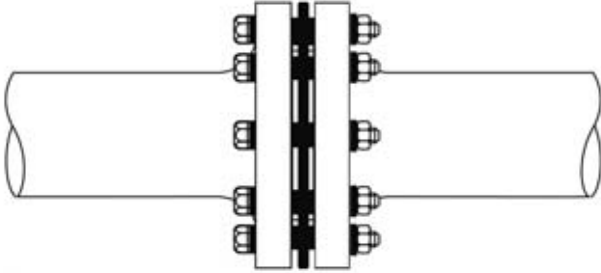


# PSI Flange Isolation Accessories

## General Information



### Flange connection for electrical isolation and against contact corrosion

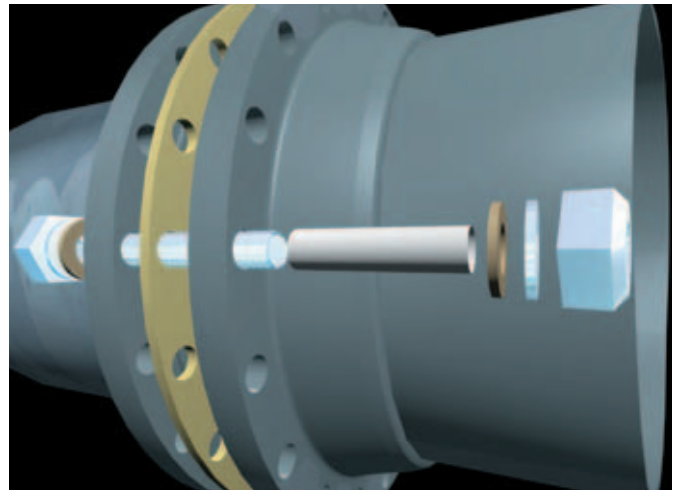


### Double Washer Set

Double washer configurations may be used for added protection against the possibility of “shorting out” the nuts and bolts. In addition, double washer sets electrically isolate the nuts and bolts from both flanges. Another important reason is to protect several flange metal qualities against contact corrosion.

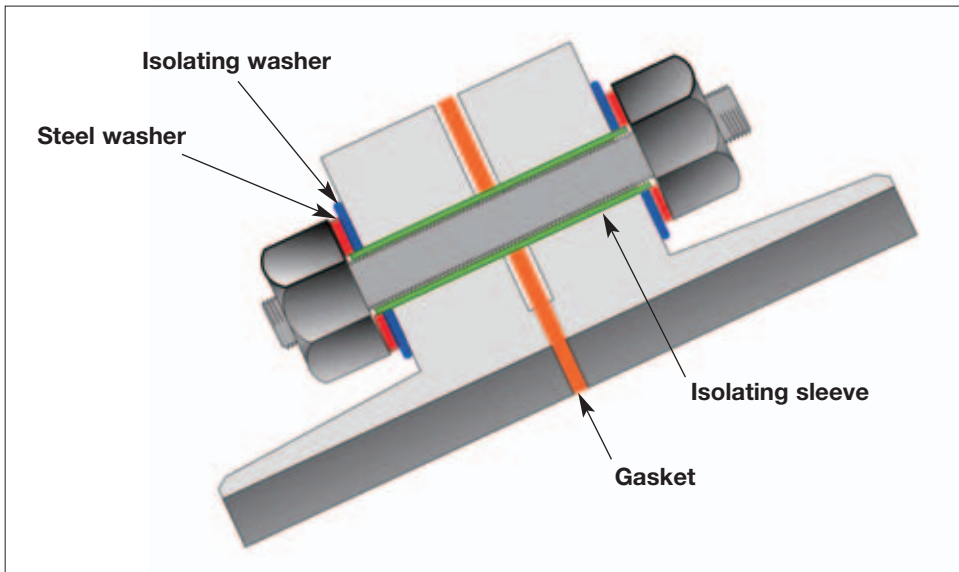
With PSI flange isolation sets it is possible to turn a normal flange connection into an isolation joint. The application are not restricted to new flange joints. PSI flange isolation are also suitable for retrofitting existing joints easily and quickly without having to modify the joint.

PSI flange isolation sets are available to fit all standards, sizes and pressure ratings. The isolating gaskets can be delivered without the isolating set (only) or with isolating set (DW). (One isolating set DW consists of one bolt sleeve, 2 isolating washer and 2 steel washers per screw hole). PSI flange isolation kits can be provided for non-standard flanges (incl. extra sleeve length).



