H16	HTS3H16	FTSS3H1	FHIS3H1	FHTS3H1

※With Bushing

Tee

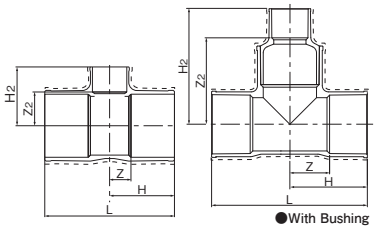


※Dashed Shape for Fiber Reinforced 1.0MPa fitting.

Unit:mm

Size	H	H2	L	Z	Weight (PVC kg/pc)	Item No.					
						TS	HI	HT	FRP reinforced type		
									TS	HI	HT
200A	267	267	533	122	8.6	TST2H6K	HIT2H6K	HTT2H6K	FTST2H	FHIT2H	FHTT2H
250A	355	355	710	180	18.8	TST2F6K	HIT2F6K	HTT2F6K	FTST2F	FHIT2F	FHTT2F
300A	410	375	820	225	30.4	TST3H6K	HIT3H6K	HTT3H6K	FTST3H	FHIT3H	FHTT3H

Reducing Tee



●With Bushing

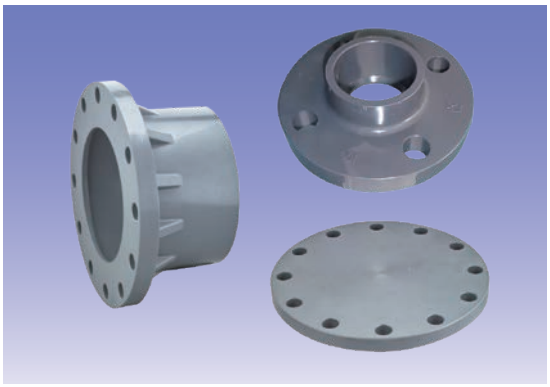
※Dashed Shape for Fiber Reinforced 1.0MPa fitting.

Unit:mm

Size	H	Z	L	H2	Z2	Weight (PVC kg/pc)	Item No.					
							TS	HI	HT	FRP reinforced type		
										TS	HI	HT
200A×75A	201	56	402	180	116	5.6	TST2H46	HIT2H46	HTT2H46	FTST2H4	FHIT2H4	FHTT2H4
200A×100A	218	73	436	200	116	6.5	TST2H36	HIT2H36	HTT2H36	FTST2H3	FHIT2H3	FHTT2H3
200A×150A	245	100	490	257	125	8.4	TST2H16	HIT2H16	HTT2H16	FTST2H1	FHIT2H1	FHTT2H1
250A×75A	246	71	492	210	146	8.8	TST2F56	HIT2F56	HTT2F56	FTST2F5	FHIT2F5	FHTT2F5
250A×100A	267	92	534	225	141	9.8	TST2F46	HIT2F46	HTT2F46	FTST2F4	FHIT2F4	FHTT2F4
※250A×150A	355	180	710	524	392	24.1	TST2F26	HIT2F26	HTT2F26	FTST2F2	FHIT2F2	FHTT2F2
250A×200A	335	160	670	335	190	16.1	TST2F16	HIT2F16	HTT2F16	FTST2F1	FHIT2F1	FHTT2F1
300A×75A	260	75	520	236	172	12.9	TST3H66	HIT3H66	HTT3H66	FTST3H6	FHIT3H6	FHTT3H6
300A×100A	266	81	532	257	173	13.4	TST3H56	HIT3H56	HTT3H56	FTST3H5	FHIT3H5	FHTT3H5
※300A×150A	375	190	750	561	429	30.8	TST3H36	HIT3H36	HTT3H36	FTST3H3	FHIT3H3	FHTT3H3
※300A×200A	410	225	820	599	454	37.7	TST3H26	HIT3H26	HTT3H26	FTST3H2	FHIT3H2	FHTT3H2
300A×250A	375	190	750	392	217	25.5	TST3H16	HIT3H16	HTT3H16	FTST3H1	FHIT3H1	FHTT3H1

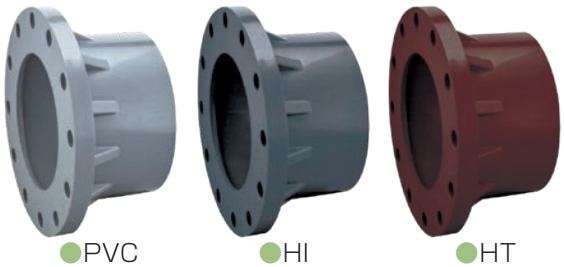
※With Bushing

ESLON™ FLANGE

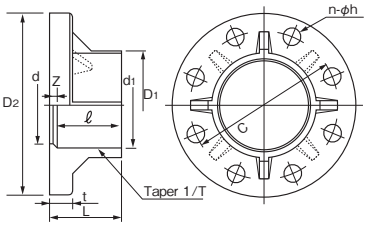


ESLON FLANGE SPECIFICATIONS

TS Flange (JIS 10K、JIS 5K)



●PVC ●HI ●HT



JIS 10K

Unit:mm

Size		TS socket			L	Z	d	Flange						Weight (PVC kg/pc)	Item No.		
A	B	d1	ℓ	1/T				C	D2	t	n-φh	Applicable Bolt M	Applicable Bolt Length		PVC	HI	HT
13	3/8	18.4	26	1/30	31	5	14	65	90	14	4-15	M12	50	0.12	TSF13	TSFHI13	TSFHT13
15(16)	1/2	22.4	30	1/34	35	5	17	70	95	14	4-15	M12	50	0.13	TSF15	TSFHI15	TSFHT15
20	3/4	26.5	35	1/34	40	5	21	75	100	14	4-15	M12	50	0.15	TSF20	TSFHI20	TSFHT20
25	1	32.6	40	1/34	45	5	25	90	125	14	4-19	M16	55	0.24	TSF25	TSFHI25	TSFHT25
32(30)	1 1/4	38.6	44	1/34	50	6	31	100	135	16	4-19	M16	60	0.31	TSF30	TSFHI30	TSFHT30
40	1 1/2	48.7	55	1/37	61	6	41	105	140	16	4-19	M16	60	0.36	TSF40	TSFHI40	TSFHT40
50	2	60.8	63	1/37	70	7	52	120	155	20	4-19	M16	70	0.52	TSF50	TSFHI50	TSFHT50
65	2 1/2	76.6	61	1/48	70	9	67	140	175	22	4-19	M16	75	0.71	TSF65	TSFHI65	TSFHT65
80(75)	3	89.6	64	1/49	72	8	78	150	185	22	8-19	M16	75	0.85	TSF80	TSFHI80	TSFHT80
100	4	114.7	84	1/56	90	6	100	175	210	22	8-19	M16	75	1.14	TSF1H	TSFHI1H	TSFHT1H
125	5	140.9	104	1/58	114	10	125	210	250	24	8-23	M20	80	1.67	TSF1Q	TSFHI1Q	TSFHT1Q
150	6	166.0	132	1/63	142	10	146	240	280	26	8-23	M20	85	2.53	TSF1F	TSFHI1F	TSFHT1F
200	8	217.5	155	1/50	166	11	196	290	330	28	12-23	M20	90	3.62	TSF2H	TSFHI2H	TSFHT2H
250	10	268.8	185	1/50	198	13	247	355	400	30	12-25	M22	95	5.48	TSF2F	TSFHI2F	TSFHT2F
300	12	319.0	185	1/57	203	18	298	400	445	32	16-25	M22	100	7.80	TSF3H	TSFHI3H	TSFHT3H

Notes: 1.Flange dimensions conform to JWWA B2220.
2.Usable maximum temparate is 80 ° C for PVC Flange.

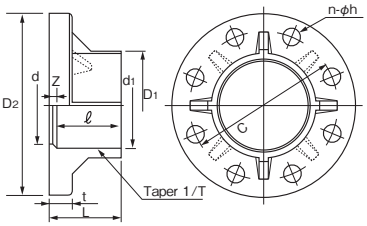
JIS 5K

Unit :mm

Size		TS socket			L	Z	d	Flange						Weight (PVC kg/pc)	Item No.	
A	B	d1	ℓ	1/T				C	D2	t	n-φh	Applicable Bolt M	Applicable Bolt Length		PVC	HT
13	3/8	18.4	26	1/30	31	5	14	55	75	9	4-12	M10	45	0.05	TSF135	TSFT135
15(16)	1/2	22.4	30	1/34	35	5	17	60	80	9	4-12	M10	45	0.06	TSF155	TSFT155
20	3/4	26.5	35	1/34	40	5	21	65	85	10	4-12	M10	45	0.08	TSF205	TSFT205
25	1	32.6	40	1/34	45	5	25	75	95	10	4-12	M10	45	0.11	TSF255	TSFT255
32(30)	1 1/4	38.6	44	1/34	50	6	31	90	115	12	4-15	M12	50	0.20	TSF305	TSFT305
40	1 1/2	48.7	55	1/37	61	6	41	95	120	12	4-15	M12	50	0.25	TSF405	TSFT405
50	2	60.8	63	1/37	70	7	52	105	130	14	4-15	M12	55	0.31	TSF505	TSFT505
65	2 1/2	76.6	61	1/48	70	9	67	130	155	14	4-15	M12	55	0.43	TSF655	-
80(75)	3	89.6	64	1/49	72	8	78	145	180	14	4-19	M16	55	0.59	TSF805	-
100	4	114.7	84	1/56	92	8	100	165	200	16	8-19	M16	60	0.91	TSF1H5	-
125	5	140.9	104	1/58	114	10	125	200	235	16	8-19	M16	60	1.29	TSF1Q5	-
150	6	166.0	132	1/63	142	10	146	230	265	18	8-19	M16	65	2.05	TSF1F5	-
200	8	217.5	155	1/50	166	11	196	280	320	28	8-23	M20	90	3.43	TSF2H5	-
250	10	268.8	185	1/50	198	13	247	345	385	30	12-23	M20	95	5.19	TSF2F5	-

Notes: 1.Flange dimensions conform to JWWA B2220.
2.Usable maximum temparate is 80 ° C for PVC Flange.

TS Flange (ANSI,Water Supply Type)



ANSI

Unit:mm

Size		TS socket				L	Z	d	Flange				Weight (PVC kg/pc)	Item No.		
A	B	d1	ℓ	1/T	D1				C	D2	t	n-φh		PVC	HI	HT
15(16)	1/2	22.4	30	1/34	31	35	5	17	60.5	89.0	14	4-16	0.13	TSF15U	TSFI15U	TSFT15U
20	3/4	26.5	35	1/34	35	40	5	21	70.0	98.6	14	4-16	0.15	TSF20U	TSFI20U	TSFT20U
25	1	32.6	40	1/34	42	45	5	25	79.5	108.0	14	4-16	0.24	TSF25U	TSFI25U	TSFT25U
32(30)	1 1/4	38.6	44	1/34	48	50	6	31	89.0	117.5	16	4-16	0.31	TSF30U	TSFI30U	TSFT30U
40	1 1/2	48.7	55	1/37	61	61	6	41	98.5	127.0	16	4-16	0.36	TSF40U	TSFI40U	TSFT40U
50	2	60.8	63	1/37	73	70	7	52	120.5	155.0	20	4-20	0.52	TSF50U	TSFI50U	TSFT50U
65	2 1/2	76.6	61	1/48	88	70	9	67	139.5	175.0	22	4-20	0.71	TSF65U	TSFI65U	TSFT65U
80(75)	3	89.6	64	1/49	102	72	8	78	152.5	190.5	22	4-20	0.89	TSF80U	TSFI80U	TSFT80U
100	4	114.7	84	1/56	132	90	6	100	190.5	229.0	22	8-20	1.65	TSF1HU	TSFI1HU	TSFT1HU
125	5	140.9	104	1/58	158	114	10	125	216.0	250.0	24	8-22	1.67	TSF1QU	TSFI1QU	TSFT1QU
150	6	166.0	132	1/63	186	142	10	146	241.5	280.0	26	8-22	2.53	TSF1FU	TSFI1FU	TSFT1FU
200	8	217.5	155	1/50	238	166	11	196	298.5	343.0	28	8-22	4.39	TSF2HU	TSFI2HU	TSFT2HU
250	10	268.8	185	1/50	289	198	13	247	362.0	406.0	30	12-26	5.48	TSF2FU	TSFI2FU	TSFT2FU
300	12	319.0	185	1/57	344	203	18	298	432.0	483.0	32	12-26	7.80	TSF3HU	TSFI3HU	TSFT3HU

Notes: Flange dimensions conform to ANSI B16.5-1981 class 150.

Water Supply

Unit:mm

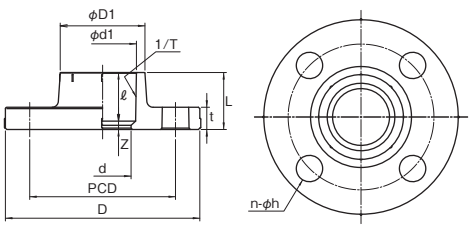
Size		TS socket				L	Z	d	Flange						Weight (PVC kg/pc)	Item No.
A	B	d1	ℓ	1/T	D1				C	D2	t	n-φh	Applicable Bolt			PVC
													M	Length		
75	3	89.6	64	1/49	102	72	8	78	168	211	22	4-19	M16	75	1.13	TSF75W
100	4	114.7	84	1/56	132	90	6	100	195	238	24	4-19	M16	80	1.65	TSF1HW
125	5	140.9	104	1/58	158	114	10	125	220	263	24	6-19	M16	80	2.09	TSF1QW
150	6	166.0	132	1/63	186	142	10	146	247	290	26	6-19	M16	85	2.87	TSF1FW
200	8	217.5	155	1/50	238	166	11	196	299	342	28	8-19	M16	90	4.39	TSF2HW
250	10	268.8	185	1/50	289	198	13	247	360	410	30	8-23	M20	95	6.25	TSF2FW
300	12	319.0	185	1/57	344	203	18	298	414	464	32	10-23	M20	100	8.60	TSF3HW

Notes: Flange dimensions conform to JWWA G113,114.

