CONTAINER CLOSURE NOTIFICATION Rev. 1/2016

Code of Federal Regulations 49 part 100-199 require that notification of the closing methods used in container assembly be provided to the user of all UN Certified Containers, which are sold by Solvents & Petroleum Service, Inc. (SPS)

The closing methods within this packet must be completed, to ensure that your containers will perform as initially tested. Closures must be properly tightened to assure that the container does not leak under conditions, which are normally incident to transportation.

If you are unable to find the proper closing instructions, have any questions, or if you need closing tools for your UN-certified containers, please contact your Solvents & Petroleum Service, Inc. representative.

*Solvents & Petroleum Service, Inc. is not responsible for changes, alterations or modifications to a container, which was completed by the shipper... (i.e. gasket changes, additional plastic bags, change of components, etc.) Any modifications/alterations to a UN-certified container shall void such UN certification.*

*UN packaging requirements are specific to the product/lading that is being contained/shipped. It is the shipper’s responsibility to ensure that the proper UN packaging is being used. For additional information on any of our UN-certified containers, please contact your Solvents & Petroleum Service, Inc. Sales/Customer Service Representative.*

Because of manufacturing consistency, changes within the closing instructions seldom occur. Therefore, UN Closing Instructions will not be issued for each shipment. It must be considered valid and maintained by your company until further notice. Should a revision be made to this document, you shall be notified in writing.

This packet of UN Closing Instructions supersedes and replaces any and all UN Closing Instructions that were previously provided by Solvents & Petroleum Service, Inc.

By signing below; you have acknowledged the receipt of this notification, and understand that this packet should be kept on file for future reference. In addition, please forward this packet to all persons that are involved with the filling and/or shipping of any UN-certified packaging that you purchase from Solvents & Petroleum Service, Inc.

Lastly, we are required to maintain records, confirming that this information has been provided to our customers. Therefore, upon receipt of this packet, please complete the information below and scan/email the signed page to june@solventsandpetroleum.com

__________________________
(Company Name)

_______________________________
(Date)

___________________________
(Signature)

_______________________________
(Company Rep. Name-please print)

www.SolventsandPetroleum.com
# UN CLOSING INSTRUCTIONS

*INDEX*

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>PAGE GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEEL DRUMS</td>
<td>A</td>
</tr>
<tr>
<td>POLY DRUMS</td>
<td>B</td>
</tr>
<tr>
<td>FIBER DRUMS</td>
<td>C</td>
</tr>
<tr>
<td>POLY PAILS-OPEN HEAD-STANDARD STYLE</td>
<td>D</td>
</tr>
<tr>
<td>POLY PAILS-OPEN HEAD-SCREW ON STYLE</td>
<td>E</td>
</tr>
<tr>
<td>POLY PAILS-TIGHT/CLOSED HEAD-ROUND &amp; RECTANGLE</td>
<td>F</td>
</tr>
<tr>
<td>STEEL PAILS-OPEN HEAD &amp; TIGHT HEAD/CLOSED HEAD</td>
<td>G</td>
</tr>
<tr>
<td>INTERMEDIATE BULK CONTAINERS/TOTES</td>
<td>H</td>
</tr>
<tr>
<td>HAZPAC (CUBIC YARD BOX KITS)</td>
<td>I</td>
</tr>
<tr>
<td>WASTEPACK (1.0 7 1.6 CUYD POLYPROPYLENE SACK)</td>
<td>J</td>
</tr>
<tr>
<td>1-GALLON HDPE BOTTLE IN UN 4X1 BOX</td>
<td>K</td>
</tr>
<tr>
<td>1-GALLON F-STYLE TIN CANS</td>
<td>L</td>
</tr>
</tbody>
</table>

**PLEASE NOTE THAT ALL PAGE NUMBERS ARE AT THE BOTTOM, RIGHT PORTION OF EACH PAGE IN RED**
SECTION A: STEEL DRUMS

In the following pages, you will find the UN Closing Instructions for the New and Reconditioned Steel Drums that we commonly sell.

Below, you will see examples of the UN Certification markings that could be on the drums that you purchased. These are examples only, and may not be the exact marking that is on your drum(s). We are showing you these examples so that you know how to identify the manufacturer’s code, and reference the corresponding closing instructions in the coming pages. If you cannot find the appropriate closing instructions, or need any guidance, whatsoever, please contact us for assistance. You will notice that part of the sample certifications are in **BOLD/UNDERLINED FONT**. This identifies the manufacturer’s code.

*NOTE: NEW STEEL DRUMS ARE TYPICALLY MARKED ON THE SIDE OF THE DRUM, IN THE BOTTOM THIRD. RECONDITIONED STEEL DRUMS ARE TYPICALLY MARKED ON THE SIDE OF THE DRUM, IN THE TOP THIRD. FOR RECONDITIONED DRUMS, DO NOT REFERENCE THE PERMANENT EMBOSSESSION MARKING IN THE BOTTOM OF THE DRUM, AS THAT UN CERTIFICATION WAS FROM WHEN THE DRUM WAS ORIGINALLY MANUFACTURED; NOT THE MOST RECENT TEST AND RE-CERTIFICATION*

*SAMPLE UN CERTIFICATION – TIGHT/CLOSED HEAD STEEL DRUM:

LIQUID LADINGS  

\[\text{\textbf{1A1 / Y1.8 / 300 / 15 / USA / M1234}}\]

*SAMPLE UN CERTIFICATION – OPEN HEAD STEEL DRUM:

LIQUID LADINGS  

\[\text{\textbf{1A2 / Y1.5 / 100 / 15 / USA / M1234}}\]

SOLID LADINGS  

\[\text{\textbf{1A2 / X400 / S / 15 / USA / M1234}}\]
Once you’ve identified the manufacturer’s code on your drum, please reference the following closing instructions:

<table>
<thead>
<tr>
<th>MANUFACTURER’S CODE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>M4599, 2-827</td>
<td>PG. A1-A2</td>
</tr>
<tr>
<td>M6066, M4452, M4453, M5369, M5368</td>
<td>PG. A3-A10</td>
</tr>
<tr>
<td>SDCC</td>
<td>PG. A11</td>
</tr>
<tr>
<td>M4358, M4935, M5868, M5387</td>
<td>PG. A12-13</td>
</tr>
<tr>
<td>R1594</td>
<td>PG. A14</td>
</tr>
</tbody>
</table>
CLOSING INSTRUCTIONS – METAL DRUMS

PRIOR TO CLOSING:
Inspect each closure to ensure that the closure has the proper gasket and that both closure and gasket are in good condition. Inspect the sealing surface for damage and make sure the threads and sealing surfaces are dry. Replace any defective gaskets, plugs or lids with new, defect free parts as sold with the original packaging.

CLOSING PROCEDURES FOR PLUGS AND CAPS:
The plug or cap is inserted into the appropriate opening and screwed down hand tight until the gasket is in contact with the sealing surface. A torque wrench capable of applying the proper torque to the fitting as specified by the closing instructions following is then used to tighten the plug or cap until it reaches the pre-set torque as indicated by a release or click. These wrenches should be calibrated at least annually.

STEEL NON-REMOVABLE HEAD DRUMS
1. All non-removable head, UN 1A1, Steel Drums, 49 CFR § 178.504(a)(1), that are supplied with plugs and gaskets must be closed for shipment using only the plugs and gaskets supplied and specified in the design qualification test for the drum, as indicated below:

   a. Tri-Sure™ Plugs, 2-inch and 3/4-inch steel and plastic, installed in Tri-Sure™ steel flanges of corresponding size and tightened to the torque recommended by American Flange & Manufacturing Co., Inc. for the plug gasket used, as indicated below. Materials classified as “POISONOUS BY INHALATION” must be sealed with Tri-Sure steel, gasketed Tab-Seal caps.

   b. Rieke® Corporation plugs 2-inch and 3/4-inch steel and plastic, installed in the appropriate Rieke steel or plastic flange of corresponding size and tightened to the torque recommended by Rieke, as indicated below.

   c. For Technocraft brand plugs and flanges please follow the guidance under “TS Type” in the following table.

   Please be advised that factory installed cap seals do not allow the filler to verify that the plug under the cap seal has been closed to the proper torque, and that the filler is responsible for closing the plugs according to the torque values below regardless of the presence of a cap seal.

<table>
<thead>
<tr>
<th>Closing Torques in ft.-lbs. (by Type)</th>
<th>Gasket Type</th>
<th>3/4&quot; Plug Torque</th>
<th>2&quot; Plug Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong> Rieke® VISE-GRIP II Plug - Plastic Flange</td>
<td>Polyethylene</td>
<td>6-9 ft.-lbs.</td>
<td>20-25 ft.-lbs.</td>
</tr>
<tr>
<td><strong>B</strong> Rieke® VISE-GRIP II Plug - Plastic Flange</td>
<td>Rubber</td>
<td>6-9 ft.-lbs.</td>
<td>20-25 ft.-lbs.</td>
</tr>
<tr>
<td><strong>C</strong> Rieke® VISE-GRIP II Plug - Steel Flange</td>
<td>Polyethylene</td>
<td>6-9 ft.-lbs.</td>
<td>20-25 ft.-lbs.</td>
</tr>
<tr>
<td><strong>D</strong> Rieke® VISE-GRIP II Plug - Steel Flange</td>
<td>Rubber</td>
<td>6-9 ft.-lbs.</td>
<td>20-25 ft.-lbs.</td>
</tr>
<tr>
<td><strong>E</strong> Rieke® VISE-GRIP II Plug with built-in gasket - Plastic Flange</td>
<td></td>
<td>6-9 ft.-lbs.</td>
<td>20-25 ft.-lbs.</td>
</tr>
</tbody>
</table>
STEEL REMOVABLE HEAD DRUMS

1. All removable head, UN 1A2, Steel Drums, 49 CFR § 178.504(a)(2), that are supplied with clamp bands, bolts, gaskets and lids must be closed for shipment using only the components supplied and specified in the design qualification tests for the drum.

2. Place lid with gasket in place, as supplied, on the curl at the top of the drum body.
3. Place bolt ring around the drum head and curl.
4. Using a head compressor, apply force to the top of the drum head assembly to compress head gasket.
5. Drive bolt into lug until the ends of the bolt ring are as follows:
   a. For steel drum thickness (marked on bottom of drum) 1.3/1.1/1.1 to 1.1/0.9/1.1: 1/2-inch or less ring gap. A gap of 1/8 inch or less is required for open head drums used for liquids.
   b. For steel drum thickness (marked on bottom of drum) 1.1/0.8/1.1 or less: 3/8-inch or less ring gap. A gap of 1/8 inch or less is required for open head drums used for liquids.
   c. NOTE: If prescribed ring gap cannot be achieved, torque ring to 75 +/-5 ft.-lbs. The ends of the ring should not be touching, maintain a minimum gap of 1/16".
6. If a head compressor is not available, start bolt into lug, alternating tapping of ring with a mallet and drive bolt with a wrench, until bolt ring ends meet the above requirements.
7. When ring has been tightened as required, the jam nut must be tightened against the left lug.
8. If using a 0.625" shoulder type bolt a jam nut is not required. These particular bolts claim easier ergonomics for the person closing the drums and less deformation of the ring in closing—hence better fit. Thread the bolt into the ring nut and tighten until the threaded portion is through the nut. The smooth unthreaded portion will not engage the threads and tightening stops at the prescribed gap.

COMPOSITE DRUMS

1. All non-removable head, UN 6HA1, Composite drums, 49 CFR § 178.522(a)(1), 55 gallon nominal capacity supplied with plug or screw cap closures with gaskets must be closed for shipment using only the closures and gaskets supplied and specified in the design qualification test for the drum as indicated below:

<table>
<thead>
<tr>
<th>Part Size / Part Number (Plug number with gasket)</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDPE Liner 6HA1/X1.8/350 and X1.8/300: 2 inch double buttress L-10xx with L11EP-xx</td>
<td>29-32 ft-lbs</td>
</tr>
<tr>
<td>Liner 5506: 2-inch NPS: L16-xx with L12-xx</td>
<td>14-18 ft-lbs</td>
</tr>
<tr>
<td>Liner 5510 :2-inch double buttress: L10-HD with L11-B4F</td>
<td>25-30 ft-lbs</td>
</tr>
<tr>
<td>Nylon/Polypropylene 2 inch with EPDM Gasket</td>
<td>12-15 ft-lbs</td>
</tr>
</tbody>
</table>
DOT 178 Notice
Closure Requirements for Steel Drums

In Regulation 49 CFR 178.2(c), the Department of Transportation (DOT) requires drum manufacturers to inform their customers of how to close drum fittings and closure rings in order to ensure the drum will perform to the marking level indicated thereon. Please see that this information is available to those responsible for closing the drums after filling. The use of non-sparking tools is recommended to close drums containing hazardous materials.

**CLOSING RINGS**

**BOLT LOCKING RINGS**

1. Covers must be firmly seated on the top of the drum with the gasket in place. Care must be taken to ensure that the gasket has not become dislodged, looped, or twisted during either removal or placement of the cover.

2. Snap the closing ring over the cover and curl area of the drum, making sure that it is seated over the entire perimeter. For drums with 12 gauge forged lug rings, use of a mechanical head compressing device is required to assure proper gasket compression. Ring bolts should be tightened while the cover/gasket is being compressed. Drums assembled without using a mechanical head compressing device may not perform to the certified level.

3. While a head compressing device is preferred for all rings, for rings lighter than 12 gauge it is acceptable to tighten the ring bolt while simultaneously tapping the outside of the closing ring around the entire perimeter with a non-sparking mallet in order to compress the gasket uniformly. If a head compressing device is used, make sure that the cover is centered on the drum curl. Check to see that the cover and drum curl are pinched together and within the recess of the ring.

4. Torque the bolt and nut until the gap between the closing ring ends is ¼” or less but with no bending of the lugs. Aim for 1/8” gap. For drums with poly liner “bags”, the gap should be ½” or less while ensuring that the liner is seated uniformly over the curl of the drum and protruding out from under the cover. Generally, the closing ring ends must not touch when the ring bolt has been fully torqued (see paragraph “b” below).

   a. **On rings supplied with a jam nut between the lugs**, tighten the nut securely against the unthreaded lug. The closing ring ends must not touch when the ring bolt has been fully torqued.
DOT 178 Notice
Closure Requirements for Steel Drums

In Regulation 49 CFR 178.2(c), the Department of Transportation (DOT) requires drum manufacturers to inform their customers of how to close drum fittings and closure rings in order to ensure the drum will perform to the marking level indicated thereon. Please see that this information is available to those responsible for closing the drums after filling. The use of non-sparking tools is recommended to close drums containing hazardous materials.

b. **Rings supplied without a jam nut may look very similar to those supplied with a jam nut, however these are not interchangeable.** It is important that jam nuts **not be** used with rings for which they are not supplied. The closing ring ends may touch when these rings are fully torqued. See the Solid Seal ring closing instructions for specific torque values, etc. for these rings.**

5. **IMPORTANT:** Open head cover gasket performance can be affected by time (age), temperature, exposure to chemicals and ozone. This could result in the loss of cover gasket elasticity. Therefore, the manufacturer strongly recommends verifying the closing ring bolt for correct torque prior to shipping.

6. Recommended torque values are as follows, however, please note that the ring gap is critical, and torque values outside those listed may be required to achieve the proper gap:

<table>
<thead>
<tr>
<th>Plant Supplying Code: M4453, M5368, M4452, M5369</th>
<th>Drum/ring configuration</th>
<th>Applied Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
<td>Std. 55-gallon 12 ga. Forged Lug ring w/ 5/8” bolt</td>
<td>60 to 65 ft.-lbs.**</td>
</tr>
<tr>
<td>ALL</td>
<td>Std. 55-gallon 12 ga. Forged Lug ring w/ 5/8” bolt</td>
<td>35 to 45 ft.-lbs.**</td>
</tr>
<tr>
<td>ALL</td>
<td>55-gallon, 5/16” and 3/8” bolts</td>
<td>not less than 15 ft.-lbs.</td>
</tr>
<tr>
<td>ALL</td>
<td>Intermediate drums, 12 ga. Forged Lug ring</td>
<td>not less than 50 ft.-lbs.</td>
</tr>
<tr>
<td>ALL</td>
<td>Intermediate drums, all other bolt rings</td>
<td>not less than 8 ft.-lbs.</td>
</tr>
</tbody>
</table>

**See the Solid Seal I & Solid Seal II closing instructions for specific instructions regarding Solid Seal rings**

**LEVER RINGS**

1. Covers must be firmly seated on the top of the drum with the gasket in place. Care must be taken to ensure that the gasket has not become dislodged, looped, or twisted during either removal or placement of the cover.

