

Improving Product Quality and Consistency

DESIGN
validation
production

**QUALITY
ASSURANCE**



RUBBER FAB
technologies group

www.rubberfab.com

RUBBER FAB'S SANITARY GASKET GUIDELINES

- **Tuf-Flex®** is the world's first **unitized gasket**, setting new standards for purity, performance and flexibility. A Tuf-Flex® Gasket's contact surface is PTFE unitized to an EPDM rubber inner core. This **totally bonded** construction provides a PTFE gasket with the mechanical characteristics, including memory, of an elastomer gasket. Designed to meet critical requirements in biopharmaceutical, ultra-pure water, WFI (water for injection) and difficult food and beverage processing.
- **Tuf-Steel®** is composed of a unique 50/50 blend of non-pigmented PTFE and 316L passivated and atomized stainless steel. **Testing and seven years of documented application usage** has demonstrated that Tuf-Steel® is the choice for **perfect surface performance, outstanding durability and extended service life** in both SIP (steam in place) and WFI (water for injection) applications. Tuf-Steel® is **ideal for sanitary steam pipe connections** in extreme temperatures ranging from -350°F to 550°F. The **superior strength** of Tuf-Steel® **eliminates creep and cold flow providing a leak-free seal** and preventing maintenance problems and system downtime.
- **PTFE** is the material of choice whenever low temperature flexibility or gasket memory is not required and can remain in service for longer periods of time in both water and steam applications. PTFE is not recommended with large temperature variations due to creep and cold flow. PTFE has minimal extractables, has a low absorption rate and excellent resistance to process fluids.
- **Platinum Cured Silicone** is the material of choice in sanitary water systems when PTFE is not feasible due to severely misaligned fittings, or if the cost of high pressure clamps does not outweigh the benefits of PTFE (extended service life). See literature RF-170 for more information.
- **FKM Fluoroelastomer** and **EPDM** compounds are specified by many of our process equipment manufacturers. They are generally suitable for these applications, however, service life must be considered and a preventative maintenance program be implemented to mitigate degradation.

1 = Excellent 2 = Good 3 = Acceptable 4 = Marginal 5 = Poor X = Do Not Use

Gasket Comments	Continuous Steam	Intermittent Steam	Pure Water Ambient	Pure Water Hot	Process Fluids Ambient	Process Fluids Hot	Process Fluids Variable (<0°C->100°C)	Temp. Range
Tuf-Flex®/Ansi-Flex Maintains seal with wide temperature variations. Has extended service life.*	1	1	1	1	1	1	1	-20°F to 300°F
Tuf-Steel® Maintains seal with wide temperature variations. Has extended service life.*	1	1	1	1	1	1	1	-350°F to 550°F
HPV EPDM, FKM, Silicone†	1	1	1	1	1	1	1	See Elastomer of choice
PTFE Wide temperature variations and may cause leakage at ΔT.	1	1	1	1	1	1	3	-100°F to 500°F
Silicone (platinum) Very flexible low temperature.	2	2	2	2	2	2	1	-40°F to 450°F
FKM Fluoroelastomer Acceptable for steam applications.	2	2	2	2	2	2	2	-30°F to 400°F
EPDM (peroxide cured) Low pressure steam only.	3	3	3	3	3	3	3	-30°F to 300°F

* Application dependent. † 100 SIP steam cycle tested.

Smart Gaskets®



The Rubber Fab Smart Gasket® value is proven when **validating sterility** in a high-purity pharmaceutical system. The Smart Gasket® Thermocouple Gasket obtains the critical **thermal mapping** information needed during the validation process, they can **meter fluids in your process system** using a **peristaltic pump**, or **withdraw samples** through our luer lock valve or syringe. Smart Gaskets require a specifically designed thermocouple clamp but easily installs in any standard sanitary flange. Then, utilize Rubber Fab's Spore Trap Gasket to **securely retain spore test strips**.

