



North American Quick Response Centers

Repair, engineering and reliability services
for valves and automation



Experience In Motion




Expertise with a sense of urgency

As a leading valve and automation provider, Flowserve has the resources to quickly turn around any repair or remanufacturing project, including plant shutdowns.

Our technicians and engineers are flow control experts. We specialize in repairing and upgrading engineered valve and automation packages — regardless of type or OEM — to extend service life and improve performance.

Our Quick Response Centers (QRCs) provide machining, repair, assembly, testing, automation packages and inventory to enable us to respond to your service needs. As a result, we can provide timely support and same-day delivery of parts, repairs and in most cases, spare valves in 72 hours or less.

Leverage our core capabilities

 Engineering support	 In-shop services	 On-site services
<p>From automation integration to diagnostic interpretation, troubleshooting, training and valve reliability management, you can count on Flowserve's highly skilled engineers to help you find the right solutions.</p>	<p>Put our experienced specialists to work on repairs for your control and engineered valves.</p>	<p>When you need maintenance or repairs — planned or unplanned, after-hours or during an emergency — our team can quickly join you on-site at your plant or remotely to provide diagnostic services as well as critical parts, management and support.</p>
<p>Discover more below.</p>	<p>Find more services on page 3.</p>	<p>Learn more on page 3.</p>



Engineering support

Application engineering and other services are available to you from our network of Quick Response Centers (QRCs) across the United States and Canada:

- Automation integration and engineering
- Diagnostic interpretations
- Product, operation and maintenance trainings
- Re-instrumentation and upgrades
- Repair-by-replace programs for equipment for all OEMs
- Troubleshooting and root cause analyses (RCA)
- Valve reliability management
- High-pressure and severe service engineering capabilities





In-shop services

Services that ensure quality, safety, reliability and performance are available to you from our teams working at Flowserve Quick Response Centers in the United States and Canada:

- Control, engineered valve and actuator repairs
 - Inbound testing and images
 - Teardowns and inspections
 - Detailed engineered root causes of findings
- Machining and welding
- OEM parts and quick-ship spare valves
- Oxygen and chlorine cleaning
- Valve automation services
- Safety
 - Compliance with the latest health, safety and environmental (HSE) standards
 - Continuous health and safety training through learning management system (LMS)
 - Job safety assessment (JSA) prior to work commencement
 - State-of-the-art facilities with the latest safety features
- Quality
 - Certified ISO 9001
 - Dedicated work instructions and customer standards manual
 - Verification to OEM critical dimensions
 - Hydrostatic and seat leak testing
 - Detailed final inspection
 - “Like-new” warranty

Similar services are also available from our network of Certified Service Centers.*

* *Certified Service Centers (CSCs):*
Flowserve’s authorized third-party network to support your valve and actuation requirements

Aftermarket portal (AMP)

Industry-leading repair management software

- Repair history tracking database and record retrieval
- Turnaround management with daily customer updates
- Updated specification sheets
- Drives standardization and automation of valve repair process



On-site services

Our large network of highly qualified Flowserve specialists and our North American mobile units are available to help you successfully complete repairs, maintenance and a wide range of support services performed at your facilities, including:

- 24-hour fast dispatch
 - After-hours and emergencies
- Flexible capacity
 - Our Quick Response Centers and Certified Service Centers are available to handle large turnaround volumes within short timelines.
- Diagnostic and predictive maintenance services
- Dedicated resources
 - Automation, positioner and valve technicians on-site and available remotely
 - Project management team assigned to you
 - On-site support during planning, outage and startup phases with single point-of-contact management
- Mobile capabilities
 - Fully equipped valve repair trailers on-site for duration of turnaround
- Outage planning and optimization
 - Repair and repair-by-replace programs
 - Pre-turnaround walk-downs for planning and quality assurance
- Asset management and inventory optimization



- Comprehensive and on-time documentation
 - Inbound findings report
 - High-quality repair report
 - Calibration — ValveSight™ diagnostic software
 - Detailed test results



Local QRCs provide inventory for fast response on spare valves, repairs and services