# PSI Flange Isolation Kits

## Sleeves and washers



### Isolating Sleeves

Isolating sleeves are available in the following materials:

- Mylar
- Nomex 410
- Phenolic
- Glimmer ST / HLT
- G – 7 silicon glass
- G – 10 epoxy glass

Designed to easily fit over standard size flange bolts/studs within standard size bolt holes. PSI isolating sleeves have a wall thickness of 0,3 - 0,8 mm and are used with separate isolating and steel washers. They are available for standard American bolt sizes from 1/2" (12.7 mm) to 3 1/2" (88.9 mm) as well as metric bolt sizes from M12 to M52 and larger.

### Isolier Washers

Isolating washers are available in the following materials:

- Phenolic
- G – 7 silicon glass
- G – 10 epoxy glass
- Glimmer ST / HLT

Designed to provide tough, positive isolation. They are made to fit over the isolating sleeves. PSI isolating washers are available for bolt sizes from 1/2" (12.7 mm) to 3 1/2" (88.9 mm) as well as metric bolt sizes from M12 to M52 and larger.



### Steel Washers

Steel washers are designed to fit over the isolating sleeve.

Steel washers are available in the following materials:

- Carbon steel, hot rolled steel galvanised (standard isolating kit)
- Stainless steel, hot rolled stainless steel (special isolating kit)

# PSI Screw Isolation

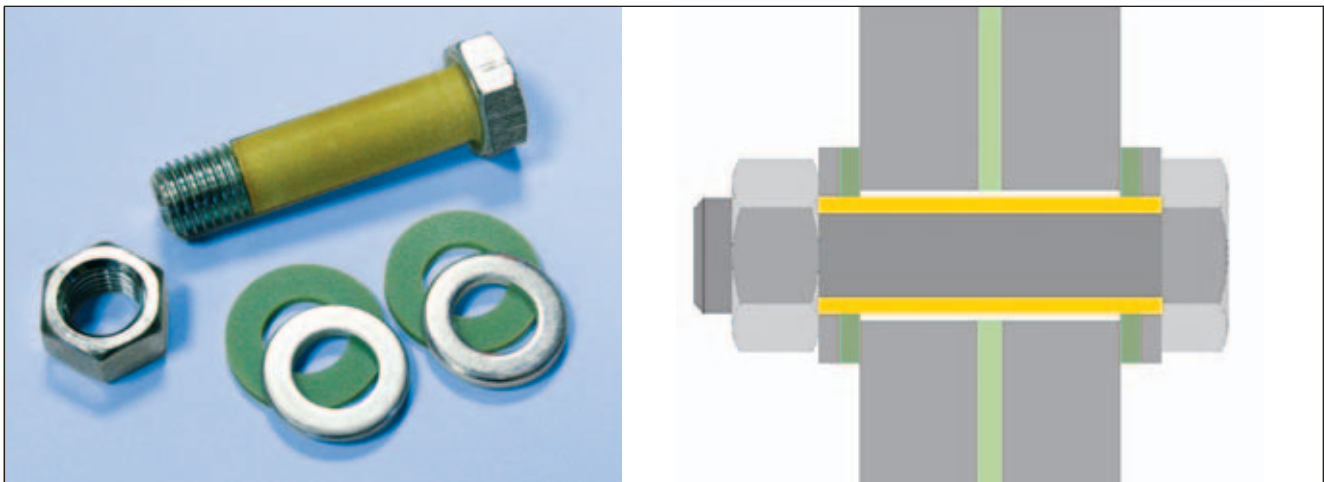
## Isolation screws/ -bolts



- Advantages:**
- optimum electrical disconnection
  - extreme firmness
  - no increasing of the screw diameter
  - ideal for application on site

Isolation screws respec. for flange isolation for applications up to 200°C.  
 (Isolation screws respec. for flange isolation for applications up to 290°C on request)

Screw bolts accord. DIN 1025 and special screws on request.  
 Screw dimensions analog the DIN/ANSI-flange standards.  
 Screw material: quality class 5.6, 8.8 CK35, 42 CrMo4, UNC – special material on request.



### Isolation

Characteristic data		Testing method	Unit	Values
material	epoxy/glass			
colour	white/yellow			
glass fibre per cm				30
breaking load in B-stage			N/cm	>2000
breaking load after curing	min.		N/cm	>2500
resilience module			Mpa	ca. 50.000
permanent operating temperatur			°C	180
spec. volume resistance			Ω/cm	10ex14
isolation resistance at dipping in water		IEC168	Ohm	1x10ex12
water absorbtion		ISO 62/1	mg	<20

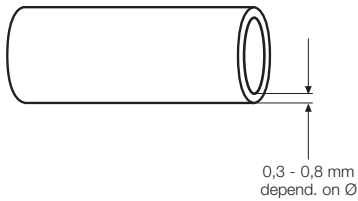
### Production:

Screw respect. threaded bolt is dressed to size on the valid diameter and afterwards covered with epoxy resin glass fibre coating. The epoxy glass fibre coating will be cured through heat and adequately calibrated by finishing.

