

### WARNING

- Read these instructions carefully and completely before attempting to unpack, install or service the rupture disc and holder.
- Do not vent a rupture disc assembly to an area where it would endanger personnel.
- Install the rupture disc assembly in such a way that equipment in the area will not prevent rupture disc from opening or be damaged by system discharge.
- A baffle plate on the outlet end of vent piping does NOT necessarily prevent potentially dangerous discharge.
- Piping should be braced to absorb shock when the rupture disc ruptures.
- Install the enclosed DANGER sign in a conspicuous location near the zone of potential danger.

### INSPECTION/PREPARATION

#### A. NEW RUPTURE DISCS

**WARNING:** Always handle the rupture disc by its edges only. Damage to the dome or seat area of the rupture disc may adversely affect the performance of the rupture disc. Read the rupture disc tag completely before installing to confirm that the size, burst information, and type are correct for your system.

1. Carefully remove the rupture disc from its packaging container.
2. Remove and discard the shipping support (if provided). Shipping supports have ORANGE STICKERS on them – they are NOT a part of the rupture disc (See Figure 1).



Figure 1 - Shipping Support Sticker

PLHO and PLHOV users: DO NOT discard the clear plastic that is attached to the tag. It is a component of the disc.

3. Inspect the rupture disc for damage. Look for dents, scratches or dings in the seat area or dents in the dome of the rupture disc (See Figure 2).
4. If foreign material is present, carefully clean the rupture disc with a solvent that is compatible with your media.

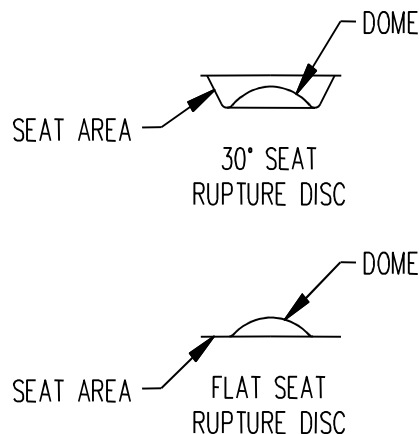


Figure 2 - Rupture Disc

5. Verify the metal tag shipped loose has the same lot number marked on it as the rupture disc.

#### B. NEW HOLDER

**WARNING:** Handle rupture disc holders with care. Damage to the rupture disc holder could affect the performance of the rupture disc.

1. After removing the rupture disc holder from its packaging, unscrew the outlet and disassemble.
2. Discard the white shipping protector which is between the inlet and outlet.
3. Inspect the seat area for scratches, dents, nicks or dirt. Flaws may adversely affect sealing and disc burst pressure.

#### C. EXISTING HOLDER

1. For ease of installation, carefully remove the rupture disc assembly from piping (See Figures 3 and 4).

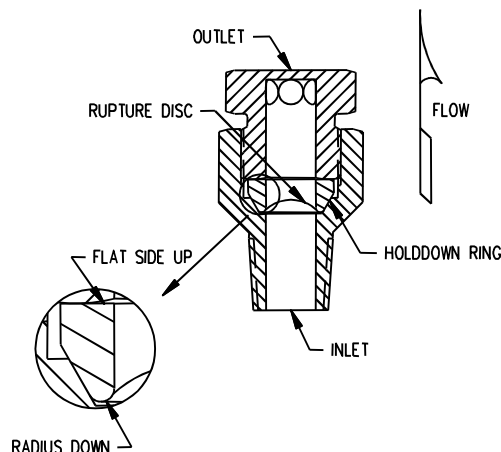
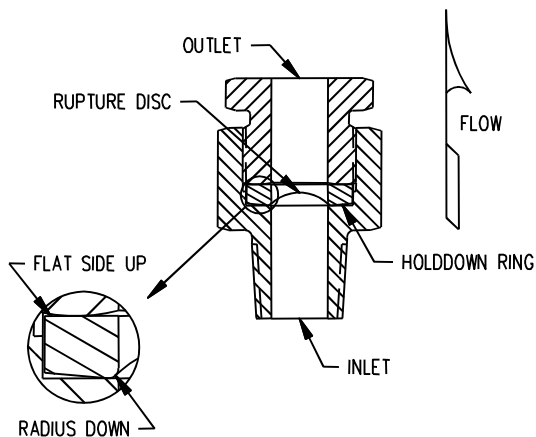


Figure 3 - Screw Type, 30° Seat



**Figure 4 - Screw Type, Flat Seat**

2. Separate rupture disc holder components (this process should also consist of removing the loose tag attached to the holder and discarding that loose tag).
3. Remove the rupture disc from its holder and discard.
4. Inspect the seat area of the rupture disc holder. Look for scratches, nicks, corrosion or deposits left from the media.
5. If necessary, clean the seat area with a solvent that is compatible with your media. If this does not remove dirt, hand polish the seat area with ScotchBrite™, fine emery cloth or #0000 steel wool. **DO NOT MACHINE THE RUPTURE DISC HOLDER!** If scratches, nicks, corrosion or deposits from the media cannot be removed by hand, contact the factory.

