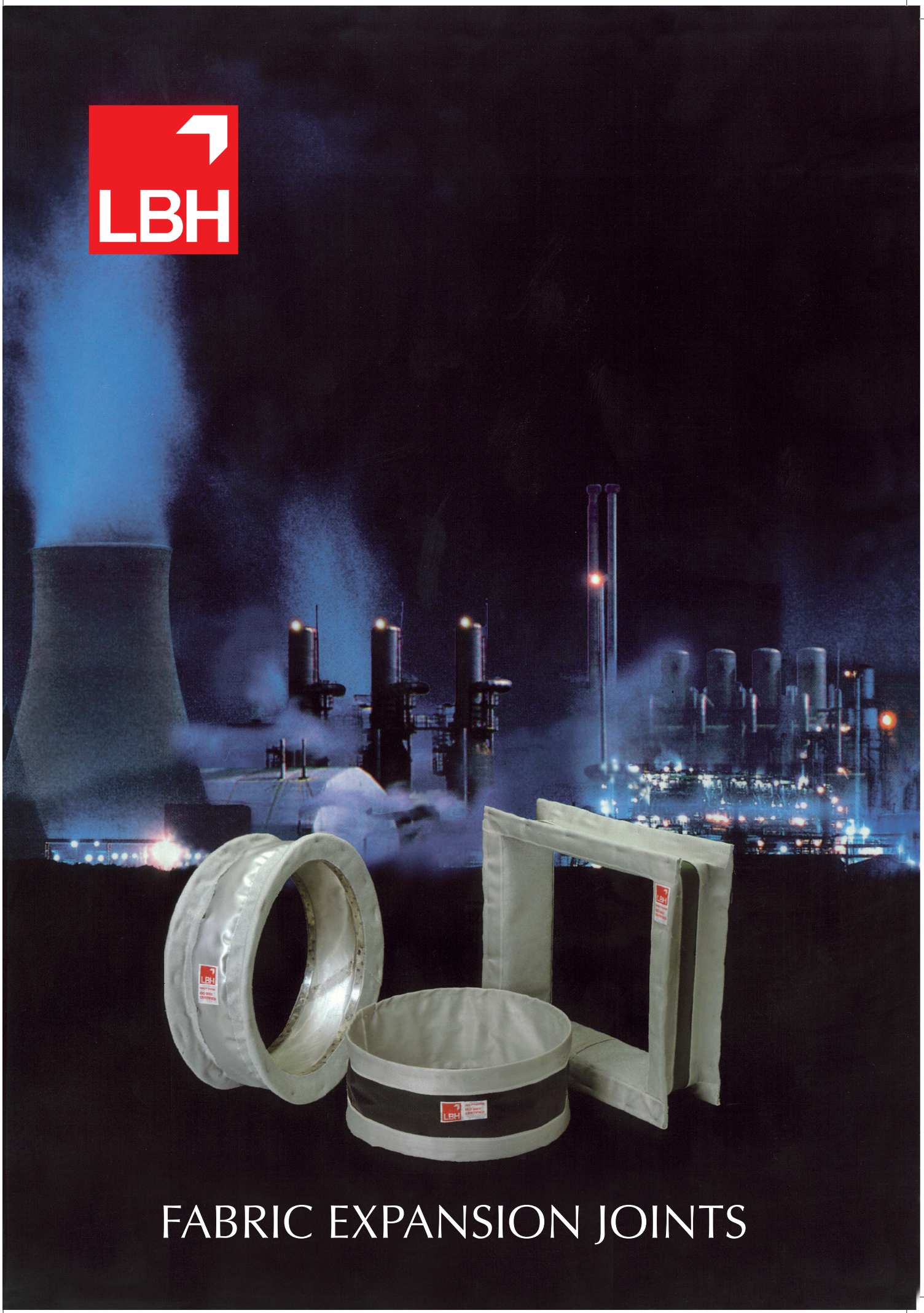


FABRIC EXPANSION JOINTS

INVOLVED IN EXPANSION

LBH INTERNATIONAL A/S is a service-oriented company specializing in the design, manufacturing and application of expansion joints and related products. LBH expansion joints are in service all over the world in the power industry, FGD-plants, DeNox-plants, gas turbine installations, incineration plants, cement works, refineries, the chemical industry, offshore, installations, ventilation systems, filter systems and many others. LBH was the first manufacturer of fabric expansion joints to be awarded the ISO 9001 approval of its Quality Management System and to be environmentally certified in accordance with ISO 14001. Our reputation as a professional and reliable partner has been aquired through superior product quality, combined with many years of experience concerning technical solutions to expansions in gas transfer applications.