With support from our Quick Response Centers and network of Certified Service Centers, you can **minimize downtime and carrying costs.**

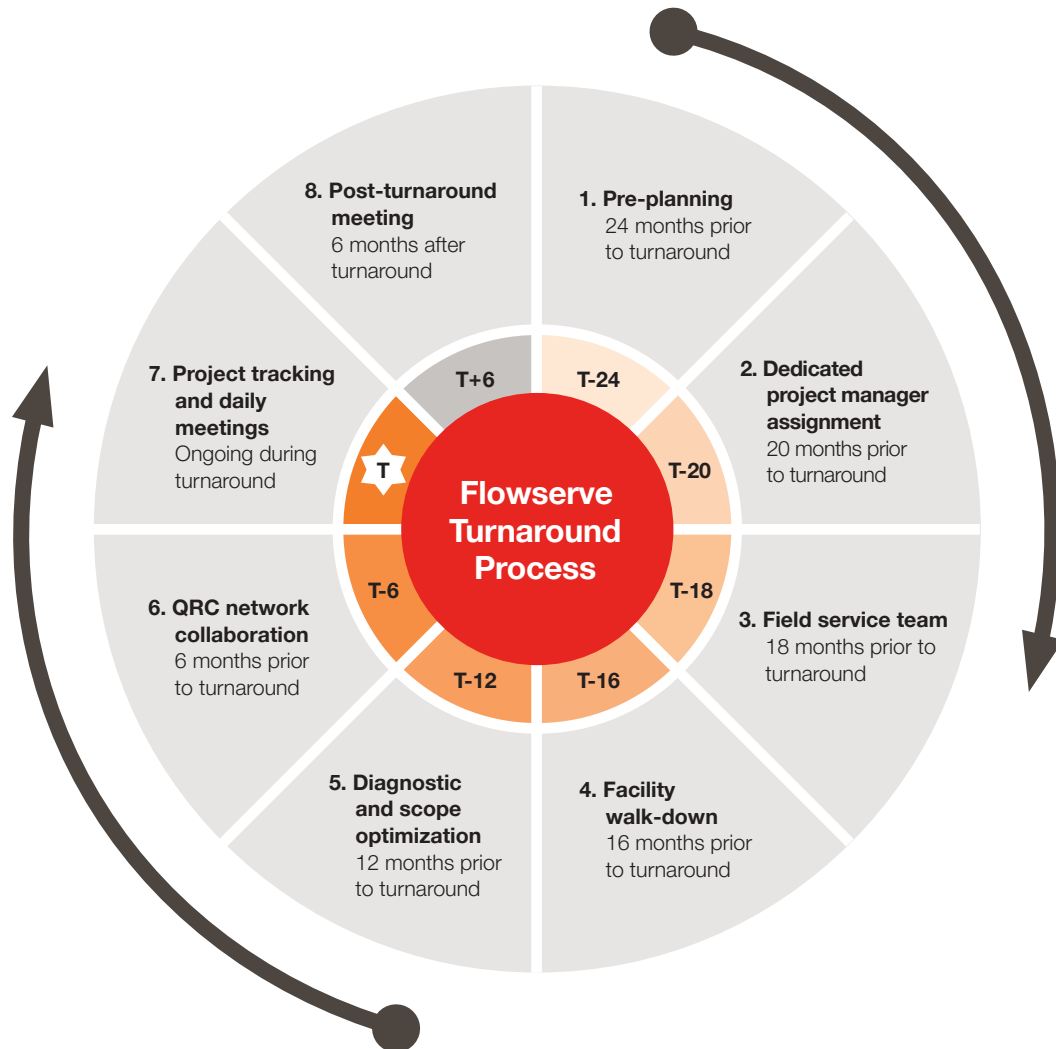
We will work with you to establish agreed-upon storage and replenishment levels for standard and non-standard parts. Complete warehouse management services are available. Typical lead times are shown below.

