



M'News

Issue No.17

M'News is MACOGA's online news bulletin featuring the latest development of significant projects, achievements, events and expansion joints related news.

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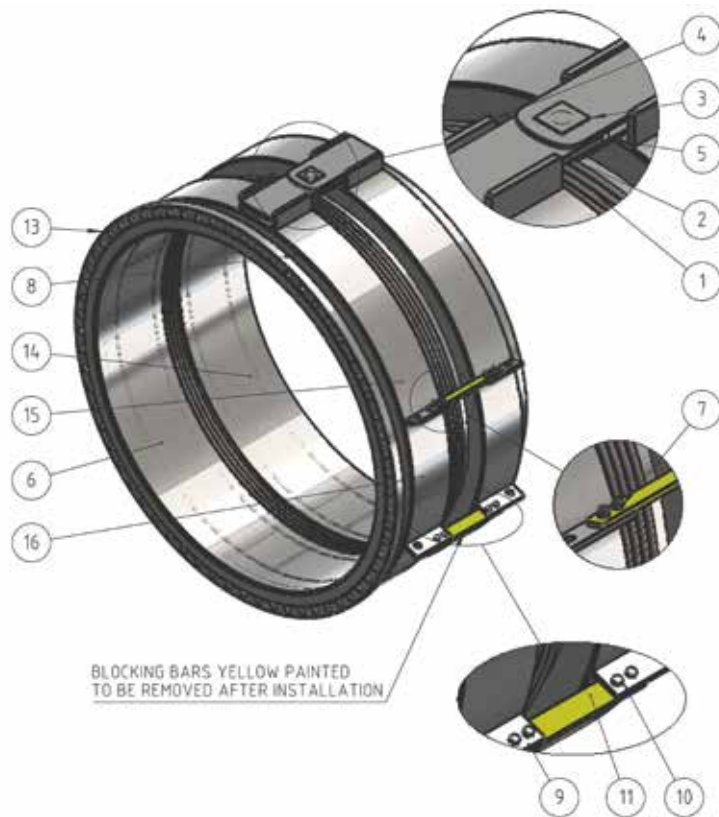
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LARGE HINGED EXPANSION JOINTS FOR STEEL PLANT IN EUROPE

MACOGA has completed the engineering, manufacturing and testing of a large size Hinged Expansion Joint DN 2800 for one of the biggest steel plants in Europe.

The Expansion Joint has a nominal diameter of 2.8 meters and a length of 1480 mm..



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EXPANSION JOINTS FOR FERRYBRIDGE MULTIFUEL 2 POWER STATION, UK

MACOGA has completed the detailed engineering, manufacturing and testing of a large number of Universal Lateral Tied Expansion Joints DN900 for the Ferrybridge Multifuel 2 power station in the UK.

The Ferrybridge Multifuel 2 (FM2) power station will have a generating capacity of circa 70MW and produce enough energy to power around 180,000 homes.

FM2 will can treat up to 675,000 tonnes of waste derived fuels each year, however on average the plant's throughput is expected to be 570,000 tonnes per annum.



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ENGINEERED EXPANSION JOINTS

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MACOGA EXPANSION JOINTS FOR GEOTHERMAL POWER IN KENYA

MACOGA has completed the detailed engineering, manufacturing and testing of two units Reinforced units MRR Series DN 1200 for 25.5 bar design pressure.

The system involves the use of reinforcement or equalizing rings located around the outside of the convolution thus preventing the bellows being forced out of shape due to the high pressures.

Equalizing and Reinforcing Rings are devices used on some expansion joints fitting snugly in the roots of the convolutions. The primary purpose of these devices is to reinforce the bellows against internal pressure and equalize the movement among all the corrugations.

The Olkaria III Power Station first started operation in 2000 with a generation capacity of 13MW. In January 2009, new infrastructure was installed, adding another 35 megawatts to the plant's capacity. Later 36 Megawatts production capacity was installed. The third-generation unit at Olkaria III, with capacity of 26 Megawatts was commissioned in 2014, bringing total capacity at the plant to 110 Megawatts. The fourth-generation unit, with capacity of 29 Megawatts is bringing a total capacity at the plant to 139 Megawatts.



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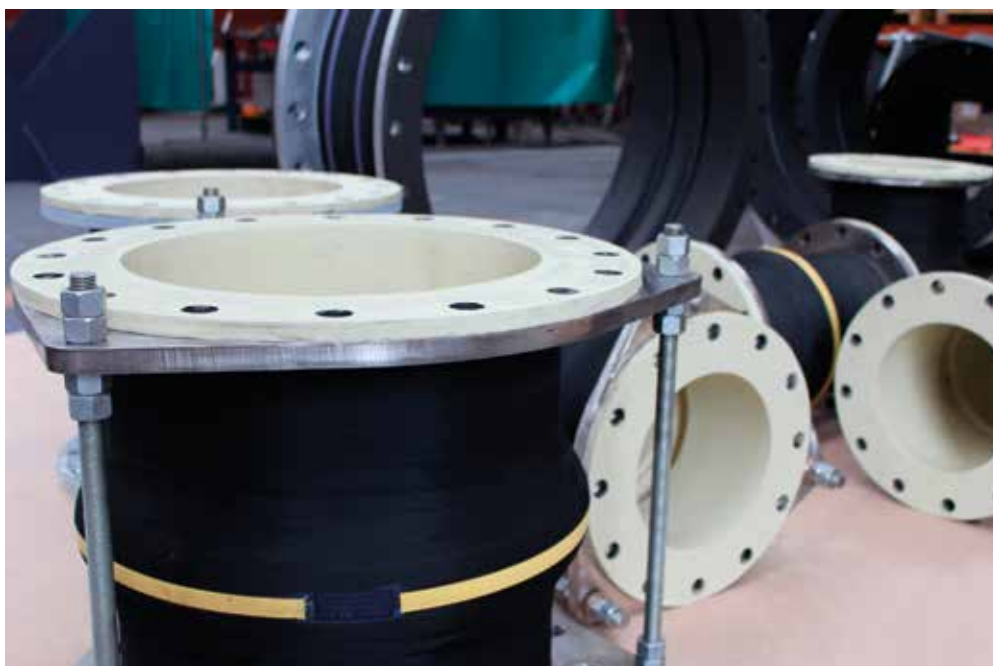
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WHITE NITRILE MAC-F AND MAC-FT RUBBER EXPANSION JOINTS