AVAILABLE SIZES:
1/2" – 4" (excluding 2-1/2")

AVAILABLE PORTS:
Thermocouple Gasket: 1-4 ports
Spore Trap Gasket: 1 port

ALSO AVAILABLE:
Accessories

Biological Indicator



Rubber Fab's Biological Indicator Gasket enables the use of a **self-contained biological indicator in sanitary process lines**. This unique Smart Gasket® permits either **top loading or inline positioning** of an EZTest® biological indicator **and/or a temperature probe**. The great advantage of a self-contained biological indicator over the traditional spore strip in glassine is the **time saved when confirming spore kill**. Results are easily obtained in only 24 hours (versus the five to seven days required with a spore strip) and **without problematic laboratory transfer**. Feel secure knowing that the biological indicator **will not be lost** down stream in the process. This fail-safe Rubber Fab Smart Gasket® holds the indicator in place for **easy retrieval**. Biological Indicator Gaskets require a specifically designed thermocouple clamp but easily install in any standard sanitary flange.

AVAILABLE SIZES:
3/4" – 2" (excluding 2-1/2")

AVAILABLE PORTS:
1 port in sizes 1", 1-1/2", 2"
N/A in 3/4"

Patent 6,927,058

Orifice Plates



Our innovative Orifice Plate line includes a complete selection of solid 316L Stainless Steel, in **standard** or **tabbed TC** and **vertical styles**, that can be custom drilled with an **eccentric or concentric bore**. **Steam trap mini orifice plates are an alternative to standard steam trap technology**. Tabs help to acknowledge that an orifice plate is **"in line"** and can be **laser engraved** to indicate the hole diameter, gasket size or user specified information. **A major safety consideration!** Rubber Fab's Orifice Plates can advance your system's performance, **adjust flow rates, balance backflow** and **equalize back pressure** during SIP procedures; achievable benefits while maintaining sanitary conditions.

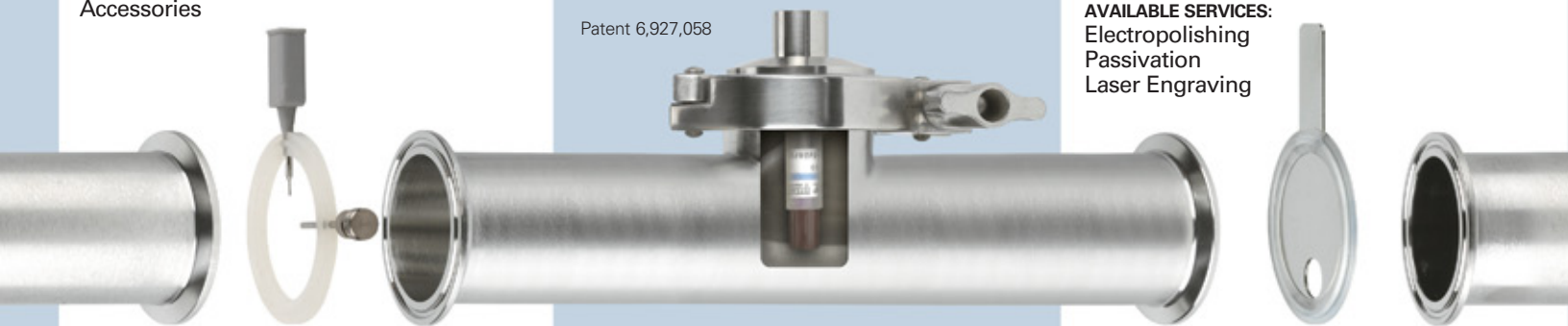
AVAILABLE ELASTOMERS:
EPDM, FKM Fluoroelastomer, Silicone, Buna

AVAILABLE FLUOROPOLYMERS:
PTFE, Tuf-Steel®

AVAILABLE SIZES:
1/2" – 4"
Consult factory for 6" and over

ALSO AVAILABLE:
Slotted Clamps for Tabbed style orifice plates

AVAILABLE SERVICES:
Electropolishing
Passivation
Laser Engraving



Screen Gaskets



Rubber Fab's Fluid filtration screen gaskets provide the most comprehensive range of stainless steel mesh and filter cloth which provide for **particulate elimination to protect fill and finish sterile products, spray balls and spray nozzles.** You can choose a screen gasket in a USP Class VI elastomer or Fluoroelastomer in a variety of mesh sizes, 10 micron through 4 mesh.

