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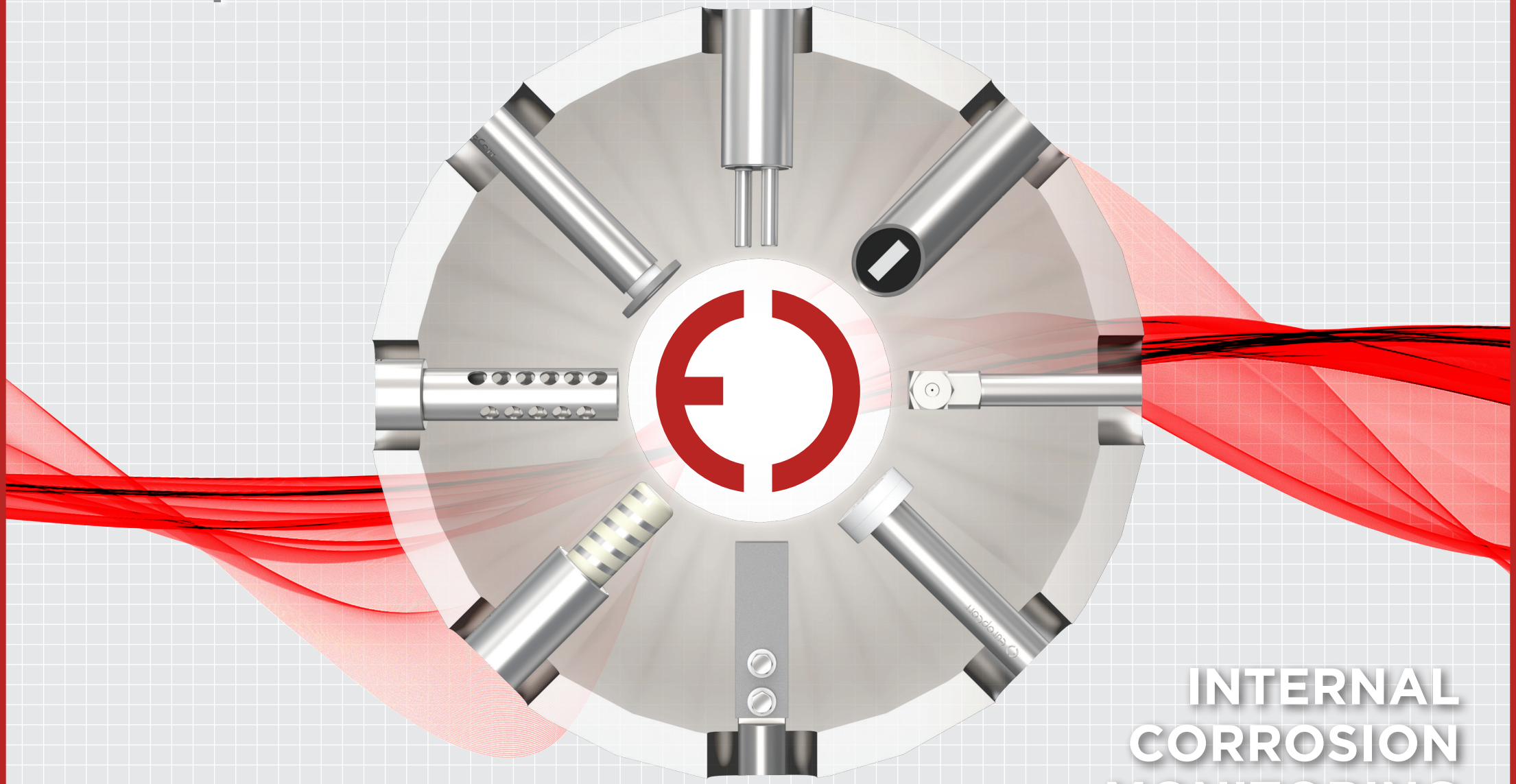

INTERNAL CORROSION MONITORING

Oil & Gas Industry

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EuropCorr

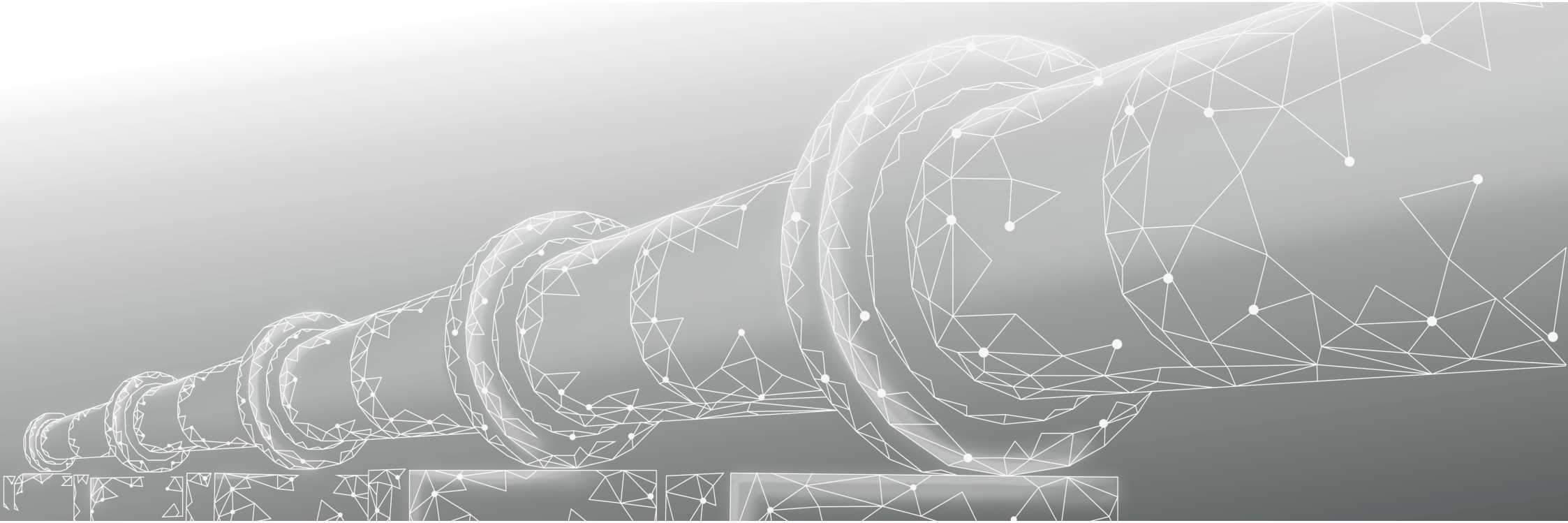
EuropCorr's concept is to combine a scientific approach with practical solutions. We have an extensive knowledge about materials and their behaviour, monitoring and inspection methods, as well as instrumentation and information technology. We also work closely with our clients in technology development, field services, data management, planning inspection and monitoring programs.

