



HOOVER CS

H O O V E R C I R C U L A R S O L U T I O N S

**USER'S MANUAL HOOVER CS METAL SIDE DRAIN IBCs
IBC APPROVAL: UN31A/Y**

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Read this user's manual carefully before using your IBC. This user's manual is designed to provide general information on the safe use and proper handling of a Hoover CS Intermediate Bulk Container (IBC). This manual is to be used as a general guide only. You must refer to the current rules and regulations for the transportation of hazardous materials (including 49 CFR parts 173, 178 & 180) and your own company's standard practices and procedures for current requirements and more detailed information.

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1. General Introduction

1.1 General Application

This IBC equipment is mainly intended to be used to load and transport liquid hazardous goods which meet UN31A/Y (packaging groups II & III) according to the standards of the Department of Transportation Title 49 CFR Performance Oriented Packaging Standards, Section 178.

1.2 Notice Before Use

- 1.2.1 End users must follow the relevant provisions for IBCs under the current packaging guides in the Department of Transportation Title 49 CFR Hazardous Materials Regulations, the International Maritime Dangerous Goods (IMDG) regulations, and any other applicable rules and regulations applicable to the goods to be transported.
- 1.2.2 It is the responsibility of the end user/shipper to determine if their product/liquid is authorized to be transported inside the IBC design. Product must have a packaging group II or III designation. The end user is solely responsible for ensuring that the equipment is suitable for its intended use and Hoover CS makes no warranties as to fitness for any particular purpose.
- 1.2.3 It is the responsibility of the end user/shipper to determine if the materials used to manufacture the IBC, including gaskets and seals, is compatible with their product/liquid that will be transported in the IBC. The end user may not be used for any purpose for which it is not designed or suitable.
- 1.2.4 Metal IBCs are not designed to be pressure vessels and should not be pressurized. Per Title 49 CFR for transportation of hazardous materials, each IBC unit manufactured for Hoover CS goes through a 3 psig leakproofness air test for a period of 10 minutes. Also, each design type manufactured for Hoover CS that requires a UN marking, goes through a yearly hydrostatic pressure test to 29 psig. At the risk of the end user, a low-pressure purge may be applied to the IBC to help in off-loading or applying a gas blanket to the product/liquid inside the IBC. This should be an intermittent pressure of between .5 psig vacuum to 5 psig pressure.
- 1.2.5 If the end user/shipper of the IBC intends to ship different liquid hazardous goods in the same IBC, the IBC must be cleaned completely after each use and before a different liquid hazardous good is filled into the IBC. The end user/shipper is responsible for making sure each product/liquid being put into the IBC is compatible with materials used on the IBC.
- 1.2.6 When filling or loading the product/liquid into the IBC, the maximum filling capacity shall not be more than 98% of the nominal capacity of the IBC.
- 1.2.7 Hoover CS cannot predict the life expectancy of any specific manufactured IBC. The useful life of your IBC is dependent on many variables, including chemical attack, IBC design type, UV exposure, and IBC handling wear and tear.
- 1.2.8 The product stored or transported in this IBC cannot have a specific gravity that exceeds 1.9.

1.3 Periodic Maintenance and Repair

1.3.1 Installation and removal of top threaded connections

- 1. Threaded plugs, caps, and bung plugs should be started by hand and closed completely by hand before tightening using a tool. This helps to ensure cross threading does not occur.
- 2. When reinstalling taper threaded fittings (NPT), Teflon tape or a combination of Teflon tape and pipe dope is to be used to ensure a proper seal. If using pipe dope, the end user to be responsible for ensuring that their product/liquid is compatible with the pipe dope used.
- 3. The IBC end user/operator should follow the manufacturer's closure instructions to ensure proper torque settings are achieved. **Hoover CS closure instructions are available upon request.**
- 4. Hoover CS offers various tools to assist with the removal and installation of IBC fittings. Please contact us for more information.

1.3.2 Removal and installation of threaded discharge outlet assembly connections

- 1. **Caution:** Removal and installation of threaded discharge outlet assembly connections is not considered to be "user-friendly". This operation should be considered to be a major repair and should be performed only by experienced technicians.
- 2. Carefully observe the manner and in what order the components are assembled. Disassemble the assembly and then reassemble the assembly in reverse order using new parts.
- 3. Threaded components can be carefully removed and tightened by use of a standard pipe wrench.