You'll find local inventory and fast support when you need spare valves, repairs and services such as:

- **Automation** — pneumatic, hydraulic and electric
- **Control valves** — linear and rotary products
- **Engineered valves** — metal and soft seat products
- **Expertise** — unrivaled experience
 - Highly qualified engineers and technicians
 - Proven experience to repair OEM products
- **Setup** — of local inventory to support your installed base
 - Complete spare valve replacements
 - OEM spare parts for repairs and upgrades
 - Raw materials and bar stocks
 - Exotic materials as required
- **Available quick-ship deliveries** — on selected brands
 - Control and engineered valves: **72 hours or less**
 - Parts and repairs: **same day to 72 hours**
 - Typical “make parts”: **1 to 5 days**

Turnaround management the Flowserve way

We work with your team to complete your project on schedule and ensure high quality, cost-effectiveness and safety.



- 1. Thorough pre-planning** alongside your team
- 2. Dedicated Flowserve project manager** assigned to you
- 3. Field service team** works on-site or in our shop as needed
- 4. Facility survey and walk-down** to assess work and resources required to complete project on schedule
- 5. Diagnostic and scope optimization** and pre-ordering of materials to minimize discovery work
- 6. Collaboration** among our Quick Response Centers and Certified Service Centers to provide the solutions you need
- 7. Project tracking and daily meetings** to ensure agreed-upon timeline and requirements are met
- 8. Post-turnaround assessment** to confirm that work has been completed to your satisfaction

OEM quality, regardless of OEM

We understand your plant uses many types and brands of valves and automation. But who wants to deal with that many individual service contracts?

At Flowserve Quick Response Centers and Certified Service Centers in North America, **we repair control, quarter-turn, automated and manually operated valve packages from all major manufacturers.** We use OEM parts on all repairs — regardless of brand — so you can rest assured your valve assembly will be restored to its original specifications. If OEM parts cannot be sourced within your critical time frame, we can work with you on alternative solutions to meet your plant deadlines.

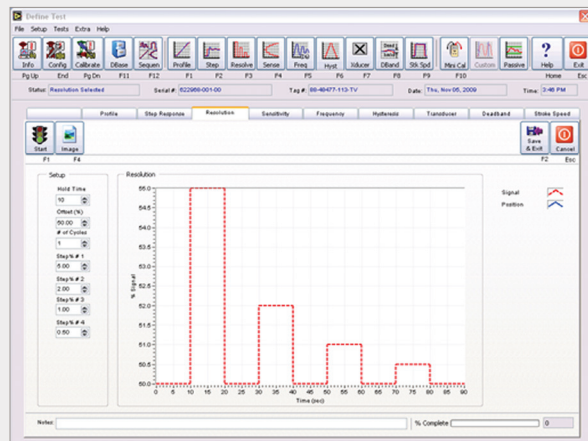
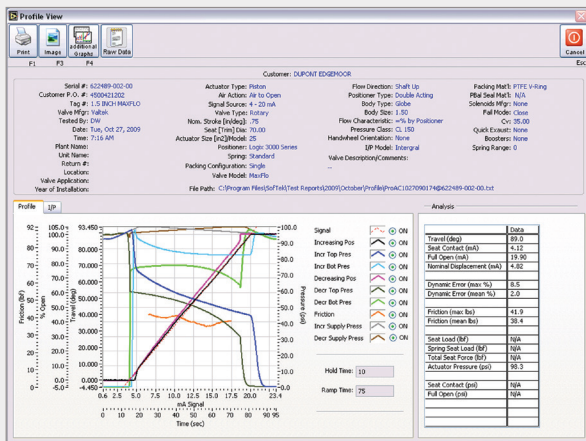
Services for all valve types

We specialize in repairing all types of valves, such as: gate, globe, check or motor-operated valves. We can help — even if the valve is obsolete or its parts are hard to find.

Performance testing and certification

At Flowserve, each new and repaired valve is stroked, seat leak tested, hydrottested and quality inspected to our rigorous standards. For the most advanced diagnostic capability, Flowserve uses the Profiler™ valve diagnostic system. The Profiler gives you a comprehensive picture of your valve health. Data for each valve is recorded in the system, providing easy access for future reference.

