general rubber

From the Simple to the Simply Amazing

PERFORMANCE RUBBER EXPANSION JOINTS

TECHNICAL GUIDELINES

Table of Contents

Since 1950, General Rubber Corporation has been at the forefront of innovative rubber expansion joint design. With our experienced engineers and sales team, we are able to provide powerful solutions to even the most demanding applications across multiple industries and sectors.

General Rubber Corporation is committed to being a leader in the design and manufacture of rubber expansion joints, providing engineered solutions, superior customer service, and competitive prices. General Rubber is both ISO 9001 and 14001 certified and has differentiated itself as a leader in the industry. We leverage our state-of-the-art United States manufacturing facility to lower operating costs while respecting the environment. General Rubber Corporation is committed to providing quality, defect-free products. Our employees are expected to adhere to the spirit and intent of meeting and exceeding our customers' requirements and to embrace a culture of continuous improvement.

Brands

Since 1950, the company has introduced many brands in a wide range of industries and sectors. We will continue to support our legacy brands including Maxi-Joint, Flex-Valve, and SoundZorber.

Project Experience

General Rubber's rich history of application-based solutions and project experience has earned us a place as an industry leader and product innovator. We have created case studies to communicate our extensive capabilities across multiple industries and sectors. Quality examples include our studies on developing 12-foot-diameter dismantling expansion joints for the world's largest common cooling water system (Ras Laffan, Qatar), and developing an all-rubber in-line pressure-balanced expansion joint, used within newly constructed AP1000 nuclear plants (VC Summer 2,3 / Vogtle 3,4). Visit us online at http://general-rubber.com/Projects.php to view our Project Table which represents our experience across many industries and sectors, and includes links to the aforementioned case studies.

News & Events

We are committed to keeping our customers informed regarding our products and services as well as company news and events. We embrace social and traditional media outlets as a means for improved communication. Find and follow us on LinkedIn, Twitter and YouTube, contact us to subscribe to our weekly newsletter, and be sure to bookmark and visit our News & Events page online.

Maxi-Joint® Rubber Expansion Joints

General Rubber's Maxi-Joint brand represents our state-of-the-art line of rubber expansion joints, flexible connectors, rubber flanged hoses and accessories, as well as spray shields and penetration seals. Since our inception in 1950, General Rubber has designed and developed a wide range of performance products used in the most demanding applications. Improved performance and engineered solutions are accomplished by incorporating advanced materials of construction and technologies to what otherwise would be considered a conventional product line.

Piping and ducting systems require support and flexibility as critical design elements to ensure continuous and safe operation. The features and benefits of our performance expansion joint designs will achieve these critical elements by absorbing system forces and displacements, replacing them with the expansion joint's low stiffness (spring rate). Additionally, they are designed to reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment, and relieve pipe and anchor stresses.

The selection and application of General Rubber's unrestrained expansion joints represent the most cost-effective arrangement when they are used in rigid piping systems with main anchors and numerous guides at specific spacing.

The selection and application of General Rubber's advanced restrained expansion joints can be used to provide system flexibility while restraining pressure thrust forces and other external loads. This approach allows for an optimal design with a smaller footprint. The economic benefits of using advanced restrained expansion joints also include—but are not limited to—fewer guides, anchors and supports.

PIPING EXPANSION JOINTS

Style 1101 - Single Wide Arch Rubber Expansion Joint
Style 1102 - Double Wide Arch Rubber Expansion Joint
Style 1103 - Triple Wide Arch Rubber Expansion Joint
Style 1104 - Quadruple Wide Arch Rubber Expansion Joint
Style 1015 - Economical Single Wide Arch Rubber Expansion Joint
Styles 8101, 8102, 8103 - Rubber Slip-On Sleeve Expansion Joints
Style 1101CR - Concentric Reducing Rubber Expansion Joint
Style 1101ER - Eccentric Reducing Rubber Expansion Joint
Styles 1101LO & 1101AO - Lateral / Angular Offset Rubber Expansion Joints
Style 1101LW - Lightweight Rubber Expansion Joint
Style 1101HP - High Pressure Rubber Expansion Joint
Style 1101HT - High Temperature Rubber Expansion Joint
Style 1100 - Rubber Flanged Pipe
Styles 1100EF, 1100TF, 1100YF - Rubber Flanged Fittings
Control Units, Limit Rods & Tie Rods

ADVANCED RESTRAINED EXPANSION JOINT STYLES

Style 5100D - Dismantling Rubber Expansion Joint
Style 5100U - Universal Rubber Expansion Joint
Style 5100H - Hinge Rubber Expansion Joint
Style 5100G - Gimbal Rubber Expansion Joint
Style 5100P - In-Line Pressure Balanced Rubber Expansion Joint
Style 5100E - Elbow Pressure Balanced Rubber Expansion Joint

DUCTING EXPANSION JOINT STYLES

Styles 8101LW, 8100LW, 1091 - Rubber Slip-On Sleeve
Styles 1092 & 1097 - Rubber Flanged Standard
Style 9100 & 9101 - Rubber Flanged Versatile
Styles 1093 & 1094 & 1095 - PTFE Single Layer
Style 1096 - PTFE Composite

Industries & Sectors

Since 1950, General Rubber has proudly worked across multiple industries and sectors creating performance products for even the most demanding applications. From Nuclear and Fossil power applications to municipal water supplies and Chemical processing plants, General Rubber products are known for their performance, quality and reliability.

Engineering, Procurement, Construction (EPC)

From the world's largest common cooling water system (Ras Laffan, Qatar) to multiple AP1000 nuclear plants (VC Summer and Vogtle 3,4), General Rubber collaborates with leading EPC firms and understands the demands of large international new construction projects.

Maintenance, Repair, Operations (MRO)

With an installed capacity across multiple industries and sectors dating back to 1950, General Rubber is a leader in developing MRO solutions. Specifically, we believe providing performance replacement expansion joints and educating our customers is the best way to ensure the continued efficiency, safety, and reliability of their plants.

Original Equipment Manufacturers (OEM)

General Rubber is dedicated to providing technical sales and support to original equipment manufacturers around the world. Our highly experienced team of engineers and technical sales professionals work directly with the manufacturer to provide unique, value-added solutions, ranging from the simple to the simply amazing.

Power – Fossil

Since 1950, General Rubber has been working with fossil fuel power plants to increase piping and equipment reliability with innovative solutions. Our expansion joints are performance based and cost effective, with applications ranging from circulating cooling water to high temperature rectangular expansion joints.

Power – Nuclear

General Rubber is original equipment in half of the nuclear generating sites in the U.S., including the newest AP1000 units and several international plants. Whether you need a plant reliability and efficiency program (PREP) for an existing plant, or are interested in best piping practice and optimization (BPPO) for a new construction project, General Rubber delivers the experience and solutions you require.

Chemical Processing

General Rubber's unique combination of performance-based products, technical knowledge, and field service deliver expansion joint solutions to even the most demanding chemical processing applications around the world.

Wastewater

Since 1950, General Rubber's products have been providing the reliability and durability demanded by the wastewater industry. Let us show you how we are using best piping practices and optimization (BPPO) for new construction projects, as well as how we can develop a plant reliability and efficiency program (PREP) for your existing plant.

Mining and Mineral Processing

Mining and processing ores and minerals require heavy-duty products to withstand the abrasive and corrosive media, as well as the aggressive environment associated with this demanding industry. General Rubber offers a number of unique product solutions, including our performance expansion joints and pinch valves.

Pulp and Paper Processing

General Rubber has a tremendous amount of experience with products specifically designed to operate reliably throughout the mill. We utilize advanced elastomers with a highly engineered construction to provide expansion joints that stand up to even the most demanding applications.

Steel

General Rubber offers the performance expansion joints needed for the harsh and demanding environment associated with steel production.

Marine

General Rubber's expansion joints are built for even the most demanding applications faced by the marine industry. Our experience includes a long history of working with the U.S. Coast Guard and U.S. Navy to supply military-approved products.

Heating, Ventilation & Air Conditioning (HVAC)

Our expansion joints and other performance rubber products will reduce noise and vibration generated from mechanical equipment, including pumps, chillers, compressors, fans, heat exchangers, and cooling towers. They are also used to absorb thermal movements and vibration in risers and other pipelines.

Resources

General Rubber offers a wide range of resources to support our customers across multiple industries and sectors. We believe it is critical to provide detailed product literature, application tools, educational materials, and technical training, so that our customers can make the best and most informed decisions.

Features & Benefits

Rubber expansion joints (REJs) are primarily used to absorb all directional piping movements as well as reduce noise and vibration. In addition, they are a cost-effective means to relieve piping and anchor stresses, compensate for misalignment, and provide access to piping and equipment.

Selection and Application

Expansion joints play a critical role in piping systems providing necessary support and flexibility for many industries and sectors. When discussing REJs, the focus is typically on the quality, durability and capabilities of the REJ, however, selecting and applying the correct REJ for a given application is critical to ensuring the features and benefits of the REJ are realized.

Materials of Construction

Improved performance and engineered solutions are accomplished by incorporating advanced materials and technologies into our product lines. General Rubber is proud to offer a variety of elastomers and construction materials chosen specifically to meet the needs for even the most demanding applications.

Catalog Downloads

General Rubber's catalogues offer an overview of our products available across multiple industries and sectors. They are designed to make it easy to view our standard products while also illustrating our capabilities for providing engineered solutions.

Data Sheets

General Rubber's data sheets illustrate key material and product characteristics in addition to their standardized performance. Additionally, these individual sheets can be utilized as basic submittal drawings for product approval and/or specification. Job specific drawings and/or specifications are available via our engineering services.

Guideline Specifications

General Rubber has created guidelines to provide the minimum requirements for engineering design, materials of construction, performance, dimensional information, and quality for each of our product categories. These guideline specifications are effective tools for utilities and EPCs to confidently specify the critical characteristics of these products.

Installation & Maintenance Instructions

General Rubber provides installation and maintenance instructions for each of their product categories. These instructions are critical for the safety and reliability of the system, as well as to optimize the performance and service life of the product.

Case Studies

General Rubber has created case studies to communicate our extensive capabilities across multiple industries and sectors. Good illustrations include our case studies on developing 12 foot diameter dismantling expansion joints for the world's largest common cooling water system (Ras Laffan, Qatar) and developing an all rubber in-line pressure balanced expansion joint, used within newly constructed AP1000 nuclear plants (VC Summer 2,3/Vogtle 3,4).

Application Demos

General Rubber has created application videos to illustrate the capabilities of each of our product categories including restrained and unrestrained expansion joints. These animations are helpful in illustrating our products role in best piping practice and optimization.

Flange Data

General Rubber has worked with numerous flange standards applied across multiple industries and sectors. We have the experience working with and are pleased to provide dimensional information on these standards. Contact engineering services for information not shown on these tables.

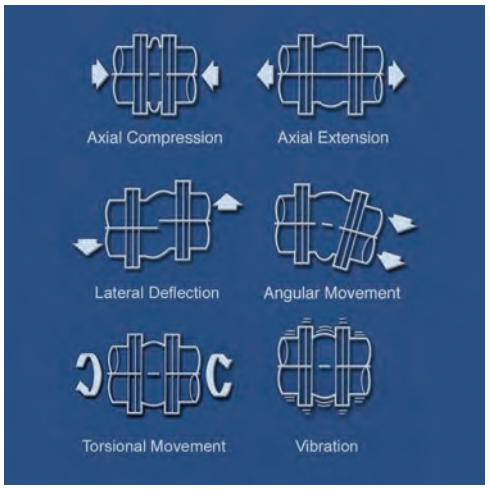
Technical Articles

General Rubber is proud to have published numerous articles in major industry periodicals including Pumps & Systems, WaterWorld, and Maintenance Technology. These articles highlight the features and benefits of our performance products, selection and application, as well as implementing an efficiency and reliability program.

FAQ (Frequently Asked Questions)

We have collected some of the most common questions and answers to help you find relevant information as quickly and easily as possible.

Features & Benefits



Expansion joints are primarily used to absorb all directional piping movements as well as reduce noise and vibration. In addition, they are a cost effective means to relieve piping and anchor stresses, compensate for misalignment, and provide access to piping and equipment.

Absorbs all Directional Movement

General Rubber's **Maxi-Joint®** wide arch expansion joints provide superior movement capability in axial compression, axial extension, and lateral deflection, as well as in the angular and torsional direction. This performance cannot be obtained with metallic joints, grooved couplings, or large pipe loops. The low stiffness and deflection forces make designing with General Rubber expansion joints a breeze.

Reduces Noise and Vibration

General Rubber's expansion joints and flexible connectors effectively dampen and insulate against the transmission of noise and vibration generated by mechanical equipment. This is particularly important in HVAC applications where the disturbing frequency of pipe and fluid-conducting noise can resonate and amplify throughout the building. Metallic joints and grooved couplings do little to reduce noise and vibration.

High Resistance to Fatigue and Shock

General Rubber's expansion joints have a cycle life in the tens of millions. The highly compliant and resilient characteristics of General Rubber expansion joints make them ideally suited for earthquake and bomb blast isolation, as well as pressure-surge and water hammer dampening.

Highly Resistant to Abrasion and Corrosion

Our abrasion and corrosion resistant materials can be superior to even the most exotic materials. General Rubber is proud to offer a variety of elastomers and construction materials chosen specifically to meet the needs of even the most demanding applications.

Relieves Pipe and Anchor Stress

Thermal movements along with other external forces and displacements, including ground settlement can quickly exceed allowable pipe and anchor stresses. General Rubber expansion joints absorb these stresses and replace them with their own low stiffness (spring rate).

Compensates for Misalignment

It is common in both new construction and replacement applications to encounter pipe misalignment. Minor misalignment can be taken up with standard General Rubber expansion joints, and custom units can be quickly fabricated with large permanent offsets.

Provides Access to Piping and Equipment

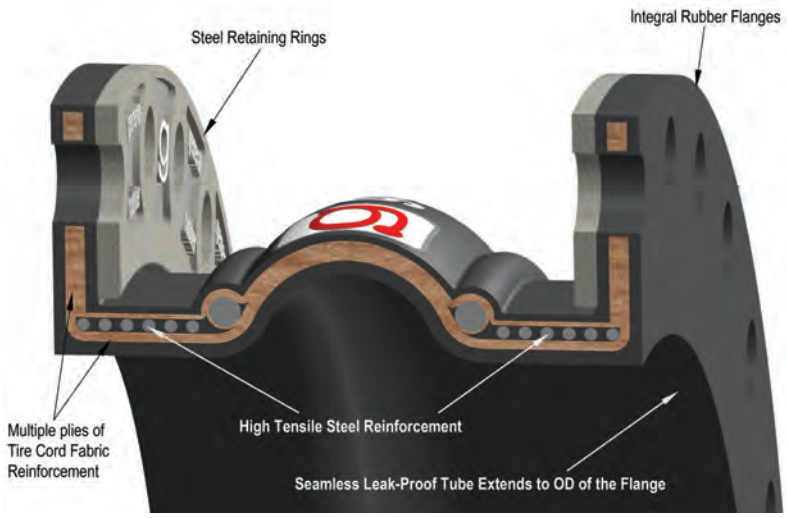
Access to piping and equipment can be easily achieved by treating the expansion joint as a removable spool piece. If a self-retracting design is needed, General Rubber's Style 5100D dismantling joint can be utilized.

Cost-Effective Solution

An optimal design does not necessarily mean higher pressure or temperature ratings, because these features typically increase the product's stiffness and cost. With a proven track record that dates back to 1950, General Rubber has the experience and is confident that we can develop an optimal and cost effective solution to meet your requirements. Our abrasion and corrosion-resistant materials can be superior to even the most exotic metals. Our large inventories and modern U.S. ISO 9001 & 14001 certified manufacturing facility also mean quick deliveries, as well as top quality products and services.

Materials of Construction

Improved performance and engineered solutions have often been accomplished by incorporating advanced materials and technologies into our product lines. General Rubber is proud to offer a variety of elastomers and construction materials chosen specifically to meet the needs for even the most demanding applications. From advanced DuPont elastomers to cutting edge construction materials, General Rubber's performance products are engineered for success.



Elastomers

EPDM

Outstanding water, vapor, and weather resistance. Good resistance to heat, ozone, alkalis, sunlight, and oxygenated solvents. Ideal for outdoor service. Do not use with petroleum oil service. Good general purpose elastomer with an effective operating range from -30°F to 350°F.

Neoprene

Resists alkalis, inorganic acids, and salt solutions. Flame retardant, as well as abrasion and weather resistant. Good resistance to animal and vegetable oils; moderate resistance to petroleum oils. Effective operating range from -20°F to 225°F.

Chlorobutyl

Lowest permeability, very good resistance to water, heat, fats, ozone, alkalis, sunlight, abrasion, and oxygenated solvents. Effective operating range from -30°F to 300°F with brief allowable excursions to 350°F.

Hypalon®

Offered superior weather, flame and abrasion resistance as well as excellent resistance to acids, alkalis and oxidation with an effective operating range from -10°F to 250°F. While DuPont has discontinued Hypalon®, a variety of elastomers of equivalent performance are readily available for specific applications. General Rubber is pleased to assist you in this regard.

Buna-N (Nitrile)

Good resistance to mineral and vegetable oils, greases, hydrocarbon solvents, dilute acids, and alkalis. Effective operating range from -10°F to 210°F.

HNBR (Hydrogenated Nitrile)

Has a wide service temperature range from -40°F to 302°F, and resistance to fluids of various chemical compositions, as well as excellent resistance to alkaline and aggressive fluids. HNBR also has improved wear and abrasion resistance and improved ozone resistance of up to 5 times that of standard NBR/Buna-N. It uniquely bridges the gap in oil applications where the temperature was too high for NBR/Buna-N and otherwise forced the use of the much more expensive FKM compound.

Pure Gum Rubber (Natural Rubber)

Excellent resilience and rebound elasticity with high tensile strength. Excellent resistance to tear and abrasion. Effective operating range from -40°F to 180°F.

PTFE Fluoroplastic

Superior chemical resistance, completely inert to nearly all industrial chemicals and solvents. Effective operating range from -60°F to 450°F. Teflon® is used when indicated or specified.

Viton®/FKM

Excellent resistance to aggressive chemicals, solvents, and halogenated hydrocarbons. Viton® TBR-S provides excellent resistance to steam, aqueous acids, amines and concentrated caustics/bases/alkalis. Viton® ETP-S offers the most universal chemical resistance and has excellent flexibility at low temperatures. Effective operating range from -10°F to 400°F.

FDA Food-Grade Service

Several white and black elastomers meet FDA requirements and can be used in direct contact with food, beverage, and pharmaceutical products.

NSF/ANSI 61 and 372 Certified

EPDM elastomer that meets stringent requirements for potable water and storm water service for Drinking Water Systems Components - Health Effects.

Reinforcements

Polyester, Nylon and Kevlar®/Aramid Tire Cord

Tire cord can be oriented in an optimal bias ply minimizing body thickness while also increasing movements and decreasing spring rates. The Resorcinol Formaldehyde Latex (RFL) coating ensures a superior rubber bond and prevents delamination. Polyester and Nylon are economical in service conditions up to 300°F. Kevlar®/Aramid has a higher tensile strength and good for service conditions up to 400°F.

Fiberglass Reinforcement/Insulation Layer

Economic reinforcement also serving as an insulation layer for applications reaching 1200°F.

High Tensile Steel

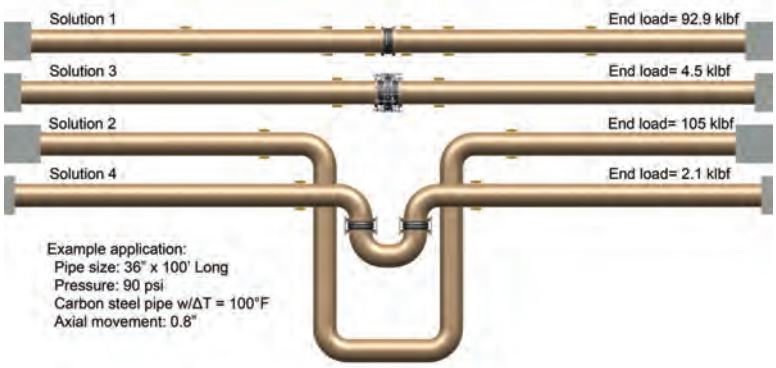
Whether it is internal reinforcement or external restraints, high tensile steel will reduce the cross sectional area contributing to a more efficient design.

Retaining rings and control unit materials include but are not limited to carbon steel with hot dipped galvanized or other coatings—stainless steel (304/316) and aluminum bronze to name a few.

Selection & Application

General Rubber is pleased to provide guidance on the selection and application of expansion joints for applications ranging from basic to demanding. We service many industries and sectors with over 65 years of expansion joint design and manufacturing experience.

When discussing rubber expansion joint (REJ) selection and application, the focus is typically on materials of construction as well as the quality, durability and capabilities of the REJ. However, selecting and applying the correct REJ for a given application is critical to ensuring the features and benefits of the REJ are realized. We have published numerous technical articles that elaborate on the many factors of selection and application.



REJs are utilized in a wide cross section of industries and sectors. The selection and application of REJs is heavily dependent on the requirements and demands of each of these industries and sectors. The predominant sectors include Engineering Procurement and Construction (EPC), Maintenance Repair and Operations (MRO) and Original Equipment Manufacturers (OEM). With over 65 years of design and manufacturing experience, General Rubber is proud to offer comprehensive solutions for each.

EPC represents an important sector focused on the design of new process systems spanning multiple industries. Minimizing system footprint and equipment requirements while increasing energy efficiency and system reliability, are common goals for this sector. The chemical processing industry may be more interested in system reliability and adherence to code while the HVAC industry may be more interested in optimizing space and performance. Utilizing our extensive experience and performance based REJs can best meet these goals. We have developed the Best Piping Practice and Optimization (BPPO) program to address the selection and application of REJs for this sector and its industries.

MRO represents an important sector focused on existing process systems spanning multiple industries. Improving reliability and efficiency with a replacement for cause and/or predictive maintenance approach are common goals for this sector. The nuclear and fossil power industries may be more interested in zero leakage and minimizing negative news cycles while the mining and mineral processing industries may be more interested in custom performance replacement REJs for high wear service. Utilizing our extensive experience and performance replacement REJs can best meet these goals. We have developed the Plant Reliability and Efficiency Program (PREP) to address the selection and application of REJs for this sector and its industries.

OEM represents an important sector dealing with major equipment suppliers spanning multiple industries. Minimizing equipment weight and maximizing its performance are common goals for this sector. A condenser manufacturer may be more interested in minimizing pressure thrust loads while a cooling tower manufacturer may be more interested in outdoor service and adding flexibility. Utilizing our extensive experience and performance based REJs can best meet these goals. We have developed OEM Solutions to address the selection and application of REJs for this sector and its industries.

Whether you are an engineer designing a new process system and/or major process equipment, or you are an operations professional interested in system reliability and efficiency, we have the selection and application tools for you.

Services & Capabilities

General Rubber is proud to offer its services and capabilities across multiple industries and sectors. Since 1950 we have been applying advanced materials and technologies, as well as developing custom solutions to even the most demanding applications.

Best Piping Practices & Optimization (BPPO)

The selection and application of expansion joints plays a significant role in system performance, quality, and reliability. Leveraging our extensive industry experience since 1950, General Rubber uses a systematic approach to finding the optimal solutions for any piping system.

Plant Reliability & Efficiency Program (PREP)

We believe providing performance replacement expansion joints, and educating our customers, is the best way to ensure the continued efficiency, safety, and reliability of our customers' plants. We provide a plant inspection in combination with training programs developed from over 65 years of experience and installed capacity.

OEM (Original Equipment Manufacturer) Solutions

General Rubber is dedicated to providing technical sales and support to original equipment manufacturers around the world. Our highly experienced team of engineers and technical sales professionals work directly with the manufacturer to provide unique, value-added solutions, ranging "From the Simple to the Simply Amazing."

Technical Support

General Rubber provides world class technical support through its partnership with its sales representatives, engineers, and distributors. Our factory-trained specialists and field representatives work closely with customers to select the best products and services required to meet the challenges faced by each industry.

Engineering Services

General Rubber's degreed and licensed engineers excel in creating unique solutions for even the most demanding applications. We lead the industry in custom engineered solutions, using CAD and advanced simulation software to create optimized solutions.

Strategic Alliances

We have established a proven history of working closely with customers to implement alliances which reduce costs and increase piping and equipment reliability, as well as improve efficiencies.

Training

We are dedicated to educating our customers by providing access to a host of tools, materials, and educational programs to satisfy different industries' requirements. Our training ranges from virtual classrooms to plant walk-downs. General Rubber is committed to excellence, something we have been proving for over 65 years.

Field Services

General Rubber is proud to offer on-site supervised plant surveys and inspections, as well as troubleshooting training and expedited replacements. We can also meet your needs through remote or hands-on training, by making recommendations, or by scheduling plant walk-downs.

Manufacturing Capabilities

General Rubber can manufacture standard and custom expansion joints in a wide range of sizes, materials and arrangements. Based in the U.S., our modern *ISO 9001/14001 Certified* manufacturing facility has a large capacity, allowing us to complete many large-scale projects at once.

Testing Capabilities

General Rubber is proud to offer a variety of testing capabilities including hydrostatic, vacuum and burst testing, as well as spring rate, movement capabilities, and cycle life and fatigue testing. We are also capable of material testing at ambient and elevated temperatures.

Compliance & Certification

General Rubber has spent nearly seven decades designing and manufacturing performance rubber products across multiple industries and sectors around the world. As a result of our significant industry experience, General Rubber is confident in its ability to handle even the most demanding requirements ranging from nuclear safety applications to basic power/process piping requirements.

General Rubber has spent nearly seven decades designing and manufacturing performance rubber for customers from around the world. As a result of our significant industry experience, General Rubber is confident in its ability to handle even the most demanding requirements ranging from basic power/process piping requirements to nuclear safety applications.

ISO

Our management processes have been recognized for their excellence through the industry's first ISO 9001 certification. General Rubber is both ISO 9001 and ISO 14001 Certified; we are proud to hold and maintain these certifications as part of our commitment to quality manufacturing, management, and environmentalism.


certificate of registration

This is to certify that the management systems of

General Rubber Corporation

have been formally assessed by International Certifications and found to comply with the requirements of

ISO 9001:2015

Quality Management Systems - Requirements

17 Oct 2017

12 Oct 2020

C40798

FSA

General Rubber plays an active leadership role in the Fluid Sealing Association (FSA). As a founding member with a current board position, General Rubber helps apply industry terminology and design considerations to the safe design of rubber expansion joints.

ASME B31.1 – Power Piping and ASME B31.3 – Process Piping

Often times these industry specifications, among others, are a distinct part of boilerplate requirements for expansion joints within piping systems. General Rubber's considerable experience in the power and processing industries enables us to help our customers select the proper safety factors and material specifications for each project or application.

While General Rubber confidently manufactures its performance products to meet all applicable codes, our extensive experience and active role in the FSA allow us to utilize sound engineering practices and advanced understanding of these specifications to ensure our customers receive the quality their projects demand in the most economical way.

Nuclear Safety Products

Through General Rubber's strategic alliances, we are able to provide our performance rubber expansion joints to projects requiring nuclear safety designated products.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ISO 14001:2015

Environmental Management Systems - Requirements with guidance for use

17 Oct 2017

12 Oct 2020

C40799

FDA

Utilizing advanced materials of construction enables General Rubber to provide its performance rubber products to customers and projects in many industries and sectors, including those requiring food-safe and FDA-compliant materials.

In addition to providing performance products that are compliant with the world's most accepted and rigorous standards, General Rubber has created guideline specifications which guarantee performance products will be specified for every project.

For more information about applications requiring specific codes, safety products, or other engineering and material considerations, please contact our technical sales and engineering teams.

NSF/ANSI 61 and 372 Certified

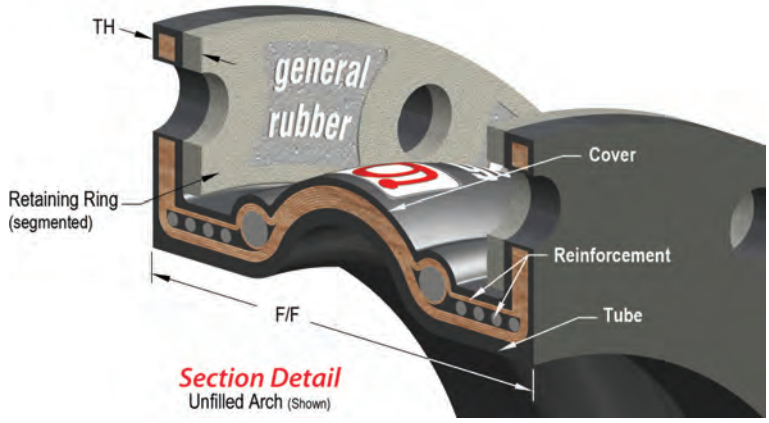
General Rubber is certified to NSF/ANSI 61 and 372 for Drinking Water Systems Components - Health Effects. All sizes and models of the series 1100 performance expansion joints are available with EPDM elastomer certified to NSF/ANSI 61 and 372. Made in the USA in our ISO-9001 and ISO-14001 Certified manufacturing facility, this is the latest demonstration of the company's commitment to preserving and improving the environment while producing performance products that meet even the most demanding applications.

Certified to NSF/ANSI/CAN 61 and 372

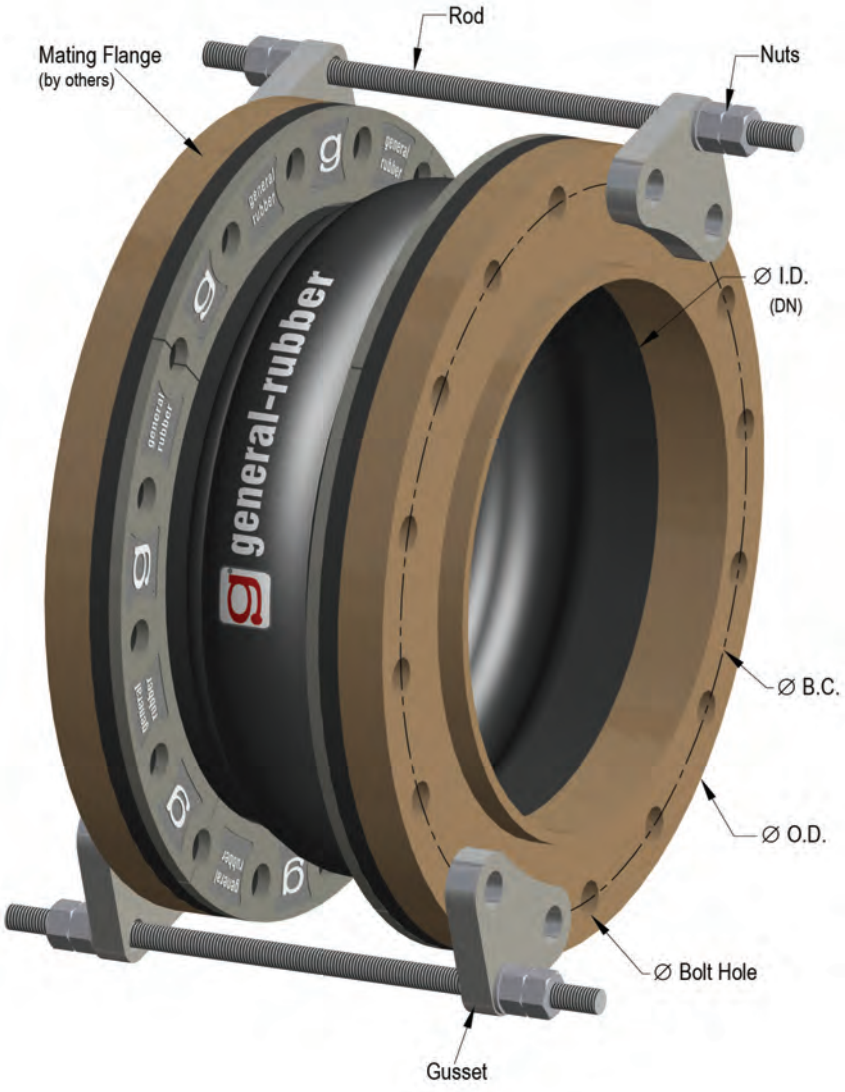
Single Wide Arch

Style 1101

General Rubber's Style 1101 single (1) wide arch rubber expansion joint (REJ) is designed to absorb large all-directional movements, reduce noise and vibration, has a cycle life in the tens of millions, compensates for misalignments, provides access to piping and equipment, and relieves pipe and anchor stresses. Its spool type body is constructed with full rubber flanges, a high-grade leak-proof tube, multiple layers of high-strength tire cord, high-tensile steel reinforcement, a seamless cover, and hot dip galvanized steel retaining rings. This construction, as a standalone expansion joint, represents the most cost-effective arrangement when used in rigid piping systems with main anchors (MA) and numerous guides at specific spacing. Control units can be externally or internally attached and used as limit rods for secondary restraint, or as tie rods when the support structure or adjacent equipment has load limitations.



- Versatile hand-built construction, made in the USA
- Standard or custom face-to-face dimensions
- Available in custom offset arrangements and sizes not shown
- Wide flowing arch design
- Exceptional all directional movement capability
- Virtually eliminates sediment buildup
- Absorbs noise, vibration and shock
- Higher pressure rating than conventional expansion joints
- Hot dip galvanized retaining rings standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Excellent chemical and abrasion resistance
- Full vacuum rating (30" Hg) in all sizes
- 250°F continuous service standard (400°F available)
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Integrally flanged design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Filled arch design available (reduces movement by 50% and increases spring rates by 400%)
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more



SIZE			FLANGES 125/150 LB				STYLE 1101 MOVEMENT (non-concurrent)					SPRING RATE			PRESSURE		WEIGHT
I.D.	F/F	TH.	O.D.	B.C.	Hole	Hole Dia.	Comp.	Ext.	Lateral	Angular	Torsional	Comp.	Ext.	Lateral	Pressure	Vacuum	REJ w/ Rings
in	in	in	in	in	No.	in	in	in	in	deg.	deg.	lb/in	lb/in	lb/in	psig	in-Hg	lb
mm	mm	mm	mm	mm	No.	mm	mm	mm	mm	deg.	deg.	N/mm	N/mm	N/mm	barg	barg	kg
2	6	7/8	6	4 3/4	4	3/4	1 3/4	7/8	1	39	4	270	340	450	225	30	7
50	152	22	152	121	4	19	44	22	25	39	4	47	60	79	15.5	-1	3.2
2 1/2	6	7/8	7	5 1/2	4	3/4	1 3/4	7/8	1	33	3.8	340	420	480	225	30	8
65	152	22	178	140	4	19	44	22	25	33	3.8	60	74	84	15.5	-1	3.6
3	6	7/8	7 1/2	6	4	3/4	1 3/4	7/8	1	28	3.7	400	510	540	225	30	10
80	152	22	191	152	4	19	44	22	25	28	3.7	70	89	95	15.5	-1	4.5
4	6	7/8	9	7 1/2	8	3/4	1 3/4	7/8	1	22	3.6	550	710	590	225	30	14
100	152	22	229	191	8	19	44	22	25	22	3.6	96	124	103	15.5	-1	6
5	6	7/8	10	8 1/2	8	7/8	1 3/4	7/8	1	18	3.4	670	880	710	225	30	17
125	152	22	254	216	8	22	44	22	25	18	3.4	117	154	124	15.5	-1	7.7
6	6	7/8	11	9 1/2	8	7/8	1 3/4	7/8	1	15	3.2	820	1,050	790	225	30	20
150	152	22	279	241	8	22	44	22	25	15	3.2	144	184	138	15.5	-1	9
8	6	7/8	13 1/2	11 3/4	8	7/8	1 3/4	7/8	1	12	3.1	990	1,160	960	225	30	29
200	152	22	343	298	8	22	44	22	25	12	3.1	173	203	168	15.5	-1	13
10	8	7/8	16	14 1/4	12	1	2	1	1 1/4	17	3	960	1,170	820	225	30	39
250	203	22	406	362	12	25	51	25	32	17	3	168	205	144	15.5	-1	18
12	8	7/8	19	17	12	1	2	1	1 1/4	14	2.9	1,010	1,250	970	225	30	58
300	203	22	483	432	12	25	51	25	32	14	2.9	177	219	170	15.5	-1	26.4
14	8	1	21	18 3/4	12	1 1/8	2 1/4	1 1/8	1 1/4	12	2.8	1,080	1,300	1,140	220	30	65
350	203	25	533	476	12	29	57	29	32	12	2.8	189	228	200	15.2	-1	29.5
16	8	1	23 1/2	21 1/4	16	1 1/8	2 1/4	1 1/8	1 1/4	11	2.7	1,150	1,390	1,320	160	30	80
400	203	25	597	540	16	29	57	29	32	11	2.7	201	243	231	11	-1	36.4
18	8	1	25	22 3/4	16	1 1/4	2 1/4	1 1/8	1 1/4	10	2.6	1,220	1,570	1,450	160	30	90
450	203	25	635	578	16	32	57	29	32	10	2.6	214	275	254	11	-1	41
20	8	1	27 1/2	25	20	1 1/4	2 1/4	1 1/8	1 1/4	9	2.5	1,280	1,750	1,620	130	30	101
500	203	25	699	635	20	32	57	29	32	9	2.5	224	306	284	9	-1	46
24	10	1 1/8	32	29 1/2	20	1 3/8	2 1/2	1 1/4	1 3/8	8	2.4	1,730	2,100	1,740	130	30	120
600	254	29	813	749	20	35	64	32	35	8	2.4	303	368	305	9	-1	54.5
30	10	1 1/8	38 3/4	36	28	1 3/8	2 1/2	1 1/4	1 3/8	7	2.3	2,180	2,660	2,190	100	30	172
750	254	29	984	914	28	35	64	32	35	7	2.3	382	466	384	6.9	-1	78.2
36	10	1 1/8	46	42 3/4	32	1 5/8	2 1/2	1 1/4	1 3/8	6	2.2	2,660	3,250	2,680	90	30	219
900	254	29	1168	1086	32	41	64	32	35	6	2.2	466	569	469	6.2	-1	99.5
42	12	1 1/8	53	49 1/2	36	1 5/8	2 1/2	1 1/4	1 1/2	4.8	2.1	3,030	3,650	3,020	90	30	290
1050	305	29	1346	1257	36	41	64	32	38	4.8	2.1	531	639	529	6.2	-1	131.8
48	12	1 1/8	59 1/2	56	44	1 5/8	2 1/2	1 1/4	1 1/2	4.2	2	3,390	4,150	3,410	90	30	342
1200	305	29	1511	1422	44	41	64	32	38	4.2	2	593	727	597	6.2	-1	155.5
54	12	1 1/8	66 1/4	62 3/4	44	1 7/8	2 1/2	1 1/4	1 1/2	3.8	1.9	4,120	5,020	4,140	85	30	405
1350	305	29	1683	1594	44	48	64	32	38	3.8	1.9	722	879	725	5.9	-1	184
60	12	1 1/8	73	69 1/4	52	1 7/8	2 1/2	1 1/4	1 1/2	3.6	1.8	4,520	5,560	4,580	85	30	500
1500	305	29	1854	1759	52	48	64	32	38	3.6	1.8	792	974	802	5.9	-1	227
66	12	1 1/8	80	76	52	1 7/8	2 1/2	1 1/4	1 1/2	3.3	1.7	5,250	6,390	5,270	85	30	580
1650	305	29	2032	1930	52	48	64	32	38	3.3	1.7	919	1,119	923	5.9	-1	264
72	12	1 1/4	86 1/2	82 1/2	60	1 7/8	2 1/2	1 1/4	1 1/2	3	1.6	5,900	7,180	5,920	85	30	650
1800	305	32	2197	2096	60	48	64	32	38	3	1.6	1,033	1,257	1,037	5.9	-1	295
78	12	1 1/4	93	89	64	2 1/8	2 1/2	1 1/4	1 1/2	2.6	1.5	6,420	7,850	6,570	80	30	715
1950	305	32	2362	2261	64	54	64	32	38	2.6	1.5	1,124	1,375	1,151	5.5	-1	325
84	12	1 1/4	99 3/4	95 1/2	64	2 1/8	2 1/2	1 1/4	1 1/2	2.3	1.4	6,950	8,670	7,400	80	30	780
2100	305	32	2534	2426	64	54	64	32	38	2.3	1.4	1,218	1,519	1,296	5.5	-1	355
90	12	1 1/4	106 1/2	102	68	2 7/16	2 1/2	1 1/4	1 1/2	2.1	1.3	7,270	9,200	8,080	80	30	880
2250	305	32	2705	2591	68	62	64	32	38	2.1	1.3	1,273	1,611	1,415	5.5	-1	400
96	12	1 1/4	113 1/4	108 1/2	68	2 7/16	2 1/2	1 1/4	1 1/2	2	1.2	7,650	10,100	9,070	80	30	1,010
2400	305	32	2877	2756	68	62	64	32	38	2	1.2	1,340	1,769	1,588	5.5	-1	459
102	12	1 3/8	120	114 1/2	72	2 11/16	2 1/2	1 1/4	1 1/2	1.6	0.8	8,128	10,730	9,640	60	30	1,073
2550	305	35	3048	2908	72	68	64	32	38	1.6	0.8	1,423	1,879	1,688	4.1	-1	487
108	12	1 3/8	126 3/4	120 3/4	72	2 11/16	2 1/2	1 1/4	1 1/2	1.5	0.7	8,606	11,360	10,200	60	30	1,136
2700	305	35	3219	3067	72	68	64	32	38	1.5	0.7	1,507	1,989	1,786	4.1	-1	516

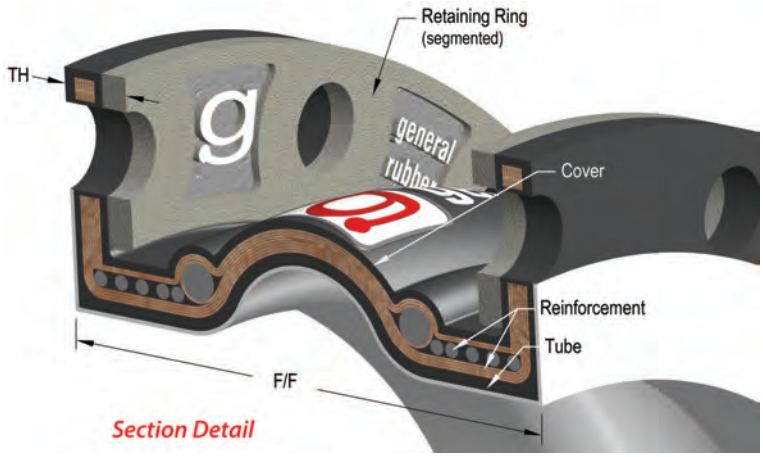
Notes:

1. Technical data shown above reflects the single arch design; additional arches typically increase movements and decrease spring rates proportionately. | 2. All parts listed are designed for 30" Hg (full vacuum) and have a maximum test at 26" Hg due to facility altitude and equipment limitations. | 3. Maximum operating temperature of 250˚F for EPDM, Butyl and Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available. | 4. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department. | 5. Bill of Materials: Retaining Ring and Gusset, carbon steel hot dipped galvanized (HDG) or stainless steel; Rods, A193 B7 (HDG) or A193 B8M; Nuts, A194 2H (HDG) or A194 8M; Spherical Washer, stainless steel; Metal Reinforcement, high-tensile steel; and Textile Reinforcement, RFL-coated tire cord. | 6. **WARNING**: Control units (sold separately) must be used when piping is not properly anchored. Number of rods are dependent upon maximum field test pressures. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended. | 7. Series 1100 and 1200 replaces styles 1025, 1050 and 1075. | 8. Standard 125/150 lb. drilling includes, 1"-24" with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30"-60" with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb., 72"-108" with ANSI B16.1 Class 125 lb./ AWWA C207 Class B.

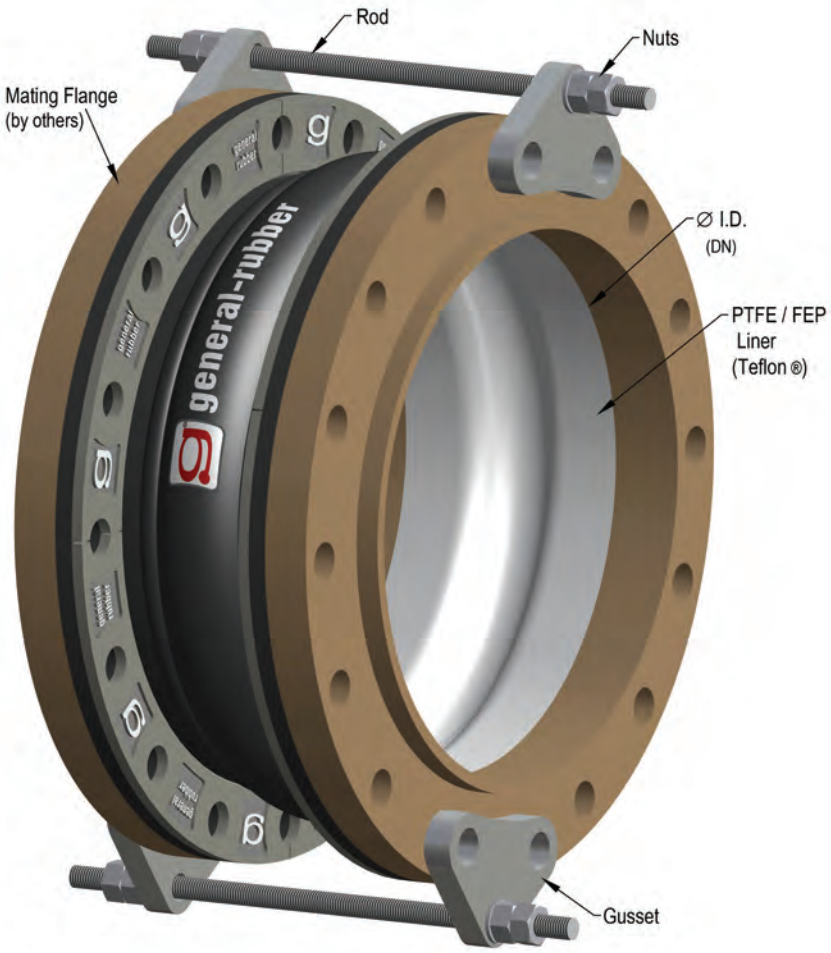
Single Teflon® Lined Wide Arch

Style 1101T

General Rubber's Style 1101T Teflon lined single (1) wide arch rubber expansion joint (REJ) has superior chemical resistance even at higher temperatures and pressures. Additionally, it is designed to absorb large all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment, and relieve pipe and anchor stresses. Its spool type body is constructed with full Teflon lined and rubber flanges, a high-grade leak-proof tube, multiple layers of high-strength tire cord, high tensile steel reinforcement, a seamless cover, and hot dip galvanized steel retaining rings. This construction, as a standalone expansion joint, represents the most cost-effective arrangement when used in rigid piping systems with main anchors (MA) and numerous guides at specific spacing. Control units can be externally or internally attached and used as limit rods for secondary restraint, or as tie rods when the support structure or adjacent equipment has load limitations.



