GRIPSAFE®ST (GSST)
PRE-INSTALLATION CHECKLIST

Before each use of the GripSafe ST plug for pressure testing, review the pre-installation checklist thoroughly and complete every step to ensure proper operation of the GripSafe ST isolation plug. For further details, refer to the full operating manual at: https://usaindustries.com/piping-isolation-testing-products/gripsafe-st/.

PREPARING GRIPSAFE PLUG FOR INSTALLATION

PLUG SIZE AND SCH VALIDATION

- ☐ The plug size/schedule on the Name Plate must match the pipe size/schedule being tested.
- ☐ Verify the pipe ID being tested falls within the plug's operational pipe ID range. Normal diametrical clearance between the pipe ID and plug OD is 3/8", with a maximum of 1/2".
- ☐ Confirm the test pressure does not exceed the MAWP (Maximum Allowable Working Pressure) listed on the Name Plate.

INSPECTING THE WEDGE GRIPPER AND ITS MECHANISM

- ☐ Ensure each Wedge Gripper Assembly is clean of debris, dirt, dust, grease, oil, fouling, and contaminants.
- ☐ Inspect the Wedge GritLock® for clogged surfaces (Figures 1 & 2), cracking (Figure 3), flaking (Figure 4), or excessive coating wear (Figure 5). Clean as needed or remove from service if any of these conditions are present. Any Wedge Gripper with questionable integrity must be taken out of service or reviewed with USA Industries LLC.
- ☐ Inspect the Back Plate (also referred to as the Friction Plate or Wear Plate) for excessive coating wear (Figure 5) and any surface bending (Figure 6). Note that some Back Plates may have a blue coating instead of black.

Figure 1:
Clogged GritLock Surface

Figure 2:
Clogged GritLock Surface

Figure 3:
Cracking of GritLock

Figure 4:
Flaking of GritLock

Figure 5:
Excessive Wear of Low-Friction Coating

Figure 6:
Bending of Back Plate

Follow steps below for cleaning and inspecting the plug

- ☐ Using a stainless steel wire brush, thoroughly clean each Wedge Gripper's GritLock® surface. If oil is present, apply paint thinner or degreaser.
- ☐ Pressure wash or blow out the plug with compressed air, paying particular attention to the gripping mechanism and sliding surfaces between the Wedge Gripper and Back Plate.
- ☐ Verify each Wedge Gripper slides freely and smoothly through its full range of motion with no resistance.

a. On models with the Wedge Gripper Pre-Setter (Figure 7), set the Spring Plate to "Retracted," remove each Wedge Gripper Nut (circled in red), and slide each gripper along its slot to confirm free movement. If any component appears compromised, STOP and replace immediately.

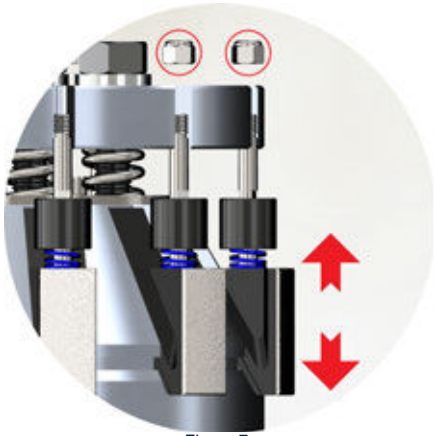


Figure 7:
Wedge Gripper With Pre-Setter

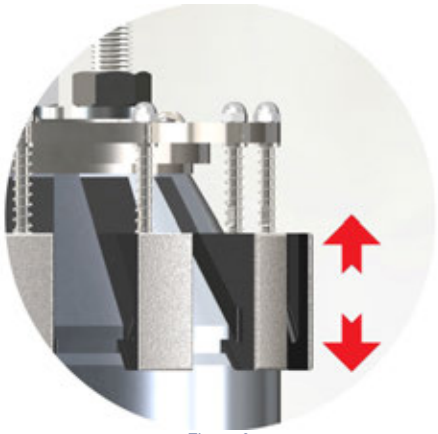


Figure 8:
Wedge Gripper Without Pre-Setter

b. For GripSafe models without the Wedge Gripper Pre-Setter (Figure 8), ensure the Spring Plate is in the "Compressed" position. Slide each Wedge Gripper along its slot to confirm free and smooth motion. If any component shows signs of concern, STOP and replace it immediately

GRIPSAFE®ST (GSST)
PRE-INSTALLATION CHECKLIST

INSPECTING THE GRIPSAFE SEAL (TRI-PLY®)

- ☐ The GripSafe Tri-Ply Seal consists of three layers of varying durometer hardness: hard – soft – hard. If delamination is observed between any layers, replace the seal immediately.
- ☐ Refer to Figures 9–13 for examples of Tri-Ply Seals requiring replacement. Note: this list is not exhaustive.

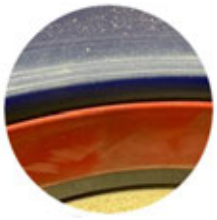


Figure 9:
Delamination of Tri-Ply Seal

Figure 10:
Cracking of Tri-Ply Seal

Figure 11:
Crumbling of Tri-Ply Seal

Figure 12:
Excessive Deformation of Tri-Ply Seal

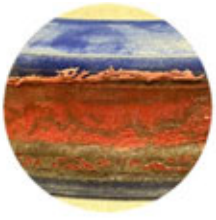


Figure 13:
Excessive Deformation of Tri-Ply Seal

PREPARING THE PIPE FOR PLUG INSTALLATION

INSPECTING AND PREPARING PIPE ID SURFACE

- ☐ The pipe ID must be free of oil, grease, dirt, dust, mill scale, heavy rust, paint, corrosion products, and other contaminants — the Wedge Gripper GritLock® must grip bare metal to function properly.
  Note: Light surface rust is acceptable, but cleaning to bare metal with a power tool and 80-grit flap disc is recommended.

Pipe ID Surface Free From:

Grease

Oils

Dirt & Dust

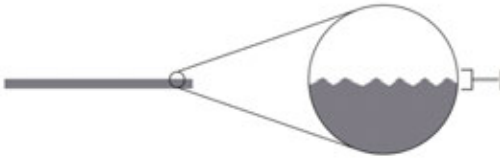
Drawing & Cutting Compounds

Mill Scale

Heavy Rusting

Paint & Coating

- ☐ The pipe ID surface must be smooth with a profile no greater than 1 mil (64 µin avg. roughness) for proper GritLock® engagement. Rust pitting is acceptable provided pit depth does not exceed 1 mil.



ENSURE A MAX. SURFACE PROFILE OF 1 MIL. OR Ra 64 µin

- ☐ Remove any sharp transitions on the pipe ID to prevent seal leaks. Weld seams at the seal location (Figure 14) must be ground smooth, and should not be positioned directly under a Wedge Gripper during installation.

Figure 14:
Weld Seam Along the Length of the Pipe