The Profiler technology also enables us to run diagnostic tests on your valves in the field. This can help us to identify failures before they happen, saving you frustration and downtime.



The Flowserve repair process



Quality

- Certified to latest quality standards
- QualityQuest tracking system
- Dedicated work instructions and plant standards manual
- Test remote witnessing

Safety

- Compliance to latest HSE standards
- Health and safety trainings through LMS
- Job assessment procedures prior to work commencement
- State-of-the art facilities with latest safety features

Operations

- Teardown and inspection
- Part dispositions
- Detailed engineered RCA
- Verification to OEM critical dimensions

Reports

- Repair database and history tracking
- Updated specification sheet
- Professional repair reports with hi-res photographs
- Specialized procedures for hazardous chemicals



A revolution in flow motion IoT

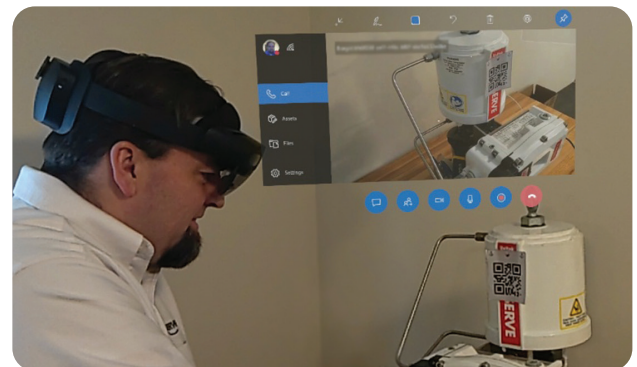
A first of its kind in Flowserve's history, RedRaven is an adaptive technology platform, enabling IoT services (Internet of Things) for flow motion equipment and systems. It offers you the scalable abilities to monitor and predict equipment failures, take preventive actions, and avoid unnecessary disruptions. RedRaven condition monitoring services enable asset performance data capture and analysis. Predictive monitoring services identify and diagnose equipment problems. For more information on Flowserve RedRaven, visit www.flowserve.com/en/iot.

Reduce downtime with remote assistance

Immediately address equipment issues by connecting remotely with Flowserve technicians. By utilizing real-time audio and video communications, our remote assistance services can provide the abilities to point, annotate and share documentation with your team. All of our Quick Response Centers have specialists who are available to help you:

- **Reduce** downtime and quickly restore operations
- **Troubleshoot**, provide guidance to your technicians, and recommend corrective actions
- **Inspect** or oversee repairs
- **Eliminate** time waiting for an in-person service visit

Remote assistance services are available for all engineered valves, controls and automation repairs, regardless of OEM. No additional hardware is required. We can communicate with your team via your existing mobile devices or laptops.



Upgrade to digital

If you're looking to **upgrade your analog controls to state-of-the-art digital technology**, application engineers at our Quick Response Centers and network of Certified Service Centers can assist with the re-instrumentation of all major third-party control valves and their positioners.

Available with a broad range of mounting kits, Flowserve digital positioners — such as the Logix™ 3800 positioner — are designed to work on all of your control valves, regardless of manufacturer. Predictive algorithms continuously monitor the health of the valve and actuator to reduce undetected failures. Partial stroke testing allows in-process testing locally, remotely or with automatic scheduling.



Logix 3800 digital positioner from Flowserve



Logix 3800 is compatible with control valves, regardless of manufacturer

Upgrading is easy with Flowserve

We can draw from our own manufactured inventory and adapt to any control valve — thus ensuring repair turnaround with minimal downtime.

To ensure we can provide rapid response in all cases, we will continue to inventory parts and components for those customers still using pneumatic or analog (I/P) positioners.

LifeCycle Advantage

Flowserve's proprietary long-term service partnership that improves your control valve reliability while reducing overall cost

With a LifeCycle Advantage service contract, we will partner with you to realize improvements in operational efficiency with measurable cost savings. From lifecycle costs and safety to equipment availability and repair, our engineers and specialists can help you to tackle critical equipment issues. That frees your team up to focus on higher-value tasks.

