BS&B SAFETY SYSTEMS,INC.
BS&B SAFETYSYSTEMS LTD.

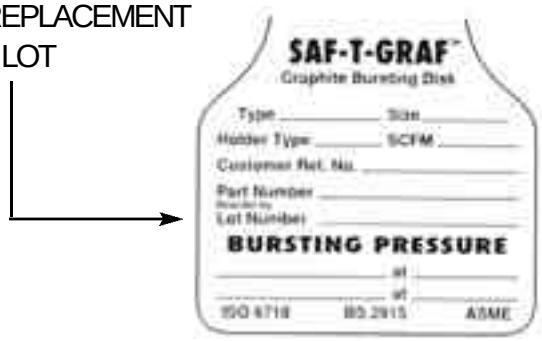
SAF-T-GRAF™ REPLACEABLE ELEMENT

GRAPHITE DISKS INSTALLATION INSTRUCTIONS

BULLETIN

77-8550I

- ◆NEW INSTALLATIONS
- ◆REPLACEMENT OF DISKS IN EXISTING INSTALLATIONS
- ◆ORDER REPLACEMENT DISKS BY LOT NUMBER



Do not remove bursting disks or safety head from packaging until required. Select proper location.

1. **CAUTION-VENT TO SAFE AREA**
   Check the location. Do not locate where personnel or property could be exposed to product and fragments from graphite rupture disks being discharged through the vent opening. Any equipment or property in the vicinity of discharge could be damaged.
2. Consider recoil or "kickback." Recoil is the force the system will experience upon rupture. Recoil (lbs.) is approximately twice the disk rating (psig) times the relief area ($in.^2$). Provide adequate support to piping and connections. If the discharge is free-vented, a baffle plate mounted on the vent opening with extra length studs will minimize recoil.
3. Provide adequate support for the downstream vent piping. The bursting disk should not be subjected to excessive structural bending stresses.
4. The safety head must match the companion flange size and rating.
5. Safety head and disk materials should be compatible with your process.