4. All tapered pipe threads should be sealed with Teflon tape or a combination of Teflon tape and pipe dope. If pipe dope is used, the end user is responsible for ensuring that the pipe dope is compatible with the product/liquid that will be transported in the IBC. **Note: Due to the variance in tapered threads, there is no known common setting required to achieve an adequate seal.**
5. A leakproof test must be performed upon completion of this repair to ensure the components are properly sealed.

1.3.3 Retest requirements for UN certified IBCs

Please refer to our [IBC Testing & Inspection Requirements](#)

2. IBC Design Features

2.1 IBC Components & Equipment

This product consists of an IBC with support legs. The IBC consists of a shell/body, top head, and bottom head. The IBC equipment consists of a manhole drum cover, clamp ring, clamp ring bolt and nut, bung plug, fusible vent cap and lifting lugs on top of the IBC. The discharge valve and valve guard under the bottom head of the IBC.

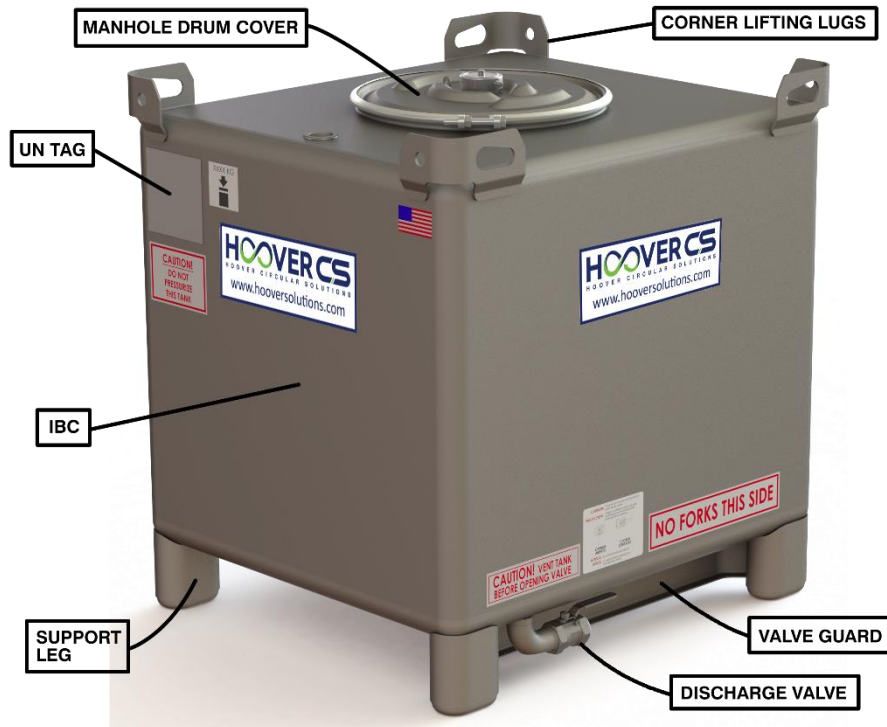


Figure 1

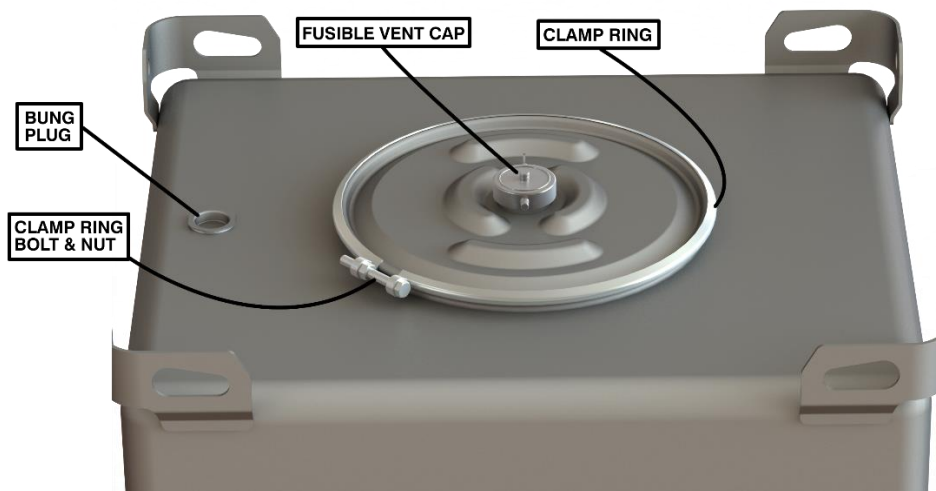


Figure 2

2.2 IBC Materials & Features

- 10 gauge, ASTM A240 304 stainless-steel construction with 2B finish on interior and exterior
- One-piece body with single seam welding (350 & 550 gallon only)
- Sloped bottom for virtually 100% drainage
- 22-5/16" (566mm) diameter top manhole with drum cover, EPDM gasket and bolted clamp ring