- Versatile hand-built construction, made in the USA
- Superior chemical resistance even at higher temperatures and pressures
- Liner made of PTFE or FEP (Teflon®)
- Standard or custom face-to-face dimensions
- Available in multiple arches or custom offset arrangements and sizes not shown
- Wide flowing arch design
- Exceptional all directional movement capability
- Virtually eliminates sediment buildup
- Absorbs noise, vibration and shock
- Higher pressure rating than conventional expansion joints
- Hot dip galvanized retaining rings standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Ideal for food, pharmaceutical, chemical and ultra pure water application
- Full vacuum rating (30" Hg)
- 250°F continuous service standard (400°F available)
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Integrally flanged design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Food Grade, and more



SIZE			STYLE 1101T MOVEMENT (non-concurrent)					SPRING RATE			PRESSURE		WEIGHT
I.D.	Std. Length (F/F)	Flange TH.	Comp.	Ext.	Lateral	Angular	Torsional	Comp.	Ext.	Lateral	Pressure	Vacuum	REJ w/ Rings
in	in	in	in	in	in	deg.	deg.	lb/in	lb/in	lb/in	psig	in-Hg	lbs
mm	mm	mm	mm	mm	mm	deg.	deg.	N/mm	N/mm	N/mm	barg	barg	kg
2	6	7/8	1 3/4	7/8	1	39	4	270	340	450	225	30	7
50	152	22	44	22	25	39	4	47	60	79	15.5	-1	3.2
2 1/2	6	7/8	1 3/4	7/8	1	33	3.8	340	420	480	225	30	8
65	152	22	44	22	25	33	3.8	60	74	84	15.5	-1	3.6
3	6	7/8	1 3/4	7/8	1	28	3.7	400	510	540	225	30	10
80	152	22	44	22	25	28	3.7	70	89	95	15.5	-1	4.5
4	6	7/8	1 3/4	7/8	1	22	3.6	550	710	590	225	30	14
100	152	22	44	22	25	22	3.6	96	124	103	15.5	-1	6
5	6	7/8	1 3/4	7/8	1	18	3.4	670	880	710	225	30	17
125	152	22	44	22	25	18	3.4	117	154	124	15.5	-1	7.7
6	6	7/8	1 3/4	7/8	1	15	3.2	820	1,050	790	225	30	20
150	152	22	44	22	25	15	3.2	144	184	138	15.5	-1	9
8	6	7/8	1 3/4	7/8	1	12	3.1	990	1,160	960	225	30	29
200	152	22	44	22	25	12	3.1	173	203	168	15.5	-1	13
10	8	7/8	2	1	1 1/4	17	3	960	1,170	820	225	30	39
250	203	22	51	25	32	17	3	168	205	144	15.5	-1	18
12	10	7/8	2	1	1 1/4	14	2.9	1,010	1,250	970	225	30	58
300	203	22	51	25	32	14	2.9	177	219	170	15.5	-1	26.4
14	10	1	2 1/4	1 1/8	1 1/4	12	2.8	1,080	1,300	1,140	220	30	65
350	203	25	57	29	32	12	2.8	189	228	200	15.2	-1	29.5
16	10	1	2 1/4	1 1/8	1 1/4	11	2.7	1,150	1,390	1,320	160	30	80
400	203	25	57	29	32	11	2.7	201	243	231	11	-1	36.4
18	10	1	2 1/4	1 1/8	1 1/4	10	2.6	1,220	1,570	1,450	160	30	90
450	203	25	57	29	32	10	2.6	214	275	254	11	-1	41
20	8	1	2 1/4	1 1/8	1 1/4	9	2.5	1,280	1,750	1,620	130	30	101
500	203	25	57	29	32	9	2.5	224	306	284	9	-1	46
24	10	1 1/8	2 1/2	1 1/4	1 3/8	8	2.4	1,730	2,100	1,740	130	30	120
600	254	29	64	32	35	8	2.4	303	368	305	9	-1	54.5
30	10	1 1/8	2 1/2	1 1/4	1 3/8	7	2.3	2,180	2,660	2,190	100	30	172
750	254	29	64	32	35	7	2.3	382	466	384	6.9	-1	78.2
36	10	1 1/8	2 1/2	1 1/4	1 3/8	6	2.2	2,660	3,250	2,680	90	30	219
900	254	29	64	32	35	6	2.2	466	569	469	6.2	-1	99.5
42	12	1 1/8	2 1/2	1 1/4	1 1/2	4.8	2.1	3,030	3,650	3,020	90	30	290
1050	305	29	64	32	38	4.8	2.1	531	639	529	6.2	-1	131.8
48	12	1 1/8	2 1/2	1 1/4	1 1/2	4.2	2	3,390	4,150	3,410	90	30	342
1200	305	29	64	32	38	4.2	2	593	727	597	6.2	-1	155.5

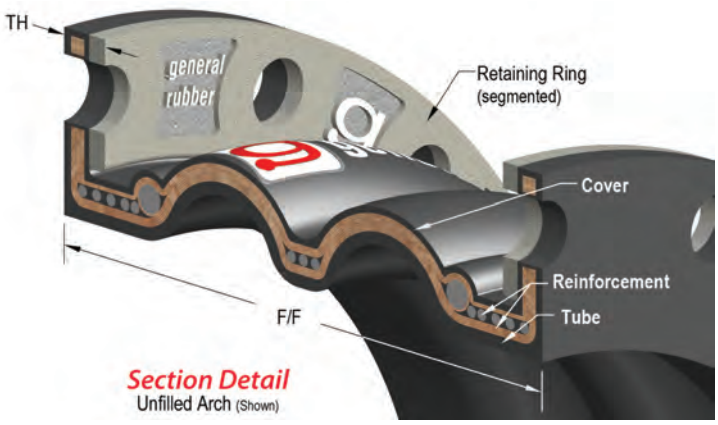
Notes:

1. Technical data shown above reflects the single arch design; additional arches typically increase movements and decrease spring rates proportionately.
2. All parts listed are designed for 30" Hg (full vacuum) and have a maximum test at 26" Hg due to facility altitude and equipment limitations.
3. Pressure based on ambient operating temperature; pressure is reduced at higher temperatures.
4. Based on size and operating pressure the liner will be either PTFE or FEP.
5. Maximum operating temperature of 250˚F for EPDM, Butyl and Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
6. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
7. Bill of Materials: Retaining Ring and Gusset, carbon steel hot dipped galvanized (HDG) or stainless steel; Rods, A193 B7 (HDG) or A193 B8M; Nuts, A194 2H (HDG) or A194 8M; Spherical Washer, stainless steel; Metal Reinforcement, high-tensile steel; and Textile Reinforcement, RFL-coated tire cord.
8. **WARNING**: Control units (sold separately) must be used when piping is not properly anchored. Number of rods are dependent upon maximum field test pressures. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.
9. Standard 125/150 lb. drilling includes, 1"-24" with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30"-60" with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb., 72"-108" with ANSI B16.1 Class 125 lb./ AWWA C207 Class B.

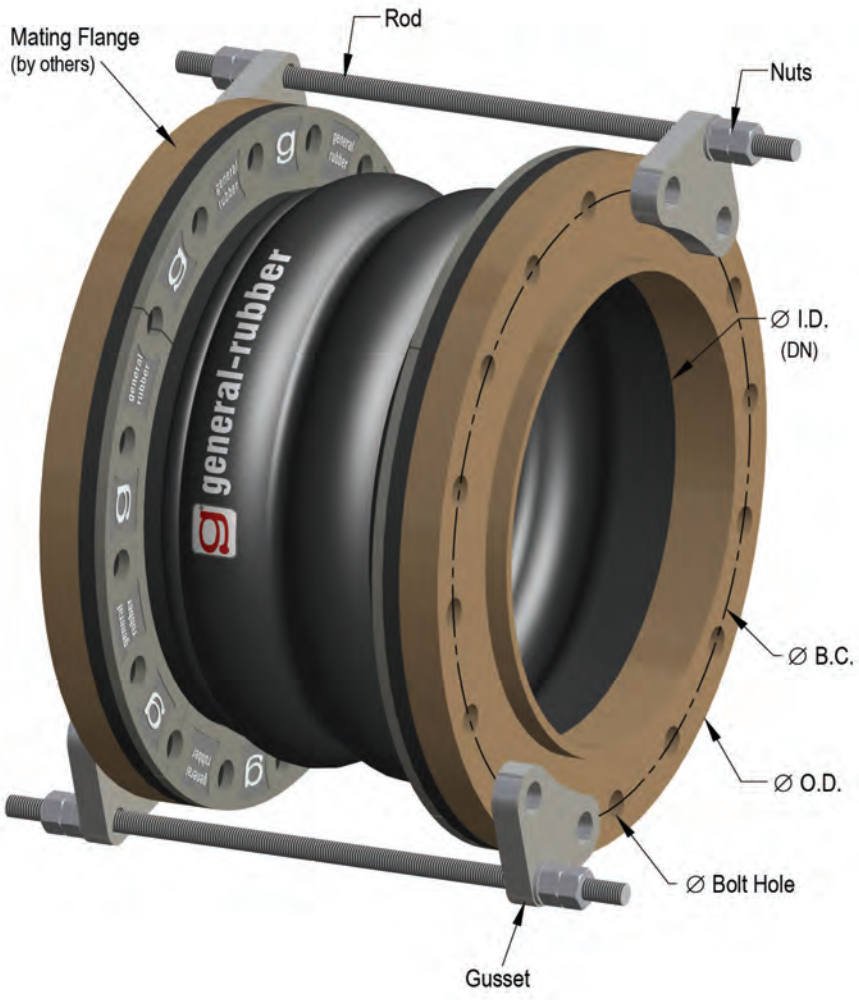
Double Wide Arch

Style 1102

General Rubber's Styles 1102 and 1202, double (2) wide arch rubber expansion joints (REJs) have twice the all-directional movement capabilities with half the spring rates of our single arch design. Additionally, they are designed to reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment and relieve pipe and anchor stresses. Its spool type body is constructed with full rubber flanges, a high-grade leak-proof tube, multiple layers of high-strength tire cord, high tensile steel reinforcement, a seamless cover and hot dip galvanized steel retaining rings. This construction, as a standalone expansion joint, represents the most cost-effective arrangement when used in rigid piping systems with main anchors (MA) and numerous guides at specific spacing. Control units can be externally or internally attached and used as limit rods for secondary restraint or as tie rods when the support structure or adjacent equipment has load limitations.



- Versatile hand-built construction, made in the USA
- Double the movement with half the spring rate
- Standard or custom face-to-face dimensions
- Available in custom offset arrangements and sizes not shown
- Wide flowing arch design
- Exceptional all directional movement capability
- Virtually eliminates sediment buildup
- Absorbs noise, vibration and shock
- Higher pressure rating than conventional expansion joints
- Hot dip galvanized retaining rings standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Excellent chemical and abrasion resistance
- Style 1202 designates full vacuum rating (30" Hg) in all sizes
- 250°F continuous service standard (400°F available)
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Integrally flanged design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Filled arch design available (reduces movement by 50% and increases spring rates by 400%)
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more



SIZE			FLANGES 125/150 LB				STYLE 1102 MOVEMENT (non-concurrent)					SPRING RATE			PRESSURE		WEIGHT
I.D.	F/F	TH.	O.D.	B.C.	Hole	Hole Dia.	Comp.	Ext.	Lateral	Angular	Torsional	Comp.	Ext.	Lateral	Pressure	Vacuum	REJ w/ Rings
in	in	in	in	in	No.	in	in	in	in	deg.	deg.	lb/in	lb/in	lb/in	psig	in-Hg	lb
mm	mm	mm	mm	mm	No.	mm	mm	mm	mm	deg.	deg.	N/mm	N/mm	N/mm	barg	barg	kg
2	10	7/8	6	4 3/4	4	3/4	3 1/2	1 3/4	2	78	8	135	170	225	225	15	12
50	254	22	152	121	4	19	89	44	51	78	8	23	29	39	15.5	-0.5	5.4
2 1/2	10	7/8	7	5 1/2	4	3/4	3 1/2	1 3/4	2	66	7.6	170	210	240	225	15	14
65	254	22	178	140	4	19	89	44	51	66	7.6	29	36	42	15.5	-0.5	6.3
3	10	7/8	7 1/2	6	4	3/4	3 1/2	1 3/4	2	56	7.4	200	255	270	225	15	17
80	254	22	191	152	4	19	89	44	51	56	7.4	35	44	47	15.5	-0.5	7.7
4	10	7/8	9	7 1/2	8	3/4	3 1/2	1 3/4	2	44	7.2	275	355	295	225	15	21
100	254	22	229	191	8	19	89	44	51	44	7.2	48	62	51	15.5	-0.5	9.5
5	10	7/8	10	8 1/2	8	7/8	3 1/2	1 3/4	2	36	6.8	335	440	355	225	15	24
125	254	22	254	216	8	22	89	44	51	36	6.8	58	77	62	15.5	-0.5	10.9
6	10	7/8	11	9 1/2	8	7/8	3 1/2	1 3/4	2	30	6.4	410	525	395	225	15	29
150	254	22	279	241	8	22	89	44	51	30	6.4	71	91	69	15.5	-05	13.2
8	10	7/8	13 1/2	11 3/4	8	7/8	3 1/2	1 3/4	2	24	6.2	495	580	480	225	15	42
200	254	22	343	298	8	22	89	44	51	24	6.2	86	101	84	15.5	-0.5	19
10	12	7/8	16	14 1/4	12	1	4	2	2 1/2	34	6	480	585	410	225	15	53
250	305	22	406	362	12	25	102	51	64	34	6	84	102	71	15.5	-0.5	24
12	12	7/8	19	17	12	1	4	2	2 1/2	28	5.8	505	625	485	225	15	69
300	305	22	483	432	12	25	102	51	64	28	5.8	88	109	85	15.5	-0.5	31
14	12	1	21	18 3/4	12	1 1/8	4 1/2	2 1/4	2 1/2	24	5.6	540	650	570	220	15	93
350	305	25	533	476	12	29	114	57	64	24	5.6	94	113	99	15.2	-0.5	42.3
16	12	1	23 1/2	21 1/4	16	1 1/8	4 1/2	2 1/4	2 1/2	22	5.4	575	695	660	160	15	110
400	305	25	597	540	16	29	114	57	64	22	5.4	100	121	115	11	-0.5	50
18	12	1	25	22 3/4	16	1 1/4	4 1/2	2 1/4	2 1/2	20	5.2	610	785	725	160	15	119
450	305	25	635	578	16	32	114	57	64	20	5.2	107	137	127	11	-0.5	54
20	12	1	27 1/2	25	20	1 1/4	4 1/2	2 1/4	2 1/2	18	5	640	875	810	130	15	143
500	305	25	699	635	20	32	114	57	64	18	5	112	153	141	9	-0.5	65
24	15	1 1/8	32	29 1/2	20	1 3/8	5	2 1/2	2 3/4	16	4.8	865	1,050	870	130	15	166
600	381	29	813	749	20	35	127	64	70	16	4.8	151	184	152	9	-0.5	75
30	15	1 1/8	38 3/4	36	28	1 3/8	5	2 1/2	2 3/4	14	4.6	1,090	1,330	1,095	100	10	225
750	381	29	984	914	28	35	127	65	70	14	4.6	190	232	191	6.9	-0.3	102.3
36	15	1 1/8	46	42 3/4	32	1 5/8	5	2 1/2	2 3/4	12	4.4	1,330	1,625	1,340	90	10	304
900	381	29	1168	1086	32	41	127	64	70	12	4.4	233	284	235	6.2	-0.3	138
42	16	1 1/8	53	49 1/2	36	1 5/8	5	2 1/2	3	9.6	4.2	1,515	1,825	1,510	90	10	378
1050	406	29	1346	1257	36	41	127	64	76	9.6	4.2	265	319	264	6.2	-0.3	171.8
48	16	1 1/8	59 1/2	56	44	1 5/8	5	2 1/2	3	8.4	4	1,695	2,075	1,705	90	10	449
1200	406	29	1511	1422	44	41	127	64	76	8.4	4	297	363	298	6.2	-0.3	204
54	16	1 1/8	66 1/4	62 3/4	44	1 7/8	5	2 1/2	3	7.6	3.8	2,060	2,510	2,070	85	10	547
1350	406	29	1683	1594	44	48	127	64	76	7.6	3.8	360	439	362	5.9	-0.3	248.6
60	16	1 1/8	73	69 1/4	52	1 7/8	5	2 1/2	3	7.2	3.6	2,260	2,780	2,290	85	10	646
1500	406	29	1854	1759	52	48	127	64	76	7.2	3.6	395	486	401	5.9	-0.3	292.6
66	16	1 1/8	80	76	52	1 7/8	5	2 1/2	3	6.6	3.4	2,625	3,195	2,635	85	10	749
1650	406	29	2032	1930	52	48	127	64	76	6.6	3.4	459	559	461	5.9	-0.3	340.5
72	16	1 1/4	86 1/2	82 1/2	60	1 7/8	5	2 1/2	3	6	3.2	2,950	3,590	2,960	85	10	826
1800	406	32	2197	2096	60	48	127	64	76	6	3.2	517	629	518	5.9	-0.3	375
78	16	1 1/4	93	89	64	2 1/8	5	2 1/2	3	5.2	3	3,210	3,925	3,285	80	10	1,088
1950	406	32	2362	2261	64	54	127	64	76	5.2	3	562	687	575	5.5	-0.3	495
84	16	1 1/4	99 3/4	95 1/2	64	2 1/8	5	2 1/2	3	4.6	2.8	3,475	4,335	3,700	80	10	1,338
2100	406	32	2534	2426	64	54	127	64	76	4.6	2.8	609	759	648	5.5	-0.3	608
90	16	1 1/4	106 1/2	102	68	2 7/16	5	2 1/2	3	4.2	2.6	3,635	4,600	4,040	80	10	1,474
2250	406	32	2705	2591	68	62	127	64	76	4.2	2.6	636	805	707	5.5	-0.3	670
96	16	1 1/4	113 1/4	108 1/2	68	2 7/16	5	2 1/2	3	4	2.4	3,825	5,050	4,535	80	10	1,583
2400	406	32	2877	2756	68	62	127	64	76	4	2.4	670	884	794	5.5	-0.3	719
102	16	1 3/8	120	114 1/2	72	2 11/16	5	2 1/2	3	3.2	1.6	4,064	5,365	4,820	60	10	1,682
2550	406	35	3048	2908	72	68	127	64	76	3.2	1.6	711	939	844	4.1	-0.3	765
108	16	1 3/8	126 3/4	120 3/4	72	2 11/16	5	2 1/2	3	3	1.4	4,303	5,680	5,100	60	10	1,780
2700	406	35	3219	3067	72	68	127	64	76	3	1.4	753	994	893	4.1	-0.3	809

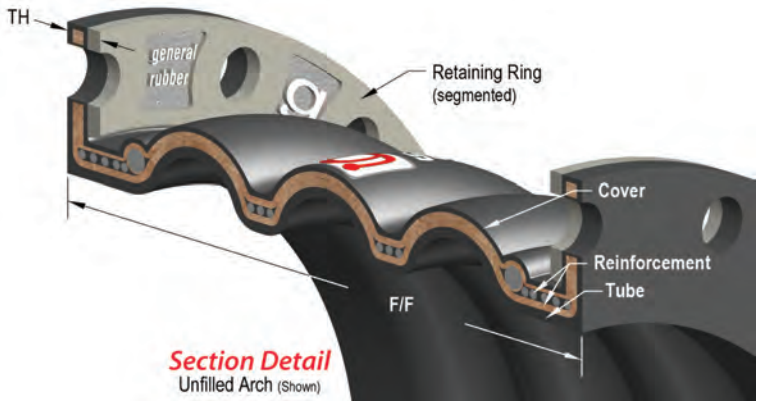
Notes:

1. Technical data shown above reflects the double arch design; additional arches typically increase movements and decrease spring rates proportionately. | 2. Series 1200 are designed for 30" Hg (full vacuum) and have a maximum test at 26" Hg due to facility altitude and equipment limitations. | 3. Maximum operating temperature of 250˚F for EPDM, Butyl and Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available. | 4. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department. | 5. Bill of Materials: Retaining Ring and Gusset, carbon steel hot dipped galvanized (HDG) or stainless steel; Rods, A193 B7 (HDG) or A193 B8M; Nuts, A194 2H (HDG) or A194 8M; Spherical Washer, stainless steel; Metal Reinforcement, high-tensile steel; and Textile Reinforcement, RFL-coated tire cord. | 6. **WARNING**: Control units (sold separately) must be used when piping is not properly anchored. Number of rods are dependent upon maximum field test pressures. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended. | 7. Series 1100 and 1200 replaces styles 1025, 1050 and 1075. | 8. Standard 125/150 lb. drilling includes, 1"-24" with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30"-60" with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb., 72"-108" with ANSI B16.1 Class 125 lb./ AWWA C207 Class B.

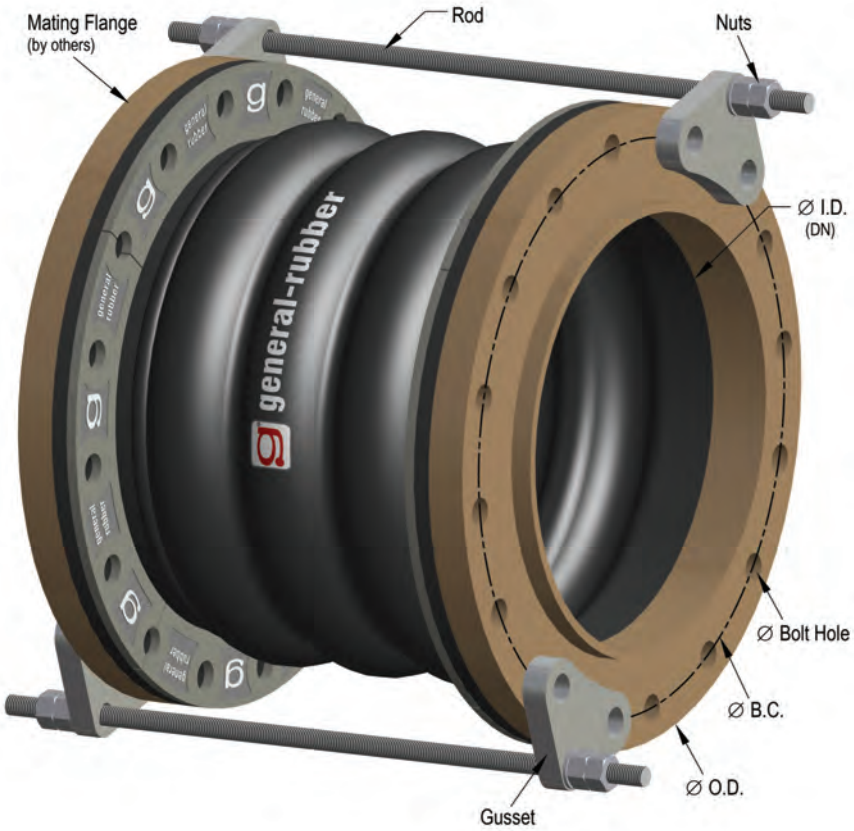
Triple Wide Arch

Style 1103

General Rubber's Styles 1103 and 1203, triple (3) wide arch rubber expansion joints (REJs) have triple the all-directional movement capabilities with one-third the spring rates of our single arch design. Additionally, they are designed to reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment and relieve pipe and anchor stresses. Its spool type body is constructed with full rubber flanges, a high-grade leak-proof tube, multiple layers of high-strength tire cord, high tensile steel reinforcement, a seamless cover and hot dip galvanized steel retaining rings. This construction, as a standalone expansion joint, represents the most cost-effective arrangement when used in rigid piping systems with main anchors (MA) and numerous guides at specific spacing. Control units can be externally or internally attached and used as limit rods for secondary restraint or as tie rods when the support structure or adjacent equipment has load limitations.



- Versatile hand-built construction, made in the USA
- Triple the movement with one-third the spring rate
- Standard or custom face-to-face dimensions
- Available in custom offset arrangements and sizes not shown
- Wide flowing arch design
- Exceptional all directional movement capability
- Virtually eliminates sediment buildup
- Absorbs noise, vibration and shock
- Higher pressure rating than conventional expansion joints
- Hot dip galvanized retaining rings standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Excellent chemical and abrasion resistance
- Style 1203 designates full vacuum rating (30" Hg) in all sizes
- 250°F continuous service standard (400°F available)
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Integrally flanged design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Filled arch design available (reduces movement by 50% and increases spring rates by 400%)
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more



SIZE			FLANGES 125/150 LB				STYLE 1103 MOVEMENT (non-concurrent)					SPRING RATE			PRESSURE		WEIGHT
I.D.	F/F	TH.	O.D.	B.C.	Hole	Hole Dia.	Comp.	Ext.	Lateral	Angular	Torsional	Comp.	Ext.	Lateral	Pressure	Vacuum	REJ w/ Rings
in	in	in	in	in	No.	in	in	in	in	deg.	deg.	lb/in	lb/in	lb/in	psig	in-Hg	lb
mm	mm	mm	mm	mm	No.	mm	mm	mm	mm	deg.	deg.	N/mm	N/mm	N/mm	barg	barg	kg
2	14	7/8	6	4 3/4	4	3/4	5 1/4	2 5/8	3	117	12	90	113	150	225	15	16
50	356	22	152	121	4	19	133	67	76	117	12	15	19	26	15.5	-0.5	7.3
2 1/2	14	7/8	7	5 1/2	4	3/4	5 1/4	2 5/8	3	99	11.4	113	140	160	225	15	19
65	356	22	178	140	4	19	133	67	76	99	11.4	19	24	28	15.5	-0.5	8.6
3	14	7/8	7 1/2	6	4	3/4	5 1/4	2 5/8	3	84	11.1	133	170	180	225	15	22
80	356	22	191	152	4	19	133	67	76	84	11.1	23	29	31	15.5	-0.5	10
4	14	7/8	9	7 1/2	8	3/4	5 1/4	2 5/8	3	66	10.8	183	237	197	225	15	28
100	356	22	229	191	8	19	133	67	76	66	10.8	32	41	34	15.5	-0.5	12.7
5	14	7/8	10	8 1/2	8	7/8	5 1/4	2 5/8	3	54	10.2	223	293	237	225	15	33
125	356	22	254	216	8	22	133	67	76	54	10.2	39	51	41	15.5	-0.5	15
6	14	7/8	11	9 1/2	8	7/8	5 1/4	2 5/8	3	45	9.6	273	350	263	225	15	38
150	356	22	279	241	8	22	133	67	76	45	9.6	47	61	46	15.5	-05	17.3
8	14	7/8	13 1/2	11 3/4	8	7/8	5 1/4	2 5/8	3	36	9.3	330	387	320	225	15	57
200	356	22	343	298	8	22	133	67	76	36	9.3	57	67	56	15.5	-0.5	26
10	16	7/8	16	14 1/4	12	1	6	3	3 3/4	51	9	320	390	273	225	15	69
250	406	22	406	362	12	25	152	76	95	51	9	56	68	47	15.5	-0.5	31.3
12	16	7/8	19	17	12	1	6	3	3 3/4	42	8.7	337	417	323	225	15	90
300	406	22	483	432	12	25	152	76	95	42	8.7	59	73	56	15.5	-0.5	40.9
14	16	1	21	18 3/4	12	1 1/8	6 3/4	3 3/8	3 3/4	36	8.4	360	433	380	220	15	122
350	406	25	533	476	12	29	171	86	95	36	8.4	63	75	66	15.2	-0.5	55.4
16	16	1	23 1/2	21 1/4	16	1 1/8	6 3/4	3 3/8	3 3/4	33	8.1	383	463	440	160	15	144
400	406	25	597	540	16	29	171	86	95	33	8.1	67	81	77	11	-0.5	65.4
18	16	1	25	22 3/4	16	1 1/4	6 3/4	3 3/8	3 3/4	30	7.8	407	523	483	160	15	157
450	406	25	635	578	16	32	171	86	95	30	7.8	71	91	84	11	-0.5	71.4
20	16	1	27 1/2	25	20	1 1/4	6 3/4	3 3/8	3 3/4	27	7.5	427	583	540	130	15	189
500	406	25	699	635	20	32	171	86	95	27	7.5	74	102	94	9	-0.5	90
24	20	1 1/8	32	29 1/2	20	1 3/8	7 1/2	3 3/4	4 1/8	24	7.2	577	700	580	130	15	211
600	508	29	813	749	20	35	191	95	105	24	7.2	101	122	101	9	-0.5	95.5
30	20	1 1/8	38 3/4	36	28	1 3/8	7 1/2	3 3/4	4 1/8	21	6.9	727	887	730	100	10	283
750	508	29	984	914	28	35	191	95	105	21	6.9	127	155	127	6.9	-0.3	128.6
36	20	1 1/8	46	42 3/4	32	1 5/8	7 1/2	3 3/4	4 1/8	18	6.6	887	1,083	893	90	10	387
900	508	29	1168	1086	32	41	191	95	105	18	6.6	155	189	156	6.2	-0.3	175.9
42	22	1 1/8	53	49 1/2	36	1 5/8	7 1/2	3 3/4	4 1/2	14.4	6.3	1,010	1,217	1,007	90	10	469
1050	559	29	1346	1257	36	41	191	95	114	14.4	6.3	176	213	176	6.2	-0.3	213
48	22	1 1/8	59 1/2	56	44	1 5/8	7 1/2	3 3/4	4 1/2	12.6	6	1,130	1,383	1,137	90	10	554
1200	559	29	1511	1422	44	41	191	95	114	12.6	6	297	363	298	6.2	-0.3	204
54	22	1 1/8	66 1/4	62 3/4	44	1 7/8	7 1/2	3 3/4	4 1/2	11.4	5.7	1,373	1,673	1,380	85	10	680
1350	559	29	1683	1594	44	48	191	95	114	11.4	5.7	240	292	241	5.9	-0.3	309
60	22	1 1/8	73	69 1/4	52	1 7/8	7 1/2	3 3/4	4 1/2	10.8	5.4	1,507	1,853	1,527	85	10	800
1500	559	29	1854	1759	52	48	191	95	114	10.8	5.4	263	324	267	5.9	-0.3	309
66	22	1 1/8	80	76	52	1 7/8	7 1/2	3 3/4	4 1/2	9.9	5.1	1,750	2,130	1,757	85	10	928
1650	559	29	2032	1930	52	48	191	95	114	9.9	5.1	306	373	307	5.9	-0.3	421.8
72	22	1 1/4	86 1/2	82 1/2	60	1 7/8	7 1/2	3 3/4	4 1/2	9	4.8	1,967	2,393	1,973	85	10	1,018
1800	559	32	2197	2096	60	48	191	95	114	9	4.8	344	419	345	5.9	-0.3	462.7
78	22	1 1/4	93	89	64	2 1/8	7 1/2	3 3/4	4 1/2	7.8	4.5	2,140	2,617	2,190	80	10	1,363
1950	559	32	2362	2261	64	54	191	95	114	7.8	4.5	374	458	383	5.5	-0.3	619
84	22	1 1/4	99 3/4	95 1/2	64	2 1/8	7 1/2	3 3/4	4 1/2	6.9	4.2	2,317	2,890	2,467	80	10	1,688
2100	559	32	2534	2426	64	54	191	95	114	6.9	4.2	405	506	432	5.5	-0.3	767.3
90	22	1 1/4	106 1/2	102	68	2 7/16	7 1/2	3 3/4	4 1/2	6.3	3.9	2,423	3,067	2,693	80	10	1,849
2250	559	32	2705	2591	68	62	191	95	114	6.3	3.9	424	537	471	5.5	-0.3	840
96	22	1 1/4	113 1/4	108 1/2	68	2 7/16	7 1/2	3 3/4	4 1/2	6	3.6	2,550	3,367	3,023	80	10	1,983
2400	559	32	2877	2756	68	62	191	95	114	6	3.6	446	589	529	5.5	-0.3	901
102	22	1 3/8	120	114 1/2	72	2 11/16	7 1/2	3 3/4	4 1/2	4.8	2.4	2,709	3,577	3,213	60	10	2,106
2550	559	35	3048	2908	72	68	191	95	114	4.8	2.4	474	626	562	4.1	-0.3	957
108	22	1 3/8	126 3/4	120 3/4	72	2 11/16	7 1/2	3 3/4	4 1/2	4.5	2.1	2,869	3,787	3,400	60	10	2,230
2700	559	35	3219	3067	72	68	191	95	114	4.5	2.1	502	663	595	4.1	-0.3	1013

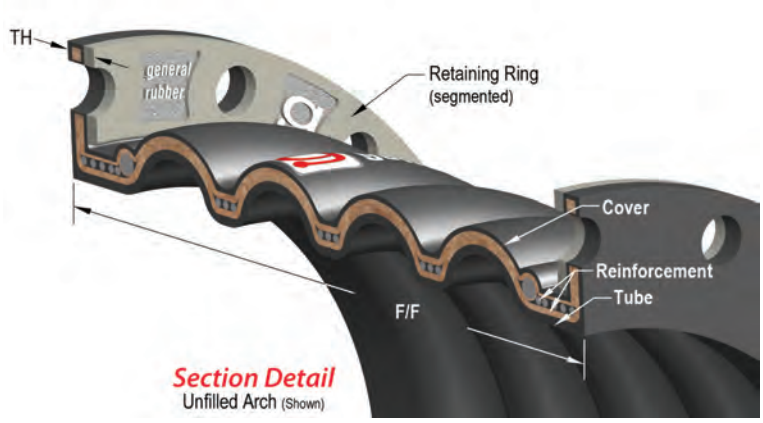
Notes:

1. Technical data shown above reflects the triple arch design; additional arches typically increase movements and decrease spring rates proportionately. | 2. Series 1200 are designed for 30" Hg (full vacuum) and have a maximum test at 26" Hg due to facility altitude and equipment limitations. | 3. Maximum operating temperature of 250˚F for EPDM, Butyl and Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available. | 4. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department. | 5. Bill of Materials: Retaining Ring and Gusset, carbon steel hot dipped galvanized (HDG) or stainless steel; Rods, A193 B7 (HDG) or A193 B8M; Nuts, A194 2H (HDG) or A194 8M; Spherical Washer, stainless steel; Metal Reinforcement, high-tensile steel; and Textile Reinforcement, RFL-coated tire cord. | 6. **WARNING**: Control units (sold separately) must be used when piping is not properly anchored. Number of rods are dependent upon maximum field test pressures. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended. | 7. Series 1100 and 1200 replaces styles 1025, 1050 and 1075. | 8. Standard 125/150 lb. drilling includes, 1"-24" with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30"-60" with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb., 72"-108" with ANSI B16.1 Class 125 lb./ AWWA C207 Class B.

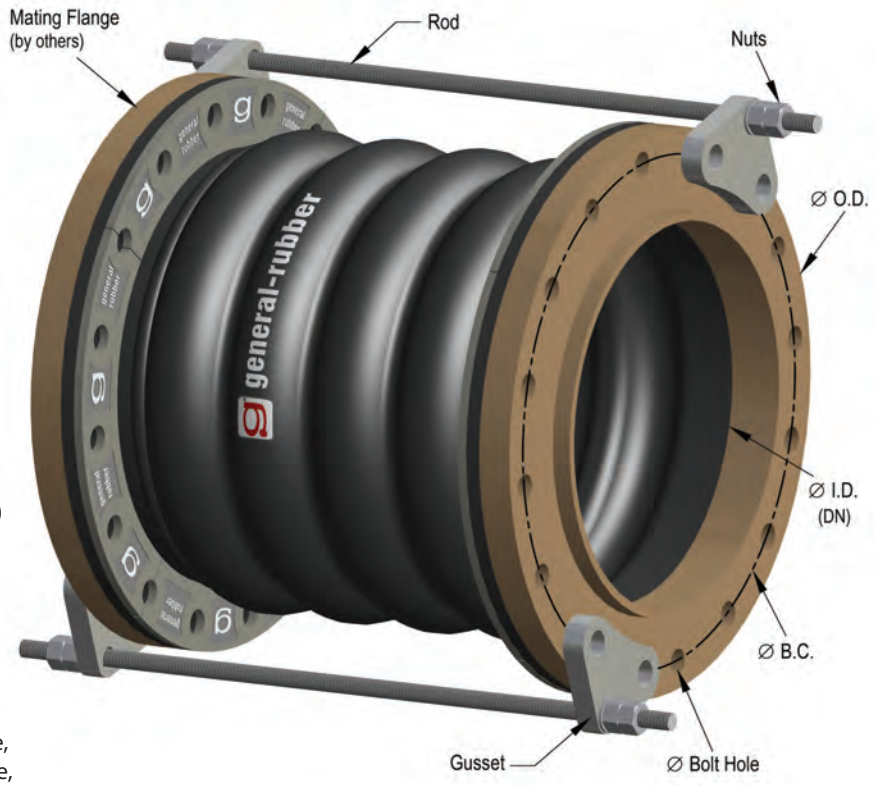
Quadruple Wide Arch

Style 1104

General Rubber's Styles 1104 and 1204, quadruple (4) wide arch rubber expansion joints (REJs) have quadruple the all directional movement capabilities with one-quarter the spring rates of our single arch design. Additionally, they are designed to reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment and relieve pipe and anchor stresses. Its spool type body is constructed with full rubber flanges, a high-grade leak-proof tube, multiple layers of high-strength tire cord, high tensile steel reinforcement, a seamless cover and hot dip galvanized steel retaining rings. This construction, as a standalone expansion joint, represents the most cost-effective arrangement when used in rigid piping systems with main anchors (MA) and numerous guides at specific spacing. Control units can be externally or internally attached and used as limit rods for secondary restraint or as tie rods when the support structure or adjacent equipment has load limitations.



- Versatile hand-built construction, made in the USA
- Quadruple the movement with one-quarter the spring rate
- Standard or custom face-to-face dimensions
- Available in custom offset arrangements and sizes not shown
- Wide flowing arch design
- Exceptional all directional movement capability
- Virtually eliminates sediment buildup
- Absorbs noise, vibration and shock
- Higher pressure rating than conventional expansion joints
- Hot dip galvanized retaining rings standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Excellent chemical and abrasion resistance
- Style 1204 designates full vacuum rating (30" Hg) in all sizes
- 250°F continuous service standard (400°F available)
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Integrally flanged design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Filled arch design available (reduces movement by 50% and increases spring rates by 400%)
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more



SIZE			FLANGES 125/150 LB				STYLE 1104 MOVEMENT (non-concurrent)					SPRING RATE			PRESSURE		WEIGHT
I.D.	F/F	TH.	O.D.	B.C.	Hole	Hole Dia.	Comp.	Ext.	Lateral	Angular	Torsional	Comp.	Ext.	Lateral	Pressure	Vacuum	REJ w/ Rings
in	in	in	in	in	No.	in	in	in	in	deg.	deg.	lb/in	lb/in	lb/in	psig	in-Hg	lb
mm	mm	mm	mm	mm	No.	mm	mm	mm	mm	deg.	deg.	N/mm	N/mm	N/mm	barg	barg	kg
2	18	7/8	6	4 3/4	4	3/4	7	3 1/2	4	156	16	68	85	113	225	15	20
50	457	22	152	121	4	19	178	89	102	156	16	11	14	19	15.5	-0.5	9
2 1/2	18	7/8	7	5 1/2	4	3/4	7	3 1/2	4	132	15.2	85	105	120	225	15	23
65	457	22	178	140	4	19	178	89	102	132	15.2	14	18	21	15.5	-0.5	10.4
3	18	7/8	7 1/2	6	4	3/4	7	3 1/2	4	112	14.8	100	128	135	225	15	27
80	457	22	191	152	4	19	178	89	102	112	14.8	17	22	23	15.5	-0.5	12.3
4	18	7/8	9	7 1/2	8	3/4	7	3 1/2	4	88	14.4	138	178	148	225	15	35
100	457	22	229	191	8	19	178	89	102	88	14.4	24	31	25	15.5	-0.5	15.9
5	18	7/8	10	8 1/2	8	7/8	7	3 1/2	4	72	13.6	168	220	178	225	15	41
125	457	22	254	216	8	22	178	89	102	72	13.6	29	38	31	15.5	-0.5	18.6
6	18	7/8	11	9 1/2	8	7/8	7	3 1/2	4	60	12.8	205	263	198	225	15	48
150	457	22	279	241	8	22	178	89	102	60	12.8	35	46	34	15.5	-05	21.8
8	18	7/8	13 1/2	11 3/4	8	7/8	7	3 1/2	4	48	12.4	248	290	240	225	15	72
200	457	22	343	298	8	22	178	89	102	48	12.4	43	50	42	15.5	-0.5	32.7
10	20	7/8	16	14 1/4	12	1	8	4	5	68	12	240	293	205	225	15	84
250	508	22	406	362	12	25	203	102	127	68	12	42	51	35	15.5	-0.5	38.2
12	20	7/8	19	17	12	1	8	4	5	56	11.6	253	315	243	225	15	111
300	508	22	483	432	12	25	203	102	127	56	11.6	44	54	42	15.5	-0.5	50.4
14	20	1	21	18 3/4	12	1 1/8	9	4 1/2	5	48	11.2	270	325	285	220	15	151
350	508	25	533	476	12	29	229	114	127	48	11.2	47	56	49	15.2	-0.5	68.6
16	20	1	23 1/2	21 1/4	16	1 1/8	9	4 1/2	5	44	10.8	288	348	330	160	15	178
400	508	25	597	540	16	29	229	114	127	44	10.8	50	60	57	11	-0.5	80.9
18	20	1	25	22 3/4	16	1 1/4	9	4 1/2	5	40	10.4	305	393	363	160	15	195
450	508	25	635	578	16	32	229	114	127	40	10.4	53	68	63	11	-0.5	88.6
20	20	1	27 1/2	25	20	1 1/4	9	4 1/2	5	36	10	320	438	405	130	15	234
500	508	25	699	635	20	32	229	114	127	36	10	56	76	70	9	-0.5	106.3
24	24	1 1/8	32	29 1/2	20	1 3/8	10	5	5 1/2	32	9.6	433	525	435	130	15	256
600	610	29	813	749	20	35	254	127	140	32	9.6	75	91	76	9	-0.5	116
30	24	1 1/8	38 3/4	36	28	1 3/8	10	5	5 1/2	28	9.2	545	665	548	100	10	347
750	610	29	984	914	28	35	254	127	140	28	9.2	95	116	95	6.9	-0.3	157.7
36	24	1 1/8	46	42 3/4	32	1 5/8	10	5	5 1/2	24	8.8	665	813	670	90	10	469
900	610	29	1168	1086	32	41	254	127	140	24	8.8	116	142	117	6.2	-0.3	213.2
42	26	1 1/8	53	49 1/2	36	1 5/8	10	5	6	19.2	8.4	758	913	755	90	10	560
1050	660	29	1346	1257	36	41	254	127	152	19.2	8.4	132	159	132	6.2	-0.3	254.5
48	26	1 1/8	59 1/2	56	44	1 5/8	10	5	6	16.8	8	848	1,038	853	90	10	660
1200	660	29	1511	1422	44	41	254	127	152	16.8	8	148	181	149	6.2	-0.3	300
54	26	1 1/8	66 1/4	62 3/4	44	1 7/8	10	5	6	15.2	7.6	1,030	1,255	1,035	85	10	812
1350	660	29	1683	1594	44	48	254	127	152	15.2	7.6	180	219	181	5.9	-0.3	369
60	26	1 1/8	73	69 1/4	52	1 7/8	10	5	6	14.4	7.2	1,130	1,390	1,145	85	10	955
1500	660	29	1854	1759	52	48	254	127	152	14.4	7.2	197	243	200	5.9	-0.3	434
66	26	1 1/8	80	76	52	1 7/8	10	5	6	13.2	6.8	1,313	1,598	1,318	85	10	1,108
1650	660	29	2032	1930	52	48	254	127	152	13.2	6.8	229	279	230	5.9	-0.3	503.6
72	26	1 1/4	86 1/2	82 1/2	60	1 7/8	10	5	6	12	6.4	1,475	1,795	1,480	85	10	1,211
1800	660	32	2197	2096	60	48	254	127	152	12	6.4	258	314	259	5.9	-0.3	550.5
78	26	1 1/4	93	89	64	2 1/8	10	5	6	10.4	6	1,605	1,963	1,643	80	10	1,638
1950	660	32	2362	2261	64	54	254	127	152	10.4	6	281	343	287	5.5	-0.3	744.5
84	26	1 1/4	99 3/4	95 1/2	64	2 1/8	10	5	6	9.2	5.6	1,738	2,168	1,850	80	10	2,038
2100	660	32	2534	2426	64	54	254	127	152	9.2	5.6	304	379	323	5.5	-0.3	926.3
90	26	1 1/4	106 1/2	102	68	2 7/16	10	5	6	8.4	5.2	1,818	2,300	2,020	80	10	2,224
2250	660	32	2705	2591	68	62	254	127	152	8.4	5.2	318	402	353	5.5	-0.3	1011
96	26	1 1/4	113 1/4	108 1/2	68	2 7/16	10	5	6	8	4.8	1,913	2,525	2,268	80	10	2,383
2400	660	32	2877	2756	68	62	254	127	152	8	4.8	335	442	397	5.5	-0.3	1083
102	26	1 3/8	120	114 1/2	72	2 11/16	10	5	6	6.4	3.2	2,032	2,683	2,410	60	10	2,532
2550	660	35	3048	2908	72	68	254	127	152	6.4	3.2	355	469	422	4.1	-0.3	1151
108	26	1 3/8	126 3/4	120 3/4	72	2 11/16	10	5	6	6	2.8	2,152	2,840	2,550	60	10	2,681
2700	660	35	3219	3067	72	68	254	127	152	6	2.8	376	497	446	4.1	-0.3	1219

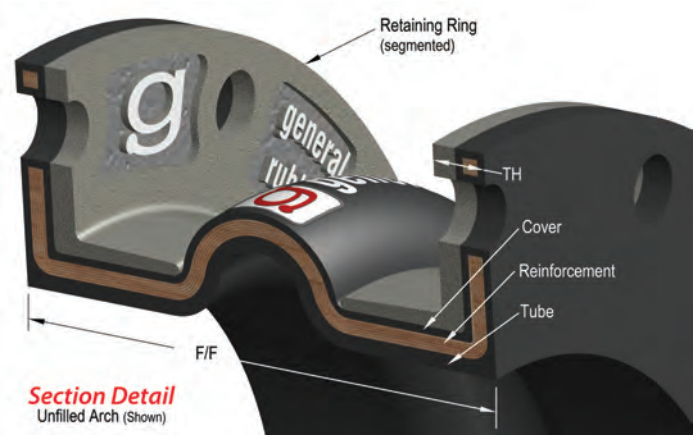
Notes:

1. Technical data shown above reflects the quadruple arch design; additional arches typically increase movements and decrease spring rates proportionately. | 2. Series 1200 are designed for 30" Hg (full vacuum) and have a maximum test at 26" Hg due to facility altitude and equipment limitations. | 3. Maximum operating temperature of 250˚F for EPDM, Butyl and Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available. | 4. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department. | 5. Bill of Materials: Retaining Ring and Gusset, carbon steel hot dipped galvanized (HDG) or stainless steel; Rods, A193 B7 (HDG) or A193 B8M; Nuts, A194 2H (HDG) or A194 8M; Spherical Washer, stainless steel; Metal Reinforcement, high-tensile steel; and Textile Reinforcement, RFL-coated tire cord. | 6. **WARNING**: Control units (sold separately) must be used when piping is not properly anchored. Number of rods are dependent upon maximum field test pressures. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended. | 7. Series 1100 and 1200 replaces styles 1025, 1050 and 1075. | 8. Standard 125/150 lb. drilling includes, 1"-24" with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30"-60" with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb., 72"-108" with ANSI B16.1 Class 125 lb./ AWWA C207 Class B.

