



Fabricated Flange Technical Information

Application

Fabricated IPS and PIP Flange fittings are coupling devices designed for joining IPS (Iron Pipe Size) or PIP (Plastic Irrigation Pipe) plastic piping systems, where frequent disassembly may be required. These flanges can be used as transitional fittings for joining IPS-to-IPS, PIP-to-PIP, IPS-to-PIP, or plastic to metal piping systems. Suitability of application is at the discretion of the user.

Pressure Rating

All standard fabricated flanges are Van Stone Style (except blind flange) - two piece design with rotating flange ring.

Class 150 IPS Flanges (with steel ring): 150 psi, water at 73°F.

IPS Flanges 18" - 24" (with plastic ring): 50 psi, water at 73°F.

IPS Flanges, Class 300 Bolt Pattern (with plastic ring): 1/2" - 16" 150 psi, 18" - 24" 50 psi, water at 73°F.

Blind Flanges, 14" - 24": 50 psi, water at 73°F.

PIP Flanges, 6" - 16" (with plastic ring & molded IPS flanges w/PIP Adapters): 125 psi, water at 73°F

PIP Flanges, 18" - 24" (with steel ring): 125 psi, water at 73°F

Flange Types

Van Stone Style Class 150 IPS (with steel ring) - Fabricated PVC body with steel flange ring, available in sizes 18" through 24", slip socket and 14" through 24", spigot.

Van Stone Style IPS (with plastic ring) - Fabricated PVC body with PVC flange ring, available in sizes 18" through 24", slip socket and 14" through 24", spigot.

Van Stone Style PIP (with plastic ring) - PIP adapter fabricated to injection molded PVC Van Stone Style IPS flange, available in sizes 6" through 16", slip socket.

Van Stone Style PIP (with steel ring) - Fabricated PVC body with steel flange ring, available in sizes 14" through 24", slip socket.

Blind - Closed ring design for capping off a mating flange; fabricated PVC available in sizes 5" and 14" through 24".

Special Note On PIP Flange Sizes

In order to facilitate connections between IPS and PIP systems, all Plastic Irrigation Pipe flanges are fabricated with PIP sockets using standard IPS Flange Rings. These are indicated in dimension tables under "Size" as (nominal IPS flange size) x (actual PIP O.D.), such as: 6" x 6.140".

To better meet user needs, Spears® offers flanges for 15.300" O.D. PIP with either 14" or 16" IPS Flange Rings. In addition, both 18.360" and 18.701" O.D. PIP are offered with 18" IPS Flange Rings.

Materials

All fabricated flanges are produced from PVC materials approved for potable water use by the National Sanitation Foundation (NSF®). Steel flange rings are carbon steel.

Conformance Standards

Materials - ASTM D 1784 (PVC Cell Classification 12454-B).



Schedule 80 PVC Technical
PVC Pipe Flange Dimensions & Information

Weights & Dimensions

Specified minimum bolt lengths are based on the use of two Spears® Flanges, two standard flat washers, standard nut and 1/8" thick elastomer full face gasket. Mating with other brands or accessories may require variations.

Note: Bolts and gaskets are not supplied with flanges.

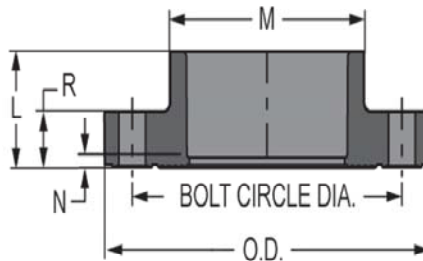
Dimension references:

- L** = Overall length of hub, ± 1/2 inch.
- M** = Outside diameter of socket hub, ± 1/4 inch.
- N** = (Laying Length) socket bottom to seal-ring face of flange, ± 1/2 inch.
- R** = Height (thickness) of flange ring, ± 1/16 inch.
- O.D.** = Outside diameter of ring, ± 1/16 inch.

Bolt Circle Diameter = ANSI B 16.5 Standard; ASTM D 4024, ± 1/16 inch.