AVAILABLE ELASTOMERS:
EPDM, FKM Fluoroelastomer, Silicone, Buna

AVAILABLE FLUOROPOLYMERS:
PTFE, Tuf-Steel®

AVAILABLE SIZES:
1/2" – 6" (Consult factory for 6" and over)
Consult factory for custom meshes

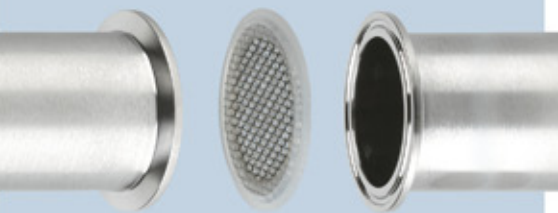
AVAILABLE SERVICES:
Electropolishing
Passivation
Laser Engraving

Sock Screens

The extended sock shaped mesh gasket offers **up to 300% more open area for 300% more soil collection capability** than conventional screens. They provide greater flow for situations where large amount of particulates are involved. Available in 10 mesh to 325 mesh with standard 16 mesh and 20 mesh in stock

AVAILABLE ELASTOMERS:
EPDM, FKM Fluoroelastomer, Silicone, Buna

AVAILABLE SERVICES:
Electropolishing



Inline Strainers & Overscreens



Today's processing pipe lines require strainers with an increased **capacity to meet production needs of state-of-the-art Food, Beverage and Pharmaceutical manufacturing facilities.** Rubber Fab's sanitary strainers and overscreens **protect valuable processing equipment** (pumps, spray nozzles, needle valves, heat exchangers and homogenizers) and have been specifically designed to meet the most stringent process requirements. Our sanitary strainer products are manufactured using 316L stainless steel and are designed for maximum installation flexibility, sanitary construction, and unrestricted flow.

AVAILABLE:
Inline Sanitary Strainers, Side Inlet Sanitary Strainers and Custom Fabricated Sanitary Strainers

ALSO AVAILABLE:
Wire mesh overscreens, hygienic overscreens, wedge wire, disposable filter socks, wire and mesh basket liners

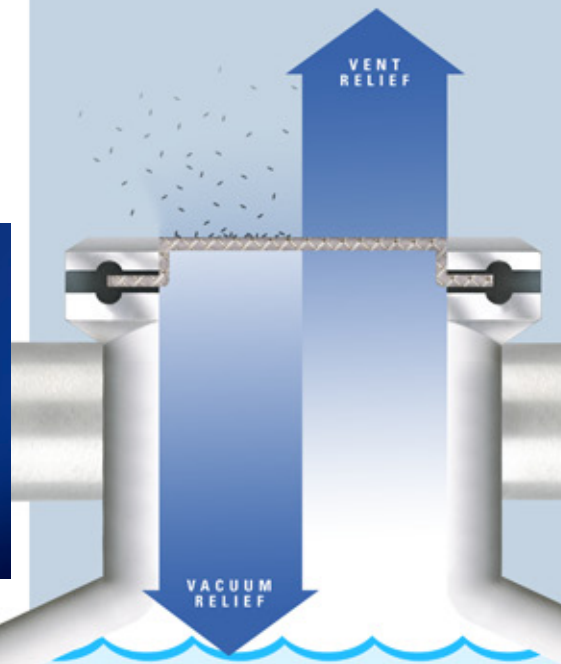


V²B Vent Gasket



The V²B Vent Gasket provides vacuum and pressure relief for **pharmaceutical and food/beverage processing tank venting** when **airborne particulate removal is required.** A 200 mesh screen combined with a 14 mesh screen of **sintered construction** creates a cost effective alternative to expensive vacuum breakers and venting systems.

