

Frequently Asked Questions for Vacuum Systems, Liquid Ring Pumps, and Hybrid Systems

- Q.** *I installed a surplus ejector in our system as a replacement. Now the system works worse than before. Why?*
- A.** Two ejectors may be identical in appearance and size; however, the ejectors could have entirely different internals and could be designed for different applications. It may be possible to contact the Original Equipment Manufacturer if you have a serial number or drawing number to obtain the original design parameters for your ejector.
- Q.** *For a multi-stage system, does it matter if the first stage performance curve is expressed in equivalent water vapor load?*
- A.** No. Performance curves for any single ejector can be plotted in dry air equivalent or water vapor equivalent. Multiple stage systems, however, are designed for a maximum non condensable flow rate. Flow rates greater than this maximum will result in instability or loss of vacuum.
- Q.** *My performance curve shows equivalent water vapor load, but I have a mixture of vapors as load. How do I interpret the curve?*
- A.** This topic is covered in detail in the HEI *Standards for Steam Jet Vacuum Systems*. Refer to section 5.3 of the standards.
- Q.** *Why does my multi-stage condensing system achieve a better vacuum level in the winter?*
- A.** Colder cooling water temperature can reduce vapor load in the main ejector system. Decreased loading to the vacuum system will also decrease absolute operating pressure.
- Q.** *Why doesn't my vacuum condenser drain properly?*
- A.** Refer to HEI Tech Sheet #130.

- Q.** *What Information do I need to do an accurate performance evaluation when troubleshooting?*
- A.** When troubleshooting systems, be certain you have the following information before proceeding to evaluate systems on your own or with the assistance of the manufacturer:
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|-------------------------------------|----------------------------------|
| ▪ Suction temperature of the system | ▪ Suction pressure of the system |
| ▪ Motive steam temperature | ▪ Motive steam pressure |
| ▪ Cooling water flow rate | ▪ Cooling water temperature |
| ▪ Inter stage temperatures | ▪ Inter stage pressures |
| | ▪ Cooling water temperature rise |
| | ▪ Cooling water pressure drop |