

Brazing

Clean and debur pipe

Wrap service valves with wet rag(s), Schrader cores out

60 to 90 second nitrogen purge of pipe/indoor coil

Flow 2-3 cfh during brazing process - opposite side of brazing point

Use proper torch tip

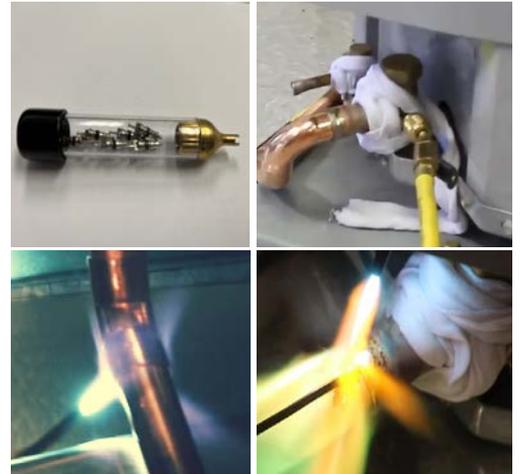
Neutral to reducing flame

Heat male pipe first, then move to fitting

Let pipe heat melt the brazing rod – don't heat the rod

Once brazing material flows, move heat to back of fitting to assist in drawing braze material in to fitting

Allow pipe to cool naturally (change color) before cooling with wet rag



Flares

Make sure pipe cutter has sharp wheel - don't deform pipe

Lightly clean/debur/ream pipe pointing downwards

Use eccentric flaring tool

Set pipe to proper depth to ensure full flare

Verify no cracks or scars on the face

Use torque wrench to tighten (see unit specs)

Brass Flare Size	Recommended Seating Torque for Brass Flare Nuts	N-m
Ø1/4	8-10 Ft. - Lbs.	10.8 to 13.6
Ø3/8	15-18 Ft. - Lbs.	20.3 to 24.4
Ø1/2	28-32 Ft. - Lbs.	38.0 to 43.4
Ø5/8	38-42 Ft. - Lbs.	51.5 to 56.9
Ø3/4	50-55 Ft. - Lbs.	68.0 to 74.6

Pressure test

Make sure mechanical fittings on TXV's are tight

Make sure service valve caps are hand tight plus 1/12th turn

Start with 50 to 100#’s of nitrogen pressure to look for obvious leaks

Use leak detection solution on all joints

Raise pressure to 25#’s under max pressure rating of indoor coil

Isolate and watch for pressure drop

Deep vacuum

The deep vacuum method requires a vacuum pump capable of pulling a vacuum of 500 microns and a vacuum gage capable of accurately measuring this vacuum depth. The deep vacuum method is the most positive way of assuring a system is free of air and liquid water. A tight dry system will hold a vacuum of 1000 microns after approximately 7 to 10 minutes. See [Fig. 4](#)

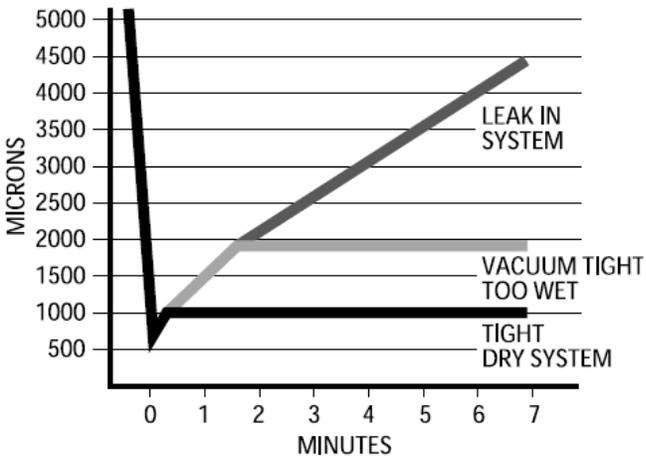


Fig. 4 – Deep Vacuum Graph

Triple Evacuation (option for existing linesets or leak repairs)

After pressure testing with nitrogen

Pull vacuum on system down to 1500 microns

Pressurize with nitrogen up to 50psig

Pull vacuum on system again down to 1000 microns

Pressurize with nitrogen up to 0psig

Pull vacuum again on system down to 500 microns or below

Shut off vacuum pump and let stand for 15 to 30 minutes

If pressure holds below 1000 microns system is leak free

If pressure raises above 1000 but doesn't raise above 1500 microns there are non-condensables in the system. Pressurize with nitrogen and let sit with indoor blower running

Once vacuum holds under 1000 microns for 15 minutes, system is considered leak free and refrigerant can be introduced into the system accordingly