

FIG. F-3 Grooved Flange Adapter



The SPF™ Model F-3 Flange allows direct connection of Class 125 or Class 150 flanged components to a grooved piping system. The two interlocking halves of the SPF Flange are hinged for ease of handling, and are drawn together by a latch bolt which eases assembly on the pipe. Precision machined bolt holes, key and mating surfaces assure concentricity and flatness to provide exact fit-up with flanged, lug, and wafer styles of pipe system equipment. A specially designed gasket provides a leak-tight seal on both the pipe and the mating flange face.

All SPF F-3 Flanges have designed-in anti-rotation tangs which bite into and grip the sides of the pipe grooves to provide a secure, rigid connection.

The SPF F-3 Flange requires the use of a steel adapter insert when used against rubber faced surfaces, wafer/lug design valves and serrated or irregular sealing surfaces. (See Installation and Assembly Instructions Section or contact your Anvil Rep. for details.)



For Listings/Approval Details and Limitations, visit our website at www.anvilintl.com or contact an Anvil® Sales Representative.

MATERIAL SPECIFICATIONS

HOUSING:

Ductile Iron conforming to ASTM A-536, Grade 65-45-12

ANSI BOLTS & HEAVY HEX NUTS:

Heat treated, oval-neck track head bolts conforming to ASTM A-183 Grade 2 with a minimum tensile strength of 110,000 psi and heavy hex nuts of carbon steel conforming to ASTM A-563 Grade A or Grade B, or SAE J995 Grade 2. Bolts and nuts are provided zinc electroplated as standard.

METRIC BOLTS & HEAVY HEX NUTS:

Heat treated, zinc electroplated oval-neck track head bolts made of carbon steel with mechanical properties per ISO 898-1 Class 8.8. Hex nuts and bolts are zinc electroplated followed by a yellow chromate dip.

COATINGS:

- Rust inhibiting paint Color: ORANGE (standard)
 - Hot Dipped Zinc Galvanized (optional)
 - Other available options: Example: RAL3000 or RAL9000 Series
- For other coating requirements contact an Anvil Representative.

LUBRICATION:

- Standard Gruvlok
- Gruvlok Xtreme™ required for dry pipe systems and freezer applications.

GASKETS: Materials

Properties as designated in accordance with ASTM D-2000.

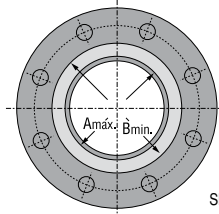
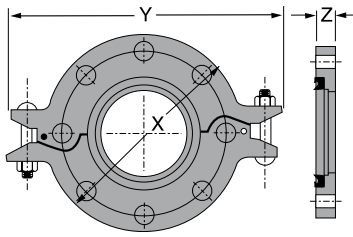
- Grade "E" EPDM (Green color code)
 - 40°F to 100°F (Service Temperature Range)[-40°C to 38°C]
 - Recommended for water service, diluted acids, alkalies solutions, oil-free air and many chemical services.
 - NOT FOR USE IN PETROLEUM APPLICATIONS.

PROJECT INFORMATION

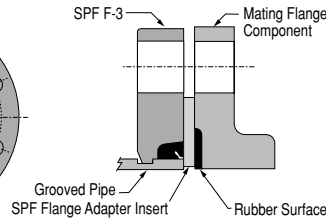
APPROVAL STAMP

Project:	<input type="checkbox"/> Approved
Address:	<input type="checkbox"/> Approved as noted
Contractor:	<input type="checkbox"/> Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