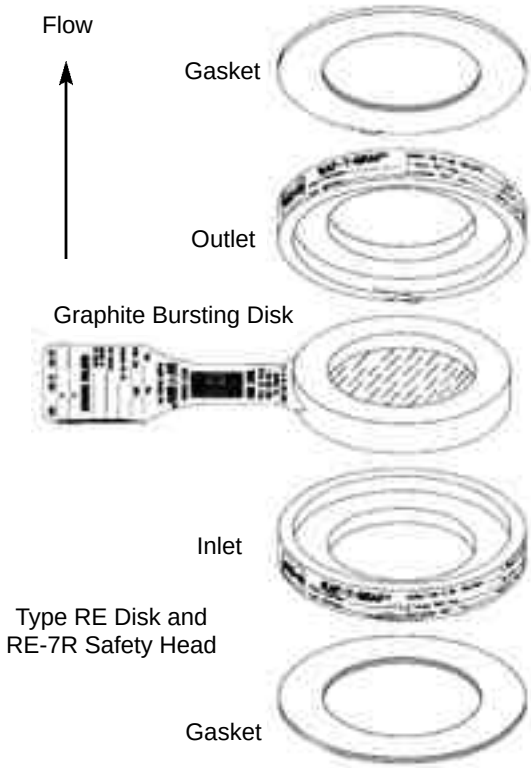
BEFORE YOU INSTALL THE BURSTING DISK

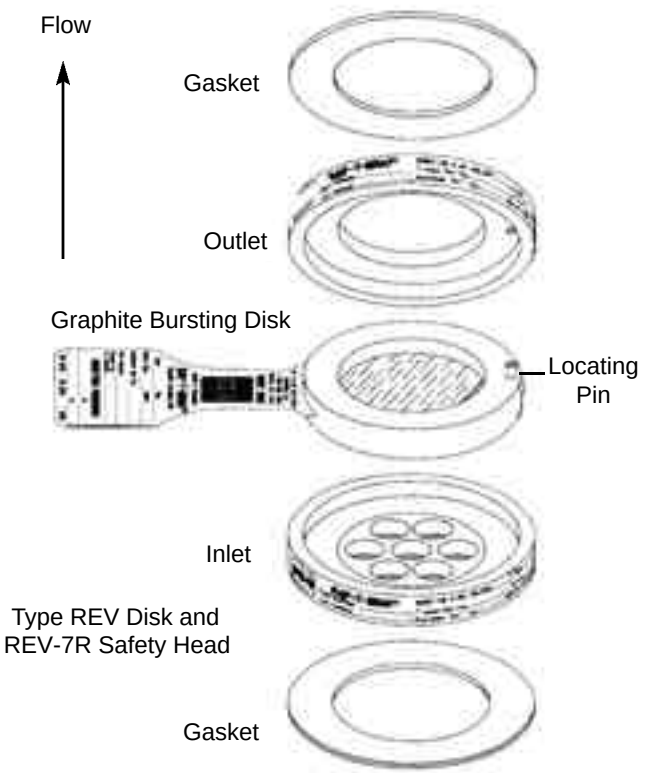
1. Inspect Flange. Clean seating surfaces of both safety head flanges before installing bursting disk. Pits, dirt or grit can damage bursting disk or cause leakage.
2. Inspect Bursting Disk. Remove disk and safety head from packaging WITH CARE. Handle bursting disk carefully - it is a precision instrument. Examine disk surfaces before installing. DO NOT INSTALL THE DISK IF THERE IS ANY DAMAGE. Adamaged disk is any disk with visible nicks, scratches – it must not be installed. Installation of a damaged disk may result in premature bursting of the disk. However, even if damaged, it will still open completely below the disk's rated pressure.

NOTE: Corrosion and service conditions may affect disk life thus requiring periodic replacement.

RE-RE-7R
Type RE Graphite Bursting Disk in RE-7R Safety Head

REV/REV-7R
Type REV Graphite Bursting Disk in REV-7R Safety Head





I. Type RE Disk and RE-7R Quik-Sert Safety Head Installation Instructions

PRE-ASSEMBLY

1. Place inlet of safety head in position as shown with recess up.
2. Place new undamaged RE graphite bursting disk on inlet safety head flange with the specification details on the disk name plate facing toward the outlet flange.
3. Carefully place outlet flange in position as shown.

INSTALL THE RE-7R SAFETY HEAD

1. Pipe flanges should be flat, parallel, and concentric.
2. Insert the RE-7R safety head assembly between the pipe flanges centralizing the assembly within the flange bolt circle.
3. Ensure flow arrow on the safety head name plate indicates the required direction of flow upon bursting.
4. Install hard compressed fiber gaskets between RE-7R safety head and the mating pipe flanges. The user is cautioned to select gasket materials adequate for the service conditions.
5. Install studs with nuts. Tighten all nuts finger tight. Evenly torque the nuts to the values in Table 1. Even torque can be achieved by applying 1/4 of the desired torque to each nut using a diagonal torquing sequence. Repeat pattern by torquing to 3/4 of the desired final torque. Then using same pattern torque to full specified torque.

Note: The fail safe design of the RE type disk assures the disk cannot be installed incorrectly in the safety head as the disk will burst at its rated pressure in either direction.

II. Type REV Disk and REV-7R Quik-Sert Safety Head Installation Instructions.

PRE-ASSEMBLY

1. Place inlet of safety head in position as shown with recess up.
2. Place new undamaged REV graphite bursting disk on inlet safety head flange with the disk's locating pin upwards. The vacuum support dial is located on the pressure side of the bursting disk.
3. Carefully place safety head outlet flange in position so that the locating pin of the disk mates with the hole in the outlet flange.

INSTALL THE REV-7R SAFETY HEAD

1. Pipe flanges should be flat, parallel, and concentric.
2. Insert the REV-7R safety head assembly between the pipe flanges centralizing the assembly within the flange bolt circle.
3. Ensure flow arrow on the safety head name plate indicates the required direction of flow upon bursting.
4. Install hard compressed fiber gaskets between REV-7R safety head and the mating pipe flanges. The user is cautioned to select gasket materials adequate for the service conditions.
5. Install studs with nuts. Tighten all nuts finger tight. Evenly torque the nuts to the values in Table 1. Even torque can be achieved by applying 1/4 of the desired torque to each nut in a diagonal sequence. Repeat pattern by torquing to 3/4 of the desired final torque. Then using same pattern torque to full specified torque.