OUR MISSION

- Extending plant & equipment lifetimes
- Optimising maintenance programs
- Preventing accidents & catastrophic failures
- Increasing regularity and availability

OUR VALUES

- Customizability
- Flexibility
- Reliability
- Competitivity



ABOUT US

info@europcorr.com www.europcorr.com

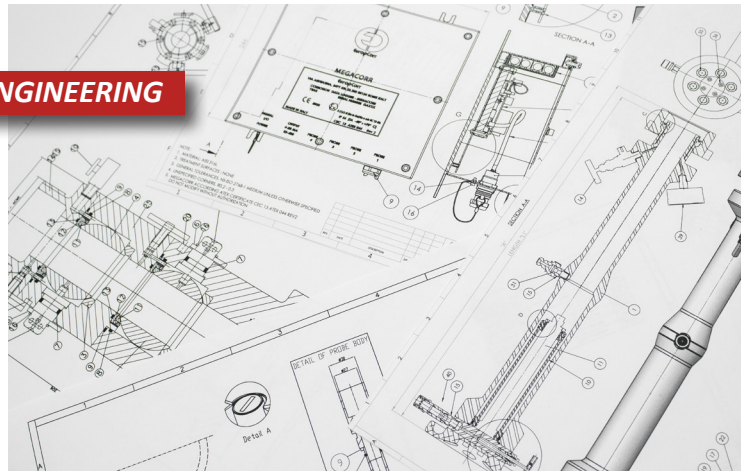
EuropCorr® Italy is specialized in design, manufacturing, sales and after sales services of Corrosion Monitoring systems mainly for Petrochemical, Oil and Gas Industry.

Our technical experts have over decades experience on corrosion technology, providing comprehensive corrosion management solutions.

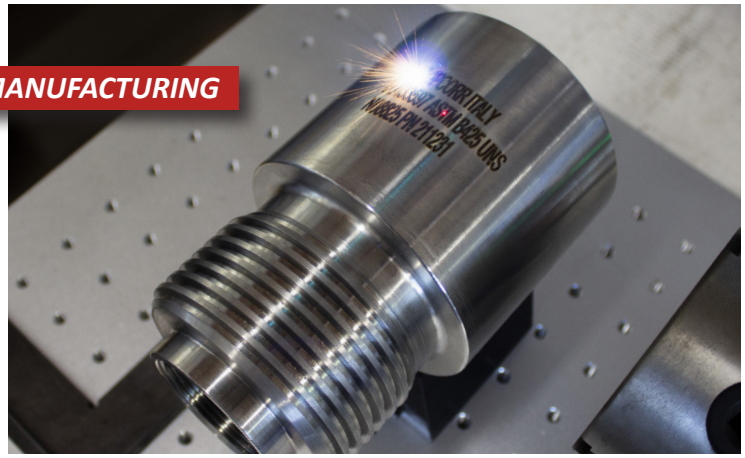
The range of internal corrosion monitoring products includes the traditional mechanical Access Fittings, Corrosion Coupons, Corrosion & Erosion Probes, Chemical Injection & Sampling devices and Retrieval Tool Kit as well as Hydraulic Access and Retrieval system, which is the preferred system in the industry.

The instrumentation has unique field reliability and flexibility, providing both online and offline configurations.

We have engineering capability to provide tailored products as per clients and projects requirements.



ENGINEERING



MANUFACTURING

SERVICE & TRAINING

CERTIFICATES

Company's Quality Management System is EN ISO 9001:2005 certified. All equipment meets NACE standards, relevant products with CE, PED and ATEX certifications.

ACCREDIA · ITA INTERNATIONAL TECHNICAL ALLIANCE · **ISO 9001:2015**

Certificate No: IT/0837Q/0762

www.itanet.eu

ACTIVITIES AND PRODUCT RANGE

- Corrosion and material selection
- Corrosion monitoring devices
- Instrumentation & Software
- Chemical injection & sampling devices
- Inspection and data management
- FAT (PMI, NDE, Pressure Test)
- Corrosion site surveys
- Failure analysis
- Laboratory testing
- Field monitoring and inspection services
- Training courses

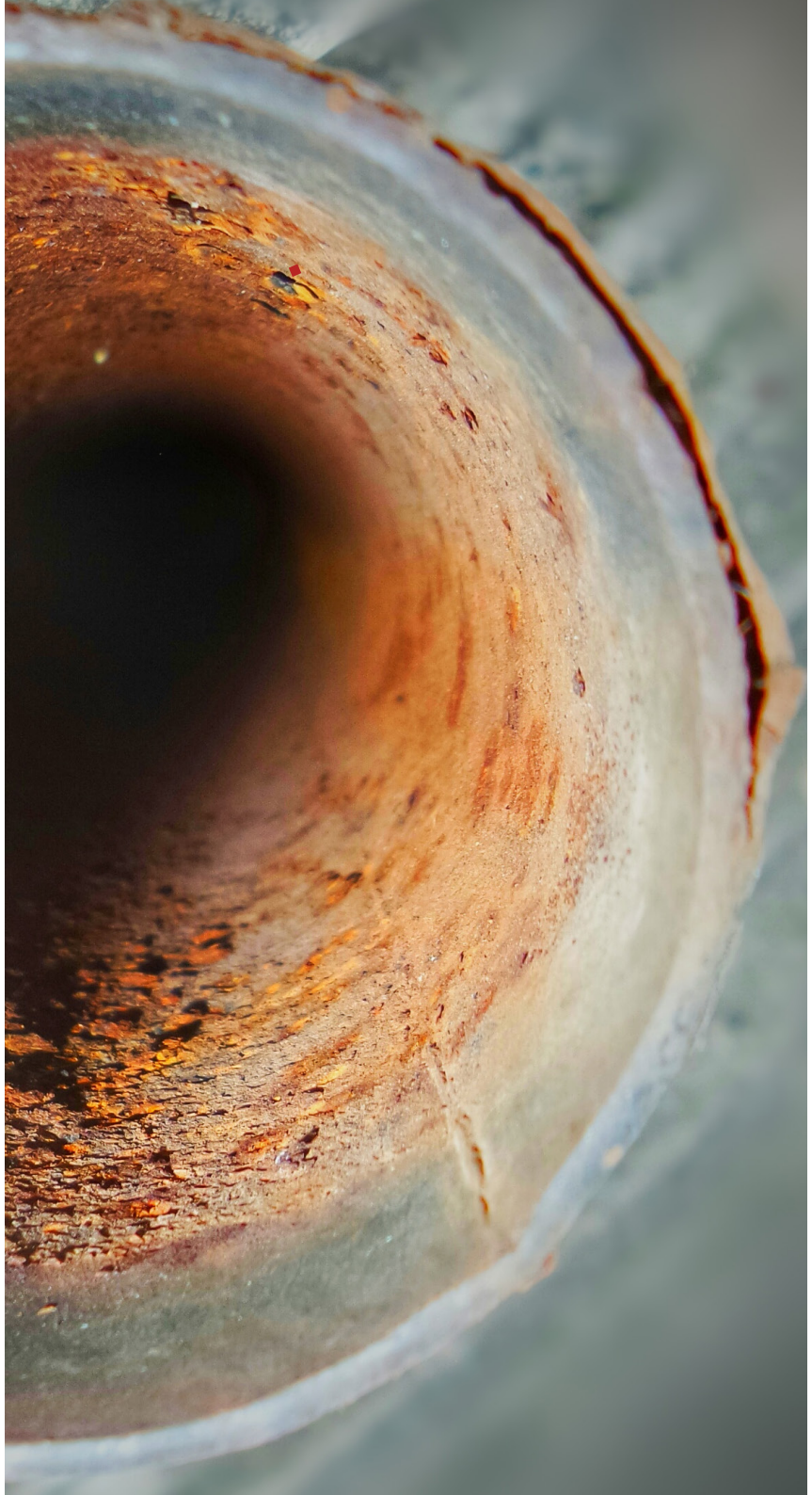
WHY CORROSION MONITORING ?

