

**JOHN CARDWELL**

L I M I T E D



**EXPANSION JOINT MANUFACTURERS  
FOR MARINE AND DIESEL  
ENGINE APPLICATIONS**

## DEDICATED TO YOUR INDUSTRY

A vessel out of commission is a costly overhead. So when a repair or replacement part is keeping it in dock or, worse still, disabled at sea, you need immediate back up.

If the problem involves an expansion joint bellows in a manifold, pipework or ducting, you need John Cardwell Limited.

The company is structured to provide rapid response solutions for the marine industry. We have repair, re-manufacture and design capabilities, and can often replace an expansion joint within 24 to 48 hours if required.

## PROBLEM SOLVING AND ADVICE

Our engineers are experienced problem-solvers who will liaise with land-based support technicians or direct with ships' engineers to deal with each situation in the most timely and cost efficient manner.

They realise, for instance, that with engine temperatures sometimes in excess of 600° C, it is not always possible to measure breakdown items at sea. Under such circumstances we will often refurbish units and reclaim parts such as flanges once the vessel has docked to provide the best engineering, commercial and logistically convenient solution.

However, where on the spot support is needed, we do not hesitate in taking whatever steps are necessary to get an engineer on site to survey the job.

As well providing emergency remedial support, John Cardwell Limited offers a free advisory service. We work alongside naval architects, ships' engineers, marine superintendents and contractors to help with any pipework installation which may be subject to movement caused by thermal expansion, vibration or vessel deflection.



## PRODUCT FILE

Our range of bellows is suitable for a wide variety of onboard applications. It includes products for all the following and more:

ENGINE MANIFOLD

CHARGED AIR

TURBOCHARGER PROTECTION

INLET/OUTLET STACK OR UPTAKE

MAIN AND AUXILIARY ENGINE

STEAM LINES

DUCT KEEL

DECK PIPEWORK

INERT GAS GENERATORS

We also fabricate square to round pipe sections incorporating an expansion joint to minimise cost and simplify installation.

## MANUFACTURING TO MEET YOUR NEEDS

John Cardwell Limited is one of the few UK companies that form convolutions in the size range 15mmNB to 4000mmNB, by both hydraulic and dry rolling methods. Our in-house facilities enable us to manufacture from sheet metal through to the finished component. This means that we can supply bellows to suit almost any specification within the shortest possible lead times.

We produce and hold in stock a vast number of convolutions in varying diameters, thicknesses and materials. Our versatile production organisation also enables us to supply one-off specials to meet specific customer requirements.

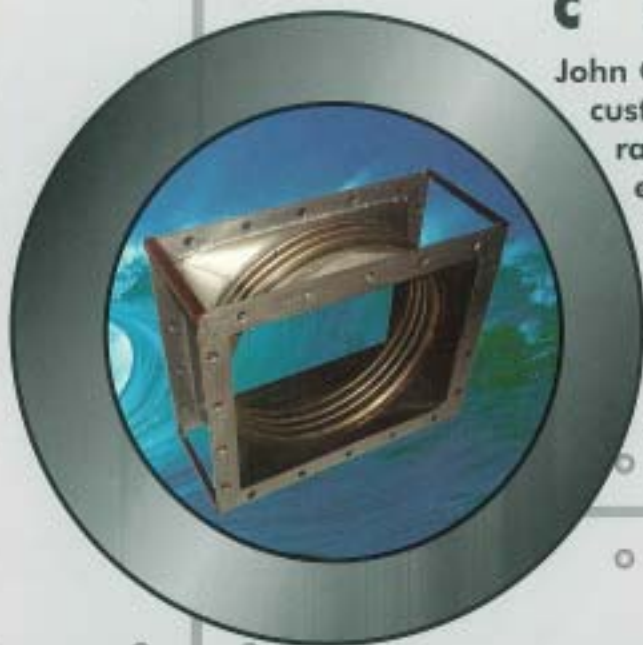
All our products meet the universally recognised EJMA (Expansion Joint Manufacturers' Association), DNV (Det Norske Veritas), and LRS (Lloyd's Register of Shipping) standards.



