



ON TIME. ON POINT.. ON YOUR SIDE...

PRECISION-ENGINEERED SEALING SOLUTIONS

Industrial gaskets & static mechanical sealing products for the world's most demanding oil & gas, petrochemical, power and heavy-engineering industries.

Corporate Overview – Hyderabad, Telangana, India

+91 9581195566 • info@txcosealing.com • www.txcosealing.com





ABOUT TXCO SEALING PRODUCTS

Who We Are

At TXCO Sealing Products, we are a leading manufacturer of high-performance industrial sealing solutions, with a commitment to delivering custom-engineered products that meet the rigorous demands of the industries we serve.

We specialize in designing, manufacturing and supplying a comprehensive range of precision sealing components for critical applications across the oil & gas, petrochemical, power and heavy-engineering sectors.

Headquartered in the industrial hub of Hyderabad, India, our highly automated and integrated operations meet the most demanding national and international standards in design, engineering, manufacture and testing.

- **Headquartered in Hyderabad, Telangana, India**
- **Serving clients across Asia, the Middle East, Europe & North America**
- **Trusted partner to global OEMs, EPC Contractors & Government Utilities**

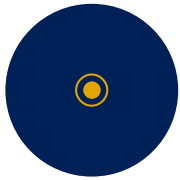


"Our passion for engineering excellence and customer satisfaction shapes everything we do — every day."



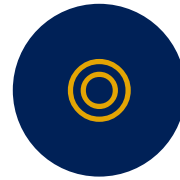
OUR FOUNDATION

Vision, Mission & Core Values



VISION

To be a global leader in sealing solutions by delivering quality products that exceed international standards, support sustainable growth, and build lasting customer partnerships through innovation and integrity.



MISSION

To manufacture reliable, high-performance sealing products, ensure timely delivery at competitive costs, and foster a culture of excellence, safety and continuous improvement.



CORE VALUES

Engineering precision and lasting partnerships.
Our values reflect our commitment to excellence, innovation and integrity in every seal we create.



OUR VALUE PROPOSITION

Why Partner With TXCO



Certified Quality

ISO 9001, 14001 & 45001 (TÜV SÜD) with full material traceability.



Precision Engineering

Tight tolerances and superior sealing performance in every product.



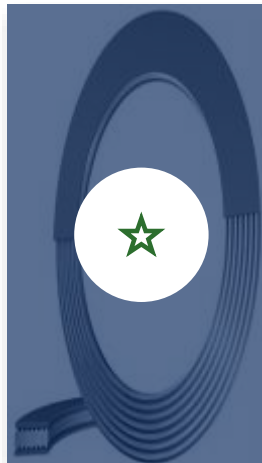
Custom-Built Solutions

Tailor-made gaskets engineered for unique operational needs.



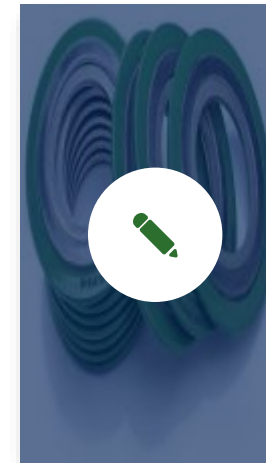
Fast Delivery & Global Reach

Efficient logistics and on-time delivery, trusted worldwide.



Technical Expertise

Decades of experience and application-based engineering support.



End-to-End Service

From design consultation through after-sales support.

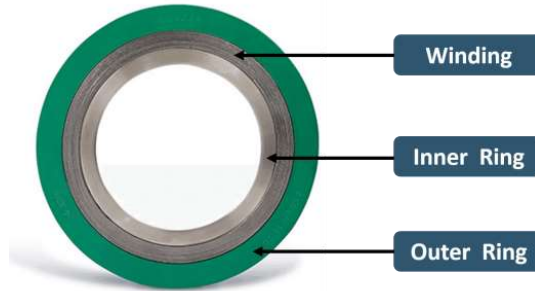


Our Product Range



Ring Type Joint (RTJ)

R • RX • BX



Spiral Wound Gaskets

Style R • RIR • CG • CGI



Kammprofile Gaskets

High compressibility



Metal Jacketed

Corrugated & flat jacket



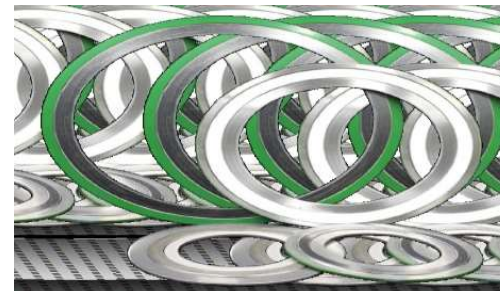
Non-Metallic Gaskets & Gasket Sheets

PTFE, Graphite, EPDM/Rubber, CNAF, etc.



