



TP-160 Spill Containment Integrity Testing

A1004 and A1005 Series

Tests for Determining the Integrity of Emco Single Wall or Double Wall Containment Vessels

Required Equipment - Available from Emco

- A0081 Adapter Wrench
- 569143 Test Cap
- A1004-210TEST Vacuum Test Apparatus, includes:
 - Vacuum gauge to measure 30" **water column** with increments of 1" **water column**
 - Vacuum pump with hoses
 - Emco 494343 Test Adapter*
- A0081 Plexiglass Test Plate with vacuum tube connection (available sizes listed below):
 - A0081-12Test A1005-505 Series
 - A0081-13Test A1004-316/A1005-517 Series
 - A0081-15Test A1004-210 Series
 - A0081-17Test A1004-215 Series, A1005-505CP

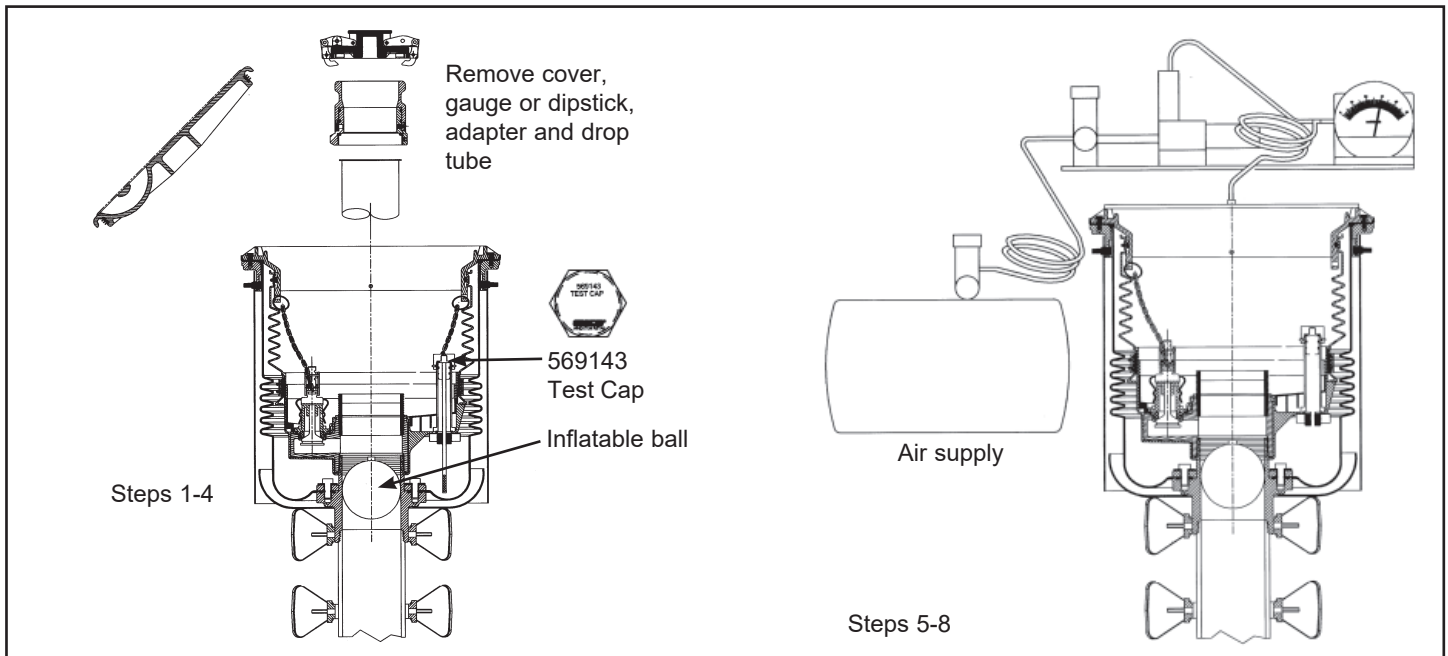
*494343 Test Adapter required for pressure test

Additional Required Equipment

- Timer
- 4" inflatable ball plug with extension hose
- Air supply
- Soap solution
- Plumber's Putty
- Air pressure regulator
- Air pressure gauge (Low Pressure), 10 psi max suggested

