



## M'News

Issue No.16

**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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## SUCCESSFUL EMERGENCY REPAIR AT A REFINERY

MACOGA's continued ability to quickly respond to a customer crisis once again proved successful for one of the largest refineries in Europe. MACOGA's emergency repair service not only resulted in a tremendous monetary savings for the customer it prevented a potentially critical emergency shut-down of all the plant.

On a Saturday evening MACOGA received the information of a sudden explosion in the blow down line at the refinery. The explosion caused severe damage to the line settings and seriously jeopardized the operation of the entire system.

One of our product engineers was immediately moved to the plant to assess the pipeline damage then develop and implement a solution.

The client and MACOGA decided to install a **clamshell unit** at the earliest. The clamshell, with four bellows of 1600 mm diameter and a total length of 4760 mm was manufactured in a record time.

In an emergency like this MACOGA implemented all its mechanisms and within a short time, the clamshell unit was manufactured and sent to the refinery along with our on-site team.

Having MACOGA team onsite was a definite advantage for improving reaction time by a significant margin.

MACOGA's ability to provide quick turnaround emergency service resulted in significant cost savings for the customer. Without this service, this refinery would have been forced to shut down. Excellent customer relations are the foundation of our success. Particularly with this client the relationship is a true partnership. Our team is proud of this relationship and we look forward to continuing to help all our customers be successful.



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# METAL EXPANSION JOINTS

## NEW METAL EXPANSION JOINTS BROCHURE

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

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

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



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## ELBOW PRESSURE BALANCE JOINTS FOR POWER PLANT IN THE DOMINICAN REPUBLIC

MACOGA has successfully designed, manufactured and tested **Elbow Pressure Balanced Expansion Joints** to be installed in the Punta Catalina Power Plant for Corporación Dominicana de Empresas Eléctricas Estatales (CDEEE) in the Dominican Republic.

Punta Catalina is a 770 MW coal plant consisting of two power plant units that is expected to cost a total of about \$2 billion. The project was initiated by the Dominican Corporation of State Electricity Companies (CDEEE). In addition to the power plant, a dedicated terminal is to be built for the incoming coal.



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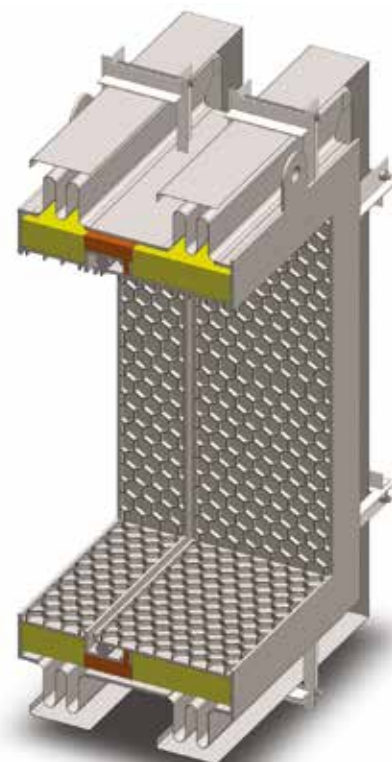
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## FCCU MACOGA MRU EXPANSION JOINTS FOR ESSO REFINERY

A set of 2 MRU **Rectangular Expansion Joints** have been successfully manufactured in a record time with our Premium Service for an ESSO Refinery in Europe .

The Expansion Joints, manufactured fully in accordance with Exxon Specifications, comprises 2 bellows of 2 convolutions each including high performance castable lining R-Max MP Refractory, Resco Sureflow 17E, a self-leveling castable that offers high strength and excellent resistance to abrasion, SS309 sealing braid and fibro ceramic insulation between sleeves and bellows.



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## MACOGA EXPANSION JOINTS FOR PETROCHEMICAL COMPANY IN SAUDI ARABIA

A number of 14 units MAC-FT DN600 Rubber Expansion Joints have been manufactured for one of the largest producer of petrochemical products in Saudi Arabia.

