



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 & CPVC 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, CPVC Cell Classification 23447-B).



PVC & CPVC FABRICATED IPS, PIP & CLASS 300 FLANGES

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.

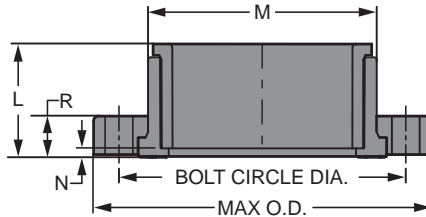
Dimension references:

- 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.
- Max O.D** = Outside diameter of ring, ± 1/16 inch.
- Bolt Circle Diameter** = ANSI B16.5 Standard; ASTM D 4024, ± 1/16 inch.

Flange Van Stone Style PIP

(with Plastic Ring)

Socket

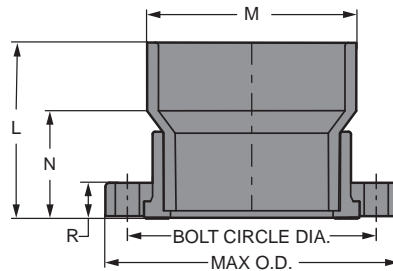


Part Number	Size	L	M	N	R	Bolt Circle Dia.	No. of Bolt Holes	Bolt Size	Min. Bolt Length	Max O.D.	Approx. Wt. (Lbs.)
354-060F	6x6.140	4-1/16	7-9/16	11/16	1-1/4	9-1/2	8	3/4	4	11-1/2	5.53
354-080F	8x8.160	4-15/16	9-3/8	9/16	1-1/2	11-3/4	8	3/4	4-1/2	13-5/8	8.30
354-100F	10x10.200	6-1/4	11-3/4	1	1-5/8	14-1/4	12	7/8	5	16	14.49
354-120F	12x12.240	7-5/16	13-13/16	1-1/16	1-5/8	17	12	7/8	5	19	21.59
354-151F	16x15.300	8-11/16	17-3/4	11/16	2-3/8	21-1/4	16	1	6-1/2	23-1/2	66.06

Flange Van Stone Style PIP

(with Plastic Ring)

Socket



Part Number	Size	L	M	N	R	Bolt Circle Dia.	No. of Bolt Holes	Bolt Size	Min. Bolt Length	Max O.D.	Approx. Wt. (Lbs.)
354-150F	14x15.300	19-5/16	16-3/16	10-5/16	2	18-3/4	12	1	5-1/2	21	47.29

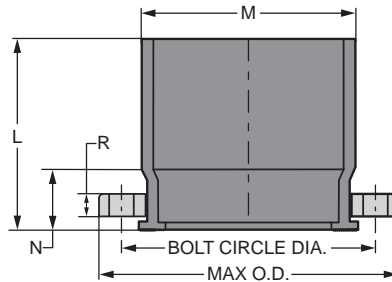
PVC & CPVC FABRICATED IPS, PIP & CLASS 300 FLANGES



Flange Van Stone Style PIP

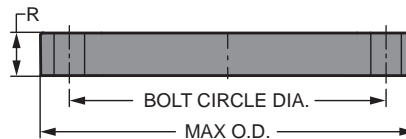
(with Steel Ring)

Socket



Part Number	Size	L	M	N	R	Bolt Circle Dia.	No. of Bolt Holes	Bolt Size	Min. Bolt Length	Max O.D.	Approx. Wt. (Lbs.)
354-181F	18x18.701	15-1/8	19-9/16	6-1/8	1/2	22-3/4	16	1-1/8	3	25	53.80
354-182F	18x18.360	11-5/8	19-1/4	5-5/8	1/2	22-3/4	16	1-1/8	3	25	53.80
354-200F	20x20.400	11-3/8	21-9/16	5-3/8	1/2	25	20	1-1/8	3	27-1/2	63.06
354-201F	20x22.047	16-9/16	23-1/4	6-9/16	1/2	25	20	1-1/8	3	27-1/2	64.43
354-241F	24x24.803	19-7/8	26-3/16	7-7/8	1/2	29-1/2	20	1-1/4	3	32	90.50

Blind Flange



Part Number		Size	R	Bolt Circle Dia.	No. of Bolt Holes	Bolt Size	Min. Bolt Length	Max. O.D.	Approx. Wt. (Lbs.)	
PVC	CPVC								PVC	CPVC
853-050F	853-050CF	5	1	8-1/2	8	3/4	4-1/8	10-1/16	3.63	3.90
853-140F	853-140CF	14	1-1/2	18-3/4	12	1	4-1/8	21	27.50	28.39
853-160F	853-160CF	16	1-1/2	21-1/4	16	1	4-1/8	23-1/2	33.83	37.21
853-180F	853-180CF	18	1-1/2	22-3/4	16	1-1/8	4-1/8	25	39.52	43.47
853-200F	853-200CF	20	1-1/2	25	20	1-1/8	4-1/8	27-1/2	47.67	52.43
853-240F	853-240CF	24	1-1/2	29-1/2	20	1-1/4	5-1/2	32	61.96	68.15