**Flange Van Stone Style PIP
 (With Plastic Ring)**

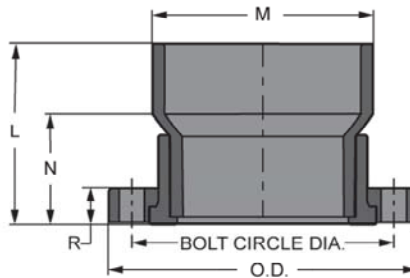
Socket



Part Number	Size	L	M	N	O.D.	R	Bolt Circle Dia.	Bolt Size	No of Bolts	Approx. Wt. (Lbs.)
354-060F*	6X6.140	3-15/16	7-5/8	9/16	11	1-3/8	9- 1/2	3/4	8	5.29
354-080F*	8X8.160	4-15/16	9- 3/8	9/16	13- 5/8	1-13/16	11- 3/4	3/4	8	8.12
354-100F*	10X10.200	6- 1/4	11- 3/4	1	16	1-13/16	14- 1/4	7/8	12	14.21
354-120F*	12X12.240	7-3/8	13-11/16	1-1/8	19	1-3/4	17	7/8	12	21.26
354-151F*	16X15.300	8-11/16	17- 3/4	11/16	23- 1/2	2-1/2	21- 1/4	1	16	47.23

* Fabricated

**Flange Van Stone Style PIP
 (With Plastic Ring)**



Part Number	Size	L	M	N	O.D.	R	Bolt Circle Dia.	Bolt Size	No of Bolts	Approx. Wt. (Lbs.)
354-150F*	14X15.300	18-5/16	16- 3/16	10- 5/16	21	2-1/16	18- 3/4	1	12	46.53

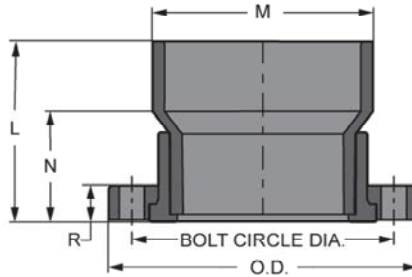
* Fabricated

Schedule 80 PVC Technical
PVC Pipe Flange Dimensions & Information



**Flange Van Stone Style PIP
 (With Steel Ring)**

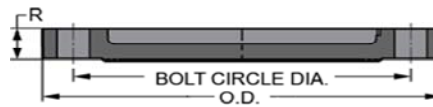
Socket



Part Number	Size	L	M	N	O.D.	R	Bolt Circle Dia.	Bolt Size	No of Bolts	Approx. Wt. (Lbs.)
354-181F*	18X18.701	14-11/16	19-13/16	5-11/16	25	1-9/16	22- 3/4	1-1/8	16	84.47
354-182F*	18X18.360	10-15/16	19- 1/2	4-15/16	25	1-9/16	22- 3/4	1-1/8	16	78.19
354-201F*	20X22.047	16-15/16	23- 1/4	6-15/16	27- 1/2	1-5/8	25	1-1/8	20	108.03
354-200F*	20X20.400	11-3/8	21-9/16	4-7/8	27-1/2	1	25	1-1/8	20	57.00
354-241F*	24X24.803	18-9/16	26- 3/16	6-9/16	32	1-11/16	29- 1/2	1- 1/4	20	147.57

* Fabricated

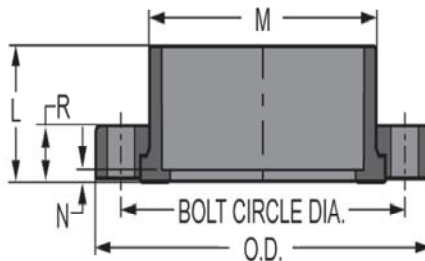
Flange - Blind



Part Number	Size	O.D.	R	Bolt Circle Dia.	Bolt Size	Min. Bolt Length	No of Bolts	Approx. Wt. (Lbs.)
853-050F*	5	10- 1/16	1	8- 1/2	3/4	4-1/8	8	6.12
853-140F*	14	21	1- 1/2	18- 3/4	1	4-1/8	12	34.00
853-160F*	16	23- 1/2	1- 1/2	21- 1/4	1	4-1/8	16	35.24
853-180F*	18	25	1- 1/2	22- 3/4	1- 1/8	4-1/8	16	36.69
853-200F*	20	27- 1/2	1- 1/2	25	1- 1/8	4-1/8	20	45.00
853-240F*	24	32	1- 1/2	29- 1/2	1- 1/4	5-1/2	20	65.19