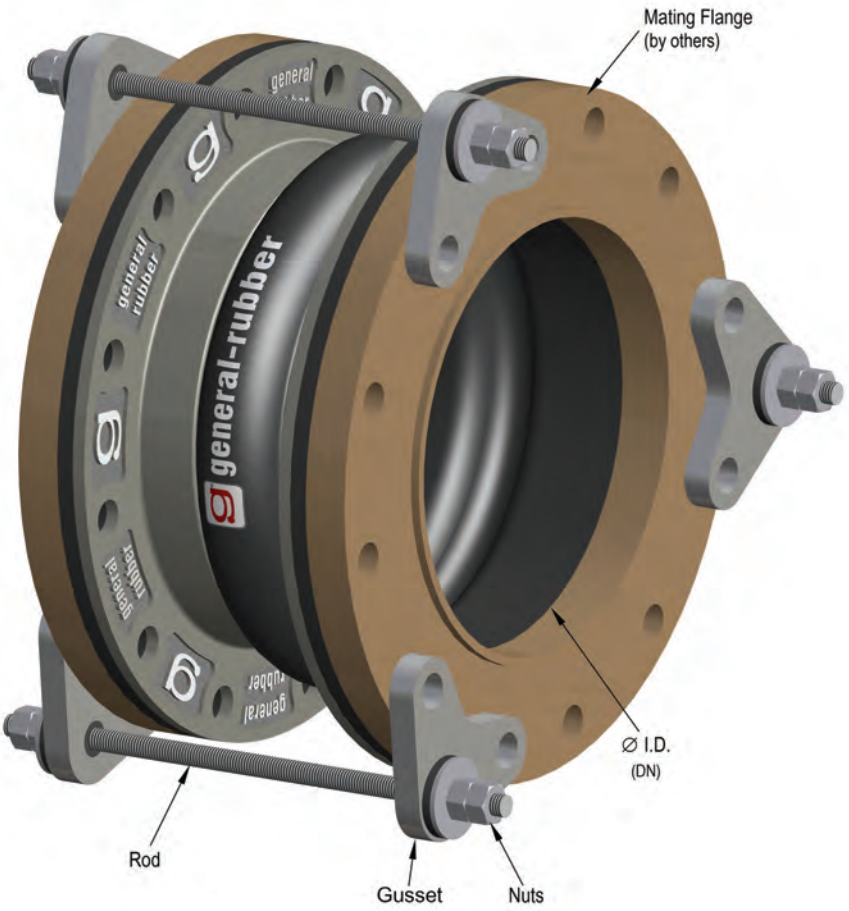
Economical Single Wide Arch

Style 1015

General Rubber's Style 1015 rubber expansion joint (REJ) represents our most cost-effective full pressure single wide arch design. An optional Teflon liner is available for optimal temperature and chemical resistance. Additionally, this REJ is designed to absorb large all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment, and relieve pipe and anchor stresses. Its spool type body is constructed with full rubber flanges, a high-grade leak-proof tube, multiple layers of high-strength tire cord, high-tensile steel reinforcement, a seamless cover, and hot dip galvanized steel retaining rings. This construction, as a standalone expansion joint, represents the most cost-effective arrangement when used in rigid piping systems with main anchors (MA) and numerous guides at specific spacing. Control units can be used as limit rods for secondary restraint or as tie rods when the support structure or adjacent equipment has load limitations.



- Versatile hand-built construction, made in the USA
- Economical fully molded construction
- Large inventory means quick shipments
- Standard face-to-face dimensions
- Wide flowing arch design
- Exceptional all directional movement capability
- Virtually eliminates sediment buildup
- Absorbs noise, vibration and shock
- Higher pressure rating than conventional expansion joints
- Hot dip galvanized retaining rings standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Excellent chemical and abrasion resistance
- Full vacuum rating (30" Hg) in all sizes
- 250°F continuous service standard (400°F available)
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Integrally flanged design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Filled arch design available (reduces movement by 50% and increases spring rates by 400%)
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more



SIZE			STYLE 1015 MOVEMENT (non-concurrent)					SPRING RATE			PRESSURE		WEIGHT
I.D.	Std. Length (F/F)	Flange TH.	Comp.	Ext.	Lateral	Angular	Torsional	Comp.	Ext.	Lateral	Pressure	Vacuum	REJ w/ Rings
in	in	in	in	in	in	deg.	deg.	lb/in	lb/in	lb/in	psig	in-Hg	lbs
mm	mm	mm	mm	mm	mm	deg.	deg.	N/mm	N/mm	N/mm	barg	barg	kg
2	6	13/16	1 3/4	3/4	3/4	39	4	214	272	363	200	30	5.5
50	152	20.6	44.4	19	19	39	4	38	48	64	13.8	-1	2.5
2 1/2	6	13/16	1 3/4	3/4	3/4	33	3.8	272	340	385	200	30	7.5
65	152	20.6	44.4	19	19	33	3.8	48	60	67	13.8	-1	3.4
3	6	13/16	1 3/4	3/4	3/4	28	3.7	320	408	431	200	30	8.5
80	152	20.6	44.4	19	19	28	3.7	56	71	75	13.8	-1	3.8
4	6	13/16	1 3/4	3/4	3/4	22	3.6	437	567	476	200	30	10
100	152	20.6	44.4	19	19	22	3.6	77	99	83	13.8	1	4.5
5	6	13/16	1 3/4	3/4	3/4	18	3.4	534	703	567	200	30	12.5
125	152	20.6	44.4	19	19	18	3.4	94	123	99	13.8	-1	5.7
6	6	13/16	1 3/4	3/4	1	15	3.2	650	839	629	200	30	16.5
150	152	20.6	44.4	19	25.4	15	3.2	114	147	110	13.8	-1	7.5
8	6	7/8	1 3/4	3/4	1	12	3.1	719	929	765	190	30	22
200	152	22.2	44.4	19	25.4	12	3.1	126	163	134	13.1	-1	10
10	8	7/8	1 3/4	3/4	1	17	3	903	1,179	816	190	30	34
250	203	22.2	44.4	19	25.4	17	3	158	206	143	13.1	-1	15.4
12	8	7/8	1 3/4	3/4	1	14	2.9	943	1,247	969	190	30	45
300	203	22.2	44.4	19	25.4	14	2.9	165	218	170	13.1	-1	20.4

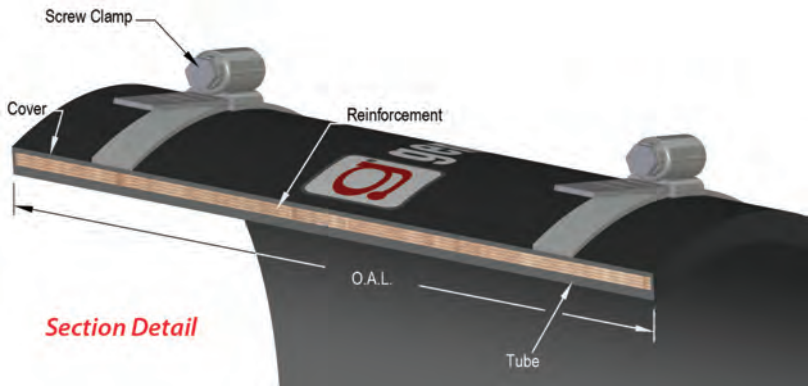
Notes:

1. Retaining rings are typically "L" shaped for sizes 1" [25mm] through 12" [300mm] and can be flat depending on internal reinforcements.
2. All parts listed are designed for 30" Hg (full vacuum) and have a maximum test at 26" Hg due to facility altitude and equipment limitations.
3. Maximum operating temperature of 250˚F for EPDM, Butyl & Viton® ; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
4. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
5. Bill of Materials: Retaining Ring and Gusset, carbon steel hot dipped galvanized (HDG) or stainless steel; Rods, A193 B7 (HDG) or A193 B8M; Nuts, A194 2H (HDG) or A194 8M; Spherical Washer, stainless steel; Metal Reinforcement, high-tensile steel; and Textile Reinforcement, RFL-coated tire cord.
6. **WARNING**: Control units (sold separately) must be used when piping is not properly anchored. Number of rods are dependent upon maximum field test pressures. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.
7. Standard 125/150 lb. drilling includes, 1"-24" with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30"-60" with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb., 72"-108" with ANSI B16.1 Class 125 lb./ AWWA C207 Class B.

Rubber Slip-On Sleeve

Style 8100

General Rubber's Style 8100 sleeve type rubber expansion joint (REJ) is designed with lower spring rates for reduced reaction forces and greater movement capabilities within a compact body. This optimally designed slip-on and lightweight construction represents the most cost-effective arrangement for low pressure applications. Mating flanges and hardware are not required, adding to the cost-effectiveness of this arrangement. The construction includes a high-grade leak-proof tube, a seamless cover, multiple layers of high-strength tire cord, and stainless steel screw clamps. Additionally, they are designed to absorb large all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment, and relieve pipe and anchor stresses.



- Versatile hand-built construction, made in the USA
- Available in split-wrap or custom offset arrangements and sizes not shown
- Available in multiple arches, reducers and custom overall length
- Virtually eliminates sediment buildup
- Economical slip-on design eliminates the need for mating flanges and hardware
- Extremely lightweight and flexible
- Large all directional movement capability with low stiffness and deflection force
- 250°F continuous service standard (400°F available)
- High strength and simple to install
- Absorbs noise, vibration and shock
- Excellent chemical and abrasion resistance
- Compensates for minor misalignment and offset
- Provides easy access to piping and equipment
- No gasket required
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more

SIZE			STYLE 8100 MOVEMENT (non-concurrent)			PRESSURE	
I.D.	Actual I.D.	Over-All Length O.A.L.	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	in	in	psig	in-Hg
mm	mm	mm	mm	mm	mm	barg	barg
1 1/2	1 15/16	8	1 5/16	9/16	9/16	90	15
40	49	203	33	14	14	6.2	-0.5
2	2 3/8	8	1 5/16	9/16	9/16	90	15
50	60	203	33	14	14	6.2	-0.5
2 1/2	2 7/8	8	1 5/16	9/16	9/16	90	15
65	73	203	33	14	14	6.2	-0.5
3	3 1/2	8	1 5/16	9/16	9/16	90	15
80	89	203	33	14	14	6.2	-0.5
4	4 1/2	8	1 5/16	9/16	9/16	90	15
100	114	203	33	14	14	6.2	-0.5
5	5 9/16	8	1 5/16	9/16	9/16	50	15
125	141	203	33	14	14	3.4	-0.5
6	6 5/8	8	1 5/16	9/16	9/16	50	15
150	168	203	33	14	14	3.4	-0.5
8	8 5/8	8	1 5/16	9/16	9/16	35	15
200	219	203	33	14	14	2.4	-0.5
10	10 3/4	8	1 5/16	9/16	9/16	35	15
250	273	203	33	14	14	2.4	-0.5
12	12 3/4	8	1 5/16	9/16	9/16	35	15
300	324	203	33	14	14	2.4	-0.5
14	14	8	1 5/16	9/16	9/16	20	10
350	356	203	33	14	14	1.4	-0.34
16	16	8	1 5/16	9/16	9/16	15	10
400	406	203	33	14	14	1.0	-0.34
18	18	8	1 5/16	9/16	9/16	10	5
450	457	203	33	14	14	0.7	-0.17
20	20	8	1 5/16	9/16	9/16	5	5
500	508	203	33	14	14	0.34	-0.17
24	24	8	1 5/16	9/16	9/16	5	5
600	610	203	33	14	14	0.34	-0.17

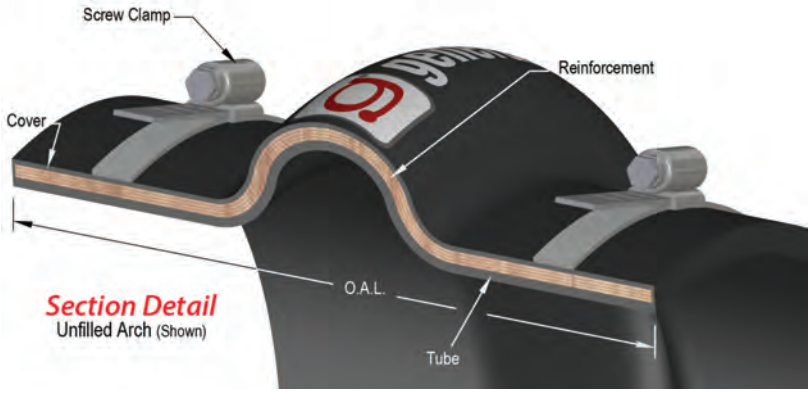
Notes:

1. Maximum operating temperature of 250˚F for EPDM, Butyl and Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
2. Expansion joints are sized to slip over schedule 40 pipe. Other I.D. dimensions are available.
3. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
4. Bill of Materials: Screw Clamps, stainless steel; Textile Reinforcement, RFL-coated tire cord.
5. **WARNING**: Anchors should be used to resist the pressure thrust force and isolate movements between expansion joints. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.

Rubber Slip-On Sleeve

Style 8101

General Rubber's Style 8101 single (1) arch sleeve type rubber expansion joint (REJ) is designed with lower spring rates for reduced reaction forces and greater movement capabilities within a compact body. This optimally designed slip-on and lightweight construction represents the most cost-effective arrangement for low pressure applications. Mating flanges and hardware are not required, adding to the cost-effectiveness of this arrangement. The construction includes a high-grade leak-proof tube, a seamless cover, multiple layers of high-strength tire cord, and stainless steel screw clamps. Additionally, this REJ is designed to absorb large all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment, and relieve pipe and anchor stresses.



- Versatile hand-built construction, made in the USA
- Available in split-wrap or custom offset arrangements and sizes not shown
- Available in multiple arches, reducers and custom overall length
- Virtually eliminates sediment buildup
- Economical slip-on design eliminates the need for mating flanges and hardware
- Extremely lightweight and flexible
- Large all directional movement capability with low stiffness and deflection force
- 250°F continuous service standard (400°F available)
- Filled arch design available (reduces movement by 50% and increases spring rates by 400%)
- High strength and simple to install
- Absorbs noise, vibration and shock
- Excellent chemical and abrasion resistance
- Compensates for minor misalignment and offset
- Provides easy access to piping and equipment
- No gasket required
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more

SIZE			STYLE 8101 MOVEMENT (non-concurrent)			PRESSURE	
I.D.	Actual I.D.	Over-All Length O.A.L.	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	in	in	psig	in-Hg
mm	mm	mm	mm	mm	mm	barg	barg
1 1/2	1 15/16	8	1 3/4	3/4	3/4	90	15
40	49	203	44	19	19	6.2	-0.5
2	2 3/8	8	1 3/4	3/4	3/4	90	15
50	60	203	44	19	19	6.2	-0.5
2 1/2	2 7/8	8	1 3/4	3/4	3/4	90	15
65	73	203	44	19	19	6.2	-0.5
3	3 1/2	8	1 3/4	3/4	3/4	90	15
80	89	203	44	19	19	6.2	-0.5
4	4 1/2	8	1 3/4	3/4	3/4	90	15
100	114	203	44	19	19	6.2	-0.5
5	5 9/16	8	1 3/4	3/4	3/4	50	15
125	141	203	44	19	19	3.4	-0.5
6	6 5/8	8	1 3/4	3/4	3/4	50	15
150	168	203	44	19	19	3.4	-0.5
8	8 5/8	8	1 3/4	3/4	3/4	35	15
200	219	203	44	19	19	2.4	-0.5
10	10 3/4	8	1 3/4	3/4	3/4	35	15
250	273	203	44	19	19	2.4	-0.5
12	12 3/4	8	1 3/4	3/4	3/4	35	15
300	324	203	44	19	19	2.4	-0.5
14	14	8	1 3/4	3/4	3/4	20	10
350	356	203	44	19	19	1.4	-0.34
16	16	8	1 3/4	3/4	3/4	15	10
400	406	203	44	19	19	1.0	-0.34
18	18	8	1 3/4	3/4	3/4	10	5
450	457	203	44	19	19	0.7	-0.17
20	20	8	1 3/4	3/4	3/4	5	5
500	508	203	44	19	19	0.34	-0.17
24	24	8	1 3/4	3/4	3/4	5	5
600	610	203	44	19	19	0.34	-0.17

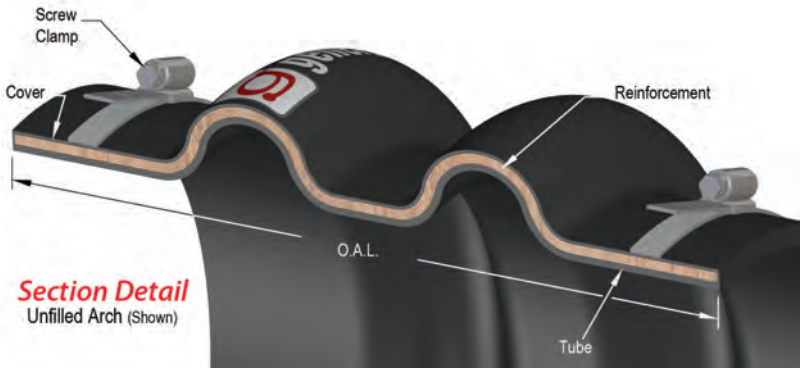
Notes:

1. Maximum operating temperature of 250˚F for EPDM, Butyl and Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
2. Expansion joints are sized to slip over schedule 40 pipe. Other I.D. dimensions are available.
3. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
4. Bill of Materials: Screw Clamps, stainless steel; Textile Reinforcement, RFL-coated tire cord.
5. **WARNING**: Anchors should be used to resist the pressure thrust force and isolate movements between expansion joints. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.

Rubber Slip-On Sleeve

Style 8102

General Rubber's Style 8102 double (2) arch sleeve type rubber expansion joint (REJ) is designed with lower spring rates for reduced reaction forces and greater movement capabilities within a compact body. This optimally designed slip-on and lightweight construction represents the most cost-effective arrangement for low pressure applications. Mating flanges and hardware are not required, adding to the cost-effectiveness of this arrangement. The construction includes a high-grade leak-proof tube, a seamless cover, multiple layers of high-strength tire cord, and stainless steel screw clamps. Additionally, they are designed to absorb large all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment, and relieve pipe and anchor stresses. This REJ has twice the all-directional movement capabilities with half the spring rates of our single arch design.



- Versatile hand-built construction, made in the USA
- Available in split-wrap or custom offset arrangements and sizes not shown
- Available in multiple arches, reducers and custom overall length
- Virtually eliminates sediment buildup
- Economical slip-on design eliminates the need for mating flanges and hardware
- Extremely lightweight and flexible
- Large all directional movement capability with low stiffness and deflection force
- 250°F continuous service standard (400°F available)
- Filled arch design available (reduces movement by 50% and increases spring rates by 400%)
- High strength and simple to install
- Absorbs noise, vibration and shock
- Excellent chemical and abrasion resistance
- Compensates for minor misalignment and offset
- Provides easy access to piping and equipment
- No gasket required
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more

SIZE			STYLE 8102 MOVEMENT (non-concurrent)			PRESSURE	
I.D.	Actual I.D.	Over-All Length O.A.L.	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	in	in	psig	in-Hg
mm	mm	mm	mm	mm	mm	barg	barg
1 1/2	1 15/16	12	3 1/2	1 1/2	1 1/2	90	15
40	49	305	89	38	38	6.2	-0.5
2	2 3/8	12	3 1/2	1 1/2	1 1/2	90	15
50	60	305	89	38	38	6.2	-0.5
2 1/2	2 7/8	12	3 1/2	1 1/2	1 1/2	90	15
65	73	305	89	38	38	6.2	-0.5
3	3 1/2	12	3 1/2	1 1/2	1 1/2	90	15
80	89	305	89	38	38	6.2	-0.5
4	4 1/2	12	3 1/2	1 1/2	1 1/2	90	15
100	114	305	89	38	38	6.2	-0.5
5	5 9/16	12	3 1/2	1 1/2	1 1/2	50	15
125	141	305	89	38	38	3.4	-0.5
6	6 5/8	12	3 1/2	1 1/2	1 1/2	50	15
150	168	305	89	38	38	3.4	-0.5
8	8 5/8	12	3 1/2	1 1/2	1 1/2	35	15
200	219	305	89	38	38	2.4	-0.5
10	10 3/4	12	3 1/2	1 1/2	1 1/2	35	15
250	273	305	89	38	38	2.4	-0.5
12	12 3/4	12	3 1/2	1 1/2	1 1/2	35	15
300	324	305	89	38	38	2.4	-0.5
14	14	12	3 1/2	1 1/2	1 1/2	20	10
350	356	305	89	38	38	1.4	-0.34
16	16	12	3 1/2	1 1/2	1 1/2	15	10
400	406	305	89	38	38	1.0	-0.34
18	18	12	3 1/2	1 1/2	1 1/2	10	5
450	457	305	89	38	38	0.7	-0.17
20	20	12	3 1/2	1 1/2	1 1/2	5	5
500	508	305	89	38	38	0.34	-0.17
24	24	12	3 1/2	1 1/2	1 1/2	5	5
600	610	305	89	38	38	0.34	-0.17

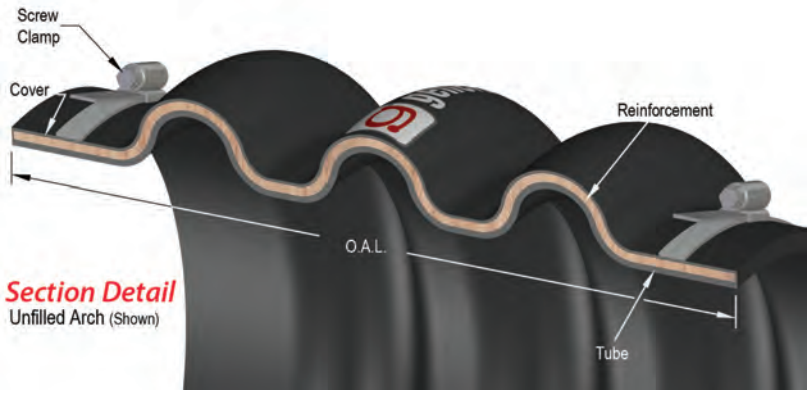
Notes:

1. Maximum operating temperature of 250˚F for EPDM, Butyl and Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
2. Expansion joints are sized to slip over schedule 40 pipe. Other I.D. dimensions are available.
3. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
4. Bill of Materials: Screw Clamps, stainless steel; Textile Reinforcement, RFL-coated tire cord.
5. **WARNING**: Anchors should be used to resist the pressure thrust force and isolate movements between expansion joints. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.

Rubber Slip-On Sleeve

Style 8103

General Rubber's Style 8103 triple (3) arch sleeve type rubber expansion joint (REJ) is designed with lower spring rates for reduced reaction forces and greater movement capabilities within a compact body. This optimally designed slip-on and lightweight construction represents the most cost-effective arrangement for low pressure applications. Mating flanges and hardware are not required, adding to the cost-effectiveness of this arrangement. The construction includes a high-grade leak-proof tube, a seamless cover, multiple layers of high-strength tire cord, and stainless steel screw clamps. Additionally, they are designed to absorb large all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment, and relieve pipe and anchor stresses. This REJ has triple the all-directional movement capabilities with one-third the spring rates of our single arch design.



- Versatile hand-built construction, made in the USA
- Available in split-wrap or custom offset arrangements and sizes not shown
- Available in multiple arches, reducers and custom overall length
- Virtually eliminates sediment buildup
- Economical slip-on design eliminates the need for mating flanges and hardware
- Extremely lightweight and flexible
- Large all directional movement capability with low stiffness and deflection force
- 250°F continuous service standard (400°F available)
- Filled arch design available (reduces movement by 50% and increases spring rates by 400%)
- High strength and simple to install
- Absorbs noise, vibration and shock
- Excellent chemical and abrasion resistance
- Compensates for minor misalignment and offset
- Provides easy access to piping and equipment
- No gasket required
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more

SIZE			STYLE 8103 MOVEMENT (non-concurrent)			PRESSURE	
I.D.	Actual I.D.	Over-All Length O.A.L.	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	in	in	psig	in-Hg
mm	mm	mm	mm	mm	mm	barg	barg
1 1/2	1 15/16	14	5 1/4	2 1/4	2 1/4	90	15
40	49	356	133	57	57	6.2	-0.5
2	2 3/8	14	5 1/4	2 1/4	2 1/4	90	15
50	60	356	133	57	57	6.2	-0.5
2 1/2	2 7/8	14	5 1/4	2 1/4	2 1/4	90	15
65	73	356	133	57	57	6.2	-0.5
3	3 1/2	14	5 1/4	2 1/4	2 1/4	90	15
80	89	356	133	57	57	6.2	-0.5
4	4 1/2	14	5 1/4	2 1/4	2 1/4	90	15
100	114	356	133	57	57	6.2	-0.5
5	5 9/16	14	5 1/4	2 1/4	2 1/4	50	15
125	141	356	133	57	57	3.4	-0.5
6	6 5/8	14	5 1/4	2 1/4	2 1/4	50	15
150	168	356	133	57	57	3.4	-0.5
8	8 5/8	14	5 1/4	2 1/4	2 1/4	35	15
200	219	356	133	57	57	2.4	-0.5
10	10 3/4	14	5 1/4	2 1/4	2 1/4	35	15
250	273	356	133	57	57	2.4	-0.5
12	12 3/4	14	5 /14	2 1/4	2 1/4	35	15
300	324	356	133	57	57	2.4	-0.5
14	14	14	5 1/4	2 1/4	2 1/4	20	10
350	356	356	133	57	57	1.4	-0.34
16	16	14	5 1/4	2 1/4	2 1/4	15	10
400	406	356	133	57	57	1.0	-0.34
18	18	14	5 1/4	2 1/4	2 1/4	10	5
450	457	356	133	57	57	0.7	-0.17
20	20	14	5 1/4	2 1/4	2 1/4	5	5
500	508	356	133	57	57	0.34	-0.17
24	24	14	5 /14	2 1/4	2 1/4	5	5
600	610	356	133	57	57	0.34	-0.17

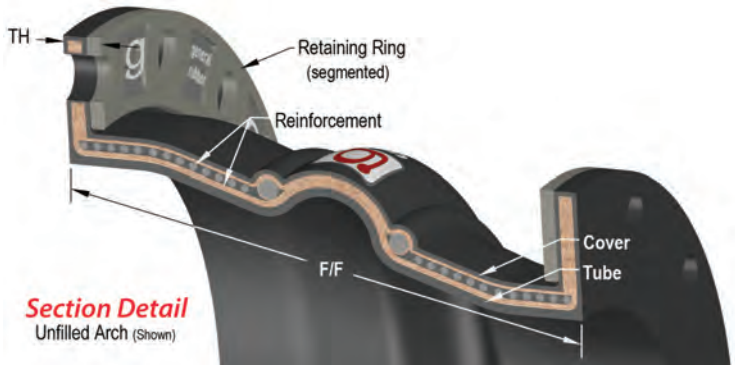
Notes:

1. Maximum operating temperature of 250˚F for EPDM, Butyl and Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
2. Expansion joints are sized to slip over schedule 40 pipe. Other I.D. dimensions are available.
3. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
4. Bill of Materials: Screw Clamps, stainless steel; Textile Reinforcement, RFL-coated tire cord.
5. **WARNING**: Anchors should be used to resist the pressure thrust force and isolate movements between expansion joints. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.

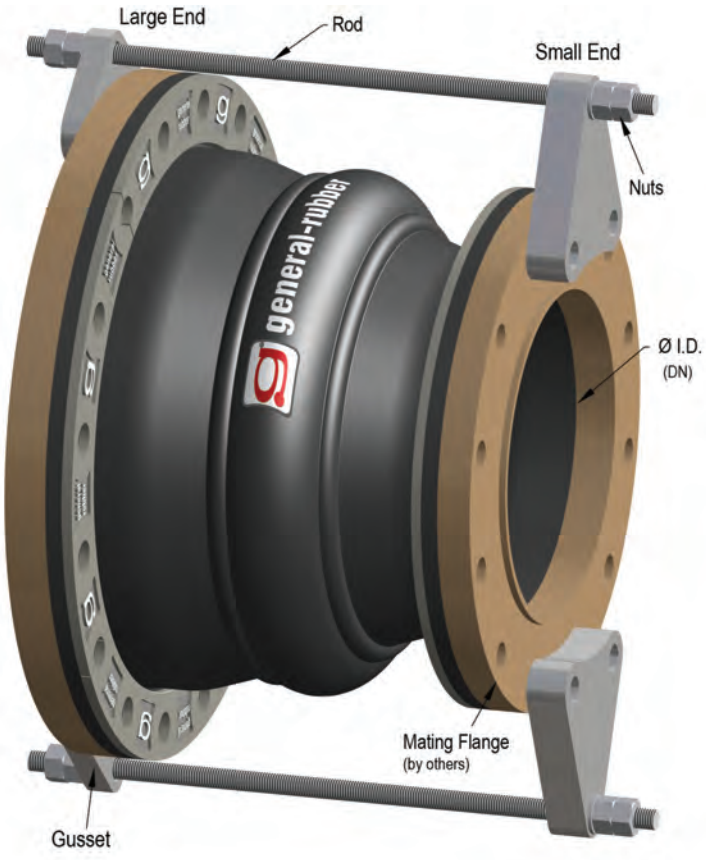
Concentric Reducing

Style 1101CR

General Rubber's Styles 1101CR and 1201CR concentric reducing rubber expansion joints (REJs) are an economical way to combine a reducing pipe fitting with an expansion joint. The two different flanged diameters have a common centerline. Additionally, they are designed to absorb large all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment, and relieve pipe and anchor stresses. Its spool type body is constructed with full rubber flanges, a high-grade leak-proof tube, multiple layers of high-strength tire cord, high tensile steel reinforcement, a seamless cover, and hot dip galvanized steel retaining rings. This construction, as a standalone expansion joint, represents the most cost-effective arrangement when used in rigid piping systems with main anchors (MA) and numerous guides at specific spacing. Control units can be externally or internally attached and used as limit rods for secondary restraint or as tie rods when the support structure or adjacent equipment has load limitations.



- Versatile hand-built construction, made in the USA
- An economic and space saving way to combine a reducing pipe fitting with an expansion joint
- Standard or custom face-to-face dimensions
- Available in multiple arch, custom offset arrangements and sizes not shown
- Wide flowing arch design
- Exceptional all directional movement capability
- Virtually eliminates sediment buildup
- Absorbs noise, vibration and shock
- Higher pressure rating than conventional expansion joints
- Hot dip galvanized retaining rings standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Excellent chemical and abrasion resistance
- Style 1201CR designates full vacuum rating (30" Hg) in all sizes
- 250°F continuous service standard (400°F available)
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Integrally flanged design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Filled arch design available (reduces movement by 50% and increases spring rates by 400%)
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more



SIZE					STYLE 1101CR MOVEMENT (non-concurrent)					PRESSURE		WEIGHT
Large End I.D.	Small End I.D.	Minimum Length Available (F/F)	Large End Flange TH.	Small End Flange TH.	Comp.	Ext.	Lateral	Angular	Torsional	Pressure	Vacuum	REJ w/ Rings
in	in	in	in	in	in	in	in	deg.	deg.	psig	in-Hg	lbs
mm	mm	mm	mm	mm	mm	mm	mm	deg.	deg.	barg	barg	kg
2	1	6	7/8	7/8	1/2	1/4	1/2	16	3.1	165	15	6
50	25	152	22.2	22.2	12.7	6.4	12.7	16	3.1	11.4	-0.5	2.7
2 1/2	1	6	7/8	7/8	1/2	1/4	1/2	14	3.0	165	15	7
65	25	152	22.2	22.2	12.7	6.4	12.7	14	3.0	11.4	-0.5	3.2
3	1	6	7/8	7/8	1/2	1/4	1/2	12.5	2.9	165	15	8
80	25	152	22.2	22.2	12.7	6.4	12.7	12.5	2.9	11.4	-0.5	3.6
4	2	6	7/8	7/8	1/2	1/4	1/2	9.5	2.7	165	15	10
100	50	152	22.2	22.2	12.7	6.4	12.7	9.5	2.7	11.4	-0.5	4.5
5	2	6	7/8	7/8	1/2	1/4	1/2	6.3	2.6	150	15	15
125	50	152	22.2	22.2	12.7	6.4	12.7	6.3	2.6	10.3	-0.5	6.8
6	3	6	7/8	7/8	1/2	1/4	1/2	6.1	2.4	150	15	16
150	80	152	22.2	22.2	12.7	6.4	12.7	6.1	2.4	10.3	-0.5	7.3
8	4	6	7/8	7/8	3/4	3/8	1/2	6.0	2.2	150	15	19
200	100	152	22.2	22.2	19	9.5	12.7	6.0	2.2	10.3	-0.5	8.6
10	6	8	7/8	7/8	3/4	3/8	1/2	5.8	2.1	150	15	34
250	150	203	22.2	22.2	19	9.5	12.7	5.8	2.1	10.3	-0.5	15.5
12	6	8	7/8	7/8	3/4	3/8	1/2	5.2	2.0	150	15	42
300	150	203	22.2	22.2	19	9.5	12.7	5.2	2.0	10.3	-0.5	19
14	8	8	1	1	3/4	3/8	1/2	3.9	1.8	90	15	55
350	200	203	25.4	25.4	19	9.5	12.7	3.9	1.8	6.2	-0.5	25
16	10	8	1	1	3/4	3/8	1/2	3.3	1.4	70	15	64
400	250	203	25.4	25.4	19	9.5	12.7	3.3	1.4	4.8	-0.5	29
18	12	8	1	1	3/4	3/8	1/2	2.6	1.0	70	15	72
450	300	203	25.4	25.4	19	9.5	12.7	2.6	1.0	4.8	-0.5	32.7

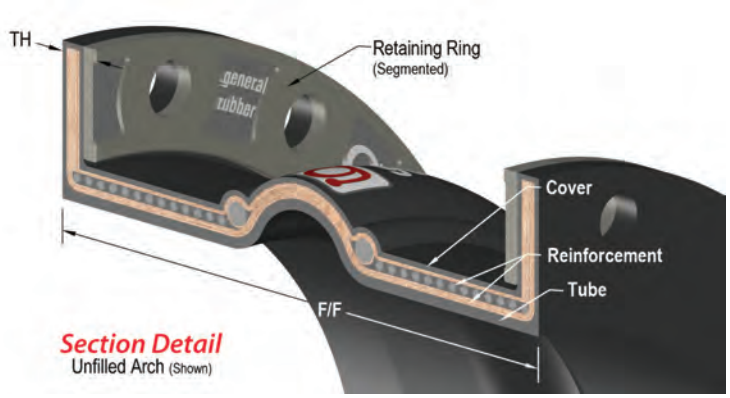
Notes:

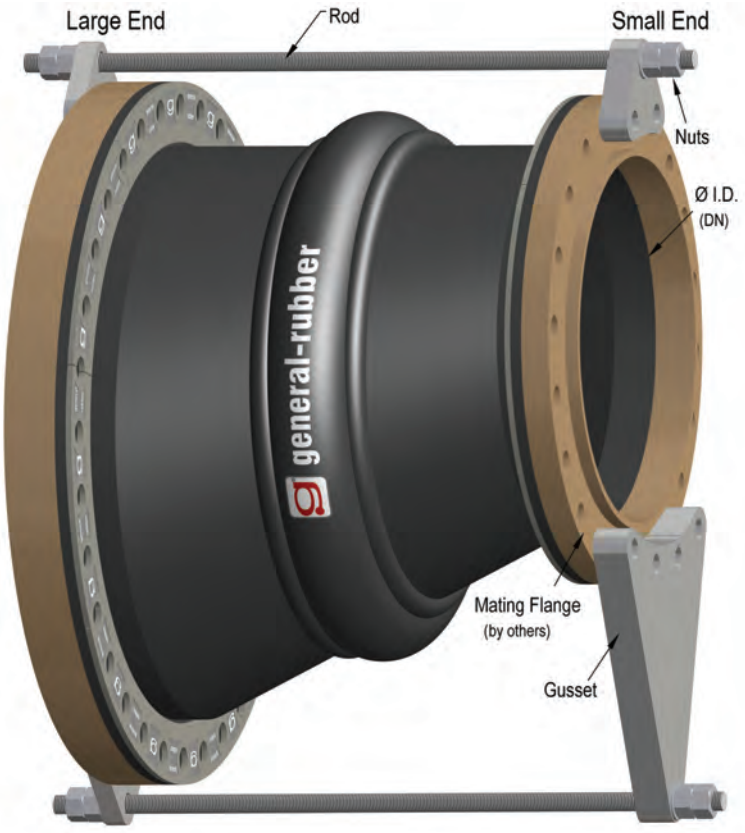
1. Technical data shown above reflects the single arch design, additional arches typically increase movements and decreases spring rates proportionately.
2. Series 1200CR are designed for 30" Hg (full vacuum) and have a maximum test at 26" Hg due to facility altitude and equipment limitations.
3. Maximum operating temperature of 250˚F for EPDM, Butyl & Viton® ; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
4. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
5. Bill of Materials: Retaining Ring and Gusset, carbon steel hot dipped galvanized (HDG) or stainless steel; Rods, A193 B7 (HDG) or A193 B8M; Nuts, A194 2H (HDG) or A194 8M; Spherical Washer, stainless steel; Metal Reinforcement, high tensile steel; and Textile Reinforcement, RFL-coated tire cord.
6. WARNING: Control units (sold separately) must be used when piping is not properly anchored. Number of rods are dependent upon maximum field test pressures. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.
7. Standard 125/150 lb. drilling includes, 1"-24" with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30"-60" with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb., 72"-108" with ANSI B16.1 Class 125 lb./ AWWA C207 Class B.

Eccentric Reducing

Style 1101ER

General Rubber's Styles 1101ER and 1201ER eccentric reducing rubber expansion joints (REJs) are an economical way to combine a reducing pipe fitting with an expansion joint. The two different flanged diameters have an offset centerline. Additionally, they are designed to absorb large all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment, and relieve pipe and anchor stresses. Its spool type body is constructed with full rubber flanges, a high-grade leak-proof tube, multiple layers of high-strength tire cord, high tensile steel reinforcement, a seamless cover, and hot dip galvanized steel retaining rings. This construction, as a standalone expansion joint, represents the most cost-effective arrangement when used in rigid piping systems with main anchors (MA) and numerous guides at specific spacing. Control units can be externally or internally attached and used as limit rods for secondary restraint or as tie rods when the support structure or adjacent equipment has load limitations.





- Versatile hand-built construction, made in the USA
- An economic and space saving way to combine a reducing pipe fitting with an expansion joint
- Standard or custom face-to-face dimensions
- Available in multiple arch, custom offset arrangements and sizes not shown
- Wide flowing arch design
- Exceptional all directional movement capability
- Virtually eliminates sediment buildup
- Absorbs noise, vibration and shock
- Higher pressure rating than conventional expansion joints
- Hot dip galvanized retaining rings standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Excellent chemical and abrasion resistance
- Style 1201ER designates full vacuum rating (30" Hg) in all sizes
- 250°F continuous service standard (400°F available)
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Integrally flanged design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Filled arch design available (reduces movement by 50% & increases spring rates by 400%)
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more

SIZE					STYLE 1101ER MOVEMENT (non-concurrent)					PRESSURE		WEIGHT
Large End I.D.	Small End I.D.	Minimum Length Available (F/F)	Large End Flange TH.	Small End Flange TH.	Comp.	Ext.	Lateral	Angular	Torsional	Pressure	Vacuum	REJ w/ Rings
in	in	in	in	in	in	in	in	deg.	deg.	psig	in-Hg	lbs
mm	mm	mm	mm	mm	mm	mm	mm	deg.	deg	barg	barg	kg
2	1	6	7/8	7/8	1/2	1/4	1/2	16	3.1	165	15	6
50	25	152	22.2	22.2	12.7	6.4	12.7	16	3.1	11.4	-0.5	2.7
2 1/2	1	6	7/8	7/8	1/2	1/4	1/2	14	3.0	165	15	7
65	25	152	22.2	22.2	12.7	6.4	12.7	14	3.0	11.4	-0.5	3.2
3	1	6	7/8	7/8	1/2	1/4	1/2	12.5	2.9	165	15	8
80	25	152	22.2	22.2	12.7	6.4	12.7	12.5	2.9	11.4	-0.5	3.6
4	2	6	7/8	7/8	1/2	1/4	1/2	9.5	2.7	165	15	10
100	50	152	22.2	22.2	12.7	6.4	12.7	9.5	2.7	11.4	-0.5	4.5
5	2	8	7/8	7/8	1/2	1/4	1/2	6.3	2.6	150	15	15
125	50	203	22.2	22.2	12.7	6.4	12.7	6.3	2.6	10.3	-0.5	6.8
6	3	8	7/8	7/8	1/2	1/4	1/2	6.1	2.4	150	15	16
150	80	203	22.2	22.2	12.7	6.4	12.7	6.1	2.4	10.3	-0.5	7.3
8	4	8	7/8	7/8	3/4	3/8	1/2	6.0	2.2	150	15	19
200	100	203	22.2	22.2	19	9.5	12.7	6.0	2.2	10.3	-0.5	8.6
10	6	8	7/8	7/8	3/4	3/8	1/2	5.8	2.1	150	15	34
250	150	203	22.2	22.2	19	9.5	12.7	5.8	2.1	10.3	-0.5	15.5
12	6	10	7/8	7/8	3/4	3/8	1/2	5.2	2.0	150	15	42
300	150	254	22.2	22.2	19	9.5	12.7	5.2	2.0	10.3	-0.5	19
14	8	10	1	1	3/4	3/8	1/2	3.9	1.8	90	15	55
350	200	254	25.4	25.4	19	9.5	12.7	3.9	1.8	6.2	-0.5	25
16	10	10	1	1	3/4	3/8	1/2	3.3	1.4	70	15	64
400	250	254	25.4	25.4	19	9.5	12.7	3.3	1.4	4.8	-0.5	29
18	12	10	1	1	3/4	3/8	1/2	2.6	1.0	70	15	72
450	300	254	25.4	25.4	19	9.5	12.7	2.6	1.0	4.8	-0.5	32.7

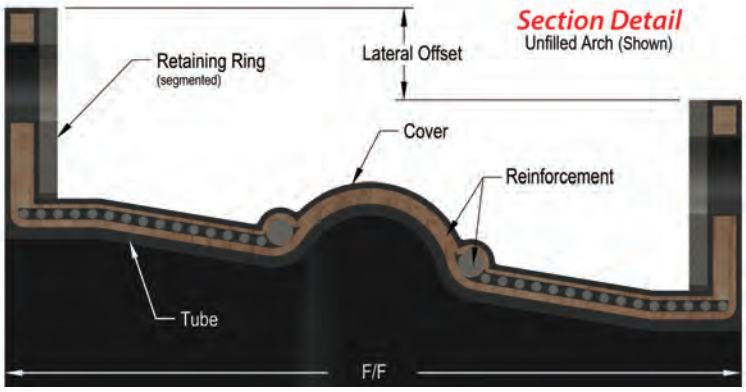
Notes:

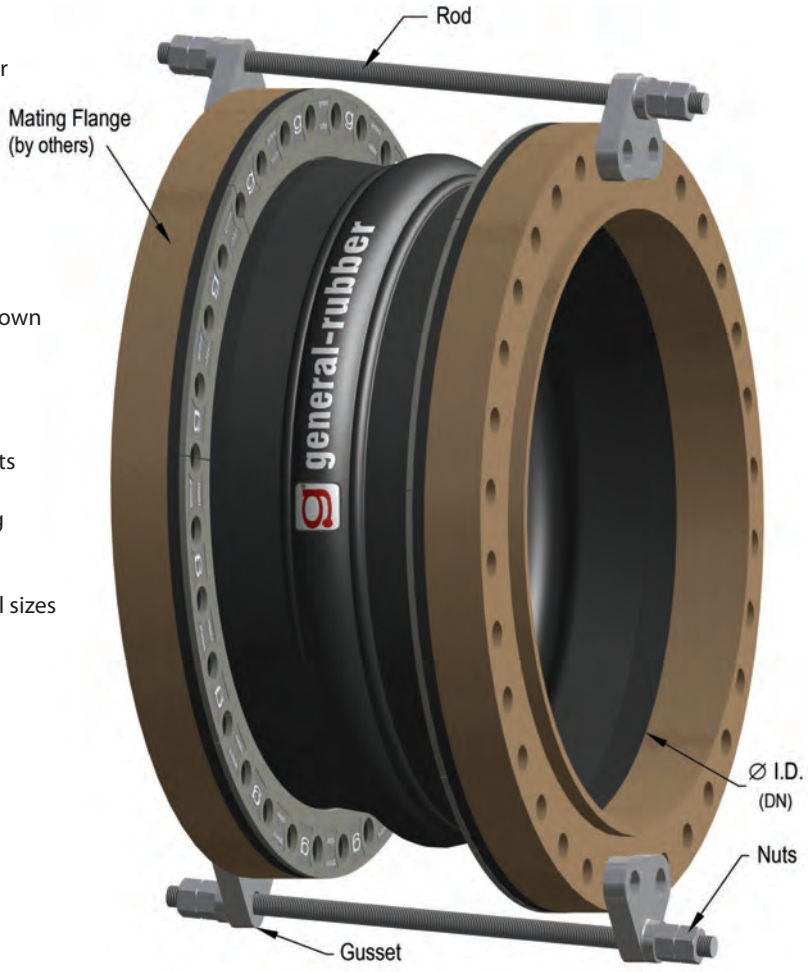
1. Technical data shown above reflects the single arch design, additional arches typically increase movements and decreases spring rates proportionately.
2. Series 1200ER are designed for 30" Hg (full vacuum) and have a maximum test at 26" Hg due to facility altitude and equipment limitations.
3. Maximum operating temperature of 250˚F for EPDM, Butyl & Viton® ; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
4. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
5. Bill of Materials: Retaining Ring and Gusset, carbon steel hot dipped galvanized (HDG) or stainless steel; Rods, A193 B7 (HDG) or A193 B8M; Nuts, A194 2H (HDG) or A194 8M; Spherical Washer, stainless steel; Metal Reinforcement, high tensile steel; and Textile Reinforcement, RFL-coated tire cord.
6. WARNING: Control units (sold separately) must be used when piping is not properly anchored. Number of rods are dependent upon maximum field test pressures. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.
7. Standard 125/150 lb. drilling includes, 1"-24" with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30"-60" with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb., 72"-108" with ANSI B16.1 Class 125 lb./ AWWA C207 Class B.