2. Snap the closing ring over the cover and curl area of the drum, making sure that it is seated over the entire perimeter. In order to compress the gasket uniformly, tap around the entire perimeter of the ring. - FOR SOME RING/GASKET COMBINATIONS, A MECHANICAL HEAD COMPRESSION DEVICE MAY BE NECESSARY TO ACCOMPLISH THIS WHILE CLOSING THE LEVER ASSEMBLY (HANDLE).

3. For side lever locking rings, the ring latch must be snapped securely in place. For top lever locking rings, the top lever must be fully locked in place under the securing bar.
DOT 178 Notice
Closure Requirements for Steel Drums

In Regulation 49 CFR 178.2(c), the Department of Transportation (DOT) requires drum manufacturers to inform their customers of how to close drum fittings and closure rings in order to ensure the drum will perform to the marking level indicated thereon. Please see that this information is available to those responsible for closing the drums after filling. The use of non-sparking tools is recommended to close drums containing hazardous materials.

4. Sealing the eyelets of lever rings is necessary not only for evidence tampering, but for the integrity of the closure.

CAUTION
Per 49 CFR 172.22, it is the responsibility of the person offering a hazardous material for shipment to assure that the containers selected are appropriate to the product being shipped, and that the containers are properly assembled, as per the above Closing Instructions. The correct installation and torquing of all closures, rings, plugs, etc. should be verified by the shipper prior to releasing a package for transportation.

Additionally, it is the responsibility of the Shipper to determine the suitability of any packaging for transportation of hazardous materials by Air. For shipments by Air, the shipper must refer to all applicable provisions (including the Hazardous Materials Table and 172.321) in 49 CFR, and take into account the characteristics of the material being shipped and the performance capabilities of the container sold to you.

CAUTION
The components of a drum from one drum manufacturer should not be intermingled with those of another. Components from the same manufacturer from different drum specifications likewise should not be intermingled. This ensures proper fit of the subassemblies and performance of the drum. Any alteration of the drum specification that varies the design of the package from the design that was tested by or any deviation from the above, voids said certification.
In Regulation 49 CFR 178.2(c), the Department of Transportation (DOT) requires drum manufacturers to inform their customers of how to close drum fittings and closure rings in order to ensure the drum will perform to the marking level indicated thereon. Please see that this information is available to those responsible for closing the drums after filling. The use of non-sparking tools is recommended to close drums containing hazardous materials.

CLOSING INSTRUCTIONS FOR 1A2 FULL OPEN HEAD DRUMS WITH SOLID SEAL ™ BOLT RING CLOSURE – TYPE I

(TYPE I IS SUPPLIED WITH A 5/8” BOLT AND RETAINING NUT)

1.) Covers must be firmly seated on the top of the drum with the gasket in place. Care must be taken to ensure that the gasket has not become dislodged, looped, or twisted during either removal or placement of the cover.

2.) Snap the closing ring over the cover and curl area of the drum, making sure that it is seated over the entire perimeter. Check to see that the cover and drum curl are fully contained and centered within the recess of the ring.

3.) Insert the 5/8” diameter bolt through the unthreaded ring lug and tighten the bolt while either compressing the gasket with a mechanical head compressing device, or, if a head compressor is unavailable, simultaneously tapping the outside of the closing ring around the entire perimeter with a non-sparking mallet.
   a.) The bolt should be tightened until the two lugs meet and touch each other with no gap. A torque of at least 30 ft-lb should be applied. If a mechanical head compressor is not used, the torque required to bring the lugs together with no gap may be higher.
   b.) When the ring and bolt are assembled and tightened correctly the two lugs should meet and touch each other with no gap, regardless of the torque required. If the lugs do not meet, go back to step 1 and repeat steps 1 through 3.

4.) Following tightening of the bolt to the specified torque, thread the 5/8” diameter retaining nut onto the end of the bolt extending through the outside ring lug. The retaining nut must be tightened until its face surface comes into contact with the face surface of the threaded ring lug.
DOT 178 Notice
Closure Requirements for Steel Drums

In Regulation 49 CFR 178.2(c), the Department of Transportation (DOT) requires drum manufacturers to inform their customers of how to close drum fittings and closure rings in order to ensure the drum will perform to the marking level indicated thereon. Please see that this information is available to those responsible for closing the drums after filling. The use of non-sparking tools is recommended to close drums containing hazardous materials.

5.) IMPORTANT: Open head cover gasket performance can be affected by time (age), temperature, exposure to chemicals and ozone. This could result in the loss of cover gasket elasticity. Therefore, it is strongly recommended verifying the closing ring bolt for correct torque prior to shipping.

CAUTION
Per 49 CFR 172.22, it is the responsibility of the person offering a hazardous material for shipment to assure that the containers selected are appropriate to the product being shipped, and that the containers are properly assembled, as per the above Closing Instructions. The correct installation and torquing of all closures, rings, plugs, etc. should be verified by the shipper prior to releasing a package for transportation.

Additionally, it is the responsibility of the Shipper to determine the suitability of any packaging for transportation of hazardous materials by Air. For shipments by Air, the shipper must refer to all applicable provisions (including the Hazardous Materials Table and 172.321) in 49 CFR, and take into account the characteristics of the material being shipped and the performance capabilities of the container sold to you.

CAUTION
The components of a drum from one drum manufacturer should not be intermingled with those of another. Components from the same manufacturer from different drum specifications likewise should not be intermingled. This ensures proper fit of the subassemblies and performance of the drum. Any alteration of the drum specification that varies the design of the package from the design that was tested or any deviation from the above, voids said certification.
DOT 178 Notice
Closure Requirements for Steel Drums

CLOSING INSTRUCTIONS FOR 1A2 FULL OPEN HEAD DRUMS
WITH SOLID SEAL™ BOLT RING CLOSURE – TYPE II
(TYPE II HAS A 5/8” BOLT WITH A NYLON LOCKING PATCH
WHICH ELIMINATES THE NEED FOR A RETAINING NUT OR
JAM NUT)

1.) Covers must be firmly seated on the top of the drum with the gasket in place.
   Care must be taken to ensure that the gasket has not become dislodged, looped, or
twisted during either removal or placement of the cover.

2.) Snap the closing ring over the cover and curl area of the drum, making sure that it
   is seated over the entire perimeter. Check to see that the cover and drum curl are
   fully contained and centered within the recess of the ring.

3.) The bolts for this application have a nylon locking patch on the threads. Insert the
   5/8” diameter nylon patched bolt through the unthreaded ring lug and tighten the
   bolt while either compressing the gasket with a mechanical head compressing
device, or, if a head compressor is unavailable, simultaneously tapping the outside
   of the closing ring around the entire perimeter with a non-sparking mallet.
   a.) The bolt should be tightened until the two lugs meet and touch each
       other with no gap. A torque of at least 30 ft-lb should be applied. If a
       mechanical head compressor is not used, the torque required to bring
       the lugs together with no gap may be higher.
   b.) When the ring and bolt are assembled and tightened correctly the two
       lugs should meet and touch each other with no gap, regardless of the
       torque required. If the lugs do not meet, repeat steps 1 through 3.
   c.) For drums with poly liner bags, the gap should be 3/8” or less while
       ensuring that the liner is seated uniformly over the curl of the drum
       and protruding out from under the cover.

NOTE: Per IFI STD 124, a nylon patch bolt may be reused (re-torqued) a maximum of
five (5) times, after which it should be replaced.

4.) IMPORTANT: Open head cover gasket performance can be affected by time
   (age), temperature, exposure to chemicals and ozone. This could result in the loss of
   cover gasket elasticity. Therefore, it is strongly recommended verifying the closing ring
   bolt for correct torque prior to shipping.
In Regulation 49 CFR 178.2(c), the Department of Transportation (DOT) requires drum manufacturers to inform their customers of how to close drum fittings and closure rings in order to ensure the drum will perform to the marking level indicated thereon. Please see that this information is available to those responsible for closing the drums after filling. The use of non-sparking tools is recommended to close drums containing hazardous materials.

**DRUM PLUGS**

Tighten all plugs to the recommended torque, while taking care that the plugs are not cross threaded into the flange and that the plug gaskets do not become looped or twisted while tightening. If drums are not intended for immediate shipment after filling and torquing of plugs, plug torque should be rechecked prior to shipment, and plugs retorqued as necessary.

**HEXAGONAL HEAD PLUGS / RECOMMENDED TORQUE**

*(Rieke Vise Grip & Vise Grip II style)*

**STEEL PLUGS**

<table>
<thead>
<tr>
<th></th>
<th>2” or 1 ½”</th>
<th>¾”</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 ft.-lb.</td>
<td>Rubber gaskets</td>
<td>15 ft.-lb.</td>
</tr>
<tr>
<td>40 ft.-lb.</td>
<td>Plastic gaskets</td>
<td>20 ft.-lb.</td>
</tr>
</tbody>
</table>

**PLASTIC or NYLON PLUGS**

<table>
<thead>
<tr>
<th></th>
<th>2”</th>
<th>¾”</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 ft.-lb.</td>
<td>Rubber gaskets</td>
<td>9 ft.-lb.</td>
</tr>
</tbody>
</table>
DOT 178 Notice
Closure Requirements for Steel Drums

In Regulation 49 CFR 178.2(c), the Department of Transportation (DOT) requires drum manufacturers to inform their customers of how to close drum fittings and closure rings in order to ensure the drum will perform to the marking level indicated thereon. Please see that this information is available to those responsible for closing the drums after filling. The use of non-sparking tools is recommended to close drums containing hazardous materials.

ROUND HEAD PLUGS / RECOMMENDED TORQUE

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Steel Plugs</th>
<th>Rubber gaskets</th>
<th>Polyethylene or Teflon</th>
<th>Plastic or Nylon gaskets</th>
</tr>
</thead>
<tbody>
<tr>
<td>2”</td>
<td>20 - 30 ft.-lb.</td>
<td>9 - 15 ft.-lb.</td>
<td>15 ft.-lb.</td>
<td></td>
</tr>
<tr>
<td>3/4”</td>
<td>30 ft.-lb.</td>
<td>9 ft.-lb.</td>
<td>15 ft.-lb.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Nylon or Polypropylene Plugs</th>
<th>Rubber gaskets</th>
<th>Polyethylene gaskets</th>
<th>All gaskets</th>
</tr>
</thead>
<tbody>
<tr>
<td>2”</td>
<td>20 ft.-lb.</td>
<td>9 ft.-lb.</td>
<td>9 ft.-lb.</td>
<td>8-12 ft.-lbs</td>
</tr>
</tbody>
</table>
**CLOSURE INSTRUCTIONS**

In compliance with DOT 49 CFR §178.2 (c), persons shipping these drums must comply with the following closure instructions.

---

**BOLT RING CLOSURE FOR OPEN HEAD DRUMS**

1. CHECK GASKET – to ensure cover gasket is properly fitted into cover groove (see Fig. 1 or 2).
2. PLACE COVER ON DRUM – being careful to properly seat gasket all around curl (see Fig. 3).
3. POSITION & SEAT RING – with lugs downward. Ensure the inner channel of the closure ring engages entire drum curl and cover (see Fig. 4). Apply downward pressure on cover. Use a non-sparking dead-blow mallet to further seat cover and drum curl into the inner channel of the ring.
4. INSERT BOLT – through the unthreaded lug of the ring. Assemble the locking hex nut onto the threaded end of the bolt and tighten into the threaded lug (see Fig. 5). Close the ring to an initial gap of about 1/2”.
5. TIGHTEN THE BOLT – with a calibrated torque wrench while using downward pressure on the cover and hammering the outside of the ring with a non-sparking dead-blow mallet to further seat the ring. Continue tightening and hammering the ring until the torque stabilizes at 55 - 60 ft-lbs and does not decrease when further hammering on the ring circumference is performed. Ring ends must not touch. (Effective 25 September, 2006 and in accordance with CFR 178.2(c), we have revised this procedure to use torque as the most effective closure requirement.)
6. LOCK RING – by tightening the nut against the unthreaded lug (see Fig. 6).

---

**OPEN HEAD DRUM - LEVERLOCK CLOSURE**

1. CHECK GASKET – to ensure cover gasket is properly fitted into cover groove (see Fig. 1 or 2).
2. PLACE COVER ON DRUM – being careful to properly seat gasket around curl (see Fig. 3).
3. OPEN LEVERLOCK – and place expanded ring on to the drum cover with the vertical-skirt hugging the drum body (see Fig. 7).
4. CLOSE LEVERLOCK – by slowly and cautiously pulling the LEVERLOCK so that the outer ring engages the cover / body juncture. Downward pressure along with tapping the outside of the ring may assist in an even closure (see Fig. 8).
5. ENGAGE LOCK – to complete closure.

---

**DRUMS WITH FITTINGS**

1. CHECK GASKETS – and ensure gasket is properly seated on plug.
2. TIGHTEN – to specifications listed in the table, and do not cross thread.

<table>
<thead>
<tr>
<th>PLUG TYPE</th>
<th>Tri-Sure style</th>
<th>Rieke style (Plastic)</th>
<th>Rieke style (Steel)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GASKET TYPES</strong></td>
<td>Buna</td>
<td>Poly or Teflon</td>
<td>PE / PP (Composite Drums)</td>
</tr>
<tr>
<td>½” PLUG</td>
<td>12 ft-lbs</td>
<td>20 ft-lbs</td>
<td>—</td>
</tr>
<tr>
<td>2” PLUG</td>
<td>20 ft-lbs</td>
<td>30 ft-lbs</td>
<td>10 ft-lbs</td>
</tr>
</tbody>
</table>

---

**IMPORTANT NOTES:**

1. Closure Instructions Rev. D are valid to close all product tested with and / or manufactured under Closure Instructions Rev C. & Rev. B. Revisions are clerical and do not effect the actual closing of product.
2. A drum is properly closed only when all steps are completed in the matter and sequence indicated. If difficulties are encountered, do not ship the drum call manufacturer for further instruction.
3. Under the applicable DOT regulations, any changes made to the method of closure or closure components constitute a change in the design type of this packaging, and invalidates the certification.
4. After filling and prior to transport, the shipper should verify the torque of all closures to determine if the effects of heating and cooling or gasket relaxation have resulted in the need to re-tighten the closure.
5. Drums (other than the composites) are tested at room temperature.
Closed-Head Steel Drum (1A1)

1. Check gaskets and ensure that they are properly seated on the plugs.
2. Tighten plugs using a torque wrench to the torque specifications presented here.
3. Take care not to cross threads.