The Expansion Joints have been manufactured in a record time with our Premium Service and have been delivered by airfreight directly to the Jubail site in Saudi Arabia.



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## HIGH PRESSURE EXPANSION JOINTS FOR BPGIC (BROOGE PETROLEUM AND GAS INVESTMENT COMPANY)

MACOGA has been selected to deliver many **High Pressure Reinforced Expansion Joints** DN300, 400 and 600 mm for Brooge Petroleum and Gas Investment Company, Fujairah, UAE.

BPGIC was incorporated in 2013 in Fujairah's Free Zone. Activities: Storing (Crude oil, Fuel oil, all kinds of oil products and gas), and Building, Managing, Investment in refineries and all kinds of investments, Extraction and Exploration of Crude oil.



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## IN-LINE PRESSURE BALANCED RECTANGULAR EXPANSION JOINT

A **pressure balanced expansion joint** accommodates axial and lateral movements and counteracts the bellows pressure thrust. An additional bellows is incorporated into the unit and is subject to the line pressure to generate a force equal and opposite to that on the main bellows. Tying these bellows together neutralizes the pressure load on the unit.

### Features:

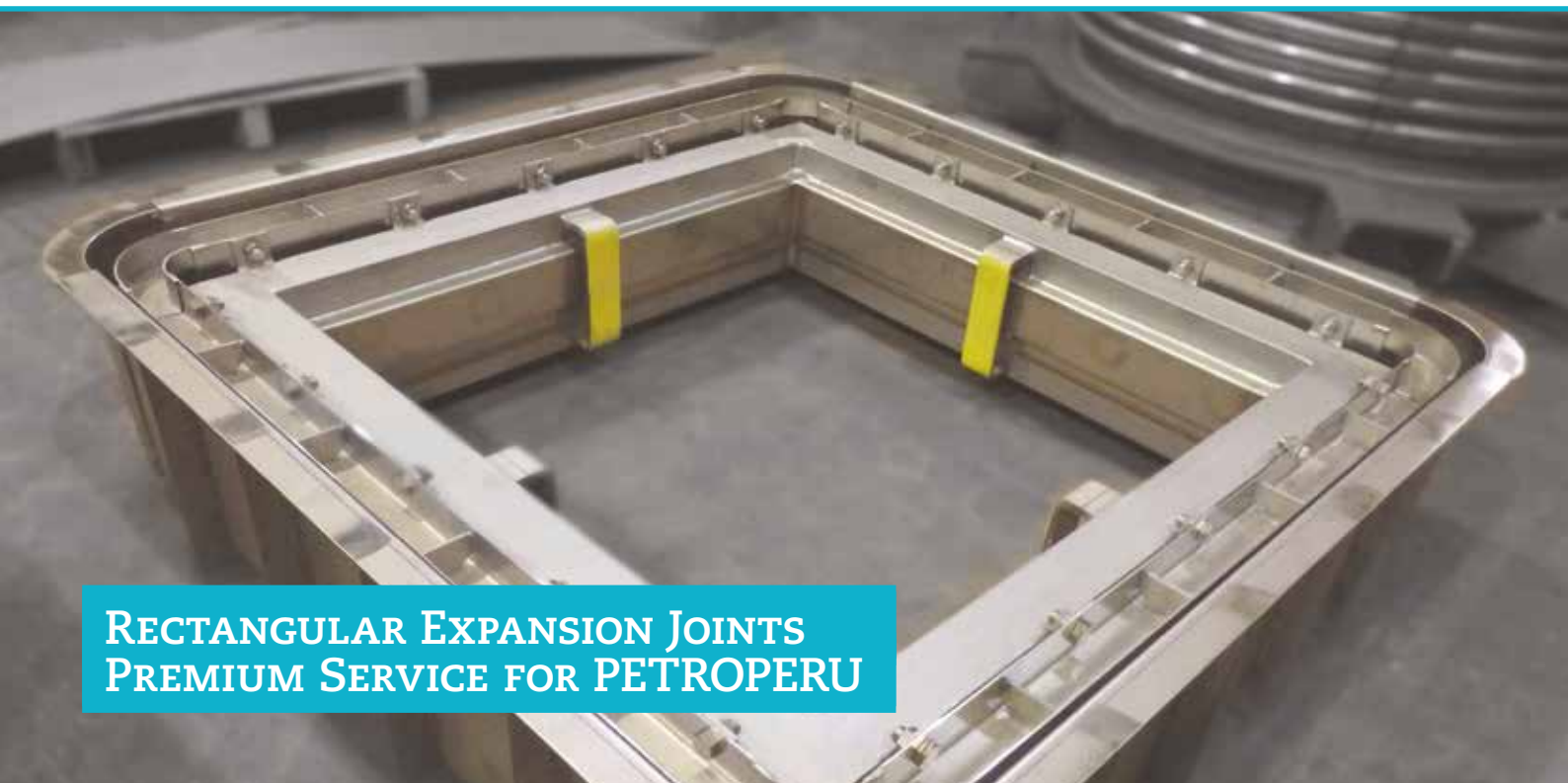
- Does not transfer the thrust caused by the internal pressure to the pipes or adjacent equipment
- Absorbs axial and lateral movements
- Eliminates change in pressure
- No main anchors required
- Pressure forces remain in balance