The V²B System is attached/connected the same way a standard vacuum breaker is installed. **Installation can be horizontal, vertical or in single or multiple port configurations** (i.e. manifolds) without special fabrication or expensive tooling. The V²B screen will **fit perfectly into the I.D. of a sanitary pipe** and can be used for **inflow fluid conditioning filtration.**



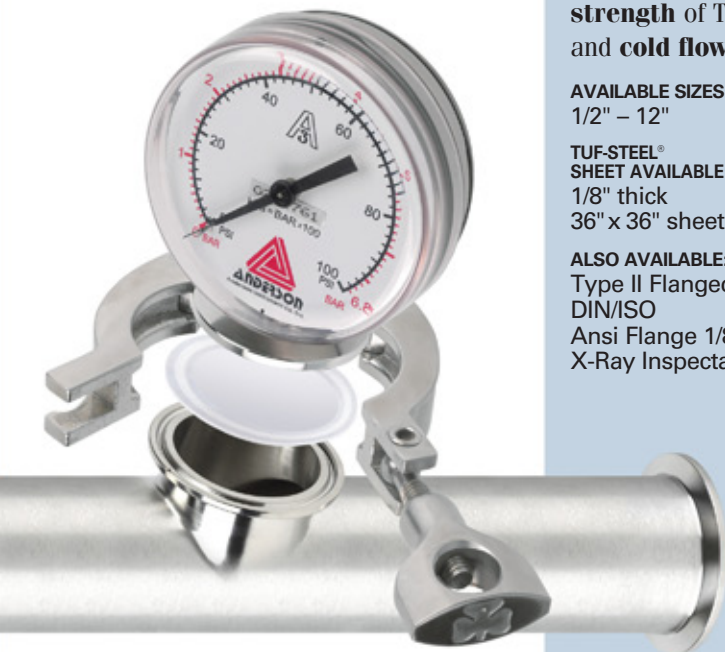
Gauge Guard Protector



The Gauge Guard Isolator and Protector Gaskets **protect expensive gauge diaphragms and instruments from damage**. When moving, storing or being autoclaved, the Gauge Guard Protector Gasket **protects the gauge's fragile diaphragm from damage**. The easy attach ring slips effortlessly onto the gauge keeping the Protector Gasket ready for use.

Gauge Guard Isolator Gasket

By combining a Rubber Fab sanitary gasket with a thin membrane, the Isolator Gasket **isolates CIP and corrosive solutions from instrumentation without affecting performance**, a necessary and **cost-effective step in assuring long life and accurate results**.



Tuf-Steel®



Tuf-Steel® – the original metal detectable and x-ray inspectable gasket, a Rubber Fab market innovation, is composed of a unique proprietary blend of non-pigmented PTFE and 316L passivated and atomized stainless steel. **Testing and many years of documented application usage** has demonstrated that Tuf-Steel® is the choice for **perfect surface performance, outstanding durability, extended service life and increased up-time** in both SIP (steam in place) and WFI (water for injection) applications. Tuf-Steel® is ideal for sanitary steam and extreme temperature processes, specifically **fryer and hot oil applications**, with temperatures ranging from **-350°F up to 550°F**. The **superior strength** of Tuf-Steel® **eliminates creep and cold flow providing a leak-free seal**.