<table>
<thead>
<tr>
<th>Size &amp; Fitting Style</th>
<th>REQUIRED TORQUE</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>STEEL PLUGS</td>
<td>NYLON OR POLY PLUGS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buna Rubber Gasket</td>
<td>Poly Gasket</td>
<td>Buna Rubber Gasket</td>
</tr>
<tr>
<td>2&quot; Rieke Type</td>
<td>30 ft. lbs.</td>
<td>40 ft. lbs.</td>
<td>20 ft. lbs.</td>
</tr>
<tr>
<td>3/4&quot; Rieke Type</td>
<td>15 ft. lbs.</td>
<td>20 ft. lbs.</td>
<td>9 ft. lbs.</td>
</tr>
<tr>
<td>2&quot; Tri-Sure Type</td>
<td>20 ft. lbs.</td>
<td>30 ft. lbs.</td>
<td>20 ft. lbs.</td>
</tr>
<tr>
<td>3/4 Tri-Sure Type</td>
<td>12 ft. lbs.</td>
<td>20 ft lbs.</td>
<td>8 ft. lbs.</td>
</tr>
</tbody>
</table>

Open-Head Steel Drum (1A2)

**Bolt-Ring Closure**

1. Check the gasket to ensure it is properly fitted into the bottom groove of the drum cover (Figure 1 and 2).
2. Place the cover on the drum, being careful to seat the gasket onto the entire lip (curl) of the drum sidewall (Figure 3).
3. Position the closure ring, with lugs downward, so that it engages the entire circumference of the drum cover and sidewall. Apply pressure on the ring and cover, and tap the circumference of the ring with a non-sparking mallet to further seat the cover and sidewall into the inner channel of the ring (Figure 4).

4. Insert the bolt into the unthreaded lug of the ring. (If the ring is equipped with a locking hex nut, affix the nut onto the bolt.) Direct the end of the bolt into the threaded lug of the ring (Figure 5). Close the ring to an initial gap between the lugs of approximately ½ inch.

5. Tighten the bolt while further tapping the edges of the ring with the mallet.

6. When fully assembled, the gap between the free ends of the ring should not exceed ¼ inch, nor should the ends of the ring touch (Figure 6).
CLOSING INSTRUCTIONS
UN 1A1 Non-Removable Head Steel Drums
UN 1A2 Removable Head Steel Drums

All non-removable head, UN 1A1 Steel drums, all fully removable head UN 1A2 Steel drums, which are supplied with plugs and gaskets, must be closed for shipment using only the plugs and gaskets supplied and specified in the design qualification test for the drum as indicated below:

• TIS Plugs: 2-inch and 3/4-inch steel and plastic, installed in TIS steel flanges of corresponding size and tightened to the torque recommended by the manufacturer for the plug and gasket used as indicated below.

• Rieke® Plugs: 2-inch and 3/4-inch steel and plastic, installed in the appropriate Rieke® steel or plastic flange of corresponding size and tightened to the torque recommended by the manufacturer as indicated below.

• Equivalent plugs: 2-inch and 3/4-inch steel and plastic, installed in the appropriate equivalent Steel flange of corresponding size and tightened to the torque recommended as indicated below.

Note: Equivalent plugs and TIS plugs may be used interchangeably in the octagonal design fittings.

Fixture  

Note: If prescribed ring gap cannot be achieved, torque ring to 75 ft. lbs. (+/- 5 ft. lbs.)

If head compressor is not available, start bolt into lug, alternate tapping of ring with a mallet and drive bolt with wrench, until bolt ring ends meet requirements.

When ring has been tightened as required, the jam nut must be tightened against the unthreaded lug to prevent the bolt from backing out of the closing ring.

Drum Thickness 1/8/0.9/1.1 = Ring Gap 3/16" or less

Prescribed Closure Torques for Steel Drums (ft. lbs.)

<table>
<thead>
<tr>
<th>ITEM</th>
<th>3/4&quot; T/S STYLE CLOSURES</th>
<th>2&quot; T/S STYLE CLOSURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>T/S Steel Plugs</td>
<td>12 ft.lbs.</td>
<td>20 ft.lbs.</td>
</tr>
<tr>
<td>Rubber Gaskets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polyethylene, Teflon® Gaskets</td>
<td>20 ft.lbs.</td>
<td>30 ft.lbs.</td>
</tr>
<tr>
<td>T/S Zinc Die Cast Plugs</td>
<td>12 ft.lbs.</td>
<td>20 ft.lbs.</td>
</tr>
<tr>
<td>Rubber Gaskets</td>
<td>20 ft.lbs.</td>
<td>30 ft.lbs.</td>
</tr>
<tr>
<td>Polyethylene Teflon® Gaskets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T/S Polypropylene 7 Nylon Plugs</td>
<td>8 ft.lbs.</td>
<td>20 ft.lbs.</td>
</tr>
<tr>
<td>Rubber Gaskets</td>
<td>8 ft.lbs.</td>
<td>30 ft.lbs.</td>
</tr>
<tr>
<td>Polyethylene Gaskets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T/S Polyethylene Plug, High Density</td>
<td>8 ft.lbs.</td>
<td>15 ft.lbs.</td>
</tr>
<tr>
<td>Rubber Gaskets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T/S Self Gasketing Polyethylene Plugs</td>
<td>5 ft.lbs.</td>
<td>12 ft.lbs.</td>
</tr>
</tbody>
</table>

RIEKE® OR EQUIVALENT CLOSURES

<table>
<thead>
<tr>
<th>Steel Flanges</th>
<th>Nylon Flanges</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4&quot;</td>
<td>2&quot;</td>
</tr>
<tr>
<td>(ft.lbs.)</td>
<td>(ft.lbs.)</td>
</tr>
<tr>
<td>Rieke® Steel Plugs</td>
<td>15 ft.lbs.</td>
</tr>
<tr>
<td>Rubber Gaskets</td>
<td>20 ft.lbs.</td>
</tr>
<tr>
<td>Polyethylene Gaskets</td>
<td></td>
</tr>
<tr>
<td>Rieke® Plastic Poly-ViseGrip® Plugs</td>
<td>9 ft.lbs.</td>
</tr>
<tr>
<td>Rubber Gaskets</td>
<td>9 ft.lbs.</td>
</tr>
<tr>
<td>Polyethylene Gaskets</td>
<td>9 ft.lbs.</td>
</tr>
<tr>
<td>Rieke® Poly-ViseGrip® Plug with Built-In Gasket</td>
<td>9 ft.lbs.</td>
</tr>
</tbody>
</table>

Recommended torque tolerance: +6,-2 ft.lbs.

Open Head Covers
All removable head, UN 1A2, Steel drums supplied with bolt rings, bolts, gaskets and lids must be Closed for shipment using only the components supplied.

• Place drum head, with gasket in place, on the curl at the top of the drum body. (See Figure 1)

• Place bolt ring around drum head and curl. (Note: Preferred orientation is with the ring gap in line with the 2" fitting.)

• Using a head compressor, apply force to the top of the drum head assembly to compress head gasket.

• Drive bolt into lug until the ends of the bolt ring are as follows: (See Figure 2)

Note: If prescribed ring gap cannot be achieved, torque ring to 75 ft. lbs. (+/- 5 ft. lbs.)

If head compressor is not available, start bolt into lug, alternate tapping of ring with a mallet and drive bolt with wrench, until bolt ring ends meet requirements.

When ring has been tightened as required, the jam nut must be tightened against the unthreaded lug to prevent the bolt from backing out of the closing ring.

Drum Thickness 1/8/0.9/1.1 = Ring Gap 3/16" or less
SECTION B: POLY DRUMS

In the following pages, you will find the UN Closing Instructions for the New Poly Drums that we commonly sell.

Below, you will see examples of the UN Certification markings that could be on the drums that you purchased. These are examples only, and may not be the exact marking that is on your drum(s). We are showing you these examples so that you know how to identify the manufacturer’s code, and reference the corresponding closing instructions in the coming pages. If you cannot find the appropriate closing instructions, or need any guidance, whatsoever, please contact us for assistance.

You will notice that part of the sample certifications are in **BOLD/UNDERLINED FONT**. This identifies the manufacturer’s code.

---

**SAMPLE UN CERTIFICATION – TIGHT/CLOSED HEAD POLY DRUM:**

LIQUID LADINGS

![UN Symbol] 1H1 / Y1.8 / 100 / 15 / USA / **M1234**

**SAMPLE UN CERTIFICATION – OPEN HEAD POLY DRUM:**

LIQUID LADINGS

![UN Symbol] 1H2 / Y1.2 / 100 / 15 / USA / **M1234**

SOLID LADINGS

![UN Symbol] 1H2 / Y200 / S / 15 / USA / **M1234**

Once you’ve identified the manufacturer’s code on your drum, please reference the following closing instructions:

<table>
<thead>
<tr>
<th>MANUFACTURER’S CODE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>M4895, M4232, M5123, M4602, M4235</td>
<td><strong>PG. B1-B7</strong></td>
</tr>
<tr>
<td>M4128</td>
<td><strong>PG. B8</strong></td>
</tr>
<tr>
<td>M5114</td>
<td><strong>PG. B9</strong></td>
</tr>
<tr>
<td>M4990</td>
<td><strong>PG. B10-B12</strong></td>
</tr>
</tbody>
</table>
CLOSING INSTRUCTIONS -- PLASTIC DRUMS

United States Department of Transportation regulations state that packaging manufacturers are required to notify each person to whom the packaging is transferred of all requirements not met at the time of transfer. This requirement is given in Title 49, Code of Federal Regulations (49 CFR), Part 178 Specifications for Packagings, § 178.2 (c). In addition this Paragraph requires the closing information to be provided to any person to whom this package is transferred who may need to close the packaging prior to re-shipment. Furthermore, it is the shipper’s responsibility as set forth in §173.22(a)(4) to ensure that these closing instructions are carried out as described. In order to ensure the instructions are followed in a manner to result in safe transport of hazardous materials the shipper is obligated, as set forth in § 172.704(a)(4), namely - function specific training - to train his/her employees in the correct way to close the packaging for shipment. In order to fulfill this obligation the shipper often turns to the packaging manufacturer for this training since the manufacturer has designed, produced and tested the packaging to meet UN performance standards. The manufacturer is prepared to provide this training in addition to supplying closing instructions. It has been the practice of the manufacturer to send closing instructions attached to the shipping documents with each shipment of drums. This document provides specific information on closing the manufacturers packagings.

These closing instructions must be given to the individuals responsible for closing the packagings prior to shipment. Many companies use electronic copies as site specific work instructions and/or use laminated hard copies posted at the fill lines for reference by the fill line operators. A hard copy (printed) must be maintained by the filler or offeror for shipment.

The following tables and text give examples of the parts and closing torque required to prepare the drum for shipment so that it is capable of meeting the performance standards indicated by the UN marking on the side or top of the packaging.

The manufacturer recommends that only parts that have been tested and certified by the manufacturer be used to close the packagings for shipment. Any UN marking is voided if parts or components other than those as sold with the original packaging design are used. Each closure is supplied with the proper gasket in accordance with the UN design type tests for the packaging supplied. In the case of removable head drums the lids, gaskets and locking rings are supplied as tested.

PRIOR TO CLOSING:

Inspect each closure to ensure that the closure has the proper gasket and that both closure and gasket are in good condition. Inspect the sealing surface for damage and make sure the threads and sealing surfaces are dry. Replace any defective gaskets, plugs or lids with new, defect free parts identical to those in the design qualification.

CLOSING PROCEDURES FOR PLUGS AND CAPS:

1. The plug or cap is inserted into the appropriate opening and screwed down “hand tight” until the gasket is in contact with the sealing surface.
2. A torque wrench capable of applying the proper torque to the fitting as specified by the closing instructions following is then used to tighten the plug or cap until it reaches the pre-set torque as indicated by a release or click. These wrenches should be calibrated at least annually. Adjustable wrenches available at hardware stores, auto parts stores, and through equipment catalog suppliers and drum parts suppliers.

PLASTIC NON-REMOVABLE HEAD DRUMS

All non-removable head, UN 1H1, and 1H1W Plastic Drums, 49 CFR § 178.509(a)(1), 15 gallon to 65 gallon nominal capacity supplied with plug or screw cap closures with gaskets must be closed for shipment using only the closures and gaskets supplied and specified in the design qualification test for the drum as indicated below:

<table>
<thead>
<tr>
<th>Part Number/Part Size</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>L10 EPDM; L10B Buna; L10VT FPM</td>
<td>20-25 ft.-lbs.</td>
</tr>
<tr>
<td>L16 EPDM; L16B Buna; L16VT FPM; L16RVCLG</td>
<td>20-25 ft.-lbs.</td>
</tr>
<tr>
<td>L16 Vented EPDM; L16V Buna; L16V VT FPM</td>
<td>20-25 ft.-lbs.</td>
</tr>
<tr>
<td>L16 EPDM</td>
<td>20-25 ft.-lbs.</td>
</tr>
<tr>
<td>C34 or C39 (S) AD with C31 EPDM; C31 Silicone</td>
<td>30-40 ft.-lbs.</td>
</tr>
<tr>
<td>L1OR-HD with L11F-HD; L16RHD; Polyolefin and Santoprene® gaskets</td>
<td>25-30 ft.-lbs.</td>
</tr>
<tr>
<td>70x6 BCS LR10W w/LR111EPDM; 70x6 BCS LR10W w/ LR11VT FPM</td>
<td>35-40 ft.-lbs.</td>
</tr>
<tr>
<td>56x4 BCS LR17 w/LR12 EPDM</td>
<td>20-25 ft.-lbs.</td>
</tr>
<tr>
<td>L16-6RK/EPDM</td>
<td>37-42 ft.-lbs.</td>
</tr>
<tr>
<td>C34-6RK/EPDM</td>
<td>8-10 ft.-lbs.</td>
</tr>
</tbody>
</table>

1 ACT drums may also be supplied with the standard NPS and buttress fittings noted above and should be closed to those torque values
2 Polycon® II may also be supplied with the standard NPS fittings noted above and should be closed with those torque values
PLASTIC REMOVABLE HEAD DRUMS

<table>
<thead>
<tr>
<th>Part Size / Part Number (Plug number with gasket)</th>
<th>Plug Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vanguard and Vanguard HLR lid with 2 inch NPS plug</td>
<td>15-20 ft.-lbf.</td>
</tr>
<tr>
<td>Vanguard and Vanguard HLR lid with ¾ inch NPS plug</td>
<td>6-9 ft.-lbf.</td>
</tr>
</tbody>
</table>

All removable head, UN 1H2, Plastic Drums, 49 CFR § 178.509(a)(2), of nominal capacity 8 to 60 U.S. gallons supplied with plastic lids, gaskets and associated clamp bands, or locking rings, or bolt rings, must be closed for shipment using only the components supplied and specified in the design qualification tests according to the following installation instructions:

- Place drum lid with gasket and selected clamp band as supplied on the top opening of the drum body.
- Firmly place lid onto top opening by applying downward pressure to lid above drum sidewall.
- While pressing down on lid, engage locking mechanism of clamp band to secure the lid in place. Make sure the locking mechanism is completely latched. Insert locking tab into slots in lever lock handle.

Lever Lock Side View

Please note that the Vanguard 57 gallon HLR drum carries a liquid rating Y1.2/100 with a lever lock closure. This is valid when the lid is factory installed with a lid press. This drum should be filled through the 2-inch opening in the lid and bungs closed as in the steps listed above. If the lid is removed the liquid rating is no longer valid unless a new lid from the same manufacturer is installed with a lid press and a lever lock from the same manufacturer is used for closure. Following is a set of pictures instructing the user to line the parting line of the drum, the bungs and the latch in a straight line as that is the configuration under which it was tested and certified.
When installing lid on drum align bungs with the parting line on the drum.

When installing ring align latch with the ¾ plug.

Drum parting line on the side with arrows.

USE THESE INSTRUCTIONS FOR MANUFACTURER'S CODE: M4895, M4232, M5123, M4602, M4235.
The removable head plastic drum may be provided with a bolt ring closing device. This bolt ring is closed as follows:

- Place lid with gasket in place, as supplied, on the curl at the top of the drum body.
- Place bolt ring around the drum head and curl.
- Using a head compressor, apply force to the top of the drum head assembly to compress head gasket.
- Drive bolt into ring until the ends of the bolt ring are at a 3/8-inch or less ring gap.
- If a head compressor is not available, start bolt into threaded eye, alternating tapping of ring with a mallet and drive bolt with a wrench, until bolt ring ends meet the above requirements.
- When ring has been tightened as required, the jam nut, if supplied, must be tightened against the left threaded eye.
- In the case of the Vanguard V57 HLR drum supplied with a bolt ring for liquid service, the bolt may have no jam nut but may use a shoulder type bolt. Follow the previous steps to tighten the bolt until the shoulder meets the threaded eye and can not be advanced.

