

## Emergency Response Training Module 3

### Chlorine Institute “A” Kit - Cylinders

Valve and Fusible Plug – A cylinder has one valve with an integral fusible plug which is designed to melt out at 158 – 168° F. Below are possible points to check to identify a potential leak and the immediate action to take before applying the “A” – Kit.

- Packing Leak
  - Ensure Cylinder is in Upright Position
  - Tighten Packing Nut – (Garlock Packing) *Packing nut can be tightened in the open or closed position.*
  - Tighten Packing Nut – (Teflon Packing) *Tighten packing nut with valve slightly open.*
  - Close Valve
  
- Leak At Valve Seating Surface
  - Ensure Valve is in the Upright Position
  - While cylinder is hooked up...or with applied outlet cap - Open and close valve to dislodge any grit or ice crystal that may have obstructed the valve seat.
  - Install Outlet Cap (Ensure outlet cap has a gasket)
  
- Leak Where Valves Screws Into Cylinder Body
  - Ensure Cylinder is in Upright Position
  - Check Cylinder Pressure if not hooked up
  
- Leak at Fusible Plug
  - Ensure Container is in upright position
  - Check to ensure the fuse plug is in place
  
- Leak at System Connection
  - Ensure Container is in upright position
  - Ensure lead washer (gasket) is in place
  - Change lead washer
  - If hook up is yoke and adapter type connection...ensure yoke is tight and not misaligned.
  - Ensure system connection is not damaged
  - Ensure valve and whip connection threads are in good condition.

- Pin Hole in Cylinder Body
  - Ensure leak point is in upright position. (12:00 Position)
  - Look for unexplained brown liquid trails on cylinder body...they are an indication of pin hole
  - Carefully remove excess paint buildup
  - Check integrity of steel before applying sidewall patch.
  
- Hole or Crack on Cylinder Body at Bottom of Cylinder
  - Ensure leak Point is in upright position. (12:00 Position)
  - Look where foot ring is welded onto the cylinder if light bottomed cylinder. (*Note: if you can smell chlorine but cannot find any valves leaking look at the foot rings.*)
  - This type leak will require a 'Recovery Vessel' or a field transfer or need to be field scrubbed. There is nothing in the A –Kit for this type of leak.
  
- Kit Installation Points To Remember
  - Normal cylinder pressure < 150 PSI (Closer to 80 -100 psi)
  - Remove all excess paint before attempting to apply the kit.
  - Whip off any liquids... frost, slime etc...before attempting to apply a kit patch.
  - Use Proper Gasket (Viton for chlorine)
  - Tighten patch securely and evenly.
  - Don't get your chains twisted or misaligned.
  - Once you get the leak stopped wait (15 -20) minutes and retighten again if necessary.
  - Even the slightest leak...no matter how small cannot be transported over the road.

### **Chlorine Institute “B” Kit – Tons**

A ton container has two valves a gas and liquid valve when the valves are aligned in the 12 (gas) and 6 (liquid) O'clock positions one over the other. The ton also has (6) fuse plugs (3) on each side which are designed to melt at 158 -168° F. Below are possible points to check to identify a potential leak and the immediate action to take before applying the “B” – Kit.

- Packing Leak
  - Ensure the leaking valve is rotated to the top position. (Rotate container if necessary.)
  - Tighten Packing Nut – (Garlock Packing) *Packing nut can be tightened in the open or closed position.*
  - Tighten Packing Nut – (Teflon Packing) *Tighten packing nut with valve slightly open.*
  - Close Valve
  
- Leak At Valve Seating Surface
  - Ensure the leaking valve is rotated to the top position. (Rotate container if necessary.)
  - While cylinder is hooked up...or with applied outlet cap - Open and close valve to dislodge any grit or ice crystal that may have obstructed the valve seat.
  - Install Outlet Cap (Ensure outlet cap has a gasket)

- Leak Where Valves or Fuse Plug Screws Into Ton Body (Valve or Fuse Plug)
  - Ensure the leaking valve is rotated to the top position. (Rotate container if necessary.)
  - Check Cylinder Pressure if not hooked up
  
- Leak at Fusible Plug
  - Ensure the leaking fuse plug is rotated to the top position. (Rotate container if necessary.)
  - Check to ensure the fuse plug is in place and not loose.
  - Check to see if lead has melted.
  
- Leak at System Connection
  - Ensure the leaking valve is rotated to the top position. (Rotate container if necessary.)
  - Ensure lead washer (gasket) is in place
  - Change lead washer
  - If hook up is yoke and adapter type connection...ensure yoke is tight and not misaligned.
  - Ensure system connection is not damaged
  - Ensure valve and whip connection threads are in good condition.
  
- Pin Hole in Ton Body
  - Ensure leak point is in upright position. (12:00 Position)
  - Look for unexplained brown liquid trails on Ton body...they are an indication of pin hole
  - Carefully remove excess paint buildup
  - Check integrity of steel before applying sidewall patch.
  
- Hole or Crack or Dent in Ton Body
  - Ensure leak Point is in upright position. (12:00 Position)
  - Depending on the size of the crack or dent this type leak may require a field transfer.
  
- Kit Installation Points To Remember
  - Normal ton pressure < 150 PSI (Closer to 80 -100 psi)
  - Remove all excess paint before attempting to apply the kit.
  - Whip off any liquids... frost, slime etc...before attempting to apply a kit patch.
  - Use Proper Gasket (Viton for chlorine)
  - Tighten patch securely and evenly.
  - Don't get your chains twisted or misaligned.
  - Once you get the leak stopped wait (15 -20) minutes and retighten again if necessary.
  - Properly align the gasket on the hood and keep the 'strong back' straight and even.
  - Check in between valves on a ton to ensure you do not need the scalloped gasket. A ridge will require the scalloped gasket.
  - Mark your B – Kit gaskets with line up marks to aid in application.
  - Even the slightest leak...no matter how small cannot be transported over the road.