- 3" (76mm) 316 stainless-steel fusible vent cap with EPDM gasket and lanyard
- 2" (51mm) top bung fitting with EPDM gasket
- (4) Top heavy-duty lifting lugs/stacking positioners
- Stackable
- 2" (51mm) discharge assembly with 316 stainless-steel one-piece elbow, 316 stainless-steel ball valve with locking handle and Teflon seals, and plastic plug
- 6-1/2" (166mm) tall bottom support legs
- Full length valve guard on bottom
- Three-way fork entry
- UN/DOT compliant for IBCs with UN markings
- Stainless steel UN marking tag

2.3 IBC Technical Parameters

NOMINAL CAPACITY	NOMINAL LENGTH	NOMINAL WIDTH	NOMINAL HEIGHT	APPROX TARE WGT	MAXIMUM GROSS WGT
120 Gal (454L)	42" (1067mm)	48" (1291mm)	24.5" (622mm)	286 lbs (130kg)	2,205 lbs (1000kg)
180 Gal (681L)	42" (1067mm)	48" (1291mm)	31.5" (800mm)	347 lbs (157kg)	3,196 lbs (1450kg)
300 Gal (1135L)	42" (1067mm)	48" (1291mm)	45" (1143mm)	430 lbs (195kg)	5,203 lbs (2360kg)
350 Gal (1325L)	42" (1067mm)	48" (1291mm)	51" (1295mm)	475 lbs (215kg)	6,030 lbs (2735kg)
400 Gal (1514L)	42" (1067mm)	48" (1291mm)	57" (1448mm)	534 lbs (242kg)	6,867 lbs (3115kg)
450 Gal (1703L)	42" (1067mm)	48" (1291mm)	63" (1600mm)	594 lbs (269kg)	7,694 lbs (3490kg)
550 Gal (2082L)	42" (1067mm)	48" (1291mm)	75" (1905mm)	630 lbs (286kg)	9,370 lbs (4250kg)
793 Gal (3000L)	54" (1372mm)	54" (1372mm)	75" (1905mm)	795 lbs (361kg)	13,456 lbs (6104kg)

