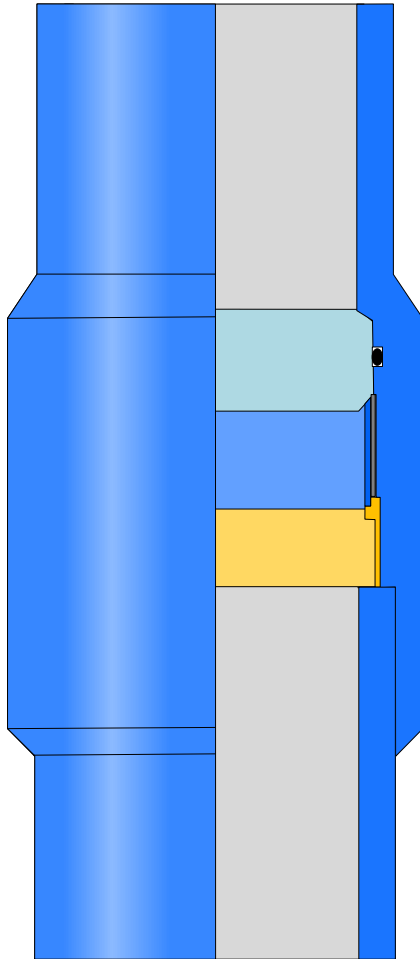


PetroQuip Phantom Glass Disk



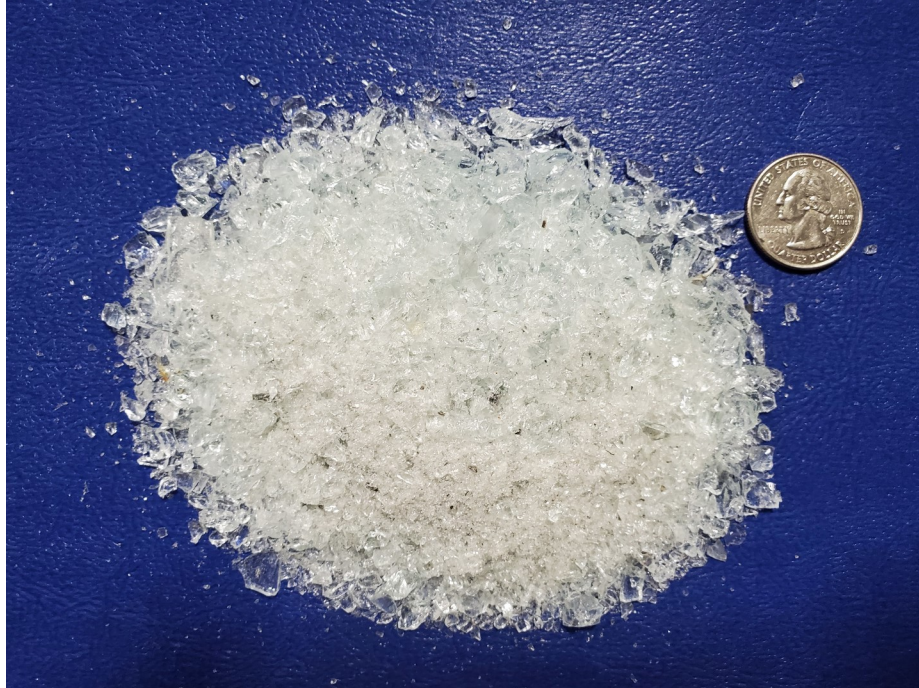
The **PetroQuip Phantom Glass Disk** provides temporary isolation of the tubing or casing string for well construction operations. The proprietary glass disk is removed by applying tubing pressure to a preset shear valve. Once it shears, the glass shatters leaving no restriction in the wellbore. There are two different activation methods:

1. Shatter the disk with applied pressure
2. Mechanically break the disk

Features and Benefits

- 8,500 psi and 10,000 psi available, holds pressure from above
- Proprietary metal to metal body thread
- Full Bore after activation
- No debris trap required
- Reliable and cost-effective
- Eliminates wireline intervention
- Can be run in extreme environments (H₂S and CO₂)
- Patent pending

PetroQuip Phantom Glass Disk



Disk after shattering

| Size | OAL (in) | ID (in) (after shatter) | OD (in) | Pressure rating of sub (after shatter) | Pressure differential of Shatter Disk (psi) | Temp Rating (°F) |
|-------|----------|-------------------------|---------|--|---|------------------|
| 2-3/8 | 15 | 1.99 | 3.20 | Equivalent or greater than the tubing/casing | 8,500 | 300°F |
| 2-7/8 | 16 | 2.44 | 3.65 | | | |
| 3-1/2 | 20 | 2.99 | 4.50 | | 8,500 & 10,000 | |
| 4-1/2 | | 3.92 | 5.40 | | | |
| 5 | 21 | 4.28 | 6.00 | | 7,500 & 10,000 | |
| 5-1/2 | 22 | 4.78 | 6.50 | | | |
| 6 | 22 | 5.2 | 7.15 | | | |

- Special order subs available on request