Product Specification Sheet

BST Detectable Sanitary Gaskets

The BST Detectable Sanitary Gaskets

Our detectable sanitary union gaskets are made from highly durable EPDM rubber containing evenly dispersed ferromagnetic additives (for metal detection) and high atomic number elements (for x-ray visibility). The entire formulation is food contact approved under FDA, EU and sanitary 3A requirements.

EPDM Gaskets have a good resistance to ozone, ageing and weathering. They are suitable for HFC & HFD flame retardant hydraulic oils and brake fluids and have exceptional resistance to hot water, steam and acids. Our seals and gaskets are high performance, blue, food grade and also minimise foreign body contamination risks by being detectable by metal detection systems and x-ray inspection systems. Current stocked gasket types include RJT O-Rings, Tri-Clamp Gaskets and DIN D-Rings (Milk Couplings).

The use of detectable seals and gaskets is a strong display of due diligence in the prevention of foreign body contamination. Seal fragments as small as 5mm^3 can be identified by correctly calibrated inspection systems, although detection performance will vary based on the food being inspected, the equipment type and other parameters.

BST Sanitary Gasket Advantages

- ✓ Detectable by metal detection & x-ray inspection systems
- ✓ Highly visible blue colour for easy visual identification
- ✓ Wide operating temperature range (-40°C ~ +120°C)
- ✓ Resistant to hydraulic oils, steam and acids
- ✓ FDA and EU approved material
- ✓ Excellent overall weathering resistance
- ✓ Can be used as part of HACCP and BRC procedures
- ✓ Displays due diligence in the prevention of foreign body contamination

RJT O-Rings

RJT unions (Ring Joint Type) are otherwise known as a standard union. These are widely used in the food sector and particularly popular for sections of pipework that are frequently dismantled, e.g. for cleaning. RJT unions use an “O-Ring” style gasket - these are the most commonly requested gaskets in metal detectable version for the food sector.

Imperial Size	Cross Section Ø	Inside Diameter	Outside Diameter	Order Code
1”	6.60 mm	26.70 mm	39.90 mm	RJT10
1½“	6.60 mm	39.40 mm	52.60 mm	RJT15
2”	6.60 mm	52.10 mm	65.30 mm	RJT20B
2½“	6.60 mm	64.80 mm	78.00 mm	RJT25B
3”	6.60 mm	77.50 mm	90.70 mm	RJT30
4”	6.60 mm	93.90 mm	107.10 mm	RJT40B

Tri-Clamp Gaskets

Tri Clamp unions provide a smoother internal pipework joint for hygiene critical product manufacturing environments. Tri clamp unions use a “Tri Clamp Gasket” which is characterised by a protruding lip on either side of the gasket.

Imperial Size	Inside Diameter	Outside Diameter	Order Code
1”	22.70 mm	50.00 mm	TRI10
1½“	35.90 mm	50.0 mm	TRI15
2”	48.60 mm	63.50 mm	TRI20
2½“	61.30 mm	76.20 mm	TRI25B
3”	74.30 mm	88.90 mm	TRI30B
4”	98.60 mm	118.0 mm	TRI40B

DIN D-Ring

DIN unions (Deutsche Industrial Norm) are a German standard fitting (DIN 11851) widely used across Europe. DIN unions use a “D-Ring” style Gasket.

Imperial Size	Cross Section	Inside Diameter	Outside Diameter	Order Code
1”	5.00 mm	30.00 mm	40.00 mm	DIN10B
1½“	5.00 mm	42.00 mm	52.00 mm	DIN15B
2”	5.00 mm	54.00 mm	64.00 mm	DIN20
2½“	5.00 mm	71.00 mm	81.00 mm	DIN25
3”	5.00 mm	85.00 mm	95.00 mm	DIN30B
4”	5.00 mm	104.00 mm	114.00 mm	DIN40

Stocked Gasket Product and Packaging Information

Pack Size	1	**Detectability**	Metal & X-Ray Visible
Material	EPDM Rubber	**Country Of Origin**	Britain
Temperature Range	-40°C ~ 120°C	**Commodity Code**	40169300

Safety Certificates / Approvals

FDA Approved	BRCGS Compliant	Made In Britain	ISO 9001:2015
EU Compliant			

Food Contact Compliance

- ✓ The material is FDA compliant to CFR 21 177-2600
- ✓ The material is EU compliant to EC1935 / 2004
- ✓ The material is 3-A 18-03 Compliant Class 3 (except for milk fat test)

Product Materials

BST detectable sanitary union gaskets are made using EPDM rubber, which is a polymer of ethylene, propylene and a small amount of diene. Blended homogenously throughout the polymer are ferrous based metal additives and high density additives. The entire formulation is compliant to FDA, 3A Sanitary and EU food contact regulations.

Typical Applications

Gaskets for hygienic / sanitary unions in food, drink, pharmaceutical and cosmetic production facilities that utilise metal detection and or x-ray production inspections systems throughout the production process or as an end of line inspection.

Properties

Original	Standard	Typical Values
Specific Gravity	ASTM D1817	1.61
Durometer shore A (slab)	ASTM D2240	67
Elongation % (Dumbbell)	ASTM D412	285
Tensile strength Psi (Mpa) (Dumbbell)	ASTM D412	1073 (7.4)
Compression set % 22h @ 212°F (100°C) (slab)	ASTM D395B	15.1
HEAT AGEING 70h @ 212°F (100°C) ASTM D573		
Durometer change points shore A		+2
Elongation change %		-14
Tensile strength change Psi (Mpa)		-102 (-0.7)
Weight loss %		0.2
FLUID IMMERSION Oil No 3 70h @ 212°F (100°C) ASTM D471		
Volume change %		+136
Durometer change points shore A		-39
Elongation change %		-15
Tensile strength change Psi (Mpa)		-551 (-3.8)

Metal Detectability

BST detectable gaskets are made using an electromagnetically detectable and x-ray visible rubber compound. Metal detectability performance will vary based on, but not limited to the following factors:

- Calibration Levels
- Product Type (E.g. Wet, Dry, Frozen, Liquid)
- Aperture Dimensions
- Orientation

Orientation is a highly influential factor for the metal detectability of a contaminant that is non spherical, i.e. it will be easier to detect the contaminant when passing in one orientation compared to another - this is known as the orientation effect.

For this reason BST recommend that all our products be thoroughly tested on your metal detection systems by a trained and certified professional. It may be the case that your equipment needs to be re-calibrated in order to reliably detect this product. Such a professional should be available by contacting the manufacturer of your metal detection system.

X-Ray Visibility

In contrast to metal detection, x-ray visibility is determined by material density. For this reason these rubber gaskets contain an additional, evenly dispersed, food safe, high density additive.

Based on our experience and testing, positive readings should be consistant for fragments as small as 6mm3. X-ray detection performance will be reduced when small fragments are buried in deeper, denser products. Detection will depend on food product type and density.

We highly recommend that all our products be thoroughly tested on your x-ray inspection systems by a trained and certified professional. It may be the case that your equipment needs to be recalibrated in order to reliably detect this product. Such a professional should be available by contacting the manufacturer of your x-ray inspection system.

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