



India Quick Response Center

Maintenance and Repair • On-Site Services
Parts and Components • Pump Retrofits and Upgrades



Experience In Motion



Repair Services and Technical Support for India

The Flowserve India Quick Response Center (QRC) in Vadodara focuses on providing customers with uncompromising service and support.

The Vadodara QRC is staffed by highly skilled engineers and technicians who are available around the clock, seven days a week to respond to customer queries, troubleshoot problems and provide reliable solutions.

Strength of Experience, Commitment to Excellence

The Vadodara QRC serves customers from industries requiring superior equipment performance and service life, such as:

- Oil and gas production
- Hydrocarbon processing
- Chemical processing
- Water resources
- Power generation
- Nuclear
- Mining and mineral processing
- Pulp and paper
- General industry
- Steel industry

Premier, Value-Added Services

With unequalled pump knowledge, design expertise and manufacturing capabilities, the Vadodara QRC specializes in value-added repair services. QRC engineers and technicians service most types of equipment, including pumps, motors, compressors, agitators, valves and seals. The dynamic range of services offered by the Vadodara QRC includes:

- Maintenance, repair and inspection services
- Pump upgrades, re-rates and retrofits
- Parts and components supply
- Overhaul, outage and mechanical services
- Installation and commissioning services
- On-site repair and diagnostic services
- Contract maintenance
- Field supervision
- Service maintenance contract





Maintenance and Repair Services

A Dynamic Range of Capabilities

The Vadodara QRC facility features 1400 m² (15 000 ft²) of shop and office space to support repair, engineering, sales and customer service functions. In-shop operations can handle a full range of pumps from small, single-stage overhung units to large multistage, between bearings pumps weighing in excess of 10 tons.

The Vadodara QRC facility offers extensive capabilities, including:

- Manufacturing
 - Horizontal lathes
 - Radial drilling machine
 - Balancing machine (2 tons)
- Lifting
 - Overhead crane (1 x SWL 5 ton)
 - Overhead crane (1 x SWL 10 ton)
- Packing
- Inspection and Test
 - Vibration analyzer
 - Laser alignment equipment
 - Hardness tester
 - Etching machine
 - Dye penetrant test
 - Hydrostatic test for casing and mechanical seals
 - Test facility of AutoShift™ tool





On-Site Services

Installation and Commissioning Services

With limited staffing, customers often do not have the resources to supervise ongoing, equipment-related activities. As a result, field service experts from the Vadodara QRC are available to support customer startup requirements:

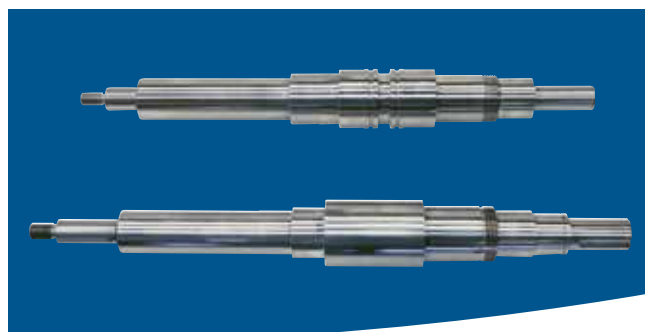
- Equipment removal and handling
- Equipment installation
- Equipment transportation
- Maintenance activities
- Startup and commissioning
- Equipment foundation inspection
- Pipe and pump bolt-up, alignment and inspection



Overhaul, Outage and Mechanical Services

The Vadodara QRC has extensive experience and resources to provide integrated outage and mechanical services. Field service teams offer rapid mechanical assistance, including maintenance, upgrade and inspection services during times of high demand.

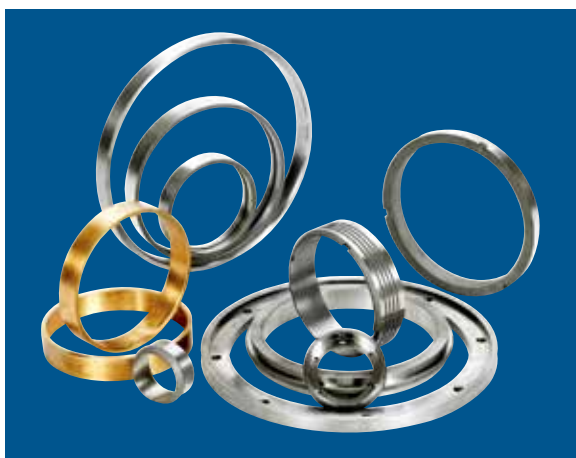




Parts and Components

Quality parts complying with OEM specifications for the entire range of Flowserve product brands are readily available through the Vadodara QRC. As all parts conform to original design and materials specifications, customers are ensured reliable operation and lowest equipment ownership costs.

