



M'News

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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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أكبر مجمع للبتروكيماويات في العالم The World's Largest Chemical Complex

MACOGA RUBBER EXPANSION JOINTS FOR SADARA CHEMICALS COMPLEX, SAUDI ARABIA

MACOGA has designed, manufactured, tested and shipped a number of 38 large size high tech **Rubber Expansion Joints** for Sadara Chemical Company (Sadara), a joint venture between Saudi Arabian Oil Company (Saudi Aramco) and The Dow Chemical Company (Dow).

The Sadara complex in Jubail will be the world's largest chemical complex ever built in a single phase.



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ООО «ТИ-СИСТЕМС» ИНЖИНИРИНГ И ПОСТАВКА ТЕХНОЛОГИЧЕСКОГО ОБОРУДОВАНИЯ

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EMERGENCY ON-SITE SERVICE - CLAMSHELL MINIMIZES DOWN TIME ON FCC

On Friday the 7th of October at noon, a refinery contacted MACOGA informing that an existing expansion joint failed causing the **FCC unit** shut down.

The customer required immediate assistance and MACOGA recommended a Clamshell Expansion Joint.

The universal oversize clamshell Expansion Joint 1200mm diameter was made from Inconel 625 plate and designed fabricated and shop tested in only four hours.

The MACOGA On-Site Team and the clamshell unit were at the Refinery on Saturday at 17:00 hours.

On Sunday at 17:00 hours the Expansion Joint was completely installed and successfully tested. A 100% dye-penetration test and a pneumatic leak test were performed to ensure quality.

The FCC was ready for service in a record time.



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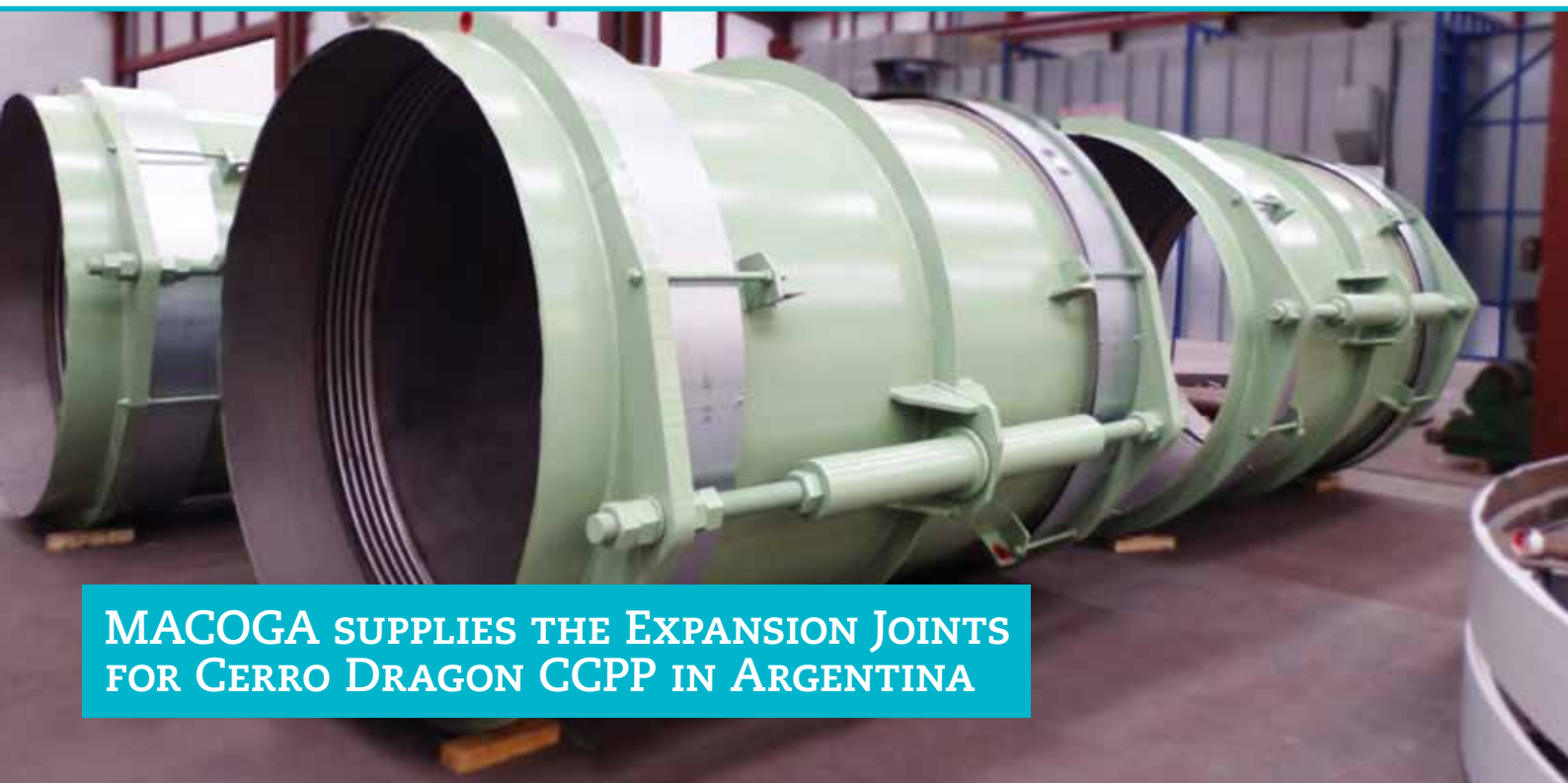
PRESSURE BALANCED MPB-E FOR BIOMASS ENERGY DE COMMENTRY, FRANCE

