



# DRUM ACCESSORIES



# PRODUCT RANGE



Stainless Steel Closure



Vent Plug



Blue Plug



Purple Plug



Leak Lock Plug



Tag Ring



Ball Ears



MANUAL CRIMPING TOOL



PNEUMATIC CRIMPING TOOL

# FLANGES & PLUGS

## Raw Material :

- Mild Steel (Hot Rolled & Cold Rolled)
- Stainless Steel
- Aluminum (Flanges only)
- Nylon (Plugs only)
- Polypropylene (Plugs only)

## Gaskets :

- Nitrile
- EPDM
- LDPE
- Poly Irradiated (Crossed Linked)
- Viton
- Teflon
- Neoprene

## Surface Finish :

- Zinc Electroplating (CR3 & CR6)
- Lacquered
- Nickel Plating
- Phosphating
- Tin Plating

## Geometry :

- Feather threads in Plugs
- Extra Top Chamfer in Flanges to facilitate effective curling.

# STEEL FLANGES & PLUGS (TYPE 'A' & 'C')

TYPE 'A'



TYPE 'C' (JIS)



## General Information

- Manufactured in compliance with ISO-15750-3
- Threads comply with ISO-228
- Raw Material : HR / CR Mild Steel
- Finish : Zinc Plated with Passivation in Chrome 3 and Chrome 6 per customer request.

## General Information

- Manufactured in compliance with JIS-Z-1604
- Threads comply with JIS-Z-1604
- Raw Material : HR / CR Mild Steel
- Finish : Zinc Plated with Passivation in Chrome 3 and Chrome 6 per customer request.

# STEEL DRUM FLANGES



Thread forms as per BSP standards.

## Varieties in Flanges

### Thread Cut

The threads are precision cut.

### Rolled Thread

Rolled thread flanges ensure longer life of the threading due to its better quality.

### Grooved Rolled Thread

GRT flanges have a tendency to climb the gasket upward after insertion and have better results than any other flanges. **GRT Flanges.**

These closures are manufactured from hot / cold rolled deep drawing steel and to prevent corrosion in humid conditions and to withstand the sea atmosphere they are bright electroplated with zinc and chrome passivated.



# SPECIAL GEOMETRY

## Geometry :

- Feather threads in Plugs
- Extra Top Chamfer in Flanges to facilitate effective curling.



## Feather Threads in Plugs

The thread end near the gasket area runs all around parallel to the collar and merges into the thread again to make this feather thread and has 4 threads.

## Extra Top Chamfer in Flange

To facilitate effective curling of flanges, extra top chamfer plays an important role.

Raw Material	Grade (OR Equivalent)
Hot Rolled Steel (Type 'A')	JDH CR04 ACN
Cold Rolled Steel (Type 'A')	IS 513: 2008 CR1 O
Hot Rolled Steel (Type 'C')	JISG3131-SPHC
Cold Rolled Steel (Type 'C')	JISG3141-SPCC-S
Stainless Steel	316L
Aluminium	AA1050 H14
Nylon	PA6 - NXH-01NC PA66 - PX-01NC
Polypropelene	Repol - H110MA Koylene - ML3530

### Zinc Electroplating

Zinc plating is widely used on steel closure components to protect from rusting. Although, hexavalent processes (popularly known as CR6) have been used for electroplating for over 65 years, upgraded environmental legislation require a shift to trivalent passivation in a phased manner. This is popularly known as CR3.

NSL has built in expertise in trivalent chrome passivation process and is one of the largest manufacturer in the world.

Our Plugs and Flanges are Cr3 coated which are environmentally friendly. On the other hand, Cr6 coating is now banned worldwide. It is also difficult to treat effluent containing Cr6.

### CR3 Advantages

- Non Toxic
- Non Carcinogenic
- Stable Compound
- No Allergic Reaction
- Complied with RoHS
- Fulfill W.H.O. Norms
- Globally Accepted

### Coating requirements -

- Finish & Appearance.
- Thickness of plating

### Tests -

- Neutral Salt Spray Resistance.
- Weathering Test.
- Blister Test.
- Adhesion Test.

### Validation of Electroplating Bath -









- Hull Cell Test.

