Safety Considerations

Never operate the Haeger® Hardware insertion machine without:

- Proper PPE (eye protection is a MUST)
- Removing any metal objects or jewelry that may contact the Upper Tool, Lower Tool, or workpiece.

Do not:

- Attempt to test or demonstrate the 6vDC safety system with any body part.
- Tamper with any part of the machine's electrical system.

Safety System Inspection

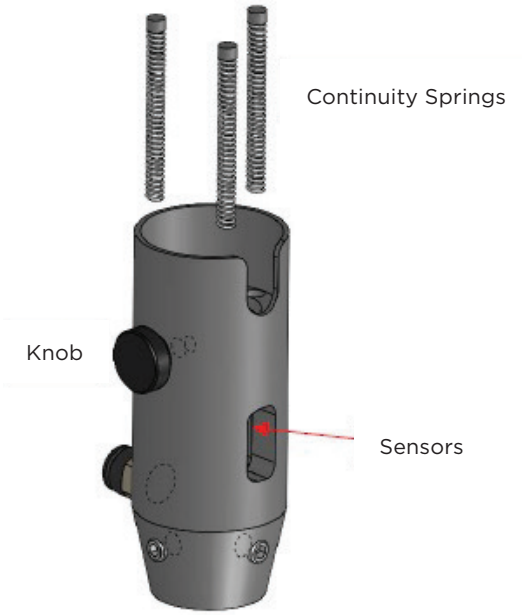
Never

- Operate our equipment without reviewing the safety section of the product manuals.
- Tamper with any part of the machine's electrical system, unless you are a trained electrician and thoroughly understand the machine's electrical schematics.
- Operate this machine while wearing any metal objects.
- Attempt to test or demonstrate the safety system with any body part, or item of importance.
- Exceed the maximum rated forces of specialty anvils. (J-Frame, Auto-TIS Arm, Manual TIS-arm, etc.)
- Attempt to run any irregular shaped parts that can contact both the Upper and Lower Tooling before the fastener is inserted into the part. This applies to both Conductive and Nonconductive modes.
- Press the down footswitch a second time in nonconductive mode when your hands are in/around the tooling.
- Operate this machine without proper Personal Protective Equipment.

Safety System Inspection, cont.

Safe operation considerations:

- The Safety System's heavy duty electrical cable conduit is very durable; however, sharp edges on some parts can damage the conduit and cause safety issues. Please use caution when working with parts that may contact the conduit.
- Lubricate the Upper Tool Holder with a small amount of white lithium every 40 operational hours or once weekly.
- Inspect the Upper Tool Holder, pins, and springs every 40 operational hours or once weekly. Replace any damaged or worn parts as needed.



Safety System Test Procedure:

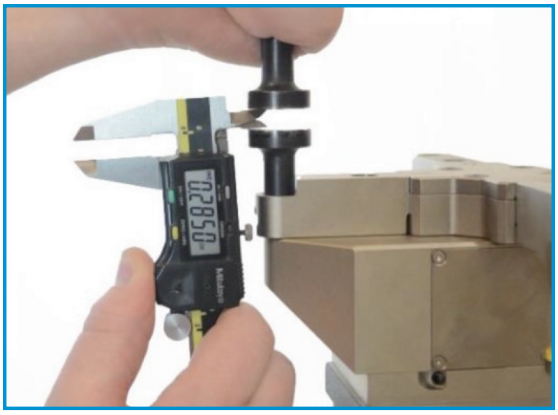
1. Turn on the Haeger Hardware Insertion Machine
2. Follow initial start-up safety system test on-screen prompts. (E-stop test, Safety Sensor test)
3. Enter "Quick Run" mode.
4. Set the Up Travel distance to 40%.
5. While keeping your hands out of the operating area, lower the Upper Tool Holder with the down footswitch. Lower this until the Upper Tool Holder is about four inches about the Lower Tool Holder. Remove your foot from the foot switch.
6. Carefully, grasp the sides of the Upper Tool Holder and lift up. The safety switch will be activated. If the system is working properly, the Upper Tool Holder will return to full top of stroke.

If the ram returns to the top of stroke, proceed to the "Conductive Mode Test".

7. If the Upper Tool Holder does not move up, follow your company or fabricator lock-out/tag-out procedures and begin inspection of the 6vDC safety system.

Safety System Inspection, cont.

Conductive Mode Test:



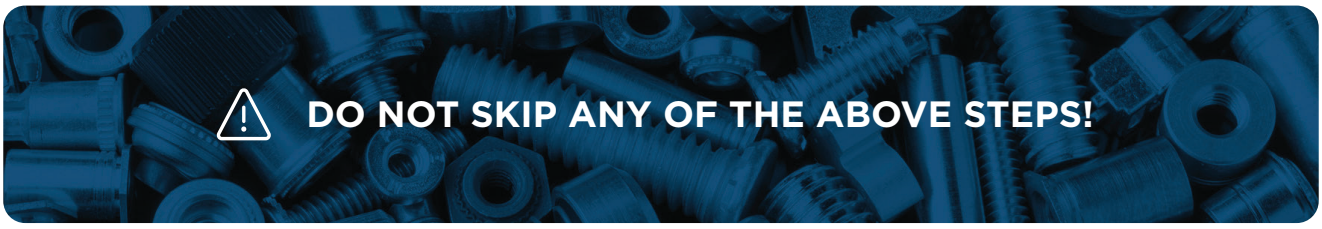
1. Install 1" flat tools into the Upper and Lower Tool Holders.
2. Conductive mode is used for this test. Ensure the machine is in conductive mode.
3. Set the machine to the following values:

   Force: 3,000 lbs
   Dwell: 0 seconds
   Up Travel: 40%

4. Complete a Set-up Stroke per the machine's on screen instructions.
5. Press the down footswitch and complete a press. If the press completes, proceed to the next step. If the press does not complete, trained personnel need to inspect the machine's control circuit.
6. Place a small non-conductive material on the Lower Tool. Ensure it completely covers the top of the lower tool (a business card or post-it note is perfect).
7. Press the down footswitch. The non-conductive material will trip the 6vDC safety system and the ram will return to top of stroke and the HMI will indicate a safety fault.

If the machine operates as engineered, proceed to the Non-Conductive Mode Test.

8. If force is applied, follow your company or fabricator lock-out/tag-out procedures and begin inspection of the 6vDC safety system.



Safety System Inspection, cont.

Non-Conductive Mode Test:

1. After completing the Conductive Mode Test, change the machine to Non-Conductive Mode.
2. Keeping your hands away from the operating area, press the down footswitch. The ram will move down and the tools will make contact and STOP IMMEDIATELY. If the machine completes this step properly, proceed to the next step.

If the machine fails to operate as described, follow your company or fabricator lock-out/tag-out procedures and begin inspection of the 6vDC safety system.

3. Remove your foot from the footswitch and press the E-Stop.
4. Carefully grasp the side of the Upper Tool Holder. With one hand, lift the Upper Tool Holder, and measure the tooling gap with the other.

If this gap is less than .060”/1.52mm, the Safety System has failed. Lock-out the machine and begin inspection of the Safety System.

5. Turn the machine back on. (Reset E-stop and power on Hydraulics).
6. Keep your hands away from the tooling area and perform the remaining portion of the stroke.
7. The machine should “press” and return to retraction point percentage.

If all three tests listed above pass the machine is safe to operate. We recommend performing this test every 24 operating hours or once daily.

DO NOT SKIP ANY OF THE ABOVE STEPS!