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

Installation Instructions

Installation Instructions for Type SK_R-U™ Rupture Disk and Union UR™ Safety Head

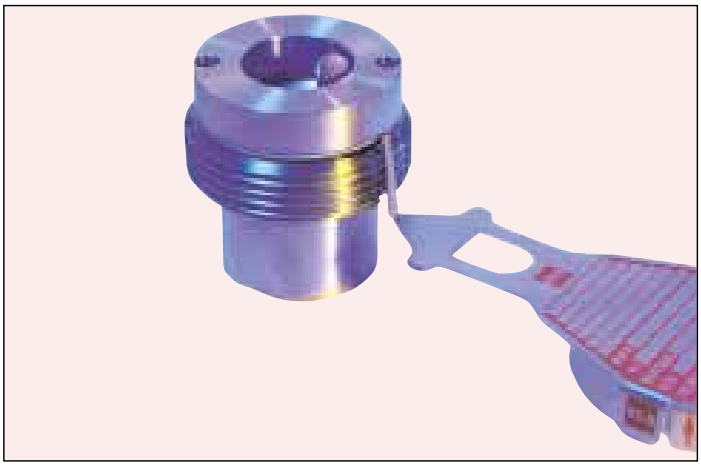
Warning: Rupture disks are intended to provide a pressure relief opening. This rupture disk is designed to burst at a specified temperature and pressure, thereby relieving excess pressure or preventing excessive vacuum in a system. **It is imperative that this rupture disk be properly installed and safely vented in order to avoid bodily injury, damage to property, pollution and loss of product.** BS&B Safety Systems, Inc. and BS&B Safety Systems Limited supply disks selected by their customers, which are manufactured in reliance upon information and specifications supplied by the customer. BS&B Safety Systems, Inc. and BS&B Safety Systems Limited are not liable for any damage resulting from improper installation, improper system design, unsafe venting, or other factors beyond BS&B Safety Systems, Inc. and BS&B Safety Systems Limited control. Do not locate the rupture disk device where personnel, equipment or property will be exposed to released product and pressure through the disk. Handle carefully, disk and tag may have sharp edges.

Order Replacement Disks by Lot Number
(shown on the disk's tag)

BEFORE YOU INSTALL A RUPTURE DISK

1.Inspect Safety Head
Inspect Safety Head's mating surfaces (inlet and holddown ring) for foreign material. Pits, dust or grit can damage the rupture disk affecting disk performance or cause leakage. If surfaces are rough, polish with a fine emery cloth. Clean if necessary.
Do not machine Safety Head holder as dimensions are critical.

2. Inspect the Rupture Disk
Prior to assembly ensure that the SK_R-U™ type disk is to be installed in a type UR™ safety head holder.
The rupture disk burst pressure must not exceed the pipe system rating.
Handle the rupture disk carefully,holding the disk by the tag and the perimeter only.
Examine both sides of the disk checking the seating and domed surfaces for nicks, dents, scratches and foreign material, which can damage the disk, cause leakage or affect the burst pressure.
Do not install a damaged disk.
If damaged the type SK_R-U™disk will burst at or below its marked burst pressure.
The SK_R-U™ uses SAF™ technology (Structural Apex Forming) and the precision indentation at the Apex of the disk is present in all cases.



SAFETY PRECAUTIONS - CAUTION
- Only competent, trained personnel should install rupture disk safety devices in accordance with these installation instructions.
- Do not remove rupture disks from packaging for inspection until ready to install.
- Consider recoil. Provide adequate support for piping and connections to absorb recoil/reaction forces when the disk ruptures.Recoil is the force the system will experience upon disk rupture.
  Recoil (lbs) is approximately twice the disk's burst pressure (psig) times the relief area ($in.^2$).
- The rupture disk and Safety Head should not be subjected to excessive structural bending stresses such as that produced by unsupported or misaligned piping.
- If disks are liquid cleaned, and a high velocity, particle spray or jet is used, take care not to damage the disk.

US patent nos 5996605, 4751938, 5005722 and other international patents pending

- Do not locate the disk where it may be subjected to thermal shock. Moisture, rain, condensation or snow may cause a thermal shock to the disk causing the disk to burst below its marked burst pressure. A protector is recommended for temperature above 212°F (100°C), consult BS&B Safety Systems, Inc. or BS&B Safety Systems Limited.
- When the disk ruptures, the resulting shock wave may affect the operating performance of down-stream equipment.
- Do not reinstall a disk that has been removed from the Safety Head. When stresses in the disk are relieved by removing from the Safety Head the disk can never resume its original installed condition, which can affect disk performance.
- The rupture disk and Safety Head must not be machined or modified in any way except with the approval of BS&B Safety Systems, Inc. or BS&B Safety Systems Limited. Failure to obtain such approval voids the warranty on this product.
- Safety Head and rupture disk materials should be compatible with the process.
- Corrosion, disk damage and process conditions may deteriorate disk performance and necessitate frequent replacement.

