

EMA Quick Response Centers Valve and Automation Systems





Value through service

At Flowserve, we know a critical choice any maintenance professional must make is: Who should repair my valves?

We also know that finding a repair facility that meets demanding deadlines, restores your valve to near original quality, repairs a wide variety of valve styles, and is costcompetitive can be the most challenging part. At Flowserve, we have developed a cohesive network of Quick Response Centers (QRCs) located throughout Europe, Middle East and Africa (EMA), cooperating and leveraging their collective capabilities, ready to meet your needs.

Flowserve's QRCs provide the highest level of service, including 24-hour emergency and on-site repair with mobile repair units. In emergencies, Flowserve service technicians can be on-site

in any EMA plant within 24 hours. Flowserve understands how critical it is to have a trusted partner that will offer fast service and quality products to keep your facility operational. This is why we have developed standard repair procedures and a large network of shared technicians throughout the region. You can rest assured knowing that your valves will be repaired the same way, every time, by highly skilled service technicians.

Flowserve's qualified and skilled technicians service all types of control, quarter-turn automated or manually operated valves, including Valtek®, Kammer®, Argus™, Durco® and Limitorque®, to name just a few.

Quick Response Centers

Flowserve's Quick Response Centers are strategically located to ensure that a QRC is within hours of most major industrial customer locations. This allows rapid response to customer needs.

Flowserve Quick Response Centers:

- Are strategically located for timely response
- Provide best-in-class aftermarket support and service
- Maintain a comprehensive inventory for fast turnaround
- Offer on-site troubleshooting and engineering support
- · Readily adapt to ever-changing valve needs
- Use original spare parts from OE manufacturer

As an established valve manufacturer, Flowserve has the equipment and capacity to turn around any repair or remanufacture project, large or small, quickly-including plant shutdowns. Experienced application engineers stand ready at each location to make valuable recommendations to extend the life of your valve or improve its performance. These engineers also specialize in upgrading valves, spring cylinder actuators and four-way positioners or automating quarter-turn valves, which can dramatically increase performance.

- At all times, our QRCs have free and ready access to the experience and expertise of our engineering and product management resources.
- Our QRCs are always up-to-date with the latest engineering developments and ensure that repairs and upgrades always meet the latest engineering standards.
- Our MRO services can be offered in any desired framework, from break/fix basis to partnerships with risk sharing along the equipment lifecycle.
- Our QRCs provide quick-ship capabilities through easy access to local and global inventories for parts and units.

QRC capabilities

While each QRC may offer a particular service capability unique to its markets and facilities, most QRCs have the following capabilities:



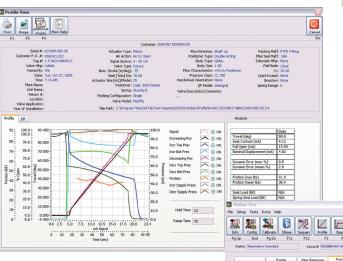
Testing and certification

All new and repaired valves are tested prior to shipment. Control valves are tested with FAST-test when specified.

After reassembly, each repaired valve is stroked, seat leak tested, hydro tested and quality tested to industry standards.

Flowserve's diagnosis technology also enables us to run diagnostics while in the field on all of your valves. Based on the diagnostic results, problems can be fixed in the field, which avoids the need for expensive repair maintenance.





FlowStar[™] data management

FlowStar asset management software allows Flowserve engineers and technicians to track performance and support improvement programs using a proven, systematic approach.







Third party repairs

Flowserve has the expertise and proven experience to repair all major control, ball and butterfly valve manufacturers' products.

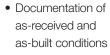
We use OEM parts on all repairs, regardless of brand origin, so you can rest assured your valve assembly is restored to the original OEM specifications. If OEM parts cannot be sourced within your critical time frame, we have the expertise and capability to resolve these issues and meet your deadlines.

We also specialize in out-of-the-ordinary valve repair. We can repair your most difficult valves, even if the valve is obsolete or parts are difficult to find.

All repaired valves, regardless of manufacturer, will undergo the following quality assurance checks:

- Positive Material Identification (PMI)
- Body thickness testing to DIN/ANSI specifications
- Flange inspection to DIN/ANSI specifications
- Measure all critical dimensions and tolerances
- Reassemble with OEM parts

• Complete diagnostics test and birth certificate





Turnaround management

Partner with our QRCs to plan your turnarounds and use a structured process to ensure they are smooth, successful and within budget.