AVAILABLE SIZES:
1/2" – 12"

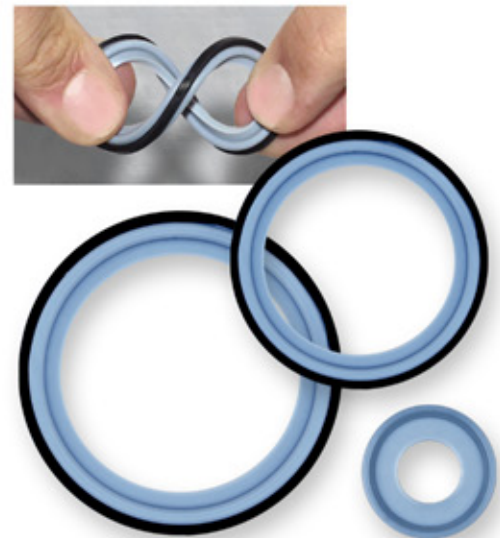
TUF-STEEL® SHEET AVAILABLE:
1/8" thick
36" x 36" sheet

ALSO AVAILABLE:
Type II Flanged
DIN/ISO
Ansi Flange 1/8" thick
X-Ray Inspectable

**TUF-STEEL®
Type II Flanged
AVAILABLE!**



Tuf-Flex®



Tuf-Flex®, the ultimate pharmaceutical sanitary gasket, is setting new standards for **purity, performance, flexibility** and is the world's first **unitized gasket**. A Tuf-Flex® gasket's contact surface is PTFE unitized to an EPDM rubber inner core. **This totally bonded construction provides the inert, non-stick benefits of PTFE with the memory of an elastomeric gasket without fear or risk of pigmentation or spalling**. Designed to meet critical requirements in biopharmaceutical, ultra-pure water, WFI (water for injection) and **difficult aseptic processing applications**. Tuf-Flex's® extended service life **increases up-time by out performing other gaskets by eliminating costly process interruptions**. Achieve higher performance under SIP/CIP conditions.

Standard Gasket

Envelope Gasket

Tuf-Flex®



AVAILABLE SIZES:
1/2" – 6"

