



GRIPSAFE®ST (GSST) PRE-INSTALLATION CHECKLIST

Before each use of the GripSafe ST plug for pressure testing, review the pre-installation checklist thoroughly. Ensure all steps are completed, and every checkbox is verified to assure the 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.
- ☐ Be sure the pipe ID being tested is within the operational pipe ID range of the plug. The normal diameter clearance between the pipe ID and the plug OD is 3/8" while the maximum diametrical clearance is 1/2".
- ☐ Verify that the pressure of the pipe/system being tested 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 any of the following issues: clogged surfaces (Figures 1 & 2), cracking (Figure 3), flaking (Figure 4), or excessive wear of the coating (Figure 5). Clean the gripper as needed or remove it from service if any of these conditions are present. While this list is not exhaustive, any Wedge Gripper with questionable integrity must be taken out of service or reviewed with assistance from USA Industries LLC.
- ☐ Inspect the Back Plate, also referred to as the Friction Plate or Wear Plate, for signs of excessive coating wear (Figure 5) and any bending along its surface (Figure 6). Please note that some Back Plates may have a blue coating instead of black.



Figure 1:
Clogged GritLock Surface

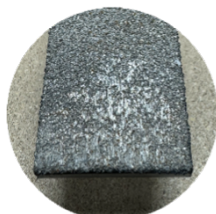


Figure 2:
Clogged GritLock Surface



Figure 3:
Cracking of GritLock

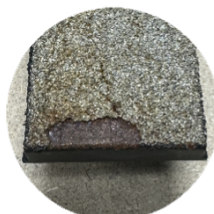


Figure 4:
Flaking of GritLock



Figure 5:
Excessive Wear of Low-Friction Coating

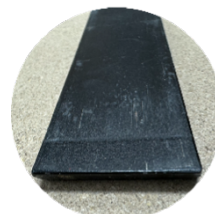


Figure 6:
Bending of Back Plate

- ☐ Follow steps below for cleaning and inspecting the plug
 1. Use a handheld stainless steel wire brush to thoroughly clean each Wedge Gripper's GritLock® surface, removing debris, dirt, dust, fouling, and other contaminants. If oil is present on the GritLock® surface, apply paint thinner or a degreaser to eliminate it.
 2. Use a pressure washer to clean the plug or compressed air to remove any loose debris, dirt, dust, sand, fouling, or other contaminants. Pay particular attention to cleaning the gripping mechanism and the sliding surfaces between the Wedge Gripper and the Back Plate.
 3. Verify that each Wedge Gripper has its full range of motion. Ensure that each gripper slides up and down freely and smoothly without any resistance.
 - a. For GripSafe models equipped with the Wedge Gripper Pre-Setter (Figure 7), ensure the Spring Plate is in the "Retracted" position, and remove each of the Wedge Gripper Nuts (circled in red). Slide each Wedge Gripper along its slot to verify free and smooth motion. If any component appears compromised, STOP and replace it immediately.

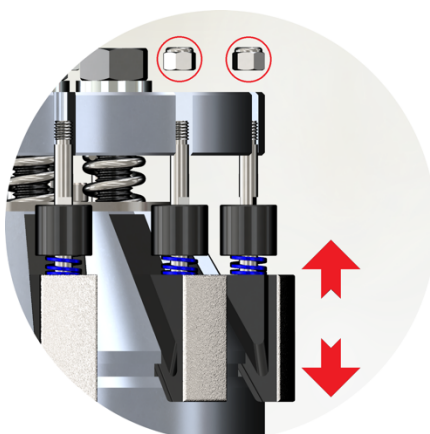


Figure 7:
Wedge Gripper With Pre-Setter

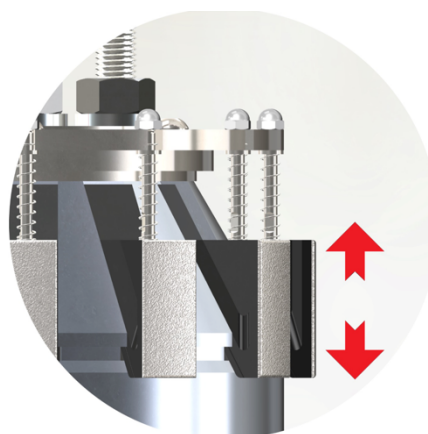


Figure 8:
Wedge Gripper Without Pre-Setter



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- 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.

INSPECTING THE GRIPSAFE SEAL (TRI-PLY®)

- ☐ The GripSafe Tri-Ply Seal is composed of three layers with different levels of durometer hardness: hard – soft – hard. If delamination is observed between any of these layers, the seal must be replaced immediately.
- ☐ Refer to Figures 9 - 13 for examples of Tri-Ply Seals that should be replaced and taken out of service. NOTE: this list is not exhaustive.

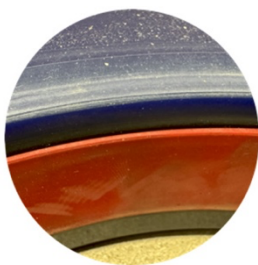


Figure 9:
Delamination of Tri-Ply Seal



Figure 10:
Cracking of Tri-Ply Seal



Figure 11:
Crumbling of Tri-Ply Seal

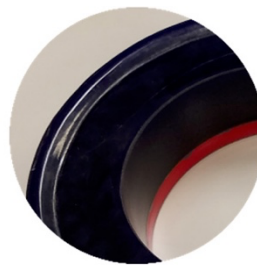


Figure 12:
Excessive Deformation of Tri-Ply Seal

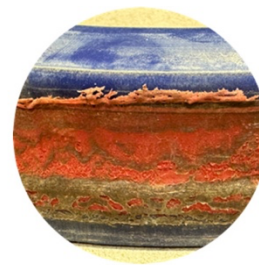


Figure 13:
Excessive Deformation of Tri-Ply Seal

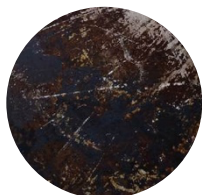
PREPARING THE PIPE FOR PLUG INSTALLATION

INSPECTING AND PREPARING PIPE ID SURFACE

- ☐ The pipe ID must be free of visible oil, grease, dirt, dust, mill scale, heavy rust, paint, corrosion products, and other contaminants.
- ☐ The Wedge Gripper GritLock® needs to grip the bare metal of the pipe for proper function.

Note: Some surface rust is acceptable, but it is recommended to use a power tool with a bonded abrasive (an 80-grit flap disc is ideal) to clean the pipe surface down to bare metal.

Pipe ID Surface Free From:



Grease



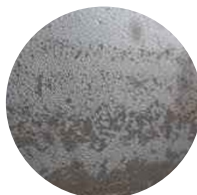
Oils



Dirt & Dust



Drawing & Cutting Compounds



Mill Scale

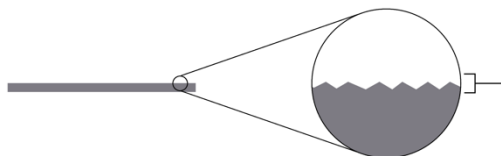


Heavy Rusting



Paint & Coating

- ☐ The pipe ID surface must be smooth, with a surface profile no greater than 1 mil or an average roughness of 64 μin , to ensure proper engagement of the Wedge Gripper GritLock®. Pitting caused by rusting is acceptable as long as the pits do not exceed a depth of 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 along the pipe, as shown in Figure 14, should be ground down or smoothed at the seal location to avoid leaks. Note: The weld seam should not be positioned directly under a Wedge Gripper during installation



Figure 14:
Weld Seam Along the Length of the Pipe