

**HEAD OFFICE**

ASUNG Bldg, 544 Gyeongin-Ro, Guro-Gu, Seoul (08278)  
Tel : 82-2-2671-1900-5 Fax : 82-2-2671-5687

**BUSAN BRANCH**

B-202 Seo-Myenjeonpo shopping arcade, 33 Jeonpo-Daero,  
255 Beon-gil, Busanjin-Gu, Busan (47247)  
Tel : 82-51-818-7781-4 Fax : 82-51-804-4060

**CANADA**

605-2267 Lakeshore West  
Toronto, ON M8V 2X3

**HONG KONG**

Rm401-403, 4/F, Honour Industrial Centre, 6 Sun Yip St.,  
Chai Wan, Hong Kong  
Tel : 852-6298-7868 [H.K.] / 852-6298-6286 [H.K & China]

**FACTORY 1**

280, Haean-Ro, Danwon-Gu, Ansan-Si, Gyeonggi-Do (15612)  
Tel : 82-31-494-8193-4 Fax : 82-31-492-6650

**FACTORY 2**

28-110, Bugokgongdan 4-Gil, Dangjin-Si, Chungcheongnam-Do (31721)  
Tel : 82-41-357-8192-5 Fax : 82-41-357-8676

Homepage : [www.asungvalve.com](http://www.asungvalve.com)  
E-mail : [sales@asungvalve.com](mailto:sales@asungvalve.com)



Since 1967

# ASUNG of the World



▪ **South Korea**

Seoul : Head Office  
Busan : Branch  
Ansan : Factory  
Dangjin : Factory

▪ **China**

Shanghai : Representative Office  
Hong Kong : Representative Office

▪ **North / Central / South America**

Canada, USA  
Chile, Brazil

▪ **Asia**

Azerbaijan, China, Indonesia, Japan,  
Kuwait, Malaysia, Myanmar, Philippines,  
Singapore, Taipei, Thailand, Vietnam

▪ **Europe**

Bulgaria

▪ **Africa**

Nigeria

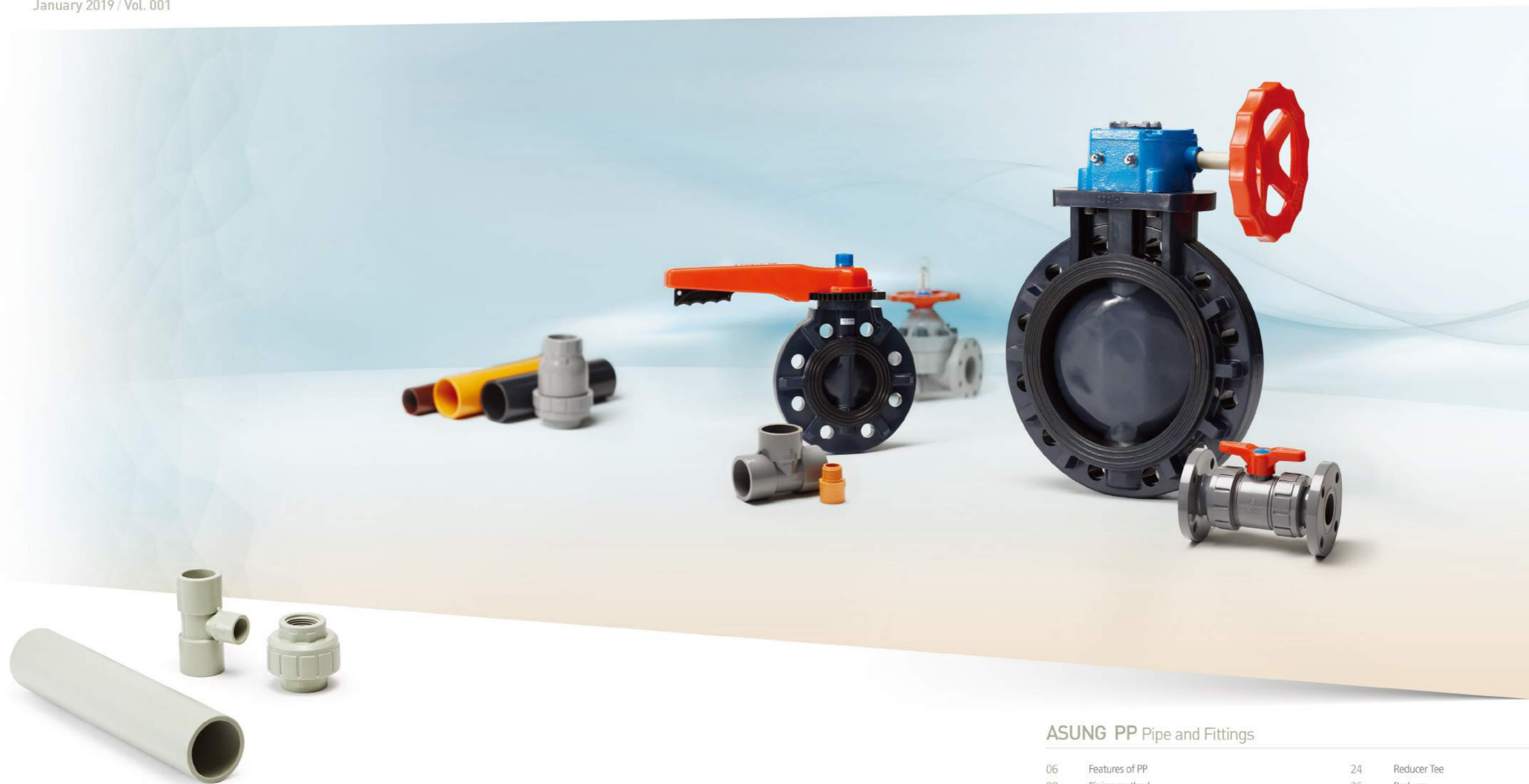
▪ **Oceania**

Australia



# Contents

January 2019 / Vol. 001



## ASUNG PP Pipe and Fittings

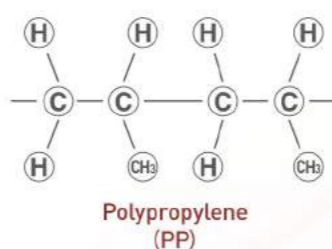
06	Features of PP	24	Reducer Tee
08	Piping method	26	Reducer
09	General property of PP	28	YT
10	Property comparison table of PLASTIC used for PIPE and FITTING	29	Y
12	Work specification of PP welding piping	30	Union
14	Thermal expansion and thermal stress	32	T.S Flange
15	Type of newly built pipes	34	Blind Flange
18	Pipe	36	Cap
19	90° Elbow	37	Valve Socket
20	45° Elbow	38	Clean Out
21	Socket	39	Welding Rod
22	Tee		

# ASUNG PP

## Pipe and Fittings

### PP (Polypropylene) pipe

PP (Polypropylene) is one of the most versatile materials that we use. With physical properties similar to PVC, including high heat resistance, it is a suitable PVC replacement. The superiority of PP has been recognized, with most wastewater treatment plants and chemical lines in the wastewater industry using PP instead of PVC.



