

# Fabric Expansion Joints

Involved In Expansion



## FABRIC EXPANSION JOINTS

The LBH manufacturing range of fabric expansion joints consists of customized and twenty-eight standard types divided into five categories:

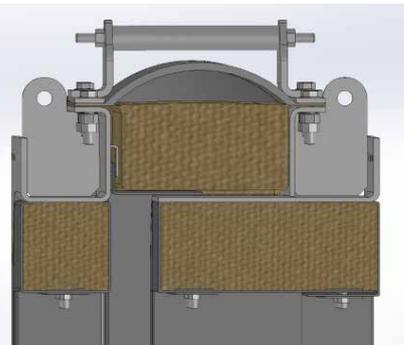
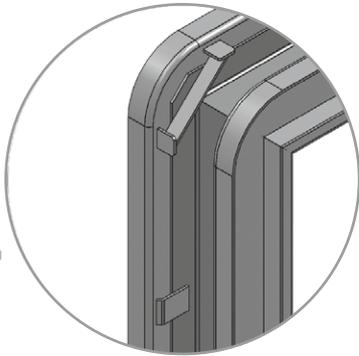
- **Type LN:** for clean air systems
- **Type MN:** for Flue Gas with low acid content
- **Type RN:** for Flue Gas with high acid content
- **Type HD:** for applications requiring optimal resistance against chemical attack or high pressure
- **Type GTX:** Gas turbine expansion joints

Temperature, pressure and media are all decisive factors for the selection of fabric expansion joints.

The temperature capabilities range from  $-50^{\circ}\text{C}$  to  $+1000^{\circ}\text{C}$

for standard types and it can reach more than the above temperatures with special customized products. The pressure range from  $-50$  kPa to  $+50$  kPa. Along with the standard types, numerous special designs are custom made.

LBH offers tailor made fabric expansion joint in all sizes and shapes for any application from single-ply bellows for ventilating systems to highly sophisticated multi-layer expansion joints for gas turbine exhaust. The common factor is always the craftsmanship, engineering and the use of superior materials.



TEMP.											
$^{\circ}\text{C}$	0	100	200	300	400	500	600	700	800	900	
LN		LN 200	LN 300	LN 400	LN 500		LN 700		LN 1000		
		LN 100									
MN		MN 250	MN 300	MN 400	MN 500		MN 700		MN 1000		
RN		RN 250	RN 300	RN 400	RN 500		RN 700		RN 1000		
HD		HD 250	HD 300	HD 400	HD 500		HD 700		HD 1000		
GTX		GTX-A GTX-B GTX-C									
$^{\circ}\text{F}$	32	212	392	572	752	932	1112	1292	1472	1652	



DNV GL BUSINESS ASSURANCE DENMARK A/S

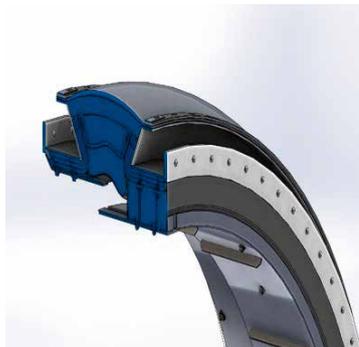


**LBH INTERNATIONAL A/S**

Kohaven 9, DK-5300 Kerteminde, Denmark  
 Tel. Int.: +45 65 32 46 11 | Fax Int.: +45 65 32 45 11  
<http://www.lbhint.com> | E-mail: [sales@lbhint.com](mailto:sales@lbhint.com)

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## SCOPE OF SUPPLY

LBH fabric expansion joints can be supplied either endless or open ended, including a complete assembly kit for closing of the expansion joint on site. Insulation bolsters are available in a large number of designs, based on the operational data.

Installed in the cavity between the inner sleeve and the expansion joint, insulation bolsters reduce the temperature exposure to the expansion joint and protect against damage caused by particles in the gas.

Metal parts such as flanges, inner sleeves etc. are designed and manufactured in accordance with project specifications.

LBH can also provide 3D models and FEA analysis to the steel structure of the expansion joint.

## EXPANSION JOINT UNITS

LBH expansion joint units are delivered ready for installation in the ductwork. The flexible components and steel parts are pre-assembled ensuring fast and simple installation.

The expansion joint, insulation bolster and steel parts are designed for optimal durability based exactly on the operational conditions in the part of the ductwork where the unit is installed.

LBH has the engineering, design and manufacturing ability to provide any technical solution involving expansion joints.

Our team of engineers at LBH in Denmark along with our representatives around the world stand at your disposal with advise during any phase of a project.

## INSTALLATION

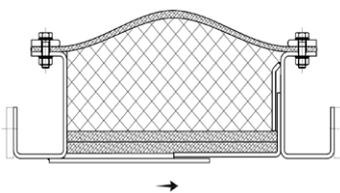
LBH expansion joints are available in the five standard profiles shown, together with a substantial customized number of special designs. The choice of profile and building length is determined by media temperature, pressure, required movement absorbtion and site conditions.

## SPECIAL DELIVERIRS

LBH is also able to provide urgent deliverreis within 24 hours based on the customer urgency and site requirements.

## APPLICATION

Oils and gas, petrochemicals, power, exhaust ducts, gas and steam turbines, steel industry, cement, oems, offshore.



**Profile I**  
Clamped directly to the pipeline.

MAX. TEMP.: 400°C.



**Profile II**  
Installed by means of angle flanges and backing flanges.  
For positive pressure.

MAX. TEMP.: 525°C.



**Profile III**  
Installed by means of angle flanges and backing flanges.  
For negative pressure.

MAX. TEMP.: 525°C.



**Profile IV**  
Installed by means of parallel flanges and backing flanges.  
For positive pressure.

MAX. TEMP.: 1000°C



**Profile IV**  
Installed by means of parallel flanges and backing flanges.  
For negative pressure.

MAX. TEMP.: 1000°C.



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