3. Use & Operation of IBC

3.1 Moving the IBC with a Forklift/Pallet Jack (bottom lift)

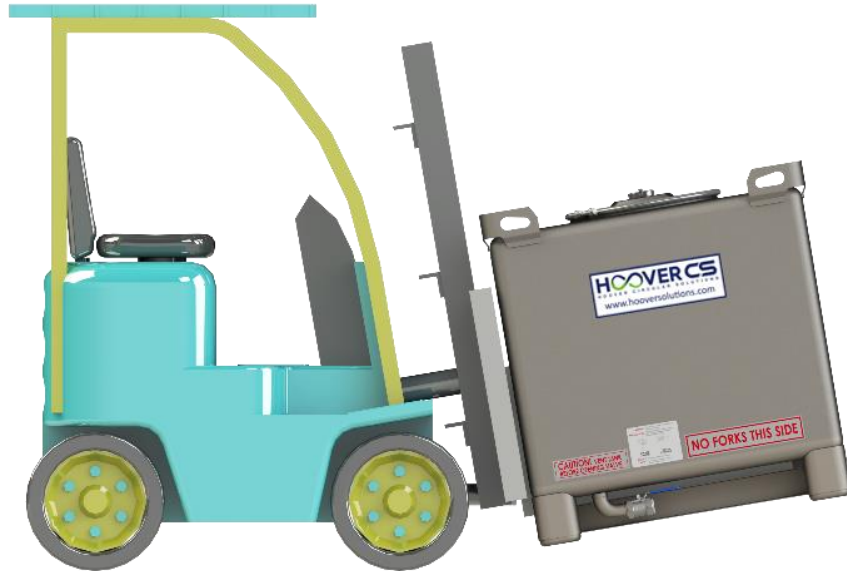


Figure 3 Moving IBC with Forklift

1. This IBC design type is designed to be moved or lifted from the bottom using a forklift or pallet jack.
2. If “No Forks This Side” decals are located on the side or sides of your IBC, do not attempt to enter, or lift from these sides of the IBC with a forklift or pallet jack.
3. When moving the IBC with forklift or pallet jack, move only one at a time. **Do not try to move IBCs when they are stacked one on top of another.**
4. Fully engage the forks of the forklift or pallet jack under the bottom of the IBC. The forklift operator should be smooth and steady and avoid any heavy impact with the IBC which may cause damage.
5. After fully engaging the forks under the IBC, slowly raise the forks until the forks are resting against the bottom of the IBC. The IBC is now ready to be moved. It is recommended that the forklift must be slightly tilted backwards to avoid the IBC from slipping off the front of the fork tines.
6. When moving the IBC, the operator should avoid any shocks, sharp drop-offs, or unlevel surfaces which might cause the IBC to dislodge from the forklift tines.
7. The above procedures are for general information only and the operator should follow any standard handling practices and procedures by their company or employer.

3.2 Moving the IBC with Overhead Equipment (top lift)

1. This IBC design type is equipped with (4) top corner lifting lugs that can be used to move the IBC by overhead equipment.
2. Only one IBC at a time should be lifted and moved by overhead equipment.
3. When lifting the IBC, all (4) top corner lifting lugs should be used for 4-point lifting. 2-point lifting is forbidden. The maximum vertical angle between the sling legs and the vertical plane from center of the IBC is 45 degrees (see illustration for lifting action on next page).
4. Make sure the equipment being used to lift the IBC is sufficiently rated to handle the weight of the IBC. Attach the lifting device through the holes in all of the (4) corner lifting lugs. Unless there are fit up issues, Hoover CS recommends the operator use the round holes instead of the oblong holes in the corner lifting lugs when attaching the lifting device.
5. Once the lifting device is secured to the (4) corner lifting lugs of the IBC and the load is evenly distributed on the corner lifting lugs, the IBC can be lifted and moved. The operator should follow any standard handling practices or procedures by their company or employer.
6. Hoover CS offers a variety of 4-legged slings and lifting bridals that can assist with lifting your IBC.

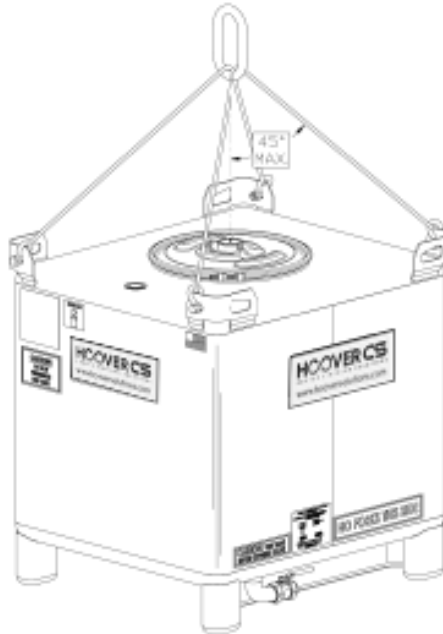


Figure 4 Illustration for Lifting Action

3.3 Stacking of IBCs



Figure 5 Diagram of Stacked IBCs

1. This IBC design type has provisions for double stacking.
2. Hoover CS recommends that IBCs should not be double stacked during transportation when the IBCs are full.
3. When not in transportation, and storing IBCs on land or in a warehouse, Hoover CS recommends only double stacking (2) IBCs when full and (3) IBCs when empty.
4. When double stacking IBCs on land or in a warehouse, the operator should choose a solid level surface before placing the IBCs. This helps to ensure tipping does not occur which might result in the stacked IBCs dislodging from one another.
5. When stacking the IBCs with forklift, the forklift operation and process should be smooth and steady to avoid the IBC dislodging from forklift tines and to eliminate any unnecessary damage to the IBCs.
6. This IBC design type varies in length and width base dimensions. Please ensure the IBCs are oriented correctly before stacking one on top of another.
7. Only move and stack one IBC at a time.
8. Never stack more weight on top of the IBC than what is shown on the stainless-steel UN tag.

3.4 Transporting IBCs



Figure 6 Diagram of Transporting IBCs

1. It is the responsibility of the end user/shipper to determine if their product/liquid is authorized to be transported inside this IBC design type.
2. Hoover CS recommends that IBCs should not be double stacked during transportation when the IBCs are full.
3. When loading the IBCs onto a truck or inside of a container, the operator should be smooth and steady to avoid any heavy impact that might cause serious damage to the IBCs.
4. Only move and load (1) IBC at a time with the forklift. Neatly place IBCs side by side, making sure support legs are firmly sitting on a solid surface.
5. When transporting IBCs by open flatbed truck without vertical walls, make sure the IBCs are strapped down and firmly fixed to the trailer bed.
6. End user/shipper is responsible for any labeling or placarding that is required by the Department of Transportation to transport your product/liquid.