Compact Flange

●HI-PVC

●PVC



JIS 10K

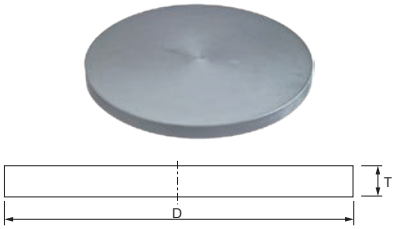
Unit:mm

Size		TS socket				L	Z	d	Flange						Weight (PVC kg/pc)	Item No.	
A	B	d1	ℓ	1/T	D1				C	D2	t	n-φh	Applicable Bolt			PVC	HI
													M	Length			
25	1	32.3	29	1／43	40	34	5	25	90	125	14	4-19	M16	55	0.22	TCF25	TCFHI25
32(30)	1 1/4	38.4	32	1／37	48	38	6	31	100	135	16	4-19	M16	60	0.29	TCF30	TCFHI30
40	1 1/2	48.5	35	1／38	61	41	6	41	105	140	16	4-19	M16	60	0.32	TCF40	TCFHI40
50	2	60.6	38	1／34	73	45	7	52	120	155	20	4-19	M16	70	0.47	TCF50	TCFHI50

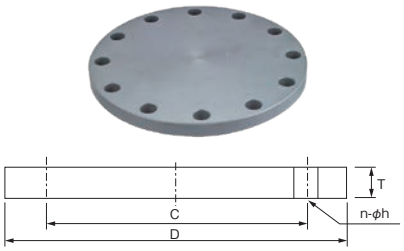
Notes: 1.Flange dimensions conform to JWWA B2220.
2.Usable maximum temparate is 80° C for PVC Flange.

Blind Flange

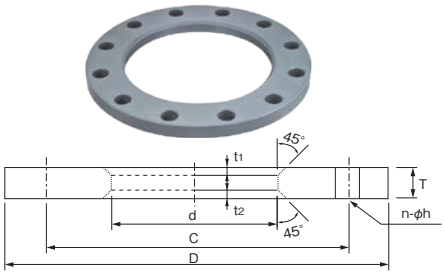
●SP Type



●SB Type



●SJ Type



JIS 10K

Unit:mm

Size		D	C	d	T	t1	t2	n-φh	Applicable Bolt		Weight (PVC kg/pc)			Item No.				
A	B								M	Length	SP	SB	SJ	PVC			HI	HT
														SP	SB	SJ	SB	SB
13	3/8	90	65	18	12	1.5	3	4-15	M12	50	0.112	0.100	0.095	FSP13	FSB13	FSJ13	-	-
15(16)	1/2	95	70	22	12	1.5	3	4-15	M12	50	0.125	0.113	0.106	FSP15	FSB15	FSJ15	FSBHI15	FSBT15
20	3/4	100	75	26	14	1.5	3	4-15	M12	50	0.162	0.147	0.136	FSP20	FSB20	FSJ20	FSBHI20	FSBT20
25	1	125	90	32	14	1.5	3	4-19	M16	55	0.253	0.229	0.213	FSP25	FSB25	FSJ25	FSBHI25	FSBT25
32(30)	1 1/4	135	100	38	16	2.5	3	4-19	M16	60	0.337	0.310	0.283	FSP30	FSB30	FSJ30	FSBHI30	FSBT30
40	1 1/2	140	105	48	16	2.5	3	4-19	M16	60	0.362	0.335	0.293	FSP40	FSB40	FSJ40	FSBHI40	FSBT40
50	2	155	120	60	16	2.5	4	4-19	M16	70	0.444	0.417	0.351	FSP50	FSB50	FSJ50	FSBHI50	FSBT50
65	2 1/2	175	140	76	18	2.5	4	4-19	M16	75	0.636	0.606	0.486	FSP65	FSB65	FSJ65	FSBHI65	FSBT65
80(75)	3	185	150	89	18	2.5	4	8-19	M16	75	0.711	0.651	0.487	FSP80	FSB80	FSJ80	FSBHI80	FSBT80
100	4	210	175	114	18	3	4	8-19	M16	80	0.916	0.856	0.586	FSP1H	FSB1H	FSJ1H	FSBHI1H	FSBT1H
125	5	250	210	140	20	4	4	8-23	M20	80	1.443	1.345	0.893	FSP1Q	FSB1Q	FSJ1Q	FSBHI1Q	FSBT1Q
150	6	280	240	165	22	4	4	8-23	M20	85	1.991	1.884	1.192	FSP1F	FSB1F	FSJ1F	FSBHI1F	FSBT1F
200	8	330	290	216	22	4	4	12-23	M20	90	2.766	2.605	1.420	FSP2H	FSB2H	FSJ2H	FSBHI2H	FSBT2H
250	10	400	355	267	24	4	4	12-25	M22	95	4.310	3.975	2.189	FSP2F	FSB2F	FSJ2F	FSBHI2F	FSBT2F
300	12	445	400	321	24	4	4	16-25	M22	95	5.335	4.835	2.288	FSP3H	FSB3H	FSJ3H	FSBHI3H	FSBT3H

JIS 10K Flange:Maximum Premissible pressure and temperature

Material	Max. Premissible pressure	Max. operating temperature
PVC	13A～150A:1.0MPa、200A:0.6MPa、250A・300A:0.5MPa	60℃
HI	15A～100A:1.0MPa、125・150A:0.8MPa、200A:0.5MPa、250A:0.4MPa、300A:0.3MPa	60℃
HT	15A～150A:1.0MPa、200A:0.6MPa、250A・300A:0.5MPa	90℃

JIS 5K

Unit:mm

Size		D	C	d	T	t1	t2	n-φh	Applicable Bolt		Weight (PVC kg/pc)			Item No.		
A	B								M	Length	SP	SB	SJ	PVC		
														SP	SB	SJ
13	3/8	75	55	18	9	1.5	3	4-12	M10	45	0.058	0.052	0.049	FSP135	FSB135	FSJ135
15(16)	1/2	80	60	22	9	1.5	3	4-12	M10	45	0.067	0.061	0.055	FSP155	FSB155	FSJ155
20	3/4	85	65	26	10	1.5	3	4-12	M10	45	0.083	0.077	0.069	FSP205	FSB205	FSJ205
25	1	95	75	32	10	1.5	3	4-12	M10	45	0.104	0.098	0.086	FSP255	FSB255	FSJ255
32(30)	1 1/4	115	90	38	12	2.5	3	4-15	M12	50	0.183	0.171	0.151	FSP305	FSB305	FSJ305
40	1 1/2	120	95	48	12	2.5	3	4-15	M12	50	0.200	0.187	0.155	FSP405	FSB405	FSJ405
50	2	130	105	60	14	2.5	4	4-15	M12	55	0.273	0.259	0.200	FSP505	FSB505	FSJ505
65	2 1/2	155	130	76	14	2.5	4	4-15	M12	55	0.388	0.374	0.280	FSP655	FSB655	FSJ655
80(75)	3	180	145	89	14	2.5	4	4-19	M16	55	0.524	0.500	0.372	FSP805	FSB805	FSJ805
100	4	200	165	114	16	3	4	8-19	M16	60	0.739	0.656	0.445	FSP1H5	FSB1H5	FSJ1H5
125	5	235	200	140	16	4	4	8-19	M16	60	1.020	0.921	0.605	FSP1Q5	FSB1Q5	FSJ1Q5
150	6	265	230	165	18	4	4	8-19	M16	65	1.459	1.328	0.834	FSP1F5	FSB1F5	FSJ1F5
200	8	320	280	216	20	4	4	8-23	M20	90	2.364	2.142	1.189	FSP2H5	FSB2H5	FSJ2H5
250	10	385	345	267	22	4	4	12-23	M20	95	3.660	3.390	1.740	FSP2F5	FSB2F5	FSJ2F5
300	12	430	390	321	22	4	4	12-23	M20	95	4.566	4.209	1.859	FSP3H5	FSB3H5	FSJ3H5

ESLON™ GASKET

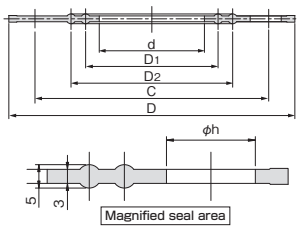
⚠ Application Precautions

- ESLON GASKET packing is intended for use with flat face flanges. Do not use to connect non-flat face flanges. (Use with raised face flange and gasket.)
- Tighten the bolts evenly on both sides to avoid overtightening a single side.
  Refer to the recommended bolt tightening torque in the dimension table.
- Provide adequate support and be careful not to forcefully bend the flange. Gasket may leak if subjected to significant warping.

ESLON GASKET SPECIFICATIONS

EPDM GASKET

For Flat Face Flange



- Highly resistant to chemicals and chlorinated water. Safely use without any risk from tap water chlorine.
  *Use ESLON IIR-X GASKET (specially-made butyl material) for high concentrations of sodium hypochlorite.
- Highly resistant to heat. Maximum working temperature of 100°C allows for use with hot water. (Usage temperature of water supply type is 60°C)
- Highly resistant to chemicals, oil, and heat.
- Double ribbed lining creates powerful seal.

- Durometer hardness Type A: 70±5 degrees
- Leach testing: **Passed Food Sanitation Law elution tests (Ministry of Health, Labor, and Welfare Notification #85) Passed JIS K 6353 leach tests for water supply rubbers**

JIS 10K

Unit:mm

Size A	Size B	Inner diameter d	Rib area D1	Rib area D2	C	Outer diameter D	Bolt hole diameter n-ϕh	Reference weight (g/piece)	Recommended bolts Tightening torque N·m	Item No.
13	3/8	17	25	38	65	88	4-15	20	15	PE13C
15 (16)	1/2	20	28	42	70	93	4-15	23	15	PE15C
20	3/4	25	33	47	75	98	4-15	29	15	PE20C
25	1	30	38	53	90	123	4-19	40	30	PE25C
32 (30)	1 1/4	38	48	63	100	133	4-19	46	30	PE30C
40	1 1/2	46	54	69	105	138	4-19	50	30	PE40C
50	2	58	68	83	120	153	4-19	55	30	PE50C
65	2 1/2	73	86	101	140	173	4-19	75	45	PE65C
80 (75)	3	84	98	113	150	183	8-19	77	45	PE80C
100	4	106	120	138	175	208	8-19	95	45	PE1HC
125	5	131	145	168	210	248	8-23	115	55	PE1QC
150	6	155	170	196	240	278	8-23	145	55	PE1FC
200	8	204	218	248	290	328	12-23	185	55	PE2HC
250	10	254	270	306	355	398	12-25	250	65	PE2FC
300	12	304	324	356	400	443	16-25	278	65	PE3HC
350	14	352	368	400	445	488	16-25	290	65	PE3FC

JIS 5K

Unit:mm

Size A	Size B	Inner diameter d	Rib area D1	Rib area D2	C	Outer diameter D	Bolt hole diameter n-ϕh	Reference weight (g/piece)	Recommended bolts Tightening torque N·m	Item No.
13	3/8	17	24	36	55	73	4-12	17	15	PE135C
15 (16)	1/2	20	28	40	60	78	4-12	19	15	PE155C
20	3/4	25	33	45	65	83	4-12	21	15	PE205C
25	1	30	38	52	75	93	4-12	25	30	PE255C
32 (30)	1 1/4	38	46	61	90	113	4-15	34	30	PE305C
40	1 1/2	46	54	68	95	118	4-15	37	30	PE405C
50	2	58	66	80	105	128	4-15	41	30	PE505C
65	2 1/2	73	82	100	130	153	4-15	56	45	PE655C
80 (75)	3	84	94	113	145	178	4-19	69	45	PE805C
100	4	106	116	135	165	198	8-19	78	45	PE1H5C
125	5	131	142	164	200	233	8-19	103	55	PE1Q5C
150	6	155	168	190	230	263	8-19	124	55	PE1F5C
200	8	204	220	243	280	318	8-23	167	55	PE2H5C
250	10	254	270	300	345	383	12-23	220	65	PE2F5C

ANSI

Unit:mm

Size A	Size B	Inner diameter d	Rib area D1	Rib area D2	C	Outer diameter D	Bolt hole diameter n-ϕh	Reference weight (g/piece)	Recommended bolts Tightening torque N·m	Item No.
15 (16)	1/2	18	25	38	60.5	86	4-16	17	14	PE15CU
20	3/4	23	33	48	70.1	97	4-16	21	14	PE20CU
20	1	30	38	53	79.5	107	4-16	25	20	PE25CU
32 (30)	1 1/4	38	51	66	88.9	114	4-16	29	20	PE30CU
40	1 1/2	43	53	69	98.6	124	4-16	34	20	PE40CU
50	2	53	69	84	120.7	150	4-19	49	34	PE50CU
65	2 1/2	69	86	102	139.7	175	4-19	66	34	PE65CU
80 (75)	3	81	99	112	152.4	188	4-19	74	41	PE80CU
100	4	102	119	137	190.5	226	8-19	101	41	PE1HCU
125	5	127	145	165	215.9	251	8-22	117	55	PE1QCU
150	6	149	168	191	241.3	277	8-22	134	68	PE1FCU
200	8	198	216	246	298.5	340	8-22	192	68	PE2HCU
250	10	249	269	307	362	404	12-25	246	89	PE2FCU
300	12	300	325	353	431.8	480	12-25	356	102	PE3HCU

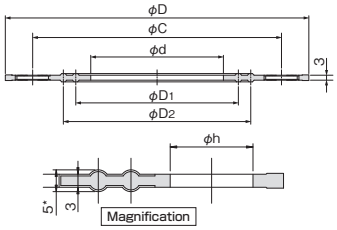
Water Supply Type

Unit:mm

Size A	Size B	Inner diameter d	Rib area D1	Rib area D2	C	Outer diameter D	Bolt hole diameter n-ϕh	Reference weight (g/piece)	Recommended bolts Tightening torque N·m	Item No.
50	2	58	68	83	120	153	4-19	55	30	PS50C
75	3	84	98	115	168	211	4-19	100	45	PS75C
100	4	106	120	140	195	238	4-19	120	45	PS1HC
125	5	131	145	168	220	263	6-19	130	55	PS1QC
150	6	155	175	195	247	290	6-19	150	55	PS1FC
200	8	205	226	248	299	342	8-19	200	65	PS2HC
250	10	254	276	300	360	410	8-23	250	65	PS2FC
300	12	305	328	350	414	464	10-23	290	65	PS3HC

Note: Products manufactured in a plant certified by the Japan Water Works Association.

PTFE GASKET For Flat Face Flange



*6mm for ANSI250, 300A

- PTFE is applied to the EPDM base, resulting in a highly durable, corrosion resistant gasket.
- Double ribbed lining creates powerful seal.