![Bolt Ring Closure](image)

The removable head drum may also be fitted with a plastic lock ring assembly. This plastic lock ring is closed as follows:

- Place lid with gasket in place, as supplied on the curl at the top of the drum body.
- Push firmly on lid to ensure an even seal.
- Place plastic locking ring around lid making sure to cover both the lid and the underside of the top of the drum with the locking band part of the ring.
- Pull the handle until the clasp mechanism closes.
- Attach Tamper Evident/Locking pin in hole provided.
CAP SEALS AND TAMPER EVIDENT DEVICES

Many fillers order their drums with closures “factory torqued” or with cap seals and tamper evident device factory installed. Keep in mind that the filler is responsible to close the packaging prior to shipment and having a closure inaccessible may be viewed by regulators as a failure to properly close the packaging. It has been demonstrated repeatedly that plastic plugs can relax their torque thus “factory torqued” plugs may not stay that way and should be verified.

Further cap seals are just that-seals. If a vented closure is required of a lading a cap seal can seal off the vented plug allowing for potentially dangerous pressure build up in the drum. Vented or less occlusive plug caps are available and should be used with vented plugs.
DIP TUBES AND EXTRACTION VALVE ASSEMBLIES

As more users strive to keep their purchased product clean as possible and address employee safety, drums can be outfitted at the manufacturer with extraction valves and dip tubes. These systems reduce the potential for human contact and many are totally closed, keeping dust and dirt out of the product. For self installation these are suggested torques as they represent the values used for factory installed units. Manufacturers’ specific recommendations should always be consulted—these are only a guide.

<table>
<thead>
<tr>
<th>Part Size / Part Number (Plug number with gasket)</th>
<th>Plug Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Micro Matic EPV (plastic w/FKM or EPDM gaskets)</td>
<td>20-25 ft.-lbs.</td>
</tr>
<tr>
<td>B. Micro Matic RSV (stainless steel w/FKM, EPDM, or PE gaskets)</td>
<td>20-25 ft.-lbs.</td>
</tr>
<tr>
<td>C. Colder Products Drum Quick Pro buttress and NPS (FKM, Buna, EPDM, PE or silicone rubber gaskets)</td>
<td>20-25 ft-lbs</td>
</tr>
<tr>
<td>D. Entegris QCII Shipping Cap</td>
<td>5 ft-lbs</td>
</tr>
<tr>
<td>E. Entegris QCII Drum Insert</td>
<td>20 ft-lbs</td>
</tr>
<tr>
<td>E. Entegris QCIII</td>
<td>20 ft-lbs</td>
</tr>
<tr>
<td>F. Taylor Cain DV-155</td>
<td>5 ft-lbs</td>
</tr>
<tr>
<td>F. Taylor Cain A-PIC-36</td>
<td>36 ft-lbs</td>
</tr>
</tbody>
</table>

COMPOSITE DRUMS

All non-removable head, UN 6HA1, Composite drums, 49 CFR § 178.522(a)(1), 55 gallon nominal capacity supplied with plug or screw cap closures with gaskets must be closed for shipment using only the closures and gaskets supplied and specified in the design qualification test for the drum as indicated below:

<table>
<thead>
<tr>
<th>Part Size / Part Number (Plug number with gasket)</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. HDPE Liner 6HA1/X1.8/350 and X1.8/300: 2 inch double buttress L-10xx with L11 EPDM</td>
<td>29-32 ft-lbs</td>
</tr>
<tr>
<td>D. Nylon/Polypropylene 2 inch with EPDM Gasket</td>
<td>12-15 ft-lbs.</td>
</tr>
<tr>
<td>E. HDPE Liner 6HA1 with 56x4 mm PP metric plugs with BUNA Gaskets</td>
<td>18-22 ft-lbs</td>
</tr>
</tbody>
</table>
USE THESE INSTRUCTIONS FOR MANUFACTURER'S CODE: M4895, M4232, M5123, M4602, M4235

TORQUE WRENCHES

The following are photographs of various torque wrenches the manufacturer has found suitable to apply the required closing torque. These are typical units and other brands of adjustable wrenches are acceptable. These should be regularly calibrated.

Note: The manufacturer uses various identical design buttress and NPS plugs under the generic part numbers L10 and L16 respectively. They are supplied with the drum with gasket-installed ready for final closing for shipment. The plug and gasket are specific to the drum as tested. The closures must be properly installed and tightened to the torque shown or specified on the particular closing instructions for the drum supplied. Closures must be tightened to recommended torque using pre-set or variable-range machinist torque wrenches calibrated to the indicated value. Variable range machinist torque wrenches are available at most auto parts stores, catalog stores like Grainger and McMaster Carr, Sears, Home Depot, Lowes, on-line drum parts suppliers, and many others.

L-ring drums marked UN 1H1/Y1.9/150** must have a torque applied of 25-27 ft-lbs (34-37 N-m)
USE THESE INSTRUCTIONS FOR MANUFACTURER’S CODES: M4128

CLOSURE SPECIFICATIONS FOR TIGHT HEAD DRUMS

PLUGS MUST BE TORQUED TO THE FOLLOWING

2” NPT AND 2” BUTTRESS - over 150 kPa - 30 FT LBS, 100 kPa = 20 ft lbs
Dip tubes -  20 ft lbs
3/4” NPT -  9 FT LBS

Note: Closures must have gaskets to seal

CLOSURE SPECIFICATIONS FOR OPEN HEAD DRUMS

CLOSE AND SECURE LID WITH LOCKING RING - ATTACH HOLDING PIN FOR HANDLE TO KEEP RING CLOSED.

PLUGS MUST BE TORQUED TO THE FOLLOWING:

2” NPT AND 2” BUTTRESS - 20 FT LBS
3/4” NPT -  9 FT LBS

note: closures must have gaskets to seal
Pursuant to the requirements of the Department of Transportation in CFR 49 Part 1782 (c), this is your notification of the closing method used for the containers sold to you. This method of closure should be used to ensure that your containers have been closed in the same manner as when they were initially tested. If there is any question regarding proper closing methods, contact us.

PRIOR TO CLOSING:

Inspect each closure to ensure that the closure has the proper gasket and that both closure and gasket are in good condition. Inspect the sealing surface for damage and make sure the threads and sealing surfaces are dry and in good condition.

55 & 30 Gallon Open-Head Drum:

To Close:

1) Place cover on drum.
2) Firmly apply downward pressure on the lid to snap the cover into the drum opening.
3) Snap the closing ring over the cover and top lip of drum. Make sure that the writing on the closure lever is right side up. Also make sure that the bottom edge of the closing ring engages under the top lip of the drum.
4) Pull the locking lever closed, at the same time, tap the outside edge of the closing ring, beginning directly opposite the closing lever, with a rubber mallet until the lever is fully closed against the edge of the ring.
5) Snap the latch into the lever until it locks.
6) Drums closed in this manner have met the UN performance test requirements as specified on the container markings.
7) If the Flat Container Accessories cover has bung openings the bungs must be torque as follows: 2 inch to 20 foot-pounds – inch 9 foot-pounds.
8) If the Ribbed IPCC cover has bung openings the bungs must be torque as follows: 2 inch to 20 foot pounds and the inch to 7 foot pounds.

55 & 30 Gallon Tight- Head Drum with 2–2inch fittings (Buttress/NPT):

To Close:

1) Both fittings must be tightened after filling
2) Do not cross thread fittings. Use proper thread type (NPT or Buttress) in matching bunghole
3) Using a torque wrench of known calibration accuracy slowly apply 25 foot-pound to each fitting.
4) Drums closed in this manner have met the UN performance test requirements as specified on the container markings.
OPEN HEAD DRUM Model 1610 is UN certified. It is a 14 gallon drum with no handles. It's certification numbers are: 1H2/X65/S/xx/USA/M4990 AND 1H2/Y100/S/xx/USA/M4990

OPEN HEAD DRUM Model 1601 is UN certified. It is a 30 gallon drum with no handles. Its certification numbers are: 1H2/X100/S/xx/USA/M4990 And 1H2/Y100/S/xx/USA/M4990

OPEN HEAD DRUM Model 1652 is UN certified. It is a 20 gallon drum with handles. Its certification number is: 1H2/X40/S/xx/USA/M4990

This container is made of high density polyethylene which is chemically resistant to many materials. It is not chemically resistant to all materials. Do not fill with any material that is not chemically compatible with this container.

This container is certified for the use of solids. There must be enough absorbent material placed in the bag inside the drum to absorb all free liquids.

INSTRUCTIONS FOR USE

STEP 1:
Fill the drum. All contents must be placed inside the drum. The total weight of the drum lid, locking band, and the contents of the drum should not exceed (100kg=220lbs. for 1601 & 1610) or (65 kg=143lbs. for 1610) or (40 kg=88lbs. for 1652). There must be enough absorbent material in the drum to absorb all free liquids.

STEP 2:
Place the lid on the drum and center the lid on the drum by tucking the drum flange inside of the lid gasket area. Take the HD plastic band with both hands and open band as far as possible. Place band over lid and drum flange by tilting band to where the gap is over the lid and drum flange. Then level the band down over the lid and start to squeeze the band over the lid and drum flange starting opposite the lever and walk the band around with both hands to the lever and then place one hand opposite the band lever on the drum to lock the band lever securely.
OPEN HEAD DRUM Model 1610M(B) is UN certified. It is a 14 gallon drum in yellow or blue color with no handles. Its certification numbers are: 1H2/X65/S/xx/USA/M4990 and 1H2/Y100/S/xx/USA/M4990. OPEN HEAD DRUM Models 1601M(B) and 1602 are UN certified. They are 30 gallon drums in yellow or blue color with no handles. Their certification numbers are: 1H2/X120/S/xx/USA/M4990 and 1H2/Y180/S/xx/USA/M4990. OPEN HEAD DRUM Model 1654 is UN certified. It is a 20 gallon drum in yellow color with handles. Its certification number is: 1H2/X75/S/xx/USA/M4990. This container is made of high density polyethylene which is chemically resistant to many materials. It is not chemically resistant to all materials. Do not fill with any material that is not chemically compatible with this container. This container is certified for the use of solids. There must be enough absorbent material placed in the bag inside the drum to absorb all free liquids.

INSTRUCTIONS FOR USE

**TOP VIEW**
METAL LEVER BAND FULLY OPEN

**METAL LEVER IN FULLY OPEN POSITION**

**METAL LEVER BAND IN CLOSED POSITION**

**LID**

**DRUM FLANGE**

**SIDE VIEW**

**FIGURE NO. 1**

**14 OR 30 GALLON DRUM**

**FIGURE NO. 2**

**MODEL 1654**

**ISO VIEW**

**STEP 1:**
Fill the drum. All contents must be placed inside the drum. The total weight of the drum, lid, locking band, and the contents of the drum should not exceed (65kg=143lbs, or 100kg=220lbs, for 1610M & 1610MB drums) or (120 kg=265lbs, or 180kg=397lbs, for 1601M & 1601MB drums) or (75 kg=165lbs. for 1654 drums). There must be enough absorbent material in the drum to absorb all free liquids.

**STEP 2:**
Place the lid on the drum and center the lid on the drum by tucking the drum flange inside of the lid gasket area. Take the metal lever band with both hands and open band as far as possible. Place band over lid and drum flange by tilting band to where the gap is over the lid and drum flange. Then level the band down over the lid and start to squeeze the band over the lid and drum flange starting opposite the metal lever and walk the band around with both hands to the lever and then place one hand opposite the metal lever on the drum to lock the band lever securely.
UN CLOSING INSTRUCTIONS FOR:
Poly Overpack/ Salvage Drums With Screw-On Cover

INSTRUCTIONS FOR USE:

TO OPEN:

Remove threaded lid by rotating lid counter-clockwise until fully disengaged from drum.

Notches are provided in lid to accept a wooden 2" x 4" board to assist in unscrewing lid. Hammer impact on 2" x 4" board may assist in loosening lid.

TO CLOSE:

Assemble threaded lid to top of drum by aligning and placing the lid onto open top of container, and then rotating lid in a clockwise direction until fully engaged. Notches are provided in lid to accept a wooden 2" x 4" board for additional tightening. Hammer impact on 2" x 4" board may be used to assist in tightening lid.
In the following pages, you will find the UN Closing Instructions for the fiber drums that we commonly sell.

Below, you will see examples of the UN Certification markings that could be on the drum(s) that you purchased. These are examples only, and may not be the exact marking that is on your drum. We are showing you these examples so that you know how to identify the manufacturer's code/name, and reference the corresponding closing instructions in the coming pages. If you cannot find the appropriate closing instructions, or need any guidance, whatsoever, please contact us for assistance.

You will notice that part of the sample certifications are in **BOLD/UNDERLINED FONT.** This identifies the manufacturer's code. If there is no "M" Number in the UN certification; please reference the manufacturer's name.

**SAMPLE UN CERTIFICATION – OPEN HEAD FIBER DRUM:**

![UN Mark] 1G / Y200 / S / 15 / USA / **M1234**

Once you've identified the manufacturer's code/name on your drum, please reference the following closing instructions:

<table>
<thead>
<tr>
<th>MANUFACTURER’S CODE/NAME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>M6063, M6064</em> Lock-Rim Style</td>
<td>PG. C1</td>
</tr>
<tr>
<td><em>BERENFIELD</em> Lock-Rim Style</td>
<td>PG. C2</td>
</tr>
<tr>
<td><em>M5373</em> All-Fiber Style</td>
<td>PG. C3</td>
</tr>
</tbody>
</table>
CLOSURE INSTRUCTIONS FOR LOCK-RIM FIBER DRUMS

1. PLACE COVER ON DRUM.
4. SNAP THE LATCH INTO THE LEVER UNTIL IT LOCKS, THEN APPLY A SEALING WIRE OR OTHER SEALING DEVICE THROUGH THE HOLES ON THE LATCH LEVER.
5. DRUMS CLOSED IN THIS MANNER HAVE MET THE UN PERFORMANCE TEST REQUIREMENTS AS SPECIFIED IN THE CONTAINER MARKINGS.

PRIOR TO CLOSING:

Inspect each lid to ensure that the lid has the proper gasket (if applicable) and that both lid and gasket (if applicable) are in good condition. Inspect the sealing surface on the drum for damage and make sure the sealing surface is dry. Replace any defective lids or gaskets (if applicable) with new, defect free parts identical to those listed in the design qualification and periodic recertification tests.

FIBER REMOVABLE HEAD DRUMS

1. All removable head, UN 1G, Fiber Drums, 49 CFR § 178.508(a), of nominal capacity 15 to 61 U.S. gallons supplied with plastic lids, or fiber lids, or metal lids, gaskets (if applicable) and associated locking rings, must be closed for shipment using only the components specified in the design qualification and periodic recertification tests according to the following installation instructions:
   • For fiber drums with poly bags:
     o Insert poly bag into drum. Standard bag is a 3 mil (0.076 mm) polyethylene bag. A “B3” will be in the product code. Specialty heavy duty and/or antistatic bags will be noted in like manner in the product code and certification documentation. Customer supplied bags must be at least identical to the bag specified in the certificates in terms of material of construction, size, thickness and strength.
     o Fill contents and close bag with wire tie or plastic cable (zip) tie as specified. Customer supplied ties must be at least identical to those in the certification documents in terms of size, material of construction, size and strength.
   • For all fiber drums, place drum lid with gasket (if applicable) and selected locking ring as supplied on the top opening of the drum body.
     o Place locking ring tab up for top latch style rings & tab down for bottom latch style rings.
     • Firmly place lid onto top opening by applying downward pressure to lid above drum sidewall.
     • While pressing down on lid, engage locking mechanism of locking ring to secure the lid in place. Make sure the locking mechanism is completely latched. Insert locking tab into slots in locking ring handle.
DOT 178 Notice Closure Requirements for LOCK-RIM Fibre Drums

In Regulation 49 CFR 178.2(c), the Department of Transportation (DOT) requires drum manufacturers to inform their customers of how to close drum fittings and closure rings in order to ensure the drum will perform to the marking level indicated thereon. Please see that information is available to those responsible for closing the drums after filling. The use of non-sparking tools is recommended to close drums containing hazardous materials.