Corrosion is a chemical phenomenon that damages some types of materials, especially metals. This process worsens the initial properties of the material subjected that can provoke a dangerous situation.

It is one of the most serious ageing mechanism impacting the equipment and assets of process facilities in Oil and Gas industry.

The application of Corrosion Monitoring technical solutions allows to analyse the state of the pipeline or vessel giving us information about corrosivity, corrosion rate, process data and the effect of corrosion inhibitors.

These data allow to take informed decisions not only regarding the remaining life of the object affected but also regarding life extension strategies, prospective material selection, risk reducing, safety increasing, environmental performance improvement and cost-effective methods for remedy corrosion problems.



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UNCONTROLLED CORROSION CAN:

Lead to severe safety and environmental hazards

Be costly in terms of interruption or stop in production processes and repair costs

Produce a risk of unexpected catastrophic failures

Produce environmental damage and potential harm to humans

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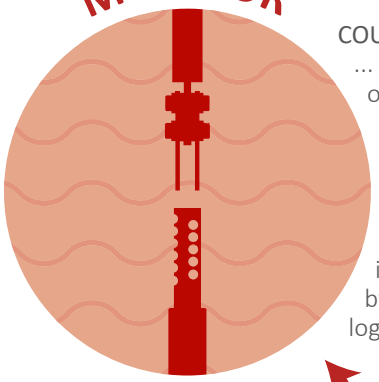
THE CYCLE
CORROSION MONITORING

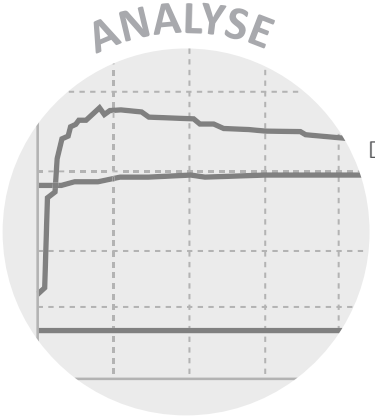


COUPON

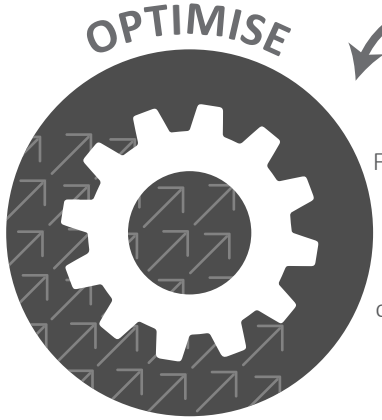
... is the classic type of Corrosion Monitoring device. It consists of introducing a piece of metal similar to the composition of pipeline for a certain period and then will be retrieved for visual inspection and laboratory analysis.

PROBE

... is an electronic type device for a continuos monitoring. It is installed in the pipeline and the probe data can be collected by means of MaxiCorr portable instrument or MegaCorr data logger/transmitter without retrieving the probe.



Data collected from Corrosion Monitoring devices will be analysed using CorrTrack software, presenting corrosion related parameters through comprehensive and explanatory graphs and generating custom reports.



From data analysis the Client can optimise the use of inhibitors, inspection and maintenance programs to extend the plant and assets lifetime. The Corrosion Monitoring and analysing must continue in order to assure any changes can be detected and corrected on time.

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HIGH PRESSURE ACCESS SYSTEM *MECHANICAL*

EuropCorr offers a complete range of Mechanical Access System assemblies for installation of monitoring devices such as Corrosion Coupons, Corrosion & Erosion Probes, Chemical Injection & Sampling.

The system is composed by an Access Fitting, a Solid or a Hollow Plug and a Heavy Duty Cover or a Pressure Retaining Cover.

450°F (232°C)

6000/10000 psi
(420/690 bar)
Or according to
Flange rating

EuropCorr

Our Solutions Your Expectations

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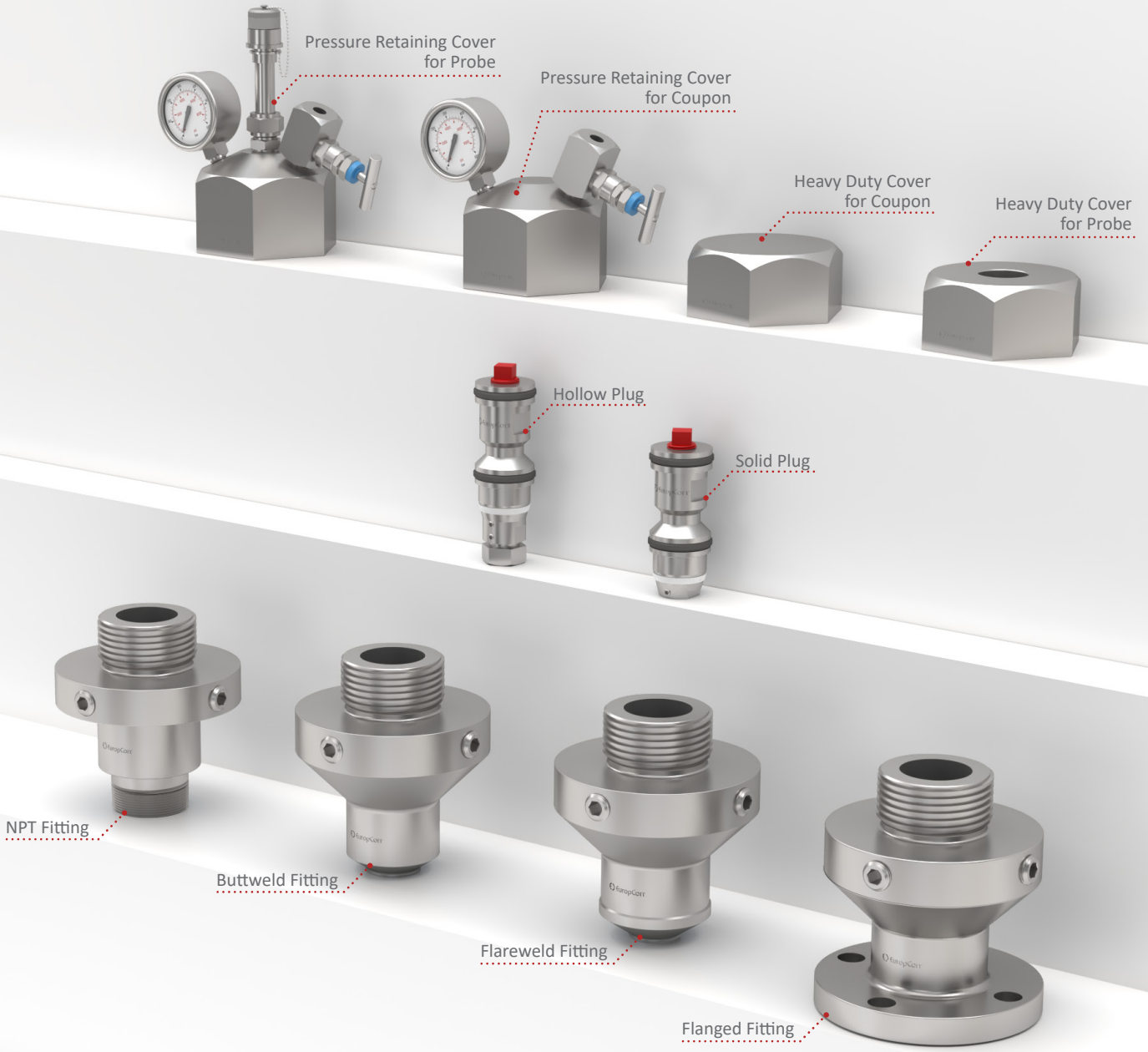
HIGH PRESSURE ACCESS SYSTEM *HYDRAULIC*

EuropCorr offers a complete range of hydraulic Access System assemblies for installation of monitoring devices such as Corrosion Coupons, Corrosion & Erosion Probes, Chemical Injection & Sampling.