### Features

#### 1. Easy handling

PP PIPE has a specific gravity of 0.9 - 0.91, and being lighter than other pipes, it is easy to carry and install thanks to its weight: 1/9 of steel pipe and 1/1.5 of copper pipe.

#### 2. Suitable for high temperature

With a maximum operating temperature of 90 °C (based on water), PP is suitable for high-temperature fluid transport that cannot be used with PVC.

#### 3. Excellent chemical resistance

Suitable for transporting acids, alkalis, and salt excellent for high temperature and high concentration.

#### 4. Excellent mechanical strength

When used at high temperature, PP has high mechanical strength, e.g. tensile strength, pressure and impact resistance compared to other synthetic resins.

#### 5. Excellent electrical insulation

Excellent electrical insulation properties and no concern about galvanic corrosion from any kind of fluid.

#### 6. Excellent fluid flow

There is no change in flow rate as the scale does not occur even with long-term use.

#### 7. Powerful features at low temperature

Maintains high strength even at low temperatures with the use of high-quality raw materials.

#### 8. Excellent heat and cold retention

Low-thermal conductivity (0.15 - 0.20), which is about 1/270 of iron with thermal insulation and cold insulation.

#### 9. Easy construction

Easy welding, even in a narrow space. In addition, socket fusion (inquire welding machine separately) is also available.

#### 10. Stress Cracking

ASUNG PP PIPE does not cause stress cracking



# ASUNG PP

## Pipe and Fittings

### Piping method

#### 1. Support gap

ASUNG PP PIPE has a narrower support interval than metal pipes, e.g. hard vinyl chloride pipes.

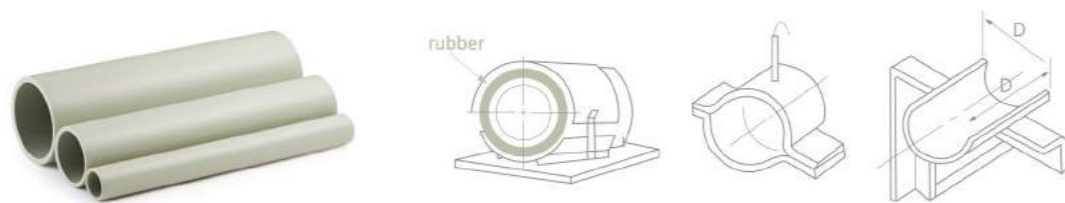
Temperature(°C)	Fluid	Nominal diameter												unit:m
		16	20	25	40	50	65	80	100	125	150	200	250	
Room temperature	Liquid	1.0	1.0	1.3	1.4	1.5	1.7	1.8	2.0	2.5	2.5	2.9	3.0	3.6
	Gaseous body	1.2	1.5	1.7	2.0	2.3	2.5	2.8	3.0	3.5	4.0	4.5	5.0	5.5
60	Liquid	0.7	0.8	0.9	1.0	1.1	1.2	1.4	1.6	1.7	1.8	2.1	2.2	2.5
	Gaseous body	0.9	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.5	3.0	3.1	3.5	3.9
80	Liquid	0.7	0.8	0.8	0.9	1.0	1.0	1.2	1.4	1.5	1.7	1.9	2.0	2.3
	Gaseous body	0.9	0.9	1.1	1.2	1.4	1.6	1.8	2.0	2.4	2.6	2.8	3.2	3.5
100	Liquid	0.6	0.7	0.8	0.8	0.9	1.0	1.1	1.3	1.4	1.6	1.8	1.9	2.2
	Gaseous body	0.8	0.8	1.0	1.3	1.3	1.5	1.7	1.9	2.2	2.3	2.4	3.0	3.3

\* The above table assumes room temperature o 30 of °C except for indoor piping.

#### 2. Support location

PIPE support positions are common to all PIPEs, but they tend to be concentrated on the dynamic loading line (pulsations, vibrations, and shocks), which needs intensive checking.

To support PIPE, use a shaft or PIPE band. The pressing band should be longer. Applying buffer materials in the band so as not to damage PIPE is recommended.



#### 3. Handling and storage

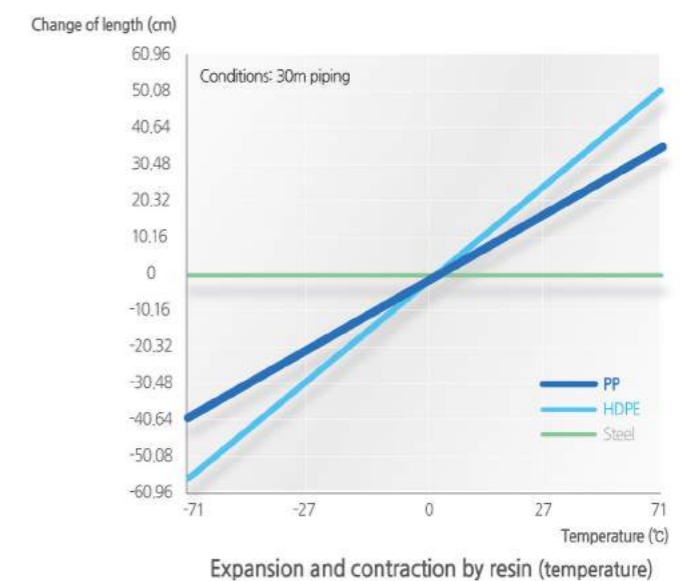
Handling : - Be careful not to drop PVDF pipe during transportation or allow impact from tools during construction.

Storage : - When stored for long periods, keep the product on a level surface with good ventilation and no direct sunlight.  
- When stored using sleepers, it is recommended to use 5-6 sleepers to avoid PIPE from bending.  
- Stacking in the open air is not recommended. If necessary, however, avoid direct contact of the pipe with floor, protrusions, and direct sunlight.

