James Walker Townson

Comflex® Metallic Expansion Joints

High Performance Expansion Joints

James Walker Townson

Performance

Introduction

Metallic expansion joints are installed in piping systems to absorb differential thermal expansion and vibration whilst containing the system pressure. They are a highly engineered product that needs to conform to one of the industry codes such as AD Merkblatt or EJMA.

Under the guidance of these codes, James Walker Townson offers a complete range of Comflex® metallic expansion joints together with the ability to design joints to individual customer requirements. They can be customised to any dimensions, both circular and rectangular.

Typical applications for metallic expansion joints include petrochemical plant, refineries, power stations, district heating installations, HVAC systems, laundries etc and wherever piping systems or ducts are subjected to movement through the effects of temperature, pressure or external forces.

Manufacturing Partnership

Comflex metallic expansion joints are provided in partnership with Đuro Đakovic - Kompenzatori of Slavonski Brod, Croatia, who manufacture them for James Walker Townson.

James Walker

The James Walker Group - of which James Walker Townson is a member - is a global manufacturing group. It has over 50 production, engineering, distribution and customer support sites across Europe, Australia, Asia Pacific, South Africa and the Americas.

A close-knit network of group companies with official distributors providing products & services to customers in well over 100 countries.

James Walker Townson

James Walker Townson is one of Europe's leading specialists in the design, manufacture and installation of flexible expansion joints and bellows.

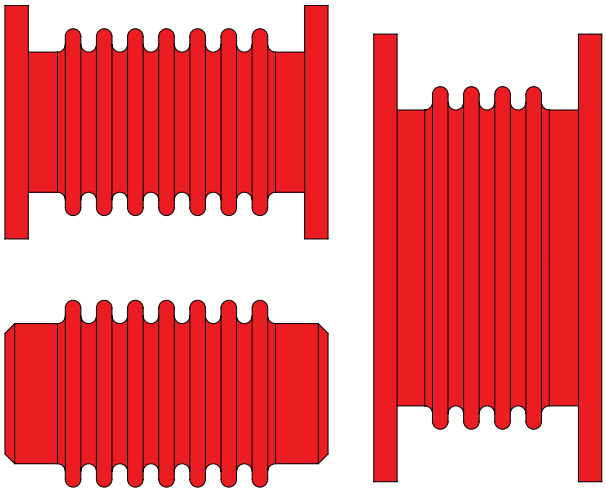
Formed in 2003 by the merger of Townson Limited and the Bellows Division of James Walker & Co Ltd, the company embraces their finest features for the benefit of industry worldwide:

- Expert on-site technical advice
- Renowned quality
- Comprehensive manufacturing capability
- Latest advances in materials' technology

Reference lists of installed applications, highlighting the company's experience with the most difficult applications, are available on request.

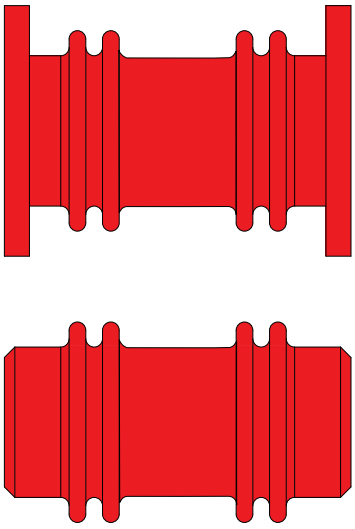
James Walker Townson Comflex®

Axial bellows (AR)



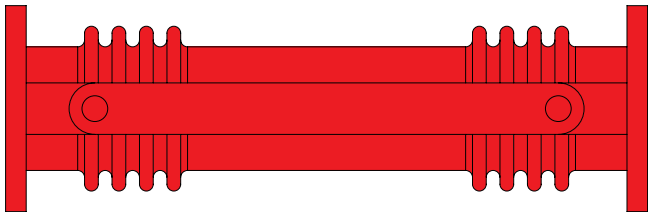
Manufactured from single or multi-ply stainless steel. Available to DIN, ASA and BSP standard for end fittings, in flanged and weld end assemblies. Four ranges of movement to suit most sizes. Fitted with internal stainless steel sleeves as standard.