Hydraulic Access System is the safest and most reliable system for installation and retrieving.

Advantages of hydraulic system in comparison with traditional mechanical system shown on page 12.



450°F (232°C)

6000/10000 psi (420/690 bar) Or according to Flange rating

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HIGH PRESSURE ACCESS SYSTEM

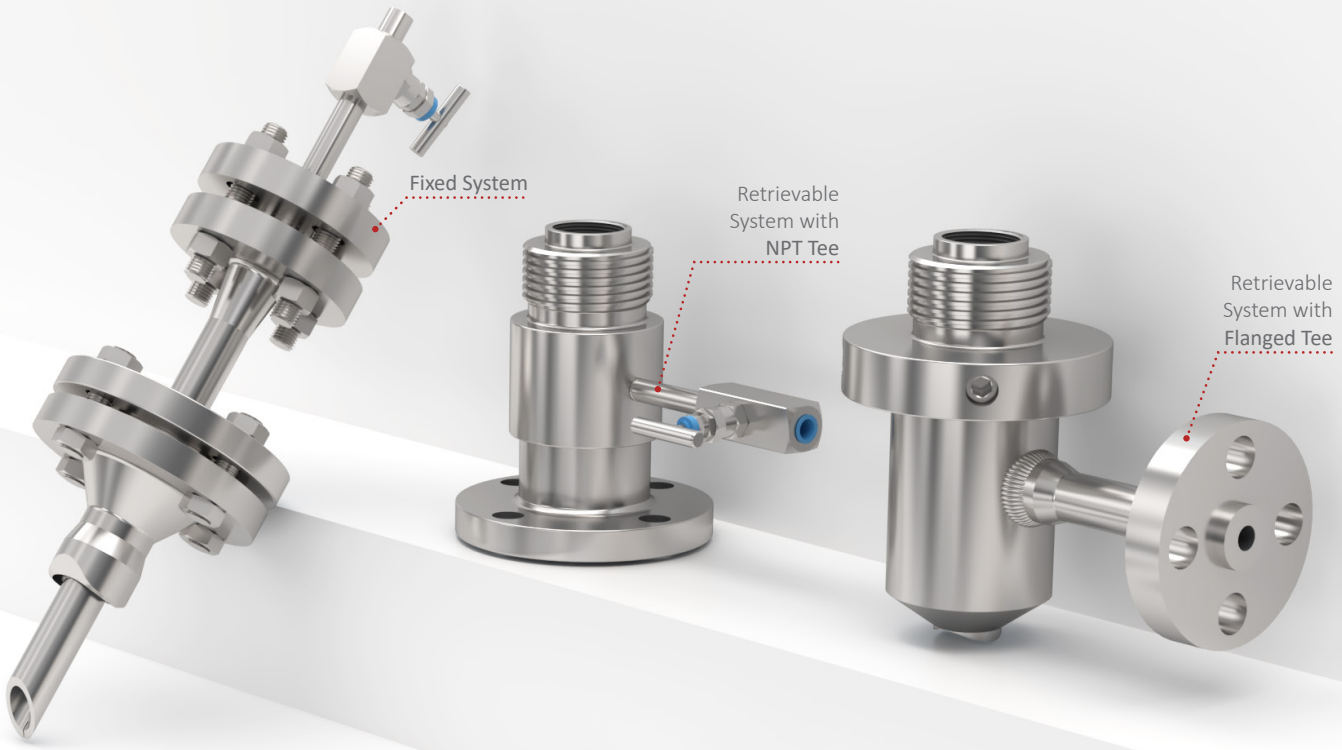
CHEMICAL INJECTION & SAMPLING

Chemical inhibition is one of the most practical preventive maintenance method for minimizing and controlling corrosion in product pipelines, vessels, etc.

The injection of chemical treatments and sampling of process fluids are two major requirements for any corrosion control system.

EuropCorr offers a complete range of 2" High Pressure Access Fitting for traditional mechanical system as well as hydraulic Access System.

A variety of Retrievable and Fixed type Injection devices can be used to provide the most efficient delivery and dispersion for a given application.



450°F (232°C)

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Or according to
Flange rating