### Chromium 6 (Hexavalent Coating)









### Chromium 3 (Trivalent Coating)



WEATHER TEST RESULT FOR JIS 2" PLUG (CR3)									
Sr. No.	SAMPLES OF	AFTER 12 HRS.	AFTER 72 HRS.	AFTER 96 HRS.	AFTER 120 HRS.	AFTER 144 HRS.	AFTER 164 HRS.	AFTER 192 HRS.	AFTER 216 HRS.
01	TECHNOCRAFT SAMPLES (Cr3)								
		OK	OK	OK	OK	OK	OK	Minor black spot started on collar edge	Minor black spot on collar
<b>REMARKS:</b> Observed minor black spot on cup and collar edge after 192 hrs.									

### Weather Test :

- 1) Place the Plugs on plain surface.
- 2) Gently spray sea water on the weakest area which is inside portion of the plug. Note that the sea water should not get accumulate inside the plug.
- 3) Keep the sprayed plugs in the atmosphere for weathering test.
- 4) Note down the hours in which Black spot is observed.
- 5) The life should be minimum 120 hours for Black spot.

SALT SPRAY TEST RESULT FOR JIS 2" PLUG (CR3)							
Sr. No.	SAMPLES OF	AFTER 24 HRS.	AFTER 48 HRS.	AFTER 72 HRS.	AFTER 96 HRS.	AFTER 135 HRS.	AFTER 150 HRS.
01	TECHNOCRAFT SAMPLES (Cr3)						
		OK	OK	OK	OK	OK	Minor white rust on cup and collar edge.
<b>REMARKS:</b> Observed minor white rust on cup and collar edge after 150 hrs.							

### Neutral Salt Spray Resistance :

The coating resistance to the Neutral Salt Spray (NSS) corrosion test defined in NF ISO 9227 must be compliant with the exposure times of 120h for white rust.

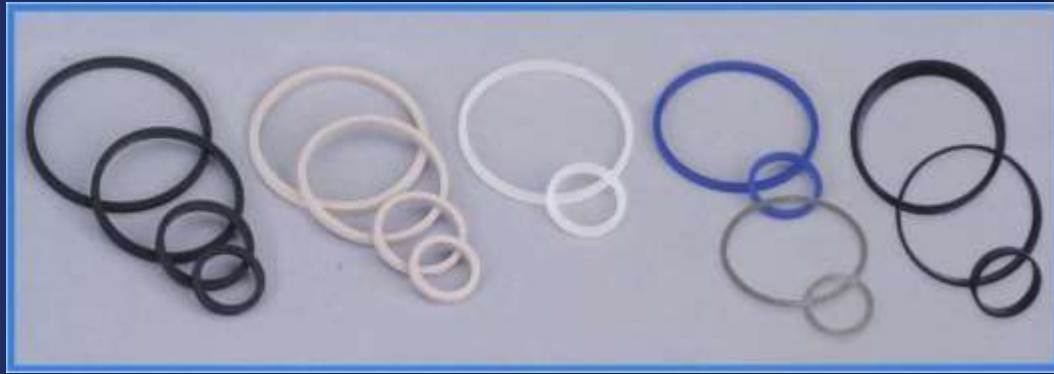
# Lacquered Closures SYSTEM

SURFACE  
FINISH



US Lacquers			European Lacquers		
Name	Company	Description	Name	Company	Description
RESCO-800L	Unichem	100% Phenolic - Olive Green	R-78007-Gold (BPA Free)	Axalta	Clear Phenolic
RESCO-500-L	Unichem	Epoxy Phenolic - Golden Brown	R-78424 (BPA free)	Axalta	100% Phenolic - Brown
L-1	KNS	Clear Phenolic	IP-2088-320	PPG	Epoxy Phenolic - Golden Brown
L-15 Dark Brown	KNS	Phenolic	L-22 Black	Madar	Epoxy Phenolic
L-5X Olive Drab	KNS	Phenolic	R-78433	Axalta	Epoxy Phenolic
L-5X Tan Phenolic	KNS	Tan Phenolic			
EHD002E	Valspar	Epoxy Phenolic - Golden Brown			
EHC0010C	Valspar	Epoxy Phenolic Clear			