**Flange Van Stone Style IPS
 (With Plastic Ring)**

Socket



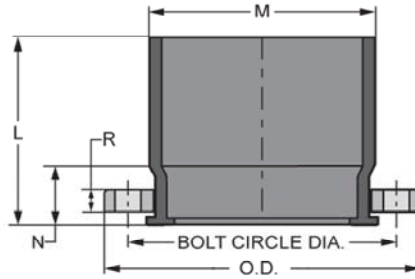
Part Number	Size	L	M	N	O.D.	R	Bolt Circle Dia.	Bolt Size	No of Bolts	Approx. Wt. (Lbs.)
854-180FP*	18	14-7/16	19- 1/8	5-7/16	25	2-1/16	22- 3/4	1- 1/8	16	42.62
854-200FP*	20	15-5/8	21- 3/16	5-5/8	27- 1/2	2-1/16	25	1- 1/8	20	55.08
854-240FP*	24	18-5/16	25- 3/8	6-5/16	32	2-3/16	29- 1/2	1- 1/4	20	80.92



**Schedule 80 PVC Technical
PVC Pipe Flange Dimensions & Information**

**Flange Van Stone Style IPS
(With Steel Ring)**

Socket

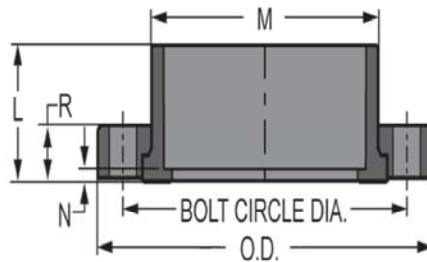


Part Number	Size	L	M	N	O.D.	R	Bolt Circle Dia.	Bolt Size	No of Bolts	Approx. Wt. (Lbs.)
854-120FS*	12	10-7/16	13-9/16	4-3/16	19	1-3/8	17	7/8	12	47.35
854-140FS*	14	11-5/16	14-7/8	4-5/16	21	1-7/16	18-3/4	1	12	60.57
854-160FS*	16	12-5/8	17	4-5/8	23-1/2	1-1/2	21-1/4	1	16	77.97
854-180FS*	18	14-7/16	19- 1/8	5-7/16	25	1-9/16	22- 3/4	1- 1/8	16	84.14
854-200FS*	20	15-5/8	21- 3/16	5-5/8	27-1/2	1-9/16	25	1- 1/8	20	100.33
854-240FS*	24	18-5/16	25- 3/8	6-5/16	32	1-11/16	29- 1/2	1- 1/4	20	146.91

* Fabricated

**Flange Van Stone Style Class
300
(With Plastic Ring)**

Socket



Part Number	Size	L	M	N	O.D.	R	Bolt Circle Dia.	Bolt Size	No of Bolts	Approx. Wt. (Lbs.)
854-005CL300*	1/2	1	1- 3/16	3/16	3- 3/4	9/16	2- 5/8	1/2	4	.42
854-007CL300*	3/4	1- 1/8	1- 3/8	3/16	4- 5/8	1	3- 1/4	5/8	4	1.26
854-010CL300*	1	1- 1/4	1- 3/4	3/16	4- 7/8	1	3- 1/2	5/8	4	1.45
854-012CL300*	1-1/4	1- 3/8	2- 1/8	1/8	5- 1/4	1	3- 7/8	5/8	4	1.94
854-015CL300*	1-1/2	1- 1/2	2- 7/16	3/16	6- 1/8	1	4- 1/2	5/8	4	2.55
854-020CL300*	2	1-11/16	2-15/16	3/16	6- 1/2	1	5	5/8	8	1.12
854-025CL300*	2-1/2	2	3- 9/16	1/4	7- 1/2	1	5- 7/8	3/4	8	3.68
854-030CL300*	3	2- 1/8	4- 1/4	1/4	8- 1/4	1	6- 5/8	3/4	8	5.24
854-040CL300*	4	2- 1/2	5- 1/4	1/4	10	1- 1/2	7- 7/8	3/4	8	7.41
854-060CL300*	6	3- 7/16	7- 9/16	3/8	12- 1/2	1- 1/2	10- 5/8	3/4	12	7.69
854-080CL300*	8	4- 3/8	9- 3/8	5/16	15	1- 1/2	13	7/8	12	15.92
854-100CL300*	10	5-11/16	11- 3/4	5/8	17- 1/2	1- 1/2	15- 1/4	1	16	29.52
854-120CL300*	12	6-5/8	13-11/16	5/8	20- 1/2	1- 1/2	17- 3/4	1- 1/8	16	38.53
854-140CL300*	14	7- 9/16	15- 9/16	9/16	23	2	20- 1/4	1- 1/8	20	28.13
854-160CL300*	16	8- 9/16	17- 3/4	9/16	25- 1/2	2	22- 1/2	1- 1/4	20	49.98

