

TUBE PREPARATION

- Ensure that the tube being used does not have any visible patch scars within 1 1/2" of the tube ends.
- Clean tube ends and remove any foreign material.
- Use a tube cutter to cut the tube to size. If using a tube cutter is not possible, ensure that the tube is cut at a right angle and the ends are free of burrs.

TIGHTENING

- Check to ensure that all connection parts are assembled in the right order. Body, followed by the front ferrule, then the back ferrule and finally the nut.
- Insert the tube end completely through the nut, back ferrule and front ferrule until it makes contact with the body shoulder.
- Hand tighten the nut until it turns no further.
- Make a mating zero position scribe mark on the body and the nut.
- Hold the body firmly with a back up wrench and tighten the nut 1 1/4" turns from the zero point using a wrench. The fitting is now fully tightened and ready to hold the rated pressure.
- Ensure that the wrenches used are of the correct size.

RETIGHTENING AFTER DISCONNECTION

- Before reconnection, ensure that the taper surface of the body and the surface of the front ferrule are clean and free of any foreign material.
- Insert the tube end into the body and hand tighten the nut until the front ferrule is in full contact with the taper surface of the body.
- Using a wrench, tighten the nut approximately 1/4 turn.

1. VISUAL EXAMINATION :

Fittings are checked for overall finish, workmanship and dimensions. Dimensional checks are carried out using Ring / Plug step gauges (with minimum / Maximum limits) and go/no-go gauges.

2. PNEUMATIC PRESSURE TEST :

Test assemblies of suitable length are prepared with different sizes and types of fittings, tube fittings tightened 1 1/4 turn past snug. Each test assembly is then pressurized to 2000 psi pneumatic and is kept for fifteen minutes under pressure. If no leakage is found, the assembly is disassembled and inspected per paragraph 7.

3. HYDRAULIC TEST :

After the completion of pneumatic test, the test assemblies are tightened 1 1/4 turn past snug, and the loop pressurized to 10,000 psi Hydraulic / Hydrostatic pressure and kept for 15 minutes. If no leakage is found, the assembly is disassembled and inspected per paragraph 7.

4. PRESSURE IMPULSE & VIBRATION TEST :

- After the completion of Hydraulic test, the test assemblies are tightened 1 1/4 turn past snug.
- The test assembly is subjected to vibration frequency in the range of 23-47 Hz with an amplitude of 5 mm and simultaneous pressure cycling at 0-3000 psi and at 35 ± 5 cpm with the Hydraulic / Hydrostatic media.
- This test is run for a minimum of 30,00,000 vibration cycles along with pressure impulse. No leakage will be allowed.
- On completion of test, the test pieces are disassembled and inspected per paragraph 7.

5. MAKE & BREAK HYDROSTATIC TEST

- After completion of pressure impulse and vibration test, the test assemblies are tightened 1 1/4 turn past snug.
- The test assemblies are then assembled and disassembled. This operation is repeated five times.
- The test assembly is then pressurized to 60000 psi hydraulically / hydrostatically, held under this pressure for five minutes and checked for leaks.
- If no leakage is found, the pressure is released and the "make and break" operation is repeated 25 times.