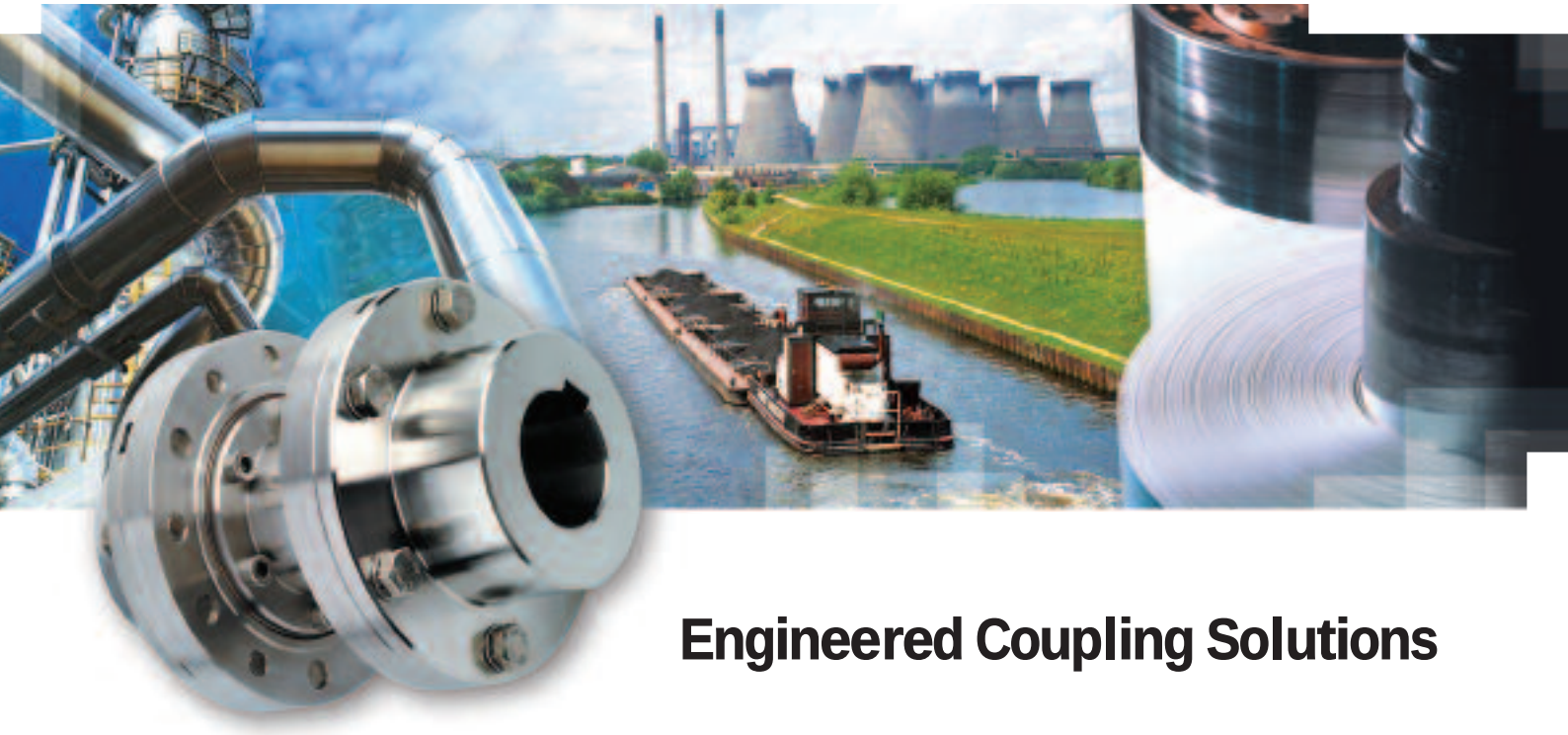


Engineered Coupling Solutions

smiths

METASTREAM™

Global Solutions

John Crane's Metastream couplings have been providing a rugged and reliable service in the world's industries for over fifty years, helping rotating equipment operate at optimum levels and provide maximum availability. As a result, Metastream couplings have now become the first choice of many of the world's leading companies. Today, John Crane's policy of constant innovation and product development serves to ensure that Metastream couplings continue to satisfy the changing demands of the market while complying fully with the relevant industry specifications.