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## RECTANGULAR EXPANSION JOINTS PREMIUM SERVICE FOR PETROPERU

MACOGA **Premium Service** is the most reliable and efficient solution for those customers who require Expansion Joints in a record time.

During an emergency (plant shut-down, parts failure, etc.) you can't afford to wait in line for a standard delivery to get your Expansion Joints.

MACOGA has delivered to Petroperu, Talara Refinery Modernization Project, in a record time very large size Rectangular Expansion Joints MRW Series in sizes from 2200 x 1760 up to 5100 x 2000 and 4000 x 1300.

The Talara Refinery Modernization Project includes expansion of an existing topping unit from 63,000 bpd to 90,000 bpd, and revamping vacuum 1 unit from the existing capacity of 28,000 bpd to 46,000 bpd. It also involves expansion of the catalytic reformer unit, which will include replacing the gas compressor and the partial burn regenerator to enhance the production from 19,000 bpd to 23,000 bpd.



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## MACOGA EXPANSION JOINTS FOR ASSIUT AND WEST DAMIETTA POWER PLANTS IN EGYPT

MACOGA has been selected to deliver a large number of Lateral, Hinged and Gimbal Expansion Joints DN3300 and 2 Dog Bone 6870 x 5765 Expansion Joints to the Assiut and West Damietta power plants conversion projects in Egypt.

Assiut and West Damietta power plants have been completed in record timing in Q3 2015. Both power plants are currently operational and have a combined capacity of 1,500 MW. Converting them into combined cycle is expected to increase capacity by approximately 50% with no additional fuel intake.



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## FCCU EXPANSION JOINTS FOR NORTH EUROPEAN REFINERY

MACOGA has successfully designed, manufactured and tested three FCCU Expansion Joints for a refinery located in the north of Europe.

The project includes a total of 3 **expansion joints for the FCCU**. The diameters of the cold wall expansion joints are 990 mm and 580 mm.

The Expansion Joint include:

- 2 ply testable & packed Bellows in ASTM B443 Inconel 625 LCF
- Internal and external Super Wool insulation
- Hexagonal Mesh, sealing anchors and sealing rope
- Refractory and abrasion lined RESCO RS17 EC / Rescobond AA 22 S
- Abrasion Resistant Lining 60 ACTCHEM 85 UOP 3-25-6
- Refractory Lining 450 SUREFLOW 17 (with needles SS304H) UOP 3-24-4

The Expansion Joints are designed for pressures of 5.5 bar and a temperature of 538 °C for the bellows and 750 °C for the medium.

MACOGA offers its customers in the oil and gas, refinery and petrochemical industries a complete field service package. We provide a professional variety of site services including assembly, supervision of installation and inspection that minimize risks of unplanned shutdowns and help to avoid failures and breakdowns.



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# 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).