# PSI Flange Isolation Spare Parts



## Bolt-Sleeves



### Mylar

Standard:	spiral wound polyester	
dielectrical strength:	DIN/VDE 0303 T2/ICE 243	280.000 V/mm
Water absorption:	DIN 53495	< 0,8%
Operating temp.:	DIN VDE 0304 part 2	- 40 °C to + 130 °C

### Nomex 410

Special:	Armid spiral wound paper	
dielectrical strength:	DIN/VDE 0303 T2/ICE 243	22.500 V/mm
Water absorption:	DIN 53495	< 0,1%
Operating temp.:	DIN VDE 0304 part 2	- 196 °C to + 220 °C

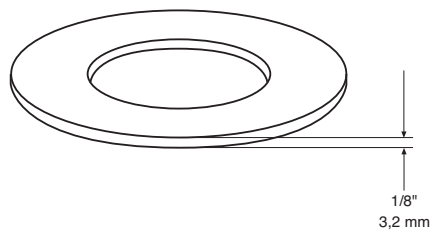
### Glimmer ST

High temperature Version:	Glimmer	
Dielectrical strength:	DIN/VDE 0303 T2/IEC 243	25.000 V/mm
Water absorption:	DIN 53495	< 0,5%
Operating temp.:	DIN VDE 0304 part 2	+23 °C to +371 °C

### Glimmer HLT

High temperature Version:	Glimmer	
Dielectrical strength:	DIN/VDE 0303 T2/IEC 243	25.000 V/mm
Water absorption:	DIN 53495	< 0,5%
Operating temp.:	DIN VDE 0304 part 2	-250 °C to +600 °C

## Isolating washers



### Isolating washers

Standard version for Phenolic gaskets and GLV-UniSeal		
Standard:	laminated phenolic resin	
Dielectrical strength:	DIN/VDE 0303 Teil 2/IEC 243	20.000 V/mm
Water absorption:	DIN 53495	max. 1,6%
max. operating temp.:	DIN VDE 0304 part 2	+20 °C to +120 °C

### Isolating washers G10

Standard:	Epoxy resin glass fabric	
Dielectrical strength:	DIN/VDE 0303 Teil 2/IEC 243	20.000 V/mm
Water absorption:	DIN 53495	< 1,0%
Operating temp.:	DIN VDE 0304 part 2	-60 °C to +130 °C

### Isolating washers G7

Special:	Silicone resin glass fabric	
Dielectrical strength:	DIN/VDE 0303 T2/IEC 243	10.100 V/mm
Water absorption:	DIN 53495	< 0,13 %
Operating temp.:	DIN VDE 0304 part 2	- 60 °C to +180 °C

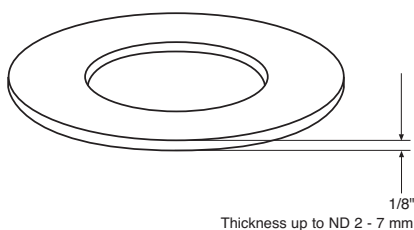
### Isolating washers Glimmer ST

High temperature Version:	Glimmer	
Dielectrical strength:	DIN/VDE 0303 T2/IEC 243	25.000 V/mm
Water absorption:	DIN 53495	< 0,5 %
Operating temp.:	DIN VDE 0304 part 2	+23 °C to +371 °C

### Isolating washers Glimmer HLT

High temperature Version:	Glimmer	
Dielectrical strength:	DIN/VDE 0303 T2/IEC 243	25.000 V/mm
Water absorption:	DIN 53495	< 0,5 %
Operating temp.:	DIN VDE 0304 part 2	-250 °C to +600 °C

## Steel washers



### Steel washers

Standard:	hot rolled steel galvanised
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### Steel washers carbon steel (V4A)

Special:	hot rolled stainless steel
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The ID of the steel washers corresponds to the OD of the bolt-sleeves. Isolating gaskets, -sleeves and -washers can be combined among each other according to temperature.

#### Standard isolating kit DW

Bolt-sleeve:	Mylar
Isolating washer:	laminated Phenolic
Steel washers:	Carbon steel

#### Special isolating kit DW

Bolt-sleeve:	Mylar/Nomex/Glimmer
Isolating washer:	G10/G7/Glimmer
Steel washers:	Stainless steel