

RM DYNEX Non-Metallic Expansion Joints



Catalog EPS 5290/USA



RM DYNEX EXPANSION JOINTS

In test after test and application after application, RM DYNEX expansion joints outperform metallic and all other non-rigid joints.

RM DYNEX – Global Leader in Innovation and Design

Parker Hannifin Corporation is a global leader in design and innovation for motion and control sealing solutions. With the addition of RM DYNEX products, Parker's EPS Division is positioned to provide engineering and fabrication expertise for all applications of fabric expansion joints for fossil-fuel fired power generation, gas turbines and various industrial facilities with critical duct sealing requirements.

RM DYNEX has an installed base of over 75,000 systems in service worldwide – providing time-tested, predictable, environmentally sound products for the most severe applications.

RM DYNEX Product Offering

RM DYNEX fabric expansion joints are offered in a broad range of configurations and multi-layer construction types. Their engineered design and construction mean performance for managing thermal expansion, noise reduction, vibration, wind & seismic loads, movement absorption and system stress relief.

Complete Advanced Materials & Testing Capabilities

Parker is dedicated and focused on innovative development of new RM DYNEX products and services to meet the growing needs of its customers.

RM DYNEX manufacturing capabilities include non-metallic expansion joints from EPDM, FKM, CR, Silicone, PTFE products and high temperature fabric materials that serve to insulate the primary and secondary sealing materials. In addition, we manufacture complementary sealing devices such as tadpole gaskets from high temperature fabrics and metals for high corrosive environments. Metal frames, baffles and backup bars are constructed of carbon steel and the higher nickel steels available for today's demanding environments.

RM DYNEX offers three classes of fabric expansion joints:

Economy:

Styles: X275-X300, X404-X425, LX801-LX1000

Performance:

Styles: E300E, E400V, C500-C1000

Premium:

Styles: Mark II, Mark III, Mark V Modified, Mark V, 1200 GTA/GTB

Quality Assurance

To ensure product integrity, RM DYNEX expansion joint manufacturing operations are certified to ISO 9001 standards. Parker is committed to consistently delivering excellence in quality and service through continuous improvement of our people, products and systems.

Our commitment to quality and service is supported by our investment in technologically advanced test and inspection methods. We're constantly striving to improve customer satisfaction and product quality through the implementation of:

- Six Sigma methodology
- Lean manufacturing
- TQM methodology
- Advanced product quality planning (APQP)
- Feasibility studies

Parker participates in and conforms to standards developed by the following industry associations:

- Fluid Sealing Association
- ASTM
- PVRC
- ASME



RM DYNEX provides quick manufacturing and delivery in addition to complete field installation services, retrofitting, engineering redesign and site supervision. RM DYNEX is the performance leader ahead of metal joints and non-rigid joints.

RM DYNEX is superior over metal joints due to:

Feature	Advantage/Benefit
<i>Flexibility</i>	<i>Fabric expansion joints move in any direction, axially, laterally and rotationally on X, Y and Z axes. Metal moves either laterally or axially (one way only).</i>
<i>Ability to take torsion</i>	<i>Fabric expansion joints absorb twisting movements caused by differential heating of ducting.</i>
<i>Money savings</i>	<i>Usually one fabric expansion joint replaces two metal joints. Also, metal joints are generally too big to be shipped in one piece and must be assembled on the job. Fabric expansion joints get to the job site complete, ready to go to work. Their light weight affords fast, easy installation. No crane is necessary for most installations. Folded into a compact, lightweight package, their shipping costs are a fraction of charges for metal.</i>
<i>Easy replacement</i>	<i>Lightweight fabric expansion joints are easier to handle and install.</i>
<i>Field Repairs</i>	<i>Parker-experienced field service crews respond quickly to problems. Minor damage can be handled by plant maintenance crews.</i>
<i>Noise reduction and vibration isolation</i>	<i>Fabric expansion joints isolate vibration and prevent sound transmission between ducting sections because metal to metal contact is eliminated.</i>
<i>Margin of Safety</i>	<i>Fabric expansion joints accommodate errors in calculated movements and construction misalignments.</i>
<i>Corrosion resistant</i>	<i>Non-metallic fabric expansion joints resist corrosion in critical scrubber applications.</i>
<i>Minimum force for movement</i>	<i>Dimensional changes in the metal duct work during thermal expansion and contraction are accommodated with minimum force exerted on the ducting.</i>
<i>RM DYNEX is superior over non-rigid joints due to:</i>	
<i>Longer Life</i>	<i>Fabric expansion joints have tough, heavy multiply walled construction.</i>
<i>No gasket needed</i>	<i>Built-in fabric flanges act as gaskets. They usually require fewer bolts and make possible easier, less expensive installation.</i>
<i>All configurations available</i>	<i>Round, square, rectangular, eccentric and reducing shapes fit all requirements for industry. Usually made in flanged cross-section with maximum radius between body and flange. Flanges can be made in either direction. Also fabric expansion joints are furnished as an open end belt without flanges for field splicing or endless belt for special applications.</i>
<i>Advanced construction</i>	<i>Parker RM DYNEX uses advanced-design molded corners on elastomeric joints. This design gives complete integrity between the inner and outer plies of material as well as providing for a built-in flange in the corners.</i>