Type REL Graphite Bursting Disk with TFE Liner.
The REL disk in the REL-7R or REV-7R Safety Heads follow the procedure given in **II.** above.

Note on Torquing: Do not over-torque studs. Uneven or excessive torquing may cause damage resulting in leaking disks or premature bursting of the disk.
Armor: An Armored disk with a steel ring around the disk will eliminate premature bursting of the disk due to uneven or excessive torquing of the pipe flange studs. Armoring minimizes the probability of damage in transit and during installation.

TORQUE TABLE I
FOR 1" THROUGH 24"

SIZE	COMPANION FLANGE RATING	SAFETY HEAD RATING				TORQUE	
IN	MM	ANSI	DIN	AFNOR	JIS	FT-LB	NM
1	25	150/300	10/16/25/40	10/16/25/40	10/16/20/30	10	14
1.5	40	150/300	10/16/25/40	10/16/25/40	10/16/20/30	14	19
2	50	150	10/16/25/40	10/16/25	10	20	27
2	50	300	-	40	16/20/30/40	10	14
2.5	65	150	10/16	10/16	10	28	38
2.5	65	300	25/40	25/40	16/20/30/40	18	25
3	80	150	-	-	-	40	55
3	80	-	10/16/25/40	10/16/25/40	10/16/20/30	26	36
4	100	-	-	-	16/20/30/40	24	33
4	100	150/300	10/16/25/40	10/16/25/40	-	30	41
5	125	150/300	16/25/40	10/16/25/40	16/20/30/40	35	48
6	150	300	-	-	16/20/30/40	31	43
6	150	150	10/16/25/40	10/16/25/40	-	40	55
8	200	150	10	10	-	50	69
8	200	300	16/25/40	16/25/40	10/16/20/30	38	52
10	250	150/300	10/16/25	10/16	10/16/20	60	82
10	250	-	40	25/40	30/40	50	69
12	300	150	10/16	10/16	-	70	96
12	300	300	25/40	25/40	10/16/20/30/40	58	80
14	350	150	-	-	-	75	103
14	350	300	10/16/25/40	10/16/25/40	10/16/20/30	63	86
16	400	150	16/25	10/40	10/16/20/30/40	84	115
16	400	300	10/40	16/25	-	68	93
18	450	150	-	-	-	87	119
18	450	300	10/16	10/16	10/16/20	75	103
20	500	150/300	10/16/25/40	10/16/25	10/16/20	85	117
24	600	150/300	10/16/25/40	-	10/16/20	85	117

NOTE: The torque values are based on using compressed fiber gaskets. The use of spiral wound, fiber-filled gaskets could result in damage to the disk and safety head.

LIMITATIONS OF WARRANTIES

BS&B Safety Systems, Inc. warrants its products against defective workmanship and material under normal and proper use in service for a period of twelve (12) months from the date of shipment, when owned by the original buyer and only when subject to normal operating conditions outlined by Buyer when the order is placed; except that, rupture disks are not guaranteed except to burst within specified pressure ranges at temperatures specified at the time of sale.

Where the products involved include a rupture disk inside a rupture disk holder, each must be of the proper type to be utilized with its mating part as otherwise recommended by and manufactured by BS&B. BS&B specifically disclaims any warranty and any and all liability for damages, either direct or indirect, incidental or consequential arising from the use of rupture disk assemblies not wholly comprised of BS&B manufactured products.

Any article not manufactured by BS&B and which is sold hereunder is sold only under such warranties as the manufacturer thereof extends to BS&B and which BS&B to can pass through to the Buyer and enforce with reasonable effort.

Because of the effects of corrosion or erosion caused by acids, chemicals, fumes, rust, dirt, debris and other factors of storage, use, and installation, over which BS&B has not control, BS&B makes no other warranties beyond those expressly stated in this limited warranty.

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BS&B Safety Systems, Inc. and BS&B Safety Systems Ltd. are here to assist you in providing a safe and efficient work place. For assistance on installation, audits, training or technical advice, please contact our Customer Service Department.

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