TUF-FLEX® SHEET AVAILABLE:
Consult factory for dimensional information



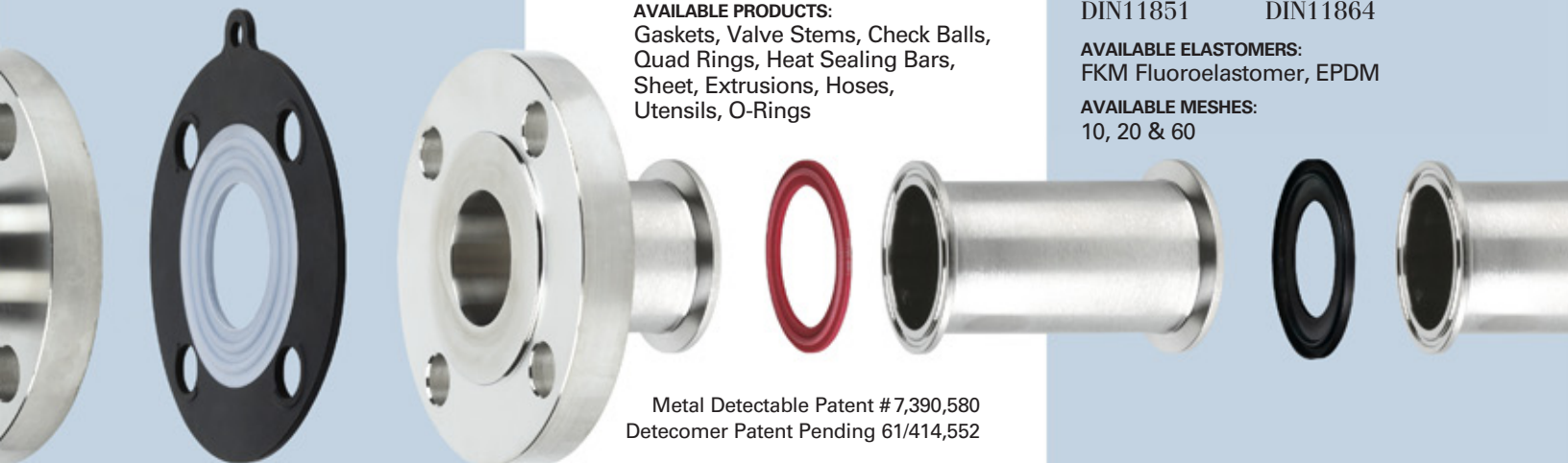
Ansi-Flex 150# Ansi Flange Gasket



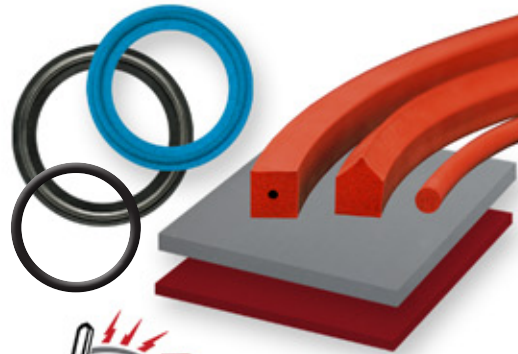
An Ansi-Flex 150# Ansi Flange Gasket's contact surface is **PTFE unitized to an EPDM rubber inner core**. This **totally bonded** construction provides a PTFE gasket with the mechanical characteristics, including memory, of an elastomer gasket with **exceptional steam resistance**. An Ansi-Flex 150# Ansi Flange Gasket is ideal for applications, such as **PVC piping and glass lining piping**, where low seating stress is required. The Ansi-Flex 150# Ansi Flange Gasket has **superior and extended service life** over standard flange gaskets. Achieve higher performance under SIP/CIP conditions.

AVAILABLE SIZES:
1/2" - 12"
Consult factory for sizes over 12"

ALSO AVAILABLE:
Ansi-Flange in 1/8" thick Tuf-Steel® material



Detectomers® X-RAY INSPECTABLE AND METAL DETECTABLE PRODUCTS



X-Ray inspection and metal detection systems provide confidence to food, dairy and pharmaceutical manufactures by insuring product safety and integrity as outlined in the **Food Safety Modernization Act**. Detectomers® is a **full line of x-ray inspectable and metal detectable products** designed to work with any existing conveyor, pipe line or free fall detection system. Detectomers® help **eliminate product recall, lower product loss and decrease the risk of components consumed in a finished product**. They insure that a worn off piece of elastomer material **migrating through your system will be detected, rejected and removed!** Searching for and locating fragmented component parts has traditionally been a **costly, time consuming and inconclusive process**. **Not locating a worn and detached part can have an even costlier outcome!**

Meets USDA Hazard Analysis and Critical Control Points.

AVAILABLE ELASTOMERS:
EPDM, FKM Fluoroelastomer, Silicone, Buna

AVAILABLE FLUOROPOLYMERS:
PTFE, Tuf-Steel®

AVAILABLE PRODUCTS:
Gaskets, Valve Stems, Check Balls, Quad Rings, Heat Sealing Bars, Sheet, Extrusions, Hoses, Utensils, O-Rings

Metal Detectable Patent # 7,390,580
Detectomer Patent Pending 61/414,552

DIN/ISO **NEW!**



Rubber Fab's DIN/ISO gaskets are manufactured in compliance with FDA, USP Class VI requirements to **insure the highest purity sealing product available worldwide**. We offer the following line of European standard sanitary gaskets

DIN32676	DIN11851
DIN11864	ISO1127
ISO2852	SMS1149

AVAILABLE ELASTOMERS:
Platinum Silicone, FKM Fluoroelastomer, EPDM, Buna

AVAILABLE FLUOROPOLYMERS:
PTFE, Tuf-Steel®



DIN/ISO Screen Gaskets

DIN11851	DIN11864
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AVAILABLE ELASTOMERS:
FKM Fluoroelastomer, EPDM

AVAILABLE MESHES:
10, 20 & 60

O-Rings & O-Ring Cord **NEW!**

The O-Ring is an exceptionally versatile sealing device. Countless applications make it the world's most popular seal.