Flange Insulation Kits

Type E • F • D



Special & Custom

Lens • Delta • IX • Bridgeman

ALSO OFFERING

Protective Coating (Xylan, Zinc / Nickel / Silver plating, PTFE)

Insulation Kits for Pipeline Integrity

Custom Groove Configurations



HOW RING TYPE JOINT (RTJ) GASKETS SEAL – TECHNICAL SCHEMATIC

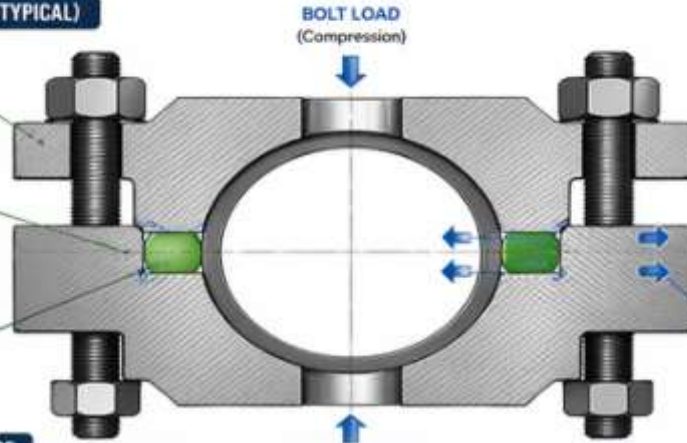
Sealing is achieved by bolt load (gasket seating stress), not by internal pressure.

1. ASSEMBLY CROSS-SECTION (TYPICAL)

Groove (Machined in Flanges)
The RTJ gasket fits precisely in the groove. Groove geometry is critical for sealing.

Ring Type Joint Gasket
Metallic ring with specific cross-section (oval, octagonal, lens, or RX, etc.).

Flange (RTJ Facing)
Precision machined surface and groove ensure metal-to-metal sealing.



BOLT LOAD
(Compression)

SERVICE CONDITIONS

- Internal pressure tries to separate the flanges and cause leakage.
- The gasket must maintain sufficient residual stress to counteract this.
- Bolt load is the primary source of sealing stress.
- RTJ gaskets seal/hact in the groove flanks.

INTERNAL PRESSURE

Acts radially outward on the gasket and axially to separate the flanges.



Txco Sealing Products Private Limited

H. No. 9-22B/A/1, Survey No. 551

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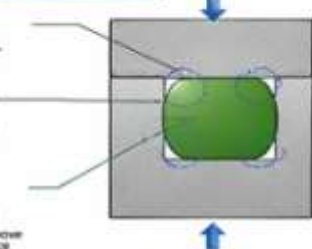
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2. ENLARGED SEALING INTERFACE

Groove Flank (Upper)
Under compression, contacts top of the gasket.

Groove Flank (Lower)
Under compression, contacts bottom of the gasket.

RTJ Gasket
Deforms plastically (an elastically limited material) to fill the groove and conform to surface irregularities.



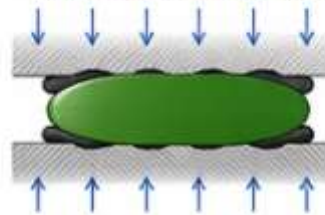
CONTACT STRESS ZONES

High contact stress occurs at the top and bottom flanks of the groove.



These concentrated metal-to-metal contacts create the seal.

MICRO-LEVEL SEALING MECHANISM



Under bolt load, the RTJ deforms and the groove flanks plastically deform the gasket.

High localized contact stress at microscopic asperity points creates metal-to-metal sealing.

Multiple contact points form a tortuous path for the pressure, preventing leakage.

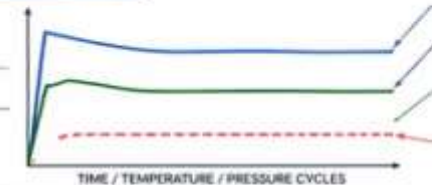
3. LOAD AND STRESS BEHAVIOR

GASKET STRESS
(Seating Stress)

Compression
Stress from Bolt Load

Operating Stress
(after relaxation)

Minimum Required Stress



Initial bolt load

Stress relaxation (embedding, creep, relaxation)

Residual stress maintained in service

Leakage likely if stress falls below minimum required

The RTJ gasket must retain enough stress at all times to maintain metal-to-metal sealing as conditions change.