After filling our container, it must be properly closed before being offered for transportation. The assembly guidelines listed below should be followed to ensure the container will perform to the marking level indicated thereon.

1. Covers must be firmly seated on the top of the drum.

2. For standard fibre drum rings, the latch must be snapped securely into place. For top lever locking rings, they must be fully closed into position.

3. Sealing the eyelets of the closing ring is recommended not only for evidence of tampering, but also to ensure the integrity of the closure.

CAUTION

The components of a drum from one manufacturer should not be intermingled with those of another. Components from the same manufacturer from different drum specifications likewise should not be intermingled. This ensures proper fit of the sub-assemblies and performance of the drum. Any alteration of the drum specification that varies the design of the package from the design that was tested for or on behalf of manufacturer voids said certification.
CLOSING INSTRUCTIONS FOR NEW FIBER DRUMS - ALL-FIBER STYLE

Pursuant to the requirements of the Department of Transportation in CFR 49 part 178.2 (C) (1), this is your notification of the closing method used for the new containers you have purchased. This method of closure should be used to ensure that your containers have been closed in the same manner as when they were tested. If there are any questions, contact your Sales Representative.

To Close;
I. Drum must be lined with a 3 mil. Poly bag prior to filling. Bag must be long enough that 12 inches minimum of poly extends over top after filling. End of bag must then be sealed with poly wire tie or equivalent wire seal. Excess liner must then be tucked into top of drum. Bags should be champion plastics chamotuf polyethylene bags or of equivalent strength. Customers wishing to use their own bags, or lighter gauge bags, should submit those bags for separate testing.

II. Telescoping cover must fit securely on drum. Push cover down until top edge of drum touches inside top of cover.

III. The cover must be attached to the drum body using adhesive backed tape. The Hollander Co. 150# 2 mil prt. Red 3 in. x 110 Ft. or its equivalent should be used. For drums rated UN Y/90 or less, the tape should be wrapped around the drum body a minimum of 4 times. There should be approximately 2 in. of tape on the cover and 2 in. on the body. For drums rated greater than UN Y/90, the tape should be wrapped a minimum of 8 times, with approximately 4 in. on both the cover and body. Press and rub the tape into place around the entire drum.

Drums closed in this manner have met UN Performance Test requirements as specified on the container markings.

Disclaimer;
Tests were conducted using sand, wood chips and mulch. Your product may adversely affect container materials. Product compatibility with containers is a shippers responsibility. These closing instructions do not take into account any hazards in your facility, or the handling, filling or shipping of your product. Any containers used for hazardous materials should be inspected prior to filling and shipping. Containers with obvious damage or deterioration should not be used. Consult your supervisor with any concerns.
SECTION D: POLY PAILS – OPEN HEAD – STANDARD COVER

In the following pages, you will find the UN Closing Instructions for the poly pails that we commonly sell.

Below, you will see examples of the UN Certification markings that could be on the pails that you purchased. These are examples only, and may not be the exact marking that is on your pail. We are showing you these examples so that you know how to identify the manufacturer’s code, and reference the corresponding closing instructions in the coming pages. If you cannot find the appropriate closing instructions, or need any guidance, whatsoever, please contact us for assistance.

You will notice that part of the sample certifications are in **BOLD/UNDERLINED FONT**. This identifies the manufacturer’s code. If there is no "M" Number in the UN certification; please reference the manufacturer's name.

*TO BE IN UN COMPLIANCE; MATHCING COVER FROMSAME MANUFACTURER MUST BE USED*

*SAMPLE UN CERTIFICATION – OPEN HEAD POLY PAIL – STANDARD COVER:

![UN Certification Markings]

Once you’ve identified the manufacturer’s code on your pail, please reference the following closing instructions:

<table>
<thead>
<tr>
<th>MANUFACTURER’S NAME/CODE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BWAY/NAMPAC/ICL</td>
<td>PG. D1-D2</td>
</tr>
<tr>
<td>M&amp;M (M2074, M6045)</td>
<td>PG. D3-D4</td>
</tr>
<tr>
<td>LETICA</td>
<td>PG. D5-D6</td>
</tr>
</tbody>
</table>

THE MANUFACTURER’S CODE/NAME WILL TYPICALLY BE FOUND ON THE BOTTOM OF THE PAIL
UN 1H2 OPEN HEAD CLOSING INSTRUCTIONS

PACKAGE:
1H2 Open-Head Package 6 - 6 Gallon Liquid UN rated packages
1H2 Open-Head Package 7 - 7 Gallon Solids UN rated packages

PURPOSE:
To insure that the 1H2 UN Cover is properly applied and sealed to the 1H2 Open-Head Pail

INSTRUCTION:
Press the cover downward onto the top of the drum with sufficient force so that the hook of cover engages the curl of the drum fully to ensure there isn't any leakage of the contents from the assembled package

PACKAGE ASSEMBLY:
- Ensure the gasket is in place in the cover and not twisted or deformed
- Loosely place the cover on top of the pail with any fittings 90° from the bailars of the pail
- Apply the cover using an appropriate tool, making certain the cover is fully engaged

The Manufacturer has certified UN 1H2 packages using three methods:
- Vertical Press
- Roller Press
- Mallet

Methods are described below:

VERTICAL CYLINDER PRESS:
- Air pressure required will vary depending on equipment used
- The platen of the press must be parallel to the surface plate
- Ensure the package is centered under press to allow uniform down-force during application
- Application pressure must be maintained for a minimum of one to two seconds
- The cylinder must be allowed to stroke a minimum of 1/4" below the top of covers
- A Burp Plug should not be used for this application
ROLLER PRESS:
- Design and operating rates for this type of press vary therefore the manufacturers operating instructions should be followed
- Manufacturer recommends as a starting point that the exit end of a roller cover press be set to the pail height (without cover) plus 0.200"
- Minor adjustments should be made as needed to ensure complete cover installation
- The rollers should exert even down-force through the length of the press such the package is completely sealed at the exit

MALLET:
- Only a rubber faced 3 lb Dead Blow Mallet should be used to close the 1H2 package
- Claw, ball peen or sledge hammers should not be used
- Strike the cover on the top-center of the outer ring until the hook of the cover snaps over the curl of the pail
- Continue to strike around the center of the outer ring in a clockwise or counter clockwise direction approximately every 2 inches until the cover is evenly seated

CLOSURE APPLICATION:
70mm SCREW CAP:
- Inspect the surface of the neck and the cap to ensure a smooth land area and properly formed threads
- Ensure the gasket is firmly seated into the closure
- Place the closure loosely over the opening
- Use calibrated equipment to tighten the cap to the specified closure torque
- Closure Torque for 70mm screw caps: 120"1bs – 150"1bs
Crimp-on Pour Spout:
- Inspect the surface of the neck and ensure the top curl is smooth and free from damage
- Push the fitting snugly onto the neck finish
- Using the appropriate crimp tool for the respective cap
- Operate the manual crimp tool or automatic pneumatic tool to full stroke to ensure complete crimp
M2/M2 and M2/M4 pails

* The M2 pail must always be used with the correct M2 or M4 lid in order to meet the UN/DOT performance oriented packaging standards.
* M2/M2 (tear tab lid) and M2/M4 (non-tear tab lid) containers are not UN certified for air transportation.
* ONLY the 5 through 5.5 gallon M2 pails with M4 lids are UN certified for liquids.

A. CLOSURE INSTRUCTIONS FOR THE M2/M2 and M2/M4 PAIL AND LIDS:

1. Pneumatic press (Figure A),
   a. Center the pail and lid under the press.
   b. Apply a minimum of 80 psi from a regulated air supply to the lid.
   c. Inspect lid after application to confirm it is properly seated.

   Figure A: Pneumatic Press

2. Rubber mallet
   a. Center the lid on the pail.
   b. Hammer the cover into place by striking cover in the center of the cover’s outer ring (Figure B).
   c. Strike cover until it snaps onto the rim of the pail. For best results, strike cover starting at 12 o’clock position, then 6 o’clock, then 3 o’clock and 9 o’clock. Continue to hammer the cover into place 360 degrees, until the cover is evenly seated all the way around the pail.
   d. Inspect lid after application to confirm it is properly seated.

   Figure B
3. When using the cover with the screw cap fitting, the recommended application torque for the 70mm cap is 120 inch pounds. Use a calibrated torque wrench to apply the closure to the fitting.
CLOSING INSTRUCTIONS FOR POLY PAILS MANUFACTURED BY LETICA CORPORATION:

Application Methods:

<table>
<thead>
<tr>
<th>Product</th>
<th>Recommended Mechanism</th>
<th>Material Type Packaged</th>
</tr>
</thead>
<tbody>
<tr>
<td>5UND Container / 5LUND Lid</td>
<td>Pneumatic Press</td>
<td>Liquid Hazardous Materials Group II &amp; III</td>
</tr>
<tr>
<td>20NSU Container / 5LUND Lid</td>
<td>Pneumatic Press</td>
<td>Liquid Hazardous Materials Group II &amp; III</td>
</tr>
<tr>
<td>20NEU Container / 5LUND Lid</td>
<td>Pneumatic Press</td>
<td>Liquid Hazardous Materials Group II &amp; III</td>
</tr>
<tr>
<td>7RUN Container / 5LUND Lid</td>
<td>Pneumatic Press</td>
<td>Solid Hazardous Materials Group II &amp; III</td>
</tr>
</tbody>
</table>

The manufacturer does not recommend the use of a mallet or roller closure for lid application. A pneumatic press is the recommended equipment for applying lids to this manufacturer's UN designated containers.

3.0 Pneumatic Press:

3.1 Design Criteria:

3.1.1 The frame of the pneumatic press and the surface where the container stands must be of significant strength to resist deflection during the application of a lid.

3.1.2 The closing plate has to be parallel to the base, within 1/32" (.79 mm), and be of sufficient strength to withstand deflection during the application of a lid (the plate should be made of steel, have a minimum thickness of 1/4", and have a minimum diameter of 13").

3.1.3 A burp plug must be installed in the center of the closing plate. Dimensions for the burp plug are 2 3/4" in diameter and 3/4" in depth.

3.2 Press Setup:

3.2.1 The size and pressure of the pneumatic cylinder is dependent on the type of lid and pail. The 5 gallon and 20 liter pails meeting the requirements for UN liquid hazardous materials are to utilize a cylinder with a 6” minimum diameter. The air pressure supplied to this cylinder is to be a minimum of 90 psi of uninterrupted air (load = 2545# min) and is not to exceed 110 psi (load = 3110# max).

3.2.2 The height of the plate should be set to between 1.5” and 2.5” above the package with the lid positioned for closure.
3.3 Lid Application:

Note: The fill level of the product in the container is not to interfere with the lid when closing.

3.3.1 Visually verify the container is undamaged including dents, nicks, scratches, etc.

3.3.2 Visually verify that the lid is undamaged, that any fittings are properly installed, and that there is a gasket fully installed in the lid.

3.3.3 Position the lid on the container with the fitting located between the handle attachment points. Be sure the lid is centered on the container.

3.3.4 Center the container / lid under the plate.

3.3.5 Confirm that the area is clear of anything that may potentially interfere with the plate travel and engage the closer. *The lid should lock with minimal hesitation (< 2 seconds) and produce an audible “snap”.

3.3.6 Verify that the lid is fully locked and that the perimeter of the lid skirt is free from bulging or flaring. If the lid skirt is bulged or appears uneven it may indicate that the lid is not fully locked.

Caution: *Insufficient momentum of plate travel may result in incomplete closure.

*If difficulties are encountered in the closing process place any affected containers in quarantine and contact us for further instructions.

4.0 Applicable Lid Attachments - No substitutes to the below identified attachments may be made.

<table>
<thead>
<tr>
<th>Lid</th>
<th>Attachments</th>
</tr>
</thead>
<tbody>
<tr>
<td>5LUND</td>
<td>Plain Lid</td>
</tr>
<tr>
<td></td>
<td>APC 25 Pour Spout – Note: Only option available for the 7-gallon.</td>
</tr>
<tr>
<td></td>
<td>APC 25 Pour Spout - Vented</td>
</tr>
<tr>
<td></td>
<td>Tri-Sure 70mm Screw Cap</td>
</tr>
<tr>
<td></td>
<td>Tri-Sure 70mm Screw Cap - Vented</td>
</tr>
<tr>
<td></td>
<td>Uni-Grip Flexspout</td>
</tr>
<tr>
<td></td>
<td>Uni-Grip Flexspout - Vented – Note: Available for 20-liter only.</td>
</tr>
</tbody>
</table>

Application of the lid attachments is as follows:

4.1 The APC closures require the use of an APC Installation Press with the following specifications: pneumatic cylinder – air pressure 100 psi, 5 inch stroke, 4 inch diameter bore, floating piston – minimum air pressure of 25 psi.

4.2 A recommended torque of 9 +6 / -2 ft-lbs is to be applied on the Tri-Sure 70mm PLASTICAP™ (Screw Cap) with EPDM rubber gasket. (Nominal 9 ft-lbs, range 7 – 15 ft-lbs / 108 in-lbs, range 84 – 180 in-lbs).

4.3 A Tri-Sure “Uni-Grip Hold Down Unit” is the recommended method for the application of the Uni-Grip spouts. Verification of the crimp must be performed using a Uni-Grip Crimp On “Go” Gage.

Caution: Improper installation of an attachment may result in leakage.
SECTION E: POLY PAILS – OPEN HEAD – SCREW-ON COVER

In the following pages, you will find the UN Closing Instructions for the poly pails that we commonly sell.

**PLEASE NOTE WITH PAILS IN THIS SECTION TO MATCH PAIL STYLE AND MANUFACTURER CODE**

Below, you will see examples of the UN Certification markings that could be on the pails that you purchased. These are examples only, and may not be the exact marking that is on your pail. We are showing you these examples so that you know how to identify the manufacturer’s code, and reference the corresponding closing instructions in the coming pages. If you cannot find the appropriate closing instructions, or need any guidance, whatsoever, please contact us for assistance.

You will notice that part of the sample certifications are in **BOLD/UNDERLINED FONT**. This identifies the manufacturer’s code.

