



TRILLIUM PUMPS ITALY  
AFTER SALES  
SOLUTIONS



## Service Solutions

For over 120 years **Trillium Pumps Italy** has developed a reputation for quality and reliability, serving its customers with the complete range of **API 610 Pumps** for the Oil & Gas, Energy and related Industries, as well as offering a comprehensive support in each phase of project and operation.



### After Sales Services

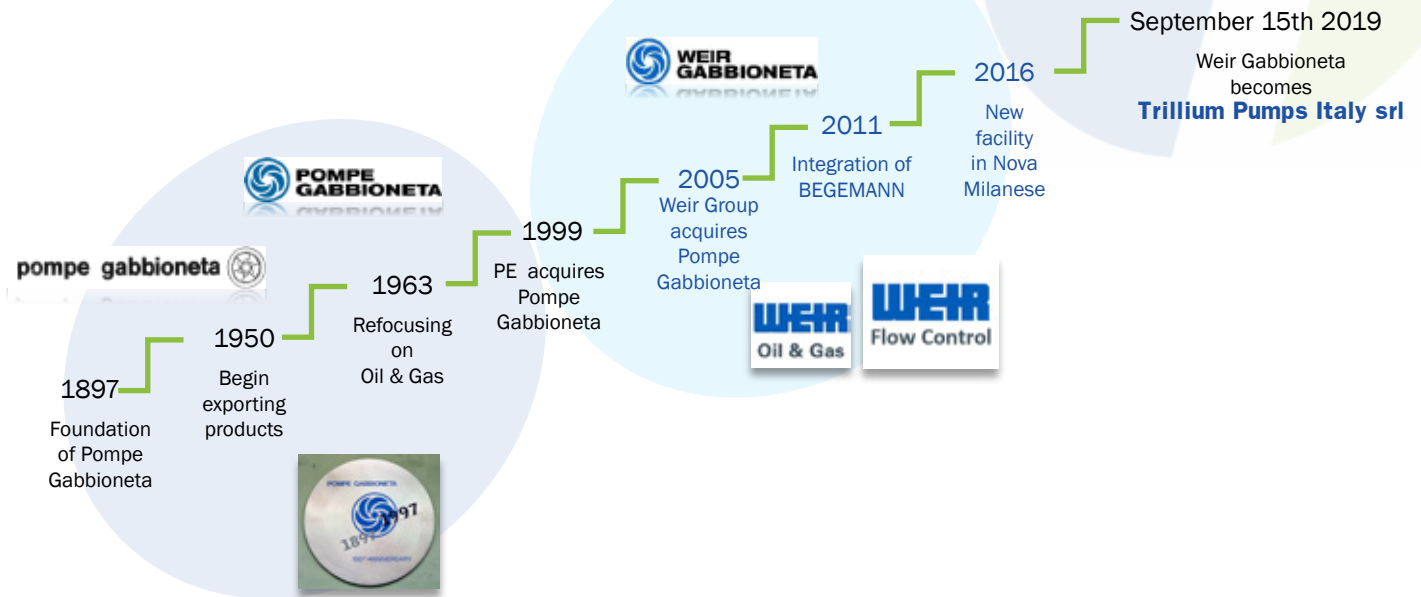
- **Post order management** with a dedicated project team.
- **Technical assistance** and technical consultancy for installations onshore and offshore.
- **Technical support on site** through qualified personnel for installation, commissioning, maintenance and field service engineering, onshore and offshore.
- **Warranty extension** with analysis of current status and extension of warranty terms.
- **Long Term Service Agreements** with provision of scheduled maintenance and suggested spare parts packages.
- **Training, in-house or on-site**, offering training packages for engineering, operations, maintenance either for installed base or specific new pumps.
- **Diagnosis and problem detection on site** through pumps health check, data and report analysis, issue of maintenance programs.
- **Original Spare Parts Supply**
- **Machine revamping and retrofit** of our pumps.
- **Machine replacement** for Gabbioneta Pumps, Begemann and other manufacturer pumps.

Gabbioneta Pumps®  
BEGEMANN®

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For over 120 years the brand has evolved,  
pumps design has been developed,  
our reputation for Quality and Reliability continues



By choosing Trillium Flow Technologies™ Gabbioneta Pumps® original spare parts, robustness, resilience and strength of our pumps is improved, significantly increasing the operating life of your project. We combine spare parts with the applied knowledge of our service team and Certified Service Centers, to ensure that warranties can be extended by the installation of spare parts.





# Post Order Management

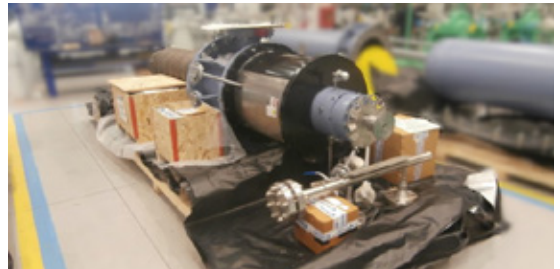
## Objective

Through our dedicated team we take care of all tasks and activities to enable our customers – EPC's and end users – to make our Gabbioneta Pumps and Begemann products operative, following the schedule of the project.

Trillium Pumps Italy ensures the management of the final part of the order. Once the pump is shipped, the Project management team supports EPC's or directly the end user during installation, commissioning and start-up.

## Typical Activities

- Management of any additional needs which arose during the installation
- Technical support during installation
- Organization of the shipment of any urgent material.



# Technical Assistance and Technical Support on site

## Objective

- Technical assistance: technical consultancy for installations onshore and offshore.
- Technical support on site: qualified personnel for installation, commissioning, start-up and future maintenance, onshore and offshore.