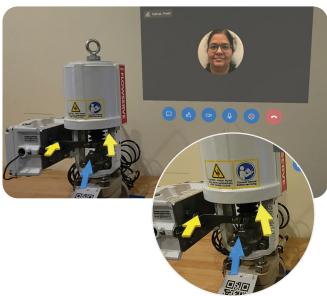
Our experts connect with your maintenance team several months ahead of major turnarounds for conducting in-field surveys and walk-downs and define the scope of inspections, upgrades and system enhancements. This structured approach minimizes the amount of discovery work and allows to plan in advance for pre-ordering material and allocating resources. Our experts are committed to making your turnarounds successful by accurately determining whether your equipment needs to be serviced to meet application requirements or upgraded to the latest available technology.

Field services

The Flowserve QRC network is equipped to handle all of your valve repair needs on-site.

Our large network of qualified field service technicians is available to address all your repair needs—from troubleshooting a single valve to servicing an entire unit. We have staff on-call 24 hours a day to help you through emergencies. Trained Flowserve service technicians can be at your facility in 24 hours, anywhere within the EMA region. We understand the importance of minimizing downtime. This is why we stock several commonly required parts to facilitate faster return to operations.





Remote assistance

All our QRCs will soon be equipped with remote assistance services, allowing you to connect with Flowserve experts and immediately address equipment issues. It closely mimics an in-person interaction by using real-time audio, video communication, and the abilities to point, annotate and share documentation.

- Reduced downtime and faster return to operations
- Troubleshooting guidance, corrective actions
- Inspections or complete oversight of repairs
- Eliminate wait time related to in-person visits
- No additional hardware required

Remote assistance services are available for all engineered valves, controls and automation repairs, regardless of OEM. For more details, contact your nearest Flowserve QRC.

Re-instrumentation

Whether you're looking for digital or analog signal control, Flowserve's positioners offer the highest performance and can be mounted on most control valves, regardless of the manufacturer.

Flowserve's QRC expertise includes re-instrumentation, troubleshooting and support for all major third party control valves and positioners. Flowserve, with a broad range of mounting kit designs and inventory, can quickly and easily adapt its own instrumentation to third party control valves as well. The ability to draw from our own Flowserve manufactured inventory and adapt to any control valve ensures that repair turnaround and customer downtime are held to a minimum.

Additionally, Flowserve continues to stock parts and components to service customers still using either pneumatic and/or analog (I/P) positioners in their facilities.







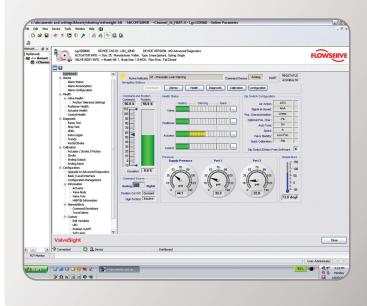
ValveSight® digital diagnostics

With today's challenging business and economic environments, performance, health, safety and environmental considerations are paramount.

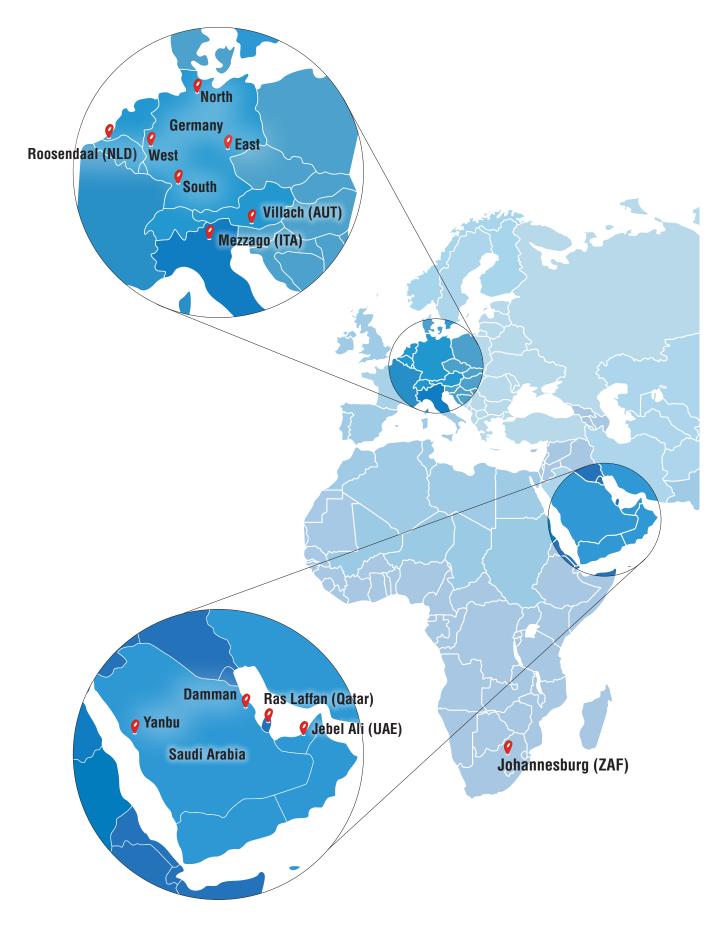
Proactive maintenance strategies for critical equipment improve output and lower cost without sacrificing safety and reliability.

