



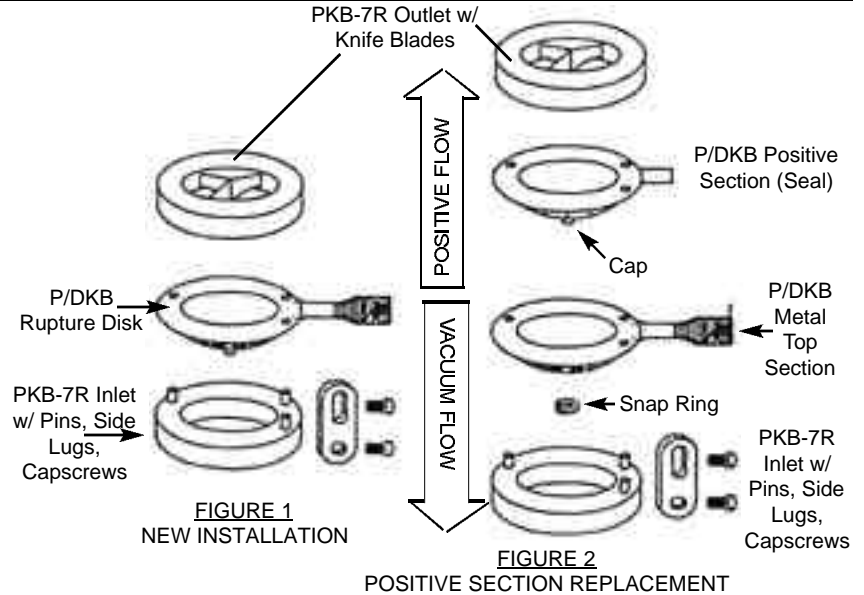
VAC-SAF™ SYSTEM

P/DKB RUPTURE DISK PKB-7R SAFETY HEAD INSTALLATION INSTRUCTIONS

BULLETIN
77-80071

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

- **NEW INSTALLATION**
- **REPLACEMENT OF DISKS OR POSITIVE SECTION IN EXISTING INSTALLATIONS**
- **ORDER REPLACEMENT DISKS AND POSITIVE SECTION BY PREVIOUS LOT NUMBER**



SELECT PROPER LOCATION FOR P/DKB DISK

1. **CAUTION - VENT TO SAFE AREA**
Do not locate where personnel or property could be exposed to the product being discharged through the disk. 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 is approximately twice the disk rating (psig) times the relief area (in²). Provide adequate support for piping and connections. If the discharge is free-vented, a baffle plate mounted with extra length studs will minimize recoil.
3. The P/DKB Disk should not be subject to excessive structural bending stresses.
4. P/DKB rupture disks are precision instruments. Do not bend, twist, or apply excessive force to any part of the rupture disk. If disks are liquid clean, do not use a high velocity coarse particle spray or jet.
5. Razor sharp edges of the cutting blades can cause injury.

BEFORE YOU INSTALL THE RUPTURE DISK:

1. **Inspect Companion Flanges**
Clean seating surfaces of both flanges before installing the safety head and gaskets.
2. **Inspect Safety Heads**
Clean seating surfaces of both safety head flanges before installing rupture disk. Pits, dirt, or grit can damage rupture disk or cause leakage. If surfaces are rough, polish with a fine emery cloth. **DO NOT MACHINE!** Dimensions of the safety head are critical. **DO NOT ALTER THEM.**

3. **Inspect the Knife Blades**
CAUTION! Damage to or interference with blade sharpness caused by various factors could prevent complete opening of the plastic section. Possible contributing factors include: product build-up, rolled edges or nicks on the cutting edge, repeated cutting during normal usage, dropping or setting the blades with cutting edge down on hard surfaces, corrosion and erosion.
If damage is found - do not install. Consult factory for repair/replacement.
4. **Inspect the Disk**
Inspect all disk parts before installation. Examine the disk for indentations or severe scratches. Do not install a damaged disk as it may result in failure of the disk to fully open.

PREASSEMBLE YOUR PKB-7R ASSEMBLY WITH P/DKB RUPTURE DISK

- I. **NEW INSTALLATION OR REPLACEMENT DISK PREASSEMBLY (See Figure 1)**
 1. Place safety head inlet in position as shown with pins up.
 2. Place new undamaged P/DKB rupture disk on inlet. The holes in the disk will mate with the pins on the safety head.
 3. Carefully place safety head outlet in position as shown.
 4. Assemble unit with alignment lugs and capscrews. Tighten capscrews sufficiently to hold disk snugly in place between the inlet and outlet.

