CLOSURE INSTRUCTIONS

IMPORTANT NOTICE: Please give to person responsible for closing these containers for shipment pursuant to Title 49 Code of Federal Regulations, part 178(c)(a)(ii), you are notified in writing of the type and dimension of closures, including gaskets, needed to satisfy performance test requirements. This includes tightening instructions for closures. You are required to provide closing information to any person to whom this package is transferred who may need to close the package prior to reshipment.

Closure Notification Advice

Steel Drums

(INCLUDING BUT NOT LIMITED TO 16-, 30-, AND 55-GAL DRUM SIZES)

Pursuant to the requirements of the U.S. Department of Transportation at 49 CFR 178.2(c)(1), we hereby provide this *Notification* of the closing method used for the containers sold to you under our *Quotation.* 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. Under the applicable DOT regulations, any changes made to (a) the type, materials or dimensions of closures or (b) the method of closure **may constitute a change to the design type of these containers, voiding the UN certification we have marked on them.** If there are any questions regarding proper closing methods, please contact your Account Manager or Customer Service representative. **Industrial Container Services highly recommends a copy of this *Notification be kept on file and posted in a conspicuous location at your facility.***

TO CLOSE FITTINGS IN HEADS OR COVERS:

1. Use only the plugs and gaskets we have supplied with the drums
2. Insert and tighten all the plugs into their appropriate
3. Using a torque wrench, tighten each fitting into the correct torque. See below for correct torques. Torques are based on the closure manufacturers' recommendations.

Size & Fitting Style	Required Torque				
	Steel Plugs			Nylon or Poly Plugs	
	Buna Rubber Gasket	Poly Gasket	EPT Gasket	Buna Rubber Gasket	Poly Gasket
2" Rieke Type	30 ft. lbs.	40 ft. lbs.	N/A	20 ft. lbs	20 ft. lbs.
1½" Rieke Type	30 ft. lbs.	40 ft. lbs.	30 ft. lbs.	N/A	N/A
3/4" Rieke Type	15 ft. lbs.	20 ft. lbs.	N/A	9ft. lbs.	9 ft. lbs.
2" Trisure Type	20 ft. lbs.	30 ft. lbs.	N/A	20 ft. lbs.	30 ft. lbs.
3/4" Trisure Type	12 ft. lbs.	20 ft. lbs.	N/A	8 ft. lbs.	8 ft. lbs.
2" Leak Lock Type	25 ft. lbs.	N/A	N/A	N/A	N/A

3/4” Leak Lock Type	20 ft. lbs.	N/A	N/A	N/A	N/A
Drums Closed in this manner meet the UN performance oriented packaging standards test requirements for the container markings shown on our Quotation. It is the responsibility of the shipper to ensure that the container is closed according to these instructions prior to shipment per 49 CFR 173.22(a)(4).					

Closure Notification Advice
Steel Drums

TO CLOSE OPEN HEAD DRUMS:

A. FOR CUSTOMERS WHO ASSEMBLE THE COVER AND RING AFTER FILLING:

a. Place cover on drum, using only the cover gasket we have supplied.

b. Snap the closing ring over the cover and the bead of the drum. Make sure the ring’s **lugs point down**, toward the floor. Also make sure that sufficient downward pressure is applied to the cover so that the bottom edge of the closing ring is fully engaged under the bottom edge of the drum bead.

c. If there are fittings in the cover, the 3/4” bung should be oriented between 45 to 90 degrees from the ring lug. If no 3/4” bung, orient the 2” bung 45 to 90 degrees from the ring lug.

d. Insert the bolt through the lug without threads. Then screw lock nut on bolt. Finally, screw the bolt into the threaded lug.

e. If jam (lock) nuts are provided, ensure nut spins freely between lugs during ring torque process. Finger tighten jam nut against threaded lug of ring (metal to metal); then wrench tighten the jam nut an additional 14 to 28 degrees. Note: If Fas lok bolts or shoulder bolts are provided (which manufacturers are using at an increased rate), they do not require a jam nut for proper closure.

B. FOR CUSTOMERS WHO PURCHASED DRUMS ASSEMBLED:

a. Ensure that the locking ring, bolt and nut have not been disturbed from the time of our delivery.

b. After filling, close the fitting in the cover used for filling.

c. Check the tightness of the bolt and nut. (Some loosening of the ring is inevitable over time, because of gasket compression.) Ensure that torque levels meet those that are shown.

Drums closed in the above manner meet the UN performance-oriented packaging standards test requirements for the container markings. It is the responsibility of the shipper to ensure that the container is closed according to these instructions prior to shipment per 49 CFR 173.22(a)(4).