Spill Bucket Test Pressure Chart Comparison of Water Column, Mercury and PSI gages <i><u>Insure that you are using a Water Column Gage</u></i>			
Inches Water Column ("WC)	Inches Mercury ("HG)	PSI	
4	0.29	0.14	4 inches water column is the allowable movement of the vacuum during a test. Note that this is only 0.29 inches mercury and is difficult to read on may mercury gages.
30	2.2	1.08	30 inches Water Column is the recommended test pressure / vacuum for Emco Spill Buckets. Note that this corresponds to only 2.2" mercury.
80	5.9	2.89	Pressures or Vacuums of 80" WC or more can damage Emco Spill Buckets

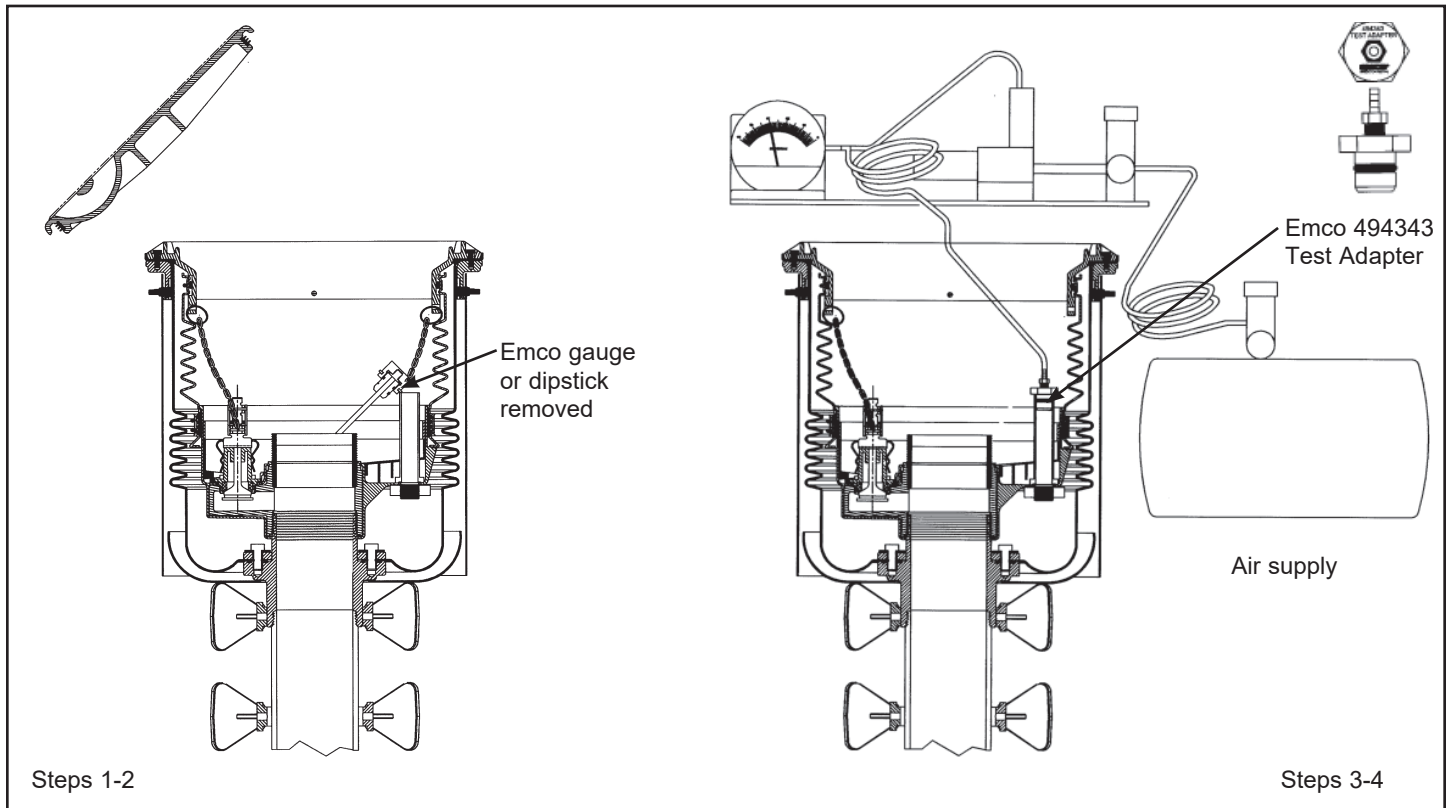
Spill Container Primary Integrity Test Procedure



