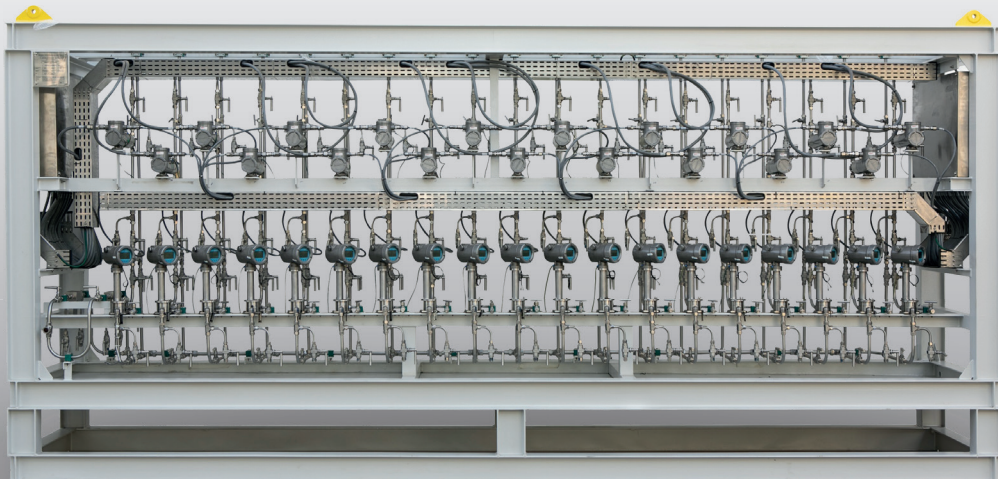


# Chemicals Products Injection System



**Metroval**  
Customized solutions in fluid measurement







**Metrolval**



# Metroval, complete solutions in fluids control

The Metroval history began in 1987 when the company Tecnobrás S.A., water meters manufacturer, won a contract for technology transfer, for manufacturing positive displacement meters, with Bopp & Reuther Messtechnik GmbH, from Germany, known worldwide for its long tradition in the instrumentation and control field. This contract was transferred to Metroval in 1988, date of the company founding.

In 1991, another technology transfer contract, with the company Rheonik Messgerate GmbH – also from Germany, granted the mass meters manufacturing by Coriolis effect, in a pioneering move in Brazil.

With a prominent position in the flow measurement domestic market, the years followed with numerous accomplishments:

- One of the first domestic companies to obtain in 1994 an ISO 9000 certification;
- Inmetro Accreditation in 2004, of its flow gage calibration laboratories, integrating RBC – Brazilian Calibration Laboratories Network;
- Conquest of the largest flow measurement contract of national history: the adequacy of four Petrobras assets in the Campos Basin, totaling 14 oil platforms;
- Opening of a branch office in Macaé (RJ), in order to provide services and support to Oil and Gas companies.

With almost 3 decades of experience, today Metroval is proud to count more than 30,000 meters sold to over 6,000 customers. A genuinely Brazilian company and national leader in measurement technology, its commitment to quality and technology has placed it as the only company in Latin America to completely dominate the production cycle of flow measurement systems, enabling the continued development of fluid control solutions.





Oil and Gas

## Chemicals Products Injection System

### Automatic and accurate chemicals control for oil production

Metroval dosing and additive systems are the ideal solution for dosing chemical additives or chemical compounds that require accurate dosing of different liquid components.

In this Metroval systems, each compound is individually measured by a high accuracy flow meter and its dosage is controlled by a control valve, in order to guarantee the correct dosing established by the customer's specification.

The system can operate with an existing supervisory, or it can be provided with an interface that allows the programming and monitoring of variables directly by the user through a human-machine interface (HMI).

These systems can operate continuously or in batches, designed according to the customer's specifications to meet the most varied process characteristics, such as flow, pressure, temperature and chemical compatibility.

### Benefits



Measured and controlled fluids individually – greater accuracy



Modular construction, rack mounting



Usable in classified area



High pressures (up to 15,000 PSI) and low flow rates (up to 0.5 l/h)



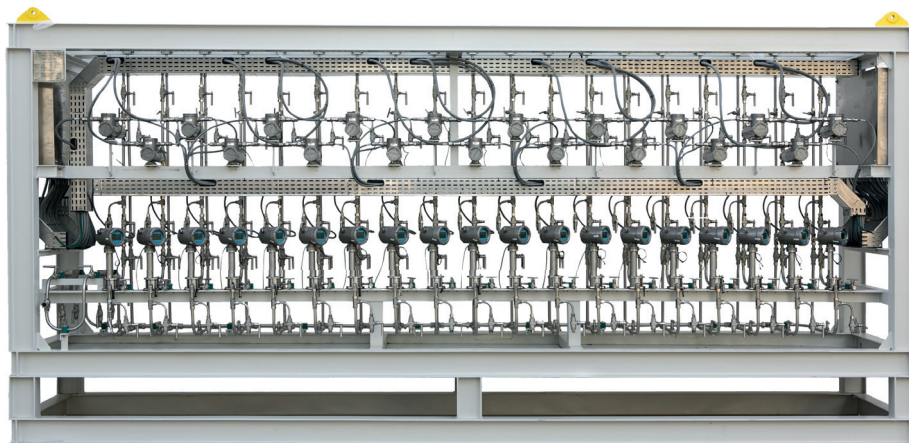


## Chemical Injection in Crude Oil

This system, with a technology developed in Brazil, aims to optimize the dosage of chemicals in an automated way.

