



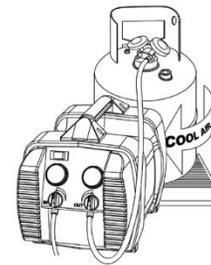
Recovery

Back pressure on the recovery machine will result in higher operating temperatures. Minimize back pressure by:

- Making certain the valve connecting the hose to the recovery cylinder and the output valve on the recovery machine are fully open.
- Use a 3/8 inch hose from the machine to the recovery cylinder.
- Use as short of a hose as is possible.

Maximize recovery speed by:

- Pulling the recovery tank into a vacuum. A good recovery machine can be used to pull it down to at least 28" Hg. This will remove non condensables and increase the initial speed of recovery.
- Replace the filter dryer regularly, particularly after a burnout.
- Remove cores from the service valves as well as the core depressors (if any) hoses.
- Inspect the screen on the intake valve regularly to check for debris.
- If using Appion's recovery machines, put the recovery cylinder behind the machine. This will pull 600 cfm of air past the cylinder to help keep the tank cooler.
- A bucket of ice can also keep the recovery tank cooler. With Appion recovery machines you can use a small container of ice water. A towel dipped in the ice water, then draped over the tank with 600 cfm of air being drawn around it will aid in cooling the tank.
- Use the 'inline' cooling procedure to keep the tank cool.



from the machine.

Inline Cooling Procedure:

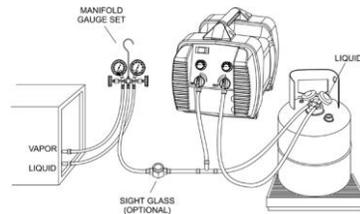
By setting up your recovery machine as shown, it is possible to cool the recovery cylinder during the recovery process.

Normal recovery:

1. Recovery Cylinder Vapor valve is closed

Tank Cooling:

1. Recovery Cylinder Vapor valve open.
2. Open Recovery Cylinder Vapor valve and close the manifold gauge set.
3. Verify all valves on the recovery machine and cylinder are open and turn on the machine.
4. Throttle the output valve so that the pressure on the Output Gauge is at least 100 psi greater than the input pressure, but never greater than 300 psi.
5. Run until the tank is cool.



both valves on

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To extend the service life of your recovery machine, consider:

- **Always** use a filter dryer
- Post purge any remaining refrigerants from the machine by disconnecting hoses and running for several seconds.
- Store with intake and outlet valves open. Caps are OK to use, just don't tighten.
- After every burnout and periodically (once a week) run a cap full of mineral oil through machine to flush out and lubricate seals.
- Use a 12 gauge extension cord up to 25', longer requires 10 gauge.

To bench test the recovery machine's performance:

- Turn on machine with both valves open.
- Close the output valve.
- Time how long it takes to trip the high pressure switch
- 30 to 60 seconds is typical for Appion, any longer suggests the seals and valve plates need to be replaced.

Evacuation

ACR systems absolutely need to be:

- Clean
- Dry
- Tight

Failure to remove all non condensables and moisture from ACR systems will cause:

- Loss of efficiency
- Loss of capacity
- Premature failure of the system (particularly 410A systems)

To ensure proper evacuation of a system, keep these factors in mind:

- **Change oil frequently** – use the micron gauge to help determine when an oil change is necessary.
- Use vacuum pump oil that has a low vapor pressure rating. Cheaper vacuum pump oils are rated between 20 to 30 microns of dryness, higher quality oil is rated less than 1. The lower the vapor pressure of the oil, the faster it absorbs moisture.

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- To be economical, use hydrophobic vacuum pump oil so it can be purchased by the gallon and have an extended shelf life. Hydrophobic oil does not readily absorb moisture at atmospheric pressure.
- Only ever use a good quality micron gauge to measure system vacuum – a refrigeration gauge set is not close to being capable of accurately measuring the deep vacuum necessary. Keep in mind 1" HG = 25,400 microns so 500 microns = approximately .02" HG.
- Remove cores from the service valves.
- Only ever use ½" diameter, vacuum rated hoses. Hoses that say 'charging hose' will likely leak.
- Use as many access ports as are available.
- Only use vacuum rated accessories that have double 'O' rings on fittings and valves.
- Regularly inspect and maintain 'O' rings and seals.
- Install your micron gauge on the third leg of the core removal tool to isolate the system from all the hose and pump fittings.

To extend the service life of your vacuum pump:

- Use a 12 gauge extension cord up to 25', longer requires 10 gauge.
- Refer to manufacturers' instructions for recommendations on sump cleaning intervals – generally once per year depending on use.

Note: these recommendations are offered for your consideration; always check with the manufacturers' operating instructions for your particular equipment.