### General property of PP

Item	Unit	Test Method	PP
Gravity	-		0.90~0.91
Tensile strength	kgf/cm <sup>2</sup>	ASTM D 638	300~350
Coefficient of linear expansion	°C <sup>-1</sup>	ASTM D 696	11x10 <sup>-5</sup>
Flexural modulus	kgf/cm <sup>2</sup>	ASTM D 790	9200
ROCKWLL Longitude	RScale		93
Impact strength	kgf/cm <sup>2</sup>	ASTM D 256	4~5
Absorption rate	%		<0.03
Permittivity	18x10 <sup>6</sup> cycle		2.2~2.3
Dielectric loss	18x10 <sup>6</sup> cycle		0.0003~0.0010
Voltage withstand	KV/mm		30~32
Volume specific resistance	Ωcm	ASTM D 257	>10 <sup>16</sup>
Thermal conductivity	Kcal/(hm°C)		0.15~0.2
VICAT Softening point	°C		83
Heat-deflection temperature	°C	ASTM D 648	105°C

### Expansion and contraction by resin



# ASUNG PP

## Pipe and Fittings



### Property comparison table of PLASTIC used for PIPE and FITTING

#### Service temperature and corrosion-resistance range

	Range of service temperature								
	-40	-20	-10	60	85	90	100	105	120~140
PVC	X	X	△	○	X	X	X	X	X
PP	X	○	○	○	○	○	X	X	X
PPG	X	○	○	○	○	○	○	X	X
CPVC	X	○	○	○	○	○	X	X	X
PVDF	○	○	○	○	○	○	○	○	○

	Range of corrosion-resistance								
	Weak acid	Strong acid	Oxidation component	Mixed acid	Weak alkaline	Strong alkaline	Organic solvent	Corrosive gas	
PVC	○	○	○	○	○	○	X	X	
PP	○	○	△	△	○	○	X	X	
PPG	○	○	○	○	○	○	X	○	
CPVC	○	○	○	○	○	○	X	○	
PVDF	○	○	○	○	○	○	○	○	

\* For more details, please refer to the CHEMICAL RESISTANCE ON ASUNG VALVE booklet.



#### O-Ring

	Range of service temperature								
	-40	-20	-10	60	85	90	100	105	120~140
Natural rubber	△	○	○	△					
Synthetic rubber	CR, NBR	△	○	○	○	○	X		
	EPDM, FPM	○	○	○	○	○	○	△	
PTFE	○	○	○	○	○	○	○	○	○

	Range of corrosion-resistance								
	Weak acid	Strong acid	Oxidation component	Mixed acid	Weak alkaline	Strong alkaline	Organic solvent	Organic acid solvent	Corrosive gas
Natural rubber	○	X	X	X	○	△	X	X	X
Synthetic rubber	CR, NBR	○	△	X	△	○	○	X	△
	EPDM, FPM	○	△	△	○	○	○	X	△
PTFE	○	○	○	○	○	○	○	○	○

○ : Usable △ : Usable on occasion X : Do not use

#### Comparison of Mechanical Properties

material	UPVC	CPVC	PPH	PPG	PVDF	Test Method
Special						
Tensile strength (kgf/cm <sup>2</sup> ) (lb/in <sup>2</sup> )	500~550 (7,100~7,820)	500~550 (7,100~7,820)	300~350 (4,570~4,980)	700~750 (9,960~10,670)	500~600 (7,110~8,530)	ASTMD 638
Impact strength (kgf/cm <sup>2</sup> )	3~5	7~10	4~5	6~8	10~20	ASTMD 256
Coefficient of thermal expansion (10 <sup>-5</sup> /c)	6~8	6~8	11~12	4~5	11~12	ASTMD 696
Max. application temperature °C(°F)	60(140)	90(195)	90(195)	100(210)	120(250)	

# ASUNG PP

## Pipe and Fittings

### Work specification of PP welding piping



#### 1. Cutting

Cut the PIPE at right angles and check the cut.

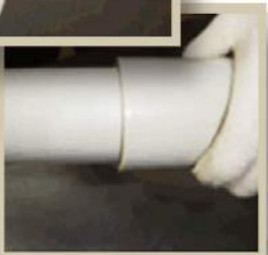
\* Cut using cutting tools (wheel type, ratchet type, saw) or cast iron cutter



#### 2. Chamfering (rounding)

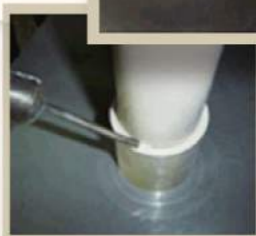
Chamfer (rounding) the outer diameter of PIPE to 10° - 15°.

\* Remove burr generated when chamfering



#### 3. Insertion

Insert the chamfered PIPE to the FITTING and push all the way in.



#### 4. Temporary welding

Weld PIPE and FITTING by setting air temperature of the heating gun to 210 °C - 240 °C

\* Temporary welding is to facilitate the main welding by lightly attaching the joint part to be welded.



#### 5. The main welding

Maintain hot air temperature and ensure welding rod is at an angle of 60° - 90° Press it while welding.

After welding 1 welding rod, weld 2 welding rods on top in sequence.

\* If the welding rod is burned or not welded during the main welding, piping failure may occur. Check if the temperature is correct.

#### \* Precaution \*

- When welding, PIPE, FITTING and welding rod should be made of the same material and from the same manufacturer.
- PLASTIC PIPE & FITTING work should be performed by a trained welder.
- The nozzle tip end should be welded while turning the nozzle spirally at a distance of 3 - 5mm from the welding surface of the basic material
- Hot air temperature may vary depending on the work environment and welding products.

#### \* Normal welding \*



(1-round welding)



(2-round welding)

After the first temporary welding, bond with ideal beads through normal welding

#### \* Examples of poor welding \*



The temperature of the welding nozzle is set low, resulting in abnormal BEAD



The welding rod melted due to excessive temperature of the welding nozzle



Unstable bonding due to low-welding nozzle temperature and irregular joining intervals



# ASUNG PP

## Pipe and Fittings

### Thermal expansion and thermal stress

PP PIPE has a large coefficient of thermal expansion like PVC PIPE and polyethylene PE. Hence, it is important to use the expansion pipe or absorb the expansion by the piping method and not to give excessive thermal stress to PIPE & FITTING.