6. KEY DESIGN & APPCTIONS



Groove Design
Critical facts outward on the gasket. The metallic gasket resists this radial force.

Axial Effect:
Pressure tries to separate the flanges. The bolt load and gasket residual stress resist joint opening.

Critical for performance. Groove dimensions, finish, angle and radius per ASME B16.30.

RTJ facing per ASME B16.31 provides the groove for gasket seating.

Typical target Ra 3.2 – 6.3 µm (125 – 250 µin) for groove flanks.

Proper bolt torque is essential to achieve and maintain required seating stress.

Affects material properties, stress relaxation, and gasket selection.

Higher pressure increases load on gasket and requires proper groove and material selection.

Material compatibility of gasket and flanges with process media is essential.

Bottom Line: RTJ gaskets seal by metal-to-metal contact in the groove flanks under bolt load. Correct groove design, proper installation, and suitable material selection are essential for reliable, leak-free performance.

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Ring Type Joint (RTJ) Gaskets



Type	Cross-Section	Max. Pressure	Typical Use
R – Oval	Oval, line contact	5,000 psi (~345 bar)	Legacy / low-medium pressure installations
R – Octagonal	Octagonal, point contact	10,000 psi (~690 bar)	Modern oil & gas, petrochemical, offshore
RX	Pressure-energized octagonal	15,000 psi (~1,034 bar)	Cyclic pressure & temperature service
BX	Square, pressure-equalized	20,000 psi (~1,379 bar)	Wellheads, Christmas trees, subsea manifolds

All types are precision-machined to ASME B16.20 / API 6A / API 17D and available with PTFE, zinc, nickel or silver coatings.

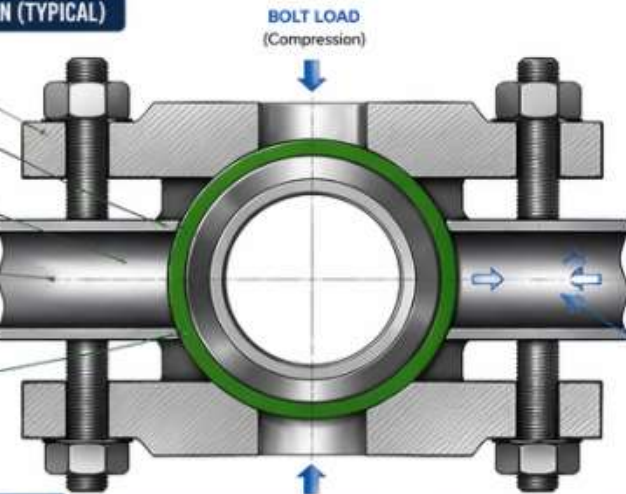


HOW SPIRAL WOUND GASKETS SEAL – TECHNICAL SCHEMATIC

Sealing is achieved by bolt load (gasket seating stress), not by internal pressure.

1. ASSEMBLY CROSS-SECTION (TYPICAL)

- Flange**
(RF shown)
- Outer Guide Ring**
Centers the gasket and limits over-compression
- Spiral Winding**
Provides spring-like resilience and strength
- Filler Material**
(Graphite / PTFE, etc.)
Flows to fill surface irregularities and microscopic voids
- Inner Ring**
Supports the inner edge, prevents inward buckling and controls compression



SERVICE CONDITIONS

- Internal pressure tries to separate the flanges and cause leakage.
- The gasket must maintain sufficient residual stress to counteract this.
- Bolt load is the primary source of sealing stress.

INTERNAL PRESSURE

Acts radially outward on the gasket and axially to separate the flanges.