RM DYNEX Styles	Material Construction*	Flue Gas Temperature			
		Continuous °F	(°C)	Excursion °F	(°C)
Mark II E300E X275-X300	Elastomeric	300	(150)	350	(175)
				400	(205)
Mark III E400V X404-X425	Elastomeric	400	(205)	450	(230)
				500	(260)
				550	(290)
				600	(315)
				650	(345)
Mark V Mod. C500-C1000 LX801-LX1001	Composite 1" Insulation	500	(260)	550	(290)
				600	(315)
		600	(315)	650	(345)
Mark V C800 - C1000 LX801-LX1001	Composite Multiple Layer			700	(370)
		1000	(540)		
1200GTA 1200GTB	Composite Multiple Layer	1200	(649)		

*Contact RM DYNEX for construction details

Power Generation Applications

RM DYNEX expansion joints manage air and gas handling systems in conventional power plants (coal, oil and gas-fired) and combined cycle and gas turbine power plants. RM DYNEX styles are well suited to meet the thermal, chemical and environmental demands for a wide variety of power plant systems and applications including:

- Coal Mills
- Flue Gas Desulphurization (FGD)
- Selective Catalytic Reduction (SCR)
- Boilers
- Flue gas ducts
- Inlet
- Bypass
- Exhaust
- FD Fan
- Economizer
- Air heaters
- Precipitators
- Wet Scubbers
- Bag house
- ID fan
- Scrubber
- Absorber
- HRSG
- Chimney stack



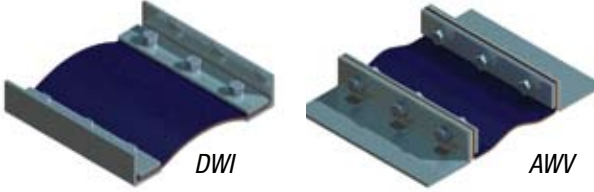
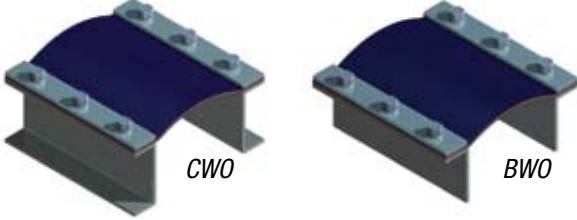
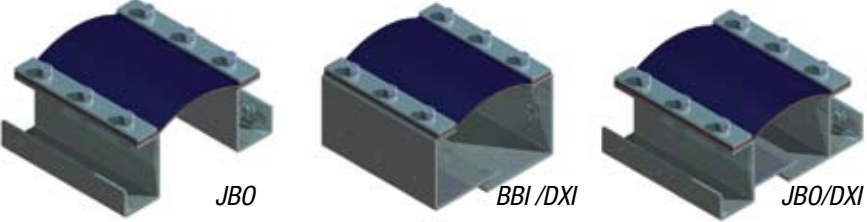
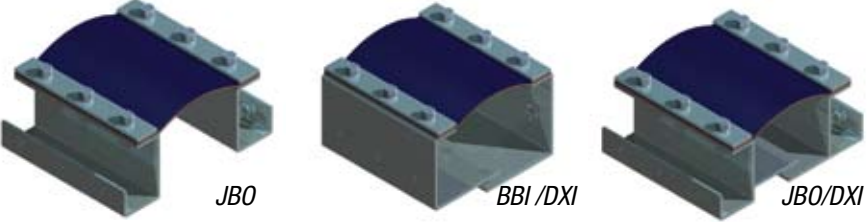
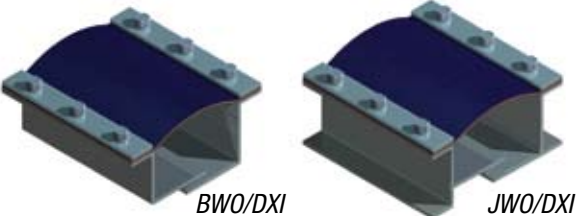
Parker Hannifin Corporation, EPS Division
403 Industrial Blvd., Nacogdoches, TX 75964
Tel: 1-800-233-3900 Fax: 936-552-8866