The Vadodara QRC can also re-engineer and produce non-Flowserve components for equipment that is obsolete or where the original equipment manufacturer cannot be located.



The Flowserve Advantage

Flowserve-manufactured parts offer significant benefits to customers. As an OEM, Flowserve understands the critical elements involved in designing and producing high-quality parts. Whether cast or machined, Flowserve-manufactured parts and components result in lower total operating costs and increased personnel safety.

- Flowserve casting quality is superior. Surface finishes, tolerances and material compositions are maintained within defined specifications.
- Flowserve parts incorporate the latest design changes which improve operating efficiency and extend equipment life.
- Customers benefit from ongoing research to develop new materials, overlay techniques and mechanically improved components.



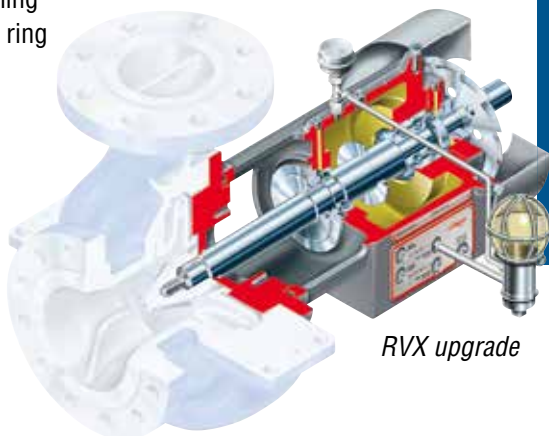


Upgrades, Re-rates and Retrofits

Unreliable and leaking pumps can be refurbished to “as-new” condition via a myriad of mechanical upgrade and retrofit options. Expert engineers from the Vietnam QRCs have the experience to analyze and diagnose the root causes of mechanical pump failure and recommend solutions that improve reliability, reduce emissions and increase plant uptime.

Mechanical Upgrades and Retrofits

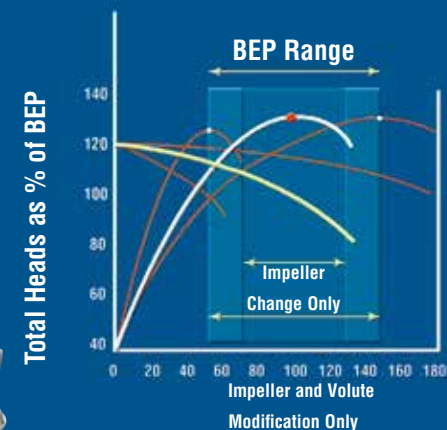
- ISO 13709/API 610 10th Edition upgrades, including the RVX and RHWX upgrades for horizontal and vertical overhung pumps, bring out-of-date process pumps to current API standards. This avoids costly new equipment investments.
- Other available mechanical upgrades, include:
 - Increased rotor stiffness (Superstraight™ shaft material)
 - Bearing housing and bearings
 - Mechanical seal upgrade to API 682
 - Seal chamber
 - Coupling
 - Wear ring



Hydraulic Upgrades and Retrofits

Hydraulic re-rates can be provided to cover changes in flow or TDH, or increase efficiency for power savings.

- Optimization of lip and shroud clearances (A/B/C gap)
- Impeller modifications
- High-efficiency rotors
- Low flow modifications
- Re-bowling
- De-staging or upstaging
- Optimized hydraulics to reduce erosion/abrasion