**II. POSITIVE SECTION (SEAL) REPLACEMENT
PREASSEMBLY ONLY (See Figure 2)**

1. If the disk is ruptured in the positive overpressure direction only (seal cut on blades), the metal top section may be reusable if undamaged. **DO NOT REUSE ADAMAGED METAL TOP SECTION.** Remove the snap ring, cap and ruptured seal. A sharp pointed tool can be used to remove the snap ring.
2. Remove all plastic from the ruptured P/DKB until only the bare metal P/DKB top section remains.
3. Make sure the "use with P/DKB top lot number" printed on the replacement positive section (seal) matches the "reorder by lot number." stamped on the P/DKB metal top section disk tag (Figure 3). If they do not match - **DO NOT INSTALL.**
4. Preassemble plastic positive section replacement to metal top section:
 - a) Remove the new snap ring from the positive section (seal). Remove the paper tag.
 - b) Carefully push the cap of the new seal up through the metal top.

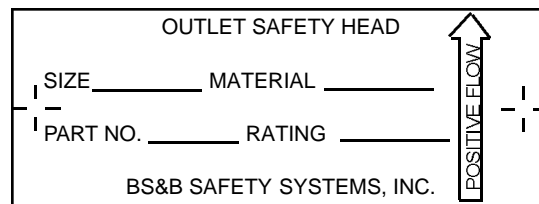
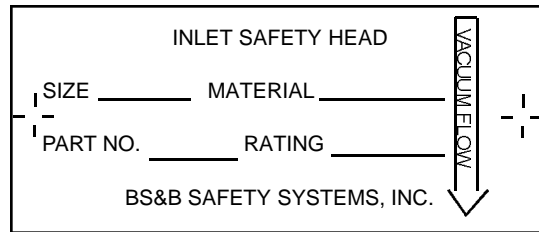
P/DKB POSITIVE SECTION REPLACEMENT	
SIZE _____	USE WITH P/DKB _____
LOT NO. _____	TOP LOT NO. _____
POSITIVE RUPTURE PRESSURE	
MIN. _____	MAX. _____
MIN. _____	MAX. _____
BS&B SAFETY SYSTEMS, INC.	

Figure 3

- c) Rotate the seal until all three locating holes of the seal match those in the metal top.
 - d) Install the snap ring without applying force to the metal top section. Carefully push against the back of the snap ring while holding the cap of the seal. Inspect the snap ring to make certain it is fully located.
5. Place safety head inlet in position as shown in Figure 2 with pins up.
6. Place the disk on the safety head inlet. The holes in the disk will mate with the pins on the safety head.
7. Carefully place the Safety Head outlet in position - aligning holes in outlet with pins on inlet.
8. Assemble unit with alignment lugs and capscrews. Tighten capscrews sufficiently to hold disk snugly in place between the inlet and the outlet.

INSTALL YOUR PKB-7R ASSEMBLY

1. Install gaskets between PKB-7R Safety Head and mating pipe flanges. BS&B recommends a hard compressed fiber gasket 1/8 of an inch thick. However, the user is cautioned to select gasket materials adequate for the service conditions and the ability of the gasket to resist "cold flows." Gaskets that "cold flow" will allow torque relaxation, which will cause premature bursts.
2. Note the flow directions on each safety head of the assembly. The inlet safety head is marked "VACUUM FLOW" with an arrow. The outlet safety head is marked "POSITIVE FLOW" with an arrow.



3. Place the assembly on your flanges being sure to match the flow directions of your system to those marked on the PKB-7R assembly.
4. Install studs with nuts. Tighten all nuts finger tight before torquing. Evenly torque the studs to the values in Table I. Even torque can be achieved by applying 1/4 of desired final torque to each stud. Repeat pattern by torquing 3/4 of the desired final torque. Then, using same pattern, torque to full specified torque.

**TABLE 1 COMPANION FLANGE TORQUE
ANSI 150, DIN 10, 16, JIS 10, 16, B.S. 10, D-E**

SIZE		COMPANION FLANGE RATING				TORQUE	
IN	MM	ANSI	DIN	JIS	B. S. 10	NM	FT-LB
2	50	150	10/16	10/16	D-E	57	42
	80	150	-	-	D-E	57	42
3	80	-	10/16	10	-	28	21
	80	-	-	16	-	35	26
4	100	150	16	10	E	57	42
	100	-	10	-	D	114	84
	100	-	-	16	-	72	53
6	150	150	16	10	E	102	75
	150	-	10	-	D	85	63
	150	-	-	16	-	79	58
8	200	150	16	-	E	102	75
	200	-	10	-	D	85	63
	200	-	-	16	-	77	57
	200	-	-	10	-	70	52

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 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 no control, BS&B makes no other warranties beyond those expressly stated in this limited warranty.

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BS&B Safety Systems, Inc.
7455 East 46th Street
Tulsa, OK 74145
Telephone: 918-622-5950
Facsimile: 918-665-3904
www.bsbsystems.com

or

BS&B Safety Systems Ltd.
Raheen Business Park
Raheen, Limerick, Ireland
Telephone: +353 61 227022
Facsimile: +353 61 227987
www.bsb.ie