RM DYNEX Styles	Material Construction	Flue Gas Temperature		Excursion Duration ³		Service
		Continuous °F (°C)	Excursion °F (°C)	Single Occurrence (Hours)	Maximum Cumulative (Hours)	
Mark II	Elastomeric ¹	300 (150)	350 (175)	2.0	150	Wet / Dry
E300E						
X275-X300		400 (205)		1.0		
Mark III	Elastomeric ¹	400 (205)	450 (230)	4.0	3000	Wet / Dry
E400V			500 (260)	2.0	1000	
X404-X425		550 (290)		1.0	240	
		600 (315)		1.0	48	
		650 (345)		0.5	4	
Mark V Mod.	Composite 1" Insulation ²	500 (260)	550 (290)	4.0	1000	Dry with options for wet conditions
C500-C1000			600 (315)	3.0	240	
LX801-LX1001		600 (315)	650 (345)	1.0	130	
			700 (370)	0.5	75	
Mark V	Composite Multiple Layer ²	1000 (540)	For service above 750 °F (400 °C) an internal insulation pillow is required.		Dry	
C800-C1000			For fly ash loading problems an internal insulation pillow is recommended.			
LX801-LX1001						
1200GTA	Composite Multiple Layer ²	1200 (649)	GTA & GTB utilize a proprietary construction which allows for high temp. and high movement conditions, as commonly found in gas turbine, H.R.S.G. and economizer outlet applications. Design applications up to 2000 °F (1093 °C) continuous. Call Parker for details.		Dry	
1200GTB						

¹External insulation is allowed over elastomeric type expansion joints. This measure is taken to reduce heat loss through the expansion joint and thereby reduce localized condensation that may attack adjacent duct flanges.

²External insulation is not allowed over the composite type expansion joint or over the back up bars.

³Excursion durations listed are design standards for a variety of operating conditions. They should not be regarded as operating limitations. For more information, consult RM DYNEX design engineers.

RM DYNEX Styles	Typical Frame Configurations*
Mark II E300E X275-X300	
Mark III E400V X404-X425	
Mark V Mod. C500-C1000 LX801-LX1001	
Mark V C800-C1000 LX801-LX1001	
1200GTA 1200GTB	

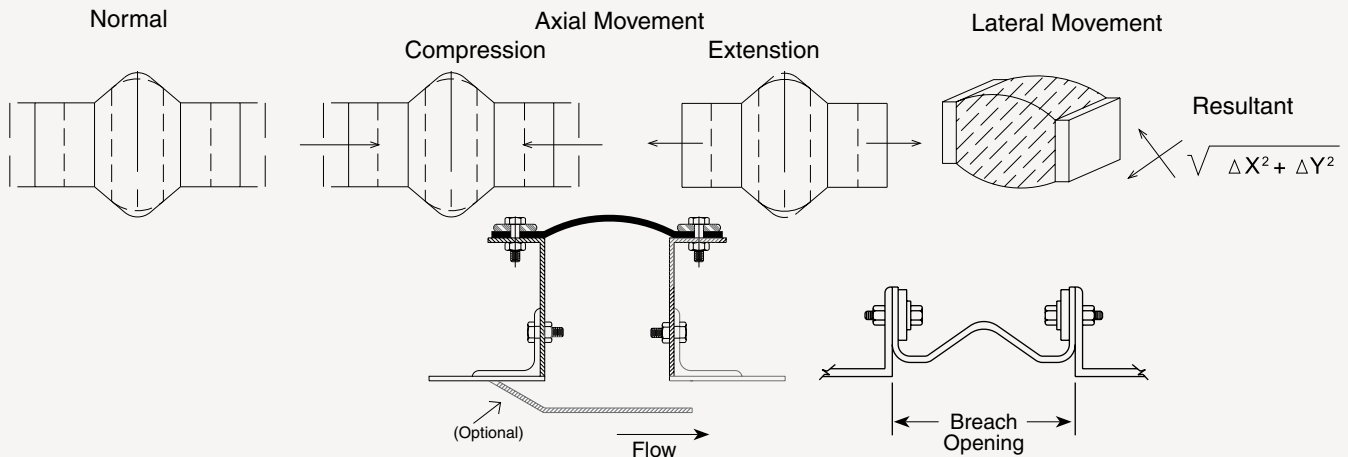
**Configurations representative only of typical designs. Frame configuration dependent upon many application variables. More options available. Consult RM DYNEX design engineers for recommended configuration based upon application parameters.*