Engineered Coupling Solutions

Global support

With an existing customer base which includes original equipment manufacturers, contractors and end-users, John Crane places great importance on the provision of high-quality customer service which is tailored to meet customer specific requirements.

As the only truly global coupling supplier, the company can offer unparalleled levels of both technical and commercial support, ranging from initial design through to commissioning and inventory management over the lifetime of the plant. In addition, John Crane's network of over 200 facilities in 55 countries provides customers with local access to that global level of support, no matter what their location and allows them to benefit from specialised installation, shaft alignment and problem-solving services.

Red dots indicate John Crane facilities

METASTREAM™

Industries served

Oil and Gas

John Crane's position as one of the leading suppliers to the global oil and gas industry means that our coupling products are designed to withstand the harshest process environments - from the corrosive environment of the North Sea to the sub-zero temperatures of Siberia – and still provide solid, reliable service. The Metastream coupling range can offer solutions for both oil and gas extraction applications as well as downstream processing activities, all to the highest standard of API 610.

Applications

- Water injection
- Export and pipeline pumps
- Blowers
- Process pumps
- Fire pumps
- Cooling tower fans

High Performance Turbomachinery

Many of the world's leading turbo-machinery manufacturers and end-users now specify Metastream couplings as standard, thanks to their optimised power transmission capabilities, minimal weight and reduced moment designs.

John Crane couplings are designed, manufactured and supplied in accordance with the requirements of API 671 and are backed by a comprehensive customer service and support capability.

Applications

Metastream high performance T Series couplings are widely specified for critical applications on:

- Turbo compressor machinery
- Main marine turbine propulsion systems
- Development test stands
- Reciprocating compressors
- Turbine generator sets
- Boiler feed pumps

Chemical and Pharmaceutical

Acknowledging the need from this sector to combine increased levels of reliability and safety with cost-effective solutions, John Crane has developed a wide range of appropriate coupling products.

Applications

- Compressors
- Mixers, agitators and reactors
- Pumps
- Fans and blowers

Power Generation

John Crane couplings are able to satisfy the demands of power generation applications that range from wind turbines and fossil fuel power stations through to hydro and nuclear plants. The result is uninterrupted performance and unrivalled reliability from all types of rotating equipment.

Applications

- Turbo generators
- High speed wind turbine shafts
- Cooling towers
- Nuclear handling equipment
- Service pumps
- Boiler feed pumps
- FGD pumps

METASTREAM™

Industries served

Marine

John Crane has an unrivalled depth of knowledge and experience in the supply of couplings for use in the harshest marine conditions. This has earned the company its current status as a leading supplier of main propulsion technology to many of the world's navies, serving a wide variety of surface and submarine vessel applications.

Typical applications include:

- Water jets
- Tanker loading pumps
- Submarine ballast pumps
- Main propulsion systems
- Bow thrusters
- Winch drives

Pulp and Paper

A wide variety of couplings that are designed to accommodate such specific pulp and paper industry requirements as zero backlash for paper-making machine use and rugged reliability for pulp mill rotating equipment applications. This range also features a series of new models which have been specifically created to provide improved performance in applications where gear couplings have traditionally been used.

Typical applications include:

- Roll drives
- Pulpers
- Vacuum pumps
- Refiners
- Process pumps
- Dryers
- Calendars
- Winders

General Industries

John Crane's range of power transmission couplings provide a versatile and flexible solution for virtually any rotating equipment application where reliability and maintenance-free operation are necessary.

Refrigeration and Industrial Compressors

Refrigeration and compressor applications are particularly well served by Metastream couplings, as their high reliability and low imposed load characteristics ensure that the coupled machine bearings are subject to minimum stress during operation.

Water and Waste Water

The need for maintenance-free operation from unmanned pumps in remote locations is one of the key reasons why Metastream couplings are well suited to water and waste water industry use. Their versatility enables them to satisfy many different types of application and their rugged construction allows them to resist the effects of the most demanding operating environments.

Machine Drives

John Crane's couplings frequently provide a flexible and reliable solution for use on machine drives where the specific nature of the application can vary greatly. Benefits include zero backlash as well as maintenance free operation.