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HIGH PRESSURE COUPONS

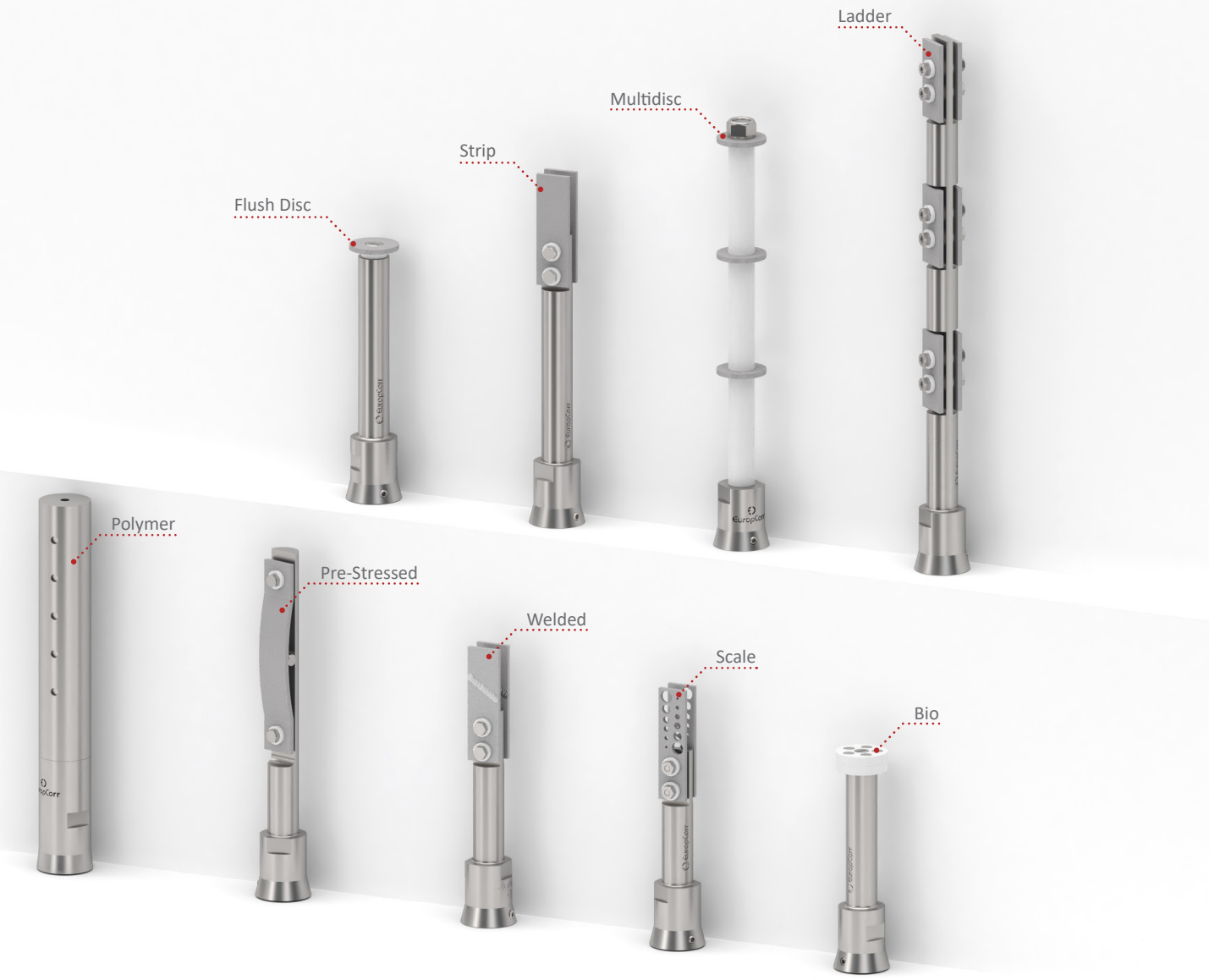
WEIGHT LOSS AND SPECIAL

Coupons are made to study corrosion and erosion behaviour in pipelines and vessels. It is the simplest, least expensive and longest established method of monitoring corrosion and erosion in operating system.

Coupon is a piece of metal of predetermined shape and size, manufactured from alloys having similar or the same chemical composition as the pipeline or vessel being monitored.

It will be inserted for a period of time in the installation to be studied. Weight loss or other changes of the coupons will be representative of corrosion effect in the pipelines.

With the use of the Access System and the Retrieval Tool Kit the coupons can be easy and rapid changed without shutdown.



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HIGH PRESSURE PROBES

CORROSION, EROSION & HYDROGEN

Probes are designed to replace the traditional coupons. This monitoring method facilitates the continuous corrosion measurement without removing the monitoring device from service.

For different monitoring purposes, we have a variety of probes:

- ER Probe is used for measuring instantaneous metal loss and corrosion rate on time.
- LPR Probe gives instantaneously corrosion rate in water-based environments.
- Erosion Sand Probe gives early detection of erosion caused by sand.
- Hydrogen Probe is used for monitoring hydrogen which has permeated into the steel in acidic environment.

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HIGH PRESSURE RETRIEVAL TOOL KIT

EuropCorr Retrieval Tool Kit consists of Retriever and Service Valve (double or single isolation) specially designed for safe and easy installation and removal of various corrosion monitoring devices such as Coupons, Probes, Chemical Injection & Sampling assemblies under full operational pressure without shutdown.

The Tool Kit is PED certified.

Advantages of hydraulic system in comparison with traditional mechanical system shown on page 12.

450°F (232°C)

6000 psi (420 bar)

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ADVANTAGES
HYDRAULIC SYSTEM

In comparison with traditional Mechanical system, the Hydraulic configuration is the preferred technique for safe and easy installation and retrieving of monitoring devices such as Corrosion Coupons, Corrosion & Erosion Probes, Chemical Injection & Sampling.

The system has important advantages from operational and safety point of view:

1. EASE OF ALIGNMENT
Precise alignment of tool and monitoring device in an access fitting of a pressurized system

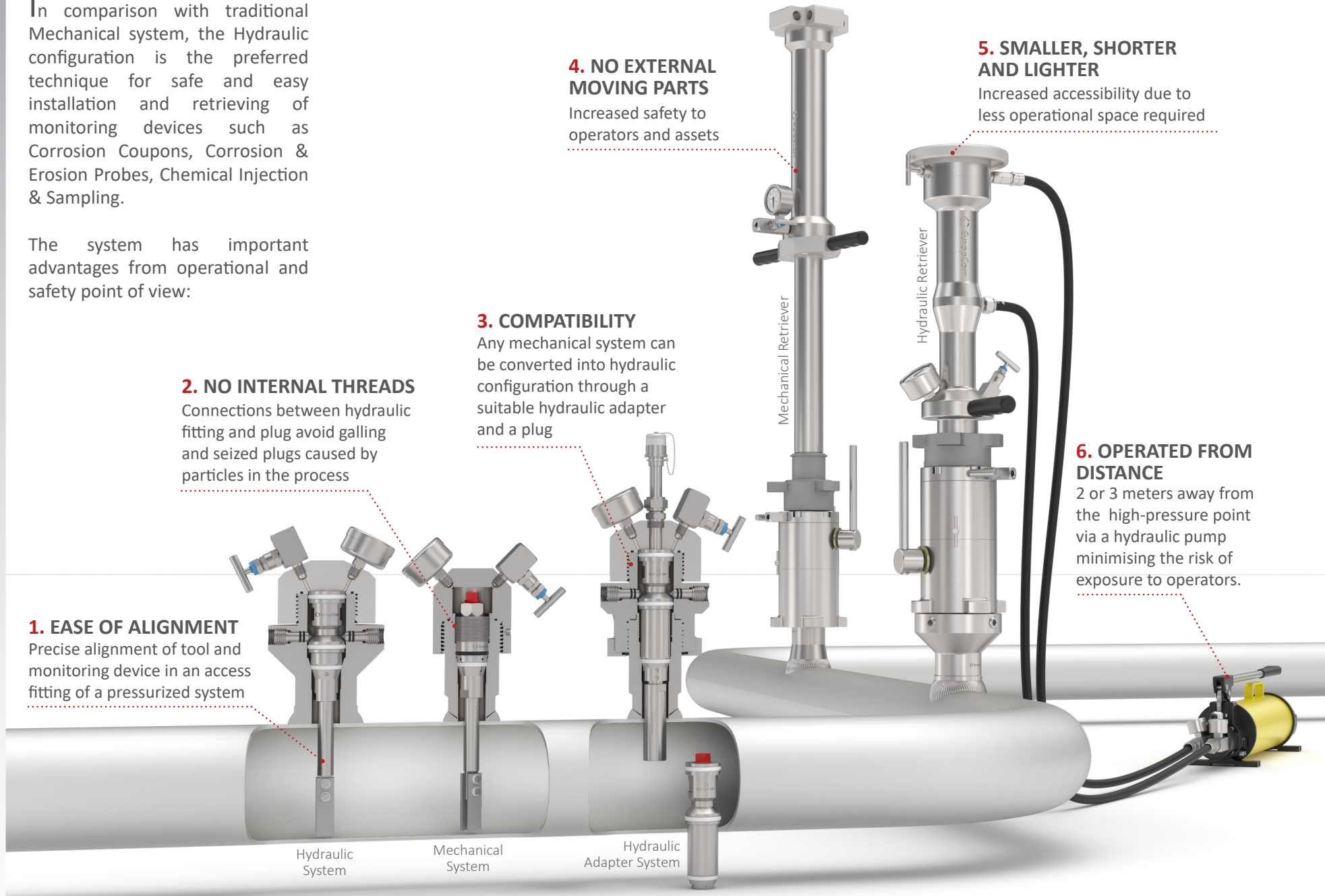
2. NO INTERNAL THREADS
Connections between hydraulic fitting and plug avoid galling and seized plugs caused by particles in the process

3. COMPATIBILITY
Any mechanical system can be converted into hydraulic configuration through a suitable hydraulic adapter and a plug

4. NO EXTERNAL MOVING PARTS
Increased safety to operators and assets

5. SMALLER, SHORTER AND LIGHTER
Increased accessibility due to less operational space required

6. OPERATED FROM DISTANCE
2 or 3 meters away from the high-pressure point via a hydraulic pump minimising the risk of exposure to operators.