Procedure:

1. Remove the cover of the spill container. Remove the cap, adapter, riser seal, and drop tube as applicable.
2. Clean all debris from around the plow ring and from the inside of the spill container.
3. Insert an inflatable ball plug into the riser pipe; place it below the drain valve at the bottom of the spill container as applicable. Inflate the ball plug to 30 psi to obtain a tight seal.
4. If the spill container is a double wall, remove the EZ gage or dipstick from the monitor tube and install the 569143 Test Cap.
5. Seal the opening of the double wall spill container with the plexiglass test plate. Use Plumber's Putty to seal the plate to the plow ring.
6. Slowly apply a vacuum of 30" water column. **This must be 30" water column, not Mercury.**
7. Soap around the perimeter of the plexiglass plate to check for leaks. As necessary, use Plumber's Putty to seal any leaks and re-establish vacuum to 30" water column. Once stabilized, close off the vacuum source.
8. Start a timer for 60 seconds. If the remaining vacuum after 60 seconds is 26" water column or greater, then the test passes and there is no issue with the primary unit.
 - a. If the spill container passes and is a single wall, then testing is complete.
 - b. If the spill container passes and is a double wall, then proceed to the Interstitial Integrity Test.
 - c. If the spill container fails, then proceed to the Leak Investigation Test.

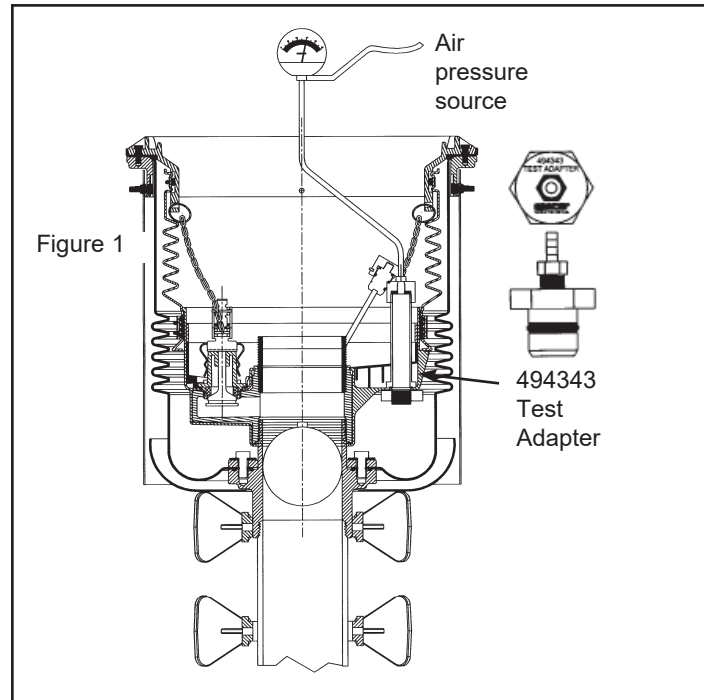
Spill Container Interstitial Integrity Test Procedure



Procedure:

1. Complete the following steps if the Primary Integrity Test was successful; otherwise, skip this section and proceed to the Leak Investigation Test.
2. Remove the EZ gage or dipstick from the monitor tube and install the 494343 Test Adapter.
3. Slowly apply a vacuum of 30" water column. **This must be 30" water column, not Mercury.** Close off the vacuum source and wait 30 seconds for the vacuum reading to stabilize. Re-establish vacuum to 30" water column and close off the vacuum source.
4. Start a timer for 60 seconds. If the remaining vacuum after 60 seconds is 26" water column or greater, then the test passes and there is no issue with the secondary unit.
 - a. If the spill container passes, then testing is complete.
 - b. If the spill container fails, then proceed to the Leak Investigation Test.