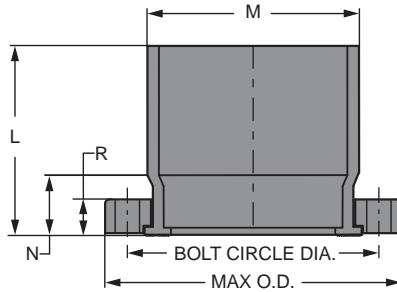


PVC & CPVC FABRICATED IPS, PIP & CLASS 300 FLANGES

Flange Van Stone Style IPS

(with Plastic Ring)

Socket

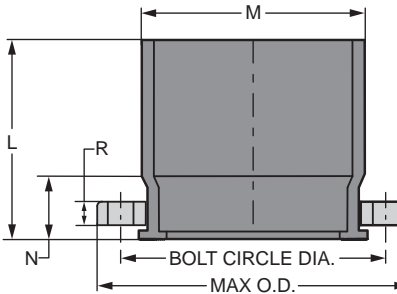


Part Number	Size	L	M	N	R	Bolt Circle Dia.	No. of Bolt Holes	Bolt Size	Min. Bolt Length	Max O.D.	Approx. Wt. (Lbs.)
854-180FP	18	15	18-7/8	6	1-1/2	22-3/4	16	1-1/8	4-1/8	25	36.09
854-200FP	20	16	21-3/16	6	1-1/2	25	20	1-1/8	5-1/2	27-1/2	43.61
854-240FP	24	19	25-3/8	7	1-1/2	29-1/2	20	1-1/4	5-1/2	32	80.93

Flange Van Stone Style IPS

(with Steel Ring)

Socket



Part Number	Size	L	M	N	R	Bolt Circle Dia.	No. of Bolt Holes	Bolt Size	Min. Bolt Length	Max O.D.	Approx. Wt. (Lbs.)
854-180FS	18	14	18-7/8	5	1/2	22-3/4	16	1-1/8	3	25	49.30
854-200FS	20	15	21-3/16	5	1/2	25	20	1-1/8	3	27-9/16	65.00
854-240FS	24	18	25-3/8	6	1/2	29-1/2	20	1-1/4	3	32	86.15

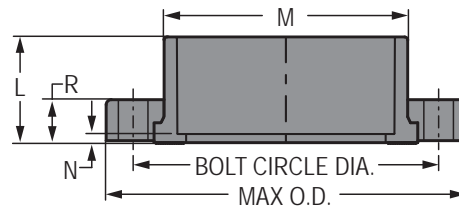
PVC & CPVC FABRICATED IPS, PIP & CLASS 300 FLANGES



Flange Van Stone Style Class 300

(with Plastic Ring)

Socket



Part Number		Size	L	M	N	R	Bolt Circle Dia.	No. of Bolt Holes	Bolt Size	Min. Bolt Length	Max O.D.
PVC	CPVC										
854-005CL300	854-005CL300C	1/2	1	1-3/16	3/16	1/2	2-5/8	4	1/2	2	3-3/4
854-007CL300	854-007CL300C	3/4	1-1/8	1-3/8	3/16	1	3-1/4	4	5/8	3-1/2	4-5/8
854-010CL300	854-010CL300C	1	1-1/4	1-3/4	3/16	1	3-1/2	4	5/8	3-1/2	4-7/8
854-012CL300	854-012CL300C	1-1/4	1-3/8	2-1/8	1/8	1	3-7/8	4	5/8	3-1/2	5-1/4
854-015CL300	854-015CL300C	1-1/2	1-1/2	2-7/16	3/16	1	4-1/2	4	5/8	3-1/2	6-1/8
854-020CL300	854-020CL300C	2	1-11/16	2-15/16	3/16	1	5	8	5/8	3-1/2	6-1/2
854-025CL300	854-025CL300C	2-1/2	2	3-9/16	1/4	1	5-7/8	8	3/4	3-1/2	7-1/2
854-030CL300	854-030CL300C	3	2-1/8	4-1/4	1/4	1	6-5/8	8	3/4	3-1/2	8-1/4
854-040CL300	854-040CL300C	4	2-1/2	5-1/4	1/4	1-1/2	7-7/8	8	3/4	4-1/2	10
854-060CL300	854-060CL300C	6	3-7/16	7-9/16	3/8	1-1/2	10-5/8	12	3/4	4-1/2	12-1/2
854-080CL300	854-080CL300C	8	4-3/8	9-3/8	5/16	1-1/2	13	12	7/8	4-1/2	15
854-100CL300	854-100CL300C	10	5-11/16	11-3/4	5/8	1-1/2	15-1/4	16	1	4-1/2	17-1/2
854-120CL300	854-120CL300C	12	7-5/16	13-13/16	9/16	1-1/2	17-3/4	16	1-1/8	4-1/2	20-1/2
854-140CL300	854-140CL300C	14	7-9/16	15-9/16	9/16	2	20-1/4	20	1-1/8	5-1/2	23
854-160CL300	854-160CL300C	16	8-9/16	17-3/4	9/16	2	22-1/2	20	1-1/4	6	25-1/2