Lateral Offset

Style 1101LO

General Rubber's Styles 1101LO and 1201LO rubber expansion joints (REJs) are designed with built-in lateral offsets to accommodate non-standard field conditions. They provide ease of installation without compromising any performance capabilities. Additionally, they are designed to absorb large all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment, and relieve pipe and anchor stresses. Their spool type bodies are constructed with full rubber flanges, a high-grade leak-proof tube, multiple layers of high-strength tire cord, high-tensile steel reinforcement, a seamless cover, and hot dip galvanized steel retaining rings. This construction, as a standalone expansion joint, represents the most cost-effective arrangement when used in rigid piping systems with main anchors (MA) and numerous guides at specific spacing. Control units can be externally or internally attached and used as limit rods for secondary restraint, or as tie rods when the support structure or adjacent equipment has load limitations.





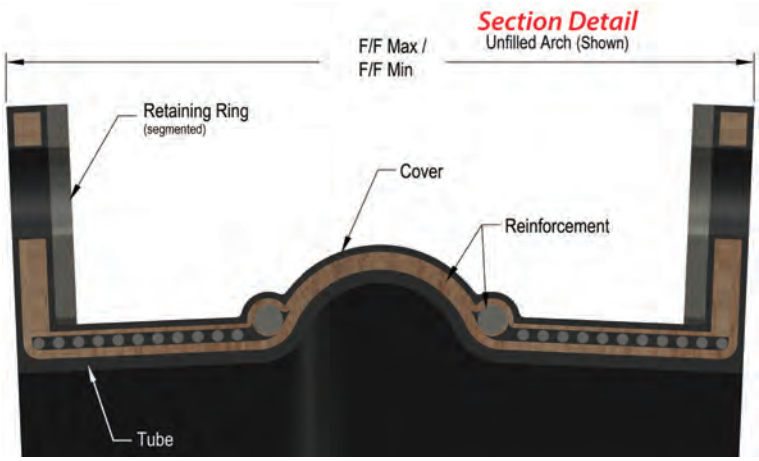
- Versatile hand-built construction, made in the USA
- An economical and space saving way to accommodate for lateral pipe variances
- Standard or custom face-to-face dimensions
- Available in multiple arch arrangements and sizes not shown
- Wide flowing arch design
- Exceptional all directional movement capability
- Virtually eliminates sediment buildup
- Absorbs noise, vibration and shock
- Higher pressure rating than conventional expansion joints
- Hot dip galvanized retaining rings standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Excellent chemical and abrasion resistance
- Style 1201LO designates full vacuum rating (30" Hg) in all sizes
- 250°F continuous service standard (400°F available)
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Integrally flanged design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Filled arch design available (reduces movement by 50% and increases spring rates by 400%)
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more

Notes:

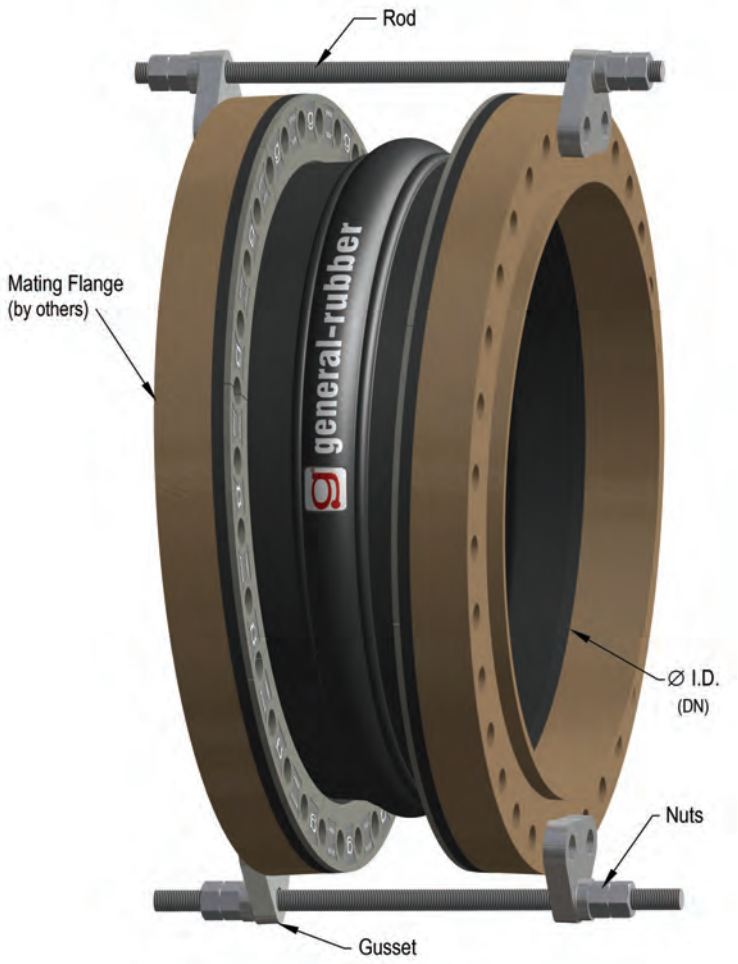
1. Data sheet can be provided upon request. For sizes and arrangements, please refer to series 1100.
2. Series 1200LO is designed for 30" Hg (full vacuum) and has a maximum test at 26" Hg due to facility altitude and equipment limitations.
3. Maximum operating temperature of 250˚F for EPDM, Butyl & Viton® ; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
4. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
5. Bill of Materials: Retaining Ring and Gusset, carbon steel hot dipped galvanized (HDG) or stainless steel; Rods, A193 B7 (HDG) or A193 B8M; Nuts, A194 2H (HDG) or A194 8M; Spherical Washer, stainless steel; Metal Reinforcement, high-tensile steel; and Textile Reinforcement, RFL-coated tire cord.
6. **WARNING**: Control units (sold separately) must be used when piping is not properly anchored. Number of rods are dependent upon maximum field test pressures. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.
7. Standard 125/150 lb. drilling includes, 1"-24" with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30"-60" with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb., 72"-108" with ANSI B16.1 Class 125 lb./ AWWA C207 Class B.

Angular Offset

Style 1101AO



General Rubber's Styles 1101AO and 1201AO rubber expansion joints (REJs) are designed with built-in angular offsets to accommodate non-standard field conditions. They provide ease of installation without compromising any performance capabilities. Additionally, they are designed to absorb large all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment, and relieve pipe and anchor stresses. Their spool type bodies are constructed with full rubber flanges, a high-grade leak-proof tube, multiple layers of high-strength tire cord, high-tensile steel reinforcement, a seamless cover, and hot dip galvanized steel retaining rings. This construction, as a standalone expansion joint, represents the most cost-effective arrangement when used in rigid piping systems with main anchors (MA) and numerous guides at specific spacing. Control units can be externally or internally attached and used as limit rods for secondary restraint, or as tie rods when the support structure or adjacent equipment has load limitations.



- Versatile hand-built construction, made in the USA
- An economical and space saving way to accommodate for angular pipe variances
- Standard or custom face-to-face dimensions
- Available in multiple arch arrangements and sizes not shown
- Wide flowing arch design
- Exceptional all directional movement capability
- Virtually eliminates sediment buildup
- Absorbs noise, vibration and shock
- Higher pressure rating than conventional expansion joints
- Hot dip galvanized retaining rings standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Excellent chemical and abrasion resistance
- Style 1201AO designates full vacuum rating (30" Hg) in all sizes
- 250°F continuous service standard (400°F available)
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Integrally flanged design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Filled arch design available (reduces movement by 50% and increases spring rates by 400%)
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more

Notes:

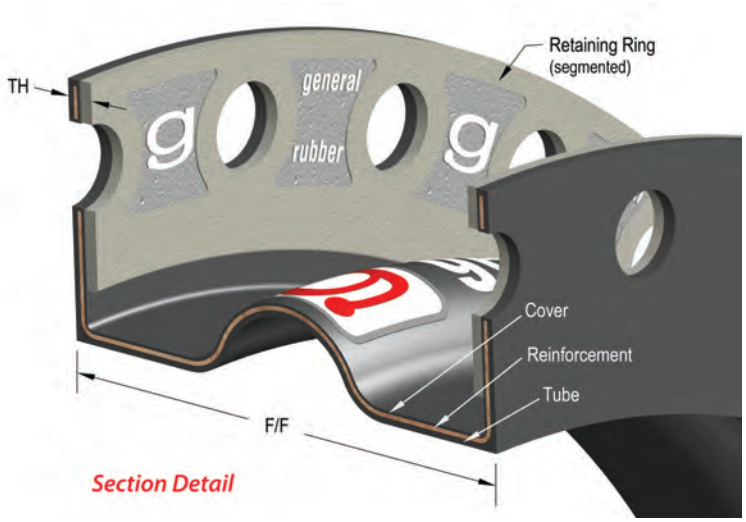
1. Data sheet can be provided upon request. For sizes and arrangements, please refer to series 1100.
2. Series 1200AO is designed for 30" Hg (full vacuum) and has a maximum test at 26" Hg due to facility altitude and equipment limitations.
3. Maximum operating temperature of 250˚F for EPDM, Butyl & Viton® ; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
4. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
5. Bill of Materials: Retaining Ring and Gusset, carbon steel hot dipped galvanized (HDG) or stainless steel; Rods, A193 B7 (HDG) or A193 B8M; Nuts, A194 2H (HDG) or A194 8M; Spherical Washer, stainless steel; Metal Reinforcement, high-tensile steel; and Textile Reinforcement, RFL-coated tire cord.
6. **WARNING**: Control units (sold separately) must be used when piping is not properly anchored. Number of rods are dependent upon maximum field test pressures. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.
7. Standard 125/150 lb. drilling includes, 1"-24" with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30"-60" with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb., 72"-108" with ANSI B16.1 Class 125 lb./ AWWA C207 Class B.

Lightweight

Style 1101LW

General Rubber's Style 1101LW lightweight rubber expansion joint (REJ) is designed with lower spring rates for reduced reaction forces and greater movement capabilities within a compact body. This optimally designed lightweight construction represents the most cost-effective arrangement for low pressure applications. The construction includes full rubber flanges, a high-grade leak-proof tube, a seamless cover, multiple layers of high-strength tire cord, and hot dip galvanized steel retaining rings. Additionally, it is designed to absorb large all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment, and relieve pipe and anchor stresses.

- Versatile hand-built construction, made in the USA
- Ideal flexible connector for fans, blowers and other industrial OEM Equipment
- Standard or custom face-to-face dimensions
- Available in multiple arch, custom offset arrangements and sizes not shown
- Wide flowing arch design
- Exceptional all directional movement capability
- Virtually eliminates sediment buildup
- Absorbs noise, vibration and shock
- Hot dip galvanized retaining rings standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Excellent chemical and abrasion resistance
- 25 PSIG with 6" Hg standard design (higher vacuum rating available)
- 250°F continuous service standard (400°F available)
- Compensates for minor misalignment and offset
- Extremely flexible design with minimum stiffness and deflection forces
- Integral flange design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more



Section Detail

SIZE			STYLE 1101LW MOVEMENT (non-concurrent)					SPRING RATE			PRESSURE		WEIGHT
I.D.	Std. Length (F/F)	Flange TH.	Comp.	Ext.	Lateral	Angular	Torsional	Comp.	Ext.	Lateral	Pressure	Vacuum	REJ w/ Rings
in	in	in	in	in	in	deg.	deg.	lb/in	lb/in	lb/in	psig	in-Hg	lbs
mm	mm	mm	mm	mm	mm	deg.	deg.	N/mm	N/mm	N/mm	barg	barg	kg
2	6	5/8	2	1	1	43	5	80	104	96	25	6	5
50	152	16	51	25	25	43	5	14	18	16	1.7	-0.2	2.3
2 1/2	6	5/8	2	1	1	36	4	100	130	120	25	6	7
65	152	16	51	25	25	36	4	17	22	21	1.7	-0.2	3.2
3	6	5/8	2	1	1	31	4	120	156	144	25	6	8
80	152	16	51	25	25	31	4	21	27	25	1.7	-0.2	3.6
4	6	5/8	2	1	1	24	4	160	208	192	25	6	11
100	152	16	51	25	25	24	4	28	36	33	1.7	-0.2	5
5	6	5/8	2	1	1	20	4	200	260	240	25	6	13
125	152	16	51	25	25	20	4	35	45	42	1.7	-0.2	5.9
6	6	5/8	2	1	1 1/4	17	4	240	312	288	25	6	14
150	152	16	51	25	32	17	4	42	54	50	1.7	-0.2	6.4
8	6	5/8	2	1	1 1/4	13	3	320	416	384	25	6	20
200	152	16	51	25	32	13	3	56	72	67	1.7	-0.2	9
10	6	5/8	2	1	1 1/4	19	3	400	520	480	25	6	23
250	152	16	51	25	32	19	3	75	91	84	1.7	-0.2	10.4
12	6	5/8	2 1/4	1	1 1/4	15	3	480	624	576	25	6	34
300	152	16	57	25	32	15	3	84	109	100	1.7	-0.2	15.4
14	6	5/8	2 1/4	1 1/8	1 3/8	13	3	560	728	672	25	6	41
350	152	16	57	29	35	13	3	98	127	117	1.7	-0.2	18.6
16	6	5/8	2 1/4	1 1/8	1 3/8	12	3	640	732	768	25	6	58
400	152	16	57	29	35	12	3	112	128	134	1.7	-0.2	26.4
18	6	5/8	2 1/4	1 1/8	1 3/8	11	3	720	936	864	25	6	64
450	152	16	57	29	35	11	3	126	163	151	1.7	-0.2	29
20	6	5/8	2 1/2	1 1/8	1 3/8	10	3	800	1,040	960	25	6	71
500	152	16	64	29	35	10	3	140	182	168	1.7	-0.2	32.3
24	8	5/8	2 1/2	1 1/8	1 3/8	9	3	960	1,248	1,152	25	6	89
600	203	16	64	29	35	9	3	168	218	201	1.7	-0.2	40.4
30	8	5/8	2 1/2	1 1/8	1 3/8	8	3	1,200	1,560	1,440	25	6	136
750	203	16	64	29	35	8	3	210	273	252	1.7	-0.2	61.8
36	8	5/8	2 1/2	1 1/8	1 3/8	7	2	1,440	1,872	1,728	25	6	176
900	203	16	64	29	35	7	2	252	327	302	1.7	-0.2	80

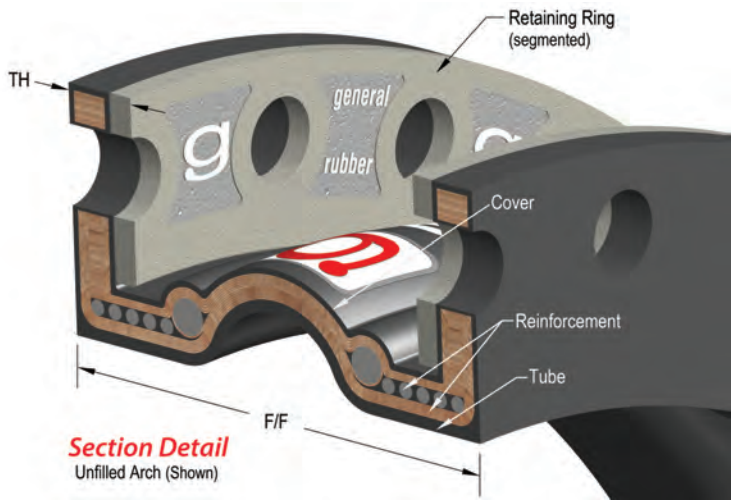
Notes:

1. Technical data shown above reflects the single arch design; additional arches typically increase movements and decrease spring rates proportionately.
2. Maximum operating temperature of 250˚F for EPDM, Butyl & Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
3. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
4. Bill of Materials: Retaining Ring and Gusset, carbon steel hot dipped galvanized (HDG) or stainless steel; Rods, A193 B7 (HDG) or A193 B8M; Nuts, A194 2H (HDG) or A194 8M; Spherical Washer, stainless steel; Metal Reinforcement, high-tensile steel; and Textile Reinforcement, RFL-coated tire cord.
5. **WARNING**: Control units (sold separately) must be used when piping is not properly anchored. Number of rods are dependent upon maximum field test pressures. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.
6. Style 1101LW replaces style 2000.
7. Standard 125/150 lb. drilling includes, 1"-24" with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30"-60" with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb., 72"-108" with ANSI B16.1 Class 125 lb./ AWWA C207 Class B.

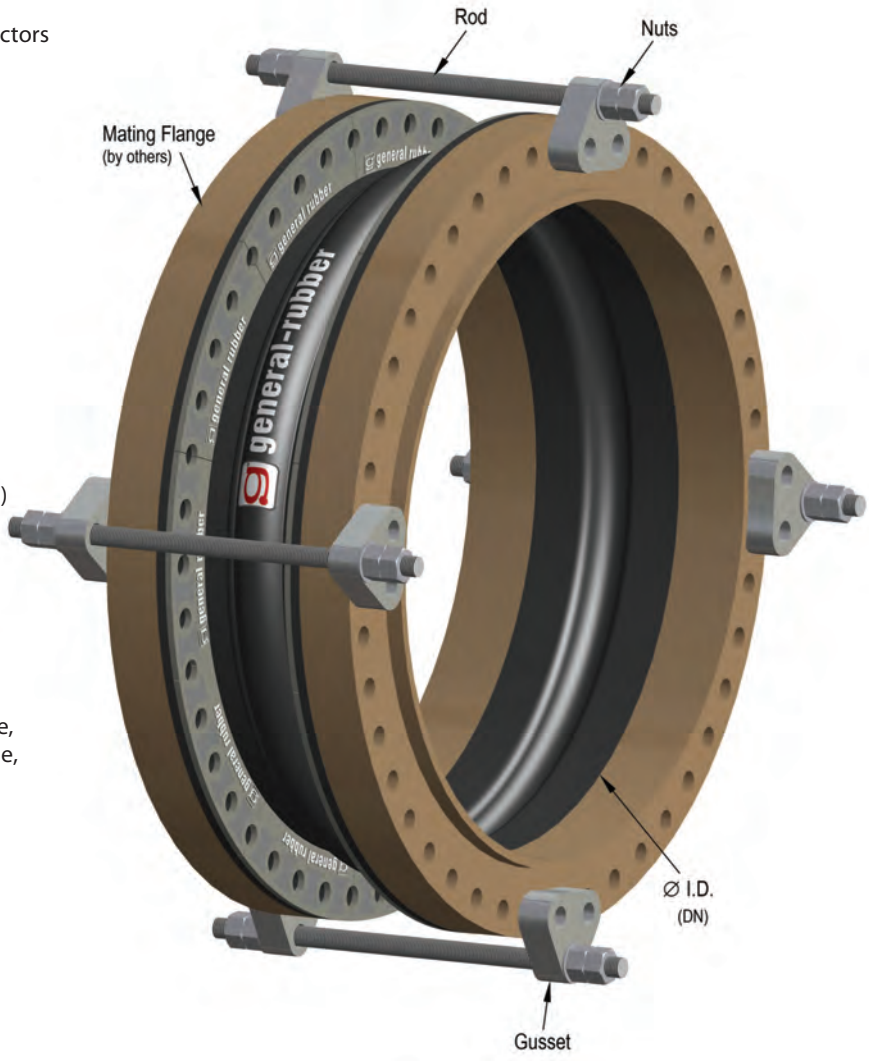
High Pressure

Style 1101HP

General Rubber's Style 1101HP rubber expansion joint (REJ) is designed for higher pressure applications. The standard spool type body is reinforced with additional layers of high-strength tire cord and high tensile steel reinforcements. The construction includes full rubber flanges, a high-grade leak-proof tube, a seamless cover, and hot dip galvanized steel retaining rings. Additionally, it is designed to reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment, and relieve pipe and anchor stresses. This construction, as a standalone expansion joint, represents the most cost-effective arrangement when used in rigid piping systems with main anchors (MA) and numerous guides at specific spacing. Control units can be externally or internally attached and used as limit rods for secondary restraint or as tie rods when the support structure or adjacent equipment has load limitations.



- Versatile hand-built construction, made in the USA
- Designed for higher pressure with greater safety factors
- Standard or custom face-to-face dimensions
- Available in multiple arches or custom offset arrangements and sizes not shown
- Wide flowing arch design
- Exceptional all directional movement capability
- Virtually eliminates sediment buildup
- Absorbs noise, vibration and shock
- Higher pressure rating than conventional expansion joints
- Hot dip galvanized retaining rings standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Excellent chemical and abrasion resistance
- Full vacuum rating (30" Hg) in all single arch sizes
- 250°F continuous service standard (400°F available)
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Integrally flanged design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Filled arch design available (reduces movement by 50% and increases spring rates by 400%)
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more



SIZE			STYLE 1101HP MOVEMENT (non-concurrent)					SPRING RATE			PRESSURE	
I.D.	Std. Length (F/F)	Flange TH.	Comp.	Ext.	Lateral	Angular	Torsional	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	in	in	deg.	deg.	lb/in	lb/in	lb/in	psig	in-Hg
mm	mm	mm	mm	mm	mm	deg.	deg.	N/mm	N/mm	N/mm	barg	barg
2	6	7/8	1 3/4	7/8	1	39	4	338	425	563	350	30
50	152	22.2	44.4	22.2	25.4	39	4	59	74	99	24.1	-1
2 1/2	6	7/8	1 3/4	7/8	1	33	3.8	425	525	600	350	30
65	152	22.2	44.4	22.2	25.4	33	3.8	74	92	105	24.1	-1
3	6	7/8	1 3/4	7/8	1	28	3.7	500	638	675	350	30
80	152	22.2	44.4	22.2	25.4	28	3.7	88	112	118	24.1	-1
4	6	7/8	1 3/4	7/8	1	22	3.6	688	888	738	350	30
100	152	22.2	44.4	22.2	25.4	22	3.6	120	156	129	24.1	-1
5	6	7/8	1 3/4	7/8	1	18	3.4	838	1,100	888	300	30
125	152	22.2	44.4	22.2	25.4	18	3.4	147	193	156	20.7	-1
6	6	7/8	1 3/4	7/8	1	15	3.2	1,025	1,313	988	250	30
150	152	22.2	44.4	22.2	25.4	15	3.2	180	230	173	17.2	-1
8	6	7/8	1 3/4	7/8	1	12	3.1	1,238	1,450	1,200	300	30
200	152	22.2	44.4	22.2	25.4	12	3.1	217	254	210	20.7	-1
10	8	7/8	2	1	1 1/4	17	3	1,200	1,463	1,025	300	30
250	203	22.2	50.8	25.4	31.8	17	3	210	256	180	20.7	-1
12	8	7/8	2	1	1 1/4	14	2.9	1,263	1,563	1,213	275	30
300	203	22.2	50.8	25.4	31.8	14	2.9	221	274	212	19	-1
14	8	1	2 1/4	1 1/8	1 1/4	12	2.8	1,350	1,625	1,425	260	30
350	203	25.4	57.2	28.6	31.8	12	2.8	236	285	250	17.9	-1
16	8	1	2 1/4	1 1/8	1 1/4	11	2.7	1,438	1,738	1,650	225	30
400	203	25.4	57.2	28.6	31.8	11	2.7	252	304	289	15.5	-1
18	8	1	2 1/4	1 1/8	1 1/4	10	2.6	1,525	1,963	1,813	200	30
450	203	25.4	57.2	28.6	31.8	10	2.6	267	344	318	13.8	-1
20	8	1	2 1/4	1 1/8	1 1/4	9	2.5	1,600	2,188	2,025	180	30
500	203	25.4	57.2	28.6	31.8	9	2.5	280	383	355	12.4	-1
24	10	1 1/8	2 1/2	1 1/4	1 3/8	8	2.4	2,163	2,625	2,175	150	30
600	254	28.6	63.5	31.8	34.9	8	2.4	379	460	381	10.3	-1

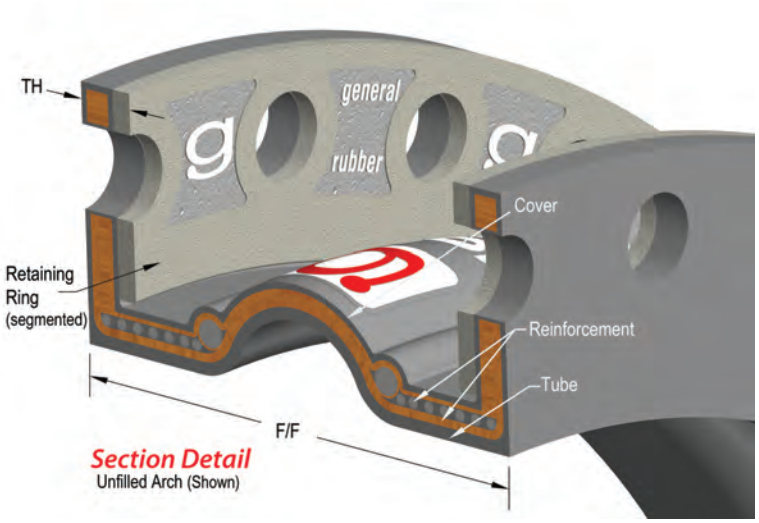
Notes:

1. Technical data shown above reflects the single arch design; additional arches typically increase movements and decrease spring rates proportionately.
2. All parts listed are designed for 30" Hg (full vacuum) and have a maximum test at 26" Hg due to facility altitude and equipment limitations.
3. Maximum operating temperature of 250˚F for EPDM, Butyl & Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
4. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
5. Bill of Materials: Retaining Ring and Gusset, carbon steel hot dipped galvanized (HDG) or stainless steel; Rods, A193 B7 (HDG) or A193 B8M; Nuts, A194 2H (HDG) or A194 8M; Spherical Washer, stainless steel; Metal Reinforcement, high-tensile steel; and Textile Reinforcement, RFL-coated tire cord.
6. **WARNING**: Control units (sold separately) must be used when piping is not properly anchored. Number of rods are dependent upon maximum field test pressures. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.
7. Standard 125/150 lb. drilling includes, 1"-24" with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30"-60" with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb., 72"-108" with ANSI B16.1 Class 125 lb./ AWWA C207 Class B.

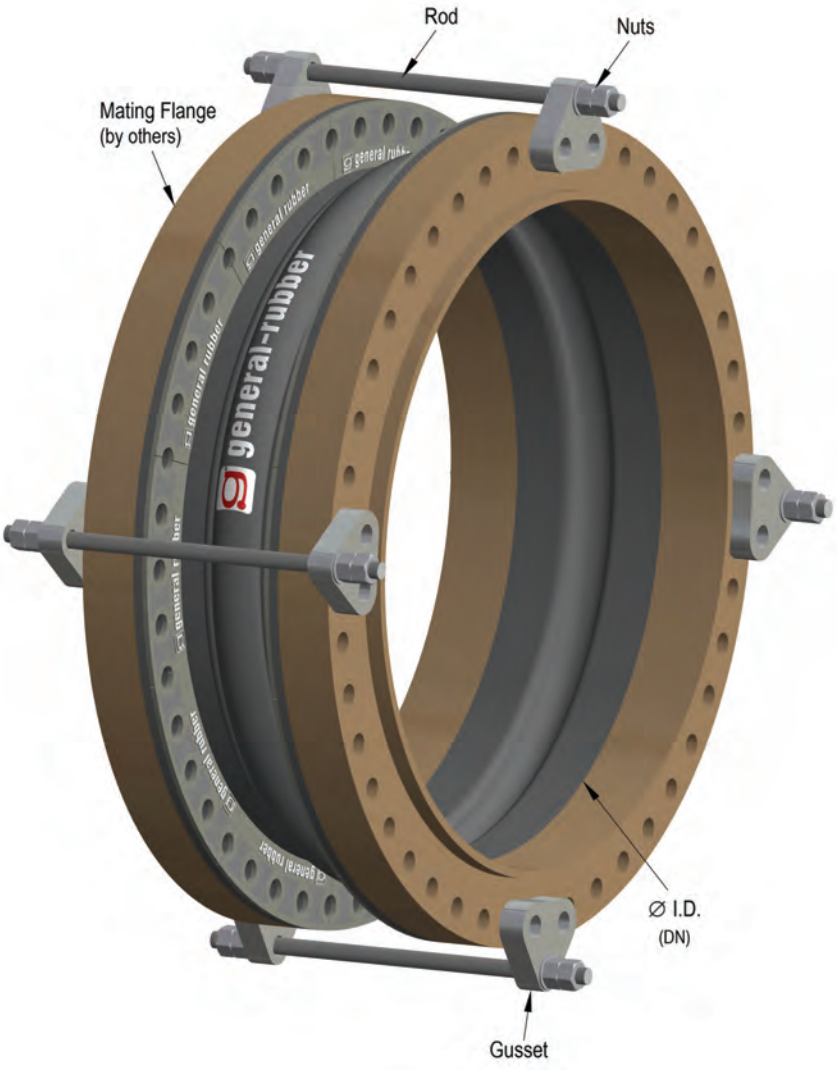
High Temperature

Style 1101HT

General Rubber's Style 1101HT rubber expansion joint (REJ) is designed for higher temperature applications. The spool type body is constructed with a high temperature resistant EPDM or Viton® leak-proof tube and seamless cover with Kevlar® high temperature and high-strength tire cord reinforcement. The construction includes full rubber flanges, high tensile steel reinforcement and hot dip galvanized steel retaining rings. Additionally, they are designed to reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment, and relieve pipe and anchor stresses. This construction, as a standalone expansion joint, represents the most cost-effective arrangement when used in rigid piping systems with main anchors (MA) and numerous guides at specific spacing. Control units can be externally or internally attached and used as limit rods for secondary restraint or as tie rods when the support structure or adjacent equipment has load limitations.



- Versatile hand-built construction, made in the USA
- Designed for higher temperatures
- Standard or custom face-to-face dimensions
- Available in multiple arches or custom offset arrangements and sizes not shown
- Wide flowing arch design
- Exceptional all directional movement capability
- Virtually eliminates sediment buildup
- Absorbs noise, vibration and shock
- Higher pressure rating than conventional expansion joints
- 350˚F continuous service with EPDM / Kevlar®
- 400˚F continuous service with Viton® / Kevlar®
- Hot dip galvanized retaining rings standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Excellent chemical and abrasion resistance
- Full vacuum rating (30" Hg) in all single arch sizes
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Integrally flanged design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Filled arch design available (reduces movement by 50% and increases spring rates by 400%)



SIZE			STYLE 1101HT MOVEMENT (non-concurrent)					SPRING RATE			PRESSURE	
I.D.	Std. Length (F/F)	Flange TH.	Comp.	Ext.	Lateral	Angular	Torsional	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	in	in	deg.	deg.	lb/in	lb/in	lb/in	psig	in-Hg
mm	mm	mm	mm	mm	mm	deg.	deg.	N/mm	N/mm	N/mm	barg	barg
2	6	7/8	1 3/4	7/8	1	39	4	270	340	450	225	30
50	152	22.2	44.4	22.2	25.4	39	4	47	60	79	15.5	-1
2 1/2	6	7/8	1 3/4	7/8	1	33	3.8	340	420	480	225	30
65	152	22.2	44.4	22.2	25.4	33	3.8	60	74	84	15.5	-1
3	6	7/8	1 3/4	7/8	1	28	3.7	400	510	540	225	30
80	152	22.2	44.4	22.2	25.4	28	3.7	70	89	95	15.5	-1
4	6	7/8	1 3/4	7/8	1	22	3.6	550	710	590	225	30
100	152	22.2	44.4	22.2	25.4	22	3.6	96	124	103	15.5	-1
5	6	7/8	1 3/4	7/8	1	18	3.4	670	880	710	225	30
125	152	22.2	44.4	22.2	25.4	18	3.4	117	154	124	15.5	-1
6	6	7/8	1 3/4	7/8	1	15	3.2	820	1,050	790	225	30
150	152	22.2	44.4	22.2	25.4	15	3.2	144	184	138	15.5	-1
8	6	7/8	1 3/4	7/8	1	12	3.1	990	1,160	960	225	30
200	152	22.2	44.4	22.2	25.4	12	3.1	173	203	168	15.5	-1
10	8	7/8	2	1	1 1/4	17	3	960	1,170	820	225	30
250	203	22.2	50.8	25.4	31.8	17	3	168	205	144	15.5	-1
12	8	7/8	2	1	1 1/4	14	2.9	1,010	1,250	970	225	30
300	203	22.2	50.8	25.4	31.8	14	2.9	177	219	170	15.5	-1
14	8	1	2 1/4	1 1/8	1 1/4	12	2.8	1,080	1,300	1,140	220	30
350	203	25.4	57.2	28.6	31.8	12	2.8	189	228	200	15.2	-1
16	8	1	2 1/4	1 1/8	1 1/4	11	2.7	1,150	1,390	1,320	160	30
400	203	25.4	57.2	28.6	31.8	11	2.7	201	243	231	11	-1
18	8	1	2 1/4	1 1/8	1 1/4	10	2.6	1,220	1,570	1,450	160	30
450	203	25.4	57.2	28.6	31.8	10	2.6	214	275	254	11	-1
20	8	1	2 1/4	1 1/8	1 1/4	9	2.5	1,280	1,750	1,620	130	30
500	203	25.4	57.2	28.6	31.8	9	2.5	224	306	284	9	-1
24	10	1 1/8	2 1/2	1 1/4	1 3/8	8	2.4	1,730	2,100	1,740	130	30
600	254	28.6	63.5	31.8	34.9	8	2.4	303	368	305	9	-1

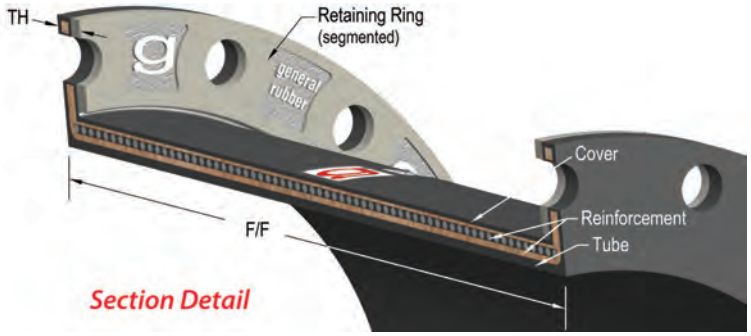
Notes:

1. Technical data shown above reflects the single arch design; additional arches typically increase movements and decrease spring rates proportionately.
2. All parts listed are designed for 30" Hg (full vacuum) and have a maximum test at 26" Hg due to facility altitude and equipment limitations.
3. Maximum operating temperature of 350˚F for EPDM / Kevlar®; 400˚F for Viton® / Kevlar® ; 302˚F for Hydrogenated Nitrile (HNBR) / Kevlar®.
4. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
5. Bill of Materials: Retaining Ring and Gusset, carbon steel hot dipped galvanized (HDG) or stainless steel; Rods, A193 B7 (HDG) or A193 B8M; Nuts, A194 2H (HDG) or A194 8M; Spherical Washer, stainless steel; Metal Reinforcement, high-tensile steel; and Textile Reinforcement, RFL-coated tire cord.
6. **WARNING**: Control units (sold separately) must be used when piping is not properly anchored. Number of rods are dependent upon maximum field test pressures. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.
7. Standard 125/150 lb. drilling includes, 1"-24" with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30"-60" with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb., 72"-108" with ANSI B16.1 Class 125 lb./ AWWA C207 Class B.

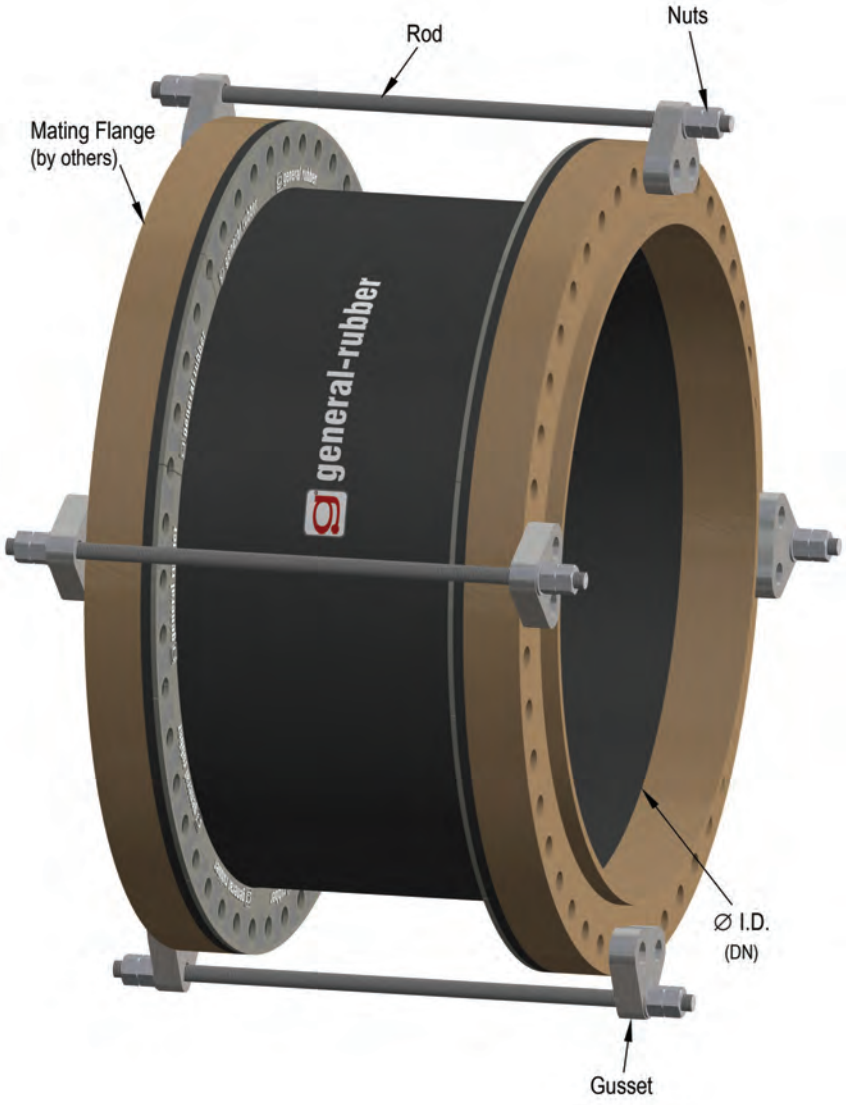
Rubber Flanged Pipe

Style 1100

General Rubber's Style 1100 rubber flanged pipe is designed to absorb all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for minor misalignments, provide access to piping and equipment, and relieve pipe and anchor stresses. Its archless spool type body is constructed with full rubber flanges, a high-grade leak-proof tube, multiple layers of high-strength tire cord, high tensile steel reinforcement, a seamless cover and hot dip galvanized steel retaining rings. This construction, as a standalone expansion joint, represents the most cost-effective arrangement when used in rigid piping systems with main anchors (MA) and numerous guides at specific spacing. Control units can be externally or internally attached and used as limit rods for secondary restraint or as tie rods when the support structure or adjacent equipment has load limitations.



- Versatile hand-built construction, made in the USA
- Standard or custom face-to-face dimensions
- Available in custom offset arrangements and sizes not shown
- Higher pressure rating than conventional expansion joints
- Absorbs noise, vibration and shock
- Hot dip galvanized retaining rings standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Excellent chemical and abrasion resistance
- 15" Hg standard design; full vacuum (30" Hg) available
- 250°F continuous service standard (400°F available)
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Integral flange design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more



SIZE			STYLE 1100 MOVEMENT (non-concurrent)			PRESSURE		WEIGHT
I.D.	Std. Length (F/F)	Flange TH.	Comp.	Ext.	Lateral	Pressure	Vacuum	REJ w/rings
in	in	in	in	in	in	psig	in-Hg	lbs
mm	mm	mm	mm	mm	mm	barg	barg	kg
1	12	7/8	1/4	1/4	1/4	150	15	6
25	305	22	6	6	6	10.3	-0.5	2.7
1 1/4	12	7/8	1/4	1/4	1/4	150	15	6
32	305	22	6	6	6	10.3	-0.5	2.7
1 1/2	12	7/8	1/4	1/4	1/4	150	15	7
40	305	22	6	6	6	10.3	-0.5	3.2
2	12	7/8	1/4	1/4	1/4	150	15	7
50	305	22	6	6	6	10.3	-0.5	3.2
2 1/2	12	7/8	3/8	1/4	3/8	150	15	10
65	305	22	10	6	10	10.3	-0.5	4.5
3	18	7/8	3/8	1/4	3/8	150	15	15
80	457	22	10	6	10	10.3	-0.5	6.8
4	18	7/8	1/2	1/4	1/2	150	15	20
100	457	22	13	6	13	10.3	-0.5	9
5	24	7/8	1/2	1/4	1/2	150	15	28
125	610	22	13	6	13	10.3	-0.5	12.7
6	24	7/8	1/2	1/4	1/2	150	15	33
150	610	22	13	6	13	10.3	-0.5	15
8	24	7/8	1/2	1/4	1/2	150	15	46
200	610	22	13	6	13	10.3	-0.5	20.9
10	24	7/8	1/2	1/4	1/2	150	15	54
250	610	22	13	6	13	10.3	-0.5	24.5
12	24	7/8	1/2	1/4	1/2	150	15	78
300	610	22	13	6	13	10.3	-0.5	35.5
14	24	1	1/2	1/4	1/2	150	15	104
350	610	25	13	6	13	10.3	-0.5	47.3
16	24	1	1/2	1/4	1/2	125	15	120
400	610	25	13	6	13	8.6	-0.5	54.5
18	24	1	1/2	1/4	1/2	100	15	150
450	610	25	13	6	13	6.9	-0.5	68.2
20	24	1	1/2	1/4	1/2	100	15	175
500	610	25	13	6	13	6.9	-0.5	79.5
24	24	1 1/8	1/2	1/4	1/2	100	15	250
600	610	29	13	6	13	6.9	-0.5	113.6

Notes:

1. All series 1200 parts are designed for 30" Hg (full vacuum) and have a maximum test at 26" Hg due to facility altitude and equipment limitations.
2. Maximum operating temperature of 250˚F for EPDM, Butyl and Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
3. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
4. Bill of Materials: Retaining Ring and Gusset, carbon steel hot dipped galvanized (HDG) or stainless steel; Rods, A193 B7 (HDG) or A193 B8M; Nuts, A194 2H (HDG) or A194 8M; Spherical Washer, stainless steel; Metal Reinforcement, high-tensile steel; and Textile Reinforcement, RFL-coated tire cord.
5. **WARNING**: Control units (sold separately) must be used when piping is not properly anchored. Number of rods are dependent upon maximum field test pressures. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.
6. Standard 125/150 lb. drilling includes, 1"-24" with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30"-60" with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb., 72"-108" with ANSI B16.1 Class 125 lb./ AWWA C207 Class B.

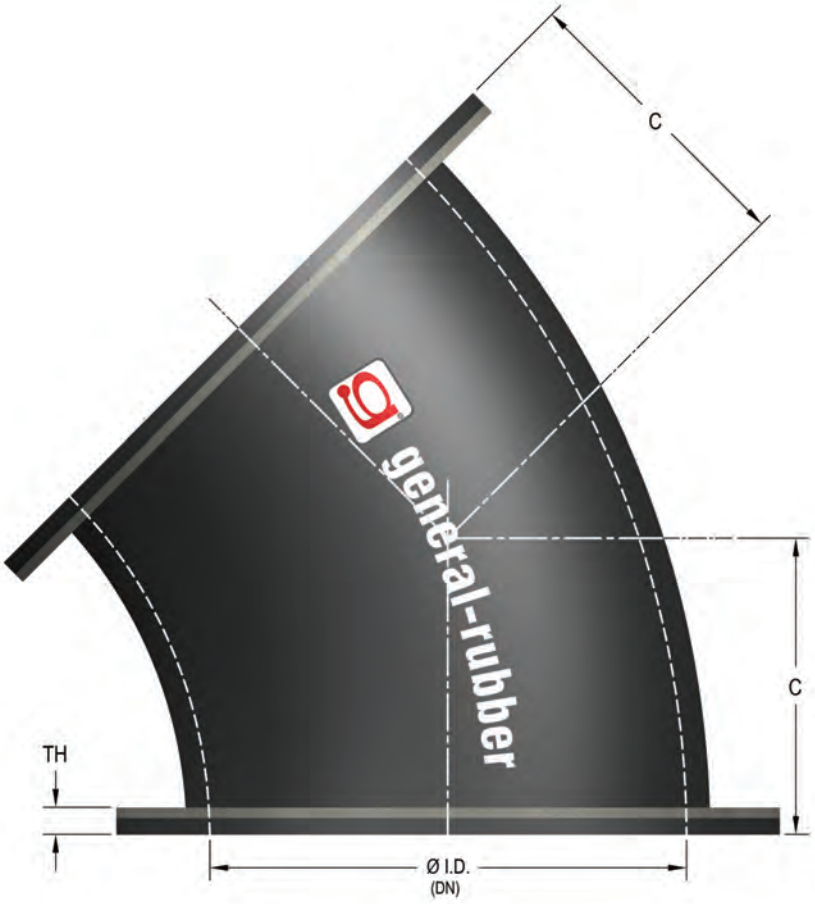
Rubber Flanged Fitting

Style 1100EF 45˚

General Rubber's Style 1100EF 45˚ rubber flanged fitting is an economical way of combining an elbow pipe fitting with an expansion joint. Additionally, it is designed to reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment, and relieve pipe and anchor stresses. Its spool type body is constructed with full rubber flanges, a high-grade leak-proof tube, multiple layers of high-strength tire cord, high tensile steel reinforcement, a seamless cover and hot dip galvanized steel retaining rings.

