

Non-condensables in Refrigerant Recovery

Non-condensable particles and gases, such as atmospheric gases, nitrogen and moisture, do not condense like refrigerant. The presence of non-condensables in a system or recovery cylinder will lead to **decreased refrigeration efficiency**, and may **increase recovery job time**.

Most common ways for non-condensables to enter a system:

- **Improper system evacuation** is the leading cause for the introduction of non-condensables in a system.
- Using leaking, contaminated, or unpurged hoses during charging.
- Micro-fractures can develop in the system lines, coils and components, which may allow refrigerant to leak out and atmosphere to leak in. This occurs most often in colder weather

If the recovery process seems slower than expected, non-condensables may be involved. This can easily and quickly be determined by using the **Pressure/Temperature (PT) Chart** for the refrigerant you are recovering, and checking it against the temperature and pressure at the recovery cylinder.

Purging Non-condensables from a Recovery Cylinder

- Let the cylinder sit undisturbed for *at least* 4 hours, up to **24 hours**. This will allow the non-condensables to separate and rise to the top.
- Slowly open the vapor port and let the excess pressure bleed off until it is about 5 PSI above the pressure on your PT Chart.
 - **CAUTION:** *Watch the output from the vapor port to ensure **no refrigerant is vented**; close the output valve at the **first sign** of any refrigerant vapor.*
- Close the valves and let the cylinder stand still for **10 minutes**. Check your PT Chart and **repeat if necessary**.

Service Tip: If the recovery process is slower than expected, use a PT Chart to determine the presence of non-condensables.