#### 1. Thermal expansion Change of length generated in the pipe according to temperature variation

$$\Delta l = L \alpha \Delta T$$

- $\Delta l$  : Expansion length(cm)
- L : Piping length(cm)
- $\alpha$  : Coefficient of thermal expansion  
( $1.1 \times 10^{-4} \text{cm/cm}^\circ\text{C}$ )
- $\Delta T$  : Temperature change( $^\circ\text{C}$ )

#### 2. Thermal stress Stress caused by temperature change when both ends of a pipe are fixed

$$\delta t = E \alpha \Delta T$$

- $\delta t$  : Thermal stress(kg/cm<sup>2</sup>)
- E : Modulus of elasticity(kg/cm<sup>2</sup>)
- $\alpha$  : Coefficient of expansion  
( $1.1 \times 10^{-4} \text{cm/cm}^\circ\text{C}$ )
- $\Delta T$  : Temperature change( $^\circ\text{C}$ )

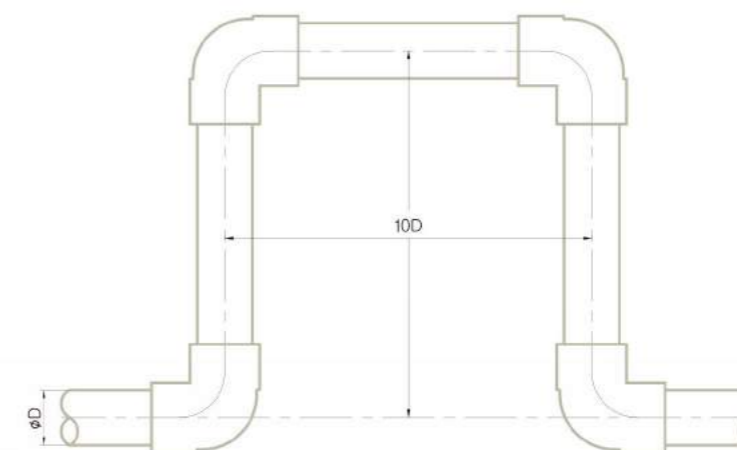
#### 3. Thermal load

$$F = \frac{\delta t \pi (D^4 - d^4)}{4}$$

- $\delta t$  : Thermal stress(kg/cm<sup>2</sup>)
- D : Outer diameter(cm)
- d : Inner diameter(cm)

### Type of newly built pipes

#### U band



U band is manufactured using ELOBW and PIPE.

\* The new allowable building range based on 100A is  $\pm 150\text{mm}$  when constructed based on the aforementioned standard.

#### \* Flexible joint

In case of temperature change / pipe length / high fluid temperature, check the flexible joint of the pipe to minimize risk caused by thermal expansion.

#### PIPE Weight

SIZE	15A	20A	25A	30A	40A	50A	65A	80A	100A	125A	150A	200A	250A	300A	350A
Weight	0.7	0.9	1.2	1.5	2.1	3	4.4	5.9	9.1	13.1	17.8	27.2	39.4	57.7	83.6

Unit: Based on Kg / 4M





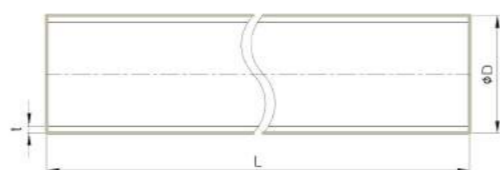
# ASUNG PP (Polypropylene) Pipe, Fitting System



# ASUNG PP

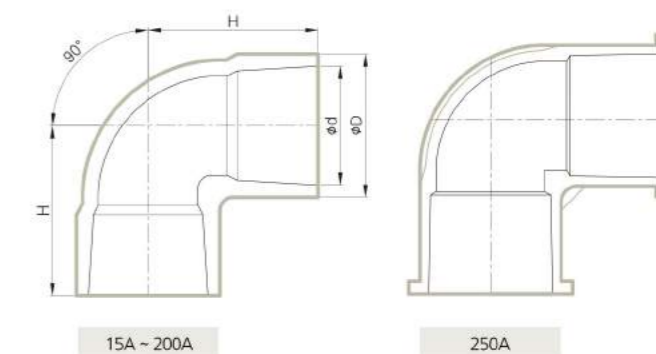
## Pipe and Fittings

### PIPE



DIMENSION				unit:mm
NOMINAL SIZE	D	t	L	
15A	22	3.0		
20A	26	3.0		
25A	32	3.5		
32A	38	3.5		
40A	48	4.0		
50A	60	4.5		
65A	76	5.2		
80A	89	5.9	4,000	
100A	114	7.1		
125A	140	8.3		
150A	165	9.6		
200A	216	11.1		
250A	267	13.4		
300A	318	16.1		
350A	370	20.0		

### 90° ELBOW



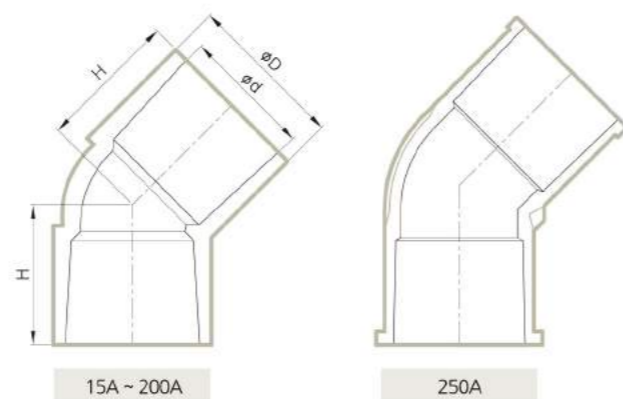
DIMENSION				unit:mm
NOMINAL SIZE	D	d	H	
15A	31	22.4	38	
20A	38	26.4	41	
25A	44	32.4	51	
32A	52	38.4	57	
40A	62	48.4	64	
50A	75	60.4	76	
65A	90	76.6	88	
80A	107	89.7	100	
100A	131	114.7	119	
125A	162	141.2	143	
150A	187	166.3	172	
200A	245	217.6	268	
250A	299	269.1	420	

\* 300A and 350A are order-made sizes

# ASUNG PP

## Pipe and Fittings

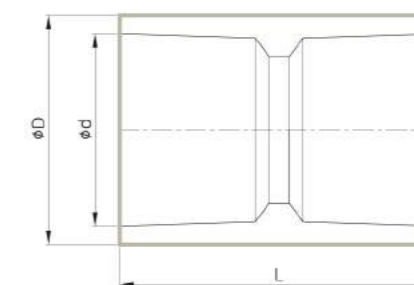
### 45° ELBOW



DIMENSION				unit:mm
NOMINAL SIZE	D	d	H	
15A	30	22.4	34	
20A	34	26.4	38	
25A	41	32.4	45	
32A	52	38.4	52	
40A	64	48.4	63	
50A	76	60.4	67	
65A	92	76.6	76	
80A	105	89.7	85	
100A	133	114.7	116	
125A	161	141.2	140	
150A	190	166.3	153	
200A	243	217.6	211	
250A	299	269.1	290	