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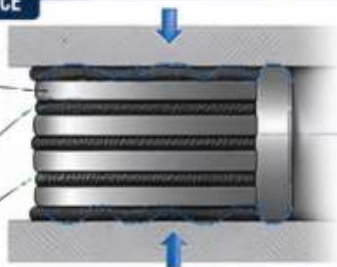
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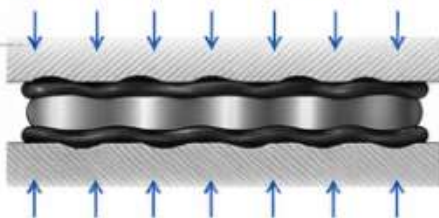
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2. ENLARGED SEALING INTERFACE

- Flange Face**
(Machined Finish)
- Contact Stress Zones**
(Sealing occurs where the winding and filler conform to the flange surface)
- Spiral Winding**
(Sealing by metal-to-metal contact under load)
- Filler Material**
(Flows to fill surface irregularities and voids)



MICRO-LEVEL SEALING MECHANISM

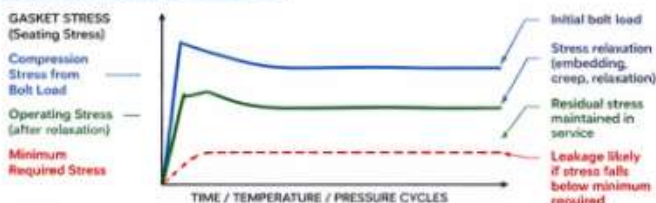


Under bolt load, the winding experiences high contact stress at limited points.

The filler material conforms and flows into microscopic irregularities.

Multiple contact points create a tortuous path for the medium, preventing leakage.

3. LOARGED STRESS BEH.NFACE



The gasket must retain enough stress at all times to maintain sealing as conditions change.

4. PRESSURE LOAD ACTIONS



Radial Effect:
Pressure acts outward on the gasket. The gasket resists this radial force.

Axial Effect:
Pressure tries to separate the flanges. The gasket must retain sufficient residual stress to prevent leakage.



Bottom Line: Spiral wound gaskets seal by maintaining sufficient seating stress under all operating. Correct design, installation, and flange conditions are essential for reliable, leak-free performance.

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KEY DESIGN FACTORS

Surface finish target: Ra 3.2 – 6.3 μm (125–250 μin).

Proper bolt torque is critical to achieve required gasket stress.

Flange type (RF, RTJ, FF) affects gasket seating and load concentration.

Filler material (graphite / PTFE) chosen for chemical compatibility.

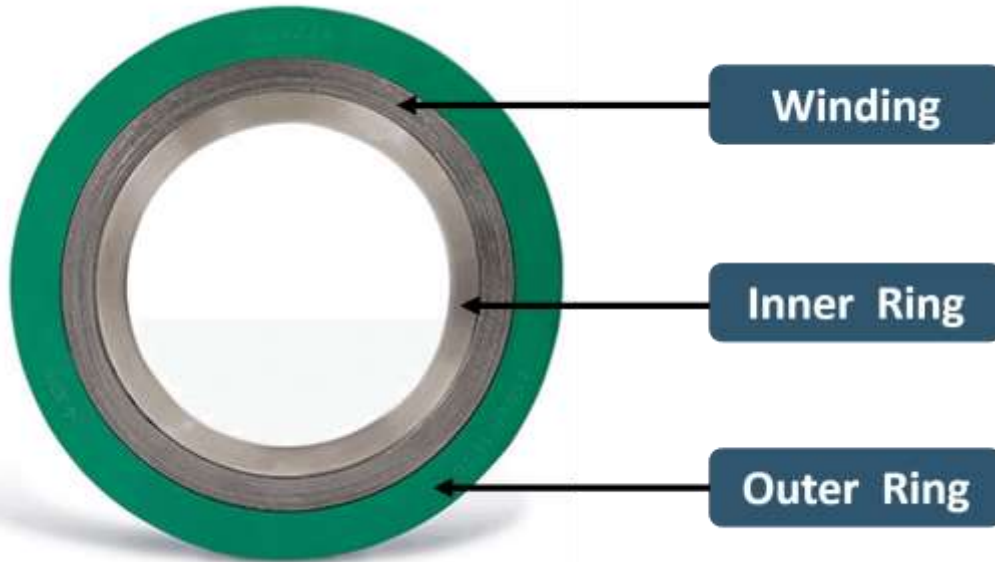
Outer & inner rings control compression and prevent buckling.

Suitable for RF, RTJ and FF flanged connections.



PRODUCT DEEP DIVE

Spiral Wound Gasket Styles



Style R

Basic spiral wound sealing element, no rings. Compression controlled solely by flange design; ideal for tongue & groove connections.

Style RIR

Sealing element with inner ring only. Acts as compression limiter and media barrier; reduces turbulence and flange erosion.

Style CG

Sealing element with outer centering ring. Aligns the gasket and prevents over-compression on RF / FF flanges.