MACOGA has successfully designed, manufactured and delivered a **Pressure Balanced MPB-E DN1800** for Biomass Energy de Commentry, a joint venture of Caisse des Dépôts et Neoen, French producer of electricity from renewable energy.

The company will build and operate the biomass cogeneration plant on the Adisseo site, one of the world leaders in the additives animal nutrition.



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MACOGA SUPPLIES THE EXPANSION JOINTS FOR CERRO DRAGON CCPP IN ARGENTINA

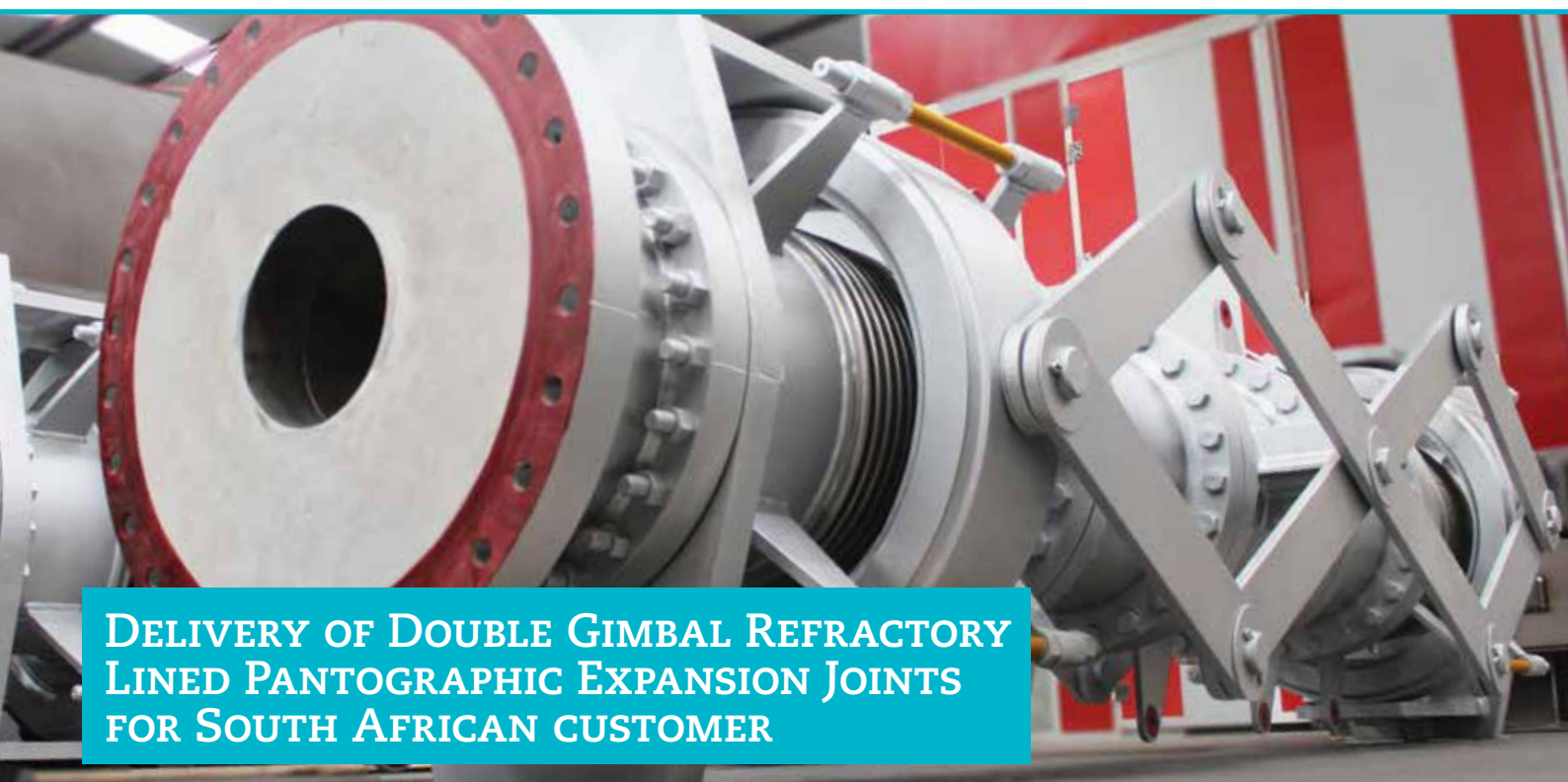
A total number of 5 **Lateral Tied** DN2000 + 5 **Hinged** DN2000 + 1 Axial untied DN4000 Expansion Joints have been successfully designed, manufactured and shipped to the Cerro Dragon Power station in Argentina.