\*\* 300A and 350A are order-made sizes

### SOCKET

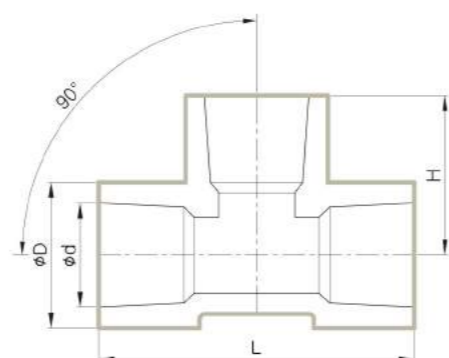


DIMENSION				unit:mm
NOMINAL SIZE	D	d	L	
15A	30	22.4	53	
20A	35	26.4	58	
25A	43	32.4	63	
32A	51	38.4	73	
40A	60	48.4	79	
50A	72	60.4	85	
65A	91	76.6	111	
80A	105	89.7	121	
100A	132	114.7	126	
125A	159	141.2	167	
150A	189	166.3	181	
200A	245	217.6	230	
250A	295	269.1	320	
300A	347	320.7	342	
350A	408	373.5	417	

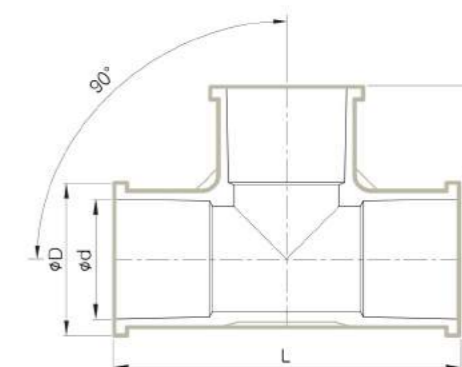
# ASUNG PP

## Pipe and Fittings

### TEE



15A ~ 200A



250A

#### DIMENSION

unit:mm

NOMINAL SIZE	D	d	H	L
15A	30	22.4	37	74
20A	37	26.4	40	81
25A	45	32.4	49	97
32A	52	38.4	56	110
40A	62	48.4	62	121
50A	75	60.4	71	140
65A	90	76.6	88	176
80A	107	89.7	98	195
100A	133	114.7	130	259
125A	161	141.2	156	307
150A	187	166.3	178	350
200A	245	217.6	264	518

#### DIMENSION

unit:mm

NOMINAL SIZE	D	d	H	L
250A	299	269.1	365	640

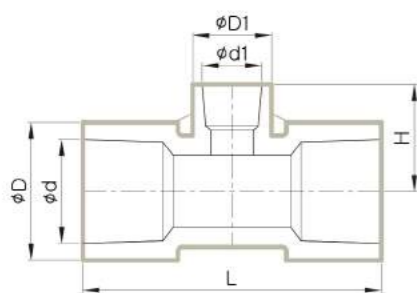
\* \* 300A and 350A are order-made sizes



# ASUNG PP

## Pipe and Fittings

### REDUCER TEE

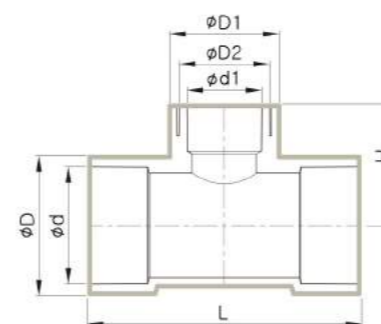


A-TYPE

#### A-TYPE DIMENSION

unit:mm

NOMINAL SIZE	D	d	D1	d1	H	L
20Ax15A	37	26.4	30	22.4	40	80
25Ax15A	45	32.4	30	22.4	48	97
25Ax20A	45	32.4	37	26.4	48	97
32Ax15A	46	38.4	29	22.4	50	132
32Ax20A	46	38.4	33	26.4	56	132
32Ax25A	52	38.4	45	32.4	55	110
40Ax15A	62	48.4	30	22.4	59	121
40Ax20A	62	48.4	37	26.4	59	121
40Ax25A	62	48.4	45	32.4	59	121
40Ax32A	62	48.4	52	38.4	59	121
50Ax15A	72	60.4	29	22.4	59	140
50Ax20A	72	60.4	35	26.4	65	140
50Ax25A	75	60.4	43	32.4	69	140
50Ax32A	72	60.4	52	38.4	69	140
50Ax40A	75	60.4	62	48.4	69	140
65Ax25A	90	76.6	42	32.4	80	175
65Ax32A	90	76.6	58	38.4	90	177
65Ax40A	90	76.6	58	48.4	90	177
65Ax50A	90	76.6	71	60.4	90	177
80Ax40A	106	89.7	62	48.4	86	210
80Ax50A	106	89.7	75	60.4	93	210
100Ax50A	132	114.7	76	60.4	105	259
100Ax80A	132	114.7	105	89.7	115	259
125Ax100A	162	141.2	134	114.7	165	342
150Ax80A	190	166.3	105	89.7	155	385
150Ax100A	190	166.3	133	114.7	180	410
150Ax125A	190	166.3	162	141.2	200	427
200Ax100A	244	217.6	134	114.7	198	429
200Ax125A	244	217.6	160	141.2	221	453
200Ax150A	244	217.6	184	166.3	253	483
250Ax80A	299	269.1	105	89.7	213	471
250Ax200A	299	269.1	243	217.6	290	590



B-TYPE

#### B-TYPE DIMENSION

unit:mm

NOMINAL SIZE	D	d	D1	D2	d1	H	L
65Ax15A	90	76.6	69	32	22.4	102	218
80Ax25A	106	89.7	72	40	32.4	112	208
80Ax65A	106	89.7	105	87	76.6	99	197
100Ax20A	134	114.7	72	34	26.4	122	247
100Ax25A	134	114.7	72	40	32.4	122	247
100Ax65A	133	114.7	133	85	89.7	152	306
125Ax32A	162	141.2	133	50	38.4	164	342
125Ax50A	162	141.2	133	72	60.4	164	342
125Ax80A	164	141.2	160	105	89.7	185	370
150Ax50A	190	166.3	105	70	60.4	155	385
200Ax25A	244	217.6	134	43	32.4	198	429
200Ax50A	244	217.6	134	70	60.4	198	429
200Ax80A	244	217.6	134	105	89.7	198	429
250Ax25A	299	269.1	106	43	32.4	213	471
250Ax50A	299	269.1	106	70	60.4	213	471
250Ax125A	299	269.1	243	156	141.2	290	590
250Ax150A	299	269.1	243	184	166.3	290	590

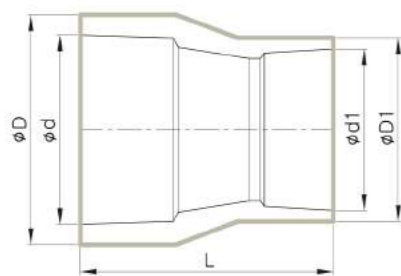
\* Please contact us for different sizes.