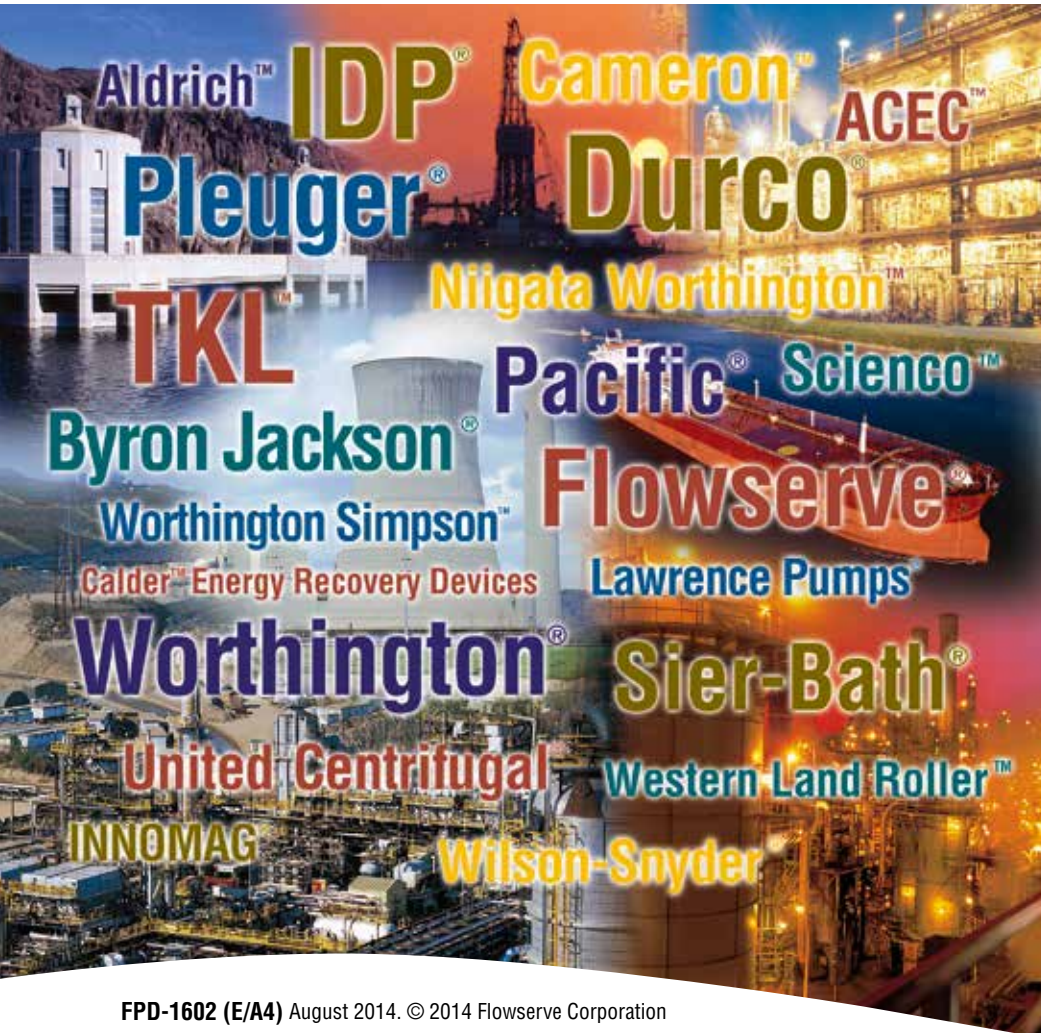


Pump and Seal Supplier to the World

With an installed base of more than one million pumps and seals, Flowserve has sales offices, service centers and manufacturing facilities throughout the world. As a result of its extensive global footprint, Flowserve is ideally positioned to deliver best-in-class solutions to successfully address the world's most challenging projects.

Asia Pacific Quick Response Centers





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To find your local Flowserve representative:

For more information about Flowserve Corporation, visit www.flowserve.com or call + 1 937 890 5839.

India

Vadodara QRC
Plot No. E-92, Manjusar GIDC,
Savli Village, Dist. Vadodara,
Gujarat, 391775, India
Tel: (91 26) 6726 3700
Fax: (91 26) 6726 3709

Vietnam

Dong Nai QRC
Det May Nhon Trach Industrial
Zone, Nhon Trach District, Dong
Nai Province, Vietnam
Tel: (84 61) 3566 108 / 109
Fax: (84 61) 3566 110

Dung Quat QRC

Tuyet Diem Hamlet, Binh Thuan
Commune, Binh Son District,
Quang Ngai Province, Vietnam
Tel: (84 55) 3618 787
Fax: (84 55) 3618 786

Indonesia

Jakarta QRC
Kawasan Industri JIEP,
Jl. Pulokambing, Blok OR No.5,
Jakarta Timur 13920, Indonesia
Tel: (62 21) 4683 0105
Fax: (62 21) 4683 0205

Taiwan

Kaohsiung QRC
No.133, Beiping Road, Fengshan
City, Kaohsiung 830, Taiwan
Tel: (886 7) 790 2800
Fax: (886 7) 790 2921

Malaysia

Kuantan QRC
Lot. A7, Jalan Gebeng 3/2,
Kawasan Perindustrian Gebeng,
26080, Kuantan Pahang, Malaysia
Tel: (60 9) 583 3203
Fax: (60 9) 583 3215

Thailand

Rayong QRC
13 Soi G-14 Eastern Industrial
Estate, Pakornsongkorhrat Road,
Maptaphut, Muang, Rayong,
21150, Thailand
Tel: (66 38) 673 888
Fax: (66 38) 673 889

Singapore

Tuas QRC
10 Tuas Loop, Singapore 637345
Tel: (65) 6771 0600
Fax: (65) 6862 2329