Subject:	**TECHNOCHEM LEAKING CYLINDER TESTING**	TSB #:	**47 5-11**
		Date:	9/8/11

Initial Once Read:						

A number of customers are concerned regarding possible refrigerant leakage from the refrigerant cylinder valve assembly.

The technical support division of Technochem, our refrigerant supplier, has been investigating the Adair customer returned cylinders that have been claimed as leaking refrigerant from the valve assembly. Technochem have issued instructions on the recommended method for assessing a refrigerant cylinder for leakage. Please see below:

1. General Leak Detection

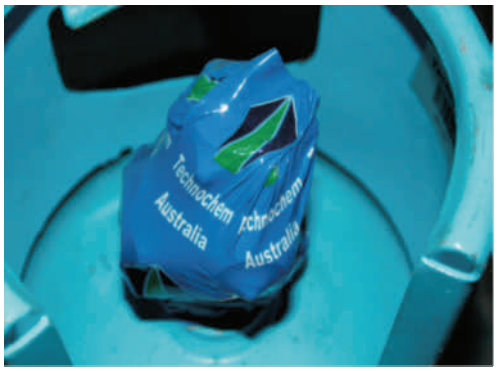
- Place the tip of the leak-detector probe under the bottom of the valve shrink wrap and slowly move the probe around the base of the valve at around 20 mm per second and a sensor distance from metal components of 3-5mm.
  Note: It is important to move the tip of the probe past the leak to get a correct reading. Most electronic leak detectors only respond to changes in concentration of the refrigerant from the leak. Moving the probe permits the instrument to respond properly to these changes.
- When the instrument detects a leak source, depending on brand of unit you will receive an audible and/or visual warning.
- When the instrument signals a leak, pull the probe away from the leak for a moment, allowing the visual and audible warnings to stop and then take it back to the location to see if you receive the same response. If the response from the instrument indicates a leak then you should follow your company internal procedure for leaking cylinders for in regard to quarantine, tagging and return of the cylinder. Please ensure you fill out the Adair cylinder tag and state that it is leaking and the area of leakage.

2. Removing Valve Cap - Residual Pressure

- If when removing the black screw on valve cap a small amount of residual pressure is evident please use the following steps to determine if the cylinder is leaking.
- Replace valve cap and leave for a couple of minutes and remove again. If residual pressure is evident again follow your internal procedure for leaking cylinders for the quarantine, tagging and return of the cylinder to Technochem.
- Once the above is completed there is no residual pressure upon removing the valve plastic cap again the original residual pressure was from a small amount of refrigerant at the valve seat from filling or just a build-up of pressure from being sealed.
- There is no need to return this cylinder. For extra assurance you can follow the information outlined in step 1, General Leak Detection.

3. Leak Detectors

Please ensure that the electronic leak detector used for the above steps have maintained in accordance with the manufacturers specifications with new batteries, sensor tip and filter being replaced at specified or regular intervals. Technochem uses sensitive infrared leak detectors and also "bubble up" solution with Nitrogen for leak testing as a confirmation of leakage. Nitrogen tests are carried out at 1200 kPa.



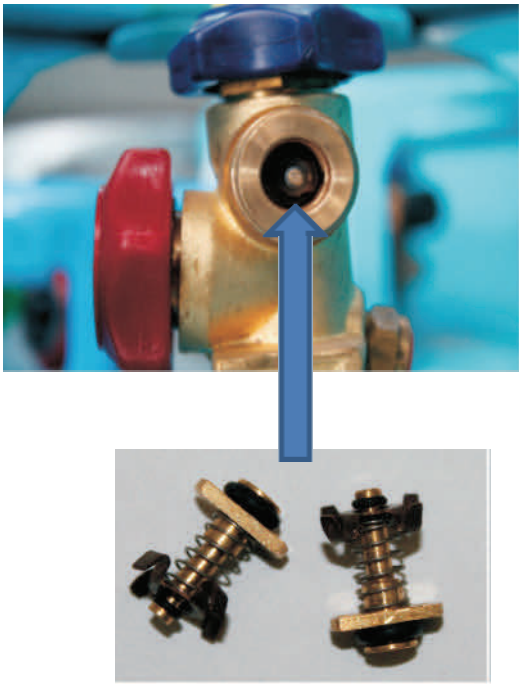
Shrink Wrapped Valves and Warranty Cylinders

While all care is taken to ensure the refrigerant cylinders are 100% leak free, we acknowledge that from time to time there may be a cylinder or valve issue. All Technochem charging cylinders have a blue plastic shrink wrap covering the valve assembly.