Certified firm according to **DS/EN ISO 9001** by Det Norske Veritas, Danmark A/S

Certified firm according to **DS/EN ISO 14001** by Det Norske Veritas, Danmark A/S

APPLICATIONS

It is essential that all relevant parameters are taken into account when selecting the type of expansion joint for a particular application.
The LBH manufacturing range of fabric expansion joints consists of twenty-six standard types divided into four categories:

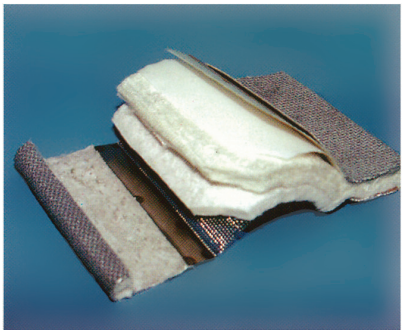
Type LN
for clean air systems.

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.

The combined temperature, pressure and media are all decisive factors for the selection of fabric



expansion joints. The temperature capabilities range from –50°C to + 1000°C and the pressure range from –50 kPa to +50 kPa. Along with the standard types, numerous special designs are custom-made.

LBH offers hand-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 craftmanship and the use of superior materials.
The materials used for the individual layers of LBH multi-layer expansion joints and the number of layers vary according to the type of expansion joint and operational conditions. In general the composition is an inner layer of glass fabric or wire mesh for mechanical protection, followed by one or more layers of insulation materials for gas temperatures above 300°C. If the gas is aggressive, a gastight membrane, typically a PTFE-laminated glass fabric serving as a chemical barrier, is incorporated before the outer layer. The outer layer functions as a protection against ambient and mechanical influences, and also acts as a pressure reinforcement. A flange reinforcement of fabric provides mechanical and thermal protection of the expansion joint in the flange area.

All materials undergo an intensive in-house testing before being released for production, just as the properties are vereified by independent testing authorities.

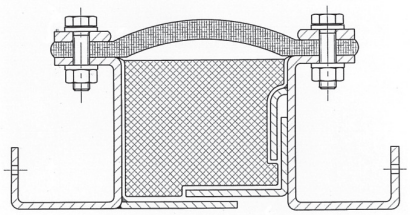
Temperature °C	0	100	200	300	400	500	600	700	800	900	1000
Air	LN 70, LN 100	LN 200	LN 300	LN 400	LN 500	LN 700		LN 1000			
Exhaust gas/ weak acid density		MN 250		MN 300	MN 400	MN 500	MN 700		MN 1000		
Flue gas/ strong acid density		RN 250		RN 300	RN 400	RN 500	RN 700		RN 1000		
Heavy duty		HD 250		HD 300	HD 400	HD 500	HD 700		HD 1000		
Temperature °F	32	300		600		900	1200		1500		1800

FLUOROPLASTICS

LBH provides three basic forms of fluoroplastic expansion joint materials, all of which are designated RST. All are manufactured from similar compounds of PTFE, FEP and PFA.
These fluorocarbon resins are used with a fiberglass weave to give a high strength fabric material on which a film of PTFE is laminated to provide an extra chemical barrier. RST is designed for wet service, mainly in flue gas desulphurization systems, and combines a high strength, lightweight material, with an ability to resist the chemical attack of most known chermicals. Unlike fluoroelastomers, such as Viton*, RST can operate continously at 260°C with higher peak temperatures, while still remaining flexible and strong.

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 on CAD and manufactured in accordance with project specifications.

EXPANSION JOINT UNITS

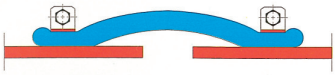
LBH expansion joint units are delivered ready for installation in the ductwork. The flexible components and steel parts are pre-assembled ensuring fast and simple installation. The expansion joint, insulation bolster and steel parts are designed for optimal durability based exactly on the operational 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.

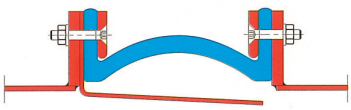
INSTALLATION

LBH expansion joints are available in the five standard profiles shown, together with a substancial number of special designs. A profile without a pre-shaped convolution is indicated by a zero after the profile numeral. The choice of profile and building length is determined by media temperature, pressure, required movement absorbtion and site conditions.

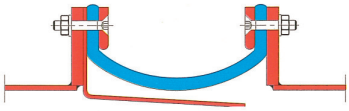
Profile I
Clamped directly to the pipeline.
Max. Temperature: 400°C.



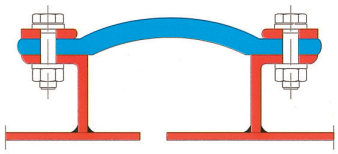
Profile II
Installed by means of angle flanges and backing flanges.
For positive pressure.
Max. temperature: 525°C.