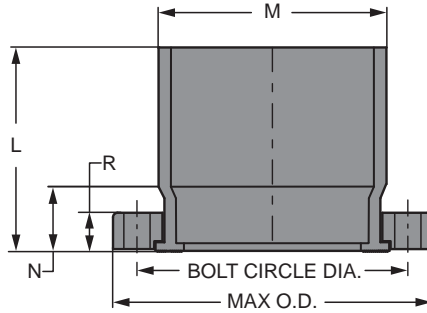


**PVC & CPVC FABRICATED IPS, PIP
& CLASS 300 FLANGES**

Flange Van Stone Style Class 300 (continued)

(with Plastic Ring)

Socket

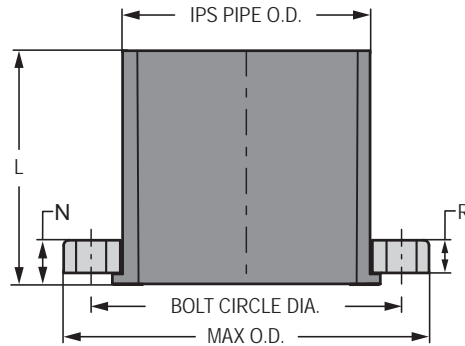


Part Number	Size	L	M	N	R	Bolt Circle Dia.	No. of Bolt Holes	Bolt Size	Min. Bolt Length	Max O.D.	Approx. Wt. (Lbs.)
854-180CL300	18	15	18-7/8	6	2	24-3/4	24	1-1/4	6	28	61.11
854-200CL300	20	15-1/4	21-3/16	5-1/4	2	27	24	1-1/4	6	30-1/2	68.38
854-240CL300	24	19	25-3/8	7	2	32	24	1-1/2	6	36	134.51

Flange Van Stone Style IPS

(with Plastic Ring)

Spigot



Part Number	Size	L	N	R	Bolt Circle Dia.	No. of Bolt Holes	Bolt Size	Min. Bolt Length	Max O.D.	Approx. Wt. (Lbs.)
856-140FP	14	15-5/16	7-9/16	2	18-3/4	12	1	5-1/2	21	24.00
856-160FP	16	17-13/16	8-9/16	2-3/8	21-1/4	16	1	6-1/2	23-1/2	61.83
856-180FP	18	19-9/16	9-9/16	2-3/8	22-3/4	16	1-1/8	6-1/2	25	34.81
856-200FP	20	13	2-1/16	1-1/2	25	20	1-1/8	5-1/2	27-1/2	42.50
856-240FP	24	16-3/8	2-1/8	1-1/2	29-1/2	20	1-1/4	5-1/2	32	68.00

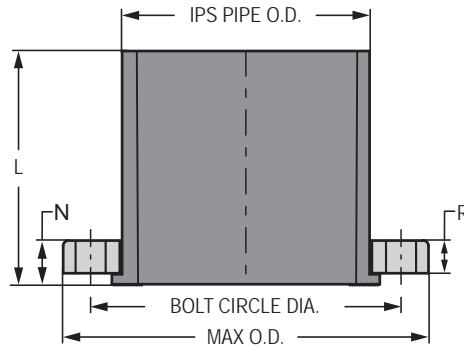
PVC & CPVC FABRICATED IPS, PIP & CLASS 300 FLANGES



Flange Van Stone Style IPS

(with Steel Ring)

Spigot



Part Number	Size	L	N	R	Bolt Circle Dia.	No. of Bolt Holes	Bolt Size	Min. Bolt Length	Max O.D.	Approx. Wt. (Lbs.)
856-140FS	14	10	15/16	1/2	18-3/4	12	1	3	21	36.63
856-160FS	16	11	1	1/2	21-1/4	16	1	3	23-1/2	46.50
856-180FS	18	12	15/16	1/2	22-3/4	16	1-1/8	3	25	47.27
856-200FS	20	13	1-1/16	1/2	25	20	1-1/8	3	27-1/2	59.00
856-240FS	24	15-3/8	1-1/8	1/2	29-1/2	20	1-1/4	3	32	84.00