

G150 Tube Testing Guns: Air Cooled Heat Exchanger (ACHE), Application -EXT

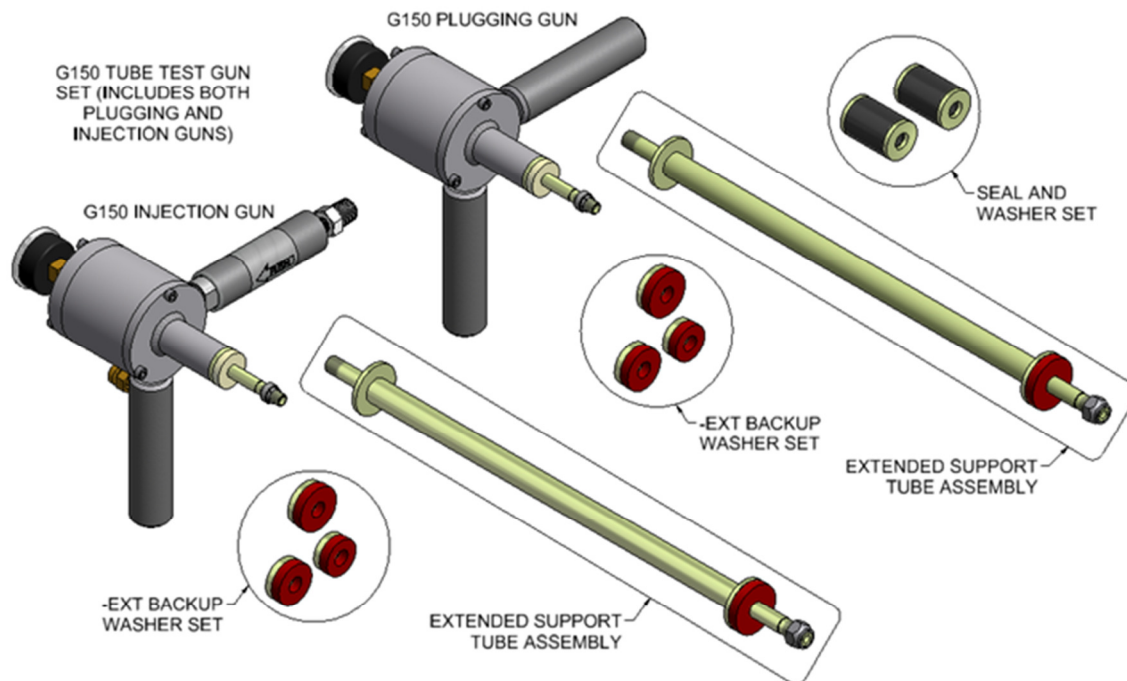
Standard G150 Gun Set



The G150 / G150A Testing Guns are utilized to find leaks in the tubes of heat exchangers, including Shell and Tube and Fin-Fan® / ACHE (Air Cooled Heat Exchanger) style. The G-150 Tube Testing Guns are a set comprised of an Air Injection Gun and a Plugging Gun. The Injection Gun incorporates the Air Control Valve and Bleed Valve and must work with the Plugging Gun. The G-150 Tube Testing Guns must have the correct size Seal and Washer Set for the tubes being tested. The standard backup washer set of the G150 *may not* pass through the plug face of the ACHE header box. The reduced diameter ACHE back up washer set is required in most cases so the washer will pass through the plug face of the header box.