Unrestrained double bellows (UD)



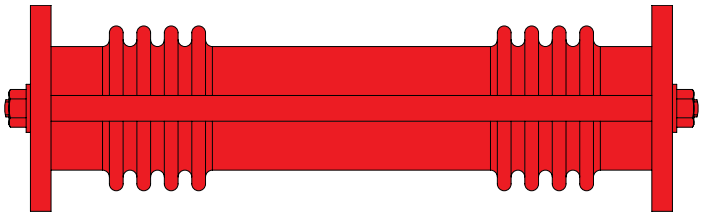
Manufactured in single and multi-ply stainless steel. Suitable for low pressure application to take up both lateral and axial movement, misalignment and vibration. Especially suitable for exhaust systems, turbochargers etc. Available with DIN, ASA and BSP end fittings, in both flanged and weld end assemblies.

Double hinged stainless steel bellows (HD)



Contains two stainless steel bellows joined by a common connecting pipe. Functions through the angular motion of each bellows in opposite directions to give lateral movement in one plane only. Hinged tie bars absorb thrust from pressure loads, resulting in low anchor forces. The amount of lateral deflection is proportional to the distance between the bellows' centres.

Tied double stainless steel bellows (TD)



Contains two stainless steel bellows joined by a common connecting pipe and incorporating two or more restraining rods having spherical bearings at their end fittings. Its purpose is to absorb two basic movements, angular and universal lateral deflection, or combinations of both. Pressure end loads are contained by the tie rods.

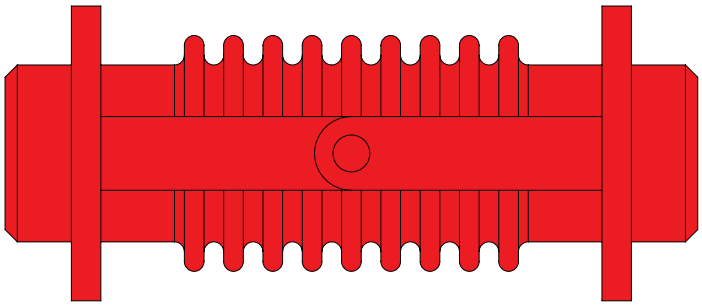
Comflex® Standard Production Products

Standard size range:	**15 – 5500 mm**
Standard pressure range:	**0.1 – 6 MPa**

other sizes and pressures are available on request

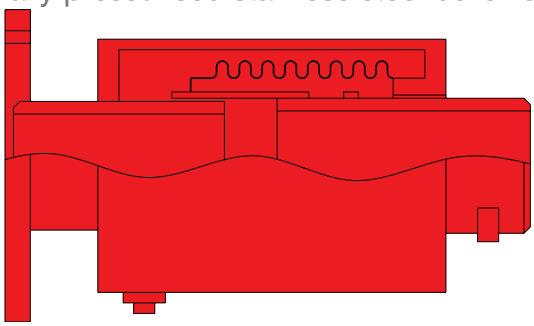
Comflex standard designs

Single hinged stainless steel bellows (HS)



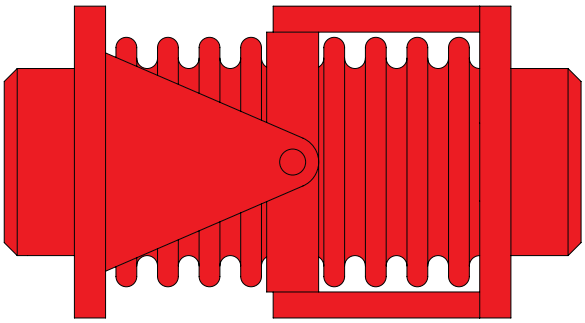
Designed to allow angular movement in one plane only through the use of a pair of pins in hinge plates attached to the expansion joint ends. Always used in pairs or threes, they can absorb large amounts of expansion. Pressure end loads are contained by the hinge assemblies.

Externally pressurised stainless steel bellows (AE)



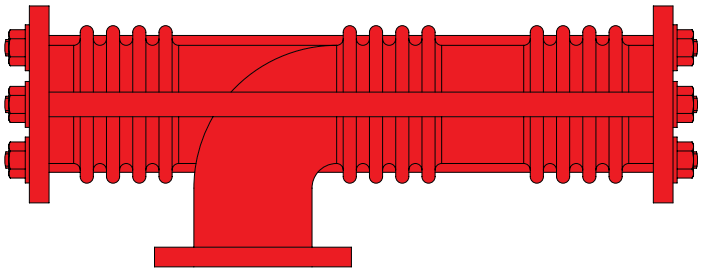
Multi-ply stainless steel bellows assembled so as to keep the line pressure external to the bellows. This stabilises the bellows unit, allowing high pressures and long movements without instability. Standard movements are 200 mm and 300 mm.