Rubber Fab offers a full line of AS 568 Dash Numbers, metric and specialty O-Ring sizes in many materials including X-Ray Inspectable and Metal Detectable materials. Our proprietary compounds are designed to perform in a wide range of applications with varying chemical exposures, pressures and temperatures.

O-Ring Products

- O-Rings
- O-Ring kits
- Splicing kits
- Cord

Materials Available

- Tuf-Steel®
- Buna
- Silicone
- FKM Fluoroelastomer
- EPDM
- PTFE

Available

AS 568 Dash Numbers and Metric O-Rings available in:

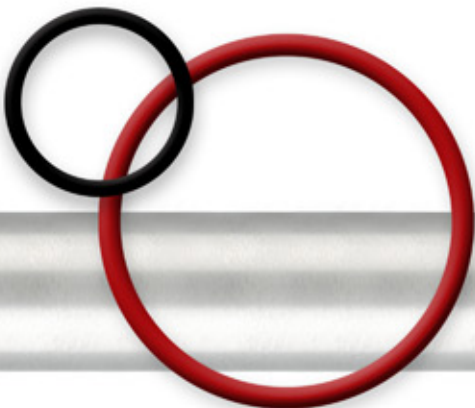
- Standard
- FDA
- Class VI

NOW AVAILABLE!
Class VI O-Rings in
Platinum Silicone, EPDM
and FKM!

O-Ring Cord

Vulcanize your own O-rings from our selection of O-ring cord stock, offered in both inch and metric sizes.

For cord diameters and available materials, please consult Rubber Fab's sales office.



Standard Gaskets



Rubber Fab standard Tri-Clamp® sanitary gaskets are manufactured using **FDA compliant** compounds, and according to CGMP guidelines. Our 1/2" – 4" Type I EPDM, FKM Fluoroelastomer, Silicone and PTFE, Tuf-Flex®, & Tuf-Steel® Tri-Clamp® gaskets are **USP Class VI and FDA CFR 177.2600 & 177.1550 and ADI (Animal Derived Ingredient Free) certified.**

- APC
- Bevel Seat
- Camlock
- Compression Control
- Detectomers®
- Diffuser
- DIN/ISO
- Envelope
- Flapper
- Full Face 150#, 300#
- Gauge Guard
- I-Line
- John Perry
- Manway
- Metal Detectable
- Orifice Plates
- O-Rings
- Perforated Plates
- Eco-Flex
- Q-Line
- Quad Rings
- Ring 150#, 300#
- Schedule V
- Screen
- Smart Gaskets®
- Tuf-Flex®
- Tuf-Steel®
- Tri-Clamp® Type I
- Tri-Clamp® Type II
- V²B Vent Breaker
- Valve Body
- X-Ray Inspectable

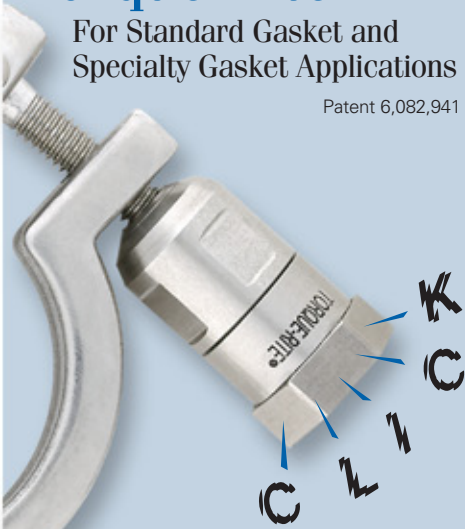
Rubber Fab also offers Sanitary Sheet Material, profiles and cord in Class VI and FDA compliant materials.