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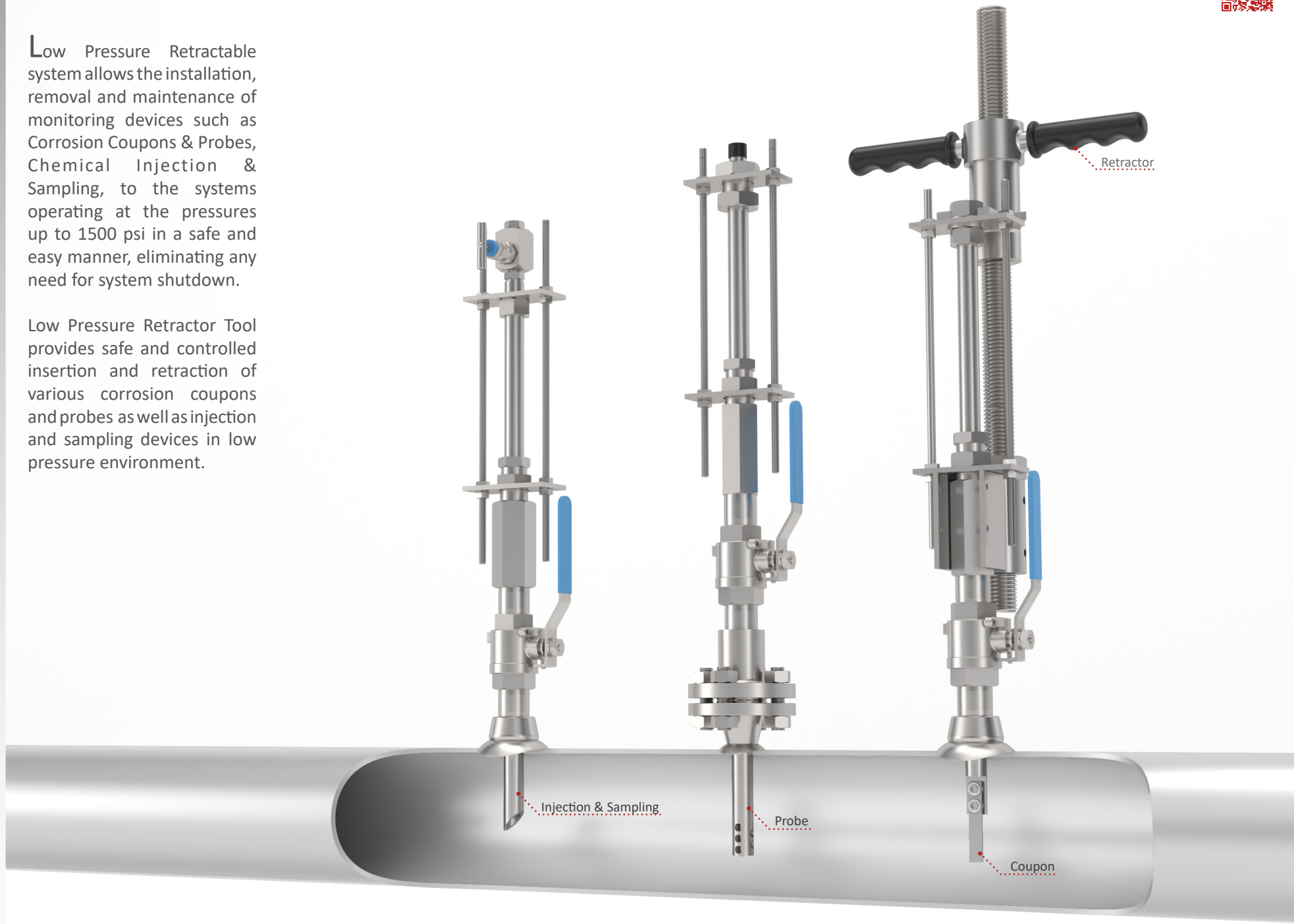
LOW PRESSURE RETRACTABLE SYSTEM

Low Pressure Retractable system allows the installation, removal and maintenance of monitoring devices such as Corrosion Coupons & Probes, Chemical Injection & Sampling, to the systems operating at the pressures up to 1500 psi in a safe and easy manner, eliminating any need for system shutdown.

Low Pressure Retractor Tool provides safe and controlled insertion and retraction of various corrosion coupons and probes as well as injection and sampling devices in low pressure environment.



450°F (232°C)

6000 psi (420 bar)

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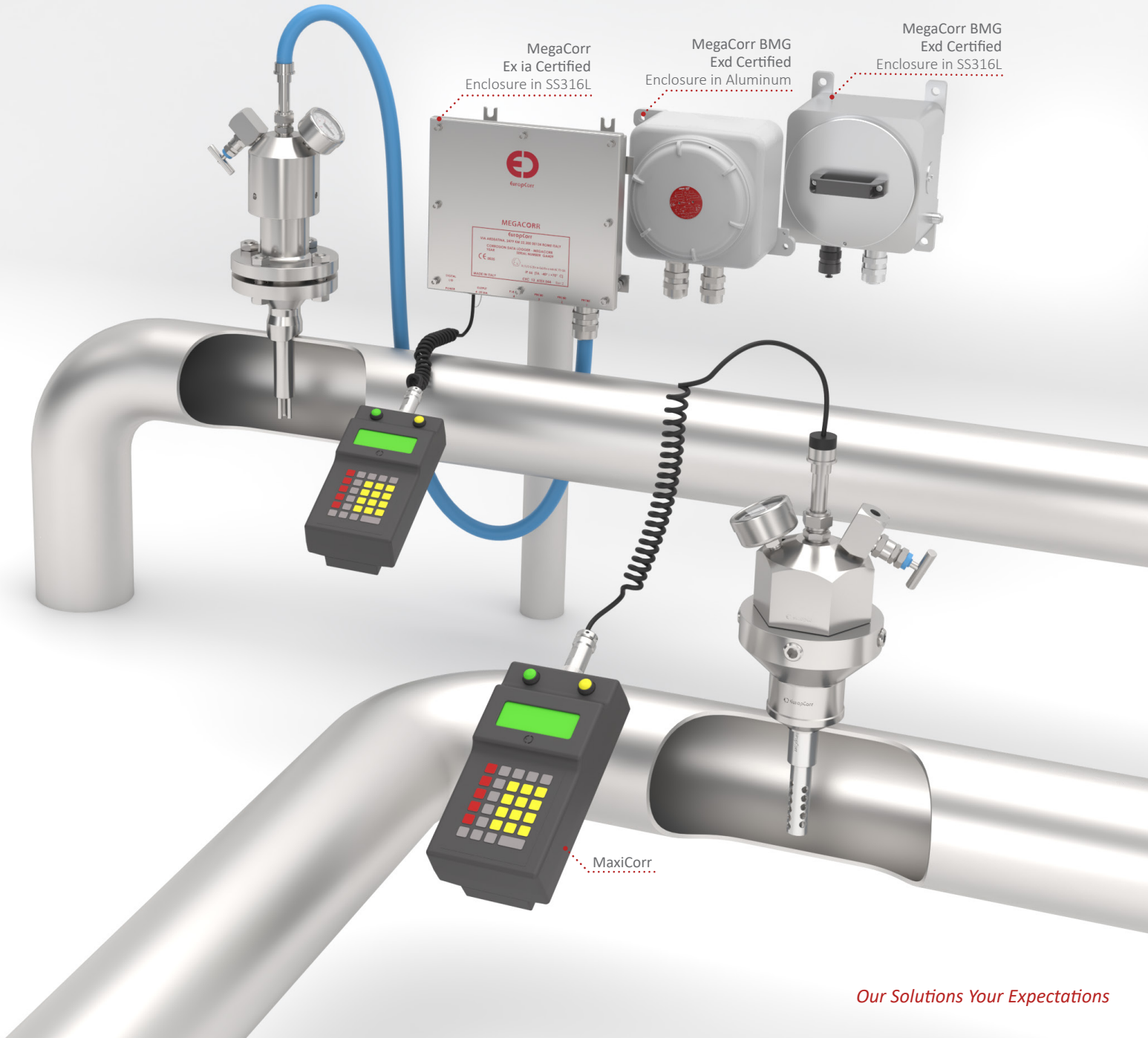
DATA COLLECTION
PORTABLE/REMOTE