## C A S E F I L E

John Cardwell Limited supplies solutions to individual customer needs so we don't have a fixed product range. What we do have is a wealth of experience, an impressive case file and testimonials from satisfied customers both in the UK and overseas.

Often, turbochargers and other plant have square or rectangular interfaces with the ductwork. Square to round transition pieces can be produced incorporating the bellows element.



The Hong Kong Harbour Police experienced recurring diesel exhaust bellows failures on their patrol boats. Replacement bellows were designed and manufactured by John Cardwell Limited and supplied through our local agent. Extensive on-engine tests were carried out and the problem was arrested.



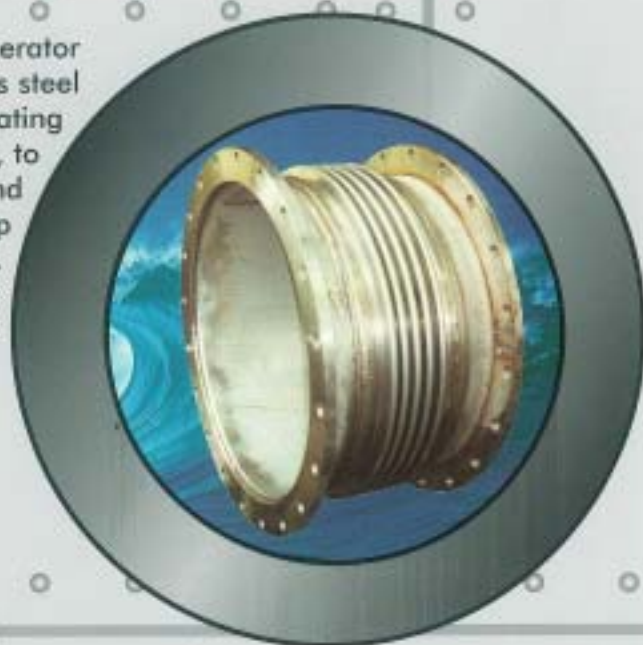
Five 1000mmNB exhaust manifold bellows used on Sulzer-IHI-RND-90M engines on board a 57,000 ton container vessel were refurbished in seven days to meet a strict refit schedule. The flanges were reused to reduce downtime and costs, and new convolutions and sleeves fitted.

John Cardwell Limited was invited to provide a solution to a problem that was being experienced on Trent lifeboats. The new bellows design that was developed is now giving very satisfactory service.



# C A S E F I L E

We supplied three 700mmNB incinerator exhaust bellows, constructed in stainless steel with nickel alloy convolutions incorporating ceramic fibre packing and flow sleeves, to operate in an arduous environment and withstand temperatures up to 1,000° C on a naval vessel. Specially designed, they were installed just 14-days after receiving the enquiry.



This 8-inch single axial bellows was purpose built for use on a hydraulic mooring winch return line. The multi-ply construction which features Incoloy 825 convolutions, to combat corrosion from sea water, and PN 40 flanges is required to work under an operating pressure of 30 to 50 bar.

## CUSTOMER PROFILE

Our customers include companies small and worldwide and government agencies. Everyone receives the same high level of personal, expert service to make sure that when a problem occurs their vessels are back in action within the shortest possible time.

### OTHER MARKET SECTORS

We also operate in the following market sectors:

PROCESS PLANT  
OIL AND GAS  
STEAM AND POWER GENERATION  
BUILDING SERVICES  
PETROCHEMICAL

For more information about our services and to find out what we can do for you please call 0161 491 5515. You can be sure of a rapid response.

## CLIENT LIST

The John Cardwell Limited client list includes:

MINISTRY OF DEFENCE  
A & P GROUP  
SHELL INTERNATIONAL  
TRADING & SHIPPING  
R.N.L.I.  
P & O CONTAINERS  
P & O TANKSHIPS  
NOVOSHIPS  
NORBULK SHIPPING  
J H WHITTAKER TANKERS  
ANDRIAKI SHIPPING

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