NOTES, G150 TUBE TESTING GUNS IN Air Cooled Heat Exchanger

- 1. SEAL AND WASHER SETS MUST BE ORDERED FOR THE TUBE SIZE BEING TESTED. ONE SEAL SET WILL ALLOW BOTH INJECTION AND PLUGGING GUNS TO OPERATE.**
- 2. THE EXTENDED SUPPORT TUBE USED IN ACHE TESTING IS SOLD AS AN INDIVIDUAL PART, NOT A SET. IF BOTH INJECTION AND PLUGGING GUNS REQUIRE EXTENDED SUPPORT TUBES, TWO MUST BE ORDERED.**
- 3. THE STANDARD BACKUP WASHERS ON THE G150 TEST GUNS MUST BE REPLACED WHEN TESTING IN THE ACHE AS THEY ARE TYPICALLY TOO LARGE TO FIT THROUGH THE PLUG FACE OF THE HEADER BOX. IF BOTH INJECTION AND PLUGGING GUNS REQUIRE A BACKUP WASHER, TWO SETS MUST BE ORDERED.**



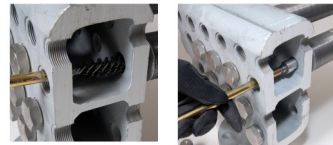
The Seals and Washers are correctly sized if the OD of the Seal is between 0.02" to 0.06" (0.51 mm - 1.52 mm) smaller than the actual tube ID. Using Seals that are too small may cause any of the following: premature Seal wear, jamming of the G- 150 Tube Testing Gun in the tube, or expulsion of the G-150 Tube Testing Gun from the tube end. Replacement Seals for the G-150 Tube Testing Guns can be manufactured for any tube I.D. from 0.28" to 1.23" (7.11 mm to 31.24 mm). For tube ID's larger than 1.23" (31.24 mm), contact EST for information on the G-150A Tube Testing Gun Package.



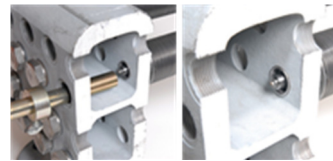
1. In the ACHE plugging application the work is done “at depth”. This point is through the header box into the finned tube at the tubesheet anywhere from 4” – 24”+ past the point where the header plug / bolt was removed. Standard Pop-A-Plug® tools require an extension to access this point, one each for the brush and the gauge, and an extended channel head pull rod for the Installation Ram.



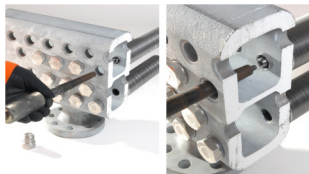
2. Testing for leaks with the G150 testing guns is also done at depth. Use the appropriate extended support tube assemblies for both the injection and plugging guns in the seal size needed. In addition, the backup washer should be changed to the –EXT version to allow it to pass through the access hole in the header box. Only a few standard back up washers fit through without change.



3. When ordering parts for ACHE work, installation is easier if the customer has an extension for both the brush and the go/no go gauge. It allows the brush to stay in the drill and the gauge to be used independently to ensure the correct size plug is being utilized.



4. Using the proper Channel Pull Rod, the plug is installed at depth. The breakaway separates at the proper force and installs the plug uniformly and consistently. The breakaway stub remains in the plug until operator removal prior to closing up the plug sheet.



5. While the Pop-A-Plug® is a permanent fix, it can be removed. The PRT (Plug Removal Tool) is used to secure the pin and loosen it from the ring with the use of the slide hammer. The ring is then speared, secured, and removed from the tubing with the pin.



EXT-A-NN or EXT-B-NN; Use one for the Gage



Threaded Go/No-Go Gauge



REM-AAA-BBB-YY-EXT; To Remove Weld Droop if present

Extended Reamer (if required)

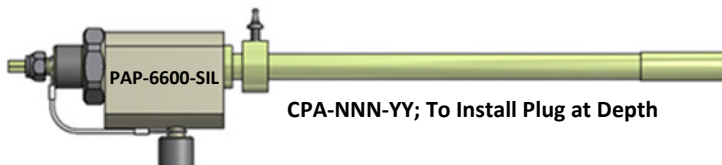


EXT-A-NN or EXT-B-NN; Use one for the Brush



Threaded Brush

BSH-NNN-HT-EXT or BSH-NNN-NY-EXT



CPA-NNN-YY; To Install Plug at Depth



Pop-A-Plug® CPI/Perma

V-NNNN-(Q)-EXT



PRT-NNN + PRPR-001-LL

Extended Plug Removal Tool