- Versatile hand-built construction, made in the USA
- Available in custom arrangements and sizes not shown
- Absorbs noise, vibration and shock
- Higher pressure rating than conventional expansion joints
- Hot dip galvanized retaining rings standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Excellent chemical and abrasion resistance
- 15" Hg standard design; full vacuum (30" Hg) available
- 250°F continuous service standard (400°F available)
- Integrally flanged design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more

Section Detail



STYLE 1100EF 45° Rubber Flange Fittings							PRESSURE	
I.D.	Flange O.D.	Bolt Circle B.C.	Bolt Holes No.	Bolt Holes Dia.	Center Line to Flange "C"	Flange "TH"	Pressure	Vacuum
in	in	in		in	in	in	psig	in-Hg
mm	mm	mm		mm	mm	mm	barg	barg
1	4 1/4	3 1/8	4	5/8	1 3/4	7/8	50	15
25	108	79.4	4	16	44.5	22	3.4	-0.5
1 1/2	5	3 7/8	4	5/8	2 1/4	7/8	50	15
40	127	98.4	4	16	57.2	22	3.4	-0.5
2	6	4 3/4	4	3/4	2 1/2	7/8	50	15
50	152.4	120.7	4	19	63.5	22	3.4	-0.5
2 1/2	7	5 1/2	4	3/4	3	7/8	50	15
65	177.8	139.7	4	19	76.2	22	3.4	-0.5
3	7 1/2	6	4	3/4	3	7/8	50	15
80	190.5	152.4	4	19	76.2	22	3.4	-0.5
4	9	7 1/2	8	3/4	4	7/8	50	15
100	228.6	190.5	8	19	101.6	22	3.4	-0.5
5	10	8 1/2	8	7/8	4 1/2	7/8	50	15
125	254	215.9	8	22	114.3	22	3.4	-0.5
6	11	9 1/2	8	7/8	5	7/8	50	15
150	279.4	241.3	8	22	127	22	3.4	-0.5
8	13 1/2	11 3/4	8	7/8	5 1/2	7/8	50	15
200	342.9	298.5	8	22	139.7	22	3.4	-0.5
10	16	14 1/4	12	1	6 1/2	7/8	50	15
250	406.4	362	12	25	165.1	22	3.4	-0.5
12	19	17	12	1	7 1/2	7/8	50	15
300	482.6	431.8	12	25	190.5	22	3.4	-0.5

Notes:

1. Maximum operating temperature of 250˚F for EPDM, Butyl & Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
2. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
3. Bill of Materials: Retaining Ring, carbon steel hot dipped galvanized (HDG) or stainless steel; Metal Reinforcement, high-tensile steel; and Textile Reinforcement, RFL-coated tire cord.
4. Standard 125/150 lb. drilling includes, 1"-24" with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30"-60" with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb.

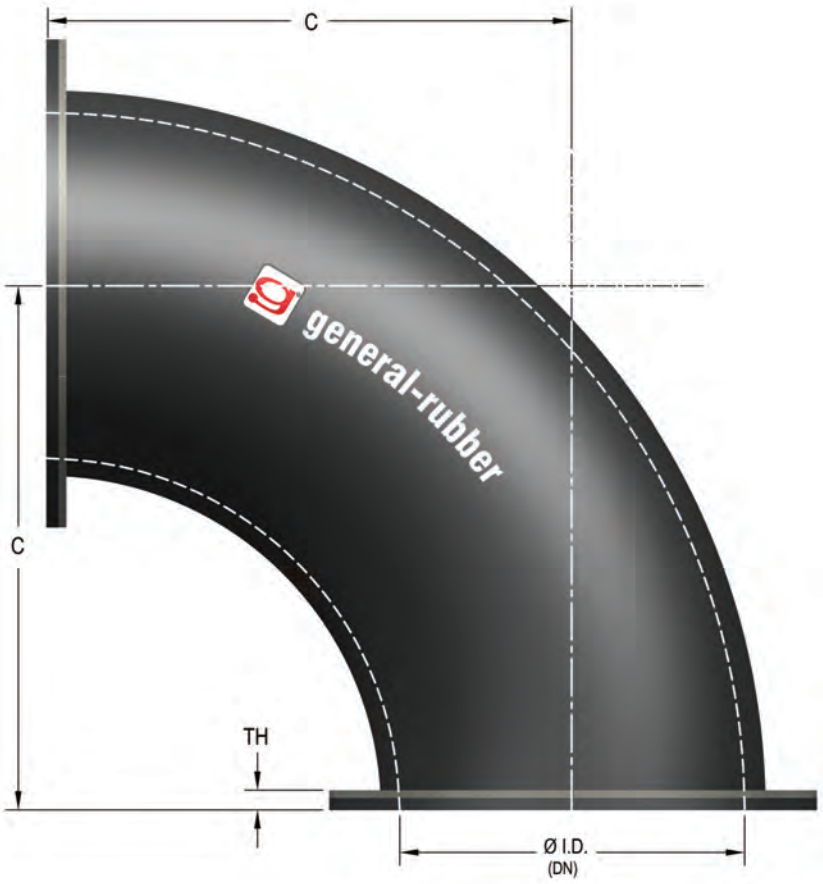
Rubber Flanged Fitting

Style 1100EF 90˚

General Rubber's Style 1100EF 90˚ rubber flanged fitting is an economical way of combining an elbow pipe fitting with an expansion joint. Additionally, it is designed to reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment, and relieve pipe and anchor stresses. Its spool type body is constructed with full rubber flanges, a high-grade leak-proof tube, multiple layers of high-strength tire cord, high tensile steel reinforcement, a seamless cover, and hot dip galvanized steel retaining rings.

- Versatile hand-built construction, made in the USA
- Available in custom arrangements and sizes not shown
- Absorbs noise, vibration and shock
- Higher pressure rating than conventional expansion joints
- Hot dip galvanized retaining rings standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Excellent chemical and abrasion resistance
- 15" Hg standard design; full vacuum (30" Hg) available
- 250°F continuous service standard (400°F available)
- Integrally flanged design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more

Section Detail
(1100EF 45° Typical)



STYLE 1100EF 90° Rubber Flange Fittings							PRESSURE	
I.D.	Flange O.D.	Bolt Circle B.C.	Bolt Holes No.	Bolt Holes Dia.	Center Line to Flange "C"	Flange "TH"	Pressure	Vacuum
in	in	in		in	in	in	psig	in-Hg
mm	mm	mm		mm	mm	mm	barg	barg
1	4 1/4	3 1/8	4	5/8	3 1/2	7/8	50	15
25	108	79.4	4	16	88.9	22	3.4	-0.5
1 1/2	5	3 7/8	4	5/8	4	7/8	50	15
40	127	98.4	4	16	101.6	22	3.4	-0.5
2	6	4 3/4	4	3/4	4 1/2	7/8	50	15
50	152.4	120.7	4	19	114.3	22	3.4	-0.5
2 1/2	7	5 1/2	4	3/4	5	7/8	50	15
65	177.8	139.7	4	19	127	22	3.4	-0.5
3	7 1/2	6	4	3/4	5 1/2	7/8	50	15
80	190.5	152.4	4	19	139.7	22	3.4	-0.5
4	9	7 1/2	8	3/4	6 1/2	7/8	50	15
100	228.6	190.5	8	19	165.1	22	3.4	-0.5
5	10	8 1/2	8	7/8	7 1/2	7/8	50	15
125	254	215.9	8	22	190.5	22	3.4	-0.5
6	11	9 1/2	8	7/8	8	7/8	50	15
150	279.4	241.3	8	22	203.2	22	3.4	-0.5
8	13 1/2	11 3/4	8	7/8	9	7/8	50	15
200	342.9	298.5	8	22	228.6	22	3.4	-0.5
10	16	14 1/4	12	1	11	7/8	50	15
250	406.4	362	12	25	279.4	22	3.4	-0.5
12	19	17	12	1	12	7/8	50	15
300	482.6	431.8	12	25	304.8	22	3.4	-0.5

Notes:

1. Maximum operating temperature of 250˚F for EPDM, Butyl & Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
2. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
3. Bill of Materials: Retaining Ring, carbon steel hot dipped galvanized (HDG) or stainless steel; Metal Reinforcement, high-tensile steel; and Textile Reinforcement, RFL-coated tire cord.
4. Standard 125/150 lb. drilling includes, 1"-24" with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30"-60" with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb.

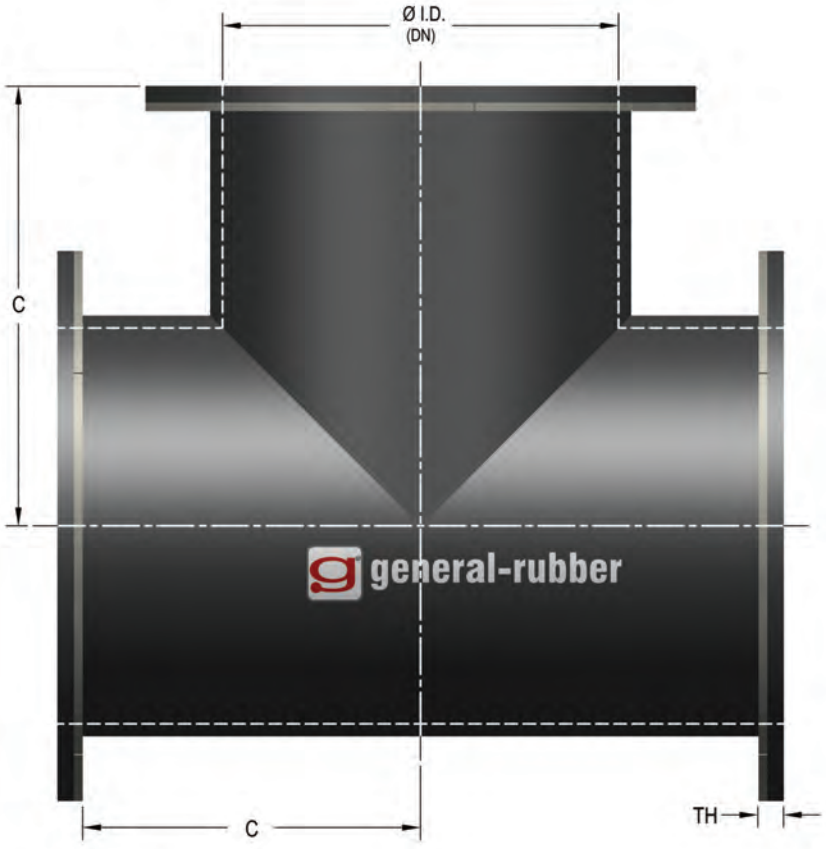
Rubber Flanged Fitting

Style 1100TF

General Rubber's Styles 1100TF rubber flanged fitting is an economical way of combining a tee pipe fitting with an expansion joint. Additionally, it is designed to reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment, and relieve pipe and anchor stresses. Its spool type body is constructed with full rubber flanges, a high-grade leak-proof tube, multiple layers of high-strength tire cord, high tensile steel reinforcement, a seamless cover, and hot dip galvanized steel retaining rings.

- Versatile hand-built construction, made in the USA
- Available in custom arrangements and sizes not shown
- Absorbs noise, vibration and shock
- Higher pressure rating than conventional expansion joints
- Hot dip galvanized retaining rings standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Excellent chemical and abrasion resistance
- 15" Hg standard design; full vacuum (30" Hg) available
- 250°F continuous service standard (400°F available)
- Integrally flanged design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more

Section Detail
(1100EF 45° Typical)



STYLE 1100TF Tee Rubber Flange Fittings							PRESSURE	
I.D.	Flange O.D.	Bolt Circle B.C.	Bolt Holes No.	Bolt Holes Dia.	Center Line to Flange "C"	Flange "TH"	Pressure	Vacuum
in	in	in		in	in	in	psig	in-Hg
mm	mm	mm		mm	mm	mm	barg	barg
1	4 1/4	3 1/8	4	5/8	3 1/2	7/8	50	15
25	108	79.4	4	16	88.9	22	3.4	-0.5
1 1/2	5	3 7/8	4	5/8	4	7/8	50	15
40	127	98.4	4	16	101.6	22	3.4	-0.5
2	6	4 3/4	4	3/4	4 1/2	7/8	50	15
50	152.4	120.7	4	19	114.3	22	3.4	-0.5
2 1/2	7	5 1/2	4	3/4	5	7/8	50	15
65	177.8	139.7	4	19	127	22	3.4	-0.5
3	7 1/2	6	4	3/4	5 1/2	7/8	50	15
80	190.5	152.4	4	19	139.7	22	3.4	-0.5
4	9	7 1/2	8	3/4	6 1/2	7/8	50	15
100	228.6	190.5	8	19	165.1	22	3.4	-0.5
5	10	8 1/2	8	7/8	7 1/2	7/8	50	15
125	254	215.9	8	22	190.5	22	3.4	-0.5
6	11	9 1/2	8	7/8	8	7/8	50	15
150	279.4	241.3	8	22	203.2	22	3.4	-0.5
8	13 1/2	11 3/4	8	7/8	9	7/8	50	15
200	342.9	298.5	8	22	228.6	22	3.4	-0.5
10	16	14 1/4	12	1	11	7/8	50	15
250	406.4	362	12	25	279.4	22	3.4	-0.5
12	19	17	12	1	12	7/8	50	15
300	482.6	431.8	12	25	304.8	22	3.4	-0.5

Notes:

1. Maximum operating temperature of 250˚F for EPDM, Butyl & Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
2. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
3. Bill of Materials: Retaining Ring, carbon steel hot dipped galvanized (HDG) or stainless steel; Metal Reinforcement, high-tensile steel; and Textile Reinforcement, RFL-coated tire cord.
4. Standard 125/150 lb. drilling includes, 1"-24" with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30"-60" with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb.

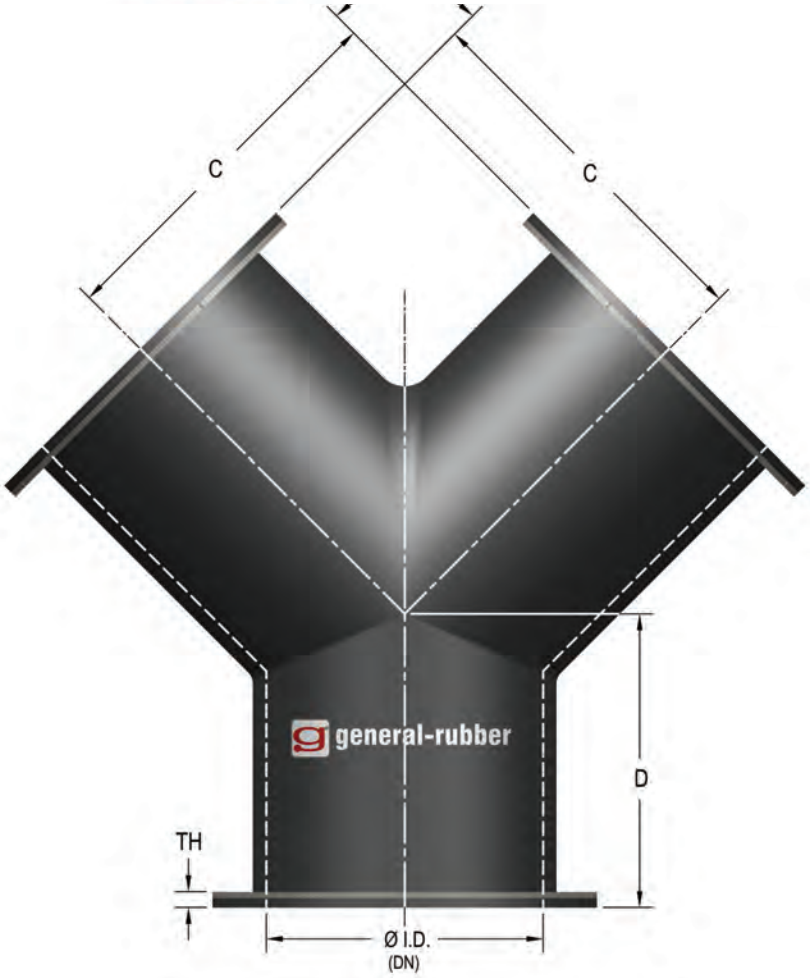
Rubber Flanged Fitting

Style 1100YF

General Rubber's Styles 1100YF rubber flanged fitting is an economical way of combining a wye pipe fitting with an expansion joint. Additionally, it is designed to reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment, and relieve pipe and anchor stresses. Its spool type body is constructed with full rubber flanges, a high-grade leak-proof tube, multiple layers of high-strength tire cord, high tensile steel reinforcement, a seamless cover, and hot dip galvanized steel retaining rings.

- Versatile hand-built construction, made in the USA
- Available in custom arrangements and sizes not shown
- Absorbs noise, vibration and shock
- Higher pressure rating than conventional expansion joints
- Hot dip galvanized retaining rings standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Excellent chemical and abrasion resistance
- 15" Hg standard design; full vacuum (30" Hg) available
- 250°F continuous service standard (400°F available)
- Integrally flanged design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more

Section Detail
(1100EF 45° Typical)



STYLE 1100YF Wye Rubber Flange Fittings							PRESSURE	
I.D.	Flange O.D.	Bolt Circle B.C.	Bolt Holes No.	Bolt Holes Dia.	Center Line to Flange "C"	Flange "TH"	Pressure	Vacuum
in	in	in		in	in	in	psig	in-Hg
mm	mm	mm		mm	mm	mm	barg	barg
1	4 1/4	3 1/8	4	5/8	3 1/2	7/8	50	15
25	108	79.4	4	16	88.9	22	3.4	-0.5
1 1/2	5	3 7/8	4	5/8	4	7/8	50	15
40	127	98.4	4	16	101.6	22	3.4	-0.5
2	6	4 3/4	4	3/4	4 1/2	7/8	50	15
50	152.4	120.7	4	19	114.3	22	3.4	-0.5
2 1/2	7	5 1/2	4	3/4	5	7/8	50	15
65	177.8	139.7	4	19	127	22	3.4	-0.5
3	7 1/2	6	4	3/4	5 1/2	7/8	50	15
80	190.5	152.4	4	19	139.7	22	3.4	-0.5
4	9	7 1/2	8	3/4	6 1/2	7/8	50	15
100	228.6	190.5	8	19	165.1	22	3.4	-0.5
5	10	8 1/2	8	7/8	7 1/2	7/8	50	15
125	254	215.9	8	22	190.5	22	3.4	-0.5
6	11	9 1/2	8	7/8	8	7/8	50	15
150	279.4	241.3	8	22	203.2	22	3.4	-0.5
8	13 1/2	11 3/4	8	7/8	9	7/8	50	15
200	342.9	298.5	8	22	228.6	22	3.4	-0.5
10	16	14 1/4	12	1	11	7/8	50	15
250	406.4	362	12	25	279.4	22	3.4	-0.5
12	19	17	12	1	12	7/8	50	15
300	482.6	431.8	12	25	304.8	22	3.4	-0.5

Notes:

1. Maximum operating temperature of 250˚F for EPDM, Butyl & Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
2. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
3. Bill of Materials: Retaining Ring, carbon steel hot dipped galvanized (HDG) or stainless steel; Metal Reinforcement, high-tensile steel; and Textile Reinforcement, RFL-coated tire cord.
4. Standard 125/150 lb. drilling includes, 1"-24" with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30"-60" with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb.

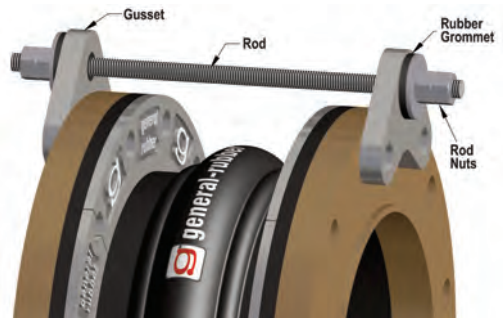
Control Units, Limit Rods and Tie Rods

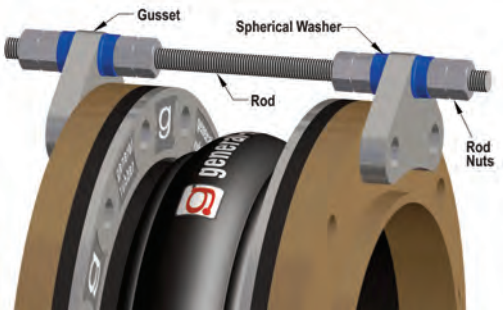
Control units can be designed as limit rods or tie rods depending on the application. Their designs are based on the calculated thrust force of the rubber expansion joint at the specified pressure and can be attached to the external or internal hardware of the expansion joint. The arrangement can also include a combination of rubber grommets, flat or spherical washers, as well as internal limits for specific applications. The standard gusset plates are high-grade carbon steel with a hot dip galvanized finish, and the standard rods are high tensile steel with a hot dip galvanized finish. Stainless steel control units are also readily available, as are those made of alternative materials including, but not limited to, aluminum, bronze, and Teflon-coated hardware.

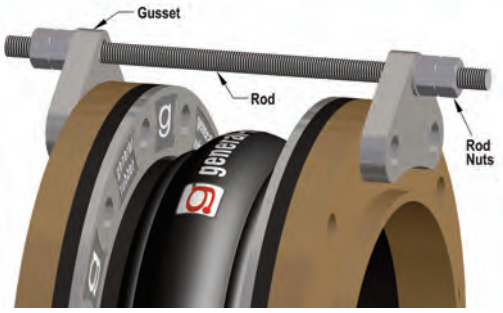
Limit Rods are control units designed with a gap to allow the rubber expansion joint's movement range (axial, angular, lateral, and torsional) during normal operation. In the event of main anchor failure, the limits rods will engage and function as a secondary restraint. This will prevent the rubber expansion joints from over-extension or over-compression, by restraining the full pressure thrust loads.

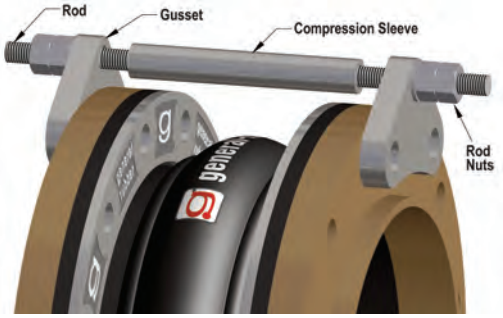
Tie Rods are control units designed to continuously restrain expansion joints axially while also restricting their other movements (angular, lateral and torsional) during normal operation. The tie rods will act as the primary restraint by continuously restraining the full pressure thrust loads.

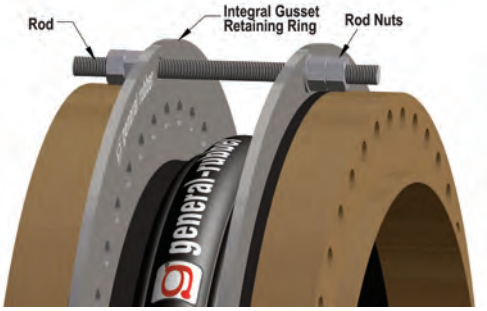
- Protects expansion joints by restraining pressure thrust forces
- High tensile galvanized steel rods standard, stainless steel and other materials available
- Galvanized gusset plates standard, stainless steel and other materials available
- Rubber grommets isolate vibration and are standard on sizes 1" to 12" diameter
- Internal nuts or compression sleeves to prevent over-compression are available
- Spherical washers prevent binding while minimizing lateral forces
- Double nuts are used to lock limit points and allow for field adjustment
- Custom restraints available including universal, hinge and gimbal arrangements











Limit Rods Configuration

- Limit Rods will function as secondary restraint once the outer gap has closed
- Movement range dependent on both gap value and expansion joint capability

Outer Grommet, Inner Bare (GR/B) up to 12" [300mm]

Outer Grommet, Inner Washer (GR/W) up to 12" [300mm]

Outer Washer, Inner Bare (W/B)

Outer & Inner Washer (W/W)

Outer Spherical Washer, Inner Bare (SW/B)

Outer & Inner Spherical Washer (SW/SW)

Inner Compression Sleeve (W/S)

Outer Spherical Washer, Inner Washer (SW/W)

Outer Spherical Washer, Inner Bare Integral Design (INT-SWB)

Outer & Inner Spherical Washer Integral Design (INT-SWSW)

Outer Washer, Inner Bare Integral Design (INT-WB)

Outer Spherical Washer, Inner Washer Integral Design (INT-SWW)

Tie Rods Configuration

- Tie Rods will continuously restrain the full pressure thrust load based on no initial outer gap
- Movement range dependent on both gap value and expansion joint capability

Outer Grommet, Inner Bare (GR/B) up to 12" [300mm]

Outer Grommet, Inner Washer (GR/W) up to 12" [300mm]

Outer Washer, Inner Bare (W/B)

Outer & Inner Washer (W/W)

Outer Spherical Washer, Inner Bare (SW/B)

Outer & Inner Spherical Washer (SW/SW)

Inner Compression Sleeve (W/S)

Outer Spherical Washer, Inner Washer (SW/W)

Outer Spherical Washer, Inner Bare Integral Design (INT-SWB)

Outer & Inner Spherical Washer Integral Design (INT-SWSW)

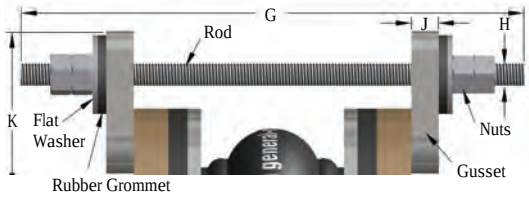
Outer Washer, Inner Bare Integral Design (INT-WB)

Outer Spherical Washer, Inner Washer Integral Design (INT-SWW)

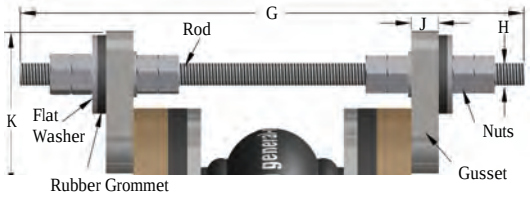
Carbon Steel Control Units

Sizes 1" [DN25] - 108" [DN2700] - 150-lb Drilling

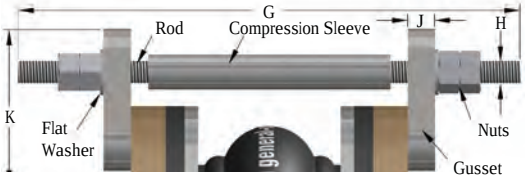
Outer Grommet, Inner Bare (GR/B) up to 12" [300mm]



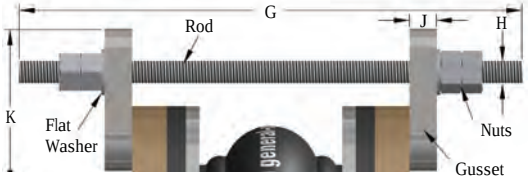
Outer Grommet, Inner Washer (GR/W) up to 12" [300mm]



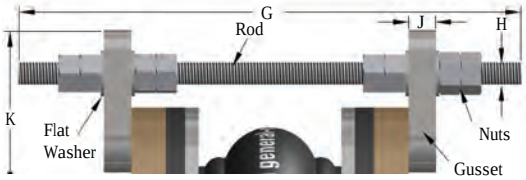
Inner Compression Sleeve (W/S)



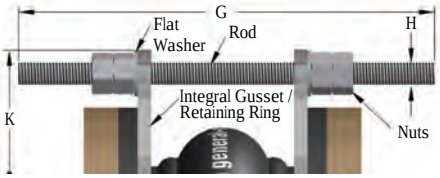
Outer Washer, Inner Bare (W/B)



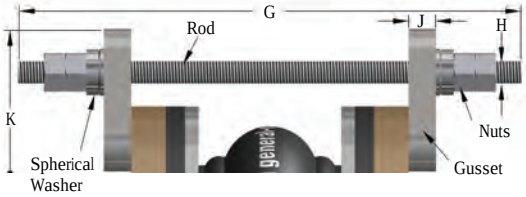
Outer & Inner Washer (W/W)



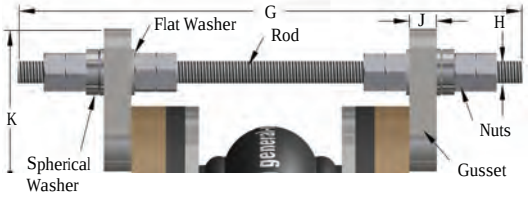
Outer Washer, Inner Bare Integral Design (INT-WB)



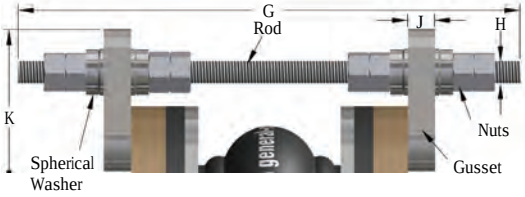
Outer Spherical Washer, Inner Bare (SW/B)



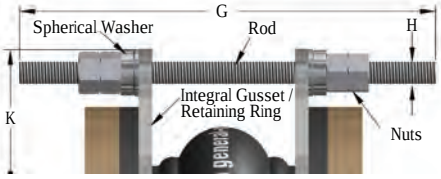
Outer Spherical Washer, Inner Washer (SW/W)



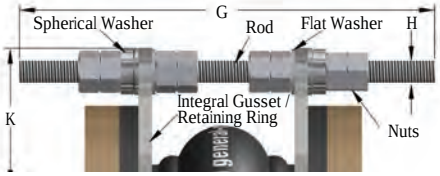
Outer & Inner Spherical Washer (SW/SW)



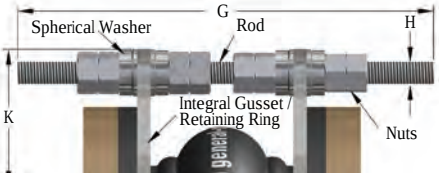
Outer Spherical Washer, Inner Bare Integral Design (INT-SWB)



Outer Spherical Washer, Inner Washer Integral Design (INT-SWW)



Outer & Inner Spherical Washer Integral Design (INT-SWSW)



Carbon Steel Control Units

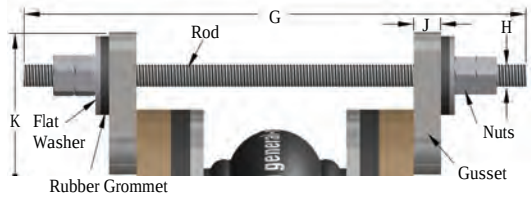
Pressure Chart

Pipe Size ID (in)	2 Rod Set Max Pressure (psi)	3 Rod Set Max Pressure (psi)	4 Rod Set Max Pressure (psi)	5 Rod Set Max Pressure (psi)	6 Rod Set Max Pressure (psi)	7 Rod Set Max Pressure (psi)	8 Rod Set Max Pressure (psi)	9 Rod Set Max Pressure (psi)	Rod Dia. "H" (in)	Gusset Thk. "J" (in)	Gusset Thk. "J" (mm)	Gusset wt. (lb)	Max Gusset OD "K" (in)	Max Rod Length "G" (in)	Pipe Size ID (in)
1	300	-	-	-	-	-	-	-	5/8"	0.39	10	0.9	8.6	16	1
1.5	300	-	-	-	-	-	-	-		0.39	10	1.0	9.3	16	1.5
2	350	-	-	-	-	-	-	-		0.55	14	1.7	10.3	16	2
2.5	350	-	-	-	-	-	-	-		0.39	10	1.3	10.8	16	2.5
3	350	-	-	-	-	-	-	-					11.3	16	3
4	350	-	-	-	-	-	-	-		0.55	14	1.7	13.3	16	4
5	300	-	-	-	-	-	-	-		0.79	20	3.0	14.4	16	5
6	250	-	-	-	-	-	-	-					15.4	16	6
8	300	-	-	-	-	-	-	-					17.9	16	8
10	287	300	-	-	-	-	-	-		0.79	20	3.1	20.3	16	10
12	199	275	-	-	-	-	-	-					23.3	16	12
14	216	275	-	-	-	-	-	-	3/4"	0.98	25	3.9	24.6	21	14
16	166	249	275	-	-	-	-	-		0.98	25	4.2	27.3	21	16
18	131	196	262	275	-	-	-	-					28.9	21	18
20	106	159	212	225	-	-	-	-					31.1	21	20
22	87	131	175	190	-	-	-	-		0.98	25	4.3	33.4	21	22
24	73	110	147	184	190	-	-	-					35.9	21	24
30	85	128	150	-	-	-	-	-	1"	1.38	35	6.3	43.5	29	30
32	75	113	140	-	-	-	-	-		1.38	35	8.3	46.8	29	32
34	66	100	130	-	-	-	-	-					48.7	29	34
36	59	89	119	125	-	-	-	-					51.0	29	36
40	48	72	96	120	125	-	-	-					55.5	29	40
42	43	65	87	109	125	-	-	-					57.9	29	42
44	39	59	79	99	110	-	-	-					60.0	29	44
48	55	82	110	-	-	-	-	-	1 1/4"	1.97	50	12.2	65.3	32	48
52	47	70	94	110		-	-	-		1.97	50	15.5	70.3	32	52
54	43	65	87	109	110	-	-	-					72.6	32	54
56	40	60	81	101	110	-	-	-					74.8	32	56
60	35	53	70	88	106	110	-	-					79.1	32	60
62	33	49	66	82	99	110	-	-					81.6	32	62
64	31	46	62	77	93	108	110	-					83.9	32	64
66	29	43	58	73	87	102	110	-					85.9	32	66
72	24	36	49	61	73	85	98	105					92.4	32	72
78	20	31	41	52	62	73	83	94					98.9	32	78
84	26	40	53	67	80	94	95	-	1 1/2"	1.97	50	24.1	106.7	35	84
90	23	35	46	58	70	81	90	-					113.4	35	90
96	20	30	41	51	61	72	82	85					120.1	35	96
102	18	27	36	45	54	63	72	80		1.97	50	26.3	126.9	35	102
108	16	24	32	40	48	56	65	73					133.5	35	108

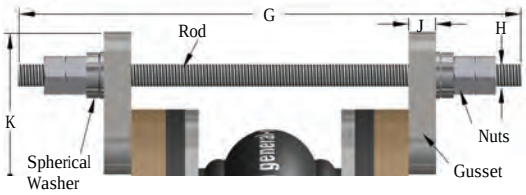
Stainless Steel Control Units

Sizes 1" [DN25] - 108" [DN2700] - 150-lb Drilling

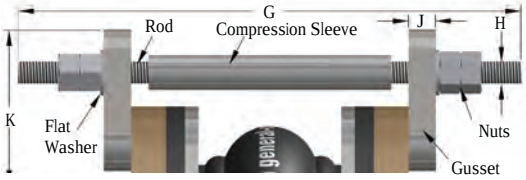
Outer Grommet, Inner Bare (GR/B) up to 12" [300mm]



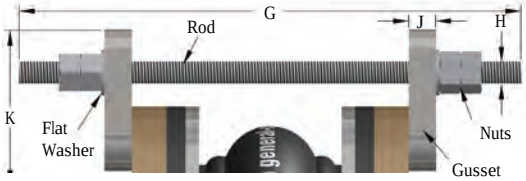
Outer Spherical Washer, Inner Bare (SW/B)



Inner Compression Sleeve (W/S)



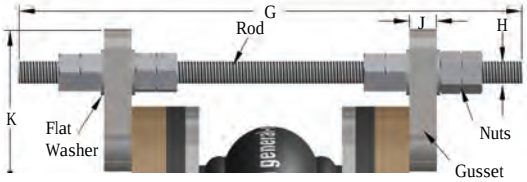
Outer Washer, Inner Bare (W/B)



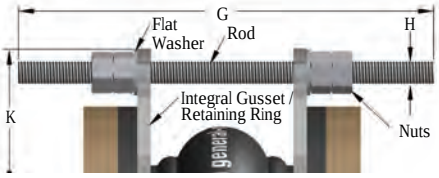
The above configuration corresponds to the data on the following page (63).

Contact General Rubber regarding the configuration below.

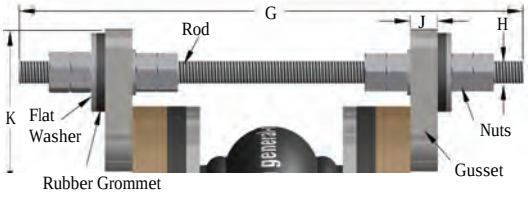
Outer & Inner Washer (W/W)



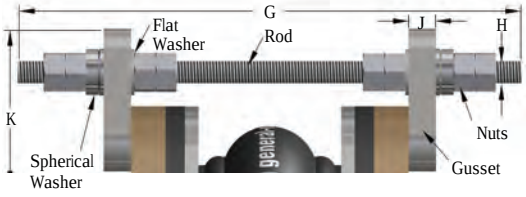
Outer Washer, Inner Bare Integral Design (INT-WB)



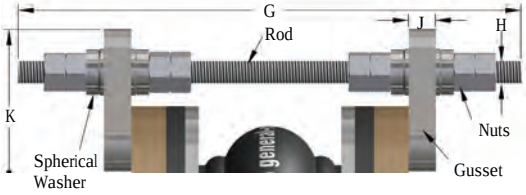
Outer Grommet, Inner Washer (GR/W) up to 12" [300mm]



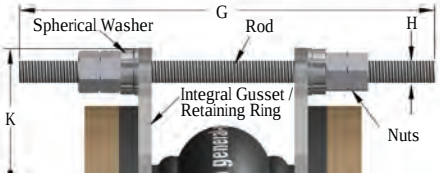
Outer Spherical Washer, Inner Washer (SW/W)



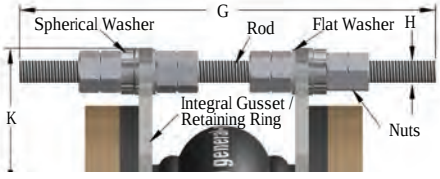
Outer & Inner Spherical Washer (SW/SW)



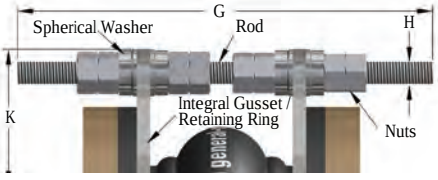
Outer Spherical Washer, Inner Bare Integral Design (INT-SWB)



Outer Spherical Washer, Inner Washer Integral Design (INT-SWW)



Outer & Inner Spherical Washer Integral Design (INT-SWSW)



Stainless Steel Control Units

Pressure Chart

Pipe Size ID (in)	2 Rod Set Max Pressure (psi)	3 Rod Set Max Pressure (psi)	4 Rod Set Max Pressure (psi)	5 Rod Set Max Pressure (psi)	6 Rod Set Max Pressure (psi)	7 Rod Set Max Pressure (psi)	8 Rod Set Max Pressure (psi)	9 Rod Set Max Pressure (psi)	Rod Dia. "H" (in)	Gusset Thk. "J" (in)	Gusset Thk. "J" (mm)	Gusset wt. (lb)	Max Gusset OD "K" (in)	Max Rod Length "G" (in)	Pipe Size ID (in)
1	300	-	-	-	-	-	-	-	5/8"	0.39	10	0.9	8.3	16	1
1.5	300	-	-	-	-	-	-	-		0.39	10	1.0	9.0	16	1.5
2	350	-	-	-	-		-	-		0.39	10	1.4	10.0	16	2
2.5	350	-	-	-	-	-	-	-		0.39	10	1.5	11.0	16	2.5
3	350	-	-	-	-	-	-	-					11.5	16	3.0
4	350	-	-	-	-	-	-	-		0.39	10	1.4	13.0	16	4
5	300	-	-	-	-	-	-	-		0.79	20	3.1	14.0	16	5.0
6	250	-	-	-	-	-	-	-					15.1	16	6
8	300	-	-	-	-	-	-	-					17.5	16	8
10	252	300	-	-	-	-	-	-		0.79	20	3.2	20.0	16	10
12	175	262	275	-	-	-	-	-					23.0	16	12
14	190	275	-	-	-	-	-	-	3/4"	0.98	25	3.8	24.1	21	14
16	145	218	275	-	-	-	-	-		0.98	25	4.3	26.8	21	16
18	115	172	230	275	-	-	-	-					28.3	21	18
20	93	139	186	225	-	-	-	-					30.6	21	20
22	77	115	154	190	-	-	-	-		0.98	25	4.4	32.8	21	22
24	64	96	129	161	190	-	-	-					35.3	21	24
26	55	82	110	137	165	175	-	-					37.3	21	26
30	68	102	136	150	-	-	-	-	1"	1.38	35	5.8	42.8	29	30
32	60	90	120	140	-	-	-	-		1.38	35	7.7	46.1	29	32
34	53	79	106	130	-	-	-	-					47.9	29	34
36	47	71	94	118	125	-	-	-					50.3	29	36
40	38	57	76	96	115	125	-	-					54.8	29	40
42	34	52	69	87	104	121	125	-					57.1	29	42
48	41	62	83	104	110	-	-	-	1 1/4"	1.38	35	9.3	64.3	32	48
52	35	53	71	89	106	110	-	-		1.38	35	12.7	69.3	32	52
54	33	49	66	82	99	110	-	-					71.5	32	54
56	30	45	61	76	91	107	110	-					73.9	32	56
60	26	40	53	67	80	93	107	110					78.2	32	60
62	25	37	50	62	75	87	100	110					80.7	32	62
64	23	35	46	58	70	81	93	105					83.0	32	64
66	22	33	44	55	66	77	88	99					85.0	32	66
72	18	27	37	46	55	65	74	83					91.5	32	72
78	15	23	31	39	47	55	63	71					98.0	32	78
84	17	26	34	43	52	61	69	78	1 1/2"	1.38	35	15.8	105.3	35	84
90	15	22	30	38	45	53	60	68					112.1	35	90
96	13	20	26	33	40	46	53	60					118.8	35	96
102	11	17	23	29	35	41	47	53		1.38	35	17.9	125.6	35	102
108	10	15	21	26	31	37	42	47					132.3	35	108

Installation, Maintenance & Storage

Rubber Expansion Joints (REJ)

Warning • Rubber Expansion Joints (REJ) may operate in pipelines, or equipment carrying fluids and/or gases at elevated temperatures and pressures, and may transport hazardous materials. Precautions should be taken to protect personnel in the event of leakage or spray. REJs should only be installed where inspections are possible and should be installed over areas with proper drainage. REJ installations should be conducted by authorized and qualified pipe fitters. If the REJ is to be installed underground, or will be submerged in water, contact General Rubber Corporation (**GRC**) for specific recommendations.

Service Conditions & Inspection • Check that the temperature, pressure, vacuum and movement ratings for the REJ are not exceeded by system conditions. Also verify that the REJ elastomers are compatible with the process fluid or gas. *If any of these ratings are exceeded, contact **GRC** immediately.* Visually inspect REJs for cuts and gouges from transport or worksite handling prior to installation. Be advised that hand-wrapped REJs are built using "cure tape" which may leave impressions, folds or creases in the cover; these are typical of the REJ industry and are only cosmetic in nature. There may also be residual Talc on the inside of the REJ — a typical mold release which is nontoxic and harmless — this chalk-like surface finish is also cosmetic in nature and common of the REJ industry.

Alignment • REJs should not be used to rectify piping misalignment of more than 1/8" [3.2mm]. Exceeding allowable misalignment value may cause damage and void the warranty. Misalignment will detract from rated movements. The use of pipe guides may be required to maintain proper alignment and support the weight of the pipe. Consult **GRC**'s Technical Guidelines for specific recommendations. *Note: **GRC** can fabricate REJs with built-in offsets to accommodate field dimension variances.*

Anchoring • When using REJs in a piping system they must be restrained from pipeline pressure thrust forces. The magnitude of this force is the pressure times the projected cross-sectional area in the pipeline and is imposed on any change of direction or termination point. If these forces are not properly restrained, they will over-extend the REJ and cause failure. They may also subject the pipeline and its components to unanticipated stresses. The pipeline must have restraints/anchors at any change of direction or termination point. The illustrations of pipeline restraint/anchoring shown in Figure 1 are to provide better understanding of the impact of pressure thrust forces only. These illustrations also provide better understanding of the role of control units in a typical piping system. It is not recommended to install more than one single REJ between two adjacent anchors in any straight pipe run. The Caution note on illustration 3 in figure 1 is to clarify that a pump or other sensitive equipment should not be used as an anchor unless the applied pressure thrust forces are within allowable nozzle loads as dictated by the equipment manufacturer. Contact **GRC** with any questions or concerns prior to installation.

