



INSTALLATION INSTRUCTIONS

For Custom Welded Assemblies

1) WARNING

- a) **To read the complete instructions before attempting to install any custom welded assembly.** It is the users responsibility to establish appropriate safety, health and training of the personnel installing, servicing or working in an area where welded assemblies are in use.
- b) For the design of adequate venting and installation of adequate vent piping or directional flow after rupture occurs with the rupture disk as intended. When size is specified, ZOOK assumes that adequate provisions have been made by the purchaser and/or user for proper venting of a system to relieve the specific pressure.
- c) To specify the burst pressure rating at the coincident temperature at which the welded assembly is to be used. A rupture disk is a temperature sensitive device. The burst pressure of the rupture disk is directly affected by its exposure to the coincident temperature. Failure to utilize a rupture disk at the specified coincident temperature could cause premature failure or overpressurization of the system.
- d) To locate the welded assembly where people or property will not be exposed to the system discharge in the event of rupture. Particles may discharge when the rupture disk ruptures. These particles may be part of the rupture disk itself, or other environmental matter in the system. It is the user's responsibility to ensure that the particles are directed to a safe area to prevent personnel injury or property damage.
- e) To vent toxic or flammable fumes to a safe location to prevent personnel injury or property damage.
- f) To provide adequate piping support to absorb recoil/reaction forces when the disk ruptures.
- g) For the proper installation of a welded assembly into a system. Improper installation and physical damage resulting therefrom, including, but not limited to, damage resulting from leakage, improper torquing, and/or failure to follow installation instructions.

2) SAFETY PRECAUTIONS BEFORE INSTALLATION

- a) ZOOK custom welded assembly service life is affected by severe pressure to vacuum cycles, corrosion, temperature variations, creep, metal fatigue, and physical damage. These conditions can derate the rupture disk to a lower pressure. Accordingly the user should be prepared to handle a premature failure of the rupture disk. There is no guarantee of a welded assembly service life.
- b) To avoid costly down time, ZOOK recommends annual replacement of welded assemblies and the user maintain three (3) spare welded assemblies in stock for each installation. The number of spares required will ultimately be determined by the service conditions and the installation history.
- c) The media or other environmental conditions should not allow for any build-up or solidification of media on the rupture disk. This may increase the burst rating of the rupture disk.
- d) ZOOK custom welded assemblies will provide a very good seal for liquids and most gases or vapors. However, ZOOK cannot guarantee the leakage rate of the welded assembly without prior knowledge of the requirement and details of the piping layout. Consult ZOOK for guidance if leakage is critical to the installation.
- e) ZOOK standard Terms and Conditions of Sale apply unless otherwise stated in writing by the manufacturer.
- f) Recommended torque values do not consider piping stress or alignment.
- g) Under no circumstances should the assembly be torqued through the weld, unless previously discussed with ZOOK.
- h) ZOOK custom welded assemblies should be aligned and supported in pipework to eliminate misalignment forces and/or torques. Custom welded designs are not designed to support weight beyond their own assembly weight.

3) INSPECTION AND PREPARATION

- a) ZOOK custom welded assemblies are designed and tested in custom tooling, or equivalent specified connections. Consult the factory for alternate standards and designs.
- b) **New Installation**
 - 1) Carefully unpack the welded assembly and inspect any critical areas for scratches, dents, nicks or dirt. Flaws may adversely affect proper sealing and/or bursting accuracy.
 - 2) For welded installations, carefully attempt to weld the connections with the welded assembly in the proper orientation. Caution must be taken to eliminate excess heat and warpage of the welded assembly from the welding process.
 - 3) Clean all foreign material from the sealing area. If necessary, clean with a solvent that is compatible with your service. These surfaces must be clean and free from all corrosion and foreign material to insure proper sealing and burst accuracy. **DO NOT USE A SCRAPER OR ABRASIVES.**
- c) **Existing Installation**
 - 1) Carefully remove the burst welded assembly without damaging it further and keep it if future evaluation is required.
 - 2) Remove any adhered gasket material from the previous installation, if applicable.
 - 3) Clean all foreign material from the sealing area. If necessary, clean with a solvent that is compatible with your service. These surfaces must be clean and free from all corrosion and foreign material to insure proper sealing and burst accuracy. **DO NOT USE A SCRAPER OR ABRASIVES.**

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4) INSTALLATION OF THE RUPTURE DISK INTO THE SYSTEM

- a) Carefully remove the new welded assembly from its packaging and inspect for damage. Look for nicks and cuts on the sealing surfaces and dents in the dome of the disk. **DO NOT TOUCH AND/OR REST THE DISK ON ITS DOME.**
- b) Always handle the rupture disk with extreme caution, installation of a damaged disk may result in leakage or affect the bursting accuracy.
- c) The welded assembly has been factory cleaned with a water soluble detergent and is ready for installation. If your process requires additional cleaning, carefully clean the rupture disk without touching the dome of the disk with a solvent that is compatible with your service.
- d) Double check the orientation of the Rupture disk, verify that the flow arrow on the holder is pointing in the vent direction of the relief system.
- e) Hand tighten any threaded fitting or hardware so that the welded assembly is held in position.
- f) Recommended torque requirements for best performance per drawing, if applicable. **EXCESSIVE TORQUE MAY CAUSE THE DISK TO BURST LOWER THAN ITS MARKED BURSTING PRESSURE.**
- g) Torque each bolt and nut in a cross torquing pattern with a calibrated torque wrench to recommended torque requirements, if applicable.

5) PREVENTIVE MAINTENANCE

- a) Store the welded assembly in its original packaging until time of use. Early removal will increase the potential of damage.
- b) Under normal operating condition, annual replacement of the welded assembly is considered good practice. A more frequent changeout may be required for more severe operating conditions. In this case the users operating history is the best indicator of changeout frequency.
- c) Premature failures of the Rupture disk may occur if periodic replacement is not performed.
- d) The welded assembly is for a one time installation and hence is to be cleaned in place only. It is not recommended to uninstall the welded assembly until it has been Ruptured.

VISUAL INSPECTION WILL NOT REVEAL FATIGUE CAUSED BY PROCESS PRESSURE FLUXUATIONS OR EXPOSURE TO THE PROCESS MEDIUM. WHEN IN DOUBT, INSTALL A NEW WELDED ASSEMBLY.

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