3.5 IBC Manhole Drum Cover Removal

1. See Figures 1 & 2 on page 6 for location of the IBC manhole drum cover and 2" bung plug.
2. Remove any internal pressure from the IBC by **slowly** unscrewing the 2" bung plug fitting in top of the IBC. This will allow all internal pressure that might have built up inside the IBC to be released.
3. Loosen the 5/8" nut on the clamp ring bolt that is in between the two clamp ring lugs on the drum cover clamp ring.
4. Remove the 5/8" x 5" long bolt from the drum cover clamp ring.
5. Grasp the lugs of the clamp ring and spread the clamp ring far enough to disengage and remove it from the IBCs manhole drum cover and drum neck.
6. Remove the drum cover from the IBC manhole. (Note: A small amount of force may be required to release the seal between the IBC drum cover and gasket).
7. If the manhole drum cover gasket is damaged, ripped or torn, please discard and replace with a new gasket before reinstalling the manhole drum cover. Hoover CS recommends installing a new gasket whenever the IBC manhole drum cover has been removed.

3.6 IBC Manhole Drum Cover Installation

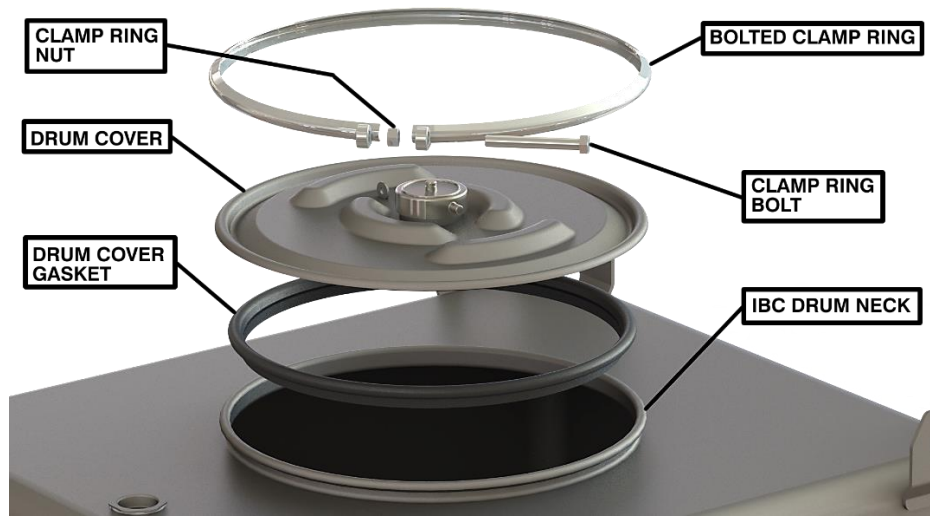


Figure 7 Diagram of Manhole Drum Cover Parts

1. Visually inspect the crown on the IBC drum neck and the groove of the metal drum cover to be certain that both are clean and free of foreign materials, and neither are bent or damaged.
2. Inspect the drum cover gasket for any damage (cuts, rips, or tears). Hoover CS recommends installing a new drum cover gasket whenever the IBC drum cover has been removed.
3. Install the drum cover gasket on the IBC drum neck by applying the gasket to the opposite side of the IBC drum neck and carefully pulling it towards yourself. Be sure the gasket covers the crown of the IBC drum neck properly.
4. Carefully position the metal drum cover onto the gasket by holding it directly over the opening of the IBC and lowering it vertically onto the proper location.
5. Visually check to be sure it is centered correctly onto the opening and gasket. Ensure that the gasket has not moved or dislodged.
6. Carefully install the bolted clamp ring, taking care that during the installation of the bolted clamp ring, the metal drum cover and gasket have not moved, and the gasket has not been pinched.
7. Visually check the bolted clamp ring to ensure that it is evenly positioned around the circumference of the metal drum cover and IBC drum neck.
8. Install the 5/8" x 5" long clamp ring bolt through the unthreaded lug of the bolted clamp ring and thread the 5/8" clamp ring nut onto the bolt between the lugs of the bolted clamp ring. Screw the bolt by hand into the bolted clamp ring threaded lug two or three turns ensuring that the bolt is not cross threaded. Note: Hoover CS does not recommend using a stainless-steel bolt in a stainless-steel bolted clamp ring as galling of the threads can and probably will occur.
9. Continue to tighten the clamp ring bolt until you feel resistance and the bolted clamp ring starts to pull the metal drum cover down around the circumference of the IBC drum neck.
10. Tap the outside of the bolted clamp ring in several places around its circumference with a rubber head hammer or mallet.
11. Continue to slowly tighten the bolt while tapping around the circumference of the bolted clamp ring. Continue this process until the bolt tightening resistance does not change and it is secure. Note: the bolted clamp ring ends should be approximately 3/8" apart and must not come together.
12. Tighten the 5/8" clamp ring nut snugly against the bolted clamp ring lug.
13. Visually inspect the full circumference where the bolted clamp ring overlaps the gasket and the IBC drum neck to ensure the metal drum cover is evenly positioned.