JIS 10K

Unit:mm

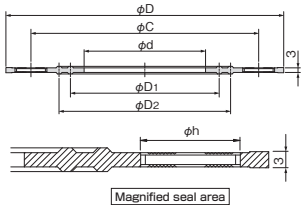
Size A	Size B	Inner diameter d	Rib area D1	Rib area D2	C	Outer diameter D	Bolt hole diameter n-ϕh	Reference weight (g/piece)	Recommended bolts Tightening torque N·m	Item No.
13	3/8	14	23	37	65	88	4-15	23	16	PP13
15(16)	1/2	18	26	41	70	93	4-15	25	16	PP15
20	3/4	22	32	47	75	98	4-15	32	16	PP20
25	1	30	38	53	90	123	4-19	46	34	PP25
32(30)	1 1/4	37	50	65	100	133	4-19	51	34	PP30
40	1 1/2	43	54	69	105	138	4-19	57	34	PP40
50	2	54	68	83	120	153	4-19	63	34	PP50
65	2 1/2	69	86	101	140	173	4-19	84	51	PP65
80(75)	3	80	98	113	150	183	8-19	88	51	PP80
100	4	102	120	138	175	208	8-19	105	51	PP1H
125	5	127	145	168	210	248	8-23	130	62	PP1Q
150	6	150	168	190	240	278	8-23	160	62	PP1F
200	8	198	216	248	290	328	12-23	200	62	PP2H
250	10	249	270	306	355	398	12-25	290	73	PP2F
300	12	300	324	356	400	443	16-25	340	73	PP3H

ANSI

Unit:mm

Size A	Size B	Inner diameter d	Rib area D1	Rib area D2	C	Outer diameter D	Bolt hole diameter n-ϕh	Reference weight (g/piece)	Recommended bolts Tightening torque N·m	Item No.
15(16)	1/2	18	30	-	60.3	85	4-16	22	16	PP15U
20	3/4	22	32	44	69.9	95	4-16	29	16	PP20U
25	1	29	38	50	79.4	103	4-16	34	35	PP25U
32(30)	1 1/4	39	47	59	88.9	111	4-16	39	35	PP30U
40	1 1/2	44	53	68	98.4	121	4-16	44	35	PP40U
50	2	55	65	83	120.7	146	4-19	65	35	PP50U
65	2 1/2	70	81	101	139.7	173	4-19	84	52	PP65U
80(75)	3	81	94	112	152.4	186	4-19	98	52	PP80U
100	4	103	124	148	190.5	223	8-19	137	52	PP1HU
125	5	128	150	174	215.9	249	8-22	153	68	PP1QU
150	6	152	172	196	241.3	274	8-22	182	68	PP1FU
200	8	200	222	246	298.5	337	8-22	258	63	PP2HU
250	10	251	276	300	362	401	12-25	348	102	PP2FU
300	12	302	335	365	431.8	477	12-25	484	136	PP3HU

IIR-X GASKET (For Sodium Hypochlorite) For Flat Face Flange



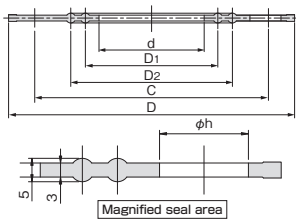
- Highly durable butyl rubber specially developed for sodium hydrochlorites.
- Double ribbed lining creates powerful seal.
- Creates powerful seal even when loosely tightened.

JIS 10K

Unit:mm

Size A	Size B	Inner diameter d	Rib area D1	Rib area D2	C	Outer diameter D	Bolt hole diameter n-ϕh	Reference weight (g/piece)	Recommended bolts Tightening torque N·m	Item No.
13	3/8	14	23	37	65	88	4-15	20	15	PI13
15(16)	1/2	18	26	41	70	93	4-15	23	15	PI15
20	3/4	22	32	47	75	98	4-15	29	15	PI20
25	1	28	38	53	90	123	4-19	40	30	PI25
32(30)	1 1/4	37	50	65	100	133	4-19	46	30	PI30
40	1 1/2	43	54	69	105	138	4-19	50	30	PI40
50	2	54	68	83	120	153	4-19	55	30	PI50
65	2 1/2	69	86	101	140	173	4-19	75	45	PI65
80(75)	3	80	98	113	150	183	8-19	77	45	PI80
100	4	102	120	138	175	208	8-19	95	45	PI1H
125	5	127	145	168	210	248	8-23	115	55	PI1Q
150	6	150	168	190	240	278	8-23	145	55	PI1F
200	8	198	216	248	290	328	12-23	185	55	PI2H
250	10	250	270	306	355	398	12-23	250	65	PI2F

FKM GASKET For Flat Face Flange



- Durometer hardness Type A: 70±5 degrees
- Leach testing: **Passed Food Sanitation Law elution tests (Ministry of Health, Labor, and Welfare Notification #85) Passed JIS K 6353 leach tests for water supply rubbers**

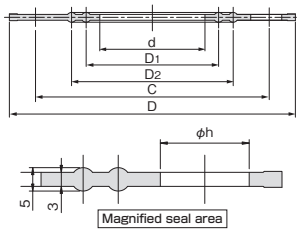
- Highly resistant to chemicals, oil, and heat.
- Double ribbed lining creates powerful seal.
- Creates powerful seal even when loosely tightened.

JIS 10K

Unit:mm

Size A	Size B	Inner diameter d	Rib area D1	Rib area D2	C	Outer diameter D	Bolt hole diameter n-ϕh	Reference weight (g/piece)	Recommended bolts Tightening torque N·m	Item No.
15(16)	1/2	20	28	42	70	93	4-15	40	15	PF15
20	3/4	25	33	47	75	98	4-15	44	15	PF20
25	1	30	38	53	90	123	4-19	68	30	PF25
32(30)	1 1/4	38	48	63	100	133	4-19	79	30	PF30
40	1 1/2	46	54	69	105	138	4-19	83	30	PF40
50	2	58	68	83	120	153	4-19	98	30	PF50
65	2 1/2	73	86	101	140	173	4-19	122	45	PF65
80(75)	3	84	98	113	150	183	8-19	127	45	PF80
100	4	106	120	138	175	208	8-19	157	45	PF1H
125	5	131	145	168	210	248	8-23	210	55	PF1Q
150	6	155	170	196	240	278	8-23	250	55	PF1F
200	8	204	218	248	290	328	12-23	280	55	PF2H
250	10	254	270	306	355	398	12-25	420	65	PF2F
300	12	304	324	356	400	443	16-25	440	65	PF3H

FKM-FB GASKET (Acid Resistant FKM Gasket) For Flat Face Flange



● Durometer hardness Type A: 70±5 degrees

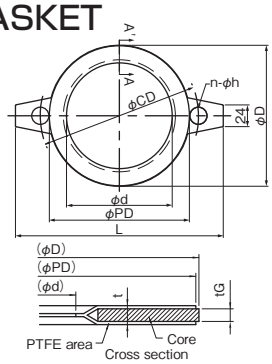
- Highly resistant to strong acids, such as hydrochloric and sulfuric acid.
- Highly resistant to chemicals, oil, and heat.
- Double ribbed lining creates powerful seal.
- Creates powerful seal even when loosely tightened.

JIS 10K

Unit:mm

Size A	Size B	Inner diameter d	Rib area D1	Rib area D2	C	Outer diameter D	Bolt hole diameter n-φh	Reference weight (g/piece)	Recommended bolts Tightening torque N·m	Item No.
15 (16)	1/2	20	28	42	70	93	4-15	41	15	PFB15
20	3/4	25	33	47	75	98	4-15	45	15	PFB20
25	1	30	38	53	90	123	4-19	69	30	PFB25
32 (30)	1 1/4	38	48	63	100	133	4-19	77	30	PFB30
40	1 1/2	46	54	69	105	138	4-19	83	30	PFB40
50	2	58	68	83	120	153	4-19	98	30	PFB50
65	2 1/2	73	86	101	140	173	4-19	121	45	PFB65
80 (75)	3	84	98	113	150	183	8-19	123	45	PFB80
100	4	106	120	138	175	208	8-19	154	45	PFB1H
125	5	131	145	168	210	248	8-23	206	55	PFB1Q
150	6	155	170	196	240	278	8-23	250	55	PFB1F
200	8	204	218	248	290	328	12-23	310	55	PFB2H
250	10	254	270	306	355	398	12-25	440	65	PFB2F
300	12	304	324	356	400	443	16-25	480	65	PFB3H

RAISED FACE GASKET



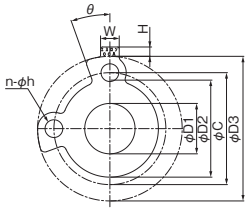
- Highly heat resistant, excellent mechanical properties, and tight seal achieved through two-layer structure made of PTFE exterior and a core made from rubber reinforced with inorganic aramid.
- The ribbed bolt hole makes it easy to align and highly workable.
- This gasket is intended for raised face flanges.
- Can be used with lined steel pipes and stainless steel pipes.

JIS 10K

Unit:mm

Size A	Size B	PTFE Inner diameter d	PTFE Outer diameter PD	Gasket PCD CD	Gasket Outer diameter D	Gasket Length L	Gasket Thickness	Total thickness t	Bolt hole n-φh	Reference weight (g/piece)	Recommended bolts Tightening torque N·m	Item No.
20	3/4	28	59	75	60	120	2	2.8	2-15	15	12.5	PRF20
25	1	35	70	90	71	145	2	2.8	2-19	20	25.0	PRF25
32 (30)	1 1/4	43	79	100	81	155	2	2.8	2-19	25	30.0	PRF30
40	1 1/2	49	84	105	86	160	2	2.8	2-19	30	30.0	PRF40
50	2	62	99	120	101	175	2	2.8	2-19	35	40.0	PRF50
65	2 1/2	78	119	140	121	195	2	2.8	2-19	45	60.0	PRF65
80 (75)	3	91	129	150	131	205	2	2.8	2-19	50	30.0	PRF80
100	4	117	155	175	156	230	2	2.8	2-19	60	40.0	PRF1H
125	5	144	185	210	187	270	2	2.8	2-23	85	70.0	PRF1Q
150	6	171	215	240	217	300	2	2.8	2-23	110	90.0	PRF1F
200	8	219	265	290	267	350	2	2.8	2-23	155	90.0	PRF2H
250	10	271	321	355	330	420	2	2.8	2-25	230	140.0	PRF2F
300	12	321	370	400	375	465	2	2.8	2-25	275	130.0	PRF3H
350	14	356	415	445	420	510	2	2.8	2-25	350	160.0	PRF3F
400	16	407	471	510	483	580	2	2.8	2-27	465	225.0	PRF4H

TRIGUARD™ PTFE GASKET



- Special structure results in secure seal even when loosely tightened.
- Made from 100% PTFE for low elution and excellent chemical resistance.
- Functions under a wide variety of temperatures (-240°C to +315°C)
- Contains no foaming agents, fillers, or adhesives.
- Can be used with plastic-lined steel pipes and stainless steel pipes.

⚠ TRIGUARD Precautions

●Refer to the recommended bolt tightness torque in the table when applying. If unable to measure the tightness, tighten the bolt evenly until it reaches 1/3 the thickness of the gasket.

*TRIGUARD is trademarks of W. L. Gore & Associates, Inc.

JIS 10K

Unit：mm

Size		D1	D2	C	D3	Rib area			n-φh	Reference weight (g/piece)	Recommended bolts Tightening torque N·m	Item No.
A	B					H	W	θ				
15 (16)	1/2	18	58	70	95	10	20	25°	2-15	8	14	PPT15
20	3/4	22	63	75	100	10	20	23°	2-15	9	14	PPT20
25	1	28	74	90	125	10	20	27°	2-19	14	29	PPT25
32 (30)	1 1/4	37	84	100	135	10	20	24°	2-19	15	29	PPT30
40	1 1/2	43	89	105	140	10	20	23°	2-19	15	29	PPT40
50	2	54	104	120	155	10	20	20°	2-19	18	29	PPT50
65	2 1/2	69	124	140	175	10	20	17°	2-19	23	44	PPT65
80 (75)	3	80	134	150	185	10	20	16°	2-19	27	44	PPT80
100	4	102	159	175	210	10	20	14°	2-19	33	44	PPT1H
125	5	127	190	210	250	10	20	13°	2-23	43	54	PPT1Q
150	6	150	220	240	280	10	20	12°	2-23	59	54	PPT1F
200	8	198	270	290	330	10	20	10°	2-23	74	54	PPT2H

JPI Class 150

Unit：mm

Size		D1	D2	C	D3	Rib area			n-φh	Reference weight (g/piece)	Recommended bolts Tightening torque N·m	Item No.
A	B					H	W	θ				
50	2	61	104	120.6	152	10	20	20°	2-20	18	29	PPTJ50
125	5	143	196	215.9	254	10	20	13°	2-23	43	54	PPTJ1Q
200	8	220	277	298.4	343	10	20	10°	2-23	74	54	PPTJ2H

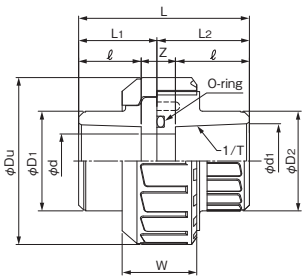
Note 1. For flange dimensions, refer to JIS10K, JIS B 2210, JPI Class 150, and JPI-7S-15.
Note 2. Use the JPI class when using ESLON PVDF pipes 50A, 125A, or 200A with TRIGUARD(TM) PTFE GASKET.
Note 3. Thickness: 3mm

ESLON™ TRUE UNION FITTING

- Compact body enable minimized face to face dimention for piping.
- Easy tightening with trapezoidal thread.

