

HOSHIZAKI AMERICA, INC. SERVICE BULLETIN

SB91-0006

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Subject: Trouble shooting Thermal Expansion Valves (TXV)

Preliminaries:

- 1. Make sure the evaporator and condenser coils are clean. Check air filters on selfcontained air cooled equipment.
- 2. System refrigerant charge must be at nameplate amount for proper operation under a wide range of operating conditions.
- 3. Water inlet valve and hot gas calve must be checked for leak by

Troubleshooting:

1. Check bulb mounting:

- a. TXV bulb clamps must be tight, however do not over tighten.
- b. The bulb position should be between the 10:00 and 2:00 o'clock position.
- c. The bulb must be fully insulated

Note:

Loose TXV bulb clamps can cause flood back, long freeze cycles, compressor overloading, evaporator freeze ups, etc. Also, loose clamps may cause the machine to trip out on the high pressure safety switch at the start of the freeze cycle. This is due to excessive refrigerant entering the defrost loop during the defrost cycle, because the TXV does not remain closed. This condition drives the discharge pressure higher than normal during the defrost cycle. When the defrost cycle is terminated and the hot gas valve closes, the discharge pressures "spike" up and may trip the high pressure safety switch

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- 2. Freeze pattern: Check for consistent ice formation/pattern on the evaporator plates. Remember, refrigerant is fed into the top and out the bottom. The last two passes on the evaporator may have cubes that are slightly smaller in size than the other cubes. This is normal and will not affect batch ice weight specifications. There should not be frost or condensation on the compressor dome. Frost should be at the evaporator outlet, at the end of the freeze cycle.
- 3. Check TXV operation: If a bad TXV is suspected, check preliminaries 1, 2, & 3 above, then warm or chill the sensing bulb of the valve to see it the valve reacts to temperature/pressure change by reading suction pressure with the machine operating in the freeze cycle. This will help determine a non-operating TXV

If the TXV is diagnosed as defective, always use Hoshizaki OEM parts sourced through your local authorized Hoshizaki distributor and always replace the filter drier any time a sealed system is open.

If you have question concerning this Service Bulletin, please contact the Technical Support department <u>techsupport@hoshizaki.com</u> or 1-800-233-1940.