Achieving excellence in oil and gas measurement, Metroval Controle de Fluidos Ltda. is proud to present this revolutionary solution.

The system provides monitoring of all variables through a dedicated panel, allowing a complete reading of process data, alarms, injection control, remote calibration of control valves and several features to provide complete monitoring of the operation. This provides a great increase in efficiency to the production process of the production units, with an excellent cost/benefit ratio.



## Applications



Dosing, Addition and Mixing of multiple products;



Process with continuous operation or per batch;



Chemical and mercaptan injection;

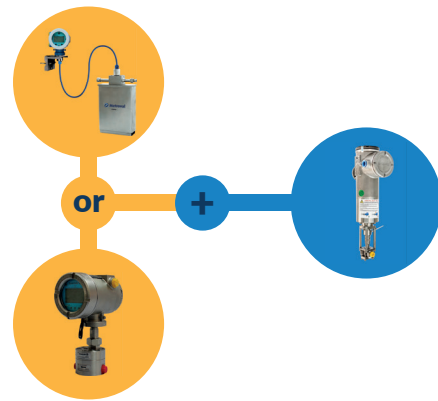
To ensure proper circulation of crude oil in the pipelines of exploration and production platforms, it is necessary to inject chemical products such as biocides, corrosion inhibitors, anti-foaming agents, demulsifiers, etc.

As a result of the exhaustive research, development and engineering work of its technical staff, as well as analysis of the equipment and material available in the market, this system for injecting these fluids in extremely small quantities into the crude oil pipelines was developed.

The dosages are carried out through tubings of small diameters conveniently sized according to the requirements of the process, taking into account available pressure losses from the skid to the injection point. The highlight of this system, however, is the technique used for dosing the exact amounts of chemicals.

## Components

The Metroval positive displacement volumetric flow meter or alternatively, a Coriolis Metroval mass flow meter, associated with a fine adjustment valve with explosion-proof electrical actuator, determines the accurate injection of a previously selected amount of chemical product.



## Operation Screen



Monitoring of all variables, complete reading of data, injection control alarms, remote calibrations of Control Valves carried out through a dedicated panel, PLC (programmed logic controller), in turn, commands a special needle valve with electric actuator, through previously determined opening and closing, give the exact value to be injected in the corresponding oil line.

## Success Cases

### Petrobras Platform P-54

Consisting of 9 skids and a total of 78 injection points.



### REPAR refinery

Composed of 18 injection points.



### Petrobras Platform P-58

Consisting of 6 skids and a total of 72 points of injection.

### Petrobras Platform P-62

Consisting of 4 skids and a total of 58 injection points.





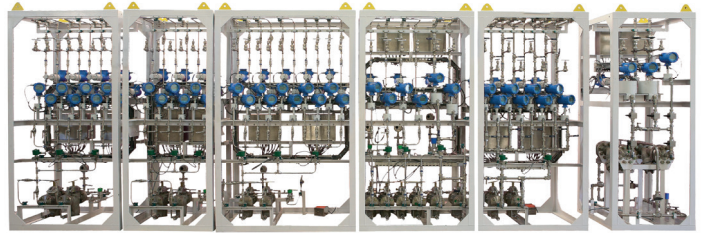
### Petrobras Plataforma P-63

Composed of 6 skids and a total of 81 injection points.



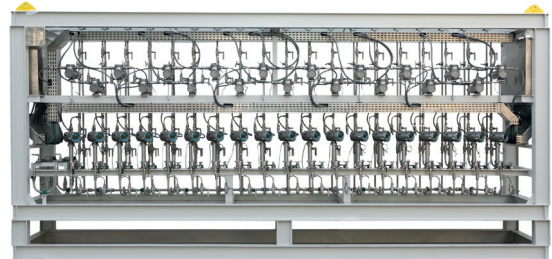
### Petrobras Platforms P-43 and P-48

Consisting of 17 skids and a total of 133 injection points.



### Petrobras Platforms P-66, P-67, P-68, P-69, P-70 e P-71

Each platform was composed for 4 skids and a total of 59 injection points.



### Petrobras Platforms P-74, P-75, P-76 e P-77

Each platform was composed of 56 meters, 56 valves and 1 control panel.



### FPSO MARLIM 2 Platform

Composed of 170 Coriolis meters, 86 control valves.



### FPSO Marechal Duque de Caxias (MERO 3) Platform

Composed of 91 Coriolis meters, 20 control valves.



### FPSO Almirante Tamandaré (BUZIOS 6) Platform

Composed of 98 Coriolis meters, 0 control valves.







PARENT COMPANY NOVA ODESSA - SP



AFFILIATE IN MACAÉ - RJ



**Metroval**  
Customized solutions in fluid measurement

TALK TO METROVAL

✉ vendas@metroval.com.br

www.metroval.com.br

+55 19 2127 9400

