Nupros Inc.



NuSeal

INSULATING FLANGE ASSEMBLY

NUSEAL Insulating Flange Assembly

Nuseal Insulating Flange Assembly, an alternative to expensive monolithic joints used in pipelines, avoids breakage of expensive insulating gasket kits during the installation process. It can be used best in CP systems, in cases of galvanic corrosion in dissimilar metals and at jetty terminal manifolds. Additionally, Nuseal offers its insulating flange assembly for high temperature services and potable water services, while the gasket of the same is tested in accordance with the NFS guidelines.

Nuseal Insulating flange assembly for CP system

The Nuseal insulated flange assembly, simplifies the process of corrosion control in Cathodic Protection. CP is a common and important practice by pipeline facility owners, which is beneficial in *mitigating* the corrosion of buried infrastructure. If flanges are not insulated could draw a great amount of current, which would rapidly decay anodes and thereby require a higher voltage. The idea is to evenly protect the pipeline and not use voltage or current that is too high and can damage the coating. Also, if a structure (such as a compressor) is hit by lightning, the insulator can prevent the current from damaging a rectifier.

Insulating flange assembly is a pre-fabricated isolation flange assembly, meaning, the joints are fully assembled, tested at our factory and then shipped.

Nuseal insulating flange assembly for galvanic corrosion

Nuseal insulating flange assembly is used to protect pipelines from galvanic corrosion that occurs when dissimilar metals joints are exist in the pipeline. These are used in the in the petrochemical complex and steel industry. These joints also eliminate use of expensive cladded flanges.

Nuseal insulating flange assembly can be supplied with:

1. Socket Weld Ends
2. Butt-Welded Ends
3. Flanged Ends

Nuseal insulating flange assembly for terminal manifold for jetty and tanker/shore isolation

Why Nuseal insulating flange assembly is used in jetty manifolds:

Due to differences in the electrical potential between the tankers and berths, there is a risk of electrical arcing at the manifold during connection and disconnection of the shore hose or loading arm. To enable protection against this risk, there needs to be a means of electrical isolation at the tanker/shore interface. Large currents can flow in electrically conducting pipework and flexible hose systems between the tanker and shore. The sources of these currents are:

- Cathodic protection of the jetty or the hull of the tanker, provided either by an impressed current system (Impressed Current Cathodic Protection - ICCP) or by sacrificial anodes
- Stray currents arising from galvanic potential differences between tanker and shore, or leakage effects from electrical power sources.

An all metal loading or discharge arm provides a very low resistance connection between tanker and shore and there are dangers of an incendive arc when the ensuing large current is suddenly interrupted during the connection. Similar arcs can occur with flexible hose strings containing metallic connections between the flanges of each length of hose.

Vessels transferring low flash point flammable liquids, at marine terminals, or during STS transfer operations, need to take precautions against potential sources of ignition. One source is the static charge caused in the cargo transfer system, which may discharge and cause a high voltage, low current spark.

As illustrated by us, you can see why we recommend Nuseal Insulating Flange Assembly.

Sizes available: up to 36”
End connection – Flange connection to suit jetty manifolds
MOC: Carbon steel, Alloy steel and Stainless steel
Coating: Internal external coating as per client's requirement

Advantages of insulating flange assembly:

- Cost effective when compared to monolithic joints
- Assembled joints eliminate the need for kits and also saves on-site labour
- Simplifies the installation process, as welding is similar to that of monolithic joints
- Controlled assembly and pre-testing eliminate the need for adjustments
- Mechanically designed, as per piping class
- Servicing and maintenance are simplified

- Bolt and stud size do not change, thus making joint strong.
- Flange bolt holes have perfect alignment and close tolerance fit to the dielectric sleeves of 0.8mm thickness
- Flange studs/nuts are manufactured using alloy steel of ASTM Designation A-193-52T Grade B-7/ A-194 Class 2-H, or as required by the pipeline design. Precise machine steel washers are added to accommodate the outer diameter of insulating sleeves for better electrical isolation
- Precise assembly with accurate torqueing carried out in stages followed by the required hydrotesting
- Tested for minimum resistance of 5 Mohms
- Internal flange gap is sealed with epoxy resin to restrict deposition that gets carried away with media, for smooth flow

NUSEAL Insulating Flange Assembly Technical Information

NUSEAL Insulating flange assembly, is manufactured in all combinations of flanges, insulating gaskets and insulating sleeves and washers. In doing so, we cater to an array of needs - flange isolation to CP system in high temperature services, potable water services and hydrocarbon services, galvanic corrosion and terminal manifold isolation at jetty.

The material selection is selected as per media characteristics too.

Flange standards to select from: ASME/ANSI B16.5/BS1560 Section 3.1 (Class 150 to 1500), ASME/ANSI B 16.1/BS 1560 Section 3.2 (Class 125, 250), AS 2129- table A to T, AS4087 Class 14,16,21,35, ISO 7005 -1 PN 20 to 420, DIN 2501-Part 1 (PN 6 to PN100), JIS B 2210:PN5 to PN63 and AWWA standards

Insulating gaskets materials to select from are: Nema LI 1-2001 G10 (applicable in potable water too)/G11/ FR4, Phenolic and Vermiculite for high temperature
Insulating Sleeves to select from: Nema LI 1-2001 G10/G11/ FR4, Phenolic, Maylar, Mica and Nomex. One-piece integrated sleeve and washer in Maylar are also available
Insulating washers to select from: Nema LI 1-2001 G10/G11/FR4, Phenolic, Maylar, Vermiculite and Mica

Nuseal Insulating flange assembly manufacturing range
Nuseal Insulating flange assembly can be manufactured in the following sizes:

- Line size: ½" to 100"
- Line thickness: 3mm to 50mm thickness
- Pressure rating: ANSI 150# to 1500#, PN 5 to PN 420 or as per above stated flange standards
- End Connection: Butt weld, Socket weld, Flanged ends

Nupros Inc. Manufacturing capacity
The Nuseal insulating flange manufacturer, Nupros Inc., has a state-of-the-art manufacturing facility to accommodate any volume and quantity ordered. To cater to manufacturing requirements, Nupros has a manufacturing floor area of 8000 sq. feet and a factory area of 15,000 sq. feet, with two overhead cranes of 5 tons capacity

Nupros Inc.Testing facilities
NUPROS Inc. has an in-house testing facility for electrical testing, hydrotesting, pneumatic testing, coating thickness gauge and all calibrated measuring instruments that are involved in manufacturing.

WE ARE BECAUSE OF THEM

Adani Port and Special Economic Zone Ltd.	UNIVERSAL CORROSION PREVENTION INDIA	हिन्दुस्तान पेट्रोलियम HP	BssTech
इंडियनऑयल IndianOil	ऑयल इंडिया लिमिटेड Oil India Limited	MAZOUN "More than just Procurement"	شركة نفط الكويت Kuwait Oil Company

How to order :
Clients to provide Line size, pressure class, end connections, media/ Process fluid, internal coating if required, working pressure, working temperature, and finally, the quantity.












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