Torque-Rite®

For Standard Gasket and Specialty Gasket Applications

Patent 6,082,941



Torque-Rite® allows you to **control compression and expansion** while maintaining constant inch/pounds force insuring a Perfect Surface I.D. Torque-Rite® **eliminates sanitary problems associated with over- or under-tightening a gasket.** When tightened, the Torque-Rite's® **self-limiting** internal mechanism will make an audible **“click”** signaling the user that they have reached **proper inch/pounds force.** If further tightening is attempted, there will be **more “clicks”** **but no additional application of force on the gasket** (if emergency conditions arise, the Torque-Rite® has a built-in manual override feature). Because Torque-Rite® **does not require any special tools or training,** exact torque is reached **faster and on the first try!**

AVAILABLE:
30 in/lbs for all elastomers and Tuf-Flex®

50 in/lbs for PTFE and Tuf-Steel®

Consult factory for other torques



Smart Clamp™

The “Half-Turn” Sanitary Smart Clamp



Rubber Fab is proud to introduce the next generation of sanitary hinge clamps — **the one-piece, completely unitized, Smart Clamp™.** With features that include half-turn installation and faster uptime, the benefits of Rubber Fab's Smart Clamp™ far exceed any other sanitary clamp.

- Dramatically increased uptime
- Supports ASME-BPE seal performance
- Half-turn installation
- Repetitive stress and ergonomic benefits
- Multiple compression settings for sanitary gaskets – no over or under tightening of gasket
- Extends gasket's service life
- Deeper clamp channel nests ferrules and evenly distributes force over the gasket's face
- Single unitized unit - no additional parts
- Threadless system minimizes soil and bacterial entrapment
- Clamp hinge and locking arm will not collapse
- Manufactured in 304SS
- No tools required
- User-friendly



Services

What really sets Rubber Fab apart from other manufacturers are our value added services.

Coding & Labeling:

Time is money. Don't waste valuable time searching for sanitary components in your process line. **“Identify”** your system components using one of Rubber Fab's System Identification products.



Laser Engraved Products and Bar Coding:

Gaskets, hose assemblies, stainless fittings and adapters insure process line identification and provide complete cradle to grave lot and batch traceability.



Laser-Etched and Bar Coded collars

present a sharp, legible, professional image. Include your company name, application-specific information such as serial numbers or maintenance codes, and more. Use **etched collars** to communicate your most critical information. Part numbers, sizes, service dates, and usage recommendations are just a few examples.



Tabbed Orifice Plate Gaskets: Tabs protrude from clamp and can be laser etched for easy line identification.

NOTE: Consult factory for spacing and size limitations on all etched products.





Hose, Hose Assemblies, Tubing, Fittings and Adapters

High Purity Platinum Silicone Hose, Tubing, Sanitary Molded Ends

PTFE & FEP Lined Smooth Bore & Convolute Hose

Metal Hose

FDA Rubber Hose

FDA PVC Hose, Tubing, Sanitary Molded Ends

Sight Gauges: PTFE & Polysulfone Fittings & Adapters: 316L, Special Alloys & Non Metallic



Rubber Fab Gaskets Meet the Most Stringent Standards For Purity

- U.S. Pharmacopeia Class VI Certification*
- Cytotoxicity Criteria*
- Title 21 CFR 177.2600 and 177.1550
- USDA and 3-A Sanitary Standards
- Current Good Manufacturing Practices (CGMP)
- ASME-BPE Standards
- ISO 9001:2000 and QS-9000:1998
- Animal Derived Ingredient Free*

* Buna does not pass U.S. Pharmacopeia Class VI Certification and Cytotoxicity and is not ADI free.

Smart Gasket®, Tuf-Steel®, Tuf-Flex® and Torque-Rite® are registered trademarks of Rubber Fab Technologies Group. Detectometers® is a trademark of Rubber Fab Technologies Group. EZTest® is a registered trademark of SGM Biotech, Inc. Tri-Clamp® is a registered trademark of The Ladish Company. Ultem® is a registered trademark of GE. Kalrez® is a registered trademark of Du Pont Performance Elastomers LLC

RUBBER FAB technologies group

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Rubber Fab Technologies Group is a member of:

ISPE



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Distributors Serving Sanitary Processing