Gimbal stainless steel bellows (GS)



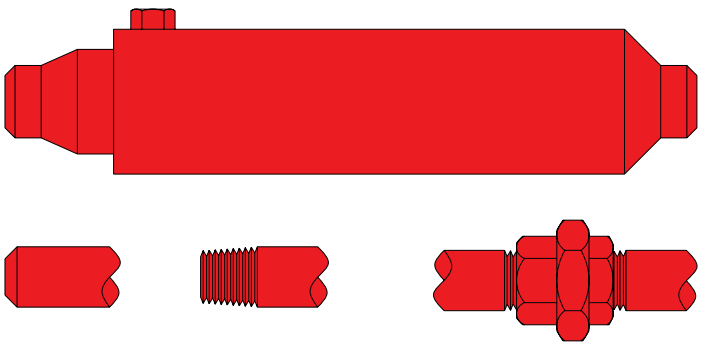
Consisting of a single bellows positioned within the universal joint framework, this unit is designed to resist the thrust from the bellows due to internal pressure. Allows angular movement in any plane. Normally used in pairs or threes or in conjunction with a hinged unit.

Pressure balanced stainless steel bellows (PB)



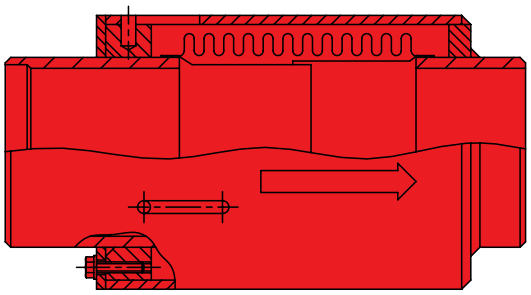
The pressure balanced unit will absorb both axial movement and lateral deflection without transmitting pressure or thrust. This type of expansion joint is normally used where a pipe changes direction, but special circumstances will permit a purely axial configuration. Size and pressure range are to customer specification.

Stainless steel bellows for HVAC systems (AS)



Designed to simplify installation in small diameter hot water systems. Fully enclosed in a robust shroud and retained in a pre-extended position for immediate installation. Available with ends for welding, with a screwed taper, or with threaded connectors.

Max Comp bellows (MC)



Max Comp bellows are designed particularly for use in polyurethane pre-insulated main pipework. The unit is a fully enclosed and protected expansion device which can be easily installed into pipework, without the usual need to cold-pull or extend the bellows.

James Walker Townson

Quality

Manufacture

Comflex® stainless steel bellows are made from tube formed from selected cold-rolled sheet, joined by longitudinal butt welds.

The bellows' convolutions are formed by cold rolling, a process giving significant lifetime advantages compared with the alternative technique of hydraulic forming.

Quality assurance

Đuro Đakovic- Kompenzatori d.o.o., manufacturer of expansion joints for James Walker Townson, operates a quality assurance system in accordance EN ISO 9001:2002 and EN ISO 14001:2004.

DDK holds Quality management, design and manufacture system certificates in conformity with:

- **PED 97/23/EC - Module H and H1 (Lloyd's Register),**
- **PED 97/23/EC - Module F and G, AD 2000-HP0, DIN EN 729-2 (TUV),**
- **GOST R** (Application Approval by Russian Federal Service for Environment, Technology and Nuclear Inspection)

and type approvals from :

Lloyd's Register
Bureau Veritas
Det Norske Veritas
Germanishe Lloyd
Croatian Register
RINA
ABS

Destructive Testing

Equipment for destructive testing in our laboratory includes the following:

a) Fatigue test
b) Burst test
c) Examination of mechanical properties of material and welds (tensile strength, elongation, impact, yield point)
d) Examination of chemical composition – spectrophotometer
e) Metallographic microscope with equipment for photography (x 800)
f) Lab examination of base materials, welds
g) Examination of spring rate

NDT – Non Destructive Testing

Equipment for NDT includes the following:

a) Radiography
b) Penetrant examination
c) Ultrasonic examination
d) Magnetic particle testing
e) Hydraulic and pneumatic pressure testing

James Walker Townson

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Health warning: *If PTFE or fluoroelastomer (eg, FKM, FFKM, FEPM) products are heated to elevated temperatures, fumes will be produced which may give unpleasant effects, if inhaled. Whilst some fumes are emitted below 250°C from fluoroelastomers or below 300°C from PTFE, the effect at these temperatures is negligible. Care should be taken to avoid contaminating tobacco with particles of PTFE or fluoroelastomer, or with PTFE dispersion, which may remain on hands or clothing. Material Safety Data Sheets (MSDS) are available on request.*

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