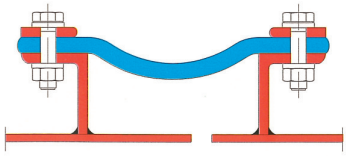
Profile III
Installed by means of angle flanges and backing flanges.
For negative pressure.
Max. temperature: 525°C.



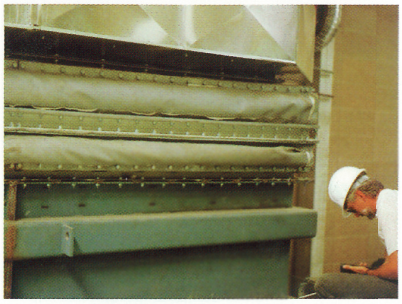
Profile IV
Installed by means of parallel flanges and backing flanges.
For positive pressure.
Max. Temperature: 1000°C.

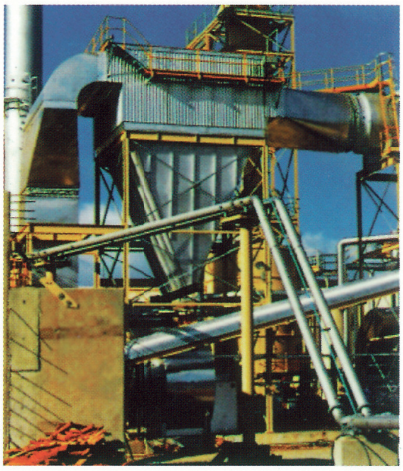


Profile V
Installed by means of parallel flanges and backing flanges.
For negative pressure.
Max. Temperature: 1000°C.










LBH ELASTOMERIC EXPANSION JOINTS

Vulcanized expansion joints of Viton*, EPDM, Neoprene etc.

LBH FIRE SEALS

Engineered pipe seals for fire protection applications.

LBH VALVE- & PIPE INSULATION

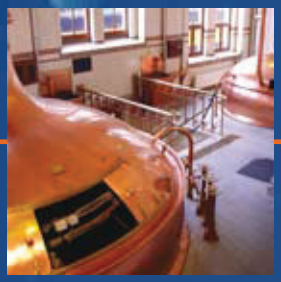
Engineered valve- & pipe insulators.

LBH

*Viton is a trademark of DuPont Corp.

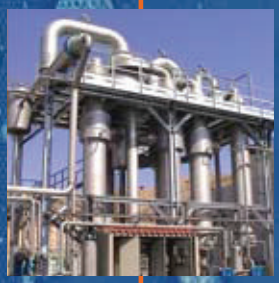
regom instruments

flow & process solutions





Potravinářský průmysl
Farmaceutický průmysl
Biotechnologie
Petrochemie
Chemický průmysl
Energetika
Úprava vody
Papírenství a zpracování celulózy
Plynárenský průmysl
Keramický průmysl
Zpracovatelský průmysl





Firma s tradicí od r. 1990 se při svém vzniku zaměřila na dodávky základních komponent, přístrojové a měřící techniky a dodávky technologií pro farmaceutický a potravinářský průmysl. Cílem bylo zajistit kompletní dodavatelsko - inženýrské služby, včetně servisu. V roce 1998, který byl pro firmu velmi významným mezníkem, proběhla transformace společnosti do nynější formy. V dalších letech činnosti společnosti dochází k rozšíření portfolia a je navazována spolupráce s partnery v oblasti armatur, komponent, ventilů, procesní měřící techniky a čerpadel.

Oblastí působnosti je potravinářský, farmaceutický průmysl, biotechnologie, chemický průmysl, petrochemie, úprava vody, papírenství a celulóza, energetika, keramický průmysl a zpracovatelský průmysl.

Firma REGOM INSTRUMENTS je díky širokému dodavatelskému portfoliu a bohatým zkušenostem schopna zajistit dodávky armatur, komponent, čerpadel, přístrojů a zařízení.

Cílem společnosti REGOM INSTRUMENTS je poskytování kvalitních služeb a spolehlivých dodávek pro co nejširší okruh zákazníků.

REGOM INSTRUMENTS s.r.o.
tel.: +420 241 402 206, +420 241 433 152
fax: +420 241 400 290, +420 241 433 151
e-mail: regom@regom.cz
skype: regom-office
www.regom.com

REGOM INSTRUMENTS s.r.o.
Brabcova 1159 / 2
147 00 Praha 4
CZECH REPUBLIC

Tel: **+420 241 402 206**
Fax: **+420 241 400 290**
Mail: **regom@regom.cz**
Skype: **regom-office**

www.regom.cz