Product Range

Metastream Flexible Couplings

Metastream flexible power transmission couplings are designed for applications where the shaft ends are nominally 'in line'. They have earned an enviable reputation for their ability to accommodate misalignments while still minimising vibration and imposed loads on the coupled machinery. High-speed applications are well served by the couplings' high torsional rigidity and natural balance features.

Each Metastream coupling incorporates spacer retention anti-fly features, plus an all-metal construction that eliminates the need for lubrication and maintenance and ensures minimal downtime.

High Performance Couplings

There are three distinct groups of couplings in the Metastream high performance range:

- The T-JE group, intended for drives where the coupling connects directly to the turbine/gearbox flanges
- The T-GE low-weight design, which is particularly suited to compressor drives normally fitted with keyless tapered shafts
- The T-DE version which combines all the features of the T-JE and T-GE couplings with the additional benefit of even lower overhung moments

Key Benefits

- Meet API 671 requirements – designed for critical unspare machines
- Pre Assembled membrane pack for ease of assembly
- Low imposed loads on bearings

M Series

M Series couplings can handle a high degree of misalignment and still provide outstanding levels of reliability which is why many users now specify them by name. They feature a unique design that transmits power across a spoke-form membrane pack. This membrane pack, together with the M Series unique anti-fly bearing, ensures that in the unlikely event of membrane failure, the coupling will disconnect the drive from the driven machine and prevent damage occurring.

Key Benefits

- Unrivalled reliability - 50 years MTBC (mean time between change)
- API 610 as standard
- Pre-assembled cartridge-style membrane units provide easy installation and good balance retention
- Composite option for long DBSE applications

T Series Spacer Couplings

Designed to satisfy the stringent standards of the process industries, these couplings are especially appropriate for pump, turbo alternator and related applications. They are designed to API 610, but can also be produced to meet the more advanced API 671 requirements.

Key Benefits

- Overload protection of membranes
- Antifly guard ring for safe operation
- API 610 as standard (API 671 optional)

