



## TECHNICAL SAFETY BULLETIN

**TSB No. 2102**

**STATUS: INITIAL RELEASE**

**SUBJECT: WELD PROCEDURE – CLUSTER DRILLS**

**PRIORITY: 3-GENERAL**

**RELEASE DATE: 12/20/21**

### KEYSTONE TECHNICAL BULLETIN INFORMATION

The bulletin was established to provide customers welding procedures for tie-down lugs for safety restraints on cluster drills. The procedures may also be used during repairs to the cluster drill.

NOTE: If repairs are needed to the cluster drill, consult Keystone Drill prior to welding.

### BULLETIN DETAILS

If welding/pre-heat will occur within 4 inches of a module, the hammer will need to be removed to prevent damage to O-rings.

#### Welding specifications - shop environment (preferred)

- Pre-heat area of weld 300°F soak – not to exceed 500°F
- Filler material: Lincoln Electric Ultracore 81Ni2A75-H (or equal)  
AWS E81T1-Ni2M-JH4-1/16" diameter
- Shielding gas: 75%-85% Argon/balance CO<sub>2</sub>
- Multi-pass per AWS D1.1 Standard
- Post cool: cover and allow to slow cool

#### Welding specifications - field environment

- Pre-heat area of weld 300°F soak – not to exceed 500°F
- Stick electrode: Lincoln Electric Excalibur 8018-C1 MR (or equal)  
AWS E8018-C1 H4R
- Multi-pass per AWS D1.1 Standard
- Post cool: cover and allow to slow cool

### RELATED EQUIPMENT

Keystone Cluster Drills, Keystone Hole Openers, Keystone Core Barrels