## Technical assistance

Trillium Pumps Italy provides any assistance to technical queries coming from end users through a dedicated service engineering team.

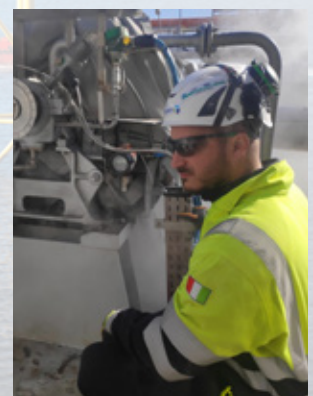
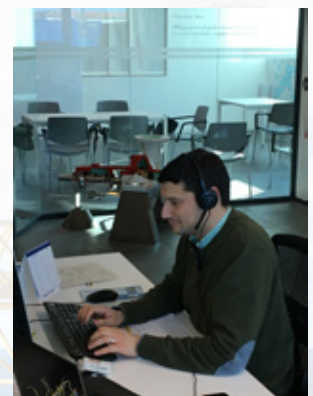
We communicate through emails as well as video-conferencing tools in order to get a clear picture of the topic and to provide a timely and precise reply to our customers.

## Technical support on site

Trillium Pumps Italy provides field service support for installation (supervision), commissioning (of pumps and auxiliary systems) and start-up. We provide our services on site and through remote assistance.

All our field service engineers are of proven experience and have successfully completed the Trillium Pumps Italy Service Training.

Our personnel is qualified to go offshore (BOSIET certificates).



**WE'RE HERE**

# Warranty Extension Long Term Service Agreements

## Objective

**Warranty extension** of our products based on a mandatory site survey to check the current status of the pumps.

**Long Term Service agreements** with provision of scheduled maintenance and suggested spare parts packages.

**Trillium Pumps Italy designs Long Term Service Agreement (LTSA) packages, customized on client needs.**

## Typical LTSA includes

- Scheduled maintenance programs
- Spare parts supply
- Deployment of specialized service engineer.

## Training

## Objective

Our Trillium Pumps Italy training team is available to carry out training sessions to end user personnel.

We provide trainings packages in-house or on-site for engineering, operations and maintenance personnel either on installed base or specific pumps.

## Training Offering

Description	Days	Italy	Local	On site
		Headquarter	Service Center	
a. Service Training lev. 1 *	5	•		
b. Service Training lev. 2 **	5	•		
c. Operations	5	•	•	•
d. Maintenance without hands on	4	•	•	•
e. Maintenance with hands on	5	•	•	•
f. Engineering	5	•	•	•
g. Pumps Basics	2	•	•	•
h. Customized sessions	Tbd	•	•	•

\* Pump fundamentals, problem solving on single stage pumps; preparatory to lev. 2

\*\* Review lev. 1 + multistage pumps, mechanical seals and on-site failure analysis and troubleshooting.

- Final examination at the end of the training and attendance certificate released.



# Diagnosis and Troubleshooting on-site

## Objective

Trillium Pumps Italy assists customers in carrying out a pump health check in order to increase pump reliability, optimize spares usage and maximize production.

## Timeline



## Diagnosis tools

Vibration analyser  
Laser alignment tool  
Ultrasonic portable flow meter  
Infrared thermometer

## Certified personnel



A team of certified service engineers available for diagnosis on site activities.

# Original Spare Parts Supply

## Objective

Trillium Pumps Italy recommends only original spare parts be used in order to guarantee performance and optimize product lifecycle.

A dedicated team with commercial, technical and project management competencies is available to satisfy any customer request.

A fast-track approach is offered in case of urgent needs.



**THROUGH THE LIFETIME**

# Machine Revamping, Retrofit and Replacement

## Objective

Trillium Pumps Italy assists customers through the entire lifetime of the pump in order to satisfy any request to repair, update or replace, both our own and other products.



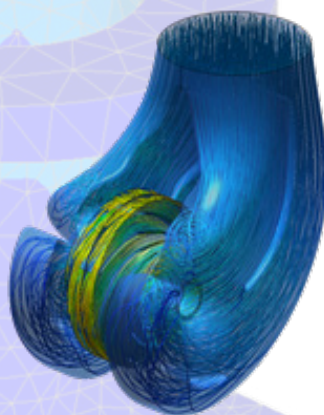
## Revamping

With more than 25.000 machines installed since 1965, we are able to repair and bring back to the original condition any Begemann and Gabbioneta Pump.

## Retrofit

Because of our extensive engineering know how, and through the latest FEM/CFD analysis, existing machines are modified to like-new conditions: hydraulic and mechanical improvements, material upgrades and instrumentation and auxiliary systems refinement are implemented to meet customer requests and the latest design standards.

Velocity  
(Streamline 1)  
1.981e+001  
1.499e+001  
1.017e+001  
5.346e+000  
5.264e-001  
[m s<sup>-1</sup>]



## Replacement

Our portfolio includes the full range of API pump models and we are able to replace Begemann, Gabbioneta Pumps and other manufacturers products, both as complete skids and bare shaft pumps.

A highly skilled dedicated staff is available to respond to any query from our customers and provide solutions, offering technical, engineering and project management competencies.

**OF YOUR PRODUCT AND PROJECT LIFECYCLE**

“One Stop Shop”  
for all your API 610 needs  
in  
Oil & Gas, Petrochemical, Feed water  
And Power Plant Auxiliaries Applications  
at any point of the lifetime of your product and project lifecycle

## Notes



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