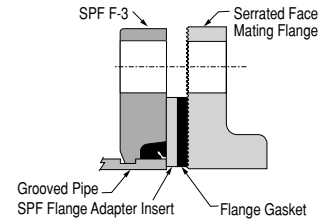
FIG. F-3 Grooved Flange Adapter



Note A



Notes 1 and 2



Notes 3 and 4

SPF F-3 FLANGE: ANSI CLASS 150 OR ISO PN10 OR PN16 BOLT PATTERNS

Nominal Size	Pipe O.D.	Max. Working Pressure ▲	Max. End Load ▲	Latch Bolt			Dimensions			Sealing Surface		Mating Flange Bolts				Approx. Wt. Ea.
				Latch Bolt Size*	Specified Torque §		X	Y	Z	A Max.	B Min.	Mating Flange Bolts		Specified Torque §		
					Min.	Max.						Quantity	Size	Min.	Max.	
2	2.375	300	1,329	3/8 x 2 3/4	30	45	6 1/4	8 3/8	3/4	2 3/8	3 1/16	4	5/8 x 2 3/4	110	140	4.2
50	60.3	20.7	5.91	M10 x 70	40	60	159	213	19	60	87	4	M16 x 70	149	190	1.9
2 1/2	2.875	300	1,948	3/8 x 2 3/4	30	45	7	9 1/2	3/4	2 1/8	4	4	5/8 x 2 3/4	110	140	4.6
65	73.0	20.7	8.66	M10 x 70	40	60	178	241	19	73	102	-	M16 x 70	149	190	2.1
3 O.D.	2.996	300	2,115	-	30	45	7 1/4	9 3/4	3/4	3	4 1/8	-	-	110	140	4.8
76.1	76.1	20.7	9.41	M10 x 70	40	60	184	248	19	76	105	4	M16 x 70	149	190	2.2
3	3.500	300	2,886	3/8 x 2 3/4	30	45	7 7/8	10 1/2	3/4	3 1/2	4 9/16	4	5/8 x 2 3/4	110	140	6.0
88.9	88.9	20.7	12.84	M10 x 70	40	60	200	267	19	89	116	8	M16 x 70	149	190	2.7
4	4.500	300	4,771	3/8 x 2 3/4	30	45	9	11 1/2	3/4	4 1/2	5 1/16	8	5/8 x 2 3/4	110	140	6.3
100	114.3	20.7	21.22	M10 x 70	40	60	229	292	19	114	141	8	M16 x 70	149	190	2.9
5 1/2 O.D.	5.500	300	7,127	-	30	45	9 7/8	12 7/8	7/8	5 1/16	6 3/4	-	-	220	250	15.6
139.7	139.7	20.7	31.70	M10 x 70	40	60	251	327	22	141	171	8	M16 x 75	298	339	7.1
5	5.563	300	7,292	3/8 x 2 3/4	30	45	10	12 1/2	7/8	5 1/16	6 3/4	8	3/4 x 2 7/8	220	250	8.8
125	141.3	20.7	32.44	M10 x 70	40	60	254	318	22	141	171	-	-	298	339	4.0
6 1/2 O.D.	6.500	300	9,955	-	30	45	11 1/4	14	7/8	6 3/8	7 13/16	-	-	220	250	9.7
165.1	165.1	20.7	44.28	M10 x 70	40	60	286	356	22	168	198	8	M20 x 80	298	339	4.4
6	6.625	300	10,341	3/8 x 2 3/4	30	45	11	14	7/8	6 3/8	7 13/16	8	3/4 x 3 1/8	220	250	9.6
150	168.3	20.7	46.00	M10 x 70	40	60	279	356	22	168	198	8	M20 x 80	298	339	4.4
8	8.625	300	17,528	3/8 x 2 3/4	30	45	13 1/2	16 1/2	1	8 3/8	10	8	3/4 x 3 1/4	220	250	15.6
200	219.1	20.7	77.97	M10 x 70	40	60	343	419	25	219	254	8 (12)	M20 x 80	298	339	7.1
10	10.750	300	27,229	3/8 x 2 3/4	30	45	16	19	1	10 3/4	12 7/8	12	7/8 x 3 1/2	320	400	18.2
250	273.1	20.7	121.12	M10 x 70	40	60	406	483	25	273	308	12	M20 x 90	439	542	8.3
12	12.750	300	38,303	3/8 x 2 3/4	30	45	19	21 3/4	1 1/4	12 3/4	14 7/8	12	7/8 x 3 3/4	320	400	29.9
300	323.9	20.7	170.38	M10 x 70	40	60	483	552	32	324	359	12	-	439	542	13.6
12 (PN)	12.750	300	38,303	-	30	45	18 3/8	21 1/4	1	12 3/4	14 7/8	12	-	320	400	20.9
300	323.9	20.7	170.38	M10 x 70	40	60	460	540	25	324	359	12	M20 x 90	439	542	9.5

+ PN 16 uses M24 x 90 (PN) dimensions for 10" and 12" sizes. The specified mating flange bolt torque for M24 bolts is 434 - 542 N-m.

* Available in ANSI or metric bolt sizes only as indicated.

• Flange cannot be assembled directly to Series 7700 butterfly valve. Flange can be assembled to one side of series 7500 and 7600 valve.

▲ - Working Pressure Ratings are for reference only and based on Sch. 40 pipe. For the latest UL/ULC, FM, VdS and LPCB pressure ratings versus pipe schedule, please visit anvilintl.com or contact your local Anvil Representative.

§ - For additional Bolt Torque information, see Technical Data Section.



For dry pipe systems and freezer applications lubrication of the gasket is required, Gruvlok® Xtreme™ Lubricant is required.

- A. The sealing surfaces A Max. to B Min. of the mating flange must be free from gouges, undulations and deformities of any type to ensure proper sealing of gasket.
- B. SPF Flanges are to be assembled on butterfly valves so as not to interfere with actuator or handle operation.
- C. Do not use SPF Flanges within 90 degrees of one another on standard fittings because the outside dimensions may cause interference.
- D. SPF Flanges should not be used as anchor points for tierods across non-restrained joints.
- E. SPF F-3 Flange sealing gaskets require a hard flat surface for adequate sealing. The use of a SPF Flange Adapter Insert is required for applications against rubber faced valves or other equipment. The SPF Flange Adapter Insert is installed between the SPF Flange sealing gasket and the mating flange or surface to provide a good sealing surface area.
- F. SPF Flanges are not recommended for use against formed rubber flanges.

Applications which require a SPF™ Flange Adapter Insert

1. When mating to a wafer valve (lug valve), if the valve is rubber faced in the area designated by the sealing surface dimensions (A Max. to B Min.), place the SPF Flange Adapter Insert between the valve and the SPF Flange.
2. When mating to a rubber-faced metal flange, the SPF Flange Adapter Insert is placed between the SPF Flange and the rubber-faced flange.
3. When mating to a serrated flange surface, a standard fullfaced flange gasket is installed against the serrated flange face, and the SPF Flange Adapter Insert is placed between the SPF Flange and the standard flange gasket.
4. When mating to valves or other component equipment where the flange face has an insert, use procedure described in note 3.