METASTREAM™

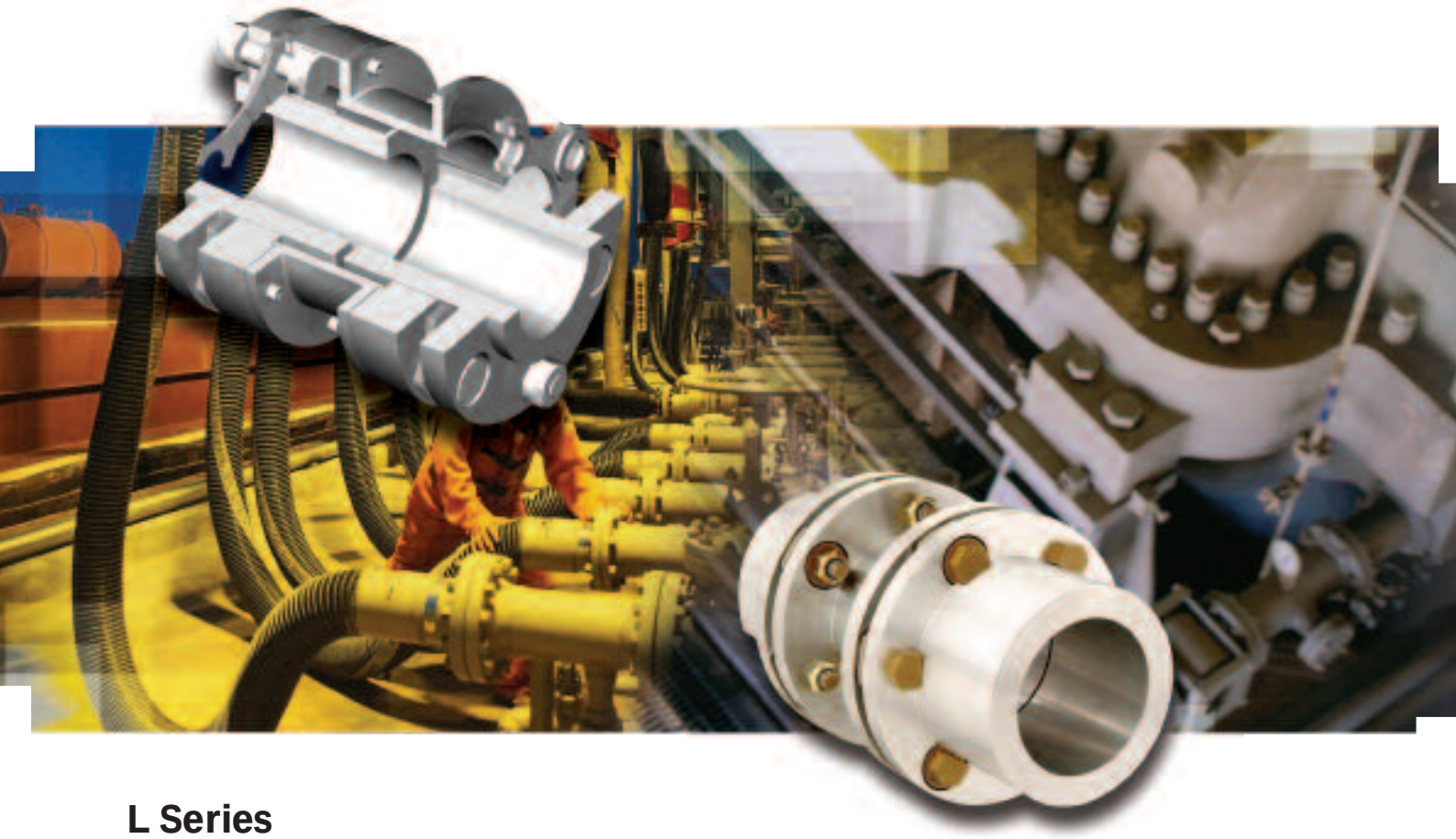
Product Range

T Series – Close Coupled TSR and TSE

John Crane's TSR and TSE ranges have been designed specifically for use on close-coupled applications. They offer three formats – each featuring variations on hub orientation and position along the shaft - to suit a wide range of distances between shaft ends (DBSE), ranging from 3mm (1/8") through to the DBSE of a standard T Series coupling. A split spacer design allows replacement of the membranes without the need to move the connected machines.

Key Benefits

- Ideal replacement for gear couplings
- Can be inspected without moving connected machinery
- No maintenance or lubrication is required



L Series

Couplings in the L Series are designed for a wide variety of industrial application which demand all the benefits of a membrane coupling from a simplified and cost-effective package.

The L series units deliver a maximum value solution, but one which does not compromise on reliability or safety and they feature robust membrane units that have been designed to provide reliable operation in the most demanding applications.

Key Benefits

- Built in overload protection
- Pre assembled membrane pack for ease of overall assembly
- Low imposed loads on bearings

Other products in the range

- C Series rigid couplings for vertical pumps (API 610)
- A Series urethane wrap-around coupling for demanding industrial applications

POWERSTREAM™

LASE-A-LIGN ExA

- Laser alignment equipment (with precision stainless shims for simple alignment – conforms to ATEX 95 for potentially explosive atmospheres)

Technology

John Crane employs advanced computer-aided design and finite element modelling techniques in its quest to continually develop and improve its range of couplings and combines these with a comprehensive range of test and evaluation facilities. The company continues to extend technological and material boundaries in its efforts to provide bespoke solutions which satisfy the most demanding of applications.

Quality

- Compliance with ISO 9001:2000
- Compliance with ISO 14001:1996
- Externally inspected by Lloyds, DNV and other accredited bodies
- All Metastream couplings conform to ATEX 95

Selection Tools

The standard range of couplings can be selected from the John Crane website at **www.metastreamcouplings.com**

Europe
Slough, UK
Tel: 44-1753-224000
Fax: 44-1753-224224

North America
Houston
Tel: 1-713-944-6690
Fax: 1-713-946-8252

Latin America
São Paulo, Brazil
Tel: 55-11-3371-2500
Fax: 55-11-3371-2599

Middle East & Africa
Dubai, United Arab Emirates
Tel: 971-4-3438940
Fax: 971-4-3438970

Asia
Singapore
Tel: 65-6512-5200
Fax: 65-6512-5233

For your nearest John Crane facility, please contact one of the locations above.

If the products featured will be used in a potentially dangerous and/or hazardous process, your John Crane representative should be consulted prior to their selection and use.
In the interest of continuous development, John Crane Companies reserve the right to alter designs and specifications without prior notice.

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