Note: Consideration should be given to the possible effects heating and cooling may have on containers resulting in the need to tighten the closure(s). Drum gaskets will compress and lose their memory over time affecting their ability to seal. It is recommended that you limit to a minimum the time assembled gaskets are kept under full compression.

New Steel Drum Container
Closing Instructions

49 CFR / UN Requirements

Container Compliance Corp. certifies that the drums we supply meet the requirements of Title 49 Code of Federal Regulations, part 178, subparts L and M. If, after receiving our drums, you, as the filler and shipper alter the drums in any way you release Container Compliance Corp. from its responsibilities as the drum manufacturer.

Specifically, Container Compliance Corp. installs all closure devices in a way that satisfies all performance test requirements.

To comply with parts 178.2, 178.601 (b), and to assist you and our customer in fulfilling your responsibilities, we list the following pertinent.

Fitting Torque Requirements (Ft.-lbs.)

C1 OCTOGONAL BASE CLOSURE SYSTEM (See Note 1)

Recommended Minimum APPLICATION Torque (Steel)

Gasket	3/4" (20 mm)	2" (50mm)
Black Buna	12ft.-lbs.	20ft.-lbs.
White Buna	12ft.-lbs.	20ft.-lbs.
Butyl	12ft.-lbs.	20ft.-lbs.
White Neoprene	12ft.-lbs	20ft.-lbs.
Polyethylene	15ft.-lbs.	30ft.-lbs.
Irradiated Poly	15ft.-lbs.	30ft.-lbs.
Viton	12ft.-lbs.	20ft.-lbs.
Hypalon	12ft.-lbs.	20ft.-lbs
Teflon	20ft.-lbs.	30ft.-lbs.
Silicone	12ft.-lbs.	20ft.-lbs.
EPDM	12ft.-lbs.	20ft.-lbs

Recommended Minimum APPLICATION Torque (Nylon)

Gasket	3/4"(20mm)	2"(50mm)
All	8ft.-lbs.	20ft.-lbs.

Recommended Minimum APPLICATION Torque (Polypropylene & HDPE)

Gasket	3/4"(20mm)	2"(50mm)
All	5ft.-lbs.	10ft.-lbs.

1. The "as shipped" torques may be up to 35% less than the application torques and still with stand normal conditions of transportation

C2 SERRATED BASE CLOSURE SYSTEM

Recommended Minimum Torque (Steel)

Gasket	3/4"(20mm)	1½"(38mm)	2"(50mm)
Black Buna	15ft.-lbs.	25ft.-lbs.	30ft.-lbs.
White Buna	15ft.-lbs.	NA	30ft.-lbs
Gray Neoprene	15ft.-lbs	NA	30ft.-lbs
Polyethylene	20ft.-lbs.	40ft.-lbs.	40ft.-lbs.

Irradiated Poly	20ft.-lbs.	40ft.-lbs	40ft.-lbs
Dapon	15ft.-lbs.	NA	30ft.-lbs
EPT/EPDM	15ft.-lbs.	25ft.-lbs.	30ft.-lbs.
Viton	15ft.-lbs.	NA	30ft.-lbs.

Recommended Minimum Torque (Plastic)

Gasket	**3/4"(20mm)**	**2"(50mm)**
Black Buna	9ft.-lbs.	20ft.-lbs.
White Buna	9ft.-lbs	20ft.-lbs
Gray Neoprene	9ft.-lbs	20ft.-lbs
Polyethylene	9ft.-lbs	20ft.-lbs
Irradiated Poly	9ft.-lbs	20ft.-lbs
Dapon	9ft.-lbs	20ft.-lbs
EPT	9ft.-lbs	20ft.-lbs
Viton	9ft.-lbs	20ft.-lbs

Recommended Minimum Torque for Self Gasketing Plastic Plugs

3/4"(20mm)	**2"(50mm)**
5ft.-lbs	12ft.-lbs

Most Important: Open head cover gasket performance can be affected by time (age), temperature, exposure to chemicals and ozone. This could result in loss of cover gasket elasticity. Consequently, Container Compliance Corp. recommends checking the closing ring bolt for proper torque prior to shipping.

The manufacturing process applies 5,000 lbs. of force to compress the gaskets, on open heads prior to tightening the ring bolt. This is roughly equivalent to the pressure the bottom drum of seven high stack would see. We strongly recommend filling through the top opening rather than by removing the cover. If you find it necessary to remove the cover for any reason, then information regarding a head press machine can be obtained by contacting Container Compliance Corp. at (216)-961-0035.