TRUE UNION FITTING SPECIFICATIONS

TRUE UNION COMPATIBLE TYPE



Unit:mm

Size		L	TS Socket			L1	L2	Z	d	Du	D1	D2	W	O-ring	Weight (PVC kg/pc)	Item No.			
																PVC		HT	
A	B		d1	1/T	ℓ											EPDM	FKM	EPDM	FKM
16	1/2	59	22.3	1/37	23	29.0	30.0	13	16	49	33	31	24	P20	0.07	UT16S	UT16SV	UTHT16S	UTT16SV
20	3/4	68	26.3	1/42	26	35.0	33.0	16	20	59	35	36	27	P24	0.09	UT20S	UT20SV	UTHT20S	UTT20SV
25	1	78	32.3	1/43	29	36.0	42.0	20	25	68	44	44	31	P30	0.16	UT25S	UT25SV	UTHT25S	UTT25SV
30	1 1/4	90	38.4	1/37	32	44.5	45.5	26	30	80	54	54	31	P36	0.24	UT30S	UT30SV	UTHT30S	UTT30SV
40	1 1/2	94	48.5	1/38	35	42.0	52.0	24	40	98	65	67	40	P48A	0.40	UT40S	UT40SV	UTHT40S	UTT40SV
50	2	110	60.6	1/34	38	48.0	61.0	34	50	120	77	79	43	P56	0.64	UT50S	UT50SV	UTHT50S	UTT50SV
65	2 1/2	122.5	76.6	1/48	45	50.0	72.5	32.5	67	150	96	データなし	50	P75	1.15	UT65S	UT65SV	–	–
75	3	146.0	89.6	1/49	48	56.0	90.0	50.0	80	185	112	データなし	67	P95	2.28	UT75S	UT75SV	–	–
100	4	173.4	114.7	1/56	58	65.5	107.9	57.4	102	228	144	データなし	82	P115	4.13	UT1HS	UT1HSV	–	–

Compatibility with Other True Union Products

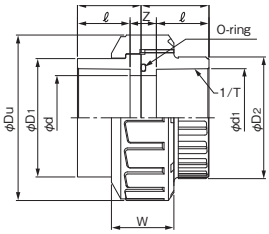
Compatible	Not Compatible
●DIAPHRAGM VALVE UNION TYPE ●CHECK VALVE LIFT TYPE ●DEAD SPACE FREE TEE-TYPE DIAPHRAGM VALVE ●YP BALL VALVE ●BALL VALVE ●FOOT VALVE (Excluding 32A) ●CHECK VALVE BALL TYPE TS Socket type・Thread Type (Excluding 32A) ●STRAINER Union type	●3-WAY BALL VALVE ●CHECK VALVE BALL TYPE TS Socket type・Thread Type (32A) ●RELIEF VALVE ●PRESSURE REGULATION VALVE ●FOOT VALVE (32A) ●AIR OPERATION VALVE ●SOLENOID VALVE

TRUE UNION COMPACT TYPE

Compatibility with Other True Union Products

Compatible	Not Compatible
●AIR OPERATION VALVE	Other Products

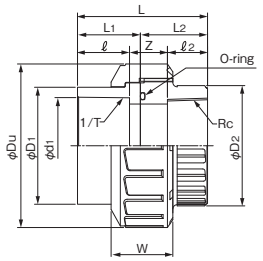
●TS Socket



Unit:mm

Size		L	TS Socket			Z	d	L1	L2	Du	D1	D2	W	O-ring	Weight (PVC kg/pc)	Item No.			
																PVC		HT	
A	B		d1	1/T	ℓ											EPDM	FKM	EPDM	FKM
13	3/8	42	18.30	1/30	18	6	13	20	22	40	24	26	17	P16	0.027	UN13S	UN13SV	UNT13S	UNT13SV
16	1/2	52	22.30	1/37	22	8	15	25	27	46	30	32	20	P20	0.047	UN16S	UN16SV	UNT16S	UNT16SV
20	3/4	59	26.30	1/42	25	9	20	28	31	54	35	37	23	P24	0.073	UN20S	UN20SV	UNT20S	UNT20SV
25	1	67	32.33	1/44	29	9	25	32	35	67	43	45	28	P30	0.132	UN25S	UN25SV	UNT25S	UNT25SV
30	1 1/4	76	38.43	1/37	32	12	31	36	40	78	53	55	31	P36	0.206	UN30S	UN30SV	UNT30S	UNT30SV
40	1 1/2	82	48.46	1/38	35	12	40	39	43	87	61	63	42	P46	0.271	UN40S	UN40SV	UNT40S	UNT40SV
50	2	92	60.56	1/34	38	16	51	43	49	107	76	78	43	P58	0.433	UN50S	UN50SV	UNT50S	UNT50SV
65	2 1/2	108	76.60	1/38	45	18	65	52	56	128	90	93	50	P71	0.663	UN65S	UN65SV	UNT65S	UNT65SV
75	3	120	89.60	1/40	48	24	77	58	62	151	108	111	57	P85	1.085	UN75S	UN75SV	UNT75S	UNT75SV
100	4	152	114.70	1/42	58	36	100	72	80	185	132	136	72	P112	1.873	UN1HS	UN1HSV	UNT1HS	UNT1HSV

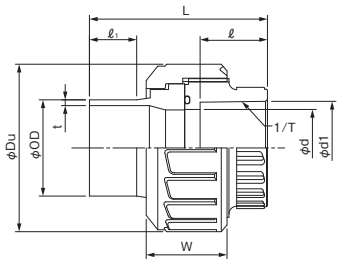
●TS Socket-Thread



Unit:mm

Size		L	TS Socket			Thread		L1	L2	Z	d	Du	D1	D2	W	O-ring	Weight (PVC kg/pc)	Item No.	
																		PVC	
A	B		d1	1/T	ℓ	Rc	ℓ2											EPDM	FKM
13	3/8	42	18.30	1/30	18	3/8	14	20	22	9.0	13	40	24	26	17	P16	0.028	UN13N	UN13NV
16	1/2	52	22.30	1/37	22	1/2	17	25	27	15.0	15	46	30	32	20	P20	0.049	UN16N	UN16NV
20	3/4	59	26.30	1/42	25	3/4	21	28	31	18.0	20	54	35	37	23	P24	0.075	UN20N	UN20NV
25	1	67	32.33	1/44	29	1	23	32	35	13.0	25	67	43	45	28	P30	0.134	UN25N	UN25NV
30	1 1/4	76	38.43	1/37	32	1 1/4	28	36	40	11.0	31	78	53	55	31	P36	0.208	UN30N	UN30NV
40	1 1/2	82	48.46	1/38	35	1 1/2	30	39	43	18.5	40	87	61	63	42	P46	0.276	UN40N	UN40NV
50	2	92	60.56	1/34	38	2	32	43	49	21.0	51	107	76	78	43	P58	0.439	UN50N	UN50NV
65	2 1/2	108	76.60	1/38	45	2 1/2	32	52	56	31.0	65	128	90	93	50	P71	0.669	UN65N	UN65NV
75	3	120	89.60	1/40	48	3	37	58	62	35.0	77	151	108	111	57	P85	1.093	UN75N	UN75NV
100	4	152	114.70	1/42	58	4	45	72	80	49.0	100	185	132	136	72	P112	1.883	UN1HN	UN1HNV

●PVDF Transtion



Unit:mm

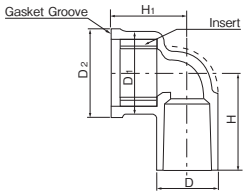
Size		L	Butt			TS Socket			d	Du	W	O-ring	Weight (PVC kg/pc)	Item No.			
														PVC/PVDF		HT/PVDF	
A	B		ℓ1	ϕOD	t	d1	1/T	ℓ						EPDM	FKM	EPDM	FKM
16	1/2	72	30	20	1.9	22.3	1/37	22	15	46	20	P20	0.050	UN16W	UN16WV	UNT16W	UNT16WV
20	3/4	76	24	25	1.9	26.3	1/42	25	20	54	23	P24	0.078	UN20W	UN20WV	UNT20W	UNT20WV
25	1	81	24	32	2.4	32.3	1/44	29	25	67	28	P30	0.132	UN25W	UN25WV	UNT25W	UNT25WV
30	1 1/4	85	25	40	2.4	38.4	1/37	32	31	78	31	P36	0.206	UN30W	UN30WV	UNT30W	UNT30WV
40	1 1/2	93	24	50	3.0	48.5	1/38	35	40	87	42	P46	0.290	UN40W	UN40WV	UNT40W	UNT40WV
50	2	104	28	63	3.0	60.6	1/34	38	51	107	43	P58	0.466	UN50W	UN50WV	UNT50W	UNT50WV

ESLON™ SUS INSERT FITTING

● Excellent corrosion and chemical resistance with SUS303 threaded insert.

SUS INSERT FITTING SPECIFICATIONS

Insert Faucet Elbow

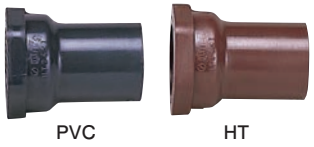


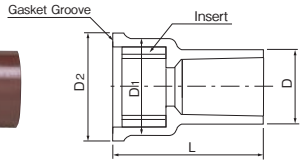
Unit:mm

Size	φD	φD1	φD2	H	H1	Weight (kg/pc)	Item No.	
							PVC	HT
13×Rp3/8	27.5	34	35	33	29	0.087	SWL133	SWLT133
13×Rp1/2	27.5	34	35	33	29	0.087	SWL134	SWLT134
16×Rp3/8	31	34	35	38	32	0.095	SWL163	SWLT163
16×Rp1/2	31	34	35	38	32	0.095	SWL164	SWLT164
20×Rp1/2	36	42	44	51	36	0.126	SWL20	SWLT20
25×Rp1	42	52	54	64	40	0.155	SWL25	SWLT25

・Thread : R conforming to JIS B 0203

Faucet Coupling



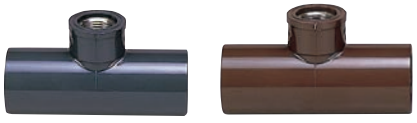


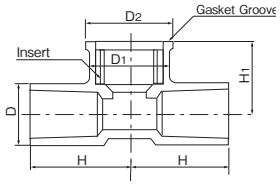
Unit:mm

Size	φD	φD1	φD2	L	Weight (kg/pc)	Item No.	
						PVC	HT
13×Rp3/8	27.5	34	35	46	0.080	SWS133	SWST133
13×Rp1/2	27.5	34	35	46	0.080	SWS134	SWST134
16×Rp3/8	31	34	35	52	0.083	SWS163	SWST163
16×Rp1/2	31	34	35	52	0.083	SWS164	SWST164
20×Rp1/2	36	42	44	63	0.111	SWS20	SWST20
20×Rp3/4	36	42	44	63	0.111	SWS206	SWST206
25×Rp1	42	52	54	72	0.134	SWS25	SWST25

・Thread : R conforming to JIS B 0203

Insert Faucet Tee



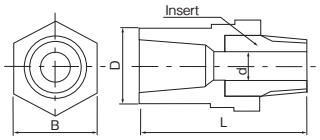


Unit:mm

Size	φD	φD1	φD2	H	H1	Weight (kg/pc)	Item No.	
							PVC	HT
13×Rp3/8	27.5	34	35	34	29	0.098	SWT133	SWTT133
13×Rp1/2	27.5	34	35	36	32	0.098	SWT134	SWTT134
16×Rp3/8	29	33	34	43	32	0.099	SWT163	SWTT163
16×Rp1/2	29	33	34	43	32	0.099	SWT164	SWTT164
20×Rp3/8	33	33	34	48	34	0.116	SWT203	SWTT203
20×Rp1/2	33	33	34	48	34	0.116	SWT204	SWTT204
25×Rp3/8	40	33	34	53	38	0.135	SWT253	SWTT253
25×Rp1	40	33	34	53	38	0.135	SWT254	SWTT254

・Thread : R conforming to JIS B 0203

Insert Male Adapter



Unit:mm

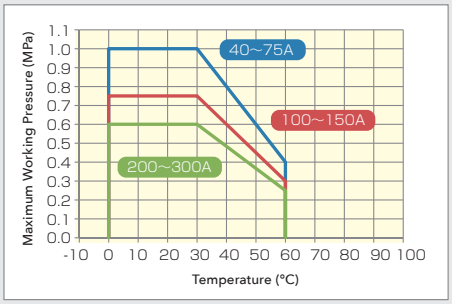
Size	φD	φd	L	B	Weight (kg/pc)	Item No.
						HT
13×R1/2	28	13	64	34	0.081	SWVS13
16×R1/2	31	13	70	34	0.091	SWVS16
20×R3/4	36	18	86	40	0.144	SWVS20
25×R1	42	28	100	45	0.127	SWVS25
30×R1•1/4	48	31	109	62	0.186	SWVS30
40×R1•1/2	58	37	114	68	0.222	SWVS40
50×R2	70	48	132	84	0.350	SWVS50

・Thread : R conforming to JIS B 0203

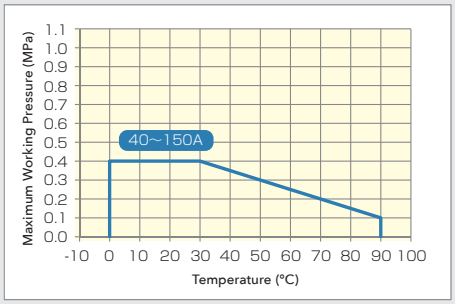
ESLON™ HEADER

- Pipe junctions are fused, achieving a smooth pipe interior with no bumps.
- Designed to allow for cross-directional and close proximity cross-directional pipe junctions, increasing the degree of movement.
- Minimum pitch is lower than tee connections.
- Lineup: ● ESLON Clean Header ● HT Esloclean Header ● Plant HT (T-17/P-10) Header

Usage Temperature and Maximum Working Pressure

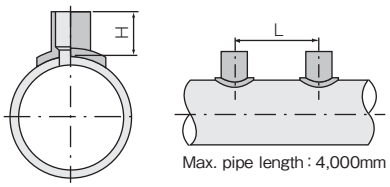


ESLON Clean Header

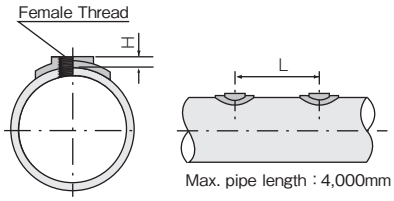


•HT Esloclean Header
•Plant HT Header

HEADER SPECIFICATIONS



TS Socket Type



Thread Type

Item	TS Socket Type	Thread Type
Plant HT Header		
ESLON Clean Header		
HT Esloclean Header		

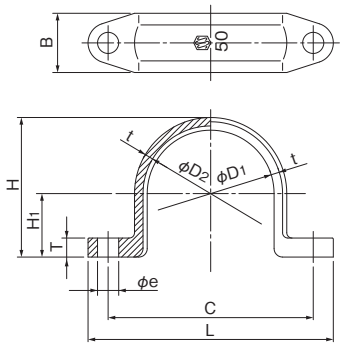
L : Minimum pitch of branch for main pipe.