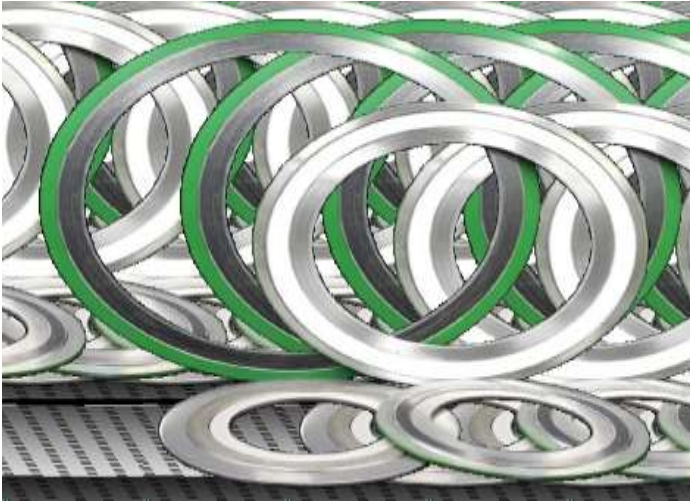
Style CGI

Sealing element with both inner and outer rings. Recommended for moderate-to-severe service with high pressure or aggressive media.



BEYOND STANDARD PRODUCTS

Specialty & Application-Specific Gaskets



IX Gaskets

IX 15 to IX 1200 per NORSOK L005 / M650 / M630, PTFE/XYLON coated.



Bonnet & Seat Rings

Critical sealing between valve body and bonnet for gate valve applications.



RTJ Blind Gaskets

Secure metal-to-metal seal for blind flanges in high-pressure systems.

Also available: Delta, Lens Ring, Bridgeman, Transition Ring Type Joints, VX-AX Gaskets, PTFE-Coated RTJ, Rubber-Coated RTJ and Sleeves & Valve Components.



Material Options

Material	UNS No.	Max. Brinell	Max. Rockwell
Soft Iron	—	90	56
Low Carbon Steel	—	120	68
4-6% Chrome ½% Moly	K42544	130	75
Type 316 Stainless Steel	S31600	160	83
Titanium Grade 2	R50400	215	94
Alloy 625	N06625	200	92
Hastelloy / Alloy C276	N10276	200	92
Super Duplex	S31803	200	92
Monel 400	—	130	72

Other exotic materials (Zeron 100, SMO 254, Alloy 800/825/900/20, 321 & 309 SS), SS304, CS available on request.

SURFACE TREATMENTS

- Zinc, Nickel & Silver Electroplating (API std., up to 13 µm)
- PTFE Coating – minimizes gasket & flange erosion
- Nitrile Rubber Coating – pressure-testing applications

20,000 psi

Pressure Capability

1,000°C

Temperature
Resistance

100%

Material Traceability



WHERE OUR SEALS PERFORM

Serving Critical Industries Worldwide



Oil & Gas

Upstream, midstream & downstream



Petrochemical Plants

Chemical resistance in aggressive media



Offshore & Subsea

Wellheads, risers & manifolds



Refineries

High-temperature process units



Power Generation

Thermal & nuclear steam systems



Marine & Shipbuilding

Propulsion, piping & fluid systems

Also serving: high-pressure steam & chemical systems, water & wastewater treatment, and fertilizer plants.



Quality, Certifications & Testing



ISO 9001:2015

Quality Management System

Reg. No. 99 100 25003

Valid: 17-Sep-2025 – 16-Sep-2028



ISO 14001:2015

Environmental Management System

Reg. No. 99 104 02220

Valid: 22-May-2026 – 21-May-2029



ISO 45001:2018

Occupational Health & Safety Mgmt.

Reg. No. 99 117 01648

Valid: 22-May-2026 – 21-Sep-2029

Certified by TÜV SÜD South Asia Pvt. Ltd. — covering Design, Manufacture & Supply of Metallic & Non-Metallic Gaskets, Flange Insulation Kits, Monolithic Insulation Joints & Machined Components for Oil & Gas Applications.

INSPECTION & TESTING

Dimensional accuracy • ASME Ra surface finish • Hardness & PMI testing per batch • Customer-specific pressure & performance testing.

COMPLIANCE

ASME B16.20 • API 6A • API 17D • NORSOK L005 / M650 / M630 — with 100% material batch traceability on request.



Break



TUV SUD



Break



South Asia



Break





YOUR PARTNER IN SEALING SOLUTIONS

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