Closing Instructions When Using A Head Press:

- Install drum cover and closing ring on the drum.
- Clamp the head press onto the drum keeping aware of pinch points.
- Optimum tightening for a 12 gage closing ring with forged lugs is to jam the nut between the two lugs.
- If the nut cannot be jammed between the lugs then tighten the ring bolt to a minimum of 65ft.-lbs. of torque then tighten the jam nut against the inside of the non-threaded lug.
- Tighten all plugs to the recommended torques.
- Note: By removing the cover from an open head drum, 49 CFR §173.22 and §178.2 make you responsible for that drum's performance and safety during transport.

Closing Instructions Without A Head Press:

- Install drum cover and closing ring on the drum.
- Optimum tightening for a 12 gage closing ring with forged lugs is to jam the nut between the two lugs
- If the nut cannot be jammed between the lugs then tighten the ring bolt to a minimum of 65ft.-lbs of torque then tighten the jam nut against the inside of the non-threaded lug.
- During the torque process, tap the outside of the closing ring with a non-sparkling mallet.
- Tighten all plugs to the recommended torques.
- Note: By removing the cover from an open head drum, 49 CFR §173.22 and §178.2 make you responsible for that drum's performance and safety during transport.
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These closing instructions are valid for all drum specifications Container Compliance Corp. supplies you and are in effect until further notice

New and Reconditioned Poly Drums

Note: All closures must have gaskets to seal

1H1 Tight head drums: Schutz – Torque 2" NPT plugs and 2" Buttress plugs to 30 ft. lbs., torque dip tubes to 20 ft. lbs. Torque ¾" plugs to 9 ft. lbs.

1H2 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 Buttress to 20 ft. lbs. Torque ¾" plugs to 9 ft. lbs. Note: All closures must have gaskets to seal

Intermediate Bulk Containers - IBC

Prior to closing:

1. Inspect each closure to insure:
   a) proper gasket is in place; b) threads and sealing surfaces are dry; c) both closure and gasket are in good condition.

Closing plug and cap fittings:

1. Insert the plug or cap into the appropriate opening and screw down "hand tight" until the gasket is in contact with the sealing surface.
2. Using a torque wrench capable of applying the proper torque as specified below, tighten the plug or cap until it reaches the pre-set torque as indicated by a release or click. Torque wrenches should be calibrated at least annually.

Manufacturer	Fitting/Accessory	Gasket Type	Closing Torque (ft-lbs)
GNX	Top 6" threaded closure	Any	80 ft-lbs
	2" plug in 6" lid	Any	18 ft-lbs
	Valve to IBC Body	Any	73 – 75 ft-lbs
Grief	Top 6" threaded closure	EPDM, SVR or Santoprene	45 ft-lbs min; 55 ft-lbs max
	Top 6" threaded closure	Viton	70 ft-lbs min; 80 ft-lbs max
	Top 9" threaded closure	Any	85 ft-lbs min; 95 ft-lbs max
	NPT/Buttress plugs in 6" cap	Any	20 ft-lbs
	All ¾" plugs in 6" caps	Any	9 ft-lbs
	All ¾" manual vent plugs on 6" caps from Stainlez	Any	2 ft-lbs
	Valve service equipment – Italy plastic collar valve		40 ft-lbs; orient to level handle
	All other plastic collar valves and metal collar valves		50 ft-lbs
Encore	Top 6" threaded closure	Any	50 ft-lbs
	2" plug in 6" cap	Any	20 ft-lbs
	All ¾" plugs in 6" cap	Any	9 ft-lbs
Mauser	SM series 275/330 w/6" or 9" lid	Any	70 (6" fill cap)
	2" plug in 6" or 9" lid	EPDM/FMK	20-25 (fill cap)
	56 mm plug in 6" or 9" lid, vented and solid	EPDM/FMK	20-25 (fill cap)
	2" buttress plug in top of IBC	EPDM/FMK	20 (fill cap)
Schutz	Valve service equipment	Not Specified	75 (6" and 9" fill cap) 20 (2" fitting) 55 (valve nut) 2 turns and line up the hole in the valve body and the hole in the bottle insert and insert clip

85 Gallon Steel Overpack

- Install drum cover and closing ring on the drum.
- Optimum tightening for a 12 gage closing ring with forged lugs is to jam the nut between the two lugs

- If the nut cannot be jammed between the lugs then tighten the ring bolt to a minimum of 40ft.-lbs of torque then tighten the jam nut against the inside of the non-threaded lug.
- During the torque process, tap the outside of the closing ring with a non-sparkling mallet.
- Tighten all plugs to the recommended torques.
- Note: By removing the cover from an open head drum, 49 CFR §173.22 and §178.2 make you responsible for that drum's performance and safety during transport.

*UPDATED 01/06/2022