MaxiCorr is a flexible handheld data acquisition unit designed for obtaining direct measure from all types of Corrosion Probes.

Battery-powered MegaCorr is a stand-alone data logger for continuously data collecting of probe at predefined intervals.

MaxiCorr is used for MegaCorr setup as well as downloading the stored corrosion data from MegaCorr to transfer data to PC with CorrTrack software installed for data analysis.

All instrumentation is ATEX certified.



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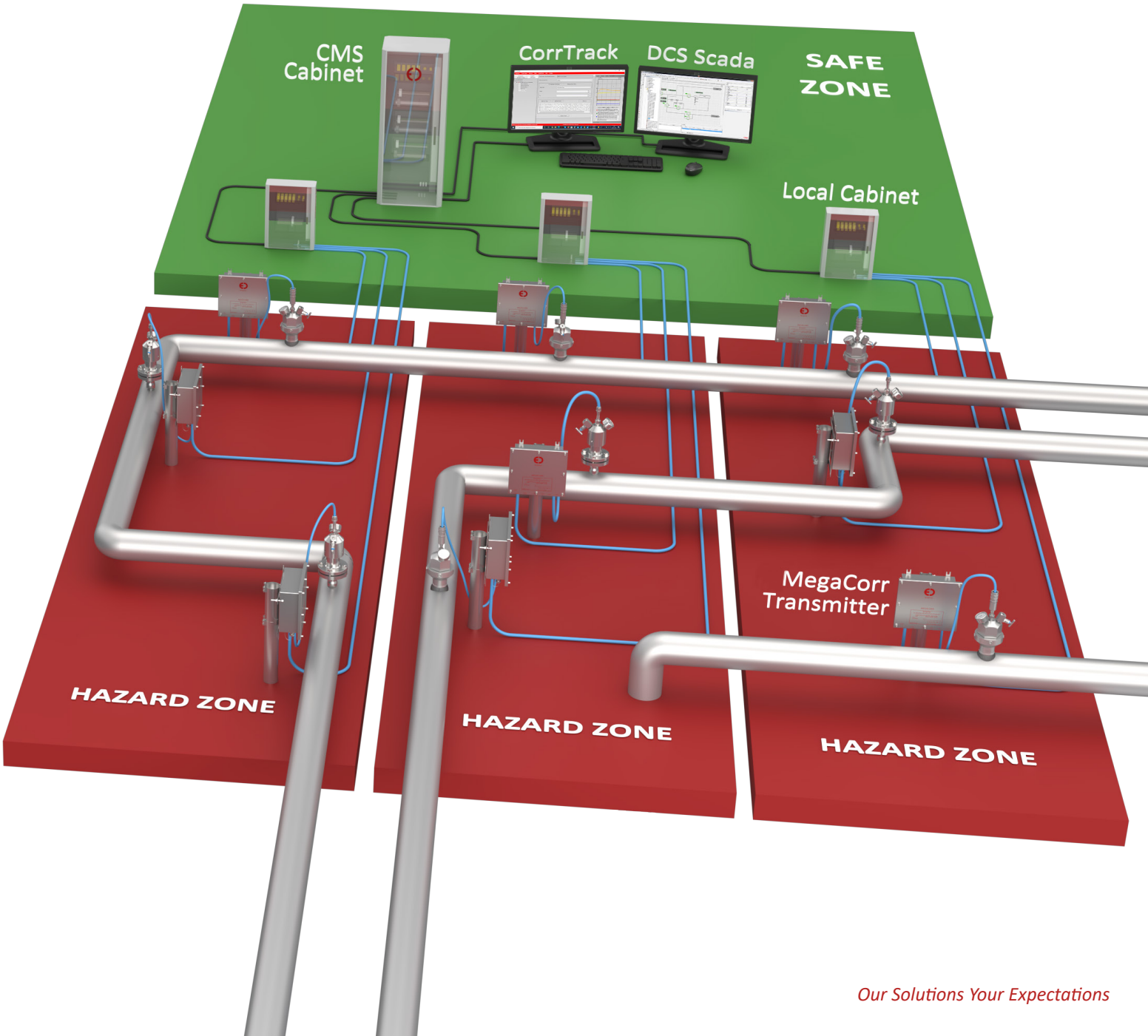
DATA TRANSMISSION *ONLINE*

Online Data Transmission is the preferred solution to have the continuous remote control of monitoring instrument, allowing the customer to manage the corrosion data, prevent corrosion upsets, regulate inhibitors in timely, economically and reliable manner.

Direct connection is possible with DSC/SCADA process control systems by means of MODBUS protocol or 4-20mA connections either directly or through the cabinets.

CorrTrack online software permits the real time configuration and visualisation of corrosion data.

To meet demaining industry challenges, EuropCorr offers wide range of communication configurations.



