

# Product Corner

## Quick Tips on TXV Troubleshooting


by: Joey Henderson, Field Service Representative





Over the years of helping to troubleshoot TXVs, I have found the following checks to be very helpful:

### TXV Troubleshooting Checklist:

- **Check subcooling.** Anywhere from 10-13 degrees should be correct on most systems to troubleshoot the TXV operation. Always charge a TXV system by subcooling.
- **Check superheat.** Although our residential TXVs are non-adjustable, they can still be checked for proper operation (after they are properly subcooled). Typically when the load in the house and outside are close to design range (75°F indoor @ 50% RH and 95°F outdoor), they will hold around 5-15 degrees superheat.
- If you are experiencing low suction pressure and normal to a little low head pressure, check subcooling and superheat. If subcooling is high and superheat is high, the TXV is not opening. To check and see if the TXV is stuck, remove the bulb and warm it up (hot water, hot hand, hot attic air, etc.) If the suction comes up, superheat drops and subcooling drops, the TXV is fine. The problem is typically low air flow causing the evaporator coil to get too cold, which causes the TXV to close down.
- If you are experiencing high suction and low head, check subcooling and superheat. If subcooling is low and superheat is low, the TXV could be stuck open. To check and see if TXV is stuck open, remove the sensing bulb and stick it in cold water. If suction pressure drops, superheat rises and subcooling rises, the TXV is fine. Typically the problem is the return is very hot causing the TXV to stay open due to the extra load. Wait until return air gets closer to 75°F-78°F and re-take readings.
- If subcooling is low and superheat high, the system is undercharged. Add refrigerant to get to proper subcooling. Wait 20-30 minutes after adding refrigerant and re-take readings.

 **Remember:** Subcooling and superheat are the **key** to troubleshooting TXVs. Pressures alone are not enough to troubleshoot a TXV accurately.

 **Remember:** Run nitrogen through the system when brazing in the system. **Always** change driers when replacing any component in the refrigerant system. The number one reason for TXV failures is debris/trash getting stuck in the valve.

 **Remember:** **Don't over-heat** the valve or sensing bulb when brazing in the refrigerant lines to the evaporator coil.

If you have technical questions about Trane HVAC equipment, call Joey Henderson at 803.727.4310, or email him at [jhenderson@gwd-ac.com](mailto:jhenderson@gwd-ac.com).