# GASKETS FOR FLANGES & PLUGS



Type of Gasket	Application	Temp. Deg. C.	Time mins	¾" Torque	2" Torque
Black Buna	General purpose application is resistant to Lube oil	220	15	8 - 15 ftlbs	15 - 25 ftlbs
White Buna	For specialty Chemicals & better oil resistant.	180	20	8 - 15 ftlbs	15 - 25 ftlbs
White EPDM	Food grade and chemical resistant	205	20	8 - 15 ftlbs	15 - 25 ftlbs
LDPE	Excellent resistance to hydrocarbons specially for petroleum products	--	-	8 - 15 ftlbs	15 - 25 ftlbs
Poly Irradiated	Are cross linked, thus withstand higher temperatures compared to LDPE gaskets	250	20	8 - 15 ftlbs	18 - 25 ftlbs
Viton	Resistant to hazardous chemicals	232	15	8 - 15 ftlbs	15 - 25 ftlbs
Teflon	Resistant to hazardous chemicals at elevated temperatures	107	15	10 - 15 ftlbs	18 - 25 ftlbs
Dual Gasket (Flanges only)	A pair of White EPDM and Black Buna gaskets fitted together to give better leak proof-ness in drop tests.	205	20	8 - 15 ftlbs	15 - 25 ftlbs

# NYLON PLUGS FACTORY MUTUAL APPROVED (FM)

## General Information

- Manufactured in compliance with ISO-15750-3
- Threads comply with ISO-228
- Raw Material : Nylon
- Nylon Plugs are designed for FM requirements of safety in case of accidental fire. They bear FM stamp.



## Advantages

- FM Approved
- ISO thread specified
- Nylon plugs are safe to use for inflammable chemicals and afford leak proof along with chemical compatibility due to selection possible out of a variety of elastomeric gaskets.

## Closure is available with any of following standard NSL gaskets.

- **Black Nitrile Gasket** : Black Nitrile Rubber (NBR) is resistant to petroleum Oils, Aromatic Hydrocarbons, Mineral Oils, Vegetable Oils and many Acids. Black Nitrile has excellent sealing properties.
- **EPDM Gasket** : EPDM is a multi-purpose sealing material with good and excellent chemical properties. EPDM is FDA compliant. As plug gasket, it is not recommended for application involving petroleum derivatives.
- **Square Poly Irradiated gasket** : Improved heat resistance due to nature of Polythelene (PE) the washers are subject to “Cold Flow” and as such to loss of compression / closing torque.
- **Round Poly Irradiated gasket (For 2” Plug only)** : Improved heat resistance due to nature of Polythelene (PE) the washers are subject to “Cold Flow” and as such to loss of compression / closing torque.

## Torque Information

Washer Type	¾” Closure		2” Closure	
	ftlbs	Nm	Ftlbs	Nm
Black Nitrile	8 - 12	11 - 16	10 - 15	14 - 20
White EPDM	8 - 12	11 - 16	10 - 15	14 - 20
Round Poly Irradiated	-	-	10 - 15	14 - 20
Square Poly irradiated	8 - 12	11 - 16	10 - 15	14 - 20

# POLYPROPYLENE PLUGS

## General Information

- Manufactured in compliance with ISO-15750-3
- Threads comply with ISO-228
- Raw Material : Poly Propylene
- Resistance upto 70°C. (158°F.) temperature.

*Closure is available with any of following standard Technocraft gaskets.*

- **Black Nitrile Gasket** : Black Nitrile Rubber (NBR) is resistant to petroleum Oils, Aromatic Hydrocarbons, Mineral Oils, Vegetable Oils and many Acids. Black Nitrile has excellent sealing properties.
- **EPDM Gasket** : EPDM is a multi-purpose sealing material with good and excellent chemical properties. EPDM is FDA compliant. As plug gasket, it is not recommended for application involving petroleum derivatives.
- **Square PE Gasket** : Square PE gasket due to nature of the Polythelene (PE) have limited heat resistance and are subject to “Cold Flow” and as such to loss of compression / closing torque.
- **Round PE Gasket** : Square PE gasket due to nature of the Polythelene (PE) have limited heat resistance and are subject to “Cold Flow” and as such to loss of compression / closing torque.