**D. ASSEMBLY**

**WARNING:** Before attempting to assemble the rupture disc and rupture disc holder, confirm that the seat area of the rupture disc is designed to fit the rupture disc holder.

1. Place new rupture disc in the inlet of the rupture disc holder with the dome pointing in the direction of flow.
2. Place the holddown ring on the rupture disc. Refer to Figure 3 for proper orientation of 30° seat and Figure 4 for proper orientation of flat seat.

**WARNING:** Inversion of the holddown ring (installing the ring upside down) may result in unexpected performance characteristics, such as premature opening or increased burst pressures.

3. Lubricate the assembly threads with a light oil such as SAE 20 oil. Commercial thread lubricants are recommended whenever conditions warrant. These conditions may include corrosive, marine and outdoor environments, service temperatures greater than 212°F (100°C), or stainless steel on stainless steel threads.

**WARNING:** The assembly should not be used if the threads show evidence of galling.

4. Screw the outlet into place, hand tight.
5. Check holder rating and type located on the side of the holder. For torque values, refer to the rupture disc tag. If the torque is not marked on the rupture disc tag, then refer to Table 1 for torque values.
6. Torque outlet to required torque.



**Figure 5 - Screw Type Tagging**

**E. INSTALLATION**

1. If necessary, clean NPT threads on the holder. Wire brushing is usually sufficient. Seal threads with Teflon® tape or pipe thread sealant.
2. Thread screw type assembly into the installation. One half turn past hand tight is recommended. Always apply torque using the flats nearest to the end being installed.
3. Experience has shown that, in some installation conditions, it may be necessary to re-torque the assembly after the system has operated through normal pressure and temperature cycles.
4. The metal tag shall be attached to the ST assembly in a manner that will prevent changing the rupture disc without breaking the seal. Reference Figure 5 showing the tag attached using a lead shunt and 0.02" SST wire as recommended practice.

Under normal operating conditions, the rupture disc should be replaced yearly. Severe operating conditions may require that the rupture disc be replaced more frequently.

Design Diameters (minimum flow diameters) for each combination of standard screw type assemblies are listed in Table 2.