*SAMPLE UN CERTIFICATION –OPEN HEAD POLY PAIL – SCREW-ON COVER:

- **New Generation Style Pails:**
  
  SOLID LADINGS 1H2 / Y30 / S / 15 / USA / M1234*

- **New Generation “Liquid” Style Pails:**
  
  LIQUID LADINGS 1H2 / Y1.5 / 30 / 15 / USA / M1234*

- **12 Gallon Drum Style Pails:**
  
  SOLID LADINGS 1H2 / Y53 / S / 15 / USA / M1234*

- **Lite Latch Style Pails:**
  
  SOLID LADINGS 1H2 / Y12 / S / 15 / USA / M1234*

Once you’ve identified the manufacturer’s code on your pail, please reference the following closing instructions:

<table>
<thead>
<tr>
<th>MANUFACTURER’S CODE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2074, M6045</td>
<td>PG. E1-E7</td>
</tr>
</tbody>
</table>
CLOSURE INSTRUCTIONS FOR SOLIDS:

Packaging Components required:
- Appropriately marked UN/DOT certified pail
- Matching lid size with trigger attached, **gasketed or non-gasketed**

**2.5, 3.5, 5.0 and 6.5 gallon NON-GASKETED lid: (Engraved MM on lid):**

To close, seat lid on top of pail (engraved MM on bottom of pail). Rotate lid clockwise until the small window by the trigger (see Ill. 1) is located to the left of the mark (see Ill. 2) on the side of the pail and continue rotating until the lid is fully tightened (see Ill. 4). **Inspect lid after application to confirm it is properly seated.**

![Illustration 1](image1)

![Illustration 2](image2)

Illustration 4 – Example of lid fully tightened with window to left of mark on pail, non-gasketed lid
2.5, 3.5, 5.0 and 6.5 gallon GASKETED lid: (Marked MM on lid):

To close, seat lid on top of pail (Marked MM on bottom of pail). Rotate lid clockwise until the small window by the trigger (see Ill. 1) is located to the left of the UN mark (see Ill. 3) on the side of the pail and continue rotating until the lid is fully tightened (see Ill. 5). **Inspect lid after application to confirm it is properly seated.**

Illustration 1

Illustration 3

Illustration 5 – Example of lid fully tightened, gasketed pail, window to left of UN mark.
0.6 and 1.25 gallon NON-GASKETED lid:

To close, seat lid on top of pail. Rotate lid clockwise until the trigger post (see Ill. 6) is located to the left of the mark (see Ill. 7) on the side of the pail and continue rotating until the lid is fully tightened. **Inspect lid after application to confirm it is properly seated.**

![Illustration 6](image1)
![Illustration 7](image2)

0.6 and 1.25 gallon GASKETED lid:

To close, seat lid on top of container. Rotate lid clockwise until the trigger post (see Ill. 6) is located to the left of the UN mark (see Ill. 8) on the side of the pail and continue rotating until the lid is fully tightened. **Inspect lid after application to confirm it is properly seated.**

![Illustration 6](image3)
![Illustration 8](image4)
CLOSURE INSTRUCTIONS FOR LIQUIDS and SOLIDS:

Only the 5 gallon Life Latch® Liquid style container with GASKETED lid is UN certified for liquid hazardous materials. Package components required:

- Appropriately marked UN/DOT certified pail, 5 gallon
- Matching lid size with trigger attached, with gasket

To Close:

Seat lid on top of pail and rotate lid clockwise a complete 360 degrees with the threads fully engaged. Continue rotating until lid is fully tightened. For ease of application, use built-in hand lever on cover.

Inspect lid after application to confirm it is properly seated.

Example of lid not properly seated, threads not fully engaged:
CLOSURE INSTRUCTIONS FOR SOLIDS:
Packaging Components required:
- Pail
- Lid
- Trigger

To close: Seat lid on top of drum. Rotate lid clockwise until the mark on the lid (see Figure 1) is located to the left of the mark on the side of the drum (see Figure 2) and continue rotating until the lid is fully tightened (see Figure 3). Inspect lid after application to confirm it is properly seated.
CLOSURE INSTRUCTIONS FOR:
Lite Latch® Containers

Identification of Packaging:  This packaging type is identified by:

<table>
<thead>
<tr>
<th>Gallon Size</th>
<th>Lite Latch Pail mold numbers</th>
<th>Corresponding Lite Latch Lid mold numbers</th>
<th>Lid diameter (ref only, measured at base of lid)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 gallon</td>
<td>12583, 12588</td>
<td>12584, 12589</td>
<td></td>
</tr>
<tr>
<td>2.0 gallon</td>
<td>12610, 12611</td>
<td>12608, 12609</td>
<td></td>
</tr>
<tr>
<td>2.5 Gallon</td>
<td>12681</td>
<td>12608, 12609</td>
<td></td>
</tr>
<tr>
<td>3.0 Gallon</td>
<td>12428, 12429</td>
<td>11554, 11947, 12294, 12295, 12430, 12431, 12607, 12678, 12679, 12688</td>
<td>12.84”</td>
</tr>
<tr>
<td>3.5 Gallon</td>
<td>11552, 11945, 12384, 12534</td>
<td>11554, 11947, 12294, 12295, 12430, 12431, 12607, 12678, 12679, 12688</td>
<td>12.84”</td>
</tr>
<tr>
<td>5.0 Gallon</td>
<td>11553, 11946, 12427</td>
<td>11554, 11947, 12294, 12295, 12430, 12431, 12607, 12678, 12679, 12688</td>
<td>12.84”</td>
</tr>
<tr>
<td>6.5 Gallon</td>
<td>11999, 12000, 12385, 12533</td>
<td>11554, 11947, 12294, 12295, 12430, 12431, 12607, 12678, 12679, 12688</td>
<td>12.84”</td>
</tr>
</tbody>
</table>

UN Markings for Lite Latch® Containers:
An appropriate UN marking must be maintained for each container design. The UN markings for Lite Latch® containers are listed below.

<table>
<thead>
<tr>
<th>Container Size</th>
<th>UN Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5 Gallon Lite Latch</td>
<td>1H2/Y19/S</td>
</tr>
<tr>
<td>5.0 Gallon Lite Latch</td>
<td>1H2/Y25/S</td>
</tr>
<tr>
<td>6.5 Gallon Lite Latch</td>
<td>1H2/Y30/S</td>
</tr>
</tbody>
</table>

NOTE: Lite Latch® containers are UN certified for solids only, using NON-GASKETED lids.

In accordance with the U.S. Department of Transportation’s Title 49CFR, Section 178.2, manufacturers of U.N. Standard/DOT Specification packages are required to notify in writing each person to whom that packaging is transferred of all requirements in this part not met at the time of transfer, and with information specifying the type(s) and dimensions of the closures, including gaskets and any other components needed to ensure that the packaging is capable of successfully passing the applicable performance tests. This information must include any procedures to be followed, including closure instructions for inner packagings and receptacles, to effectively assemble and close the packaging for the purpose of preventing leakage in transportation.

Specifically, the following items pertain to the Lite Latch® containers:
Lite Latch ® Containers

- Lite Latch ® containers are certified to the UN/DOT performance oriented packaging standards and are marked with the appropriate UN markings on the container.
- The Lite Latch ® pail must always be used with the correct Lite Latch ® lid in order to meet the UN/DOT performance oriented packaging standards.
- Lite Latch ® containers are not UN certified for liquids.

CLOSURE INSTRUCTIONS FOR SOLIDS:

Packaging Components required:

- Appropriately marked UN/DOT certified pail
- Matching lid size with trigger attached, non-gasketed

All sizes, NON-GASKETED lid:

To close, seat lid on top of pail. Rotate lid clockwise until the line on the lid above the trigger is located to the left of the mark on the side of the pail (see Ill 1). Continue rotating until the lid is fully tightened. Inspect lid after application to confirm it is properly seated.

Illustration 1 – Line on lid is located to left of line on pail when lid is fully tightened.
SECTION F:  POLY PAILS – TIGHT/CLOSED HEAD

In the following pages, you will find the UN Closing Instructions for the poly pails that we commonly sell.

Below, you will see examples of the UN Certification markings that could be on the pails that you purchased. These are examples only, and may not be the exact marking that is on your pail. We are showing you these examples so that you know how to identify the manufacturer’s code, and reference the corresponding closing instructions in the coming pages. If you cannot find the appropriate closing instructions, or need any guidance, whatsoever, please contact us for assistance.

You will notice that part of the sample certifications are in **BOLD/UNDERLINED FONT**. This identifies the manufacturer’s code. If there is no "M" Number in the UN certification; please reference the manufacturer’s name.

*SAMPLE UN CERTIFICATION – TIGHT/CLOSED HEAD POLY PAIL:*

LIQUID LADINGS  

1H1 / Y1.8 / 100 / 15 / USA / **M1234**

OR

LIQUID LADINGS

3H1/Y1.8/100 / 15 / USA / **M1234**

Once you’ve identified the manufacturer’s code on your pail, please reference the following closing instructions:

**MANUFACTURER’S NAME/CODE**  
**PAGE**

- BWAY/NAMPAC  
  PG. F1-F3

MARKINGS WILL BE LOCATED ON BOTTOM OF THE PAIL
70mm Screw Cap Closure Instructions

PURPOSE:

To ensure that the threaded screw cap is properly sealed when assembled onto the jerricans and tighthead drums. The DOT/UN Performance Certification only applies to a Tight Head Container that is closed per this procedure.

SIGNIFICANCE:

The sealing performance of the Cap is compromised if the top surface of the neck is rough, has a burr, or is not clean; in addition, if the gasket in the cap is not properly seated in the O-Ring groove, twisted, or is not clean. The Caps are only to be assembled on the jerrican after all sealing surfaces pass inspection.

APPARATUS:

- 70mm Torque Head Fixture
- Torque Wrench (Adjustable from 10 - 15 ft-lbs or 120 - 180 in-lbs)
- The use of a calibrated automatic torque application machine is permissible if it does not damage the threads or seating surface of the container.

PROCEDURE:

1. Inspect the top surface of the neck to ensure an acceptable sealing surface, clean and free of any debris.
2. Inspect the cap to ensure the gasket is properly assembled and is clean.
3. Start the cap on the neck by hand, rotating the cap in a clock-wise direction. Take care not to cross thread the cap; this will result in damage to the cap or to the neck finish.
4. Using the 70mm torque head fixture mounted onto a torque wrench, tighten the cap per the table below.

<table>
<thead>
<tr>
<th>CAP SIZE (DIA)</th>
<th>Thread Pitch</th>
<th>INSTALLATION TORQUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>70mm</td>
<td>8TPI (3mm)</td>
<td>120 IN-LBS (10 FT-LBS)</td>
</tr>
<tr>
<td>70mm</td>
<td>6TPI (4mm)</td>
<td>120-150 IN-LBS (10 to 12.5 FT-LBS)</td>
</tr>
</tbody>
</table>
63mm Crimp-On Fitting Closure
Instructions

PURPOSE:
These instructions are designed to ensure the proper installation of any one of several 63mm crimp-on fitments onto BWAY jerricans and tighthead drums. The UN Regulated Container Certification applies to marked UN 1H1 and 3H1 Tight Head packages that are closed per this procedure.

SIGNIFICANCE:
The sealing performance of the UN components can be compromised if the components have been damaged in shipment or handling. Ensure that the crimp bead around the top of the container neck is clean and free of burrs, ragged edges, or other defects and verify that the inner surface of the fitting is clean and defect free before assembling the components.

APPARATUS:
Manual or automatic multi-jaw crimp head (manual model shown in instruction diagrams)

1. Simply place the crimp-on into the opening.
2. Force the spout into the opening by pushing firmly downward with the heel of the hand.
3. Place the appropriate manual crimp tool over the crimp-on and exert a downward force, making sure the tool is level.
4. Pull the lever arms apart with a firm motion and apply even pressure on the left and right lever arms while exerting downward force and keeping the tool level. The hand-operated, or air operated crimp tool will give the best possible seal if you apply steady pressure in one motion.
5. Crimp tools must be periodically checked against the manufacturer’s specification to ensure proper installation.
6. Use fitting manufacturer's crimp gauge to verify that fitting is properly crimped onto container.
## CLOSURE TOOL REFERENCE TABLE

<table>
<thead>
<tr>
<th>Closure Mfg’r</th>
<th>Closure Types</th>
<th>Closure Size (mm)</th>
<th>Closure Tool Model</th>
<th>Closure Tool Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Various</td>
<td>Vent Caps</td>
<td>18,22,28</td>
<td>T-Handle Torque wrench</td>
<td></td>
</tr>
<tr>
<td>American Flange</td>
<td>Tri-Sure Tab Seal</td>
<td></td>
<td>UG</td>
<td>Manual Crimping Tool</td>
</tr>
<tr>
<td></td>
<td>Tri-Sure Uni-Grip</td>
<td></td>
<td>UAG</td>
<td>Pneumatic Crimping Tool</td>
</tr>
<tr>
<td>Norpak / Norton</td>
<td>Norcap</td>
<td>70</td>
<td>Manual Crimping Tool</td>
<td>Norcap Vented Seekonk Torque Wrench (Gauge) or Equivalent with Rieke Cap Wrench Adapter, W394; or contact your representative for equivalent adapter</td>
</tr>
<tr>
<td>Republic</td>
<td>Comack TEXT</td>
<td>70</td>
<td>Manual Crimping Tool</td>
<td>Republic SC63R Vented Seekonk Torque Wrench (Gauge) or Equivalent with Rieke Cap Wrench Adapter, W394; or contact your representative for equivalent adapter</td>
</tr>
<tr>
<td>Brandt (BWAY)</td>
<td>Brandt 70mm</td>
<td>70</td>
<td>Manual Crimping Tool</td>
<td>Brandt 70mm TE Seekonk Torque Wrench (Gauge) or Equivalent with Rieke Cap Wrench Adapter, W394; or contact your representative for equivalent adapter</td>
</tr>
<tr>
<td></td>
<td>Brandt 70 Vented</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Brandt 70mm TE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brandt (BWAY)</td>
<td>Brandt 61mm</td>
<td>61</td>
<td>Manual Crimping Tool</td>
<td>Brandt 61mm TE Seekonk Torque Wrench (Gauge) or Equivalent with Rieke Cap Wrench Adapter, W394; or contact your representative for equivalent adapter</td>
</tr>
<tr>
<td></td>
<td>Brandt 61 Vented</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Brandt 61mm TE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Westphal Lange</td>
<td>Westphal Lange</td>
<td>61</td>
<td>Manual Crimping Tool</td>
<td>Westphal Lange 61mm TE Seekonk Torque Wrench (Gauge) or Equivalent with Rieke Cap Wrench Adapter, W394; or contact your representative for equivalent adapter</td>
</tr>
<tr>
<td>Brandt (BWAY)</td>
<td>Brandt 51mm</td>
<td>51</td>
<td>Manual Crimping Tool</td>
<td>Brandt 51mm TE Seekonk Torque Wrench (Gauge) or Equivalent with Rieke Cap Wrench Adapter, W394; or contact your representative for equivalent adapter</td>
</tr>
<tr>
<td>Rieke</td>
<td>FS-60</td>
<td>70</td>
<td>Manual Crimping Tool</td>
<td>Rieke FS-60 Seekonk Torque Wrench (Gauge) or Equivalent with Rieke Cap Wrench Adapter, W394</td>
</tr>
<tr>
<td></td>
<td>FS-70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FS-70 TE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FS-70 Vented</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SC-76</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SC-76 TE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FS-80</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>FS-80 TE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FS-80 Vented</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SC-86</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SC-86 TE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rieke/Bomag/Technocraft Pour Spouts</td>
<td>FS-10-6-300</td>
<td>FS-600</td>
<td>Manual Flexspout Crimping Tool</td>
<td>FS-10-6-300 IA-FS-600 HFS-600 Manual Flexspout Crimping Tool Airmatic Flexspout Crimping Tool Airdraulic Flexspout Crimping Head and Hose</td>
</tr>
<tr>
<td></td>
<td>FS-10-6-624</td>
<td>FS-600</td>
<td>Manual Flexspout Crimping Tool</td>
<td>FS-10-6-624 IA-FS-600 HFS-600 Manual Flexspout Crimping Tool Airmatic Flexspout Crimping Tool Airdraulic Flexspout Crimping Head and Hose</td>
</tr>
<tr>
<td></td>
<td>FS-10-8V-300</td>
<td>IA-FS-600</td>
<td>Manual Flexspout Crimping Tool</td>
<td>FS-10-8V-300 HFS-600 Manual Flexspout Crimping Tool Airmatic Flexspout Crimping Tool Airdraulic Flexspout Crimping Head and Hose</td>
</tr>
<tr>
<td></td>
<td>FS-300</td>
<td></td>
<td>Manual Flexspout Crimping Tool</td>
<td>FS-300 IA-FS-600 HFS-600 Manual Flexspout Crimping Tool Airmatic Flexspout Crimping Tool Airdraulic Flexspout Crimping Head and Hose</td>
</tr>
<tr>
<td></td>
<td>FS-II</td>
<td></td>
<td>Manual Flexspout Crimping Tool</td>
<td>FS-II IA-FS-600 HFS-600 Manual Flexspout Crimping Tool Airmatic Flexspout Crimping Tool Airdraulic Flexspout Crimping Head and Hose</td>
</tr>
<tr>
<td></td>
<td>Bomag Crimp-on</td>
<td>FS-600</td>
<td>Manual Flexspout Crimping Tool</td>
<td>Bomag Crimp-on FS-600 IA-FS-600 HFS-600 Manual Flexspout Crimping Tool Airmatic Flexspout Crimping Tool Airdraulic Flexspout Crimping Head and Hose</td>
</tr>
<tr>
<td></td>
<td>Technocraft Crimp-on</td>
<td>FS-600</td>
<td>Manual Flexspout Crimping Tool</td>
<td>Technocraft Crimp-on FS-600 IA-FS-600 HFS-600 Manual Flexspout Crimping Tool Airmatic Flexspout Crimping Tool Airdraulic Flexspout Crimping Head and Hose</td>
</tr>
</tbody>
</table>

Many Torque Wrench Heads are custom made to suit a particular brand of closure.
SECTION G: STEEL PAILS –

In the following pages, you will find the UN Closing Instructions for the steel pails that we commonly sell.