Movement Table

<i>Breach Opening</i>	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
	(150mm)	(200mm)	(250mm)	(300mm)	(350mm)	(400mm)	(450mm)	(500mm)	(550mm)	(600mm)
<i>Manufactured F/F</i>	6.5"	8.5"	11"	13"	15"	17"	19"	21"	23"	25"
	(163mm)	(215mm)	(275mm)	(325mm)	(375mm)	(452mm)	(475mm)	(525mm)	(575mm)	(625mm)
<i>Bolt Gauge (Normal)</i>	3"	4"	5"	6"	6.75"	6.75"	6.75"	6.75"	6.75"	6.75"
	(17mm)	(100mm)	(125mm)	(150mm)	(170mm)	(170mm)	(170mm)	(170mm)	(170mm)	(170mm)
<i>Set Back (Minimum)</i>	2.25"	2.5"	3.25"	3.5"	3.625"	3.875"	4"	4.25"	4.375"	4.5"
	(57mm)	(65mm)	(82mm)	(88mm)	(92mm)	(96mm)	(100mm)	(105mm)	(109mm)	(113mm)
<i>Axial Compression (Operating)</i>	1.5"	2.25"	3.25"	4"	4.75"	5.625"	6.25"	7"	7.5"	8.5"
	(40mm)	(60mm)	(80mm)	(100mm)	(120mm)	(140mm)	(155mm)	(175mm)	(190mm)	(210mm)
<i>(Excursion)</i>	3.25"	4.375"	5.5"	6.5"	7.5"	8.5"	9.5"	10.5"	11.5"	12.5"
	(80mm)	(110mm)	(140mm)	(165mm)	(190mm)	(215mm)	(240mm)	(265mm)	(290mm)	(315mm)
<i>Axial Extension (Operating)</i>	0.5"	0.5"	1"	1"	1"	1"	1"	1"	1"	1"
	(15mm)	(15mm)	(25mm)	(25mm)	(25mm)	(25mm)	(25mm)	(25mm)	(25mm)	(25mm)
<i>(Excursion)</i>	5% Stretch allowed for Wire-F; 20% Stretch allowed for Wire									
<i>Resultant Lateral (Operating)</i>	1.5"	2.25"	3.25"	4"	4.75"	5.625"	6.25"	7"	7.5"	8.5"
	(40mm)	(60mm)	(80mm)	(100mm)	(120mm)	(140mm)	(155mm)	(175mm)	(190mm)	(210mm)
<i>(Excursion)</i>	2.375"	3.375"	4.375"	5.375"	6.25"	7"	7.5"	8.5"	9.5"	10.6"
	(60mm)	(85mm)	(110mm)	(135mm)	(155mm)	(175mm)	(190mm)	(215mm)	(240mm)	(265mm)

Movement Types



**Design Action Request Form. Download the electronic form:
Return completed form to Parker RM DYNEX: Fax: 936-552-8866**

Customer's Name	Date:	Page of
Mailing Address	Project Name:	Delivery Required Date:
City, State, Zip Code	Specification No.:	Inquiry No:
Name of person submitting data	Phone No.:	Fax No.:

Quantity Per Item

New or Replacement (check one) Please forward all drawings of ducting, expansion joints. If replacement please furnish drawings of existing joint.

SERVICE

Type of plant/service: (Precipitator, Scrubber, etc.)

Type of fuel and percent sulfur:

Peak load or base load:

Number of startups and shutdowns per year.

Location of expansion joint (I.D. Fan Outlet, Stack, Etc.)

DIMENSIONS

Duct Size: (Inside Dimensions or Diameter)

Breech Opening:

FLOW / MEDIUM

Flowing Medium: (air, flue gas, etc.)

Dust Load: (PSF) Flow Velocity: (FPS)

Flow Direction: UP DOWN HORIZONTAL ANGULAR UP ANGULAR DOWN (circle one)

PRESSURE

Design Pressure: (Inches Hg) Maximum: Normal:

TEMPERATURE

Gas Temperature: Normal: Continuous:

Maximum: (Upset) Duration Per Event: Cumulative Duration:
Temperature:

Ambient Temperature (°F): Minimum: Maximum:

MOVEMENTS OF EXPANSION JOINT

Axial Compression: (inches)

Axial Extension: (inches) One Direction: Second Direction:
Lateral Deflection: (inches)

Angulation: (degrees) Torsion: (degrees)

DUCT

Duct Material: Duct Thickness:

Internal Liner/ Baffle Required? Yes No



**Parker Hannifin Corporation, Seal Group
North America**

Engineered Polymer Systems Division

RM DYNEX expansion joint manufacturing location:

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Marion, NY 14505 USA
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