Unit:mm

Branch size / Main pipe size	TS Socket Type																		Thread Type									
	13		16		20		25		30		40		50		65		75		Rc 1/4		Rc 3/8		Rc 1/2		Rc 3/4		Rc 1	
	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H
40A	—		—		—		—		—		—		—		—		—		40	12	40	12	—		—		—	
50A	60	40	60	40	60	45	60	50	—		—		—		—		—		60	9	60	9	60	9	60	9	—	
65A	70	40	70	40	70	45	80	50	80	54	—		—		—		—		70	11	70	11	70	11	70	11	—	
75A	70	40	70	40	70	45	80	50	80	54	90	65	—		—		—		70	11	70	11	70	11	70	11	—	
100A	70	40	70	40	70	45	80	50	80	54	90	65	110	73	—		—		70	11	70	11	70	11	70	11	—	
125A	70	40	70	40	70	45	80	50	80	54	90	65	120	73	—		—		75	12	75	12	75	12	75	12	75	12
150A	70	40	70	40	70	45	80	50	80	54	90	65	120	73	150	82	—		75	12	75	12	75	12	75	12	75	12
200A	70	40	70	40	70	45	80	50	80	54	90	65	120	73	150	82	170	87	75	14	75	14	75	14	75	14	75	14
250A	70	40	70	40	70	45	80	50	80	54	90	65	120	73	150	82	170	87	75	13	75	13	75	13	75	13	75	13
300A	70	40	70	40	70	45	80	50	80	54	90	65	120	73	150	82	170	87	75	13	75	13	75	13	75	13	75	13

ESLON™ SADDLE BAND

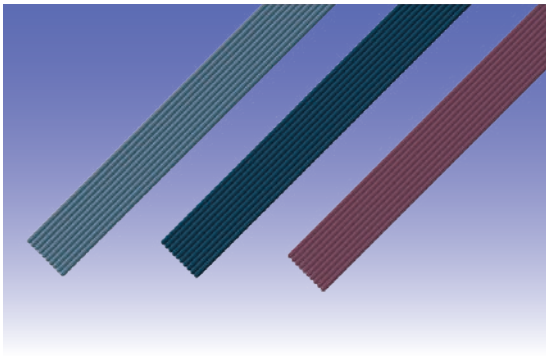
SADDLE BAND SPECIFICATIONS



Unit:mm

Size	φD1	φD2	t	C	L	φe	T	H1	H	B	Bolt	Weight (kg/pc)	Item No.
16	22	24	3	42	53	6	5	11.0	26.0	15	M5	0.01	SBU16
20	26	29	3	48	59	6	5	13.0	30.5	18	M5	0.01	SBU20
25	32	35	3	54	65	6	6	16.0	36.5	18	M5	0.01	SBU25
28	34	37	3	59	73	7	7	17.0	38.5	20	M6	0.01	SBU28
30	38	41	4	66	80	7	7	19.0	43.5	20	M6	0.03	SBU30
40	48	52	4	90	109	10	9	24.0	54.0	25	M8	0.03	SBU40
50	60	64	4	97	116	10	9	30.0	66.0	28	M8	0.03	SBU50
65	76	81	4	114	134	10	10	38.0	82.5	30	M8	0.05	SBU65
75	89	94	4	134	158	12	11	44.5	95.5	38	M10	0.07	SBU75
100	114	120	4.5	160	186	12	12	57.0	121.5	42	M10	0.10	SBU1H
125	140	150	5	192	218	12	12	70.0	150.0	46	M10	0.15	SBU1Q
150	165	177	8	238	268	17	14	82.5	179.0	50	M14	0.29	SBU1F
200	216	236	10	316	356	18	20	108.0	236.0	70	M16	0.72	SBU2H

WELDING ROD



WELDING ROD SPECIFICATIONS

Unit:mm

	Color	Quantitiy for Reference		length (mm)	Weight (kg/pc)	Item No.	
		Single (●)	Double (●●)				
		φ3	φ3			Single	Double
For PVC pipe	Gray	530	270	1,000	5	※	※
For HI pipe	Navy Blue	540	280	1,000	5	※	※
For Plant HT pipe (T-17)	Brown	440	220	1,000	5	WLHTT3S	WLHTT3W
For Plant HT pipe (P-10)	Pink	440	220	1,000	5	WLHTP3S	WLHTP3W

※…Please contact us.

ESLON™ SOLVENT CEMENT

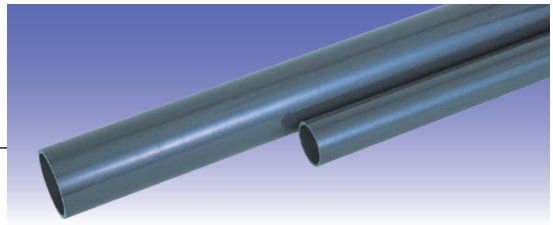
SOLVENT CEMENT LINEUP

Name	Size Color/Viscosity (13 50 150 300 600)	VP Plant	VP	VPW	VU	HI	HT	Clean Super	Clean HT	UVS	HTFW	VPFW	Clear	Volume	Item No.	Packing unit (CANS)
Compliant of JWWA S101 No.65S	Transparent Clear／500mPa•s		○	○	◎									1kg	S651	24
Compliant of JWWA S101 No.73S	Transparent Clear／500mPa•s	◎	◎	◎	◎								◎	500g	S735G	40
														1kg	S731	24
Compliant of JWWA S101 No.75S	Transparent Clear／150mPa•s	○	◎	◎	◎								◎	500g	S755G	40
														1kg	S751	24
Compliant of JWWA S101 No.80S	Transparent Clear／500mPa•s	○		○		◎							○	500g	S805G	40
														1kg	S801	24
Compliant of JWWA S101 No.83S White	White／500mPa•s													500g	S835G	40
														1kg	S831	24
No.90C	Transparent Clear／500mPa•s							◎						500g	C905G	40
														1kg	C901	24
No.90C White	White／500mPa•s													500g	C90W5G	40
														1kg	C90W1	24
No.95C ※without brush	Transparent Clear／1000mPa•s	◎	◎		○			◎						1kg	C951	24
No.95C White ※without brush	White／1000mPa•s													1kg	C95W1	24
Primer P-810										◎				1kg	P810C1K	24
No.100S	Transparent Clear／500mPa•s						◎		◎		◎			250g	S1H2G	80
														500g	S1H5G	40
														1kg	S1H1	24
No.110	Transparent Clear／1600mPa•s						◎				◎			500g	N1105G	40

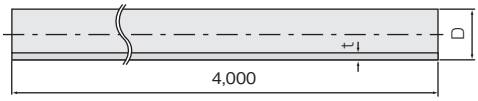
◎…recomendable ○…available

RELATED PRODUCTS

※For more information, Pleas visit to
https://www.eslon-plant.jp/



ESLON CLEAN PIPING SYSTEM



Pipe HI-PVC

Unit:mm

Size		D	t	Weight (kg/m)	Item No.
A	B				
13	3/8	18	2.5	0.170	CLP134S
16	1/2	22	3.0	0.251	CLP164S
20	3/4	26	3.0	0.303	CLP204S
25	1	32	3.5	0.439	CLP254S
30	1 1/4	38	3.5	0.531	CLP304S
40	1 1/2	48	4.0	0.774	CLP404S
50	2	60	4.5	1.098	CLP504S
65	2 1/2	76	4.5	1.416	CLP654S
75	3	89	5.9	2.156	CLP754S
100	4	114	7.1	3.338	CLP1H4S
125	5	140	7.5	4.372	CLP1Q4S
150	6	165	9.6	6.561	CLP1F4S
200	8	216	11.0	9.922	CLP2H4S
250	10	267	13.6	15.150	CLP2F4S
300	12	318	16.2	21.500	CLP3H4S

Pipe HT(CPVC)

Unit:mm

Size		D	t	Weight (kg/m)	Item No.
A	B				
16	1/2	22.0	3.0	0.265	HTCL164
20	3/4	26.0	3.0	0.321	HTCL204
25	1	32.0	3.5	0.464	HTCL254
30	1 1/4	38.0	3.5	0.561	HTCL304
40	1 1/2	48.0	4.0	0.818	HTCL404
50	2	60.0	4.5	1.161	HTCL504
65	2 1/2	76.0	5.0	1.651	HTCL654
75	3	89.0	5.8	2.244	HTCL754
100	4	114.0	7.0	3.483	HTCL1H4
125	5	140.0	8.2	4.957	HTCL1Q4
150	6	165.0	9.7	6.910	HTCL1F4

Fitting Line Up

Size		Coupling	90° Elbow	90° Bend	45° Elbow	Tee	Cap	Faucet Fitting				SUS Inserted Faucet Fitting			
A	B							Socket	Elbow	Tee	Male Adaptor	Socket	Elbow	Tee	Male Adaptor
13	3/8	HI	HI	-	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	-
16	1/2	HI/HT	HI/HT	-	HI/HT	HI/HT	HI/HT	HI	HI	-	HI	HI/HT	HI/HT	HI/HT	HT
20	3/4	HI/HT	HI/HT	-	HI/HT	HI/HT	HI/HT	HI	HI	HI	HI	HI/HT	HI/HT	HI/HT	HT
25	1	HI/HT	HI/HT	-	HI/HT	HI/HT	HI/HT	HI	HI	HI	HI	HI/HT	HI/HT	HI/HT	HT
30	1 1/4	HI/HT	HI/HT	-	HI/HT	HI/HT	HI/HT	-	-	-	HI	-	-	-	HT
40	1 1/2	HI/HT	HI/HT	-	HI/HT	HI/HT	HI/HT	-	-	-	HI	-	-	-	HT
50	2	HI/HT	HI/HT	-	HI/HT	HI/HT	HI/HT	-	-	-	HI	-	-	-	HT
65	2 1/2	HI/HT	HI/HT	-	HI/HT	HI/HT	-	-	-	-	HI	-	-	-	-
75	3	HI/HT	HI/HT	-	HI/HT	HI/HT	HI	-	-	-	HI	-	-	-	-
100	4	HI/HT	HI/HT	-	HI/HT	HI/HT	HI	-	-	-	-	-	-	-	-
125	5	HI/HT	HI/HT	-	HI/HT	HI/HT	-	-	-	-	-	-	-	-	-
150	6	HI/HT	HI/HT	-	HI/HT	HI/HT	-	-	-	-	-	-	-	-	-
200	8	HI	HI	HI	HI	HI	-	-	-	-	-	-	-	-	-
250	10	HI	HI	HI	HI	HI	-	-	-	-	-	-	-	-	-
300	12	HI	HI	HI	HI	HI	-	-	-	-	-	-	-	-	-

Reducing Fitting Line Up

Size	Coupling		Elbow	Tee	
	HI-PVC	HT	HI-PVC	HI-PVC	HT
16×13	●	-	-	●	-
20×13	●	-	●	●	-
20×16	●	●	-	●	●
25×13	●	-	●	●	-
25×16	●	●	-	●	●
25×20	●	●	●	●	●
30×13	●	-	-	●	-
30×16	-	-	-	●	●
30×20	●	●	-	●	●
30×25	●	●	-	●	●
40×13	-	-	-	●	-
40×16	-	-	-	●	●
40×20	●	●	-	●	●
40×25	●	●	-	●	●
40×30	●	●	-	●	●
50×13	-	-	-	●	-
50×16	-	●	-	●	●
50×20	●	●	-	●	●
50×25	●	●	-	●	●
50×30	●	●	-	●	●
50×40	●	●	-	●	●
65×16	-	●	-	-	●
65×20	-	●	-	-	●
65×25	-	●	-	-	●
65×30	-	●	-	-	●
65×40	-	●	-	-	●
65×50	●	●	-	●	●
75×20	-	●	-	-	●
75×25	-	●	-	●	●
75×30	-	●	-	-	●
75×40	-	●	-	●	●
75×50	●	●	-	●	●
75×65	●	●	-	●	●

Size	Coupling		Tee	
	HI-PVC	HT	HI-PVC	HT
100×20	-	●	-	●
100×25	-	●	-	●
100×30	-	●	-	●
100×40	-	●	-	●
100×50	-	●	●	●
100×65	-	●	-	●
100×75	●	●	●	●
125×20	-	●	-	●
125×25	-	●	-	●
125×50	-	●	-	●
125×65	-	●	-	●
125×75	-	●	-	●
125×100	-	●	●	●
150×13	●	-	-	-
150×20	-	●	-	●
150×25	-	●	-	●
150×75	-	●	●	●
150×100	●	●	●	●
150×125	●	●	●	●
200×75	-	-	●	-
200×100	-	-	●	-
200×150	●	-	●	-
250×75	-	-	●	-
250×100	-	-	●	-
250×150	●	-	●	-
250×200	●	-	●	-
300×75	-	-	●	-
300×100	-	-	●	-
300×150	●	-	●	-
300×200	●	-	●	-
300×250	●	-	●	-

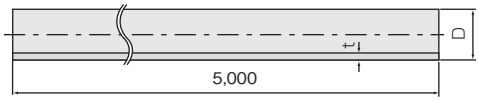
"UNIFIT" Compact Fitting

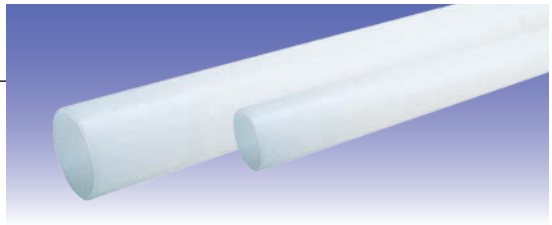
Size	Bushing Tee with Female Thread		Sampling Tee
	T-type	L-type	
20	●	●	-
25	●	●	-
30	●	●	-
40	●	●	-
50	●	●	-
65	●	●	●
75	●	●	●
100	●	●	●
125	●	-	●
150	●	-	●
200	●	-	-

Size	Bushing Tee with TS Socket		Reducing Elbow	Reducing Coupling
	T-type	L-type		
65×16	●	●	●	●
65×20	●	●	●	●
65×25	●	●	●	●
65×30	●	●	●	●
65×40	●	●	●	●
75×16	●	●	●	●
75×20	●	●	●	●
75×25	-	-	●	●
75×30	●	●	●	●
75×40	-	●	●	●
75×50	-	●	●	-
75×65	-	●	●	-
100×16	●	●	●	●
100×20	●	●	●	●
100×25	●	●	●	●
100×30	●	●	●	●
100×40	●	●	●	●
100×50	-	●	●	●
100×65	●	●	●	●
100×75	-	●	●	-