Pan American Energy LCC will convert the power plant of Cerro Dragon natural gas and oil field in the southern Argentine province of Chubut to a combined cycle.

Cerro Dragon is added to the extensive portfolio that MACOGA has conducted in Latin America, where MACOGA has delivered the Expansion Joints to more than 20 large combined-cycle power stations: Rio Bravo, Baja California IV, Agua Prieta, Monterrey, Norte II, La Laguna, etc. in Mexico, Chila, Chilca I and Kalpa in Peru, El Tablazo in Venezuela, Aluar in Argentine and now Cerro Dragón.

In Latin America, MACOGA has also worked on other projects in different sectors like high pressure Expansion Joints for hydro-power plants in Costa Rica, **FCCU Expansion Joints** for refineries in Peru, and many mining projects in Chile.

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DELIVERY OF DOUBLE GIMBAL REFRACTORY LINED PANTOGRAPHIC EXPANSION JOINTS FOR SOUTH AFRICAN CUSTOMER

MACOGA has successfully delivered a number of 2 **Double Gimbal Refractory Lined Pantographic Expansion Joints** DN 600 and 4700 mm long.

These Expansion Joints, with multiply bellows made in SS309 incorporate a double gimbal system plus a specially designed pantographic system.

A pantographic linkage is an accessory that is used to distribute movement equally between the bellows and supports the weight of the centre pipe section between them. These units were internally lined with a thick high-tech refractory system.



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DELIVERY OF LARGE SIZE EXPANSION JOINTS FOR THE AZITO POWER PLANT IN IVORY COAST

An **In-Line Pressure Balanced** MPB-I DN 4000, 14 units Gimbal DN 2200 and 7 units Hinged DN 2200 have been shipped from MACOGA for the Azito Power Plant expansion in Ivory Coast.

The existing Azito plant will be converted to a more efficient combined cycle plant, increasing capacity by 50%; the new capacity will use no additional fuel and will result in no rise in CO emissions.

The combined cycle technology being installed at the plant uses waste heat from the existing gas turbine exhausts to produce steam used to drive the new steam turbine generator. It will not require any additional fuel to increase the capacity.

Once operational, the additional electricity will be sold to the State through a 20 year concession, making Azito one of the largest and most efficient thermal generation facilities in the country.



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FCCU EXPANSION JOINT ASSEMBLY SUPERVISION

MACOGA FCCU Expansion Joints specialists have successfully concluded the supervision during the installation and start-up of a ND 1400 FCCU Expansion Joint in one of the largest refineries in Europe.

The **FCCU Expansion Joints** manufactured by MACOGA and designed as per UOP Specifications, incorporates Inconel 625 LCF 2-ply testable bellows and RESCO and RESCOBOND Refractory and Abrasion Resistance Lining.

MACOGA on-site team can provide you:

- Installation guidance for new FCCU Expansion Joints
- Inspection in cold conditions (plant shutdown)
- Inspection in hot conditions (plant in operation)
- Periodical Inspections
- Maintenance and refurbishment
- Problem resolution
- Immediate response to site inspections needs
- Quick-turn expansion joint replacement during shutdowns and turnarounds