**Table 1 – Torque Values**

1/2" 30 Screw Type (3,000 PSI)					3/4" 30 Screw Type (3,000 PSI)				
Burst Pressure	Solid Disc		Soft Disc		Burst Pressure	Solid Disc		Soft Disc	
psig @ 72°F	ft-lb	N-m	ft-lb	N-m	Psig @ 72°F	ft-lb	N-m	N-m	ft-lb
Min to 500 w/o liner	45	61	11	15	Min to 500	68	92	34	46
Min to 500 w/ liner	15	20	-	-	>500 to 1,000	75	102	38	51
>500 to 1,000 w/o liner	50	68	19	26	>1,000 to 1,500	83	113	-	-
>500 to 1,000 w liner	20	27	-	-	>1,500 to 2,000	90	122	-	-
>1,000 to 1,500 w/o liner	55	75	-	-	>2,000 to 2,500	98	133	-	-
>1,000 to 1,500 w/ liner	25	34	-	-	>2,500 to 3,000	105	142	-	-
>1,500 to 2,000 w/o liner	60	81	-	-	3/4" 150 Screw Type (15,000 PSI)				
>1,500 to 2,000 w/ liner	30	41	-	-	Min to 500	45	61	45	61
>2,000 to 2,500 w/o liner	65	88	-	-	>500 to 1,000	58	78	58	78
>2,000 to 2,500 w/ liner	35	47	-	-	>1,000 to 2,000	78	106	-	-
>2,500 to 3,000 w/o liner	70	95	-	-	>2,000 to 3,000	100	135	-	-
>2,500 to 3,000 w/ liner	40	54	-	-	>3,000 to 4,000	122	166	-	-
1/2" 100 Screw Type (10,000 PSI)					>4,000 to 5,000	145	197	-	-
Min to 500	30	41	9	12	>5,000 to 6,000	167	226	-	-
>500 to 1,000	38	52	11	15	>6,000 to 7,000	181	246	-	-
>1,000 to 2,000	52	71	-	-	>7,000 to 8,000	196	266	-	-
>2,000 to 3,000	66	89	-	-	>8,000 to 9,000	212	287	-	-
>3,000 to 4,000	81	110	-	-	>9,000 to 10,000	227	307	-	-
>4,000 to 5,000	96	130	-	-	>10,000 to 12,500	264	358	-	-
>5,000 to 6,000	110	149	-	-	>12,500 to 15,000	301	409	-	-
>6,000 to 7,000	120	163	-	-	1" 40 Screw Type (4,000 PSI)				
>7,000 to 8,000	130	176	-	-	Min to 500	90	122	45	61
>8,000 to 9,000	140	190	-	-	>500 to 1,000	100	136	50	68
>9,000 to 10,000	150	203	-	-	>1,000 to 1,500	110	149	-	-
1/2" 150 Screw Type (15,000 PSI)					>1,500 to 2,000	120	163	-	-
Min to 500	30	41	9	12	>2,000 to 2,500	130	176	-	-
>500 to 1,000	38	52	11	15	>2,500 to 3,000	140	190	-	-
>1,000 to 2,000	52	71	-	-	>3,000 to 3,500	150	203	-	-
>2,000 to 3,000	66	89	-	-	>3,500 to 4,000	160	217	-	-
>3,000 to 4,000	81	110	-	-	1" 50 Screw Type (5,000 PSI)				
>4,000 to 5,000	96	130	-	-	Min to 500	45	61	45	61
>5,000 to 6,000	110	149	-	-	>500 to 1,000	59	80	59	80
>6,000 to 7,000	120	163	-	-	>1,000 to 1,500	71	96	-	-
>7,000 to 8,000	130	176	-	-	>1,500 to 2,000	83	112	-	-
>8,000 to 9,000	140	190	-	-	>2,000 to 2,500	96	130	-	-
>9,000 to 10,000	150	203	-	-	>2,500 to 3,000	107	146	-	-
>1,000 to 12,500	175	237	-	-	>3,000 to 3,500	121	164	-	-
>12,500 to 15,000	200	271	-	-	>3,500 to 4,000	134	182	-	-
					>4,000 to 4,500	147	199	-	-
					>4,500 to 5,000	160	217	-	-

**Solid Disc Types**

Seals: Hastelloy (C-276), Titanium (Ti) Tantalum (Ta), 316 SST, Inconel, Monel, Nickel (Ni)  
 Liners: Fluoropolymer (FEP and PFA), Lead (Pb)  
 Coatings: Gold (Au), Teflon (FEP), Polyurethane

**NOTE:** In the event of a conflict between solid and soft discs, the soft disc torque shall be used.

**NOTE:** Rupture disc specifications and year of manufacture can be found on the rupture disc tag.

**Soft Disc Types**

Seals: Silver (Ag), Gold (Au), Aluminum (Al), Fluoropolymer (FEP and PFA)  
 Liners: Fluoropolymer (FEP and PFA)  
 Coatings: Teflon (FEP), Polyurethane

**NOTE:** Torque values in Table 1 are based on a coefficient of friction of  $\mu=0.17$ . Adjustment to the torque should be considered if the installation utilizes lubrication with a coefficient of friction other than  $\mu=0.17$ . The following expression may be used for correction:

Equation 1:  $T_2 = (T_1/\mu_1)*\mu_2$  where  $T_1$  and  $\mu_1$  are the Fike default torque and coefficient of friction values.

**Table 2 – Design Diameters**

Rating	NPT Size (in)	Design Diameter (in)
½" 30 Screw Type (3,000 PSI)	0.125	0.219
	0.250	0.313
	0.375	0.406
	0.500	0.465
½" 100 Screw Type (10,000 PSI)	0.125	0.219
	0.250	0.250
	0.375	0.375
	0.50	0.465
½" 150 Screw Type (15,000 PSI)	0.250	0.188
	0.500	0.438
¾" 40 Screw Type (4,000 PSI)	0.750	0.719
¾" 150 Screw Type (15,000 PSI)	0.750	0.563
1" 40 Screw Type (4,000 PSI)	1.000	0.938
1" 50 Screw Type (5,000 PSI)	1.000	0.875