Size	Bushing Tee with TS Socket	
	T-type	L-type
125×16	●	-
125×20	●	-
125×25	●	-
125×30	●	-
125×40	●	-
125×50	●	-
125×65	●	-
125×75	●	-
150×16	●	-
150×20	●	-
150×25	●	-
150×30	●	-
150×40	●	-
150×50	●	-
150×65	●	-
200×16	●	-
200×20	●	-
200×25	●	-
200×30	●	-
200×40	●	-
200×50	●	-
200×65	●	-
200×75	●	-

ESLON PVDF-UHP PIPING SYSTEM





Pipe (PVDF)

Size	D	t	Weight (kg/m)	Item No.
16	20	1.9	0.210	FP155
20	25	1.9	0.270	FP205
25	32	2.4	0.440	FP255
30	40	2.4	0.550	FP325
40	50	3.0	0.850	FP405
50	63	3.0	1.090	FP505
65	75	3.6	1.550	FP655
75	90	4.3	2.220	FP805
100	110	5.3	3.320	FP1H5
125	140	4.3	3.520	FP1Q5
150	160	4.9	4.540	FP1F5
200	225	6.9	8.950	FP2H5

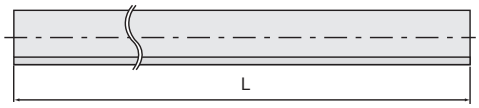
Fitting Line Up

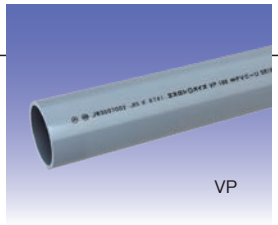
Size	90° Bend	45° Bend	Tee	Cap	Male Adaptor	Female Adaptor	Flange	True Union
16	●	●	●	●	●	●	●	●
20	●	●	●	●	●	●	●	●
25	●	●	●	●	●	●	●	●
30	●	●	●	●	●	●	●	●
40	●	●	●	●	●	●	●	●
50	●	●	●	●	●	●	●	●
65	●	●	●	●	-	-	●	-
75	●	●	●	●	-	-	●	-
100	●	●	●	●	-	-	●	-
125	●	●	●	-	-	-	●	-
150	●	●	●	-	-	-	●	-
200	●	-	●	-	-	-	●	-

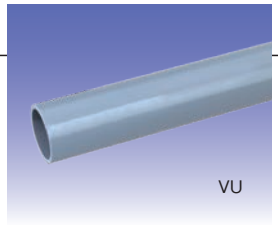
Reducing Fitting Line Up

Size	Reducing Tee	Reducing Coupling
20×16	-	●
25×16	-	●
25×20	-	●
30×16	-	●
30×20	-	●
30×25	-	●
40×16	-	●
40×20	-	●
40×25	-	●
40×30	-	●
50×25	●	●
50×30	-	●
50×40	-	●
65×40	-	●
65×50	-	●
75×50	●	●
75×65	-	●
100×50	●	●
100×65	●	●
100×75	●	-
150×75	●	-
150×100	●	●
150×125	-	●
200×150	-	●

ESLON PIPE




VP

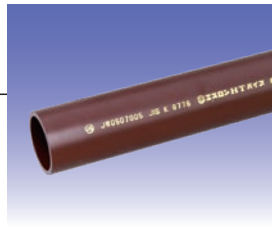

VU

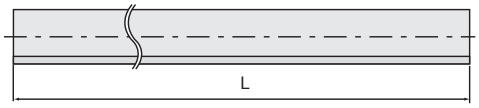

HI

U-PVC Pipe

Size	Item No.							Weight (kg/m)			
	JIS K 6741			JIS K 6742							
	VP	VU	HI-PipeGold+	VPW		HI-PipeGold+		VP	VU	HI-PipeGold+	VPW
	L=4000	L=4000	L=4000	L=4000	L=5000	L=4000	L=5000				
13	-	-	-	VW134	-	IW134	-	-	-	0.170	0.174
16	-	-	-	VW164	-	IW164	-	-	-	0.521	0.256
20	-	-	-	VW204	-	IW204	-	-	-	0.303	0.310
25	-	-	-	VW254	-	IW254	-	-	-	0.439	0.448
30	-	-	-	VW304	-	IW304	-	-	-	0.531	0.542
40	VP404	VU404	-	VW404	VW405	IW404	IW405	0.791	0.413	0.774	0.791
50	VP504	VU504	-	VW504	VW505	IW504	IW505	1.122	0.521	1.098	1.122
65	VP654	VU654	-	-	-	IP654	-	1.445	0.825	1.415	1.445
75	VP754	VU754	-	-	VW755	IW754	IW755	2.202	1.159	2.156	2.202
100	VP1H4	VU1H4	-	-	VW1H5	IW1H4	IW1H5	3.409	1.737	3.338	3.409
125	VP1Q4	VU1Q4	-	-	-	IP1Q4	-	4.464	2.739	4.370	4.464
150	VP1F4	VU1F4	-	-	VW1F5	IW1F4	IW1F5	6.701	3.941	6.561	6.701
200	VP2H4	VU2H4	IP2H4	-	-	-	-	10.129	6.572	9.918	-
250	VP2F4	VU2F4	IP2F4	-	-	-	-	15.481	9.758	15.157	-
300	VP3H4	VU3H4	IP3H4	-	-	-	-	21.962	13.701	21.504	-
350	-	VU3F4	-	-	-	-	-	-	18.051	-	-
400	-	VU4H4	-	-	-	-	-	-	23.059	-	-
450	-	VU4F4	-	-	-	-	-	-	28.875	-	-
500	-	VU5H4	-	-	-	-	-	-	35.346	-	-
600	-	VU6H4	-	-	-	-	-	-	52.679	-	-

ESLON HT PIPE



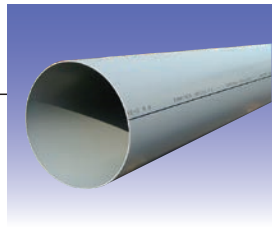


CPVC PIPE AND FITTINGS (ESLON HT)

Unit:mm

Size	Weight (kg/m)	Item No.	
		JIS K 6776	Sekisui standard
		L=4000	L=4000
13	0.180	HT134	-
16	0.265	HT164	-
20	0.321	HT204	-
25	0.464	HT254	-
30	0.561	HT304	-
40	0.818	HT404	-
50	1.161	HT504	-
65	1.651	-	HT654
75	2.244	-	HT754
100	3.483	-	HT1H4
125	5.025	-	HT1Q4
150	7.004	-	HT1F4

ESLON DUCT PIPE&FITTING



Pipe (E-Type)

Unit:mm

Size
150 ~ 600

Fitting Line Up

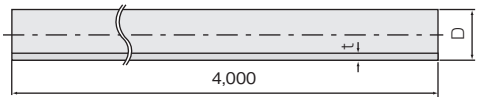
Unit:mm

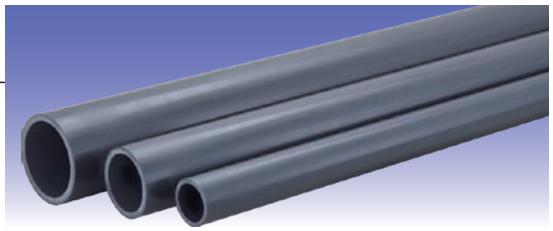
Type	Item	Size
Sleeve (Socket) Type	90° Elbow	150-600
	45° Elbow	150-600
	Coupling	150-600
	Reducing Coupling	All size
	Eccentric Reducing Coupling	All size
	Tee	All size
	Y-Tee	All size
	Cap	150-600
Flange Type	90° Elbow	150-600
	45° Elbow	150-600
	Reducing Coupling	All size
	Eccentric Reducing Coupling	All size
	Tee	All size
	Expansion Joint	150-600
	Damper	150-600
	Flange	150-600
	Blind Flange	150-600


Sleeve (Socket) Type


Flange Type

ESLON Sch80 PVC&CPVC PIPING SYSTEM





Pipe

Unit:mm

Size	D	t
1/2"	21.34	3.73
3/4"	26.67	3.91
1"	33.40	4.55
1 1/4"	42.16	4.85
1 1/2"	48.26	5.08
2"	60.32	5.54
2 1/2"	73.02	7.01

Unit:mm

Size	D	t
3"	88.90	7.62
4"	114.30	8.56
5"	141.30	9.53
6"	168.28	10.97
8"	219.08	12.70
10"	273.05	15.06
12"	323.85	17.45

Unit:mm

Size	D	t
14"	355.60	19.05
16"	406.40	21.41
18"	457.20	23.80
20"	508.00	26.19
24"	609.60	30.94

Fitting Line Up

size	Coupling		90° Elbow			45° Elbow			Tee			Male Adapter	Female Adapter
	S×S	FT×FT	S×S	FT×FT	S×FT	S×S	FT×FT	S×FT	S×S×S	FT×FT×FT	S×S×FT		
1/2"	●	●	●	●	●	●	●	●	●	●	●	●	●
3/4"	●	●	●	●	●	●	●	●	●	●	●	●	●
1"	●	●	●	●	●	●	●	●	●	●	●	●	●
1 1/4"	●	●	●	●	●	●	●	●	●	●	●	●	●
1 1/2"	●	●	●	●	●	●	●	●	●	●	●	●	●
2"	●	●	●	●	●	●	●	●	●	●	●	●	●
2 1/2"	●	●	●	●	●	●	●	●	●	●	●	●	●
3"	●	●	●	●	●	●	●	●	●	●	●	●	●
4"	●	●	●	●	●	●	●	●	●	●	●	●	●
5"	●		●			●			●				
6"	●		●			●			●				
8"	●		●			●			●				
10"	●		●			●			●				
12"	●		●			●			●				
14"	●		●			●			●				
16"	●		●			●			●				

size	Cap		Plug	Nipple	Union		One Piece Flange			Van Stone Flange		Blind Flange
	Socket	Thread			S×S	FT×FT	ANSI×ASTM	JIS×ASTM	ANSI×Threaded	ANSI×ASTM	JIS×ASTM	ANSI
1/2"	●	●	●	●	●	●	●	●	●	●		●
3/4"	●	●	●	●	●	●	●	●	●	●		●
1"	●	●	●	●	●	●	●	●	●	●		●
1 1/4"	●	●	●	●	●	●	●	●	●	●		●
1 1/2"	●	●	●	●	●	●	●	●	●	●		●
2"	●	●	●	●	●	●	●	●	●	●	●	●
2 1/2"	●	●	●	●	●	●	●	●	●	●	●	●
3"	●	●	●	●	●	●	●	●	●	●	●	●
4"	●	●	●	●	●	●	●	●	●	●	●	●
5"	●						●	●		●	●	●
6"	●						●	●		●	●	●
8"	●						●	●		●	●	●
10"	●									●	●	●
12"	●									●		●
14"										●	●	●
16"										●	●	●
18"										●	●	
20"										●	●	
24"												

Reducing Fitting Line Up

3/4"	● △ ■														
1"	● △ ■	● △ ■													
1 1/4"	● △ ■	● △ ■	● △ ■												
1 1/2"	● △ ■	● △ ■	● △ ■	● △ ■											
2"	● △ ■	● △ ■	● △ ■	● △ ■	● △ ■										
2 1/2"					● △ ■	● △ ■									
3"			● ■		● △ ■	● △ ■	● △ ■								
4"			■	■	■	● △ ■	● △ ■	● △ ■							
5"									● △ ■						
6"								● △ ■	● △ ■	● △ ■					
8"								△	● △ ■		● △ ■				
10"									△		■	● △ ■			
12"									△		■	● △ ■	● △ ■		
14"														● △	
16"														● △	● △
Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"

● Reducing Coupling
△ Reducing Tee
■ Bush

Basic Physical Property of Material

■Characteristic of Material

	Material	Abbreviation	General Characteristic
Plastic	Polyvinyl Chloride	PVC	Resistant against most of acids, alkalis and sodium of high to low concentration level, however tends to be attacked by some chemicals such as aromatic hydrocarbon, ketones, esters and chlorinated hydrocarbon.
	Hi-Impact Polyvinyl Chloride	HI-PVC	Almost same mechanical properties as PVC however higher impact strength and durability. Inferior to PVC in chemical resistance.
	Chlorinated Polyvinyl Chloride	HT CPVC	Almost same properties as PVC however higher heat resistance and usable for higher temperature application than PVC.
	Polypropylene	PP	It is lightweight, has high heat resistance, is excellent in durability, oil resistance, chemical resistance.
	Polyethylene	PE	It is lightweight, has high earthquake resistance, is excellent in durability, oil resistance, chemical resistance.
	Polyvinylidene difluoride	PVDF	Highly resistant in higher temperature range, against ordinary acids and chemicals, however broken down by fuming sulfuric acid and strong basic amines. Usable conditions and application are limited for ketones, amides, esters, solvents and alkalis.
	Polytetra-fluoroethylene	PTFE	Highly resistant against ordinary acids and alkalis, and not dissolved nor changed by ordinary solvent medium. Attacked by melted alkali metal and by fluorine and chlorine trifluoride in high temperature.
Rubber	Ethylene Propylene Rubber	EPDM	Chemical resistant and ozone resistant. Comparatively resistant against ketones and esters, however weak resistant against aromatics, alphatic families, gasoline, and oil.
	Fluor rubber (Trade name Viton)	FKM	Highly resistant against ordinary chemicals, especially acids. Resistant against oils, however attacked by ketones, ammonia anhydride, concentrated caustic soda, etc.
	Chlorinated polyethylene	FKM-FB	Enhanced FKM in chemical resistance. Superior resistant especially against high-temperature acids and highly concentrated acids. Remarkably low metal elution by chemicals. Same level of oil-resistance and high temperature resistance as FKM.
	Isobutylene-isoprene rubber	IIR	It has excellent in heat resistance, cold resistance, weather resistance. Our IIR-X rubber has high tolerance to sodium hypochlorite by special formulation

■Basic Physical Property of Material at Temp.23℃

Material / Property	Unit	PVC	HI-PVC	HT CPVC	PP	PE	PVDF	PTFE
Density	g/cc	1.43	1.40	1.48	0.92	0.95	1.77	2.17
Water Absorption	mg/m²	0.04～0.06	0.04～0.06	0.04～0.06	0.01	0.032	0.04≦	0.00
Tensile Strength Yield	MPa	50～55	40～45	50～55	35～40	20≦	49～54	17～22
Modulus of Elasticity	MPa	$2.5\sim3.0\times10^3$	$2.0\sim2.5\times10^3$	$2.5\sim3.0\times10^3$	$1.0\sim1.5\times10^3$	$0.9\sim1.1\times10^3$	$2.3\sim2.8\times10^3$	$3.7\sim4.2\times10^2$
Flexural Strength	MPa	78～89	76～81	88≦	24～35	24～25	64≦	
Sharpy Impact Strength	kJ/m²	5～10	not break (90≦)	10～15	3～8	16～18	17～21	2～5
Heat Deflection Temperature	℃	61～66	63～68	98～103	118～123		145～150	
Linear Expansion Coefficient	/℃	7×10^{-5}	7×10^{-5}	7×10^{-5}	12×10^{-5}	12×10^{-5}	12×10^{-5}	10×10^{-5}
Thermal Conductivity	W/m·K	0.15	0.15	0.14	0.12	0.46～0.50	0.12	0.7
Dielectric Strength	kV/mm	40≦	40≦	40≦	26	17.3～23.6	70	
Volume Resistivity	Ωcm	5.3×10^{15}≦	5.3×10^{15}≦	5.3×10^{15}≦	4.9×10^{15}≦	$1.0\sim10^{15}$≦	5×10^{15}≦	1×10^{18}

・This data is intended to serve as reference.