# ASUNG PP

## Pipe and Fittings

### REDUCER

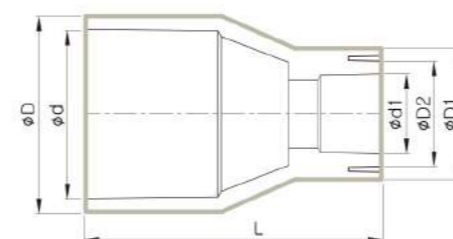


A-TYPE

#### A-TYPE DIMENSION

unit:mm

NOMINAL SIZE	D	d	D1	d1	L
20Ax15A	33	26.4	28	22.4	56
25Ax15A	40	32.4	29	22.4	65
25Ax20A	42	32.4	34	26.4	65
32Ax15A	46	38.4	33	22.4	92
32Ax20A	46	38.4	33	26.4	92
32Ax25A	52	38.4	43	32.4	74
40Ax15A	58	48.4	29	22.4	73
40Ax20A	60	48.4	33	26.4	75
40Ax25A	60	48.4	41	32.4	75
40Ax32A	58	48.4	46	38.4	78
50Ax15A	72	60.4	28	22.4	91
50Ax20A	72	60.4	34	26.4	91
50Ax25A	72	60.4	41	32.4	77
50Ax32A	72	60.4	51	38.4	91
50Ax40A	72	60.4	58	48.4	91
65Ax40A	89	76.6	71	48.4	106
65Ax50A	89	76.6	72	60.4	106
80Ax40A	103	89.7	71	48.4	105
80Ax50A	103	89.7	71	60.4	105
80Ax65A	103	89.7	88	76.6	108
100Ax40A	130	114.7	70	48.4	197
100Ax50A	130	114.7	72	60.4	120
100Ax65A	131	114.7	103	76.6	183
100Ax80A	131	114.7	103	89.7	127
125Ax80A	157	141.2	103	89.7	227
125Ax100A	160	141.2	131	114.7	153
150Ax80A	185	166.3	103	89.7	291
150Ax100A	187	166.3	131	114.7	174
150Ax125A	187	166.3	160	141.2	180
200Ax150A	243	217.6	189	166.3	364
250Ax200A	299	269.1	243	217.6	395



B-TYPE

#### B-TYPE DIMENSION

unit:mm

NOMINAL SIZE	D	d	D1	D2	d1	L
80Ax25A	103	89.7	70	43	32.4	163
80Ax32A	103	89.7	70	49	38.4	163
100Ax32A	130	114.7	70	49	38.4	197
125Ax40A	157	141.2	102	58	48.4	226
200Ax80A	243	217.6	189	104	89.7	364
200Ax100A	243	217.6	189	131	114.7	364
200Ax125A	243	217.6	189	157	141.2	364
250Ax100A	299	269.1	243	131	114.7	395
250Ax150A	299	269.1	243	186	166.3	395

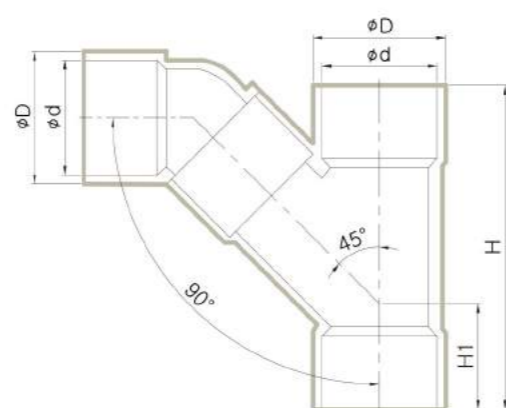
\* Please contact us for different sizes.



# ASUNG PP

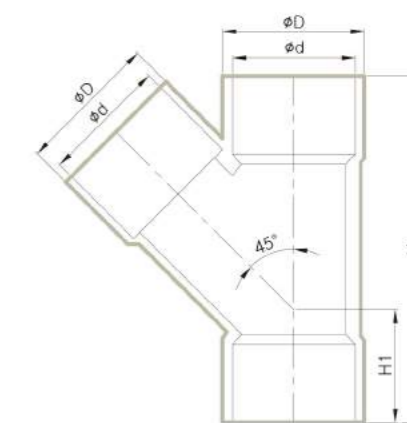
## Pipe and Fittings

YT



DIMENSION					unit:mm
NOMINAL SIZE	D	d	H	H1	
50A	71	60.4	141	45	
65A	87	76.6	182	55	
80A	102	89.7	212	66	
100A	129	114.7	267	82	
125A	160	141.2	340	103	
150A	186	166.3	398	121	

Y



DIMENSION					unit:mm
NOMINAL SIZE	D	d	H	H1	
50A	72	60.4	143	45	
65A	88	76.6	182	55	
80A	102	89.7	212	66	
100A	129	114.7	267	82	
125A	160	141.2	340	103	
150A	186	166.3	398	121	

# ASUNG PP

Pipe and Fittings

## UNION (SOCKET TYPE)



DIMENSION					unit:mm
NOMINAL SIZE	D	d	D1	L	
15A	30	22.4	49	59	
20A	36	26.4	60	68	
25A	46	32.4	70	86	
32A	54	38.4	80	84	
40A	65	48.4	97	102	
50A	75	60.4	106	114	
65A	89	76.6	132	121	
80A	105	89.7	153	148	
100A	136	114.7	204	165	

## UNION (THREAD TYPE)



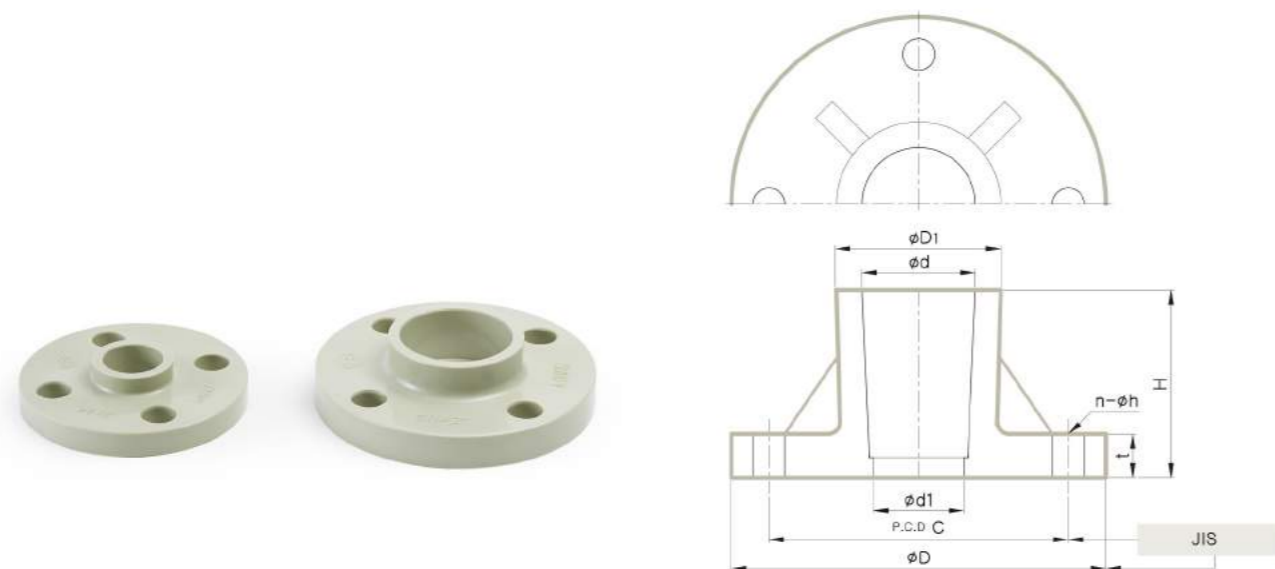
DIMENSION (JIS)					unit:mm
NOMINAL SIZE	D	L	D1	Rc	
15A	32	48	49	Rc 1/2"	
20A	38	56	60	Rc 3/4"	
25A	48	66	70	Rc 1"	
32A	58	71	80	Rc 1-1/4"	
40A	67	84	97	Rc 1-1/2"	
50A	78	94	106	Rc 2"	
65A	89	121	132	Rc 2-1/2"	
80A	105	148	153	Rc 3"	
100A	136	167	204	Rc 4"	