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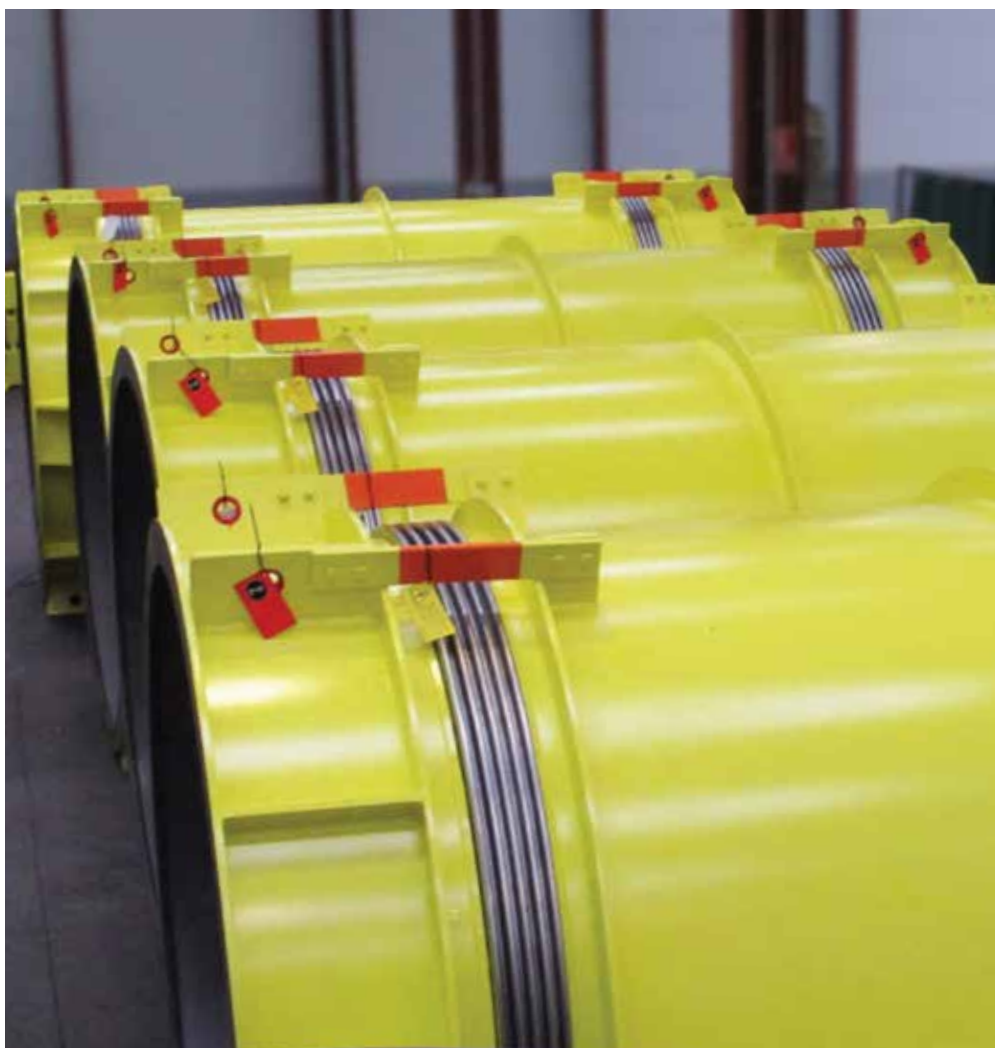


LATERAL & HINGED EXPANSION JOINTS FOR NUEVO PEMEX A3T COGENERATION PLANT, MEXICO

MACOGA has completed the production of 4 **Lateral Tied** DN2300 MWL units and 4 **Hinged** DN2300 for the Nuevo Pemex cogeneration plant in Tabasco.

The plant will use natural gas supplied by Pemex to produce electrical energy. Heat from the turbine exhaust gases will be recovered and used for converting demineralized/condensed water into steam. The plant is expected to generate up to 800t of steam per hour.

This project is added to the extensive portfolio that MACOGA has conducted in Mexico where MACOGA has delivered the expansion joints to more than 15 large combined-cycle power stations: Rio Bravo, Baja California IV, Agua Prieta, Monterrey I & II, Norte II, La Laguna I & II, Chihuahua I & II, El Encino, Hermosillo, El Bajio, etc. and now A3T.



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RECTANGULAR PRESSURE BALANCED FOR VÄRTAN 1×131 MW, SWEDEN

The **Pressure Balanced** expansion joint 2070x1470mm diameter and 4420mm in length will be installed in the largest block for the combustion of clean biomass in the world.

The new CHP plant will be connected to Stockholm's Southern-central district heating network.

The advanced boiler technique will allow to use a full range of solid bio-fuels and reduce the use of fossil fuels significantly.

The new plant will use forest biomass as fuel. The use of bioenergy at Värtan will increase to as high as 70% from today's 45%.



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PREMIUM SERVICE WHEN TIME IS CRITICAL

MACOGA Premium Service has been created with a goal in mind: providing full service during an emergency situation.

We have the man power, engineering and design tools, manufacturing equipment and delivery capability to react to your emergency situation anywhere in the world in a record time.

- IMMEDIATE REPLY TO YOUR ENQUIRY
- DRAWINGS
- HIGH PRIORITY PRODUCTION
- GUARANTEED DELIVERY
- EXPRESS DELIVERY
- TRACKING OF YOUR SHIPMENT



MACOGA

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).