Installation of SK_R-U™ Rupture Disk in UR™ Type Safety Head

1. Place inlet of Safety Head on a flat work surface in position as shown with locating pin and capscrew holes up. Please refer figure 1.
2. Place NEW, UNDAMAGED, rupture disk on inlet so locating pin mates with the corresponding hole in the rupture disk and holes in disk align with capscrew hole locations.
3. Place holddown ring on disk aligning holes in holddown ring with locating pin and capscrew holes in disk and inlet.
4. Hold the holddown ring flat aganist the disk and inlet, then install both capscrews finger tight, using a hex-key size 3/32 in or 7/64 in (or metric equivalent) torque to maximum of 2.5 Nm (20 in lb).
5. Remove existing gasket and place new gasket (supplied with each disk) on holddown ring, adhesive side down.
6. Place outlet and nut in position and tighten finger tight.
7. Tighten nut using a torque wrench to 350 Ft.lbs (475 Nm).
8. When using a BS&B Torque Drive Adapter set the torque wrench at the setting corresponding to the LN length shown in Table 1. Tighten the assembly to the TW value shown in Table 1.

It may be necessary to restrain or clamp the Safety Head inlet.

Ensure flow arrows on the disk tag and on the nut of the Safety Head point in the same direction. Flow arrow on the Safety Head and rupture disk tag should also point in the desired process flow direction upon disk rupture.

WARNING

Should the SK_R-U™ disk and its Safety Head be installed upside down, the burst pressure of the rupture disk generally exceeds 1.5 times the marked burst pressure.
A new gasket must be fitted when replacing a rupture disk to ensure a leak tight assembly downstream of the rupture disk. The UR™ Safety Head has a "bite-type" seal on the inlet face that engages with the rupture disk. Do not modify this feature in any way. Should the 'bite-type" seal be incomplete or damaged contact BS&B for repair.

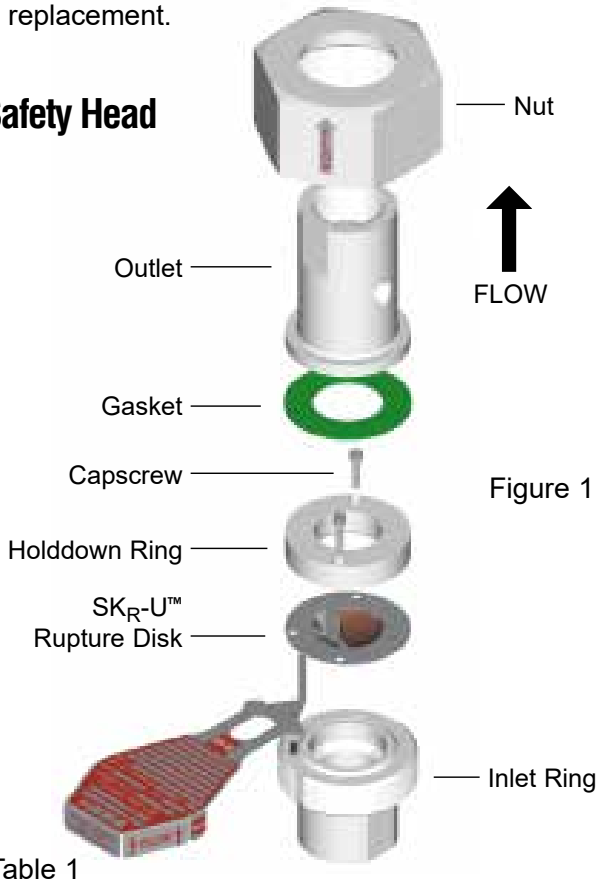


Figure 1

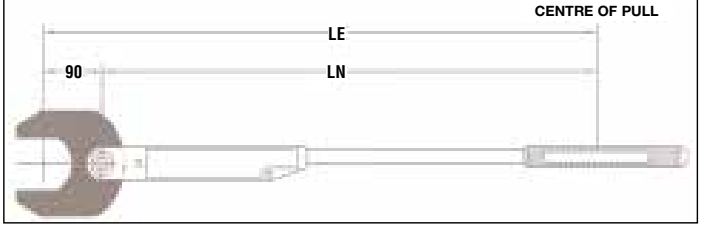
Table 1

Torque Calculations for use with BS&B Torque Wrench Adapter (P/N K0-0-5050-000)

$$TW = TA \times \frac{LN}{LE}$$

TW Torque wrench setting.
TA Required Torque = 475 Nm/350 Ft.lbs
LN Normal length from center of pull to center of square drive.
LE Length from center of pull to center of adapter = LN + 90 mm (3.5 inches)

LN Normal length from center of pull to center of drive.		TW Torque Wrench Setting.	
mm	inches	Nm.	Ft.lbs.
400	5.7	388	286
500	19.7	403	297
600	23.6	413	304
700	27.6	421	310
800	31.5	427	315
900	35.4	432	319
1000	39.4	436	321
1500	59.1	448	330
2000	78.7	455	335



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ISO 9001 Quality System Certification

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