If you have removed the blue plastic shrink wrap and fitted the cylinder to your charging device and have then found that refrigerant has leaked from the cylinder or valves (when closed) contact David Townley @ Adair customer technical support 03 9790 4878 for assistance or your local Adair representative.

Warranty cylinders will only be accepted with the Adair cylinder tag (attached to cylinder) and all required information filled out including the leak information such as location if known. Return the cylinder with the plastic cap attached to cylinder valve.

Note: It is advisable that when the charging cylinder is not in use close the cylinder valve taps. This is to avoid any refrigerant leakage through the charging device hoses and hose joints.



Residual Pressure Device

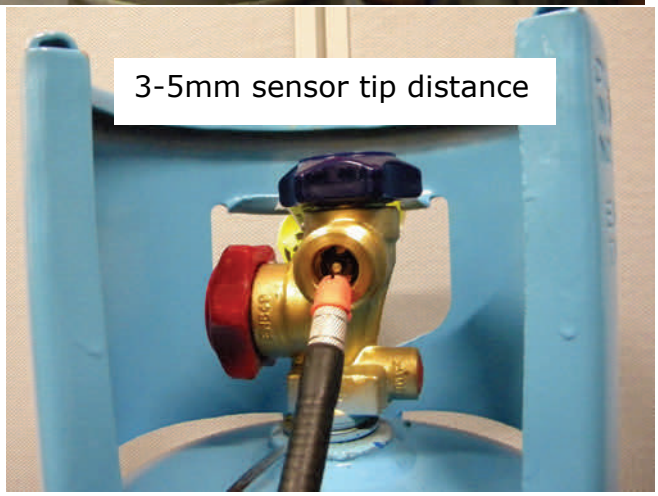
RPD – Residual Pressure Device

All Technochem refrigerant charging cylinders are fitted with a RPD (residual pressure device) in the valve assembly port (s) to ensure the purity of refrigerant contained in the cylinder.

The RPD ensures that no refrigerant can be "pumped" into the charging cylinder. The Technochem twin port charge cylinder is not suitable for some automated charging stations because of the RPD. These automated stations will use a dedicated cylinder that would have to be filled from a charge cylinder.

The RPD also ensures that if a valve is left slightly open the RPD will hold a residual pressure of 100Kpa (14psi) to ensure that air / moisture does not enter the cylinder.

If the RPD has been removed a service charge will be incurred for replacement.



Leak Detection of Valve Port and RPD

At this stage the plastic shrink wrap has been removed as the cylinder is to be installed on the charging station.

- Ensure that the valves are closed.
- Remove the plastic screw on cap.
- Allow 2 minutes for any residual refrigerant build up to vaporize.
- Activate your electronic leak detector away from the cylinder valve.
- Inset the leak detector tip approx. 3-5 mm into the valve port(s) at the RPD.
- If the leak detector indicates a leak confirm by carrying out the same test 2 -3 times. I still indicates leak at final test, refit the screw on cap and return the cylinder for warranty as leakage.

Screw On Cylinder Valve Caps

All cylinders as a part of Arctick requirements are to have screw on caps fitted to the valve outlets. Cylinders full or empty are to have caps fitted at all times. The plastic or brass screw on caps are the only protective / leak proofed caps that can be used.

Arctick do not approve the use of push on plastic caps as these will not prevent a leak should the valve malfunction. All Technochem cylinders are provided with plastic screw on caps fitted.

On return of the cylinder to our warehouse if the cap is found to be missing a service cost will be incurred.