A "total cost of ownership" approach

LifeCycle Advantage focuses on six key factors to ensure that long-term improvements in your total cost of ownership (TCO) don't come at the expense of anything else.

- Energy management
- Safety, health and environment
- Equipment performance
- Technical support
- Strategic procurement
- Inventory optimization

Lasting value that fits you

We know there is no one-size-fits-all solution, so LifeCycle Advantage contracts can be structured to meet your needs. Flowserve can partner with you on a program that covers a single piece of equipment, several units or a full plant. Regardless of the scope, **you will see lasting improvements in reliability, safety and availability.**



Training and educational services for your workforce

Turn your technicians, operators and engineers into equipment and system experts with specialized training at your plant or off-site.

Plant operators, reliability engineers, system engineers and maintenance personnel will find educational services and programs designed to deepen their understanding of flow management systems. Examples include:

- Advanced diagnostics
- Preventive maintenance
- Root cause analysis
- Valve, centrifugal pump and mechanical seal fundamentals
- Valve, pump and seal reliability
- Valve, pump and seal repair

Customized training where you want it

Whether your workforce needs basic training or customized programs, Flowserve offers an unparalleled global network of flow equipment experts and facilities to accommodate virtually any training request. You can choose location, course content and program formats to optimize human and financial resources and help to deliver optimal results. Among the available options:

- Bring advanced training capabilities and certified trainers to your location.
- Send teams to our world-class training facilities, each equipped with classrooms and labs.
- Online and state-of-the-art sessions using augmented and virtual platforms are available for customized training.



Service you can rely on

Each of the Flowserve North American QRCs — located across the United States and Canada — focus on helping you to keep your flow control equipment and plants operating at peak condition. We also can support you from our network of third-party Certified Service Centers and Flowserve manufacturing facilities across North America. Whether you need time-sensitive parts or repairs, reliability-based upgrades, or in-depth engineering analysis, our valve and automation technicians and engineers can help you to maximize uptime and profitability.

Our locations are ready to quickly support you.



See next page for location information.

Find a Quick Response Center or Certified Service Center near you

Flowserve's Quick Response Centers and third-party Certified Service Centers are strategically located across North America to provide same-day delivery of standard parts. Special parts can be delivered in days instead of weeks.

Application engineers with deep product and process expertise at each location can make valuable recommendations to extend the life of your valves, actuators and positioners or improve their performance. We're set up to help you maximize uptime and profitability.

Quick Response Centers

1. Edmonton, AB, Canada

- +1-780-449-4850
- EDMSales@flowserve.com

2. Portage, IN, USA

- +1-219-763-1000
- PGEQRC@flowserve.com

3. Baton Rouge, LA, USA

- +1-800-480-9674
- BTRQRC@flowserve.com

4. Boothwyn, PA, USA

- +1-610-990-8710
- PHIQRC@flowserve.com

5. Kingsport, TN, USA

- +1-423-349-4354
- KNGQRC@flowserve.com

6. Pasadena, TX, USA

- +1-713-286-3100
- GCQRC@flowserve.com

7. Corpus Christi, TX, USA

- +1-361-265-1100
- GCQRC@flowserve.com

8. Port Arthur, TX, USA

- +1-409-984-3500
- GCQRC@flowserve.com

9. Imperial, PA, USA

- +1-724-227-0733
- IMPQRC@flowserve.com

Certified Service Centers

10. Basin Valve/Blaire Martin, Signal Hill, CA, USA

- +1-562-595-8773

11. VRC Protx, Salt Lake City, UT, USA

- +1-801-972-1267

Manufacturing Units

12. Raleigh, NC, USA

- +1-919-832-0525

14. Sulphur Springs, TX, USA

- +1-903-885-4691

16. Lynchburg, VA, USA

- +1-434-528-4400

13. Cookeville, TN, USA

- +1-931-432-4021

15. Springville, UT, USA

- +1-903-885-4691

Discover more about the capabilities and services available at a Flowserve-owned Quick Response Center or a third-party Certified Service Center near you.



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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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