Chemical Resistance Guide

Please refer to "Chemical Resistance Manual for ESLON Plastics Pipe, Valves and Relative Materials" for details.

1 Please note that plastic might be strongly affected by surface-activating agent.
2 "PVC" in chemical resistance guide does not include "HI-PVC".
3 This table is intended to serve as guide only. The information based on data accumulated from immersion test and experiments herein is believed to be reliable, but no representations, guarantee or warranties of any kinds are made as to its accuracy, suitability for particular applications or results to be obtained.

++ : Excellent Resistant
\+ : Good Resistant
− : Caution (Actual testing suggested)
−− : Not recommended

Chemical	Concentration(%)	Temp. (℃)	Temp. (°F)	Plastic						Rubber				Metal
				PVC	CPVC (HT)	PP	PE	PVDF	PTFE	EPDM	FKM	FKM FB	IIR-X	SUS 316
Hydrochloric acid HCl	15	20	68	+	++	++	++	++	++	++	++	++	++	−−
		40	104	+	++	++	++	++	++	+	+	++	+	
		60	140	+	++	++	++	++	++	−	−	++	−	
		80	176		++	++		++	++	−−	−−	+	−−	
		100	212					++	++					
		120	248											
	35	20	68	+	++	++	++	++	++	+	++	++	+	−−
		40	104	+	++	++	++	++	++	−	−	++	−	
		60	140	+	+	++	++	++	++	−−	−−	+	−−	
		80	176		+	+		++	++			+		
		100	212					+	++					
		120	248											
	38	20	68	+	++	++	++	++	++	+	+	++	+	−−
		40	104	−	++	++	++	++	++	−	−	+		
		60	140	−	+	++		++	++	−−	−−	+		
		80	176		+	+		++	++			−		
		100	212					+	++					
		120	248											
Nitric acid HNO_3	10	20	68	++	++	++	++	++	++	++	++	++	++	++
		40	104	++	++	++	++	++	++	++	++	++	++	++
		60	140	+	++	++		++	++	+	+	++	+	++
		80	176		+	+		++	++	−−	−−	++	−−	++
		100	212					++	++					
		120	248											
	30	20	68	++	++	++	++	++	++	+	++	++	+	++
		40	104	+	+	++	+	++	++	+	+	++	+	++
		60	140	−	−	+		++	++	−−	+	++	−−	+
		80	176		−−	+		++	++		−	+		+
		100	212					++	++		−	+		+
		120	248											
	50	20	68	++	++	++	+	++	++	−−	++	++	−−	++
		40	104	−	−	+	−	++	++		+	++		+
		60	140	−−	−−	−		+	++		−	+		+
		80	176			−−		+	++		−−	+		−
		100	212					−	++					−
		120	248											
	60	20	68	+	+	−	−	++	++	−−	−−	++	−−	++
		40	104	−	−	−−	−−	++	++			+		+
		60	140	−−	−−			+	++			+		+
		80	176					−	++			−		−
		100	212						++					
		120	248											
	70	20	68	−−	−−	−−	−−	−	++	−−	−−	−	−−	++
		40	104					−−	+					
		60	140						+					
		80	176						−					
		100	212						−					
		120	248											
Sulfuric acid H_2SO_4	10	20	68	++	++	++	++	++	++	++	++	++	++	+
		40	104	++	++	++	++	++	++	++	++	++	++	−−
		60	140	++	++	++	++	++	++	++	++	++	++	
		80	176		++	++		++	++	++	++	++	+	
		100	212					++	++		++	++		
		120	248											
	30	20	68	++	++	++	++	++	++	++	++	++	++	−−
		40	104	++	++	++	++	++	++	++	++	++	++	
		60	140	++	++	++	++	++	++	++	++	++	++	
		80	176		++	++		++	++	+	++	++	+	
		100	212					++	++	−−	++	++		
		120	248											
	50	20	68	++	++	++	++	++	++	++	++	++	++	−−
		40	104	++	++	++	++	++	++	++	++	++	++	
		60	140	++	++	++	++	++	++	++	++	++	++	
		80	176		++	++		++	++	+	++	++	+	
		100	212					++	++	−−	++	++		
		120	248											

Ref, : Ver.7 ESLON CHEMICAL RESISTANCE GUIDE

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Chemical	Concentration(%)	Temp. (℃)	Temp. (°F)	Plastic						Rubber				Metal
				PVC	CPVC (HT)	PP	PE	PVDF	PTFE	EPDM	FKM	FKM FB	IIR-X	SUS 316
Sulfuric acid H_2SO_4	70	20	68	++	++	++	++	++	++	++	++	++	+	−−
		40	104	++	++	++	++	++	++	++	++	++	−	
		60	140	++	++	++	+	++	++	+	++	++	−−	
		80	176		+	+		+	++	−	++	++		
		100	212					+	++		+	+		
		120	248											
	80	20	68	++	++	++	++	++	++	++	++	++	+	−−
		40	104	++	++	++	++	++	++	++	++	++	−	
		60	140	+	+	+	+	++	++	+	++	++	−−	
		80	176		−	+		+	++	−	+	++		
		100	212					+	++		−	+		
		120	248											
	90	20	68	+	+	++	++	++	++	++	++	++	−−	−−
		40	104	+	+	++		++	++	+	++	++		
		60	140	−	−	+		++	++	−	++	++		
		80	176			+		+	++	−−	+	+		
		100	212					+	+		−−	−		
		120	248											
	98	20	68	+	+	−−	−−	++	++	−−	++	++	−−	−−
		40	104	−	−			+	++		+	++		
		60	140	−−	−−				++		−	+		
		80	176						+					
		100	212											
		120	248											
Hydrofluoric acid HF	Dilute	20	68	++	++	++	++	++	++	++	++	++	++	
		40	104	++	+	+	+	++	++	++	++	++		
		60	140	−	+	+		++	++	++	++	++		
		80	176		−	+		++	++	++	++	++		
		100	212			+		++	++	++	++	++		
		120	248								+	+		
	30	20	68	++	++	++	++	++	++	++	++	++	++	
		40	104	+	+	+	+	++	++	++	++	++		
		60	140	−	−	+		++	++	++	++	++		
		80	176	−−	−−	+		++	++	+	++	++		
		100	212					++	++	−−	++	++		
		120	248											
	40	20	68	+	+	++	++	++	++	++	++	++	++	
		40	104	−	−	+	+	++	++	+	++	++		
		60	140	−−	−−	+		++	++	−	++	++		
		80	176			+		++	++	−−	++	++		
		100	212					++	++		+	++		
		120	248											
	50	20	68	+	+	++	++	++	++	++	++	++	++	−−
		40	104	−−	−−	+	+	++	++	+	++	++		
		60	140			+		++	++	−	++	++		
		80	176			+		++	++		++	++		
		100	212					++	++		+	++		
		120	248								−	+		
Acetic acid CH_3COOH	20	20	68	++	++	++	++	++	++	++	++	++	−−	++
		40	104	+	++	++	+	++	++	++	+	++		++
		60	140	−	+	+		++	++	+	−	+		++
		80	176		−	−		++	++		−−	+		++
		100	212					+	++					++
		120	248											
	50	20	68	++	++	++	++	++	++	+	+	+	−−	++
		40	104	+	+	+	+	++	++	−	−	−		++
		60	140	−	−	−	−	++	++	−−	−−	−−		++
		80	176		−−			++	++					++
		100	212					+	++					++
		120	248											
Chromic acid H_2CrO_4	20	20	68	+	+	−−	−−	++	++	+	+	+	−−	+
		40	104	+	+			++	++	−−	+	+		−
		60	140	+	+			++	++		+	+		−
		80	176					++	++		−	−		−−
		100	212					++	++		−−	−−		−−
		120	248											

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Chemical	Concentration(%)	Temp. (℃)	Temp. (°F)	Plastic						Rubber				Metal
				PVC	CPVC (HT)	PP	PE	PVDF	PTFE	EPDM	FKM	FKM FB	IIR-X	SUS 316
Chromic acid H_2CrO_4	50	20	68	+	+	−−	−−	++	++	−−	+	+	−−	+
		40	104	+	+	−−		−	++					−−
		60	140					−−	++					
		80	176						++					
		100	212						++					
		120	248											
Hydrogen peroxide H_2O_2	20	20	68	++	++	++	++	++	++	++	++	++	++	−−
		40	104	+	+	++	++	++	++	+	++	++	+	−−
		60	140	−	−	++		++	++	+	++	++	+	−−
		80	176		−	+		++	++	−	++	++	−	
		100	212											
		120	248											
	30	20	68	++	−	++	++	++	++	++	++	++	−−	−−
		40	104	+	−	+		++	++	+	+	+		−−
		60	140	−		+		++	++	−	−	−		−−
		80	176			−		++	++		−	−		
		100	212											
		120	248											
	50	20	68	+	−	−	−	++	++	−−	−	−	−−	−−
		40	104	−	−−	−−	−−	++	++		−−	−−		−−
		60	140					++	++					
		80	176					++	++					
		100	212											
		120	248											
Caustic potash (Potassium hydroxide) KOH	5	20	68	++	++	++	++	++	++	++	+	++	++	+
		40	104	++	+	++	++	++	++	++			++	+
		60	140	+	+	++	++	+	++	++			++	+
		80	176		+	++		−	++	++				+
		100	212					−−	++	+				+
		120	248											
	14	20	68	+	+	++	++	++	++	++	+	++		+
		40	104	+	−−					++	−−			+
		60	140	+	−−					++				+
		80	176							++				+
		100	212							+				+
		120	248											
	25	20	68	++	++	++	++	++	++	++	+	++	++	+
		40	104	++	+	++	++	++	++	++			++	+
		60	140	++	+	++	++	+	++	++			++	+
		80	176		+	++		−	++	++				+
		100	212					−−	++	+				+
		120	248											
Sodium hydroxide NaOH	5	20	68	+	+	++	++	++	++	++	++	++		++
		40	104	+	−−	++	++		++	++	++	++		++
		60	140	+	−−	++			++	++	+	+		++
		80	176						++	+				++
		100	212											++
		120	248											
	15	20	68	++	+	++	++	++	++	++	+	++	++	++
		40	104	++	−	++	++	++	++	++	−	+	++	++
		60	140	++	−	++		+	++	++	−−			++
		80	176		−−	+		−	++	+				++
		100	212					−−	++	+				++
		120	248											
	30	20	68	++	++	++	++	++	++	++	−	+	++	++
		40	104	++	++	++	++	+	++	++	−−	−−	++	++
		60	140	++	+	++		−	++	++				
		80	176		−	+		−−	++	++				
		100	212						++	+				
		120	248											
	50	20	68	++	++	++	++	++	++	++	−−	−−	++	+
		40	104	++	++	++	++	+	++	++			++	+
		60	140	++	++	++	++	−	++	++				+
		80	176		+	+		−−	++	++				+
		100	212						++					+
		120	248											−

Ref, : Ver.7 ESLON CHEMICAL RESISTANCE GUIDE

Please refer to "Chemical Resistance Manual for ESLON Plastics Pipe, Valves and Relative Materials" for details.

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\+ : Good Resistant
− : Caution (Actual testing suggested)
−− : Not recommended

Chemical	Concentration(%)	Temp. (℃)	Temp. (°F)	Plastic PVC	Plastic CPVC (HT)	Plastic PP	Plastic PE	Plastic PVDF	Plastic PTFE	Rubber EPDM	Rubber FKM	Rubber FKM FB	Rubber IIR-X	Metal SUS 316
Sodium hypochlorite NaClO	1ppm	20	68	++	++	++	+	++	++	++	++	++	++	
		40	104											
		60	140											
		80	176											
		100	212											
		120	248											
	3	20	68	++	++	+	+	++	++	+	++	++	++	+
		40	104	++	++	+	−	++	++	+	++	++	+	+
		60	140	+	−	+		++	++	−	++	++	+	−
		80	176					++						
		100	212					++						
		120	248											
	5	20	68	++	++	+	+	++	++	+	++	++	++	+
		40	104	++	++	+	−	++	++	+	++	++	+	+
		60	140	+	−	−		++	++	−	++	++	−	−
		80	176					++						
		100	212					++						
		120	248											
	7	20	68	++	++	+	−	++	++	+	++	++	++	+
		40	104	++	++	−	−−	++	++	+	++	++	+	+
		60	140	+	−	−		++	++	−	++	++	−	−
		80	176					++						
		100	212					++						
		120	248											
	10	20	68	++	++	+	−	++	++	−−	++	++	++	−−
		40	104	++	++	−	−−	++	++		++	++	+	
		60	140	+	−	−		++	++		++	++	−	
		80	176					++						
		100	212					++						
		120	248											
	13	20	68	++	++	+	−−	++	++	−−	++	++	++	−−
		40	104	++	++	−		++	++		+	+	+	
		60	140	+	−			++	++					
		80	176					++						
		100	212					++						
		120	248											
Ferric chloride $FeCl_3$	Satu	20	68	++	++	++	++	++	++	++	++	++	++	−−
		40	104	++	++	++	++	++	++	++	++	++	++	
		60	140	+	++	++	++	++	++	++	++	++	++	
		80	176		++	++		++	++	++	++	++		
		100	212					++	++	+	+	+		
		120	248											
Ammonia water NH_3Aq	10	20	68	+	−−	++	++	++	++	++	+	+	++	++
		40	104	+	−−	++	++	++	++	++	−	−	++	+
		60	140	+	−−	++	++	++	++	++	−−	−−	++	+
		80	176		−−	+		++	++	++			++	+
		100	212					++	++	++			+	+
		120	248											
	28	20	68	+	−−	++	++	++	++	++	−	−	++	++
		40	104	+	−−	++	++	++	++	++	−	−	++	
		60	140	−	−−	++	++	++	++	++	−−	−−	++	
		80	176		−−	++		++	++					
		100	212					++	++					
		120	248											
Toluene (Toluol) $C_6H_5CH_3$	Pure	20	68	−−	−−	+	−	++	++	−−	−	−	−−	
		40	104			−		++	++					
		60	140			−−		+	++					
		80	176					+	++					
		100	212					−	+					
		120	248						−					
Benzene C_6H_6	Pure	20	68	−	−	+	+	++	++	−−	+	+	−−	
		40	104	−−	−−	−	−	+	++		+	+		
		60	140					+	++		+	+		
		80	176					+	++		+	+		
		100	212											
		120	248											