Proactive maintenance strategies for critical equipment improve output and lower cost without sacrificing safety and reliability. QRCs support ValveSight, Flowserve's latest diagnostic solution for control valves that can be seamlessly integrated into any FDT/DTM compliant host control or plant asset management system. The power of ValveSight is the intelligent diagnostic engine, which is constantly monitoring the valve, actuator, positioner and control signal, providing actionable advice proactively when a problem is detected.

Working with Flowserve QRC resources, ValveSight can be easily retrofitted onto your control valves, including valves from a third party manufacturer.



QRC locations and capabilities





Capabilities												
Capabilities	QRC Locations											
	Germany							Saudi Arabia				
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Capabilities	West Essen	North Stade - Agathenburg	East Leuna - Göhren	South Ettlingen	Netherlands Roosendaal	Austria Villach	Italy Mezzago	Dammam	Yanbu	UAE Dubai-Jebel Ali	Qatar Ras Laffan	South Africa Johannesburg
Control valve repair and upgrade	√	√	√	√	√	√	√	√	√	√	√	√
Automated/Ball valve repair and upgrade		√	√	√	√	√	√	√	√	√	√	√
New valve sales and assembly	√			√	√	√	√	√	√	√	√	√
Standard and custom automation packages		√	√	√	√	√	√	√	√	√	√	√
Full machine and weld shop	√			√	(√)	√		√	√			√
Spares inventory for quick delivery	√	√	√	√	√	√		√	√	√	√	√
Oxygen cleaning	√			√		√		√				√
On-site and field service repairs	√	√	√	√	√	√	√	√	√	√	√	√
Maintenance and technical training courses	√	√	√	√		√	√	√	√	√	√	
Maintenance management program	√	√	√	√		√	√	√	√	√	√	√
Plant surveys and turnaround management	√	√	√	√	√	√	√	√	√	√	√	√
Digital and diagnostic technical support	√	√	√	√	(√)	√		√	√	√	√	√
Full valve diagnostic capabilities	√	√	√	√	(√)	√	√	√	√	√	√	√

⁽ $\sqrt{\ }$ Limited capabilities. Flowserve QRCs are networked for collaborative resource utilization.



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fcd.essen@flowserve.com

The QRC West is an integral part of the Flowserve Essen facility, which is located at the center of the metropolitan Ruhr area with around seven million residents.

The QRC is close to the main industrial areas in Western Germany along the Rhine river with its wide range of chemical, petrochemical and refining industries. A further major region is close by; Rotterdam is just 2.5 hours away.

The QRC West has comprehensive repair and diagnostic capabilities for all Flowserve valves as well as the repair and maintenance of third party equipment. Also, major shutdowns are coordinated from here. The QRC has its own machines and tools and is available 24/7 if required.



QRC Germany—North

Established in 2010

420 m² (4,521 ft²)

Lieth 6 21684 Agathenburg Germany +49 (0) 4141-65936-20 stadeqrc@flowserve.com

The QRC North is a valuable partner for our customers in the North Germany region. Highly senior technicians are helping to have reliable and available installation around the region.

We organize help and solutions 24/7 year-round and fix problems on-site or in our workshop. The QRC North offers spare parts for all Flowserve flow control products and service and repair capabilities for up to 150 valves.

Upgrades and retrofits are the basis for a reliable valve and a continuous improvement of the customer's process.