A set of MAC-F and MAC-FT Rubber Expansion Joints have been manufactured internally WHITE NBR-W - White Nitrile Butadiene Rubber. This FDA approved material and has good resistance to oils and greases, foodstuff, good for pulps, flours, juices and wines. Food and beverages, including fats and oils. It is recommended for use in the dairy industry and food processing plants. White food quality Nitrile rubber is made from FDA approved ingredients, it has good resistance to oily and greasy food products and abrasion.

The Expansion Joints are provided with EPDM external coating as a weather-resistant (resistant to attack by oxygen, U.V., ozone and extreme weather environments) elastomer.



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EXTERNALLY PRESSURIZED EXPANSION JOINTS

This model is mainly used in cases of high pressure and large amounts of axial compression and extension. When under external pressure, the bellows will retain its shape and can be manufactured in almost any length.

When using internally pressurized expansion joints and for large movements the system should be divided into subsections, as internally pressurized axial expansion joints tend to become unstable with a great length. When the system allows their use, expansion joints with externally pressurized bellows can be used, which permit larger movements, since external pressure tends to stabilize the bellows.

Features

- Absorbs large amounts of axial compression and extension
- Eliminates pressure instability
- Does not restrain pressure thrust
- Requires main and directional anchors



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RUBBER EXPANSION JOINTS

NEW RUBBER EXPANSION JOINTS BROCHURE

We are pleased to announce the release of our **new Rubber Expansion Joints Brochure**.

This new 32-page, full-color brochure presents a sampling of our extensive range of Rubber Expansion Joints, production capabilities and services.

To receive a print copy of the catalog, **contact us by e-mail**.



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HOW TO DETERMINE IF A RUBBER EXPANSION JOINT IS DAMAGED

Most failures related to rubber expansion joints are not catastrophic in nature and signs of fatigue and/or premature failure can be easily detected long before the actual failure occurs.

Common signs of rubber expansion joint deterioration:

- Visible cracking
- Exposed fabric or metal reinforcements
- Extreme dimensional changes
- Rubber Deterioration (soft, gummy, too stiff, etc.)
- Blisters-Deformation-Ply Separation
- Leakage
- Ballooning or flattening of the convolution

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ON-SITE SERVICE – EMERGENCY REPAIR IN A REFINERY

In a record time, MACOGA has successfully completed the manufacturing and installation of a universal oversize clamshell expansion joint.

The clamshell Expansion Joint DN-765 mm diameter was made from Alloy 625 Gr. 1 (UNS6625) plate and designed, fabricated and shop tested in only four hours. The MACOGA On-Site Team, consisting of highly-qualified technicians and engineers specialized in expansion joints, moved to the refinery and completed the installation.

If a bellows is leaking or damaged, or if a bellows must be changed with a target to having the minimum down time, this is where a clamshell should be considered.

MACOGA Clamshell bellows is the best solution when a quick and unexpected replacement of the bellows is necessary. Clamshell bellows is a two-piece bellows which is welded around the existing unit.



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MACOGA EXPANSION JOINTS FOR THE LACKAWANNA ENERGY CENTER IN THE USA

MACOGA **Lateral Tied Expansion Joints** MWL and Hinged **MWP Series DN3200** have been successfully designed, manufactured, tested and shipped to the Lackawanna Energy Center in the USA. With its state-of-the-art technology, the 1,480 megawatt Lackawanna Energy Center will be one of the most efficient power plants in the United States.

Equipped with GE's latest technology, it will use less fuel and generate fewer emissions. Our energy center will feature best-in-class equipment: three gas-powered turbines, three heat recovery steam generators, and a steam turbine.

As a combined cycle facility, it will maximize usage of the heat from natural gas as fuel, increasing efficiency. The facility will be compact and low impact and far more advanced than earlier generations of natural gas plants.



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EXPANSION JOINTS FOR 6TH OCTOBER II 600 MW POWER PLANT, EGYPT

A very large Dog Bone Turbine to Condenser Expansion Joint 5940 x 7778, six Lateral Tied MWL Type DN 3300 and six Hinged DN 3000 have been successfully manufactured for Cairo Electricity Production Company (CEPC) for the "6th October II" 600 MW Power Plant in Egypt.

The **Dog Bone Type Expansion Joint** is used as flexible connection between Turbines and Condensers. This turbine exhaust expansion joint is used as a flexible connection in power plants and it is the most widely used turbine to condenser expansion joint in use.

6th October II is a 4 x 147 MW GT based power plant, it's an extension of new 4 units to the previous 6th October base plant. one 600 MW Simple Cycle Power Project located inside the High Voltage Lab fence which is at 25 km far from Cairo - Alexandria desert road.



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ENGINEERED EXPANSION JOINTS



GLOBAL PRESENCE WORLD-CLASS COMMITMENT

Our expansion joints are present in more than 80 countries across all continents performing demanding tasks. MACOGA is always ready to provide support exceeding customer expectations.

We are conveniently located in NW Spain near two international airports (SCQ and LCG) and two deepwater oceanic sea ports (Vigo and La Coruna).