Control Units • In a ***restrained/anchored*** pipeline, it is recommended to use a **Limit-Rod Control Unit** configuration to restrict the REJ's movement to within its allowable axial, lateral, and angular movements. The Limit Rod Nuts must be set with proper spacing/gaps to allow freedom of movement during normal operation (see Figure 2). In the event of a main anchor failure, they are designed to prevent the REJ's overextension by restraining the full pressure thrust force after the space/gap is consumed. • In an ***unrestrained/unanchored*** pipeline, it is recommended to use a **Tie-Rod Control Unit** configuration to continuously restrain the full pressure thrust force while permitting lateral deflection (see Figure 2). Angular rotation can be accommodated with a two Tie-Rod configuration located 90° opposed to the direction of rotation. • *There are many Control Unit configurations. Figure 2 illustrates the most common. Contact **GRC** for further clarification if the illustration does not match what is being installed.*

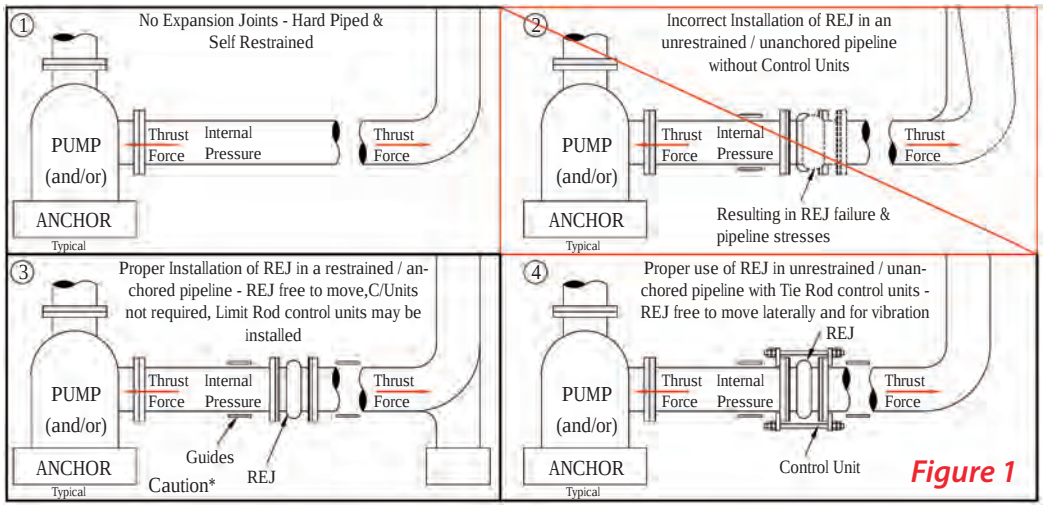
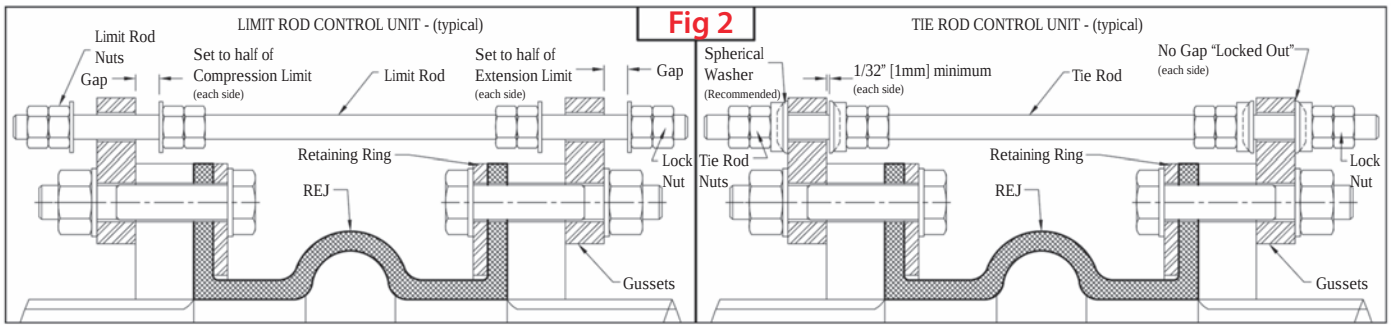
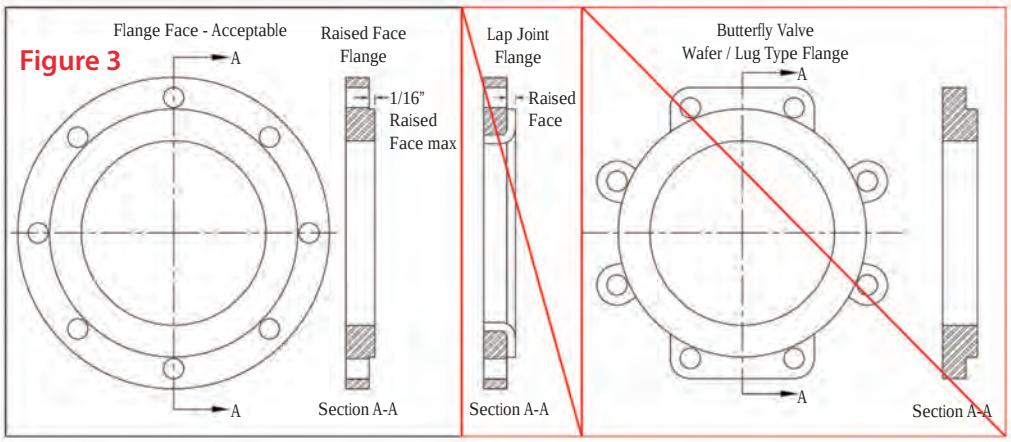


Figure 1



Mating Flanges • Install the REJ against the mating flange. It is recommended to install bolt heads against the retaining ring. The use of SAE-sized washers at the retaining ring split is also recommended, otherwise take precaution to ensure that the bolt threads do not come in contact with the REJ arch section. Face-to-face dimensions (F/F) of the REJ as shown on a typical submittal drawing should be within 1/8" [3.2mm] of the breech opening. Make sure the mating flanges are clean and are either the flat-face type or have no more than 1/16" [1.5 mm] of a raised face. Never install a REJ next to a wafer type check valve, butterfly valve, lap joint flange, Victaulic, or any other non-continuous flange, as it will cause flange damage and void the warranty. An acceptable mating surface can be achieved with the use of flange spacers or filler flanges. Non metallic flanges and some demanding applications may require a machined surface for proper sealing as per AWWA C207 Section 4.2.2. Contact **GRC** for help with any questions or concerns.



Bolting Torque • Tighten bolts in stages by alternating around the flange in a star pattern. If the REJ has an integral rubber flange, the bolts should be tight enough to make the outer rubber flange bulge slightly between the retaining ring and the mating flange. Avoid using any rubber gaskets. Contact **GRC** for recommended torque values based on your operating pressures. REJ flanges may have to be retightened after initial installation due to the rubber flanges relaxing and taking a compression set. Check bolt tightness two or three weeks after installation and retighten as needed. *Never retighten bolts when the pipeline is under pressure.*

Maintenance • REJs should be inspected regularly to insure they are in proper working order. Check the face-to-face dimension for any changes and make sure it is still within allowable limits. Look for any obvious bulges, tears, cracks or other damage. Any tears or voids on the cover without reinforcing fabric showing is cosmetic in nature and can be field remedied with the use of a rubber compound.

A weather-resistant compound should be used for outdoor installations. It is recommended that REJs in a hot, arid environment be provided with a sun shield/cover, or periodically painted with an elastomer-based UV resistant coating. ***DO NOT*** *insulate REJs with fiberglass or other insulation material.* ***DO NOT*** *weld in the vicinity of an REJ.* Whenever possible, inspect the inside tube for damage or wear, including voids or blisters. The inside tube should not be hard/brittle or gummy in texture, or be worn to the point of the fabric showing. It is recommended that inspections increase in frequency during the later stages of service life as elastomers tend to age and lose their inherent flexibility and resiliency.

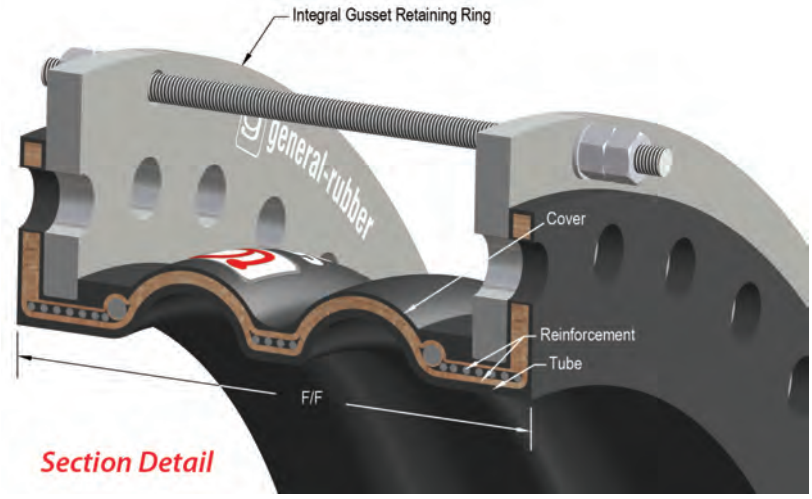
Storage • Ideal storage is a cool and dry warehouse location with relative humidity above 25%. Store flange face down on a smooth pallet or wooden platform. Storage near ozone-producing equipment should be avoided. Do not store other heavy items on top of the REJs. If storage must be outdoors, the expansion joints should be placed on smooth, wooden platforms and should not be in contact with the ground and/or exposed to vermin. Cover with a tarpaulin or store in original container. A maximum 10-year shelf life may be expected with ideal conditions.

Large Joint Handling • Do not lift with ropes or bars through the bolt holes. If lifting through the bore, use padding or a saddle to distribute the weight. Make sure cables, chains or fork lift tines do not contact the rubber. Do not let REJs sit vertically on the flange edges, and don't roll the joint on its flanged edges.

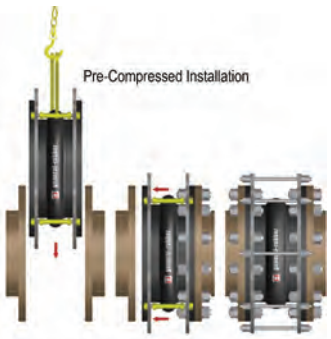
Dismantling

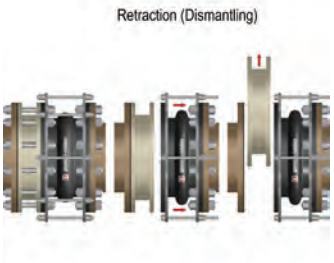
Style 5100D

General Rubber's Style 5100D dismantling rubber expansion joint (REJ) is designed for self-retraction to facilitate access to piping and equipment as well as for unmatched ease of installation and subsequent removal. Additionally, it is designed to absorb large all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, and relieve pipe and anchor stresses. Its spool type body is constructed with full rubber flanges, a high-grade leak-proof tube, multiple layers of high strength tire cord, high tensile steel reinforcement, a seamless cover, and hot dip galvanized steel retaining rings. Control units are typically internally attached and used as limit rods for secondary restraint or as tie rods when the support structure or adjacent equipment has load limitations.



- Versatile hand-built construction, made in the USA
- Standard or custom face-to-face dimensions
- Available in multiple arches or custom offset arrangements and sizes not shown
- Wide flowing arch design
- Exceptional all directional movement capability
- Virtually eliminates sediment buildup
- Absorbs noise, vibration and shock
- Higher pressure rating than conventional expansion joints
- Hot dip galvanized integral gusset retaining rings standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Excellent chemical and abrasion resistance
- Full vacuum rating (30" Hg) in all single arch sizes
- 250°F continuous service standard (400°F available)
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Integrally flanged design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more





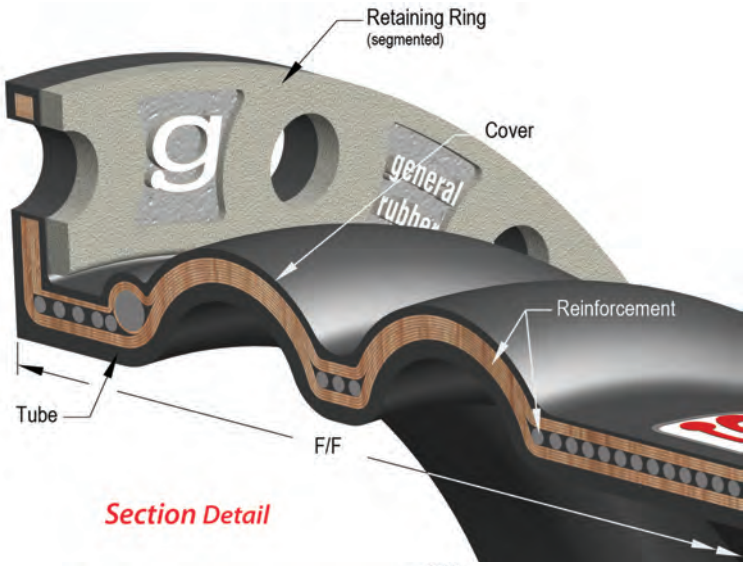
Notes:

1. Data sheet available upon request. For sizes and arrangements refer to series 1100's for reference. | 2. Maximum operating temperature of 250˚F for EPDM, Butyl and Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available. | 3. Tied joints have axial movement limitation. | 4. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department. | 5. Bill of Materials: Integral Gusset Retaining Ring, carbon steel hot dipped galvanized (HDG) or stainless steel; Rods, A193 B7 (HDG) or A193 B8M; Nuts, A194 2H (HDG) or A194 8M; Spherical Washer, stainless steel; Metal Reinforcement, high tensile steel; and Textile Reinforcement, RFL-coated tire cord. | 6. **WARNING**: Control units (sold separately) must be used when piping is not properly anchored. Number of rods are dependent upon maximum field test pressures. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended. | 7. Standard 125/150 lb. drilling includes, 1"-24" with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30"-60" with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb., 72"-108" with ANSI B16.1 Class 125 lb./ AWWA C207 Class B.

Universal

Style 5100U

General Rubber's Style 5100U universal rubber expansion joint (REJ) features two resilient arch sections separated by a straight section to facilitate greater lateral movement capability. This single unit arrangement represents an effective solution for absorbing axial thermal movements from adjacent pipe runs. Additionally, it is designed to absorb large all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment, and relieve pipe and anchor stresses. Its spool type body is constructed with full rubber flanges, a high-grade leak-proof tube, multiple layers of high-strength tire cord, high tensile steel reinforcement, a seamless cover, and hot dip galvanized steel retaining rings. Their control units are externally or internally attached and used as limit rods for secondary restraint in a properly anchored piping system or as tie rods when the support structure or adjacent equipment has load limitations.



Section Detail

- Versatile hand-built construction, made in the USA
- Most economical restrained design
- Exceptional lateral movement capabilities
- Standard or custom face-to-face dimensions
- Available in multiple arch sections or custom offset arrangements and sizes not shown
- Wide flowing arch design
- Virtually eliminates sediment buildup
- Absorbs noise, vibration and shock
- Higher pressure rating than conventional expansion joints
- Hot dip galvanized retaining rings standard
- Hot dip galvanized gusset plates and high tensile galvanized steel rods standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Excellent chemical and abrasion resistance
- 250°F continuous service standard (400°F available)
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Integrally flanged design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Filled arch design available (reduces movement by 50% and increases spring rates by 400%)
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more

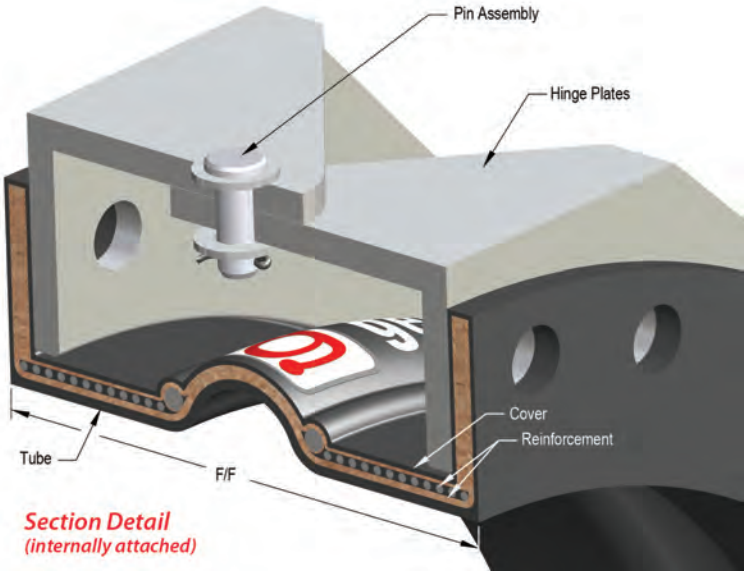
Notes:

1. Data sheet available upon request. For sizes and arrangements refer to series 1100's for reference. | 2. Maximum operating temperature of 250˚F for EPDM, Butyl and Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available. | 3. Tied joints have axial movement limitation. | 4. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department. | 5. Bill of Materials: Retaining Ring and Gusset, carbon steel hot dipped galvanized (HDG) or stainless steel; Rods, A193 B7 (HDG) or A193 B8M; Nuts, A194 2H (HDG) or A194 8M; Spherical Washer, stainless steel; Metal Reinforcement, high tensile steel; and Textile Reinforcement, RFL-coated tire cord. | 6. **WARNING:** Control units (sold separately) must be used when piping is not properly anchored. Number of rods are dependent upon maximum field test pressures. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended. | 7. Standard 125/150 lb. drilling includes, 1"-24" with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30"-60" with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb., 72"-108" with ANSI B16.1 Class 125 lb./ AWWA C207 Class B.

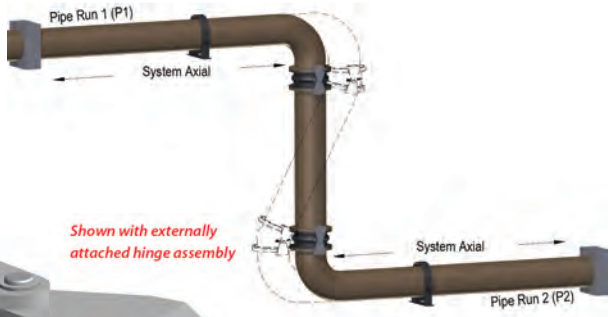
Hinge

Style 5100H

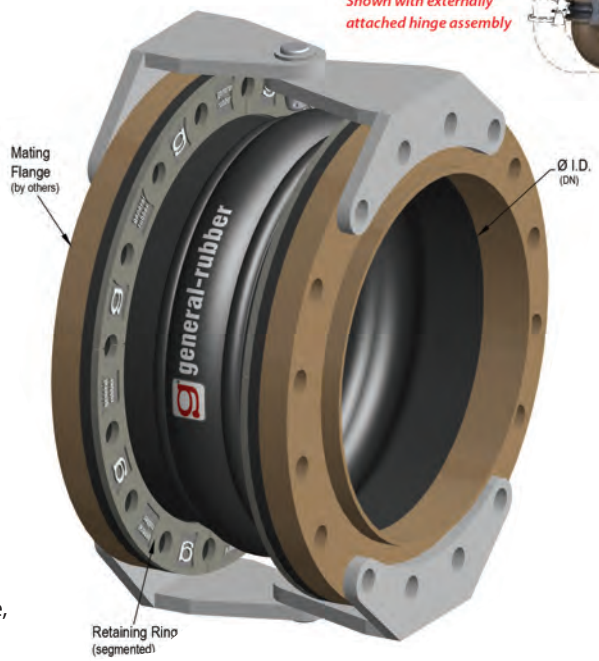
General Rubber's Style 5100H hinge rubber expansion joint (REJ) is designed to facilitate and isolate angular rotation in one plane. The arrangement consists of a pair of hinge plates connected with pins and attached to the external or internal hardware of the expansion joint. The hinge assembly must be designed for the internal pressure thrust forces of the system. It can be used in sets of two or three to absorb large lateral movements in a single plane. This optimally designed arrangement is an effective solution for absorbing large axial thermal movements from an adjacent pipe run. Its spool type body is constructed with full rubber flanges, a high-grade leak proof-tube, multiple layers of high-strength tire cord, high tensile steel reinforcement, and a seamless cover. They are commonly used when the support structure or adjacent equipment has load limitations. The economic benefits of this arrangement include a smaller system footprint with far fewer anchors and guides.



Section Detail
(internally attached)



Shown with externally attached hinge assembly



- Versatile hand-built construction, made in the USA
- Optional slotted hardware for greater movement capabilities
- Effective restrained design
- Exceptional lateral movement capabilities in sets of two or two with a single hinge
- Standard or custom face-to-face dimensions
- Available in multiple arch arrangements and sizes not shown
- Wide flowing arch design
- Exceptional all directional movement capability
- Virtually eliminates sediment buildup
- Absorbs noise, vibration and shock
- Higher pressure rating than conventional expansion joints
- Hot dip galvanized retaining rings and hinge plates standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Excellent chemical and abrasion resistance
- Full vacuum rating (30" Hg) in all single arch sizes
- 250°F continuous service standard (400°F available)
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Integrally flanged design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more

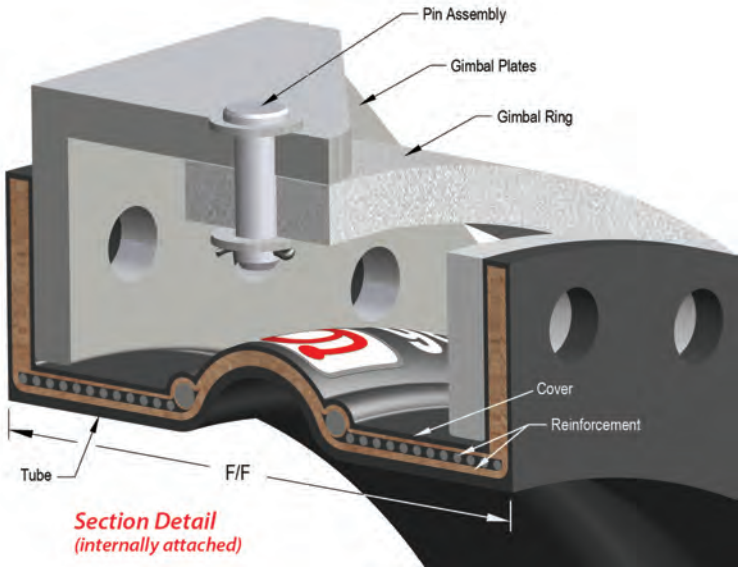
Notes:

1. Data sheet available upon request. For sizes and arrangements refer to series 1100's for reference. | 2. Maximum operating temperature of 250˚F for EPDM, Butyl and Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available. | 3. Hinge joints have axial movement limitation. | 4. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department. | 5. Bill of Materials: Retaining Ring and Hinge Plates, carbon steel hot dipped galvanized (HDG) or stainless steel; Pin Assembly, carbon steel (HDG) or stainless steel; Metal Reinforcement, high-tensile steel; and Textile Reinforcement, RFL-coated tire cord. | 6. Standard 125/150 lb. drilling includes, 1"-24" with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30"-60" with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb., 72"-108" with ANSI B16.1 Class 125 lb./ AWWA C207 Class B.

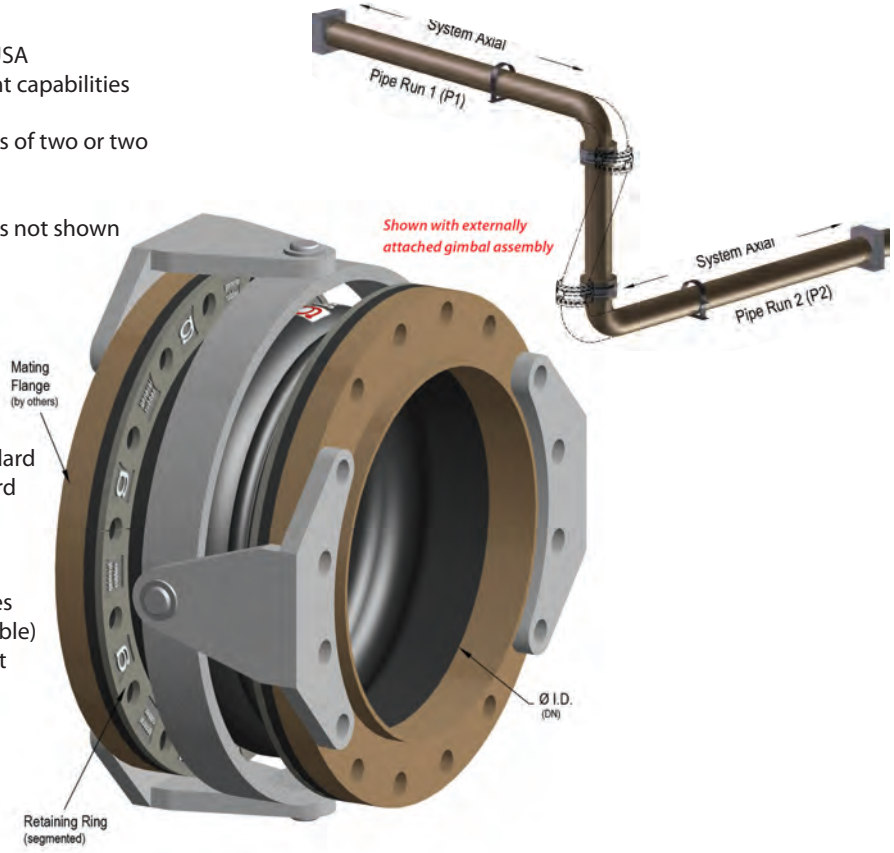
Gimbal

Style 5100G

General Rubber's Style 5100G gimbal rubber expansion joint (REJ) is designed to facilitate and isolate angular rotation in two planes. The arrangement consists of two pairs of hinge plates connected with pins to a common gimbal ring and attached to the external or internal hardware of the expansion joint. The gimbal assembly must be designed for the internal pressure thrust forces of the system. It can be used in sets of two or sets of two with a single hinge design to absorb large lateral movements in multiple planes. This optimally designed arrangement represents an effective solution for absorbing large axial thermal movements from adjacent pipe runs. Its spool type body is constructed with full rubber flanges, a high-grade leak-proof tube, multiple layers of high-strength tire cord, high tensile steel reinforcement, and a seamless cover. They are commonly used when the support structure or adjacent equipment has load limitations. The economic benefits of this arrangement include a smaller system footprint with far fewer anchors and guides.



- Versatile hand-built construction, made in the USA
- Optional slotted hardware for greater movement capabilities
- Effective restrained design
- Exceptional lateral movement capabilities in sets of two or two with a single hinge
- Standard or custom face-to-face dimensions
- Available in multiple arch arrangement and sizes not shown
- Wide flowing arch design
- Exceptional all directional movement capability
- Virtually eliminates sediment buildup
- Absorbs noise, vibration and shock
- Higher pressure rating than conventional expansion joints
- Hot dip galvanized retaining rings standard
- Hot dip galvanized gimbal plates and ring standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Excellent chemical and abrasion resistance
- Full vacuum rating (30" Hg) in all single arch sizes
- 250°F continuous service standard (400°F available)
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Integrally flanged design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more



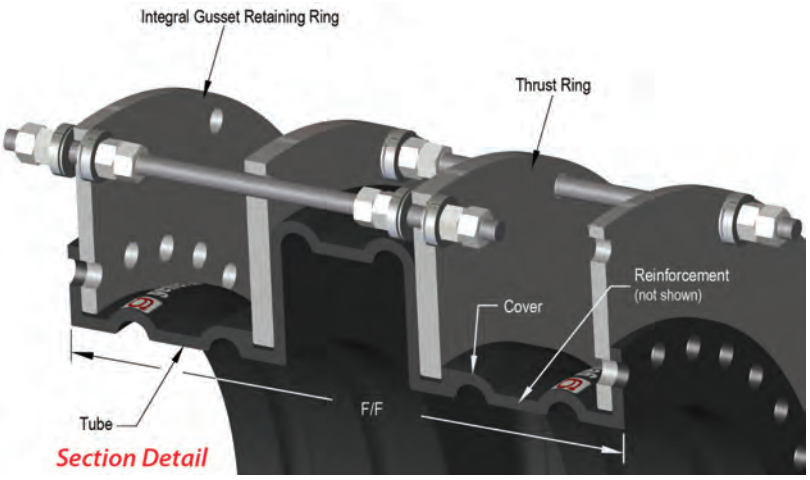
Notes:

1. Data sheet available upon request. For sizes and arrangements refer to series 1100's for reference. | 2. Maximum operating temperature of 250˚F for EPDM, Butyl and Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available. | 3. Gimbal joints have axial movement limitation. | 4. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department. | 5. Bill of Materials: Retaining Ring, Gimbal Plates and Gimbal Ring, carbon steel hot dipped galvanized (HDG) or stainless steel; Pin Assembly, carbon steel (HDG) or stainless steel; Metal Reinforcement, high-tensile steel; and Textile Reinforcement, RFL-coated tire cord. | 6. Standard 125/150 lb. drilling includes, 1″-24″ with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30″-60″ with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb., 72″-108″ with ANSI B16.1 Class 125 lb./ AWWA C207 Class B.

In-Line Pressure Balanced

Style 5100P

General Rubber's Style 5100P in-line pressure balanced rubber expansion joint (REJ) is the only effective solution for directly absorbing large axial thermal movements while continuously self-restraining the pressure thrust forces. This arrangement consists of tie devices inter-connecting its main joint sections to its opposing balancing joint section. This REJ is commonly used when the support structure or adjacent equipment has load limitations. The body is a one-piece rubber construction with full rubber flanges, a high-grade leak-proof tube, multiple layers of high-strength tire cord, high tensile steel reinforcement, a seamless cover, and hot dip galvanized steel retaining rings. Additionally, they are designed to absorb all-directional movement, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment, and relieve pipe and anchor stresses. The economic benefits of using pressure balanced designs include a smaller system footprint as well as far fewer guides, anchors and supports.



Section Detail

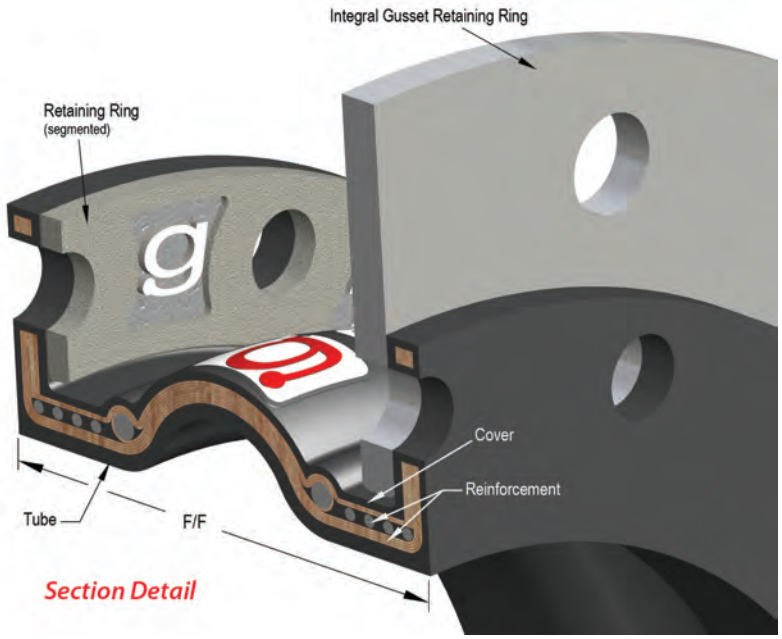
- Versatile hand-built construction, made in the USA
- Excellent all-directional movement capabilities
- Standard or custom face-to-face dimensions
- Wide flowing arch design
- Virtually eliminates sediment buildup
- Absorbs noise, vibration and shock
- Higher pressure rating than conventional expansion joints
- Hot dip galvanized integral gusset retaining ring, thrust ring and high tensile galvanized steel rods standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Excellent chemical and abrasion resistance
- 250°F continuous service standard (400°F available)
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Integrally flanged design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more

Notes:
1. Data sheet available upon request. For sizes and arrangements refer to series 1100's for reference. | 2. Maximum operating temperature of 250˚F for EPDM, Butyl and Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available. | 3. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department. | 4. Bill of Materials: Integral Gusset Retaining Ring and Thrust Ring, carbon steel hot dipped galvanized (HDG) or stainless steel; Rods, A193 B7 (HDG) or A193 B8M; Nuts, A194 2H (HDG) or A194 8M; Spherical Washer, stainless steel; Metal Reinforcement, high tensile steel; and Textile Reinforcement, RFL-coated tire cord. | 5. Standard 125/150 lb. drilling includes, 1"-24" with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30"-60" with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb., 72"-108" with ANSI B16.1 Class 125 lb./ AWWA C207 Class B.

Elbow Pressure Balanced

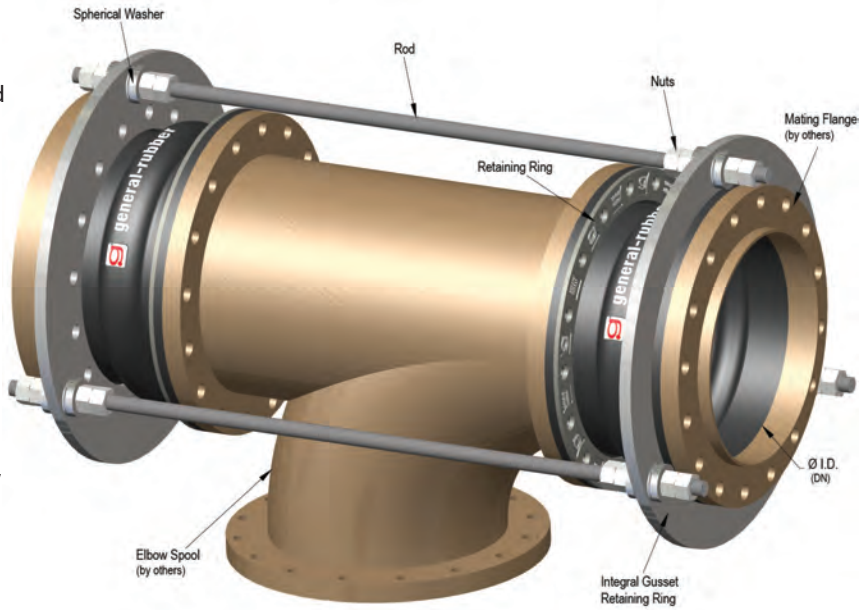
Style 5100E

General Rubber's Style 5100E elbow pressure balanced rubber expansion joint (REJ) is designed to absorb all-directional movement while continuously self-restraining the pressure thrust forces. This arrangement consists of tie devices inter-connecting its main joint section to its opposing balancing joint section. This REJ is commonly used when the support structure or adjacent equipment has load limitations. The pair of spool type bodies are constructed with full rubber flanges, high-grade leak-proof tubes, multiple layers of high-strength tire cord, high tensile steel reinforcements, seamless covers, and hot dip galvanized steel retaining rings. Additionally, they are designed to reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to piping and equipment and relieve pipe and anchor stresses. The economic benefits of using pressure balanced designs include a smaller system footprint as well as far fewer guides, anchors and supports.



Section Detail

- Versatile hand-built construction, made in the USA
- Exceptional all directional movement capability
- Virtually eliminates sediment buildup
- Wide flowing arch design
- Absorbs noise, vibration and shock
- Hot dip galvanized retaining rings standard
- Hot dip galvanized integral gusset retaining ring and high tensile galvanized steel rods standard
- ANSI 125/150 lb. drilling standard, other standard drilling available, including ASA 300, DIN, PN, JIS, API, and Navy
- Excellent chemical and abrasion resistance
- 250°F continuous service standard (400°F available)
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Integrally flanged design, no gaskets required
- High strength and simple to install
- Provides easy access to piping and equipment
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more

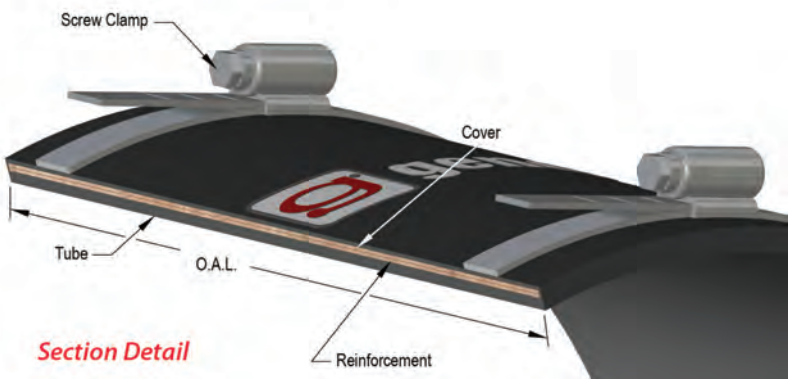


Notes:
1. Data sheet available upon request. For sizes and arrangements refer to series 1100's for reference. | 2. Maximum operating temperature of 250˚F for EPDM, Butyl and Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available. | 3. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department. | 4. Bill of Materials: Integral Gusset Retaining Ring and Retaining Ring, carbon steel hot dipped galvanized (HDG) or stainless steel; Rods, A193 B7 (HDG) or A193 B8M; Nuts, A194 2H (HDG) or A194 8M; Spherical Washer, stainless steel; Metal Reinforcement, high tensile steel; and Textile Reinforcement, RFL-coated tire cord. | 5. Standard 125/150 lb. drilling includes, 1"-24" with ANSI B16.1 Class 125 lb./B16.5 Class 150 lb., 30"-60" with ANSI B16.1 Class 125 lb./ B16.47 series A, Class 150 lb., 72"-108" with ANSI B16.1 Class 125 lb./ AWWA C207 Class B.

Rubber Slip-On Sleeve

Style 8100LW

General Rubber's Styles 8100LW rubber slip-on sleeve type rubber expansion joint (REJ) is designed with lower spring rates for reduced reaction forces and greater movement capabilities within a compact body. This optimally designed slip-on and lightweight construction represents the most cost-effective arrangement for low pressure applications. Mating flanges and hardware are not required, adding to the cost-effectiveness of this arrangement. The construction includes a high-grade leak-proof tube, a seamless cover, multiple layers of high-strength tire cord, and stainless steel screw clamps. Additionally, it is designed to absorb large all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to ducting and equipment, and relieve duct and anchor stresses. This slip-on sleeve type REJ is designed with minimal reinforcement for ducting applications operating within ± 5 PSIG.



- Versatile hand-built construction, made in the USA
- Available in split-wrap or custom offset arrangements and sizes not shown
- Available in multiple arches, reducers and custom overall length
- Virtually eliminates sediment buildup
- Economical slip-on design eliminates the need for mating flanges and hardware
- Extremely lightweight and flexible
- 250°F continuous service standard (400°F available)
- Absorbs noise, vibration and shock
- Excellent chemical and abrasion resistance
- Compensates for minor misalignment and offset
- Provides easy access to ducting and equipment
- No gasket required
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more

SIZE			STYLE 8100LW MOVEMENT (non-concurrent)			PRESSURE	
I.D.	Actual I.D.	Over-All Length O.A.L.	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	in	in	psig	psig
mm	mm	mm	mm	mm	mm	barg	barg
1 1/2	1 15/16	8	3/4	1/4	1/4	5	-5
40	49	203	19	6	6	0.34	-0.34
2	2 3/8	8	3/4	1/4	1/4	5	-5
50	60	203	19	6	6	0.34	-0.34
2 1/2	2 7/8	8	3/4	1/4	1/4	5	-5
65	73	203	19	6	6	0.34	-0.34
3	3 1/2	8	3/4	1/4	1/4	5	-5
80	89	203	19	6	6	0.34	-0.34
4	4 1/2	8	3/4	1/4	1/4	5	-5
100	114	203	19	6	6	0.34	-0.34
5	5 9/16	8	3/4	1/4	1/4	5	-5
125	141	203	19	6	6	0.34	-0.34
6	6 5/8	8	3/4	1/4	1/4	5	-5
150	168	203	19	6	6	0.34	-0.34
8	8 5/8	8	3/4	1/4	1/4	5	-5
200	219	203	19	6	6	0.34	-0.34
10	10 3/4	8	3/4	1/4	1/4	5	-5
250	273	203	19	6	6	0.34	-0.34
12	12 3/4	8	3/4	1/4	1/4	5	-5
300	324	203	19	6	6	0.34	-0.34
14	14	8	3/4	1/4	1/4	5	-5
350	356	203	19	6	6	0.34	-0.34
16	16	8	3/4	1/4	1/4	5	-5
400	406	203	19	6	6	0.34	-0.34
18	18	8	3/4	1/4	1/4	5	-5
450	457	203	19	6	6	0.34	-0.34
20	20	8	3/4	1/4	1/4	5	-5
500	508	203	19	6	6	0.34	-0.34
24	24	8	3/4	1/4	1/4	5	-5
600	610	203	19	6	6	0.34	-0.34

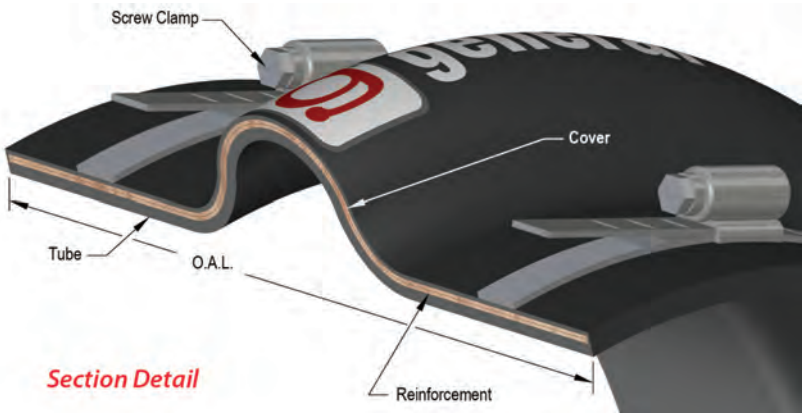
Notes:

1. Maximum operating temperature of 250˚F for EPDM, Butyl & Viton® ; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
2. Expansion joints are sized to slip over schedule 40 pipe. Other I.D. dimensions are available.
3. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
4. Bill of Materials: Screw Clamps, stainless steel; and Textile Reinforcement, RFL-coated tire cord.
5. Extension & lateral movement can be increased with additional pre-compression during installation.
6. **WARNING**: Anchors should be used to resist the pressure thrust force and isolate movements between expansion joints. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.

Rubber Slip-On Sleeve

Style 8101LW

General Rubber's Styles 8101LW rubber slip-on sleeve type rubber expansion joint (REJ) is designed with lower spring rates for reduced reaction forces and greater movement capabilities within a compact body. This optimally designed slip-on and lightweight construction represents the most cost-effective arrangement for low pressure applications. Mating flanges and hardware are not required, adding to the cost-effectiveness of this arrangement. The construction includes a high-grade leak-proof tube, a seamless cover, multiple layers of high-strength tire cord, and stainless steel screw clamps. Additionally, it is designed to absorb large all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to ducting and equipment, and relieve duct and anchor stresses. This slip-on sleeve type REJ has exceptional all-directional movement and is designed with minimal reinforcement for ducting applications operating within ± 5 PSIG. Additionally, they are available in multiple arches for increased movements and decreased spring rates as well as custom offsets and reducing arrangements.



Section Detail

- Versatile hand-built construction, made in the USA
- Available in split-wrap or custom offset arrangements and sizes not shown
- Available in multiple arches, reducers and custom overall length
- Virtually eliminates sediment buildup
- Economical slip-on design eliminates the need for mating flanges and hardware
- Extremely lightweight and flexible
- 250°F continuous service standard (400°F available)
- Absorbs noise, vibration and shock
- Excellent chemical and abrasion resistance
- Compensates for minor misalignment and offset
- Provides easy access to ducting and equipment
- No gasket required
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more

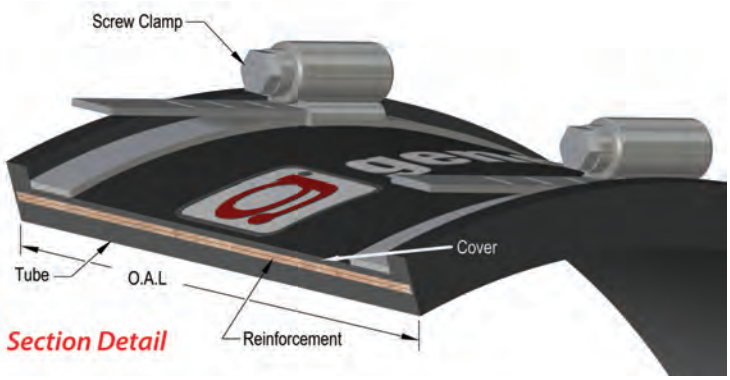
SIZE			STYLE 8101LW MOVEMENT (non-concurrent)			PRESSURE	
I.D.	Actual I.D.	Over-All Length O.A.L.	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	in	in	psig	psig
mm	mm	mm	mm	mm	mm	barg	barg
1 1/2	1 15/16	8	1 3/4	3/4	3/4	5	-5
40	49	203	44	19	19	0.34	-0.34
2	2 3/8	8	1 3/4	3/4	3/4	5	-5
50	60	203	44	19	19	0.34	-0.34
2 1/2	2 7/8	8	1 3/4	3/4	3/4	5	-5
65	73	203	44	19	19	0.34	-0.34
3	3 1/2	8	1 3/4	3/4	3/4	5	-5
80	89	203	44	19	19	0.34	-0.34
4	4 1/2	8	1 3/4	3/4	3/4	5	-5
100	114	203	44	19	19	0.34	-0.34
5	5 9/16	8	1 3/4	3/4	3/4	5	-5
125	141	203	44	19	19	0.34	-0.34
6	6 5/8	8	1 3/4	3/4	3/4	5	-5
150	168	203	44	19	19	0.34	-0.34
8	8 5/8	8	1 3/4	3/4	3/4	5	-5
200	219	203	44	19	19	0.34	-0.34
10	10 3/4	8	1 3/4	3/4	3/4	5	-5
250	273	203	44	19	19	0.34	-0.34
12	12 3/4	8	1 3/4	3/4	3/4	5	-5
300	324	203	44	19	19	0.34	-0.34
14	14	8	1 3/4	3/4	3/4	5	-5
350	356	203	44	19	19	0.34	-0.34
16	16	8	1 3/4	3/4	3/4	5	-5
400	406	203	44	19	19	0.34	-0.34
18	18	8	1 3/4	3/4	3/4	5	-5
450	457	203	44	19	19	0.34	-0.34
20	20	8	1 3/4	3/4	3/4	5	-5
500	508	203	44	19	19	0.34	-0.34
24	24	8	1 3/4	3/4	3/4	5	-5
600	610	203	44	19	19	0.34	-0.34

Notes:

1. Maximum operating temperature of 250˚F for EPDM, Butyl & Viton® ; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
2. Expansion joints are sized to slip over schedule 40 pipe. Other I.D. dimensions are available.
3. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
4. Bill of Materials: Screw Clamps, stainless steel; Textile Reinforcement, RFL-coated tire cord.
5. Extension & lateral movement can be increased with additional pre-compression during installation.
6. **WARNING**: Anchors should be used to resist the pressure thrust force and isolate movements between expansion joints. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.

Rubber Slip-On Sleeve

Style 1091



General Rubber's Style 1091 rubber slip-on sleeve type rubber expansion joint (REJ) is designed with lower spring rates for reduced reaction forces and greater movement capabilities within a compact body. This optimally designed slip-on and lightweight construction represents the most cost-effective arrangement for low pressure applications. Mating flanges and hardware are not required, adding to the cost-effectiveness of this arrangement. The construction includes a high-grade leak-proof tube, a seamless cover, multiple layers of high-strength tire cord, and stainless steel screw clamps. Additionally, it is designed to absorb large all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to ducting and equipment, and relieve duct and anchor stresses. This fully molded sleeve has unique beaded ends to prevent the sleeve from being pulled out from under the clamps, making this design ideal for vibrating bin activators as well as other industrial OEM equipment.