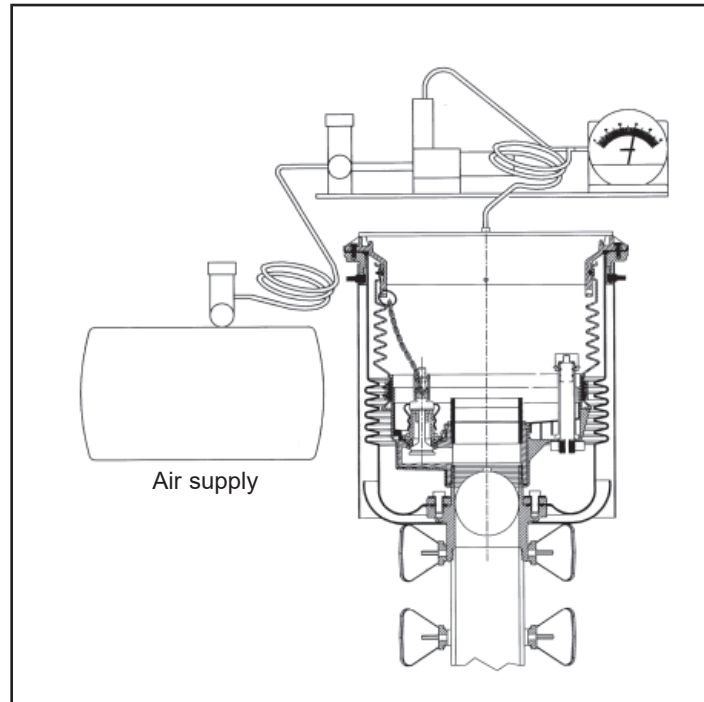
Spill Container Leak Investigation Test Procedure



Double Wall Bucket Procedure:

1. Remove the EZ gage or dipstick from the monitor tube and install the 494343 Test Adapter.
2. Apply a soap solution to the following locations inside the primary unit as applicable: around the base/pipe nipple, around the monitor tube, around the drain, around the circumference of the plow ring, and on all rim bolts.
3. Slowly apply a pressure up to 40" WC (3" Hg or 1.5 psi).
4. Observe for leakage:
 - a. If there is a leak at the plow ring or rim bolts, re-torque the bolts to 25 ft-lbs. If the leak persists, replace the interstitial seal (flat gasket) and retest.
 - b. If there is a leak anywhere else, replace the primary unit and retest.
 - c. If no leakage is observed, proceed to the next section.
5. Remove the EZ gage or dipstick from the monitor tube. Do not plug the monitor tube.
6. Seal the opening of the double wall spill container with the plexiglass test plate. Use Plumber's Putty to seal the plate to the plow ring.
7. Slowly apply a vacuum of 30" water column. **This must be 30" water column, not Mercury.**
8. Soap around the perimeter of the plexiglass plate to check for leaks. As necessary, use Plumber's Putty to seal any leaks and re-establish vacuum to 30" water column. Once stabilized, close off the vacuum source.
9. Start a timer for 60 seconds. If the remaining vacuum after 60 seconds is 26" water column or greater, then the test passes and there is no issue with the secondary unit.
 - a. **If the spill container passes this test and is a double wall, then the secondary unit has shown no signs of leakage.**
 - b. If the spill container fails, then replace the secondary unit and retest.

Spill Container Leak Investigation Test Procedure



Single Wall Bucket Procedure:

1. Apply a soap solution to the following locations inside the primary unit as applicable: around the base/pipe nipple, around the drain, around the circumference of the plow ring, and on all rim bolts.
2. Seal the opening of the double wall spill container with the plexiglass test plate. Use Plumber's Putty to seal the plate to the plow ring.
3. Slowly apply a vacuum of 30" water column. **This must be 30" water column, not Mercury.**
4. Observe for leakage:
 - a. If there is a leak at the plow ring or rim bolts, re-torque the bolts to 25 ft-lbs. If the leak persists, replace the interstitial seal (flat gasket) and retest.
 - b. If there is a leak anywhere else, replace the primary unit and retest.
 - c. If no leakage is observed, retest according to the Primary Integrity Test.