CORRTRACK SOFTWARE

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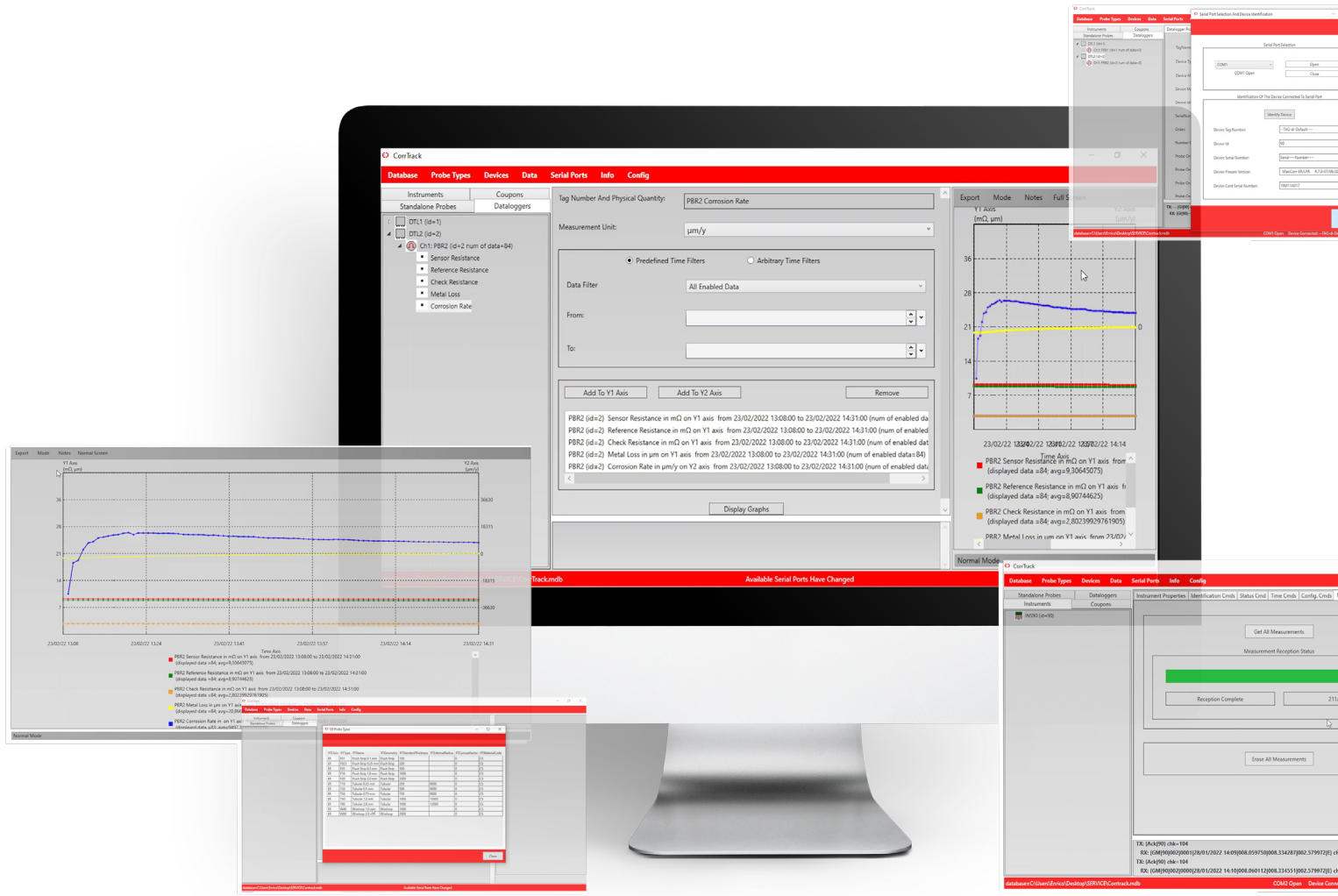
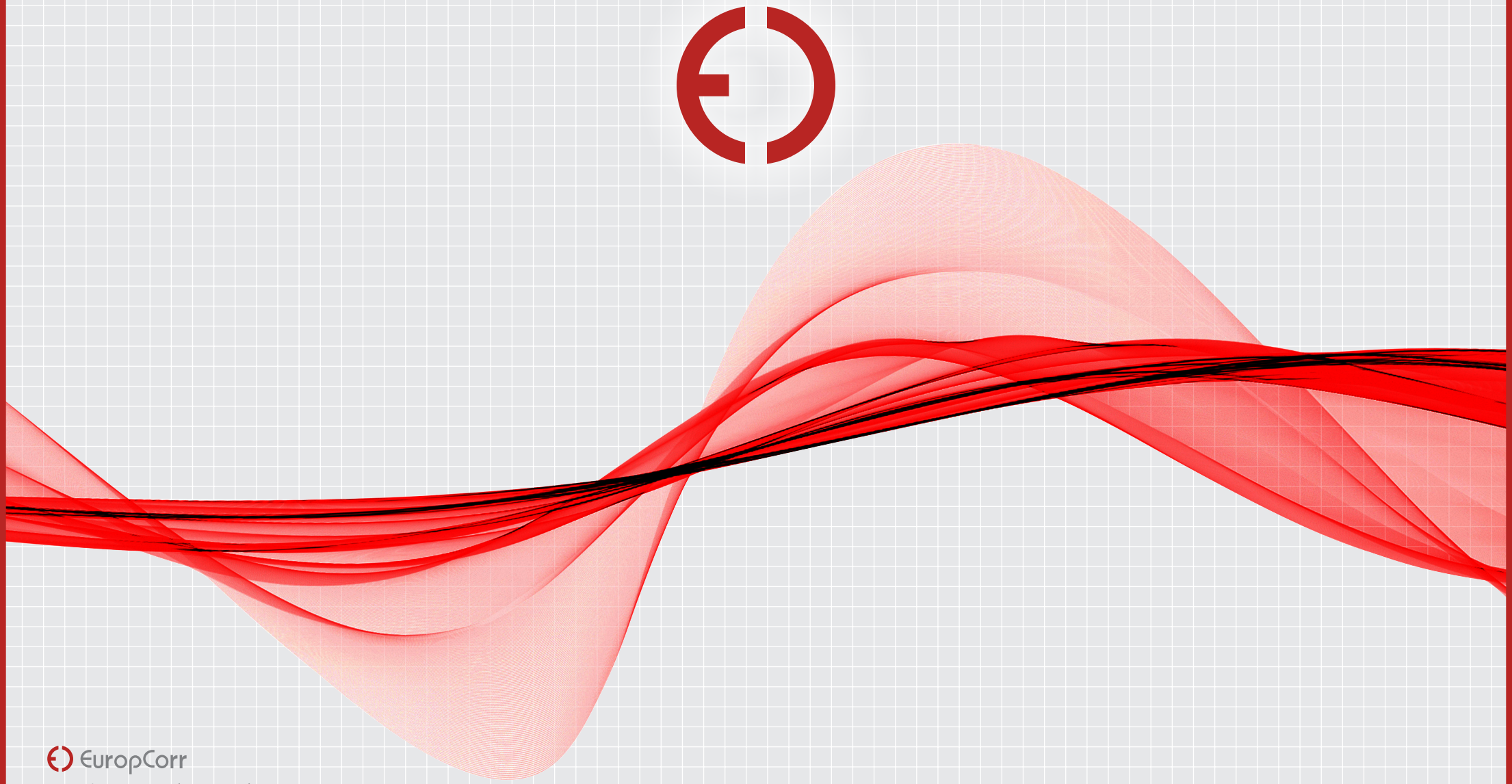
CorrTrack is a Microsoft Windows based corrosion management software.

CorrTrack is designed for :

- Managing Probe data.
- Configuring monitoring instrument MegaCorr , MaxiCorr and FIU (Field Interface Unit).
- Storing the measured data.
- Assisting in data analysis.
- Presenting the corrosion related parameters through comprehensive and explanatory graphs.
- Generating custom reports.
- Providing real time graphs and alarms (only for online system).





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