- Versatile hand-built construction, made in the USA
- Absorbs noise, vibration and shock
- Excellent chemical and abrasion resistance
- 250°F continuous service standard (400°F available)
- Economical slip-on design eliminates the need for mating flange
- Extremely lightweight and flexible
- Provides easy access to ducting and equipment
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more

SIZE	STYLE 1091 MOVEMENT (non-concurrent)			PRESSURE	
O.A.L. Available	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	psig	psig
mm	mm	mm	mm	barg	barg
4	1/8	1/8	1/8	5	-5
102	3	3	3	0.34	-0.34
5	1/8	1/8	1/8	5	-5
125	3	3	3	0.34	-0.34

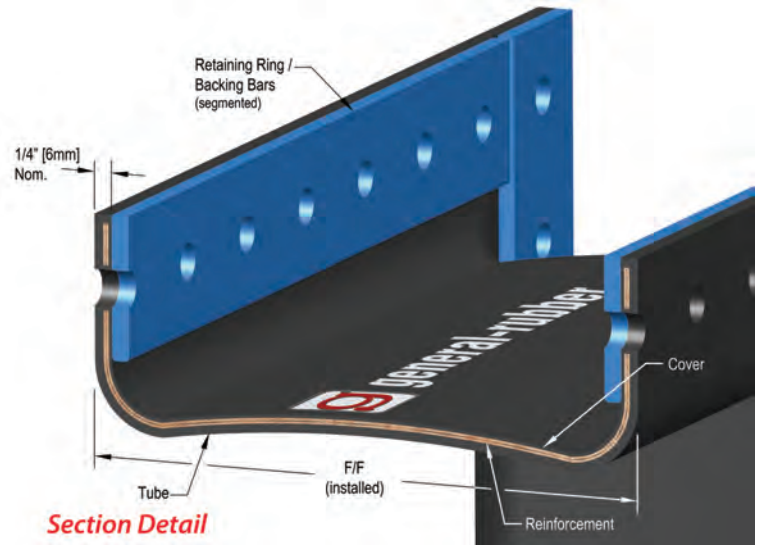
Notes:

1. Maximum operating temperature of 250˚F for EPDM, Butyl and Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
2. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
3. Bill of Materials: Screw Clamps, stainless steel; and Textile Reinforcement, RFL-coated tire cord.
4. **WARNING**: Anchors should be used to resist the pressure thrust force and isolate movements between expansion joints. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.

Rubber Flange Standard

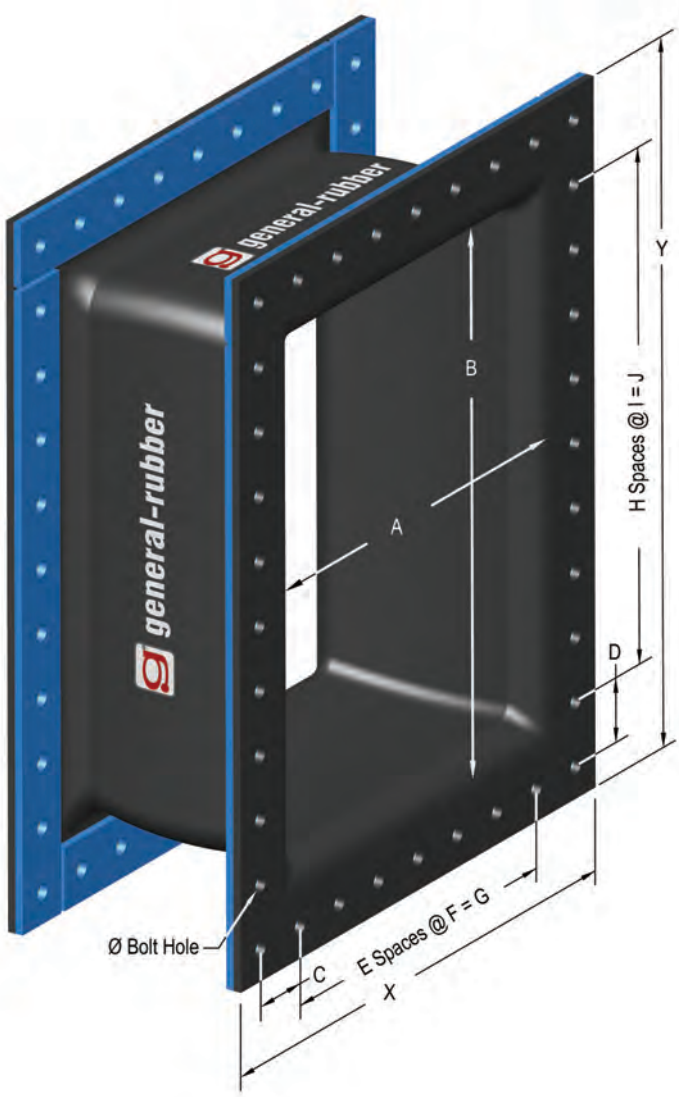
Style 1092 Rectangular

General Rubber's Style 1092 rubber flanged standard ducting expansion joint is designed with lower spring rates for reduced reaction forces and greater movement capabilities within a compact body. This lightweight construction is optimally designed with external or internal molded flanges and represents the most cost-effective arrangement for low pressure flanged ducting applications. The construction includes a high-grade leak-proof tube, a seamless cover, multiple layers of high-strength tire cord, and steel retaining rings. Additionally, they are designed to absorb large all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to ducting and equipment, and relieve duct and anchor stresses. This expansion joint offers improved performance capabilities and easier installation based on its U-shaped and performance-based molded belt construction. Its fully molded flanges minimize the stresses along the inside edge and are available in standard face-to-face dimensions including 3", 4", 6", 8", 9" and 12".



Section Detail

- Economical, all-molded construction, made in the USA
- Available in custom offset as well as reducing arrangements
- Available in round and rectangular design in all sizes
- ± 3 PSI continuous service
- Zero porosity in wet or dry service
- Exceptional all-directional movement capability
- Absorbs system noise, vibration and shock
- Carbon steel, stainless steel, or hot dip galvanized retaining rings / bars available
- Excellent chemical and abrasion resistance
- 250°F continuous service standard (400°F available)
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Integrally flanged design, no gaskets required
- Available with external or internal flanges
- Extremely lightweight and flexible
- Provides easy access to ducting and equipment
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more



SIZE		STYLE 1092 MOVEMENT (non-concurrent)			PRESSURE	
Installed Length F/F	MFD Length F/F +	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	in	psig	psig
mm	mm	mm	mm	mm	barg	barg
3	1/2	1	1/2	1/2	3	-3
76	13	25	13	13	0.2	-0.2
4	1/2	1	1/2	1/2	3	-3
102	13	25	13	13	0.2	-0.2
6	1/2	2	1/2	1	3	-3
152	13	51	13	25	0.2	-0.2
8	1/2	3	1/2	2	3	-3
203	13	76	13	51	0.2	-0.2
9	1/2	3	1/2	2	3	-3
229	13	76	13	51	0.2	-0.2
12	1/2	4	3/4	3	3	-3
305	13	102	19	76	0.2	-0.2

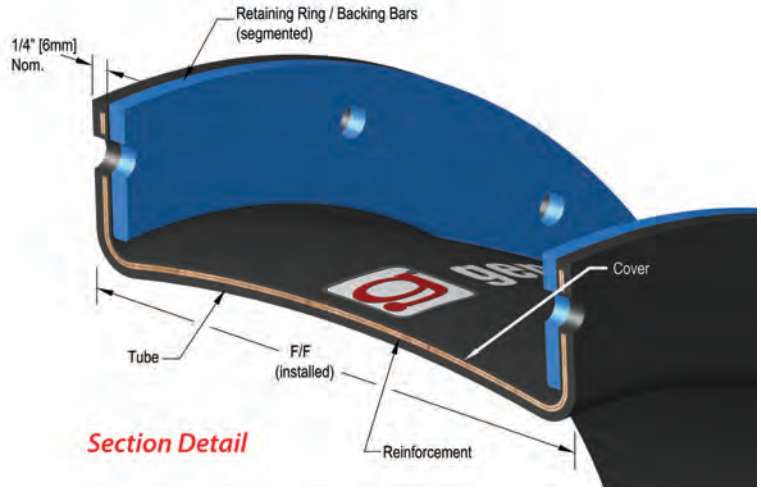
Notes:

1. Extension movement capabilities can be increased with additional pre-compression during installation.
2. For vacuum or large pre-compressed application, a set-back may be required to keep the expansion joint from protruding into the gas stream or touching the flow liner/baffle.
3. Retaining Rings / Backing Bars of ¼" thickness standard. Suggested bolt spacing at 4" centers max.
4. Maximum operating temperature of 250˚F for EPDM, Butyl & Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 3 psig maximum, higher pressure and temperature ratings available.
5. Bill of Materials: Retaining Ring/Backing bars, carbon steel, stainless steel or hot dip galvanized; and Textile Reinforcement, RFL-coated tire cord.
6. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
7. **WARNING**: Anchors should be used to resist the pressure thrust force and isolate movement between expansion joints. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.

Rubber Flange Standard

Style 1092 Round

General Rubber's Style 1092 rubber flanged standard ducting expansion joint is designed with lower spring rates for reduced reaction forces and greater movement capabilities within a compact body. This lightweight construction is optimally designed with external or internal molded flanges and represents the most cost-effective arrangement for low pressure flanged ducting applications. The construction includes a high-grade leak-proof tube, a seamless cover, multiple layers of high-strength tire cord, and steel retaining rings. Additionally, they are designed to absorb large all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to ducting and equipment, and relieve duct and anchor stresses. This expansion joint offers improved performance capabilities and easier installation based on its U-shaped and performance-based molded belt construction. Its fully molded flanges minimize the stresses along the inside edge and are available in standard face-to-face dimensions including 3", 4", 6", 8", 9" and 12".



- Economical, all-molded construction, made in the USA
- Available in custom offset as well as reducing arrangements
- Available in round and rectangular design in all sizes
- ± 3 PSI continuous service
- Zero porosity in wet or dry service
- Exceptional all-directional movement capability
- Absorbs system noise, vibration and shock
- Carbon steel, stainless steel, or hot dip galvanized retaining rings / bars available
- Excellent chemical and abrasion resistance
- 250°F continuous service standard (400°F available)
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Integrally flanged design, no gaskets required
- Available with external or internal flanges
- Extremely lightweight and flexible
- Provides easy access to ducting and equipment
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more

SIZE		STYLE 1092 MOVEMENT (non-concurrent)			PRESSURE	
Installed Length F/F	MFD Length F/F +	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	in	psig	psig
mm	mm	mm	mm	mm	barg	barg
3	1/2	1	1/2	1/2	3	-3
76	13	25	13	13	0.2	-0.2
4	1/2	1	1/2	1/2	3	-3
102	13	25	13	13	0.2	-0.2
6	1/2	2	1/2	1	3	-3
152	13	51	13	25	0.2	-0.2
8	1/2	3	1/2	2	3	-3
203	13	76	13	51	0.2	-0.2
9	1/2	3	1/2	2	3	-3
229	13	76	13	51	0.2	-0.2
12	1/2	4	3/4	3	3	-3
305	13	102	19	76	0.2	-0.2

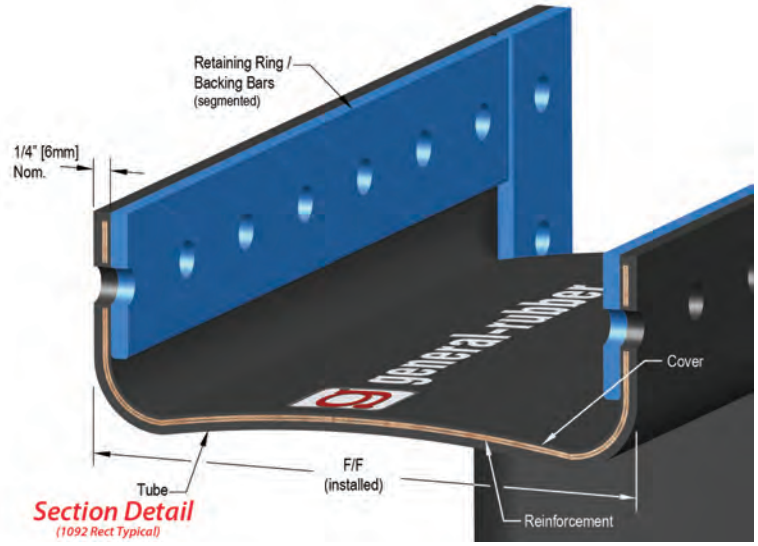
Notes:

1. Extension movement capabilities can be increased with additional pre-compression during installation.
2. For vacuum or large pre-compressed application, a set-back may be required to keep the expansion joint from protruding into the gas stream or touching the flow liner/baffle.
3. Retaining Rings / Backing Bars of ¼" thickness standard. Suggested bolt spacing at 4" centers max.
4. Maximum operating temperature of 250˚F for EPDM, Butyl & Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 3 psig maximum, higher pressure and temperature ratings available.
5. Bill of Materials: Retaining Ring/Backing Bars, carbon steel, stainless steel or hot dip galvanized; and Textile Reinforcement, RFL-coated tire cord.
6. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
7. **WARNING**: Anchors should be used to resist the pressure thrust force and isolate movement between expansion joints. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.

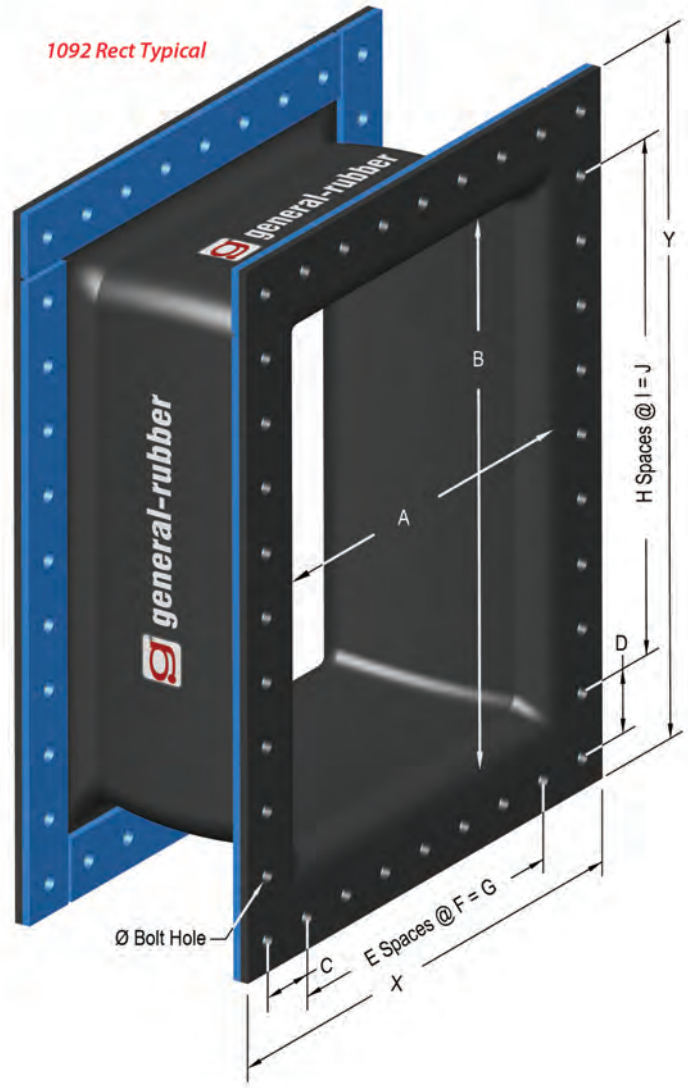
Rubber Flange Standard

Style 1097 Rectangular

General Rubber's Style 1097 rubber flanged standard ducting expansion joint is designed with lower spring rates for reduced reaction forces and greater movement capabilities within a compact body. This lightweight construction is optimally designed with external or internal molded flanges and represents the most cost-effective arrangement for low pressure flanged ducting applications. The construction includes a high-grade leak-proof tube, a seamless cover, multiple layers of high-strength tire cord and steel retaining rings. Additionally, they are designed to absorb large all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to ducting and equipment and relieve duct and anchor stresses. This expansion joint offers custom face-to-face dimensions based on its flat and versatile molded belt construction.



- Economical, all-molded construction, made in the USA
- Available in custom offset as well as reducing arrangements
- Available in round and rectangular design in all sizes
- ± 3 PSI continuous service
- Zero porosity in wet or dry service
- Exceptional all-directional movement capability
- Absorbs system noise, vibration and shock
- Carbon steel, stainless steel, or hot dip galvanized retaining rings / bars available
- Excellent chemical and abrasion resistance
- 250°F continuous service standard (400°F available)
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Integrally flanged design, no gaskets required
- Available with external or internal flanges
- Extremely lightweight and flexible
- Provides easy access to ducting and equipment
- Wide variety of tube and cover elastomers available, including Pure Gum Rubber, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more



SIZE		STYLE 1097 MOVEMENT (non-concurrent)			PRESSURE	
Installed Length F/F	MFD Length F/F +	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	in	psig	psig
mm	mm	mm	mm	mm	barg	barg
3 1/2 - 6	1/2	2	1/2	1	3	-3
89-152	13	51	13	25	0.2	-0.2
6 1/2 - 9	3/4	3	3/4	2	3	3
165 - 229	19	76	19	51	0.2	-0.2
9 1/2 - 12	1	4	1	3	3	-3
241 - 305	25	102	25	76	0.2	-0.2

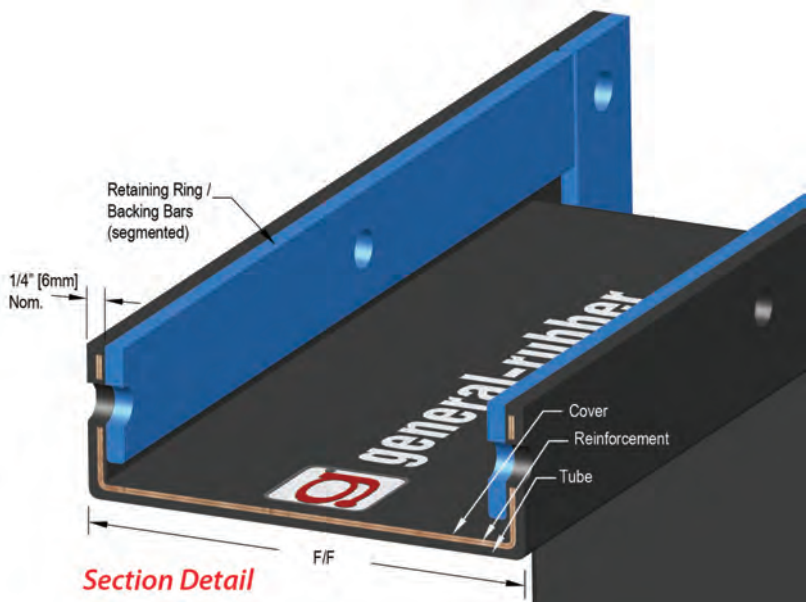
Notes:

1. Extension movement capabilities can be increased with additional pre-compression during installation.
2. For vacuum or large pre-compressed application, a set-back may be required to keep the expansion joint from protruding into the gas stream or touching the flow liner/baffle.
3. Retaining Rings / Backing Bars of ¼" thickness standard. Suggested bolt spacing at 4" centers max.
4. Maximum operating temperature of 250˚F for EPDM, Butyl & Viton®; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 3 psig maximum, higher pressure and temperature ratings available.
5. Bill of Materials: Retaining Ring/Backing Bars, carbon steel, stainless steel or hot dip galvanized; and Textile Reinforcement, RFL-coated tire cord.
6. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
7. **WARNING**: Anchors should be used to resist the pressure thrust force and isolate movement between expansion joints. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.

Rubber Flanged Versatile

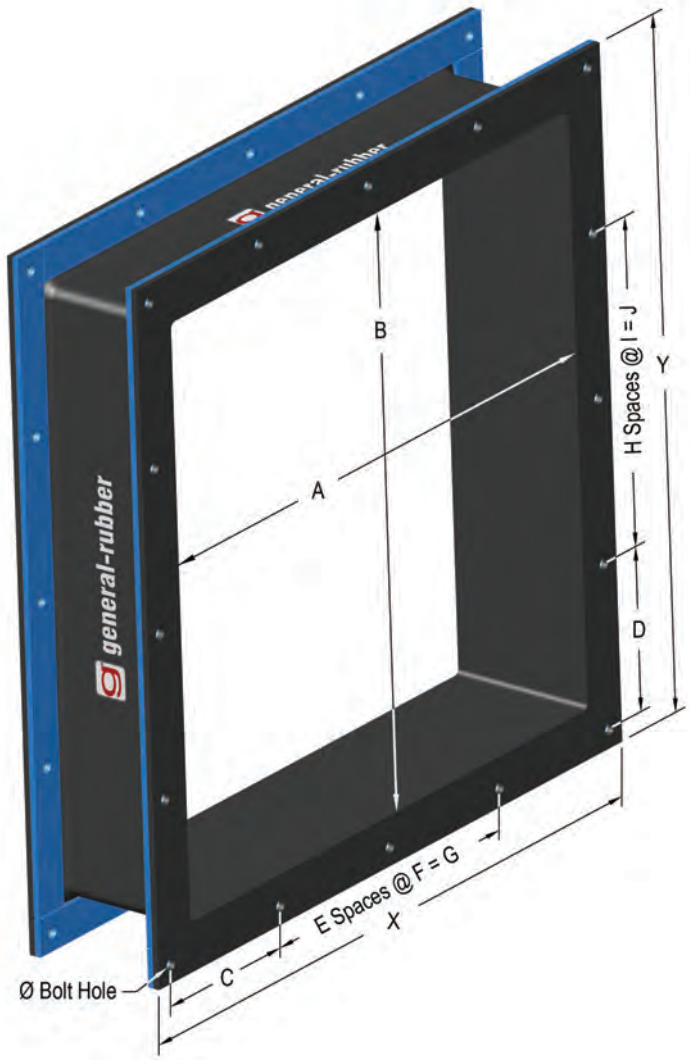
Style 9100 Rectangular

General Rubber's Style 9100 completely versatile ducting rubber expansion joint (REJ) is a hand-wrapped construction. This results in lower spring rates for reduced reaction forces and greater movement capabilities within a compact body. This optimally designed lightweight construction represents the most versatile arrangement for even the most demanding ducting applications. The versatile hand-built construction includes full rubber flanges, a high-grade leak-proof tube, a seamless cover, multiple layers of high-strength tire cord, and steel retaining rings. Additionally, it is available in multiple arches for increased movements and decreased spring rates as well as custom offsets and reducing arrangements. It is also designed to absorb large all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to ducting and equipment, and relieve duct and anchor stresses.



Section Detail

- Versatile hand-built construction, made in the USA
- 250°F continuous service standard (400°F available)
- ±3 PSI continuous service standard (25 PSI available)
- Round or rectangular in all sizes
- Exceptional all directional movement capability
- Absorbs system noise, vibration and shock
- Compensates for minor misalignment and offset
- Available in multiple arches for greater movements and reduced spring rates
- Available in custom offsets and face-to-face dimensions as well as reducing arrangements
- Simple to install, lightweight and high-strength
- Provides easy access to ducting and equipment
- Carbon steel, stainless steel, or hot dip galvanized retaining ring / backing bars
- Zero porosity in wet or dry service
- No gasket required
- Excellent chemical and abrasion resistance
- Wide variety of tube and cover elastomers available, including Pure Gum, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more



SIZE	STYLE 9100 MOVEMENT (non-concurrent)			PRESSURE	
Installed Lengths F/F	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	psig	psig
mm	mm	mm	mm	barg	barg
6	3/4	1/4	1/2	3	-3
152	19	6	13	0.2	-0.2
9	1 1/4	1/4	3/4	3	-3
229	32	6	19	0.2	-0.2
12	2	1/2	1	3	-3
305	51	13	25	0.2	-0.2
16	3	1/2	1 1/2	3	-3
406	76	13	38	0.2	-0.2

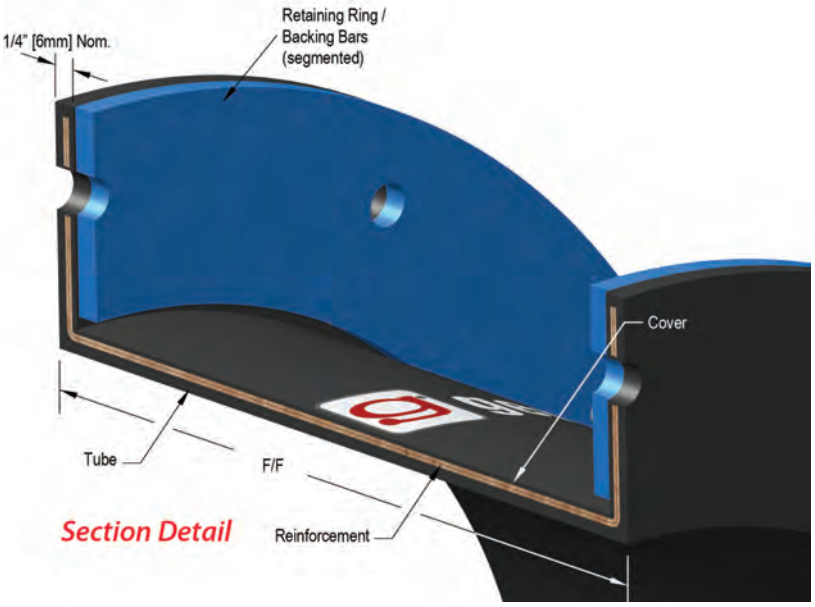
Notes:

1. For vacuum or large pre-compressed applications, a set-back may be required to keep the expansion joint from protruding into the gas stream or touching the flow liner/baffle.
2. Retaining Rings / Backing Bars of ¼" thickness standard. Suggested bolt spacing at 4" centers max.
3. Maximum operating temperature of 250˚F for EPDM, Butyl & Viton® ; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
4. Bill of Materials: Retaining Ring/Backing Bars, carbon steel, stainless steel or hot dip galvanized; and Textile Reinforcement, RFL-coated tire cord.
5. Extension movement capabilities can be increased with additional pre-compression during installation.
6. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
7. **WARNING**: Anchors should be used to resist the pressure thrust force and isolate movements between expansion joints. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.

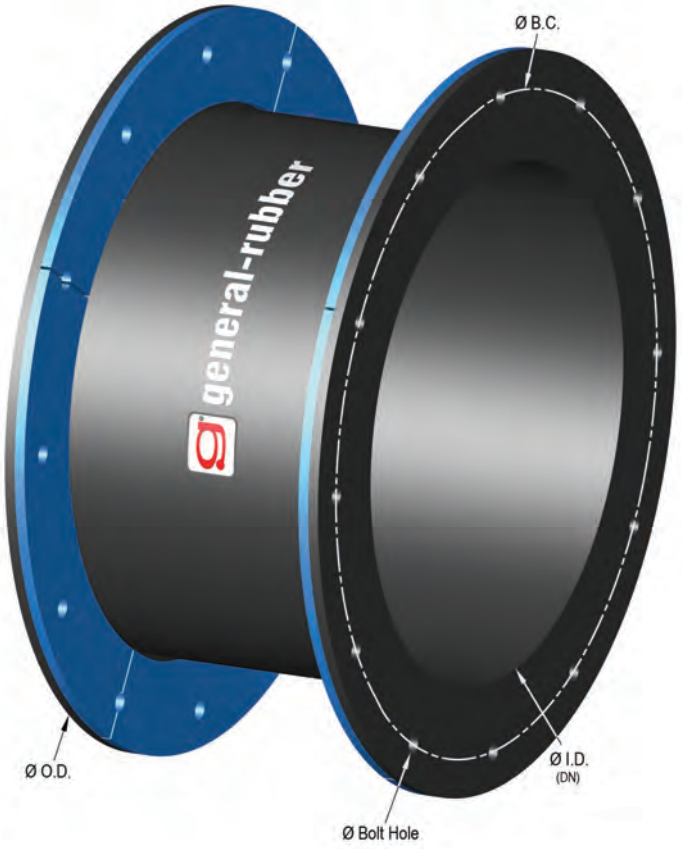
Rubber Flanged Versatile

Style 9100 Round

General Rubber's Style 9100 completely versatile ducting rubber expansion joint (REJ) is a hand-wrapped construction. This results in lower spring rates for reduced reaction forces and greater movement capabilities within a compact body. This optimally designed lightweight construction represents the most versatile arrangement for even the most demanding ducting applications. The versatile hand-built construction includes full rubber flanges, a high-grade leak-proof tube, a seamless cover, multiple layers of high-strength tire cord, and steel retaining rings. Additionally, it is available in multiple arches for increased movements and decreased spring rates as well as custom offsets and reducing arrangements. It is also designed to absorb large all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to ducting and equipment, and relieve duct and anchor stresses.



- Versatile hand-built construction, made in the USA
- 250°F continuous service standard (400°F available)
- ±3 PSI continuous service standard (25 PSI available)
- Round or rectangular in all sizes
- Exceptional all directional movement capability
- Absorbs system noise, vibration and shock
- Compensates for minor misalignment and offset
- Available in multiple arches for greater movements and reduced spring rates
- Available in custom offsets and face-to-face dimensions as well as reducing arrangements
- Simple to install, lightweight and high-strength
- Provides easy access to ducting and equipment
- Carbon steel, stainless steel, or hot dip galvanized retaining ring / backing bars
- Zero porosity in wet or dry service
- No gasket required
- Excellent chemical and abrasion resistance
- Wide variety of tube and cover elastomers available, including Pure Gum, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more



SIZE	STYLE 9100 MOVEMENT (non-concurrent)			PRESSURE	
Installed Lengths F/F	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	psig	psig
mm	mm	mm	mm	barg	barg
6	3/4	1/4	1/2	3	-3
152	19	6	13	0.2	-0.2
9	1 1/4	1/4	3/4	3	-3
229	32	6	19	0.2	-0.2
12	2	1/2	1	3	-3
305	51	13	25	0.2	-0.2
16	3	1/2	1 1/2	3	-3
406	76	13	38	0.2	-0.2

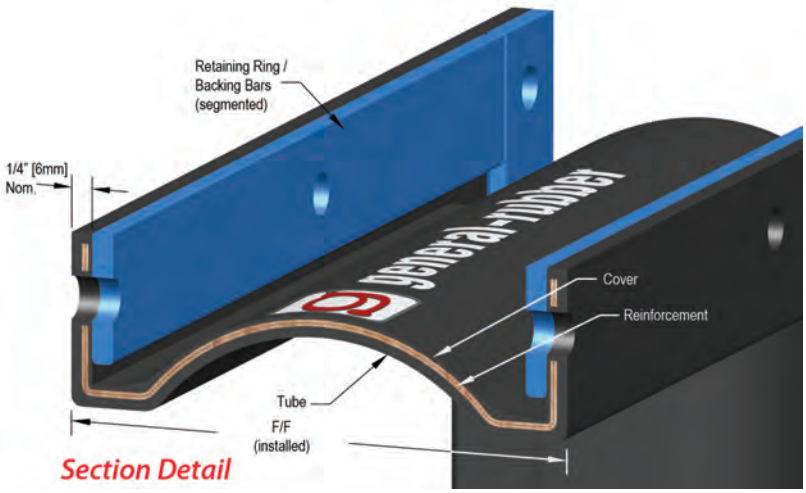
Notes:

1. For vacuum or large pre-compressed applications, a set-back may be required to keep the expansion joint from protruding into the gas stream or touching the flow liner/baffle.
2. Retaining Rings / Backing Bars of ¼" thickness standard. Suggested bolt spacing at 4" centers max.
3. Maximum operating temperature of 250˚F for EPDM, Butyl & Viton® ; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
4. Bill of Materials: Retaining Ring/Backing Bars, carbon steel, stainless steel or hot dip galvanized; and Textile Reinforcement, RFL-coated tire cord.
5. Extension movement capabilities can be increased with additional pre-compression during installation.
6. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
7. **WARNING**: Anchors should be used to resist the pressure thrust force and isolate movements between expansion joints. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.

Rubber Flanged Versatile

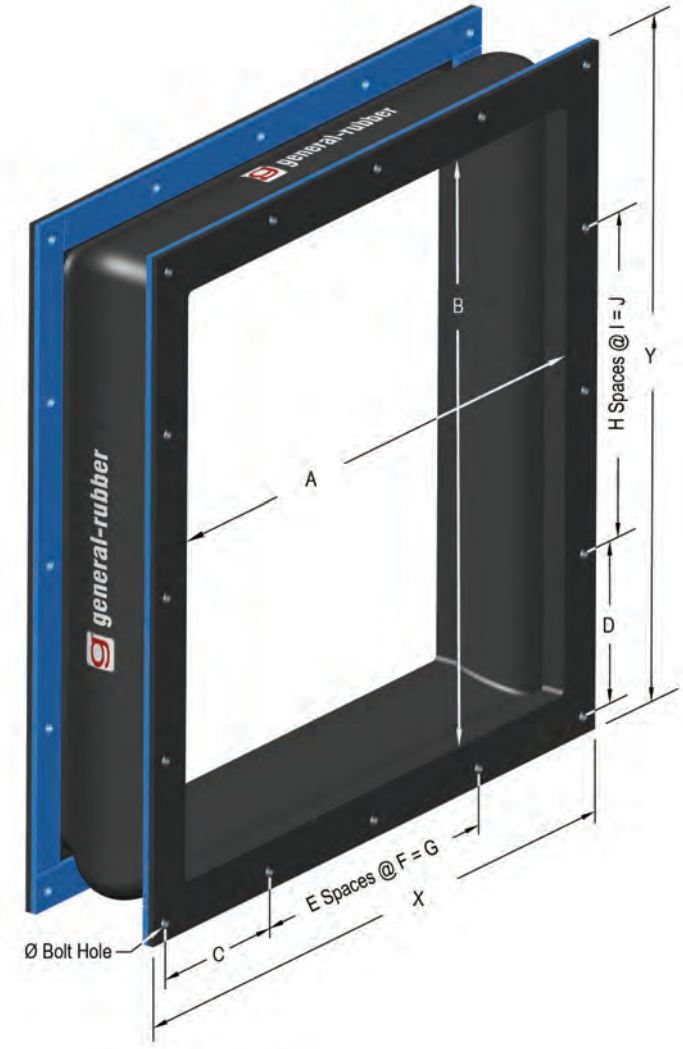
Style 9101 Rectangular

General Rubber's Style 9101 completely versatile ducting rubber expansion joint (REJ) is designed with an integral arch in a hand-wrapped construction. This results in lower spring rates for reduced reaction forces and greater movement capabilities within a compact body. This optimally designed lightweight construction represents the most versatile arrangement for even the most demanding ducting applications. The versatile hand-built construction includes full rubber flanges, a high-grade leak-proof tube, a seamless cover, multiple layers of high-strength tire cord, and steel retaining rings. Additionally, they are available in multiple arches for increased movements and decreased spring rates as well as custom offsets and reducing arrangements. They are also designed to absorb large all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to ducting and equipment, and relieve duct and anchor stresses.



Section Detail

- Versatile hand-built construction, made in the USA
- 250°F continuous service standard (400°F available)
- ±3 PSI continuous service standard (25 PSI available)
- Round or rectangular in all sizes
- Exceptional all directional movement capability
- Absorbs system noise, vibration and shock
- Compensates for minor misalignment and offset
- Available in multiple arches for greater movements and reduced spring rates
- Available in custom offsets and face-to-face dimensions as well as reducing arrangements
- Simple to install, lightweight and high-strength
- Provides easy access to ducting and equipment
- Carbon steel, stainless steel, or hot dip galvanized retaining ring / backing bars
- Zero porosity in wet or dry service
- No gasket required
- Excellent chemical and abrasion resistance
- Wide variety of tube and cover elastomers available, including Pure Gum, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more



SIZE	STYLE 9101 MOVEMENT (non-concurrent)			PRESSURE	
Installed Lengths F/F	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	psig	psig
mm	mm	mm	mm	barg	barg
6	2 1/4	1 1/4	1 1/4	3	-3
152	57	32	32	0.2	-0.2
9	3	1 1/2	2	3	-3
229	76	38	51	0.2	-0.2
12	4	2	2 1/2	3	-3
305	102	51	64	0.2	-0.2
16	5	2 3/4	3	3	-3
406	127	70	76	0.2	-0.2

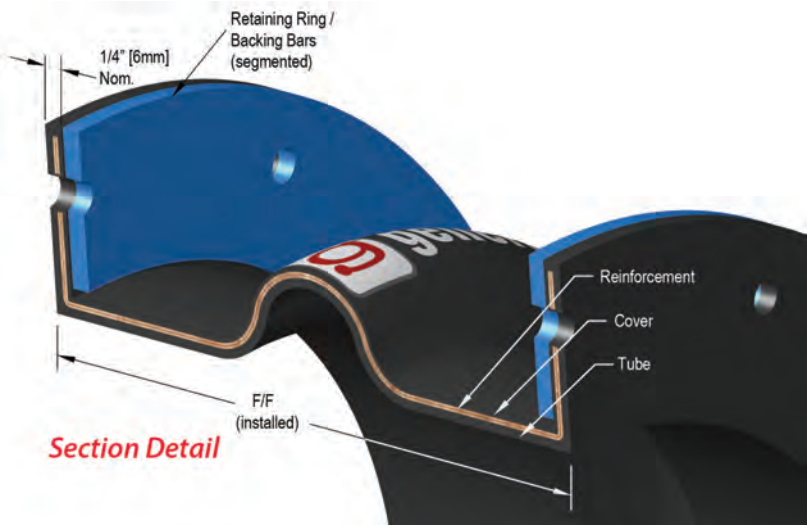
Notes:

1. For vacuum or large pre-compressed applications, a set-back may be required to keep the expansion joint from protruding into the gas stream or touching the flow liner/baffle.
2. Retaining Rings / Backing Bars of ¼" thickness standard. Suggested bolt spacing at 4" centers max.
3. Maximum operating temperature of 250˚F for EPDM, Butyl & Viton® ; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
4. Bill of Materials: Retaining Ring/Backing Bars, carbon steel, stainless steel or hot dip galvanized; and Textile Reinforcement, RFL-coated tire cord.
5. Extension movement capabilities can be increased with additional pre-compression during installation.
6. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
7. **WARNING**: Anchors should be used to resist the pressure thrust force and isolate movements between expansion joints. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.

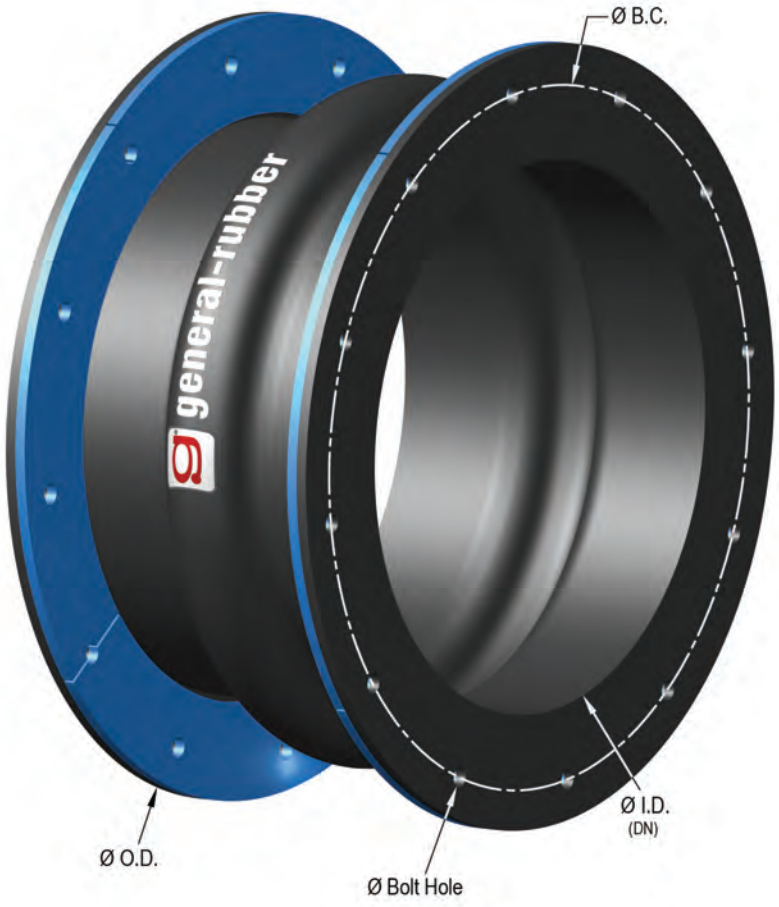
Rubber Flanged Versatile

Style 9101 Round

General Rubber's Style 9101 completely versatile ducting rubber expansion joint (REJ) is designed with an integral arch in a hand wrapped construction. This results in lower spring rates for reduced reaction forces and greater movement capabilities within a compact body. This optimally designed lightweight construction represents the most versatile arrangement for even the most demanding ducting applications. The versatile hand-built construction includes full rubber flanges, a high-grade leak-proof tube, a seamless cover, multiple layers of high-strength tire cord, and steel retaining rings. Additionally, they are available in multiple arches for increased movements and decreased spring rates as well as custom offsets and reducing arrangements. They are also designed to absorb large all-directional movements, reduce noise and vibration, have a cycle life in the tens of millions, compensate for misalignments, provide access to ducting and equipment, and relieve duct and anchor stresses.



- Versatile hand-built construction, made in the USA
- 250°F continuous service standard (400°F available)
- ±3 PSI continuous service standard (25 PSI available)
- Round or rectangular in all sizes
- Exceptional all directional movement capability
- Absorbs system noise, vibration and shock
- Compensates for minor misalignment and offset
- Available in multiple arches for greater movements and reduced spring rates
- Available in custom offsets and face-to-face dimensions as well as reducing arrangements
- Simple to install, lightweight and high-strength
- Provides easy access to ducting and equipment
- Carbon steel, stainless steel, or hot dip galvanized retaining ring / backing bars
- Zero porosity in wet or dry service
- No gasket required
- Excellent chemical and abrasion resistance
- Wide variety of tube and cover elastomers available, including Pure Gum, Neoprene, Butyl, Nitrile, EPDM, Viton®, Teflon®, Food Grade, and more



SIZE	STYLE 9101 MOVEMENT (non-concurrent)			PRESSURE	
Installed Lengths F/F	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	psig	psig
mm	mm	mm	mm	barg	barg
6	2 1/4	1 1/4	1 1/4	3	-3
152	57	32	32	0.2	-0.2
9	3	1 1/2	2	3	-3
229	76	38	51	0.2	-0.2
12	4	2	2 1/2	3	-3
305	102	51	64	0.2	-0.2
16	5	2 3/4	3	3	-3
406	127	70	76	0.2	-0.2

Notes:

1. For vacuum or large pre-compressed applications, a set-back may be required to keep the expansion joint from protruding into the gas stream or touching the flow liner/baffle.
2. Retaining Rings / Backing Bars of ¼" thickness standard. Suggested bolt spacing at 4" centers max.
3. Maximum operating temperature of 250˚F for EPDM, Butyl & Viton® ; 225˚F for Neoprene; 210˚F for Nitrile; 180˚F for Pure Gum Rubber, Natural Rubber; 300˚F for EPDM and Butyl in air service at 25 PSI maximum, higher pressure and temperature ratings available.
4. Bill of Materials: Retaining Ring/Backing Bars, carbon steel, stainless steel or hot dip galvanized; and Textile Reinforcement, RFL-coated tire cord.
5. Extension movement capabilities can be increased with additional pre-compression during installation.
6. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
7. **WARNING**: Anchors should be used to resist the pressure thrust force and isolate movements between expansion joints. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.

Installation, Maintenance & Storage

Ducting Expansion Joints

Warning • Expansion Joints may operate in pipelines and ductwork, or incorporated with equipment carrying fluids and/or gases at elevated temperatures and pressures, and may transport hazardous materials. Precautions should be taken to protect personnel in the event of leakage or spray. Expansion joints should only be installed where inspections are possible. Expansion joint installations should be conducted by authorized and qualified personnel.

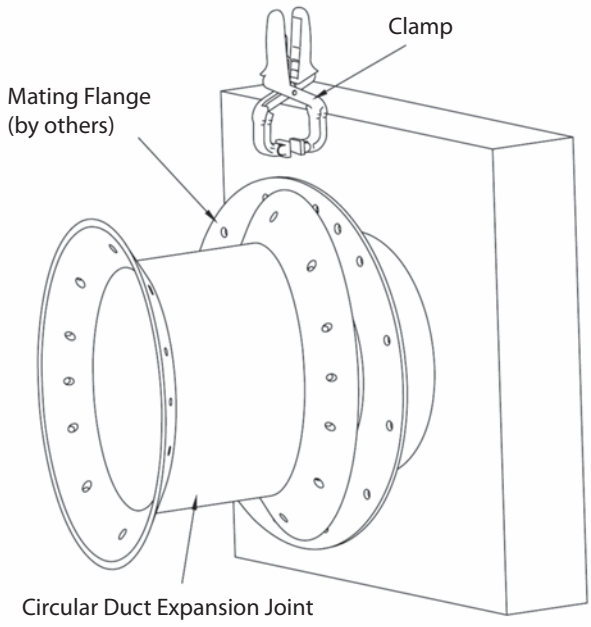
Service Conditions & Inspection • Check that the temperature, pressure, vacuum and movement ratings for the expansion joints are not exceeded by system conditions. Also verify that the expansion joints' elastomers are compatible with the process fluid or gas. *If any of these ratings are exceeded, contact **GRC** immediately.* Visually inspect expansion joints for cuts and gouges from transport or worksite handling prior to installation.