Below, you will see examples of the UN Certification markings that could be on the pails that you purchased. These are examples only, and may not be the exact marking that is on your pail. We are showing you these examples so that you know how to identify the manufacturer’s code, and reference the corresponding closing instructions in the coming pages. If you cannot find the appropriate closing instructions, or need any guidance, whatsoever, please contact us for assistance.

You will notice that part of the sample certifications are in **BOLD/UNDERLINE FONT**. This identifies the manufacturer’s code.

*SAMPLE UN CERTIFICATION – OPEN HEAD STEEL PAILS:

| LIQUID LADINGS | 1A2 / Y1.5 / 70 / 15 / USA / **M1234** |
| SOLID LADINGS  | 1A2 / Y50 / S / 15 / USA / **M1234** |

*SAMPLE UN CERTIFICATION – TIGHT/CLOSED HEAD STEEL PAILS:

| LIQUID LADINGS | 1A1/Y1.8/200 / 15 / USA / **M1234** |

Once you’ve identified the manufacturer’s code on your pail, please reference the following closing instructions:

<table>
<thead>
<tr>
<th>MANUFACTURER’S CODE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>M4461</td>
<td>PG. G1-G12</td>
</tr>
</tbody>
</table>
Open Head Closing Instructions

Open Head Pail Closing Instructions

Step 1—Determine that the pail/cover combination is the correct specification for the material being filled.

Step 2—Place the cover on pail. Ensure that it is evenly seated around the curl of the pail.

The eye of one of the lugs should be centered directly over the seam weld of the pail.

Step 3—Lower the closing tool onto the cover. Rotate the tool in order to position the lug eyes between the jaws of the closing tool.

Step 4a--To close the pail with the pneumatic closing tool, push the Humphrey levers on the top of the closing tool.

When the downward motion of the tool stops, release the levers.
Open Head Closing Instructions

**Step 4b**—To close the pail with the *manual closing tool*, push the handles down and out until the downward motion stops.

When the downward motion of the tool stops, release the handles.

**Note:** The use of pneumatic and manual closing tools is detailed in this closing instruction; however, many packaging facilities use automated closing tools; regardless of the closing tool used, the quality of the closure is critical.

**Step 5**—Check the integrity of the close to be sure that the cover is properly crimped. Ideally, the cover lugs should be rolled up under the curl as shown in the drawing below.

**Step 6**—Remove the closing tool. The lugs should be crimped under the curl of the pail at least 90° from the starting position.

Review the following photographs and drawings that illustrate the *preferred* crimp, the *acceptable* crimp and the *unacceptable* crimp.
Open Head Closing Instructions

Acceptable Crimp

The lug is crimped to the point where it contacts the bottom of the curl.

Unacceptable Crimp

The lug is barely crimped; at a minimum, it must touch the bottom of the curl, which it does not.
Rieke® (RU/RS) LeverLock Closing Instructions

Proper Application of the Rieke® (RU/RS) LeverLock Ring

Step 1—Place the cover on the pail. Press down along the edges and in the center of the cover to ensure that it is seated properly.

Step 2—Select the proper leverlock ring for the material being packaged.

The RU leverlock ring is used when packaging liquids.

The RS leverlock ring is used when packaging solids.

The leverlock rings are stamped for the particular application. Also, the RS leverlock ring is wider than the RU leverlock ring.

Step 3—Before placing the leverlock ring on the pail, it must be oriented correctly. There is an Up indicator w/ an arrow stamped into the base of the handle. Orient the ring w/ the arrow pointing up.
Rieke® (RU/RS) LeverLock Closing Instructions

**Step 4**—Open the leverlock ring as wide as possible, then slip it over the pail. Be sure that the ring is placed on the pail in a manner that allows it to be closed by moving the lever clockwise onto the ring.

**Step 5**—Orient the lever on the ring to be opposite of the seam weld (180 degrees from the seam weld).

**Step 6**—Apply downward pressure to the cover and release the lever, allowing the ring to slide onto the cover/curl edge.

**Note:** The ring must encompass the cover/curl around the entire edge of the pail.

**Step 7**—Close the ring clockwise by applying pressure to the lever until it collapses onto the ring.

**Step 8**—Insert the tamper-evident T-clip through the slot in the lever. This will hold the lever in place. The T-clip should also pass through the loop attached to the body of the ring.
**Note:** A locking mechanism can be inserted into the eyelet of the latch to make the lever tamper-evident.

**Step 9**—If the ring is locked properly, it cannot be rotated or moved. If the ring slides, it is oversized.
Rieke® FlexSpout Closing Instructions

Manual, Hand-Operated Crimping Tool

Step 1—Place the pail on a flat surface. Using a screwdriver, pry off the dust cover.

Step 2—Place the Rieke® FlexSpout in the opening on the top of the pail.

Step 3—The FS-600 Rieke® Hand Crimping Tool is used to crimp the FlexSpout to the opening. Place the crimping tool evenly over the fitting on the pail.

Step 4—In the resting position, the handles of the crimping tool should be approximately 45° to the top of the pail.

Step 5—Grip the handles of the crimping tool with your hands. Apply even downward pressure until the handles are parallel to the top of the pail in order to properly crimp the fitting.
**Rieke® FlexSpout Closing Instructions**

**Note:** The use of the hand crimping tool is detailed in this closing instruction; however, many packaging facilities use automated crimping tools; regardless of the crimping tool used, the quality of the crimp is critical.

**Step 6**—Visually inspect the crimped FlexSpout. The crimp should be uniform and consistent around the entire circumference of the retainer ring of the fitting.

**Note:** It is important that the closing tool is resting **evenly** on the FlexSpout when applying the downward pressure; if the tool is **cocked** or **tilted** when crimping the fitting, an improper seal can result which might cause leakage of the contents of the pail.

**Step 7**—Check the crimp of the Rieke® FlexSpout fitting using the **G-101 go / no go gauge**. As the gauge is moved over the fitting, the edge must be able to pass by the side of crimp.

**Note:** Please contact us for proper crimping tool, NoGo Gauge, or any other closing tools that you may require.
Rieke® Drum Fitting Closing Instructions

Rieke® Tite-Grip and Vice-Grip
Drum Fitting Closing Instructions

3/4" Rieke® Tite-Grip Fitting (Steel)

**Step 1**--Place the pail on a flat surface.

**Step 2**--Place the fitting on the top of the pail in the threaded opening.

**Step 3**--Rotate the fitting clockwise to engage the threads in the opening.

**Step 4**--Thread the fitting into the opening and tighten it using a (1) custom-made fitting adapter for a torque wrench, or a (2) pre-set torque wrench from the manufacturer.

**Step 5**--Be sure the fitting is tightened to the proper specification (refer to the table located on the last page of this section).

2" Rieke® Tite-Grip Fitting (Steel)

**Step 1**--Place the pail on a flat surface.

**Step 2**--Place the fitting on the top of the pail in the threaded opening.

**Step 3**--Rotate the fitting clockwise to engage the threads in the opening.
Step 1--Place the pail on a flat surface.

Step 2-- Place the fitting on the top of the pail in the threaded opening.

Step 3--Rotate the fitting clockwise to engage the threads in the opening.

Step 4--Thread the fitting into the opening and tighten it using a pre-set torque wrench from the manufacturer.

3/4" Rieke® Vice-Grip Fitting (Steel)

Step 4--Thread the fitting into the opening and tighten it using a custom-made fitting adapter for a torque wrench.

Step 5--Be sure the fitting is tightened to the proper specification (refer to the table located on the last page of this section).

Note: The photograph below illustrates both fittings correctly installed in the pail cover.
Step 5—Be sure the fitting is tightened to the proper specification (refer to the table located on the last page of this section).

2" Rieke® Vice-Grip Fitting (Steel)

Step 1—Place the pail on a flat surface.

Step 2—Place the fitting on the top of the pail in the threaded opening.

Step 3—Rotate the fitting clockwise to engage the threads in the opening.

Step 4—Thread the fitting into the opening and tighten it using a pre-set torque wrench from the manufacturer.

Step 5—Be sure the fitting is tightened to the proper specification (refer to the table located on the last page of this section).

Note: The photograph below illustrates both fittings correctly installed in the pail cover.
## Rieke® Drum Fitting Closing Instructions

### 2" Plugs

<table>
<thead>
<tr>
<th>Gasket</th>
<th>Material</th>
<th>Plastic Plug</th>
<th>Steel Plug</th>
<th>Oven Temp</th>
</tr>
</thead>
<tbody>
<tr>
<td>G-43</td>
<td>Buna</td>
<td>20 ft-lbs</td>
<td>30 ft-lbs</td>
<td>450°F</td>
</tr>
<tr>
<td>G-43w</td>
<td>White Buna</td>
<td>20 ft-lbs</td>
<td>30 ft-lbs</td>
<td>450°F</td>
</tr>
<tr>
<td>G-73-2</td>
<td>LD Polyethylene</td>
<td>9 ft-lbs</td>
<td>30 ft-lbs</td>
<td>120°F</td>
</tr>
<tr>
<td>G-73-3</td>
<td>Irradiated LD Polyethylene</td>
<td>9 ft-lbs</td>
<td>30 ft-lbs</td>
<td>375°F</td>
</tr>
<tr>
<td>G-79</td>
<td>LD Polyethylene</td>
<td>20 ft-lbs</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>G-83</td>
<td>Dapon</td>
<td>20 ft-lbs</td>
<td>30 ft-lbs</td>
<td>450°F</td>
</tr>
<tr>
<td>G-93</td>
<td>EPT / EPDM</td>
<td>20 ft-lbs</td>
<td>30 ft-lbs</td>
<td>450°F</td>
</tr>
<tr>
<td>G-93w</td>
<td>White EPT / EPDM</td>
<td>20 ft-lbs</td>
<td>30 ft-lbs</td>
<td>450°F</td>
</tr>
<tr>
<td>G-99w</td>
<td>White EPT / EPDM</td>
<td>20 ft-lbs</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### 3/4" Plugs

<table>
<thead>
<tr>
<th>Gasket</th>
<th>Material</th>
<th>Plastic Plug</th>
<th>Steel Plug</th>
<th>Oven Temp</th>
</tr>
</thead>
<tbody>
<tr>
<td>G-41</td>
<td>Buna</td>
<td>9 ft-lbs</td>
<td>15 ft-lbs</td>
<td>450°F</td>
</tr>
<tr>
<td>G-41w</td>
<td>White Buna</td>
<td>9 ft-lbs</td>
<td>15 ft-lbs</td>
<td>450°F</td>
</tr>
<tr>
<td>G-71-2</td>
<td>LD Polyethylene</td>
<td>9 ft-lbs</td>
<td>20 ft-lbs</td>
<td>120°F</td>
</tr>
<tr>
<td>G-71-3</td>
<td>Irradiated LD Polyethylene</td>
<td>9 ft-lbs</td>
<td>20 ft-lbs</td>
<td>375°F</td>
</tr>
<tr>
<td>G-81w</td>
<td>Dapon</td>
<td>9 ft-lbs</td>
<td>15 ft-lbs</td>
<td>450°F</td>
</tr>
<tr>
<td>G-91</td>
<td>EPT / EPDM</td>
<td>9 ft-lbs</td>
<td>15 ft-lbs</td>
<td>450°F</td>
</tr>
<tr>
<td>G-91w</td>
<td>White EPT / EPDM</td>
<td>9 ft-lbs</td>
<td>15 ft-lbs</td>
<td>450°F</td>
</tr>
</tbody>
</table>
SECTION H: IBC’s / TOTES / INTERMEDIATE BULK CONTAINERS

In the following pages, you will find the UN Closing Instructions for the IBC’S that we commonly sell.

They can be classified into 3 categories:

- **RECONDITIONED BOTTLE AND CAGE**
- **NEW BOTTLE IN A RECONDITIONED CAGE**
- **BRAND NEW IBC – NEW BOTTLE IN A NEW CAGE**

With each of these, since the bottle is the portion that is coming in contact with your product, please make sure to match the manufacturer’s name on the bottle to the correct UN Closing Instructions.

As always, please contact Customer Service with any questions or concerns regarding the proper closing instructions for your container.

**Once you’ve identified the manufacturer on your IBC, please reference the corresponding the closing instructions on the following pages**

**Once you’ve identified the manufacturer’s code on your drum, please reference the following closing instructions:**

<table>
<thead>
<tr>
<th>MANUFACTURER</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAUSER</td>
<td>PG.H1-H2</td>
</tr>
<tr>
<td>SCHUETZ</td>
<td>PG. H3</td>
</tr>
<tr>
<td>GREIF</td>
<td>PG. H4</td>
</tr>
<tr>
<td>HOOVER</td>
<td>PG. H5-H6</td>
</tr>
</tbody>
</table>
United States Department of Transportation regulations state that packaging manufacturers are required to notify each person to whom the packaging is transferred of all requirements not met at the time of transfer. This requirement is given in Title 49, Code of Federal Regulations (49 CFR), Part 178 Specifications for Packagings, § 178.2 (c). In addition this Paragraph requires the closing information to be provided to any person to whom this package is transferred who may need to close the packaging prior to re-shipment. Furthermore, it is the shipper's responsibility as set forth in §173.22(a)(4) to ensure that these closing instructions are carried out as described. In order to ensure the instructions are followed in a manner to result in safe transport of hazardous materials the shipper is obligated, as set forth in § 172.704(a)(4), namely - function specific training - to train his/her employees in the correct way to close the packaging for shipment. In order to fulfill this obligation the shipper often turns to the packaging manufacturer for this training since the manufacturer has designed, produced and tested the packaging to meet UN performance standards. The manufacturer is prepared to provide this training in addition to supplying closing instructions. It has been the practice of the manufacturer to send closing instructions attached to the shipping documents with each shipment of drums. This document provides specific information on closing packagings.

These closing instructions must be given to the individuals responsible for closing the packagings prior to shipment. A hard copy (printed) must be maintained by the filler or offeror for shipment. Copies should be immediately available at the fill lines.

The following tables and text give examples of the parts and closing torque required to prepare IBC for shipment so that it is capable of meeting the performance standards indicated by the UN marking on the side or top of the packaging. The manufacturer recommends that only parts that have been tested and certified by the manufacturer be used to close the packagings for shipment. Any UN marking is voided if parts other than those used in the original design qualifications are used. Each closure is supplied with the proper gasket in accordance with the UN design type tests for the packaging supplied. In the case of Intermediate Bulk Containers, IBC's, the lid, gaskets, plugs, cages, pallets, valves and service equipment are supplied as tested.

PRIOR TO CLOSING:

Inspect each closure to ensure that the closure has the proper gasket and that both closure and gasket are in good condition. Inspect the sealing surface for damage and make sure the threads and sealing surfaces are dry. Replace any defective gaskets, plugs or lids with new, defect free parts identical to the original packaging design.

CLOSING PROCEDURES FOR PLUGS AND CAPS:

1. The plug or cap is inserted into the appropriate opening and screwed down “hand tight” until the gasket is in contact with the sealing surface.
2. A torque wrench capable of applying the proper torque to the fitting as specified by the closing instructions following is then used to tighten the plug or cap until it reaches the pre-set torque as indicated by a release or click. These wrenches should be calibrated at least annually.