# ASUNG PP

## Pipe and Fittings

### T.S FLANGE (JIS FLANGE TYPE)

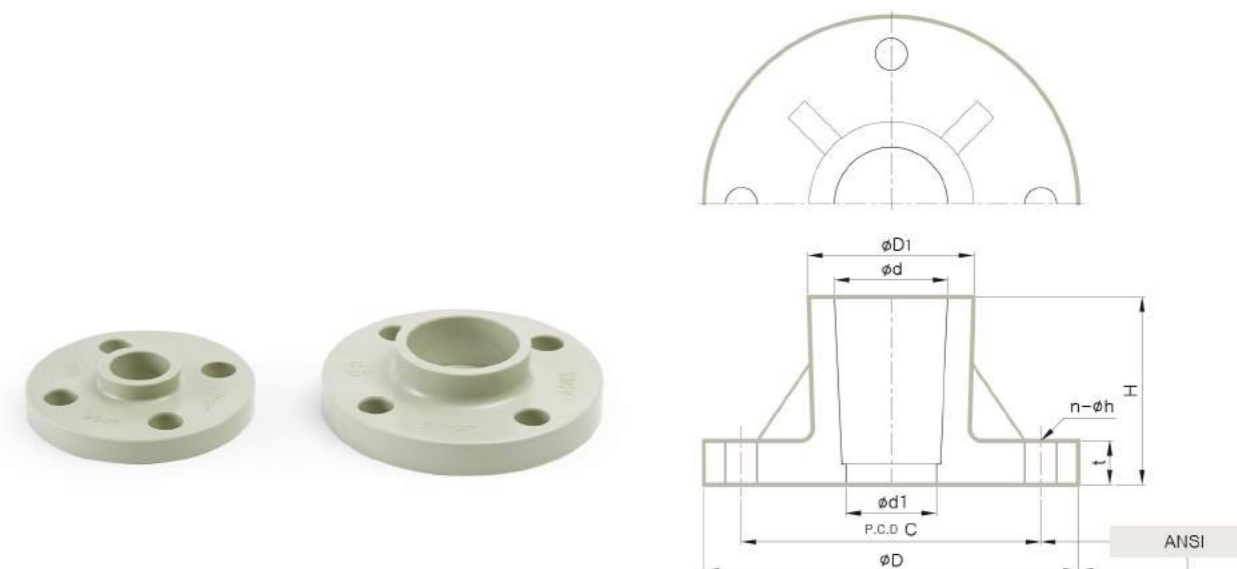


DIMENSION (FLANGE=JIS10K)

unit:mm

NOMINAL SIZE	D1	d	d1	H	t	JIS 10K		
						D	C	n-h
15A	32	22.4	18	46	14	95	70	4-15
20A	35	26.4	22	46	14	100	75	4-15
25A	44	32.4	25	25	14	125	90	4-19
32A	50	38.4	30	29	14	135	100	4-19
40A	61	48.4	41	35	15	140	105	4-19
50A	74	60.4	52	39	19	155	120	4-19
65A	88	76.6	67	41	21	175	140	4-19
80A	102	89.7	79	49	22	185	150	8-19
100A	129	114.7	99	59	22	210	175	8-19
125A	156	141.2	126	63	22	250	210	8-23
150A	184	166.3	146	75	24	280	240	8-23
200A	239	217.6	193	157	28	330	290	12-23
250A	291	269.1	240	186	29	400	355	12-25
300A	342	320.7	294	165	29	445	400	16-25

### T.S FLANGE (ANSI FLANGE TYPE)



DIMENSION (FLANGE=ANSI)

unit:mm

NOMINAL SIZE	D1	d	d1	H	t	ANSI CLASS 150		
						D	C	n-h
15A	32	22.4	18	46	14	88.9	60.4	4-16
20A	35	26.4	22	46	14	98.6	69.9	4-16
25A	44	32.4	25	25	14	108.0	79.2	4-16
32A	50	38.4	30	29	14	117.3	88.9	4-16
40A	61	48.4	41	35	15	127.0	98.5	4-16
50A	74	60.4	52	39	19	152.4	120.6	4-19
65A	88	76.6	67	41	20	177.8	139.7	4-19
80A	102	89.7	79	49	21	190.5	152.4	4-19
100A	129	114.7	99	59	22	228.6	190.5	8-19
125A	156	141.2	126	63	22	254.0	215.9	8-22
150A	184	166.3	146	75	24	279.4	241.3	8-22
200A	239	217.6	193	157	28	342.9	298.4	8-22