Alignment • Expansion joints should not be used to rectify piping/ducting misalignment of more than 1/4" [6.4mm]. Exceeding allowable misalignment value may cause damage and void the warranty. Misalignment will detract from rated movements. The use of support and guides may be required to maintain proper alignment and support the weight of the pipe and ductwork. *Note: **GRC** can fabricate expansion joints with built-in offsets to accommodate field dimension variances.*

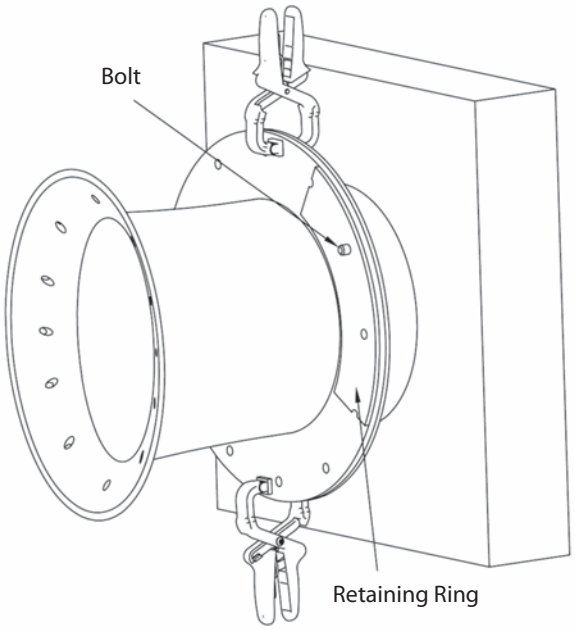
Anchoring • Verify that the system anchors, supports and guides, are in accordance with the piping/ducting system drawings. Any field variance from planned installation may affect the expansion joint parameters, reduce life expectancy and heighten the above stated warning.

Mating Flanges • The mating flanges or expansion joint attachment area of the pipe, ductwork and equipment must be smooth, clean, flat, and parallel. All welded areas must be ground smooth at the attachment points. The area around the expansion joint must be cleared of any sharp objects and protrusions. It is recommended to install bolt heads against the Retaining Ring/Bars and use SAE-sized washers at the retaining ring split. Care must be taken to ensure the retaining ring ends butt up to each other without over-lapping or allowing a large gap between ends. Expansion joint installation can be facilitated by choosing the difficult flange to bolt up to first. The expansion joint flange can be pushed into position from the inside body out. Insert a bolt through the first hole and install the subsequent bolts in a cross-star pattern and tighten by hand (see figures 1 & 2). Repeat the steps for the opposite flange.

Figure 1 - Circular Duct Expansion Joint

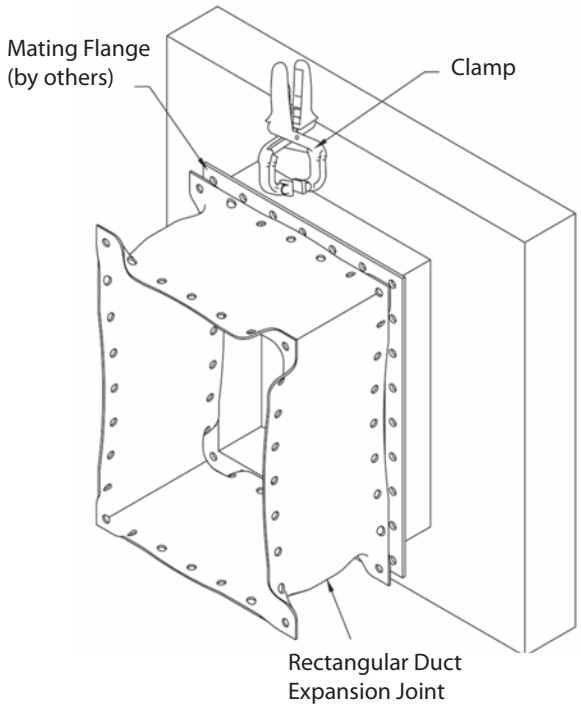


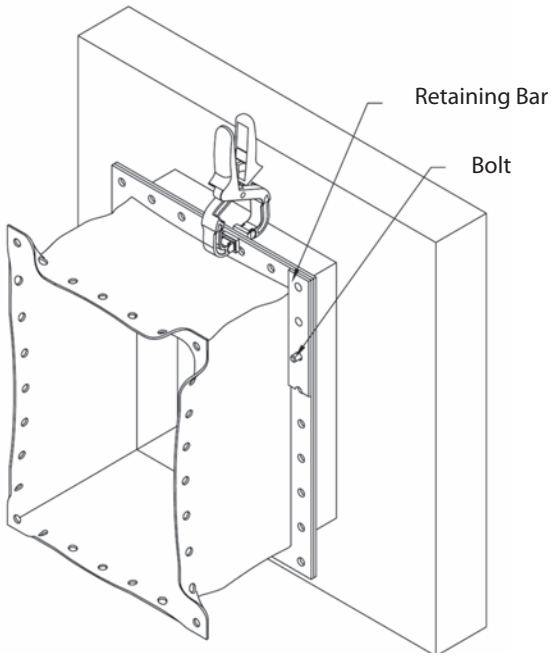
Install the joint against the mating flange surface and secure in-place with clamp(s). Flange can be stretched to line up the mating bolt holes.



A bolt can be used to line up the first hole, the second bolt should be at 180°, subsequent bolts installed in a cross-star pattern. Retaining bars are installed and secured in place with bolts.

Figure 2 - Rectangular Duct Expansion Joint





Install the joint against the mating flange surface and secure in-place with clamp(s). Flange can be stretched to line up the mating bolt holes.

A bolt can be used to line up the first hole, the second bolt should be at 180°, subsequent bolts installed in a cross-star pattern. Retaining bars are installed and secured in place with bolts.

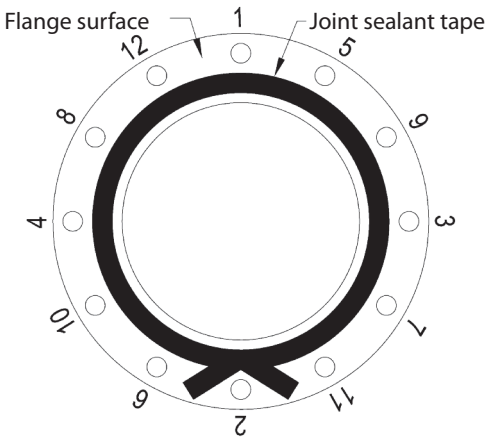
Bolting Torque • Tighten bolts in stages by alternating around the flange in a star pattern until a leak tight seal is achieved (see figure 3). If the expansion joint has an integral rubber flange, the bolts should be tight enough to make the outer rubber flange bulge slightly between the retaining ring and the mating flange. Avoid using any rubber gaskets. Expansion joint flanges may have to be retightened after initial installation due to the rubber flanges relaxing and taking a compression set. If the expansion joint has an integral laminated fluoroplastic PTFE flange, a PTFE joint sealant tape should be applied onto the mating flange to improve sealing. Ensure the placement of the joint sealant is below the bolt circle diameter as shown on figure 3. Check bolt tightness two or three weeks after installation and retighten as needed. *Never retighten bolts when the pipeline/ducting is under pressure.*

Maintenance • Expansion joints should be inspected regularly to insure they are in proper working order. Check the face-to-face dimension for any changes and make sure it is still within allowable limits. Look for any obvious bulges, tears, cracks or other damage. If there are any signs of damage, contact **GRC** immediately.

Storage • Ideal storage is a cool and dry warehouse location. Store flange face down on a smooth pallet or wooden platform. Do not store other heavy equipment on top of the expansion joints. If storage must be outdoors, the expansion joints should be placed on smooth, wooden platforms and should not be in contact with the ground and/or exposed to vermin. Cover with a tarpaulin or store in original container.

Handling • Do not lift with ropes or bars through the bolt holes. To ensure proper performance and service life it is important to prevent damage by careful handling and by supporting the expansion joint during installation.

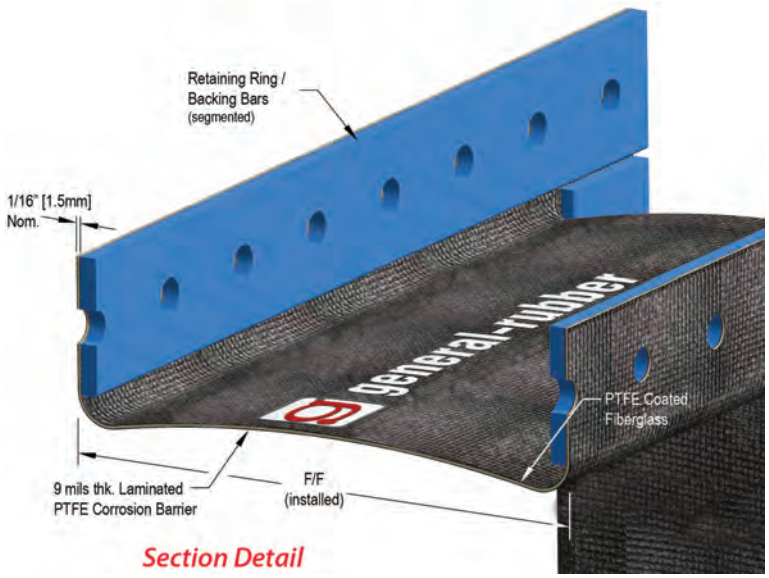
Figure 3



PTFE Single Layer

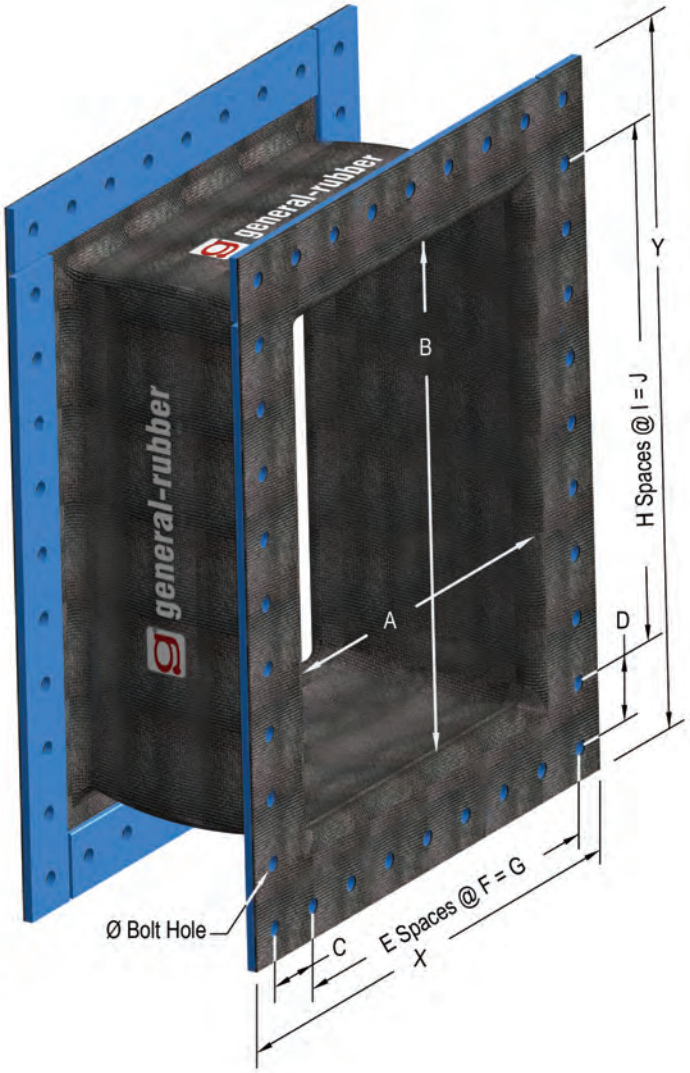
Style 1093 Rectangular

General Rubber's Style 1093 PTFE single layer flanged ducting expansion joint is designed with lower spring rates for reduced reaction forces and greater movement capabilities within a compact body. This lightweight construction is optimally designed with external or internal laminated flanges and represents the most cost-effective arrangement for low-pressure flanged ducting applications. The construction includes a PTFE fluoropolymer laminated flexible element and steel retaining rings. Additionally, it is designed to absorb large all-directional movements, reduce noise and vibration, compensate for misalignments, provide access to ducting and equipment and relieve duct and anchor stresses. This expansion joint offers up to 600°F with ± 3 PSI continuous service and zero porosity in wet and dry systems. The flexible element is constructed with PTFE fluoropolymer coated high tensile fiberglass reinforcement and a 9 Mil thick laminated PTFE fluoropolymer corrosion barrier.



Section Detail

- Exceptional all-directional movement capability
- Laminated PTFE fluoropolymer corrosion barrier
- Available in custom offset as well as reducing arrangements
- Available in round and rectangular design in all sizes
- Absorbs system noise, vibration and shock
- Available with external or internal flanges
- Carbon steel, stainless steel, or hot dip galvanized retaining rings / bars available for easy bolting to mating flanges
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Simple to install, lightweight and high strength
- Superior chemical resistance
- Heat form and sealed to any size and arrangement
- Provides easy access to ducting and equipment



SIZE		STYLE 1093 MOVEMENT (non-concurrent)			PRESSURE	
Installed Length F/F	MFD Length F/F +	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	in	psig	psig
mm	mm	mm	mm	mm	barg	barg
3 1/2 - 6	1/2	2	1/2	1	3	-3
89-152	13	51	13	25	0.2	-0.2
6 1/2 - 9	3/4	3	3/4	2	3	-3
165 - 229	19	76	19	51	0.2	-0.2
9 1/2 - 12	1	4	1	3	3	-3
241 - 305	25	102	25	76	0.2	-0.2
12 1/2 - 16	1	5	1	4	3	-3
318 - 406	25	127	25	102	0.2	-0.2

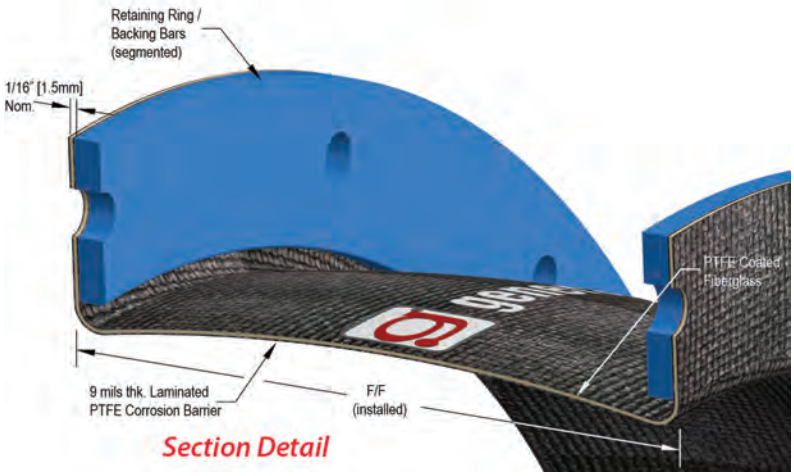
Notes:

1. Extension movement capabilities can be increased with additional pre-compression during installation.
2. For vacuum or large pre-compressed application, a set-back may be required to keep the expansion joint from protruding into the gas stream or touching the flow liner/baffle.
3. Retaining Rings / Backing Bars of ¼" thickness standard. Suggested bolt spacing at 4" centers max.
4. Flange gaskets suitable for the system temperature and fluid media should be used to ensure a full seal on all fluoroplastic styles.
5. Bill of Materials: Retaining Ring/ Backing Bars, Carbon Steel Shop Prime or Carbon Steel hot dipped galvanized or Stainless Steel; Reinforcement, PTFE Fluoropolymer Coated Fiberglass; Barrier (tube & cover), 9 mils thick laminated PTFE corrosion barrier.
6. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
7. **WARNING**: Anchors should be used to resist the pressure thrust force and isolate movements between expansion joints. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.

PTFE Single Layer

Style 1093 Round

General Rubber's Style 1093 PTFE single layer flanged ducting expansion joint is designed with lower spring rates for reduced reaction forces and greater movement capabilities within a compact body. This lightweight construction is optimally designed with external or internal laminated flanges and represents the most cost-effective arrangement for low-pressure flanged ducting applications. The construction includes a PTFE fluoropolymer laminated flexible element and steel retaining rings. Additionally, it is designed to absorb large all-directional movements, reduce noise and vibration, compensate for misalignments, provide access to ducting and equipment, and relieve duct and anchor stresses. This expansion joint offers up to 600°F with ± 3 PSI continuous service and zero porosity in wet and dry systems. The flexible element is constructed with PTFE fluoropolymer coated high-tensile fiberglass reinforcement and a 9 Mil thick laminated PTFE fluoropolymer corrosion barrier.



Section Detail

- Exceptional all-directional movement capability
- Laminated PTFE fluoropolymer corrosion barrier
- Available in custom offset as well as reducing arrangements
- Available in round and rectangular design in all sizes
- Absorbs system noise, vibration and shock
- Available with external or internal flanges
- Carbon steel, stainless steel, or hot dip galvanized retaining rings / bars available for easy bolting to mating flanges
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Simple to install, lightweight and high strength
- Superior chemical resistance
- Heat form and sealed to any size and arrangement
- Provides easy access to ducting and equipment

SIZE		STYLE 1093 MOVEMENT (non-concurrent)			PRESSURE	
Installed Length F/F	MFD Length F/F +	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	in	psig	psig
mm	mm	mm	mm	mm	barg	barg
3 1/2 - 6	1/2	2	1/2	1	3	-3
89-152	13	51	13	25	0.2	-0.2
6 1/2 - 9	3/4	3	3/4	2	3	-3
165 - 229	19	76	19	51	0.2	-0.2
9 1/2 - 12	1	4	1	3	3	-3
241 - 305	25	102	25	76	0.2	-0.2
12 1/2 - 16	1	5	1	4	3	-3
318 - 406	25	127	25	102	0.2	-0.2

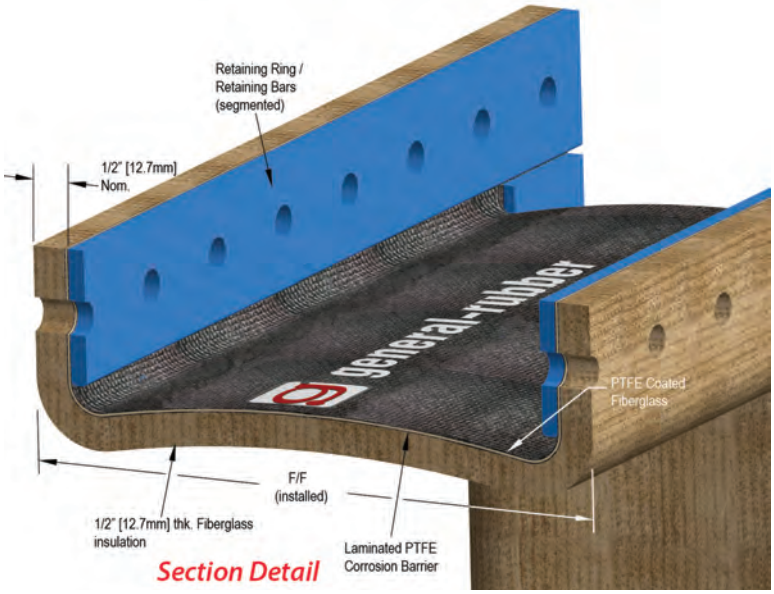
Notes:

1. Extension movement capabilities can be increased with additional pre-compression during installation.
2. For vacuum or large pre-compressed application, a set-back may be required to keep the expansion joint from protruding into the gas stream or touching the flow liner/baffle.
3. Retaining Rings / Backing Bars of ¼" thickness standard. Suggested bolt spacing at 4" centers max.
4. Flange gaskets suitable for the system temperature and fluid media should be used to ensure a full seal on all fluoroplastic styles.
5. Bill of Materials: Retaining Ring/ Backing Bars, Carbon Steel Shop Prime or Carbon Steel hot dipped galvanized or Stainless Steel; Reinforcement, PTFE Fluoropolymer Coated Fiberglass; Barrier (tube & cover), 9 mils thick laminated PTFE corrosion barrier. 6. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
7. **WARNING**: Anchors should be used to resist the pressure thrust force and isolate movements between expansion joints. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.

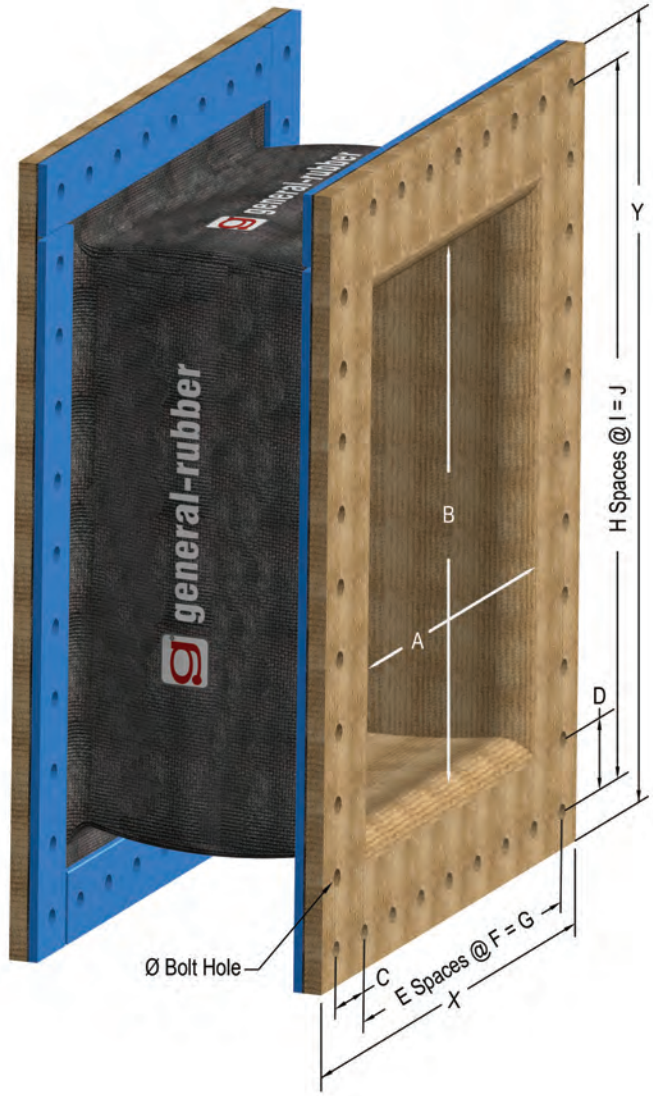
PTFE Single Layer

Style 1094 Rectangular

General Rubber's Style 1094 PTFE single layer flanged ducting expansion joint is designed with lower spring rates for reduced reaction forces and greater movement capabilities within a compact body. This lightweight construction is optimally designed with external or internal laminated flanges and represents the most cost-effective arrangement for low pressure flanged ducting applications. The construction includes a PTFE fluoropolymer laminated flexible element and steel retaining rings. Additionally, it is designed to absorb large all-directional movements, reduce noise and vibration, compensate for misalignments, provide access to ducting and equipment, and relieve duct and anchor stresses. This expansion joint offers up to 1,000°F and ± 3 PSI continuous service. The flexible element is constructed with PTFE fluoropolymer coated high-tensile fiberglass reinforcement, a laminated PTFE fluoropolymer corrosion barrier, and a laminated woven or needle mat fiberglass insulation layer.



- Exceptional all-directional movement capability
- Laminated PTFE fluoropolymer corrosion barrier
- Available in custom offset as well as reducing arrangements
- Available in round and rectangular design in all sizes
- Absorbs system noise, vibration and shock
- Available with external or internal flanges
- Carbon steel, stainless steel, or hot dip galvanized retaining rings / bars available for easy bolting to mating flanges
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Simple to install, lightweight and high strength
- Superior chemical resistance
- Heat form and sealed to any size and arrangement
- Provides easy access to ducting and equipment



SIZE		STYLE 1094 MOVEMENT (non-concurrent)			PRESSURE	
Installed Length F/F	MFD Length F/F +	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	in	psig	psig
mm	mm	mm	mm	mm	barg	barg
3 1/2 - 6	1/2	2	1/2	1	3	-3
89-152	13	51	13	25	0.2	-0.2
6 1/2 - 9	3/4	3	3/4	2	3	-3
165 - 229	19	76	19	51	0.2	-0.2
9 1/2 - 12	1	4	1	3	3	-3
241 - 305	25	102	25	76	0.2	-0.2
12 1/2 - 16	1	5	1	4	3	-3
318 - 406	25	127	25	102	0.2	-0.2

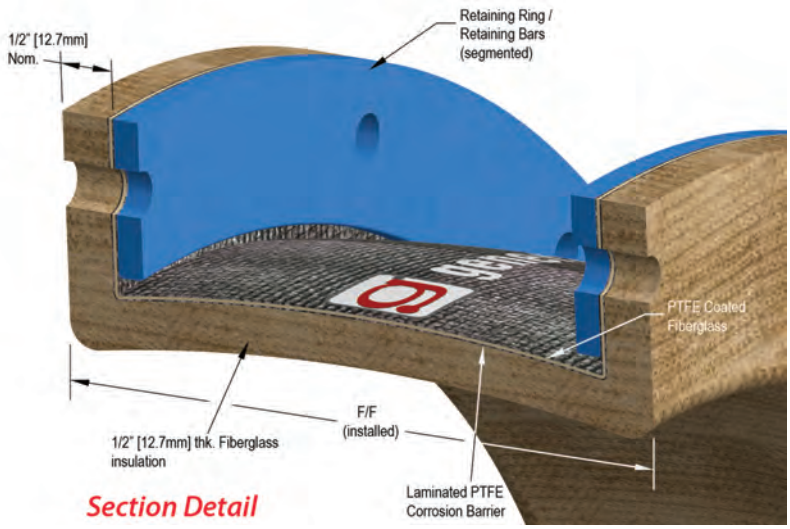
Notes:

1. Extension movement capabilities can be increased with additional pre-compression during installation.
2. For vacuum or large pre-compressed application, a set-back may be required to keep the expansion joint from protruding into the gas stream or touching the flow liner/baffle.
3. Retaining Rings / Backing Bars of ¼" thickness standard. Suggested bolt spacing at 4" centers max.
4. Flange gaskets suitable for the system temperature and fluid media should be used to ensure a full seal on all fluoroplastic styles.
5. Bill of Materials: Retaining Ring/ Backing Bars, Carbon Steel Shop Prime or Carbon Steel hot dipped galvanized or Stainless Steel; Reinforcement, PTFE Fluoropolymer Coated Fiberglass; Barrier (tube & cover), laminated PTFE corrosion barrier; Insulation, fiberglass.
6. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
7. **WARNING**: Anchors should be used to resist the pressure thrust force and isolate movements between expansion joints. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.

PTFE Single Layer

Style 1094 Round

General Rubber's Style 1094 PTFE single layer flanged ducting expansion joint is designed with lower spring rates for reduced reaction forces and greater movement capabilities within a compact body. This lightweight construction is optimally designed with external or internal laminated flanges and represents the most cost-effective arrangement for low pressure flanged ducting applications. The construction includes a PTFE fluoropolymer laminated flexible element and steel retaining rings. Additionally, it is designed to absorb large all-directional movements, reduce noise and vibration, compensate for misalignments, provide access to ducting and equipment, and relieve duct and anchor stresses. This expansion joint offers up to 1,000°F and ± 3 PSI continuous service. The flexible element is constructed with PTFE fluoropolymer coated high-tensile fiberglass reinforcement, a laminated PTFE fluoropolymer corrosion barrier, and a laminated woven or needle mat fiberglass insulation layer.



- Exceptional all-directional movement capability
- Laminated PTFE fluoropolymer corrosion barrier
- Available in custom offset as well as reducing arrangements
- Available in round and rectangular design in all sizes
- Absorbs system noise, vibration and shock
- Available with external or internal flanges
- Carbon steel, stainless steel, or hot dip galvanized retaining rings / bars available for easy bolting to mating flanges
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Simple to install, lightweight and high strength
- Superior chemical resistance
- Heat form and sealed to any size and arrangement
- Provides easy access to ducting and equipment

SIZE		STYLE 1094 MOVEMENT (non-concurrent)			PRESSURE	
Installed Length F/F	MFD Length F/F +	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	in	psig	psig
mm	mm	mm	mm	mm	barg	barg
3 1/2 - 6	1/2	2	1/2	1	3	-3
89-152	13	51	13	25	0.2	-0.2
6 1/2 - 9	3/4	3	3/4	2	3	-3
165 - 229	19	76	19	51	0.2	-0.2
9 1/2 - 12	1	4	1	3	3	-3
241 - 305	25	102	25	76	0.2	-0.2
12 1/2 - 16	1	5	1	4	3	-3
318 - 406	25	127	25	102	0.2	-0.2

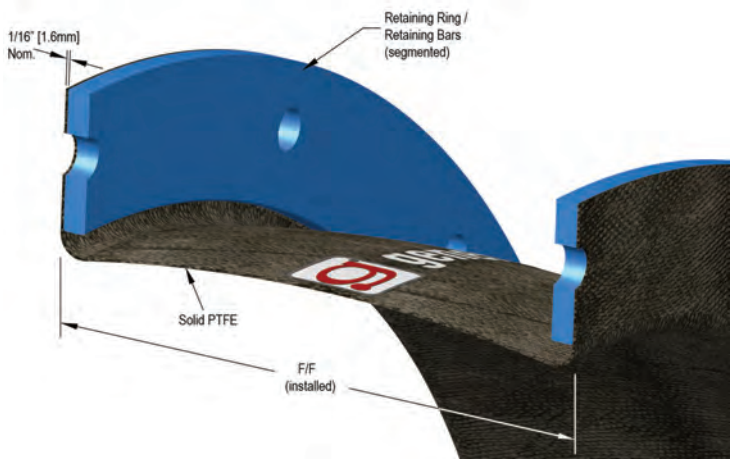
Notes:

1. Extension movement capabilities can be increased with additional pre-compression during installation.
2. For vacuum or large pre-compressed application, a set-back may be required to keep the expansion joint from protruding into the gas stream or touching the flow liner/baffle.
3. Retaining Rings / Backing Bars of ¼" thickness standard. Suggested bolt spacing at 4" centers max.
4. Flange gaskets suitable for the system temperature and fluid media should be used to ensure a full seal on all fluoroplastic styles.
5. Bill of Materials: Retaining Ring/ Backing Bars, Carbon Steel Shop Prime or Carbon Steel hot dipped galvanized or Stainless Steel; Reinforcement, PTFE Fluoropolymer Coated Fiberglass; Barrier (tube & cover), laminated PTFE corrosion barrier; Insulation, fiberglass.
6. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
7. **WARNING**: Anchors should be used to resist the pressure thrust force and isolate movements between expansion joints. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.

PTFE Single Layer

Style 1095 Round

General Rubber's Style 1095 PTFE single layer flanged ducting expansion joint is designed with lower spring rates for reduced reaction forces and greater movement capabilities within a compact body. This lightweight construction is optimally designed with external or internal laminated flanges and represents the most cost-effective arrangement for low pressure flanged ducting applications. The construction includes a PTFE fluoropolymer laminated flexible element and steel retaining rings. Additionally, it is designed to absorb large all-directional movements, reduce noise and vibration, compensate for misalignments, provide access to ducting and equipment, and relieve duct and anchor stresses. This expansion joint offers up to 500°F with ± 3 PSI continuous service, zero porosity in wet and dry systems, and a cycle life in the millions. The flexible element is constructed of a solid 30 Mil thick PTFE fluoropolymer layer and is available in thicknesses up to 60 Mil, offering the ultimate chemical resistance with no fiberglass component to fatigue.



- Exceptional all-directional movement capability
- Laminated PTFE fluoropolymer corrosion barrier
- Available in custom offset as well as reducing arrangements
- Available in round and rectangular design in all sizes
- Absorbs system noise, vibration and shock
- Available with external or internal flanges
- Carbon steel, stainless steel, or hot dip galvanized retaining rings / bars available for easy bolting to mating flanges
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Simple to install, lightweight and high strength
- Superior chemical resistance
- Heat form and sealed to any size and arrangement
- Provides easy access to ducting and equipment

SIZE		STYLE 1095 MOVEMENT (non-concurrent)			PRESSURE	
Installed Length F/F	MFD Length F/F +	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	in	psig	psig
mm	mm	mm	mm	mm	barg	barg
3 1/2 - 6	1/2	2	1/2	1	3	-3
89-152	13	51	13	25	0.2	-0.2
6 1/2 - 9	3/4	3	3/4	2	3	-3
165 - 229	19	76	19	51	0.2	-0.2
9 1/2 - 12	1	4	1	3	3	-3
241 - 305	25	102	25	76	0.2	-0.2
12 1/2 - 16	1	5	1	4	3	-3
318 - 406	25	127	25	102	0.2	-0.2

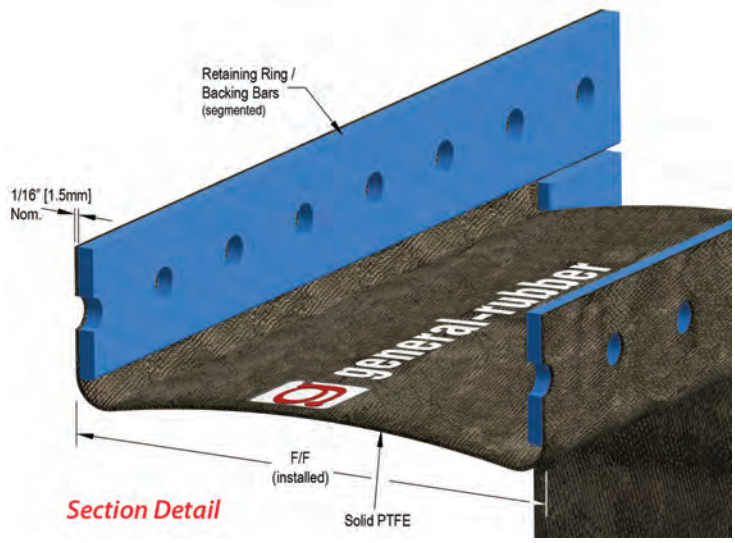
Notes:

1. Extension movement capabilities can be increased with additional pre-compression during installation.
2. For vacuum or large pre-compressed application, a set-back may be required to keep the expansion joint from protruding into the gas stream or touching the flow liner/baffle.
3. Retaining Rings / Backing Bars of ¼" thickness standard. Suggested bolt spacing at 4" centers max.
4. Flange gaskets suitable for the system temperature and fluid media should be used to ensure a full seal on all fluoroplastic styles.
5. Bill of Materials: Retaining Ring/ Backing Bars, Carbon Steel Shop Prime or Carbon Steel hot dipped galvanized or Stainless Steel; Reinforcement, 30 mils thick solid PTFE.
6. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.
7. **WARNING**: Anchors should be used to resist the pressure thrust force and isolate movements between expansion joints. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.

PTFE Single Layer

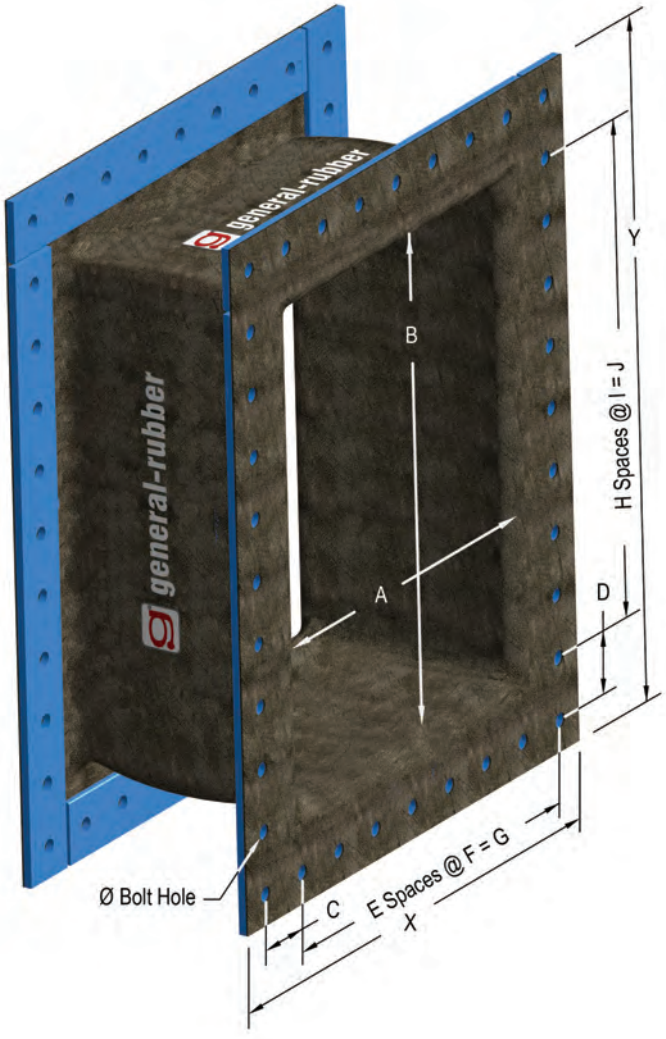
Style 1095 Rectangular

General Rubber's Style 1095 PTFE single layer flanged ducting expansion joint is designed with lower spring rates for reduced reaction forces and greater movement capabilities within a compact body. This lightweight construction is optimally designed with external or internal laminated flanges and represents the most cost-effective arrangement for low pressure flanged ducting applications. The construction includes a PTFE fluoropolymer laminated flexible element and steel retaining rings. Additionally, it is designed to absorb large all-directional movements, reduce noise and vibration, compensate for misalignments, provide access to ducting and equipment, and relieve duct and anchor stresses. This expansion joint offers up to 500°F with ± 3 PSI continuous service, zero porosity in wet and dry systems, and a cycle life in the millions. The flexible element is constructed of a solid 30 Mil thick PTFE fluoropolymer layer and is available in thicknesses up to 60 Mil, offering the ultimate chemical resistance with no fiberglass component to fatigue.



Section Detail

- Exceptional all-directional movement capability
- Laminated PTFE fluoropolymer corrosion barrier
- Available in custom offset as well as reducing arrangements
- Available in round and rectangular design in all sizes
- Absorbs system noise, vibration and shock
- Available with external or internal flanges
- Carbon steel, stainless steel, or hot dip galvanized retaining rings / bars available for easy bolting to mating flanges
- Compensates for minor misalignment and offset
- Low stiffness and deflection forces
- Simple to install, lightweight and high strength
- Superior chemical resistance
- Heat form and sealed to any size and arrangement
- Provides easy access to ducting and equipment



SIZE		STYLE 1095 MOVEMENT (non-concurrent)			PRESSURE	
Installed Length F/F	MFD Length F/F +	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	in	psig	psig
mm	mm	mm	mm	mm	barg	barg
3 1/2 - 6	1/2	2	1/2	1	3	-3
89-152	13	51	13	25	0.2	-0.2
6 1/2 - 9	3/4	3	3/4	2	3	-3
165 - 229	19	76	19	51	0.2	-0.2
9 1/2 - 12	1	4	1	3	3	-3
241 - 305	25	102	25	76	0.2	-0.2
12 1/2 - 16	1	5	1	4	3	-3
318 - 406	25	127	25	102	0.2	-0.2

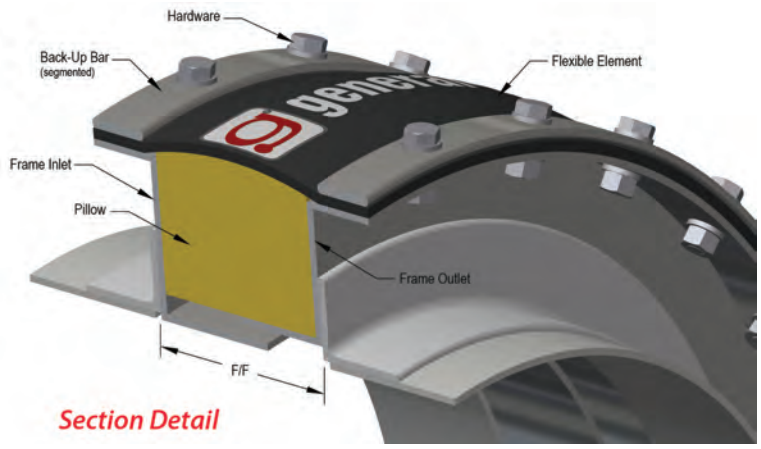
Notes:

1. Extension movement capabilities can be increased with additional pre-compression during installation.
2. Anchors should be used to resist the pressure thrust force and isolate the thermal movements between expansion joints.
3. For vacuum or large pre-compressed application, a set-back may be required to keep the expansion joint from protruding into the gas stream or touching the flow liner/baffle.
4. Retaining Rings / Backing Bars of ¼" thickness standard. Suggested bolt spacing at 4" centers max.
5. Flange gaskets suitable for the system temperature and fluid media should be used to ensure a full seal on all fluoroplastic styles.
6. Bill of Materials: Retaining Ring/ Backing Bars: Carbon Steel, Stainless Steel or hot dip galvanized, Reinforcement: 30 mils thick solid PTFE.
7. For full product specifications and installation instructions, visit general-rubber.com or contact our sales department.
8. **WARNING**: Anchors should be used to resist the pressure thrust force and isolate movements between expansion joints. Expansion joints may operate in pipelines carrying fluids at elevated temperatures and pressures, so precaution should be taken to ensure proper installation and regular inspection. Care is required to protect personnel in the event of leakage or splash. Adequate floor drains are always recommended.

PTFE Composite

Style 1096DB Round

General Rubber's Style 1096 PTFE composite ducting expansion joint is designed for flue gas continuous service up to 1200°F. This construction is optimally designed with a PTFE fluoropolymer composite flexible element, cavity pillows, steel frames, and flow liners, as the support structures and applications require. Composite layering includes a heat and abrasion resistant high-tensile fiberglass reinforcement (gas side), insulation matting, 9 Mil thick PTFE corrosion barrier (dew point sensitive), insulation matting, high-tensile fiberglass reinforcement, and an outer layer of PTFE fluoropolymer coated high-tensile fiberglass. Additionally, it is designed to absorb large all-directional movements, reduce noise and vibration, compensate for misalignments, provide access to ducting and equipment, and relieve duct and anchor stresses.



Section Detail

- Flue gas service up to 1200°F continuous service
- PTFE Fluoropolymer corrosion barrier standard for superior chemical resistance
- Round and rectangular frames available in all sizes
- Available with single or double flow liners
- Easy to field splice or repair by heat sealing
- Exceptional all-directional movement capability
- Absorbs system noise, vibration and shock
- Compensates for minor misalignment and offset
- Field surveys and evaluations available

SIZE	STYLE 1096DB MOVEMENT (non-concurrent)			PRESSURE	
Installed Length F/F	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	psig	psig
mm	mm	mm	mm	barg	barg
6	2	1/2	1	3	-3
152	51	13	25	0.2	-0.2
9	3	3/4	1 1/2	3	-3
229	76	19	38	0.2	-0.2
12	4	1	3	3	-3
305	102	25	76	0.2	-0.2
16	5	1	3 1/2	3	-3
406	127	25	89	0.2	-0.2

Notes:

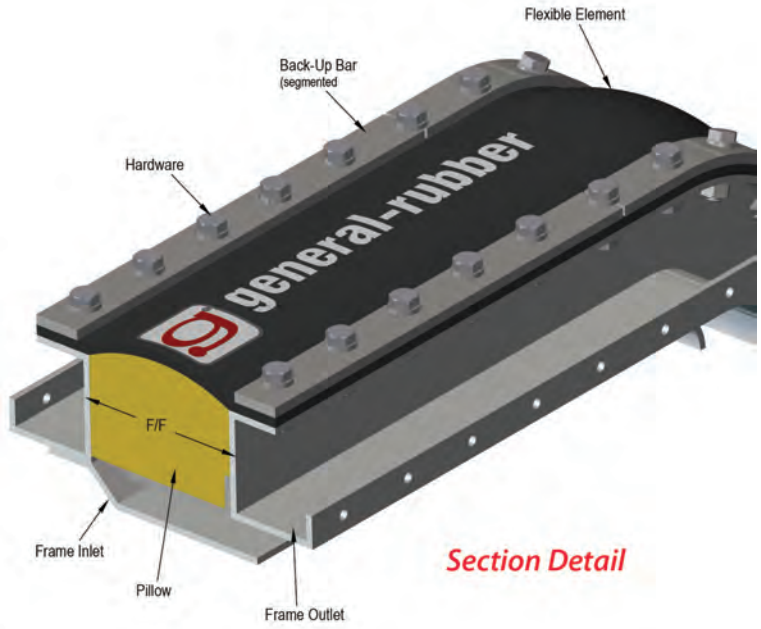
1. Bill of Materials: Back-Up Bars, Frame Inlet and Frame Outlet, carbon steel or stainless steel; Hardware, hot dipped galvanized steel or stainless steel; Pillow, fiberglass; Flex Element, PTFE fluoropolymer composite.
2. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.

PTFE Composite

Style 1096DB Rectangular

General Rubber's Style 1096 PTFE composite ducting expansion joint is designed for flue gas continuous service up to 1200°F. This construction is optimally designed with a PTFE fluoropolymer composite flexible element, cavity pillows, steel frames, and flow liners, as the support structures and applications require. Composite layering includes a heat and abrasion resistant high-tensile fiberglass reinforcement (gas side), insulation matting, 9 Mil thick PTFE corrosion barrier (dew point sensitive), insulation matting, high-tensile fiberglass reinforcement, and an outer layer of PTFE fluoropolymer coated high-tensile fiberglass. Additionally, they are designed to absorb large all-directional movements, reduce noise and vibration, compensate for misalignments, provide access to ducting and equipment, and relieve duct and anchor stresses.

- Flue gas service up to 1200°F continuous service
- PTFE Fluoropolymer corrosion barrier standard for superior chemical resistance
- Round and rectangular frames available in all sizes
- Available with single or double flow liners
- Easy to field splice or repair by heat sealing
- Exceptional all-directional movement capability
- Absorbs system noise, vibration and shock



Section Detail

SIZE	STYLE 1096DB MOVEMENT (non-concurrent)			PRESSURE	
Installed Length F/F	Comp.	Ext.	Lateral	Pressure	Vacuum
in	in	in	in	psig	psig
mm	mm	mm	mm	barg	barg
6	2	1/2	1	3	-3
152	51	13	25	0.2	-0.2
9	3	3/4	1 1/2	3	-3
229	76	19	38	0.2	-0.2
12	4	1	3	3	-3
305	102	25	76	0.2	-0.2
16	5	1	3 1/2	3	-3
406	127	25	89	0.2	-0.2

Notes:

1. Bill of Materials: Back-Up Bars, Frame Inlet and Frame Outlet, carbon steel or stainless steel; Hardware, hot dipped galvanized steel or stainless steel; Pillow, fiberglass; Flex Element, PTFE fluoropolymer composite.
2. For full product specifications and installation instructions, visit general-rubber.com or contact our technical sales department.

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We are particularly proud of both our EPC-focused program for Best Piping Practice and Optimization (BPPO), and our MRO-focused Plant Reliability and Efficiency Program (PREP).

In addition, utilizing advanced materials and technologies has differentiated us as a leader in the industry and is the principal reason our products range "From the Simple to the Simply Amazing."

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