## Torque Information

Washer Type	¾" Closure		2" Closure	
	Ftlbs	Nm	Ftlbs	Nm
Black Nitrile	8 - 15	11 - 20	15 - 25	20 - 34
White EPDM	8 - 15	11 - 20	15 - 25	20 - 34
Round Poly Irradiated	8 - 15	11 - 20	15 - 25	20 - 34
Square Poly irradiated	8 - 15	11 - 20	18 - 25	20 - 34



# METAL CAPSEALS

## General Information

- Raw Material : Tin Plate (0.27mm to 0.32mm)
- Lithography :  
External Side → Base Size - RCDS White Coating → Customer design print on request. → Protective Varnish.  
Internal Side → R C Internal Gold Coating
- Pneumatic and Manual Sealing Tools available.
- NSLcapseal makes the drum tamperproof and additionally leak proof.
- Packing : Sealed in Polythelene bag and packed in corrugated box.
- No leakage at 1.5 kg/cm<sup>2</sup> air pressure.
- We print special design as per requirement of the customer.



Steel security capseals are made of quality tin plated steel, which is precisely formed, lined with a chemical resistant lacquer and fitted with a heat cured vinyl gasket. A white enamel exterior is standard and multi colour custom litho printing is available.

Sealing tool is meant to seal metal capseals on to curled wall of flange fitted on drum to make the drum leak proof and tamper proof. Flange & plugs gaskets make drum leak proof. In case bung is little loose the leak through flange thread is sealed by capseal sitting on curled wall of flange.







# VENT PLUGS (STEEL & PLASTIC / NYLON)

## Steel Plugs

### *General Information*

- Manufactured in compliance with ISO-15750-3
- Threads comply with ISO-228
- Raw Material : CR Mild Steel
- Finish : Zinc Plated with Passivation in Chrome 3 and Chrome 6 per customer request.



## Plastic / Nylon Plugs

### *General Information*

- Manufactured in compliance with ISO-15750-3
- Threads comply with ISO-228
- Raw Material : Nylon



NSL offers Vent-In & Vent-Out Plugs that protect drum from differential pressure damage.

When Drum Filler fills a product which creates internal Vapour pressure, Vent-Out plugs release the same. Vent-In plugs do the same if vacuum gets created in the drum. Both plugs vent at differential pressure of 8.5 psi.

# LEVER LATCHES FOR LOCKING RINGS (CLAMPS)

## General Information

- *Raw Material : HR and CR Steel*
- *We can produce and supply any design clamp suitable for projection, spot welding and riveting.*
- *We make more than 100 types of clamps.*
- *We produce clamps with wide range as follows*
  - Smallest Clamp - 59mm (Handle length)*
  - Biggest Clamp - 240mm (Handle length)*
- *Plastic seals are available for clamps on request.*



NSL is the world's largest stockiest of Lever Latches / Clamps for open head steel drums, fibre drums, plastic drums made globally. Large proportion of special custom made latches are made in very high precision for state of the art automatic welding machines of our high end customers particularly in western Europe. Our clamps are manufactured to very high tolerances to answer to precision demands of drum makers particularly focused on Europe, U.S., South America. We can make specials to specific requirement of customers at very short notice due to in-house design, forming simulation, auto blank development, computer controlled machining and finishing for toolings. Electroplating is Chrome 3.

Clamps are also designed and produced into special locking latches or other locking features. Tolerance control can be so close to give just the right click, neither too hard nor too loose.

Large range of clamps also produced with orbital riveting for high strength. Clamps are also produced with very short rivets orbitally closed such that hinge is attached to body of clamp by two small rivets in place of one. This is to give very high rigidity.

Many clamps at customer request were redesigned to combine link and small hinge into one part such that in place of 4 or 5 part clamp, it becomes three part clamp (besides rivets).

High repeatable accuracy is maintained on weld dimples to give very consistent welding at customers end.

# RINGS WITH CLAMPS

To address the growing requirements of our customers, we are indulged in offering Drum Lock Ring (Lever Type) to our valued customers. Made with the use of high quality resource, offered product is in extensive demand in the market and is high acclaimed in industry for its finished construction, high quality and long working life.

## Features:

- Easy to operate
- Optimum performance
- Rugged design
- Perfect finish
- Perfectly polished
- Anti corrosive

## Rings Manufacturing



## Rings Welding





NOVA STARLINK FZC

T +971 (0)4 452 1998

M + 971 50 156 9930 / 054 400 9528

PO BOX 113855 DUBAI UAE

INFO@NOVASTARLINK.AE

WWW.NOVASTARLINK.AE