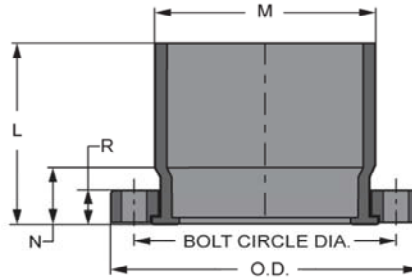
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Schedule 80 PVC Technical
PVC Pipe Flange Dimensions & Information



**Flange Van Stone Style Class 300
 (With Plastic Ring)**

Socket

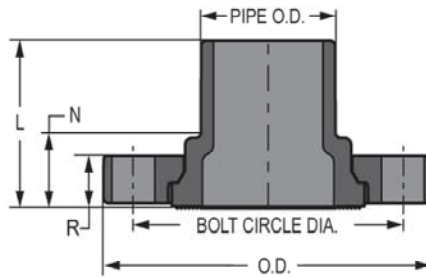


Part Number	Size	L	M	N	O.D.	R	Bolt Circle Dia.	Bolt Size	No of Bolts	Approx. Wt. (Lbs.)
854-180CL300*	18	14-7/16	19- 1/8	5-7/16	28	2	24- 3/4	1- 1/4	24	60.24
854-200CL300*	20	15-5/8	21- 3/16	5-5/8	30- 1/2	2	27	1- 1/4	24	97.17
854-240CL300*	24	18-5/16	25- 3/8	6-5/16	36	2	32	1- 1/2	24	109.80

* Fabricated

Flange Van Stone Style (Two Piece)

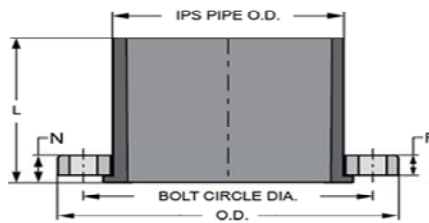
Spigot



Part Number	Size	L	N	O.D.	R	Bolt Circle Dia.	Bolt Size	No of Bolts	Approx. Wt. (Lbs.)
856-140FP*	14	15-9/16	7-9/16	21	2	18- 3/4	1	12	41.85
856-160FP*	16	17-9/16	8- 9/16	23- 1/2	2-1/2	21- 1/4	1	16	61.89
856-180FP*	18	19- 9/16	9-1/2	25	2- 3/8	22- 3/4	1- 1/8	16	77.97
856-200FP*	20	13-5/8	2- 1/16	27- 1/2	1- 1/2	25	1- 1/8	20	51.07
856-240FP*	24	15-11/16	2-3/16	32	1- 1/2	29- 1/2	1- 1/4	20	75.22

Flange Van Stone Style IPS (with Steel Ring)

Spigot



Part Number	Size	L	N	O.D.	R	Bolt Circle Dia.	Bolt Size	No of Bolts	Approx. Wt. (Lbs.)
856-140FS*	14	10-7/16	1-7/16	21	1-7/16	18- 3/4	1	12	56.93
856-160FS*	16	11-1/2	1-1/2	23- 1/2	1-1/2	21- 1/4	1	16	73.23
856-180FS*	18	12-9/16	1-5/16	25	1-9/16	22- 3/4	1- 1/8	16	76.87
856-200FS*	20	13-5/8	1-9/16	27- 1/2	1-9/16	25	1- 1/8	20	93.39
856-240FS*	24	15-11/16	1-11/16	32	1-11/16	29- 1/2	1- 1/4	20	132.15

* Fabricated