<table>
<thead>
<tr>
<th>IBC Type</th>
<th>Gasket Type</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Bulkdrum @ II</td>
<td>EPDM/FKM</td>
<td>70 ft.-lbs.</td>
</tr>
<tr>
<td>B MAUSER ® SM series 275/330 gallon</td>
<td>EPDM</td>
<td>70 ft.-lbs.</td>
</tr>
<tr>
<td>C MAUSER ® SM series 275/330 gallon</td>
<td>FKM/FPM</td>
<td>70 ft.-lbs.</td>
</tr>
<tr>
<td>D 2” plug in 150 mm lid, vented and solid</td>
<td>EPDM/FKM</td>
<td>20-25 ft.-lbs.</td>
</tr>
<tr>
<td>E 56 mm plug in 150 mm lid vented and solid</td>
<td>EPDM/FKM</td>
<td>20-25 ft.-lbs.</td>
</tr>
<tr>
<td>F 2” Buttress plug in top of IBC</td>
<td>EPDM/FKM</td>
<td>20 ft-lbs</td>
</tr>
</tbody>
</table>

All UN 31HA1 and 31 HG1 Composite IBC's 49CFR § 178.707 (a) (5) that are supplied with lids, cages, pallets and service equipment must be closed for shipment using only the components supplied and specified in the design qualification tests for that IBC.

- Place the lid with gasket in place on the top opening of the IBC.
- Screw the lid by hand until the gasket is in contact with the sealing surface.
- Using the lid adaptor and torque wrench tighten the lid to the recommended torque. Recommended torque is reached when the wrench releases or clicks.
VALVES

The valves supplied with the manufacturers IBCs are factory installed and are not meant to be installed by the filler. A qualified IBC reconditioner like National Container Group is equipped and staffed with trained technicians for all valve replacements. If an IBC valve must be replaced the following procedures must be followed. Only valves as specified in the original design qualification are suitable.

IBC valve replacement must adhere to the requirements of 49 CFR Part 180 Subpart D §§ 180.350 -180.352 Qualification and Maintenance of IBCs. The manufacturer assumes no responsibility for the performance of any packaging modified from the original design by any person or company. This information is provided as an accommodation and the manufacturer assumes no warranty or guarantee of any kind and the recipients use or non-use of this information is at the sole discretion and responsibility of the recipient.

1. Inspect new unused replacement valve for presence of defect free, clean gaskets.
2. Hand thread the valve until the threads begin to grip.
3. **MAUSER Butterfly and Cylinder and Integrated Collar Valves:** Using a torque wrench with a valve adapter as above tighten the valve to a minimum of 70 ft-lbs, finishing the procedure with the valve in the proper vertical orientation. If the valve reaches 70 ft-lbs and will not orient properly, or if it can not reach 70 ft-lbs, it may be cross threaded or a bad thread. Discard and repeat with a **new** valve. The polyolefin gasket on the valve collar is not designed for multiple installations.
4. **Metal collar valves:** Holding the valve in the proper vertical orientation spin the metal collar until hand tight. Using a calibrated torque wrench with valve adapter tighten the collar to > 55 ft-lbs.
5. **Leak proof test the empty IBC with ≥20 kPa air pressure per 49 CFR 178.813.**

CAP SEALS

It is the responsibility of the filler to verify the torque on all closures that have been “factory torqued” and/or closures that have been supplied with a cap seal, dust cover or tamper evidence. This includes any bungs in an IBC lid/cap. For this reason we suggest all cap seals and the like be installed after filling and all closures have been properly closed. Please be aware that cap seals and tamper evidence devices may interfere with the proper function of vents or other pressure and vacuum relief devices.

DIP TUBES AND EXTRACTION VALVES:

Please consult the manufacturer for proper closing torques on the style being used.

TORQUE WRENCHES

The following are photographs of various torque wrenches the manufacturer has found suitable to apply the required closing torque. These are typical units and other brands of adjustable wrenched are acceptable. These should be regularly calibrated.
CLOSURE SPECIFICATIONS FOR SCHEUTZ IBC'S
FILL PORT CAP AND VALVE MUST BE TORQUED TO THE FOLLOWING:

6” AND 9” FILL PORT CAP - 75 FT LBS

2" plug in 6" or 9" fill port cap must be torqued to 15 ft lbs. (Manufacturer does not recommend that you remove this plug. Filling should be done through the 6” or 9” opening )
* 56 x 4 mm plug - 20 ft lbs

Old style valves
VALVE NUT - 55 FT LBS
note: caps, valves, and plugs must have gaskets to seal

New Style valves - two turns and line up the hole in the valve body and the hole in the bottle insert and insert clip.
GREIF INDUSTRIAL PACKAGING & SERVICES LLC
DOT REQUIRED NOTIFICATION STATEMENT
INTERMEDIATE BULK CONTAINERS

The below listed statement is printed on the bottom of each packing list copy of the customer order that is shipped from Greif, Inc. Lavonia, Georgia Intermediate Bulk Container plant.

The recent general revisions of the DOT’s Hazardous Materials Regulations requires that manufacturers of the packaging for hazardous materials notify their customers in writing of:

1. Any packaging specification requirements that are not met when the empty packages are shipped, and
2. Information on closures needed to satisfy the performance test requirements.

The following NOTIFICATION STATEMENT is intended to comply with that regulatory requirement.

UN IBC’S

- TOP OPENINGS IN GREIF UN-IBC’s MUST BE FITTED WITH 6” COVERS AND GASKETS SUPPLIED BY GREIF INC. 6” COVERS MUST BE TIGHTENED ½ TURN AFTER GASKET CONTACT WITH THE TOP OF THE BOTTLE AND TO AT LEAST 45 FT. LBS TORQUE. FITTINGS IN THE COVER MUST BE TIGHTENED TO A TORQUE OF 20 FT-LBS FOR 2”NPT FITTINGS AND 9 FT-LBS FOR ¾” BUNGS, IF INSTALLED.
Attention Regulatory Manager

49 CFR §178.2(c)(1)(ii) NOTICE

Per 49 CFR §178.2(c)(1)(ii), the below listed closures and gaskets were used to performance qualify Hoover Materials Handling Group, Inc.’s (HMHGI) IBCs. It is important for the IBC user to know what closures have been installed by HMHGI.

**Metal 31A and 31B Closure Descriptions** - per below or print

*bung*: 2” 304 stainless steel, carboru steel or aluminum with EPDM, Teflon®, Viton®, silicone or Buna gasket.

*drum cover*: 22” 304, 316 stainless, carbon steel or aluminum with 22” plated steel bolted clamp ring with EPDM, Viton®, silicone, Buna, neoprene or Teflon® gasket: with 3” 316 stainless steel, aluminum or bronze fusible vent with EPDM, Viton®, Buna, silicone, Teflon® coated or Teflon®** gasket.

*bottom discharge*: 2” 316 stainless steel or bronze ball valve, Teflon® seats & stem bushings and 2” PP or steel plug with EPDM, Viton® or Teflon® gasket.

2” and 3” threaded fittings with non-Teflon® gaskets: install until solid gasket contact is achieved then tighten an additional 3/8 turn.

2” and 3” threaded fittings with Teflon® gaskets: install until solid gasket contact is achieved then tighten an additional 1/8 turn (1-1/4 inches travel).

22” drum rings with multi-seal gasket: 1) Seat the ring by “striking” it with blows around the circumference of the ring with a mallet. 2) Start the 5/8” bolt by hand and tighten until hand tight. 3) Re-strike the ring again as in 1) above. 4) Using a wrench, tighten the 5/8” bolt again, repeating 3) until the bolt tightening resistance does not change. 5) Note: the ring ends should be approximately 3/8” apart and must not meet.

**Blowmolded 31HAl, 31HG1 and 31HH1 Closure Descriptions** - per below or print

*lid*: 6” black, white or natural HDPE with Viton®, Teflon®, Santoprene®, Buna-n or EPDM gasket and 2” natural LDPE emergency plug with EPDM, Viton® or Teflon® gasket.

*bottom discharge*: 2” HDPE butterfly valve (Santoprene® gasket, PP with glass & EPDM o-rings) with 2” HDPE threaded cap and EPDM gasket) or 2” ball valve (PP with glass & carbon black, EPDM, Viton® or Teflon® o-rings, Teflon seats and stem bushing) and with gray HDPE threaded cap & EPDM gasket.

*torque to seal lids*: install the lid until solid gasket contact is achieved then tighten an additional 1/4 turn.

*torque to seal screw type collar of bottom discharge onto bottle’s snout*: install the discharge until solid gasket contact is achieved then tighten an additional 1/8 turn.
torque to seal self-sealing bung plugs: install until solid sealing area contact is achieved then tighten an additional 1/8 turn.

**torque to seal gasketed bung plugs:** install until solid gasket contact is achieved then tighten an additional 3/8 turn.

**Rotationally Molded 31H2 and 31HA1 Closure Descriptions** - per below or print

**lid:** 6” black or white HDPE with EPDM, Viton® or Teflon® gasket, 2” PP emergency plug with EPDM, Viton® or Teflon® gasket; 2” vent (HDPE, 316 stainless steel, Hastelloy C with EPDM, Viton® or Teflon® gasket/flapper).

**bottom discharge:** 2” coupler/valve/adapter combination (PP with glass and carbon black*; EPDM, Viton® or Teflon® o-rings, Teflon® seats and stem bushings), 2” dust cap (PP with glass and carbon black* and 2” EPDM or Viton® or Teflon® gasket) and 2” snout gasket (EPDM, Viton® or Teflon®): 2” hose barb (PP with glass and carbon black*), 2” ball valve (PP with glass and carbon black*, EPDM, Viton® or Teflon® o-rings, Teflon® seats and stem bushings), 2” male adapter (PP with glass and carbon black*), 2” cap (PP with glass and carbon black* with EPDM, Viton®, Buna or Teflon® gasket).

**torque to seal lids:** install the lid until solid gasket contact is achieved then tighten an additional 1/8 turn (+1/8 / -1/16 turn) until tight.

**torque to seal screw type collar of bottom discharge onto bottle’s snout:** install the discharge until solid gasket contact is achieved then tighten an additional 1/8 turn

**torque to seal self-sealing bung plugs:** install the bung plug until solid sealing area contact is achieved then tighten an additional 1/8 turn (1-1/8 inches travel).

**torque to seal gasketed bung plugs:** install the bung plug until solid gasket contact is achieved then tighten an additional 3/8 turn.

- * = Some may be without carbon black.
- ** = Solid Teflon® gasket only available in a Liquitote® with bolted lid assembly.

Distributed as an insertion with “first” invoice.

Word File 1782(c) IBC notification
SECTION I: HAZPAC / CUBIC-YARD BOX KIT

On the following page, you will find the UN Closing Instructions for the HAZPAC Box Kits.

Please note that in order to be in UN compliance, assembly and closure must be made, as instructed, using all the components that are provided by Bronstein Container Co., Inc.

If you need any guidance, whatsoever, please contact us for assistance.
HAZPAC

CUBIC-YARD BOX CLOSING INSTRUCTIONS:

1. Unfold container, place onto pallet and nail bottom flap to pallet with four 1 7/8 threaded shank cap nails provided. Nail through deck stringers.

2. Fold in bottom as you pull the container upright onto the pallet.

3. Pull out the poly liner and stretch firmly around the container walls.

4. Fill the container and carefully fold over liner to prevent any leakage.

5. Settle the waste into the container and close the flaps around the liner.

6. Permanently seal the flaps with 2" filament reinforced pressure sensitive tape.

7. Strap box to pallet with a minimum of 2 bands
On the following page, you will find the UN Closing Instructions for the Wastepacks Container.

Please note that in order to be in UN compliance, assembly and closure must be made, as instructed, using all the components that are provided by Bronstein Container Co., Inc.

If you need any guidance, whatsoever, please contact us for assistance.
Components List for WastePack 1.0 Bag

- One (1) 42” x 42” x 42” heavy-duty 6 oz. polypropylene bulk bag with four lifting loops, sewn in pocket, duffel top, full flap closure and internal pocket sleeves (ships flat).
- Corrugated hard wall inserts already inside the bag’s panel pocket
- One (1) 41” x 40” x 85” Black Heavy Duty Gusset LDPE Poly Liner.

Assembly/Closure Instructions

1. To open bag
   - Stand bag upright
   - To pop open bag, hold opposite side of bag and pull towards you.

2. Remove the Black Poly liner from the woven bag.
   - Open Black poly liner at top and carefully insert inside the container.
   - Smooth and pull excess slack inside the container
   - Ensure the liner is tucked into each corner
   - Drape liner over the outside edge of the bag, the liner should be pulled down minimum of 15” and not to exceed maximum of 18”

3. When container is filled close liner by
   - Twisting tightly top portion of poly liner taking up void space in liner.
   - Place zip tie around twisted neck of poly liner and pull tight or
   - Using 2” tape wrap it around the neck of poly liner minimum of two times.

4. Close the duffel top by
   - Pulling the duffel top up
   - Gather and tightly twist the duffel top
   - Secure top by using the two (2) sewn in ties.

5. Close bag by
   - Pulling the outside cover over top of bag
   - Using the (3) ties, secure them to the outside loops.
SECTION K: 1-GALLON HDPE BOTTLE IN UN 4x1 BOX

On the following page, you will find the UN Closing Instructions for the UN approved 4x1 Box Kits for 1 Gallon HDPE bottles and closures that we commonly sell.

*THE FOLLOWING CLOSING INSTRUCTION ONLY APPLY TO PACKAGES WHERE THE BOX COLOR AND UN CERTIFICATION ARE A MATCH; AS SEEN BELOW *

Please note that assembly and closure must be made with all the parts provided by Bronstein Container Co., Inc. in order to be in UN compliance.

If you cannot find the appropriate closing instructions, or need any guidance, whatsoever, please contact us for assistance.

❖ KRAFT BROWN BOX WITH UN MARKING:

UN4G/Y19.4/S/15/ USA

PAGE : K1

❖ WHITE BOX WITH UN MARKING:

4G/Y19.7/S/15/USA

PAGE : K1
CLOSING INSTRUCTIONS FOR 1 GALLON 4X4 JUGS

*TO BE IN UN COMPLIANCE*
APPROVED CAPS MUST BE USED FOR CLOSURE
PLEASE CONTACT US FOR FURTHER INFORMATION OR WITH ANY QUESTIONS

Fill material is put into a one gallon round plastic bottle closed with cap:

CLOSURE OF BOTTLE: Cap tightened with 22 in-lbs of applied torque

Four bottles are put into the 4G fiberboard box:

A fiberboard pad is put in on top:

Top of the 4G box is taped closed:

CLOSURE OF BOX: 2” wide tape Intertape 7100, (1) strip along where flaps meet with 2” edge overlap

**UN Testing was conducted to certify the package for PG II Liquids with a maximum specific gravity of 1.2.**
**SECTION L: F-STYLE TIN CANS**

In the following pages, you will find the UN Closing Instructions for the F style tin cans that we commonly sell.

If you cannot find the appropriate closing instructions, or need any guidance, whatsoever, please contact us for assistance.

**Once you've identified the manufacturer's code on your can, please reference the following closing instructions:**

<table>
<thead>
<tr>
<th>MANUFACTURER’S CODE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>M4953</td>
<td>PG. L1</td>
</tr>
</tbody>
</table>
Closing Instructions for “F” Style Tin Cans

Tin Coated Steel Screw Caps

Nozzle sizes – 1 inch, 1 1/8 inch

Apply screw cap and torque to the minimum tested as shown on UN certification.

Please contact Customer Service for a copy of the most recent UN testing/certification.

Plastic Closures-

Closing instructions do not include a tamper evident seal. Plastic closures may need to be preheated to ease insertion into the can opening. The filler should request this information from the closure supplier. The 32 mm REL closure was tested at an ambient temperature of 68-72°F.

Closure sizes: .954 Magenta and 32 mm REL.

After cans are filled, select the proper closure for the opening in the top of the can.

Place the closure in the opening and center it as closely as possible.

Apply downward force until the closure is fully seated. The closure will normally snap in with a distinct sound. Do not continue to apply force after the insertion is complete because this could result in damage to the opening.