3.7 IBC Filling

1. See Figures 1 & 2 on page 6 for location of parts described below.
2. Ensure that the bottom discharge valve handle is in the closed position and the positive lock engaged.
3. Ensure that the secondary seal is installed at the end of the bottom discharge valve.
4. Remove any internal pressure that might have developed inside the IBC by **slowly** unscrewing the 2" bung plug fitting located on top of the IBC.
5. Once any internal pressure has been completely released from the IBC, open the filling aperture on top of the IBC (i.e., the 2" bung plug, 3" fusible vent cap, manhole drum cover, etc.).
6. Fill the IBC through the filling aperture per your standard filling practices and procedures, taking care not to overfill the IBC. Filling capacity shall not be more than 98% of the nominal capacity of the IBC.
7. After the filling process is finished, ensure all open fittings have been properly closed off before moving or putting the IBC back into service.

3.8 IBC Discharging

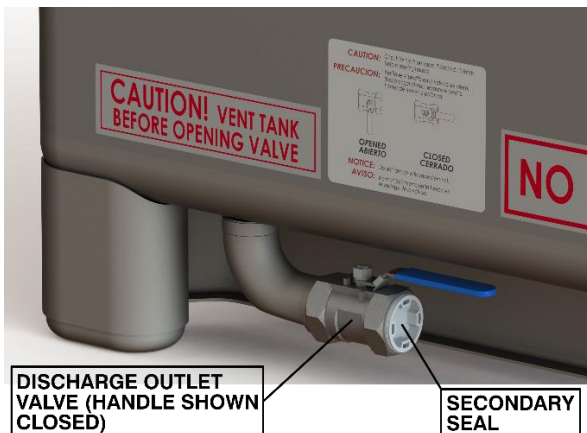


Figure 8 Diagram of Bottom Discharge Valve

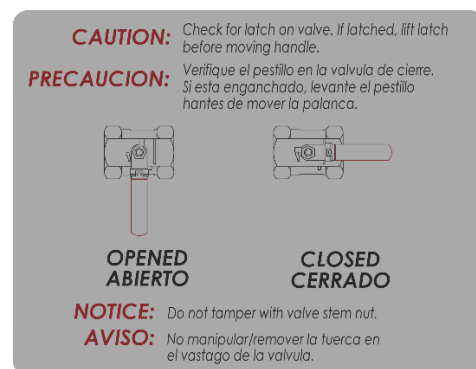


Figure 9 Open/Closed Valve Handle Decal

1. Besides the illustrations above, see Figures 1 & 2 on page 6 for location of parts described below.
2. Ensure that the bottom discharge valve handle is in the closed position and the positive lock engaged.
3. Remove any internal pressure that might have developed inside the IBC by **slowly** unscrewing the 2" bung plug fitting located on top of the IBC.
4. Properly vent the IBC by opening a filling aperture on top of the IBC (i.e., the 2" bung plug, 3" fusible vent cap, manhole drum cover, etc.). Note: It is important to properly vent your IBC before discharge. This IBC is not pressure rated and you should never cause a pressure difference between the inside and outside of the IBC. Failure to properly vent your IBC may result in permanent deformation and damage to the IBC.
5. Remove the secondary seal that is installed in the end of the bottom discharge valve. If required, connect transfer hose or any other equipment to the end of the bottom discharge valve.
6. Slowly open the bottom discharge valve and discharge the contents from the IBC per your standard discharge practices and procedures.
7. After discharging and before moving or putting the IBC back into service, ensure that the bottom discharge valve handle is closed, the transfer hose or other equipment is disconnected from the bottom discharge valve and the secondary seal is reinstalled into the end of the valve, and all open top fittings have been properly closed off.



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