QRC Germany—East

Established in 1999

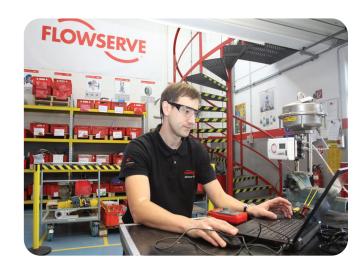
400 m² (4,306 ft²)

Auenallee 3 06237 Leuna Germany +49 (0) 34638-818-12 info.ost@flowserve.com

The QRC East is located in the center of the East German chemical triangle formed by Bitterfeld, Leuna and Schkopau/ Böhlen. Internationally operating companies such as Dow, BASF, Linde, Bayer HiBis, Trinseo are just a few of our customers.

Upgrades, new installations, replacements and retrofits are part of our working capabilities as well as third party repair, shutdown support and startup assistance. In order to support our customers at all times, we are available 24/7.

Own machinery and a sophisticated inventory enable us to







QRC Germany—South

Established in 2020

1,600 m² (17,222 ft²)

Rudolf-Plank-Straße 2 76275 Ettlingen Germany +49 (0) 7243 103 480

Ettlingenqrc@flowserve.com

The QRC South is embedded into the Flowserve Ettlingen facility. The location is strategically important, as it's in the middle of the metropolitan and industrial area of Rhine-Neckar, which has many chemical and petrochemical plants.

The QRC has a certified decontamination room and is capable of handling all sizes of valves and actuators. Even a certified clean room for repair is available. For urgent needs, a 24/7 service is provided.







1,800 m² (19,375 ft²)

Flowserve B.V. Flow Control Benelux Rechtzaad 17 4703RC Roosendaal The Netherlands +31 165 59 8800

fcbinfo@flowserve.com

The QRC Benelux is centrally located within Benelux, between Rotterdam (45 minutes) and Antwerp (30 minutes). It is in the center of the largest oil and chemical cluster in Europe. Recent local site investments have created a solution that puts our dedicated QRC team closer to what our customers need.



We leverage our expertise, new tools and resources to positively impact our customers.

The center is designed to support time-sensitive repairs and efficient turnaround jobs. We have equipped our QRC with machinery and inventory that enables same-day delivery on key products and reduces the delivery of special parts to a matter of days instead of weeks.

The QRC Benelux is focused on supporting almost all valve and actuation repairs within the Flowserve product range.

Furthermore, we are part of a broad QRC network within Flowserve, all sharing support, resources, product and application knowledge.

QRC Italy

Established in 2003

3,000 m² (32,292 ft²)

Flowserve S.r.I. FCO Division, QRC Italy Via dell Industrie 15 20883 Mezzago (MB) Italy +39 0396241233 Valbart_reception@Flowserve.com

Mezzago QRC is an integral part of the Flowserve Valbart production site located in Brianza (MB) on the northern side of Italy, 20 km (12.4 miles) east of Milan. The QRC is inside one of Europe's most industrialized areas with many chemical, petrochemical and manufacturing plants. Leveraging the capabilities of Valbart and Limitorque Fluid Power Systems existing plants, the Mezzago QRC is capable of any kind of service and repair for all Flowserve valves as well as third party repair and maintenance. The QRC is also equipped and capable of performing automation jobs on Flowserve and other manufacturers' products, including design, manufacturing and testing activities of any actuator and valve assembly present in the market.



QRC Austria

Established in 1961

25,000 m² (total) (269,098 ft²)

Flowserve Control Valves GmbH Kasernengasse 6 9500 Villach Austria +43 (0) 424241181 - 0 villach_operation@flowserve.com

QRC Austria is an integral part of Flowserve Control Valves GmbH and is located in Villach, Southern Austria. The QRC is certified as per ISO 9001 and other management systems, and the Field Service Group is certified as per SCCP:2011 by DNV-GL.

Service-related work is performed in a dedicated Service Corner and in other places within the site when needed. This allows a broad spectrum of work tasks, inspection and testing. Furthermore, the QRC is fully supported by Flowserve Villach operations, which allows custom solutions to be offered in short lead times.



QRC Saudi Arabia

Dammam

Established in 2010

5,000 m² (53,820 ft²)

Flowserve Abahsain Flow Control Co. Ltd. Makkah Road Phase 4
Plots 10 and 12, 2nd Industrial City Dammam, Kingdom of Saudi Arabia

This QRC is fully integrated into Flowserve's primary valve manufacturing facility in Saudi Arabia. It serves customers throughout Saudi Arabia with an emphasis on the eastern region of the country and large valves and larger turnarounds.