# ASUNG PP

Pipe and Fittings

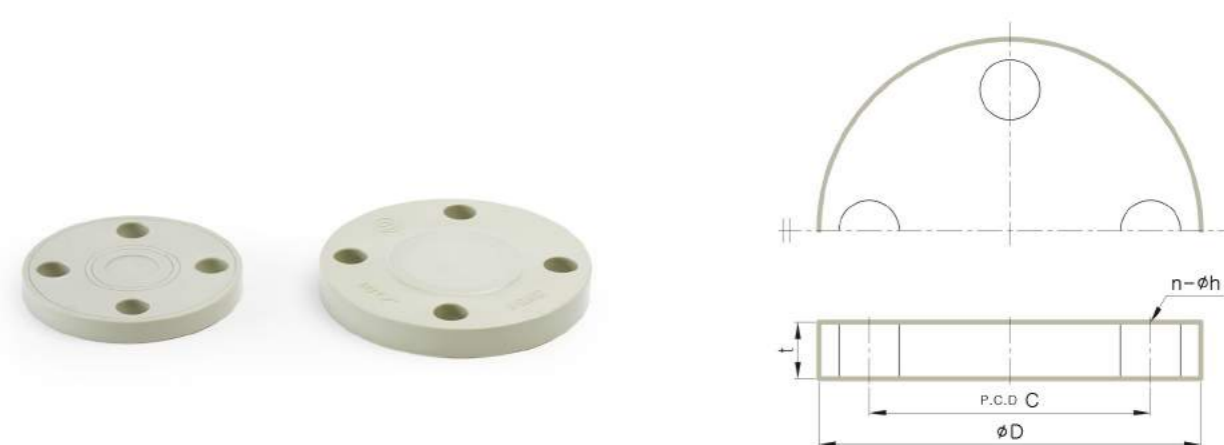
## BLIND FLANGE (JIS)



**DIMENSION (JIS)** unit: mm

NOMINAL SIZE	JIS 10K			t
	D	C	n-h	
15A	95	70	4-15	14
20A	100	75	4-15	14
25A	125	90	4-19	14
32A	135	100	4-19	14
40A	140	105	4-19	15
50A	155	120	4-19	19
65A	175	140	4-19	21
80A	185	150	8-19	22
100A	210	175	8-19	22
125A	250	210	8-23	22
150A	280	240	8-23	24
200A	330	290	12-23	28
250A	400	355	12-25	29
300A	445	400	16-25	29

## BLIND FLANGE (ANSI)



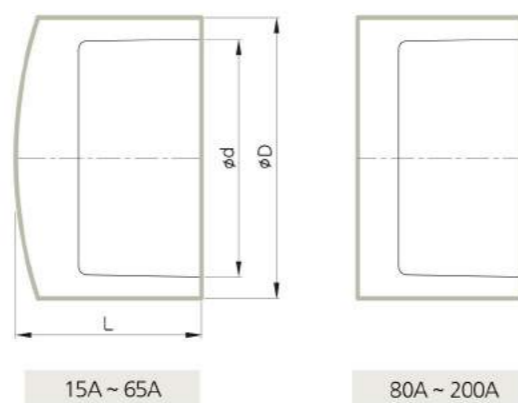
**DIMENSION (ANSI)** unit: inch

NOMINAL SIZE		ANSI CLASS 150			t
mm	inch	D	C	n-h	
15A	1/2"	88.9	60.4	4-16	14
20A	3/4"	98.6	69.9	4-16	14
25A	1"	108.0	79.2	4-16	14
32A	1-1/4"	117.3	88.9	4-16	14
40A	1-1/2"	127.0	98.5	4-16	15
50A	2"	152.4	120.6	4-19	19
65A	2-1/2"	177.8	139.7	4-19	21
80A	3"	190.5	152.4	4-19	22
100A	4"	228.5	190.5	8-19	22
125A	5"	254.0	215.9	8-22	22
150A	6"	279.4	241.3	8-22	24

# ASUNG PP

## Pipe and Fittings

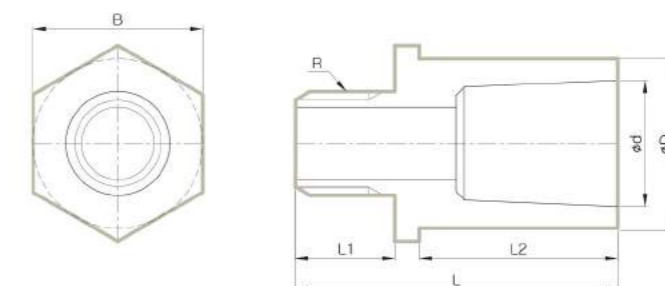
### CAP



DIMENSION				unit:mm
NOMINAL SIZE	D	d	L	
15A	30	22.4	31	
20A	34	26.4	36	
25A	42	32.4	40	
32A	52	38.4	44	
40A	59	48.4	48	
50A	73	60.4	52	
65A	88	76.6	61	
80A	107	89.7	67	
100A	131	114.7	78	
125A	160	141.2	95	
150A	188	166.3	95	
200A	244	217.6	123	

\* 250A and 300A are order-made sizes

### VALVE SOCKET

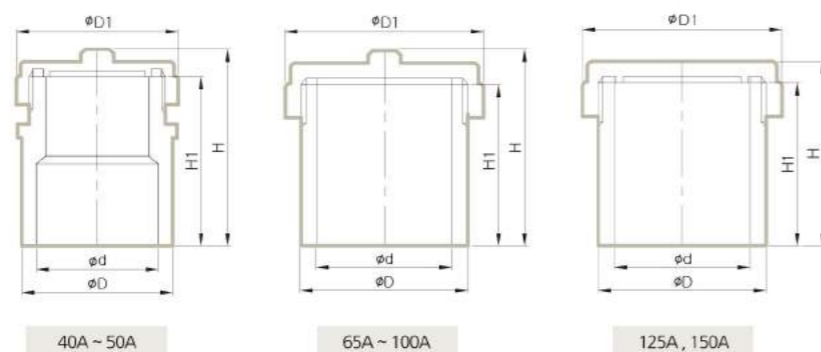


DIMENSION								unit:mm
NOMINAL SIZE	D	B	d	L	L1	L2	R	
15A	30	30	22.4	47	18	22	R 1/2"	
20A	34	34	26.4	54	21	23	R 3/4"	
25A	41	41	32.4	60	25	25	R 1"	
32A	51	51	38.4	66	28	28	R 1-1/4"	
40A	58	59	48.4	74	28	36	R 1-1/2"	
50A	72	72	60.4	87	31	43	R 2"	

# ASUNG PP

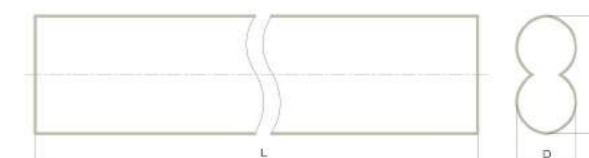
## Pipe and Fittings

### CLEAN OUT



DIMENSION						unit:mm
NOMINAL SIZE	D	D1	d	H	H1	
40A	58	57	48.4	97	76	
50A	72	74	60.4	109	87	
65A	91	104	65.6	126	101	
80A	89	104	77.2	121	99	
100A	114	131	99.8	128	102	
125A	140	157	123.4	136	110	
150A	165	185	145.8	140	120	

### WELDING ROD



DIMENSION			unit:mm
L	D	H	
1,000	3	6	