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Chemical	Concentration(%)	Temp. (℃)	Temp. (°F)	Plastic PVC	Plastic CPVC (HT)	Plastic PP	Plastic PE	Plastic PVDF	Plastic PTFE	Rubber EPDM	Rubber FKM	Rubber FKM FB	Rubber IIR-X	Metal SUS 316
Non-ionic Surfactant	10	20	68	–	––		–	+	+					
		40	104	–	––		–	+	+					
		60	140											
		80	176											
		100	212											
		120	248											
Cationic surfactant	10	20	68	+	–		+	++	++					
		40	104	+	–		+	++	++					
		60	140											
		80	176											
		100	212											
		120	248											
Anionic surfactant	10	20	68	+	–		+	++	++					
		40	104	+	–		+	++	++					
		60	140											
		80	176											
		100	212											
		120	248											
Methyl alcohol (Methanol) CH_3OH	Pure	20	68	–	–	++	++	++	++	++	++	++	+	++
		40	104	––	––	++	++	++	++	++	++	++		++
		60	140			+		+	+	+	+	+		++
		80	176											
		100	212											
		120	248											
	20	20	68	++	++	++	++	++	++	++	++	++	++	++
		40	104	+	+	++	++	++	++	++	++	++	++	++
		60	140			+		+	+	+	+	+	+	++
		80	176											
		100	212											
		120	248											
Soybean oil	–	20	68	–	–	++	++	++	++	++	++	++	++	
		40	104	–	–	++	++	++	++	++	++	++	++	
		60	140	–	–	++		++	++	++	++	++	++	
		80	176		–	+		++	++	–	++	++	++	
		100	212					++	++	––	–	–		
		120	248					++	++		––	––		
Gasoline	–	20	68	–	–	––	––	++	++	––	+	+	––	
		40	104					++	++					
		60	140					++	++					
		80	176					++	++					
		100	212											
		120	248											
Kerosene (kerosine)	–	20	68	–	–	+	+	++	++	––	++	++	––	
		40	104	–	–			++	++					
		60	140	––	––			++	++					
		80	176					++	++					
		100	212											
		120	248											
Aniline (Aminobenzene) $C_6H_5NH_2$	Pure	20	68	–	–	+	+	++	++	++	++	++	++	+
		40	104	––	––	+	–	+	++	–	+	+	–	+
		60	140			–		+	++	––	–	–	––	+
		80	176			––		–	++					+
		100	212					––	++					+
		120	248						++					
Ethanolamine $H_2NCH_2CH_2OH$	Pure	20	68	––	––	++	+	––	++	+	––	––	–	+
		40	104						++					+
		60	140											+
		80	176											+
		100	212											+
		120	248											+

Ref, : Ver.7 ESLON CHEMICAL RESISTANCE GUIDE

SAFETY PRECAUTIONS

Essential safety precautions are explained here in order to ensure safe and appropriate use. Warnings and explanations are as follows.

⚠ Warning	Ignoring or misunderstanding warnings may result in death or serious injury.
⚠ Precautions	Ignoring or misunderstanding precautions may result in injury or damage to property.

1. Usage Precautions

⚠ Precautions

- **Usage Temperature**
  Varies depending on fluid pressure. Check conditions before use.
- **Usage Application**
  Usage application differs depending on the type of pipe. Using outside of the intended application poses significant risk, as it may damage the pipe or fittings. Clearly confirm the usage application prior to use. Contact us with any questions.

2. Transport Precautions

⚠ Warning

- **Wear Gloves**
  To prevent injury, be sure to wear slip-resistant rubber gloves when working.
- **Do Not Sit or Stand Atop Pipe**
  The surface of the pipe is slippery, and may cause injury. Do not sit or stand on top of the pipe.
- **Handle Carefully**
  When stacking or removing from trucks, do not throw or drag the pipes or fittings. Handle with care in order to avoid damage, breakage, or injury.
- **Suspended or Hanging Pipes**
  When using a truck with a crane, ensure that the pipes are balanced to avoid injury.
- **Inattentive Cargo Handling is Dangerous**
  Large diameter pipes and banded units of pipes can become heavy. Handle cautiously in order to avoid injury.
- **Prevent Cargo Shifting During Transport**
  Pay proper care to prevent pipes falling due to loose or improperly tied ropes.

⚠ Precautions

- **Use Cushioning**
  To avoid damaging or warping the pipes, place cushioning between the truck bed, the pipes, and the rope secure fixtures.

3. Application Precautions

⚠ Warning

- **Water Flow Test**
  Be sure to use water pressure when testing pipes for leaks and pressure endurance. Testing with air is incredibly dangerous, as it may erupt from the fitting and shoot out pipe fragments.

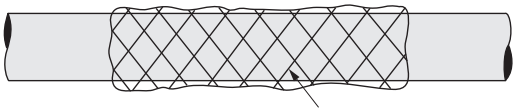
■PVC Pipe • Fittings

⚠ Warning

- **Solvent Vapor**
  Disperse of all solvent vapor before use. Leaving solvent vapor in the pipes following connection may result in pipe explosion should the surrounding area be subject to high temperatures, sparks, or flame. Leaving the connected pipes unused for a long period of time will increase the likelihood that the pipes will fill with solvent vapor.

⚠ Precautions

- **Pipe-fitting connecting**
  Fully ventilate the pipe after connecting. When the pipes are closed after connecting, solvent cracking (from residual vapor in the solvent) may cause small fissures in the PVC pipe. The vapors are particularly resistant to evaporation in the wintertime. Exercise caution.
  Install expansion joints to prevent breakage or disconnection due to changes in heat.
- **Organic Solvent and Chemical Precautions**
  Organic solvents may penetrate into the PVC pipe and fitting material. Do not use Creosote (wood antiseptic), termite pesticide, insect pesticide, or other such sprays. Chemical agents spilt onto the ground may penetrate into pipes and fittings that have been shallowly buried. Exercise proper caution. Consider using polyethylene tube for protection.



Polyethylene Tube

- **Bending Prohibited**
  Do not bend the pipes, as it may leave warps or cause breakage.
- **Manufacturing pipe or fittings with heat on site**
  Under no conditions should you heat the pipes, as it may reduce their strength.
- **Making threaded joints with PVC pipe and fittings**
  PVC pipes are prone to notch effects. Do not directly thread the PVC or fittings, as this may decrease the strength of the pipe, and cause indentations or ruptures.
- **Anti-freeze**
  Frozen pipes may lead to pipe breakage. Ensure necessary pipe flow in cold climates. Consider removing the liquid in the pipes and using heating materials to prevent freezing.

4. Solvent Cement Handling Precautions

⚠ Warning

●Store in Accordance with the Law
Solvent cement is considered a hazardous substance under the Fire Services Act. Follow the law and local regulations when storing. Keep away from flame and store in a cool area after use.

●Use in Accordance with the Law
ESLON solvent cement is considered a class two solvent cement under the organic solvent poisoning prevention regulations of the Ministry of Health, Labor and Welfare. If using an amount of solvent cement exceeding the permissible limit below within one hour, the solvent cement will be subject to these regulations, and you will be required to obtain certification as a supervising handler of organic solvents. Confirm details with a labor safety standards supervision office in your jurisdiction.

Solvent cement maximum permissible limit W (g/hours)=0.4(g/m³・hours) x room area (m³) (Room area calculated as 150m³ if the room exceeds 150m³ when measured within 4m above the floor.) To calculate the usage amount of solvent cement per hour, the actual amount used is multiplied by 0.6.

●Ventilation・Flame Precautions
Solvent cement is a flammable, hazardous substance that contains organic solvents. To prevent fire or explosion, cigarettes, lighters, sparks, and flame are prohibited in the storage area or workspace. In addition, thoroughly ventilate the area before using. Volatile substances have an adverse affect on the human body.

●Eye Contact
If the substance mistakenly enters your eyes, avoid rubbing them and quickly see a doctor.

●Hand Washing and Gargling
Thoroughly wash your hands and gargle after use.

●Wearing Gloves
Wear gloves to prevent rash or inflammation. Be careful to avoid direct contact with the skin. If the substance comes into contact with your skin, quickly wash it off using water and soap.

***About container displays**
Solvent cement is considered a hazardous substance (class 4 petroleum). Be sure to read the precautions regarding connection and handling of each product prior to use.

⚠ Precautions

●Suitable Solvent Cements
Use an ESLON solvent cement suited to the pipe type.

●Do not use out-of-date or contaminated products.
Do not use a thinner to water down solvent cement that has hardened due to age or contamination from water or dirt. This will reduce the effectiveness of the solvent cement, and may lead to disconnection.

●Dispose of accumulated water from the initial flow cycle.
ESLON solvent cement contains organic solvents. Flushed water may omit an odor if the pipe connection was coated with a large amount of solvent cement or the solvent cement has not yet sufficiently dried. Allow the solvent cement to sufficiently dry, and dispose of the initial accumulated water.

●Do Not Mix
Do not mix various types of solvent cements together or mix old solvent cement with new solvent cement. This will reduce the effectiveness of the solvent cement, and may lead to disconnection.

●Chamfer
Be sure to chamfer the edge of the pipe before connecting, and mark with a line.

●Clean Off Coating Surface
Wipe off any oils, moisture, or dust from the connection surface before coating the pipe with solvent cement. Try to coat as uniform a layer as possible.

●Quickly Insert After Coating
Once coated with the solvent cement, quickly insert the pipe into the fitting and hold until it is firmly in place.

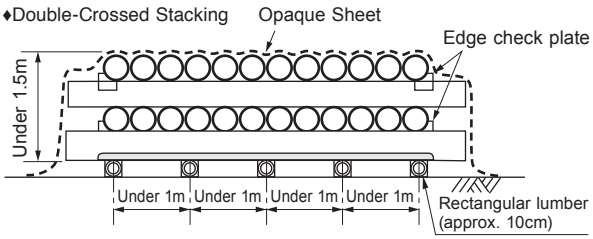
●Reinsertion Prohibited
Do not reinsert pipes or fittings that have fallen out once they have initially been coated and inserted, regardless of whether you have recoated the pipe with solvent cement. Doing so will reduce the effectiveness of the solvent cement, and may lead to disconnection and leaks.

5. Storage Precautions

■PVC Pipe • Fittings

⚠ Precautions

●Set Down Horizontally Indoors
To prevent warps and deformations to the PVC pipes, store by stacking in a flat area. Be sure to use material on the sides to keep the pipes from shifting.



●If Storing Upright
If necessary to store upright, ensure safety by using a rope or other measure to prevent collapse.

●If Storing Outside
If storing outside, keep out of sunlight in order to prevent warps and deformations to the PVC pipes. Drape in an opaque sheet or build a makeshift roof. If using a sheet, make sure that wind is unable to penetrate into the stack.

●Storing Fittings
In principle, store fittings indoors in order to prevent warps or dirt. In particular, avoid storing in high temperature environments (such as in vehicles during summer). Doing so will make the fittings susceptible to warping.

6. Flange Connection Precautions

⚠ Precautions

- Use seal-type ESLON GASKET.
- Tighten the bolt uniformly. Be sure to use a flat washer on the bolt and nut side to prevent the flange from losing strength.
  If set between valves and gasket, adjust the end-to-end dimensions to eliminate any gaps between the piping materials prior to tightening the bolts.
- Do not use raise faced metal flanges (including LP piping).
- Uniformly tighten the bolt diagonally according to the sequence shown in the figure below.
- Refer to ESLON GASKET instructions for bolt tightening torque.
  *The standard tightening torque values for ESLON EPDM GASKET are shown in figure 1.
- Use bolts shown in figure 2 to avoid issues with longer bolts hitting the valve body or shorter bolts that are unable to initially screw down.

Bolt tightening sequence

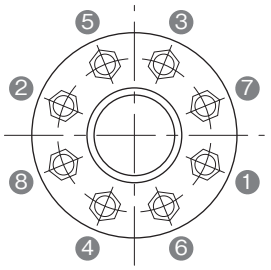


Fig.A

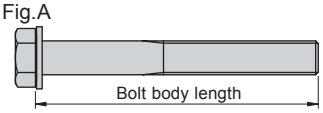


Fig.B

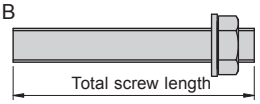


Fig.1 Standard tightening torque for flat faced plastic flange (for EPDM)

Unit: N・m

Size (A)	15~20	25~50	65~100	125~200	250~300
Torque	15	30	45	55	65

Fig.2 Flange Connection Bolts

Size (A)		15	20	25	32	40	50	65	75	80	100	125	150	200	250	300
TS Flange (10K)	Bolt diameter	M12	M12	M16	M16	M16	M16	M16	—	M16	M16	M20	M20	M20	M22	M22
	Body length	50	50	55	60	60	70	75	—	75	75	80	85	90	95	100
	Number	4	4	4	4	4	4	4	—	8	8	8	8	12	12	16
TS Flange (5K)	Bolt diameter	M10	M10	M10	M12	M12	M12	M12	—	M16	M16	M16	M16	M20	M20	—
	Body length	45	45	45	50	50	55	55	—	55	60	60	65	90	95	—
	Number	4	4	4	4	4	4	4	—	4	8	8	8	8	12	—
TS Flange (For Water Supply)	Bolt diameter	—	—	—	—	—	—	—	M16	—	M16	M16	M16	M16	M20	M20
	Body length	—	—	—	—	—	—	—	75	—	80	80	85	90	95	100
	Number	—	—	—	—	—	—	—	4	—	4	6	6	8	8	10

ESLON PLANT PIPE MATERIALS CATALOGUE

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