The shop is fully certified by Aramco, SABIC and other major customers and maintains an API 6D certification. It has fullrepair and service capabilities for all Flowserve valves and actuators as well as those for third party suppliers. The facility has hydro test capability up to 60 in Class 2500 and high-pressure gas test capability up to 700 bar size to 24 in Class 2500.

The Dammam QRC has full machining capabilities as well as oxygen cleaning capability along with all the other testing and servicing capabilities outlined in this brochure.



Established 2019

700 m² (7,535 ft²)

Flowserve Abahsain Flow Control Co. Ltd. Aldasmah, Al Mhan, Building No. 8 Royal Commission Yanbu Yanbu, Kingdom of Saudi Arabia

The Yanbu QRC is a stand-alone QRC providing repairs, service and support for customers in the western region of Saudi Arabia. It has full Flowserve and third party valve and actuation capabilities up to 24 in.

The shop has hydro test and machining capabilities and is fully certified by the primary customers in Saudi Arabia.











QRC UAE

Established in 2009

9,350 m² (100,643 ft²)

Flowserve Gulf FZE Flow Control Operations P.O. Box 17678, Plot no. S20601 South Zone 2 Jebel Ali Free Zone, Dubai United Arab Emirates +97 148104745

The Jebel Ali QRC acts as a hub for customers in UAE, Kuwait, Qatar, Oman and Iraq. The QRC is located in Jebel Ali Free Zone of Dubai. The Jebel Ali QRC is a 60-minute drive from Abu Dhabi, where major installations are located. Jebel Ali has a major seaport and an airport.

All major shutdowns in the region are coordinated from the Jebel Ali QRC. All service calls are also coordinated from Jebel Ali. The Jebel Ali QRC is capable of performing all types of service and repair work for all Flowserve valves as well as third party repair and maintenance.

Apart from service, repairs and shutdown management, we also perform automation work involving valves and actuators of Flowserve and other makes.



QRC Qatar

Established in 2018

280 m² (3,014 ft²)

Flowserve Services & Trading L.L.C. Rashid Street (206), Near RLIC Gas Station Ad-Dahirah, ZONE 75, Qatar + 97466999386

The QRC is located in Ras Laffan Industrial City (RLIC) and is a 90-minute drive from Doha City.

All shutdowns in Qatar are addressed by the RLIC QRC. The RLIC QRC is capable of doing all types of service and repair for all Flowserve valves as well as third party repair and maintenance.

Apart from service, repairs and shutdown management, we also conduct automation work involving several valves and actuators of Flowserve and other manufacturers.











QRC South Africa

Established in 2000

2,920 m² (31,431 ft²)

Flowserve South Africa (Pty) Ltd. Unit 1, 12 Director Road, Spartan Ext. 2 Kempton Park Gauteng 1620 +27 11 923-7300

The Flowserve South Africa QRC is well-equipped to assemble new product in-country as well as perform professional repair work on most types of valves.

The QRC employs a good core of trained technicians who are able to manage the quick turnaround of valve repair requirements.

The facility is highly maintained, working within ISO standards and keeps very high housekeeping standards, ensuring the safety of employees and customers.

Management and staff take great pride in the facility and ensure that high-quality service work is performed at all times.







Germany

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Flowserve Essen GmbH QRC North Lieth 6 21684 Agathenburg Germany

Flowserve Essen GmbH QRC East Auenallee 3 06237 Leuna Germany

Flowserve Flow Control GmbH QRC South Rudolf-Plank-Straße 2 76275 Ettlingen Germany

Benelux

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Italy

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Austria

Flowserve Control Valves GmbH Kasernengasse 6 9500 Villach Austria

Kingdom of Saudi Arabia

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Flowserve Abahsain Flow Control Co. Ltd. Aldasmah, Al Mhan, Building No. 8 Royal Commission Yanbu Yanbu, Kingdom of Saudi Arabia

United Arab Emirates

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Qatar

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South Africa

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SEBR000235 (EN/A4) September 2020

Flowserve Corporation has established industry leadership in the design and manufacture of its products. When properly selected, this Flowserve product is designed to perform its intended function safely during its useful life. However, the purchaser or user of Flowserve products should be aware that Flowserve products might be used in numerous applications under a wide variety of industrial service conditions. Although Flowserve can provide general guidelines, it cannot provide specific data and warnings for all possible applications. The purchaser/user must therefore assume the ultimate responsibility for the proper sizing and selection, installation, operation, and maintenance of Flowserve products. The purchaser/user should read and understand the Installation Instructions included with the product, and train its employees and contractors in the safe use of Flowserve products in connection with the specific application.

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