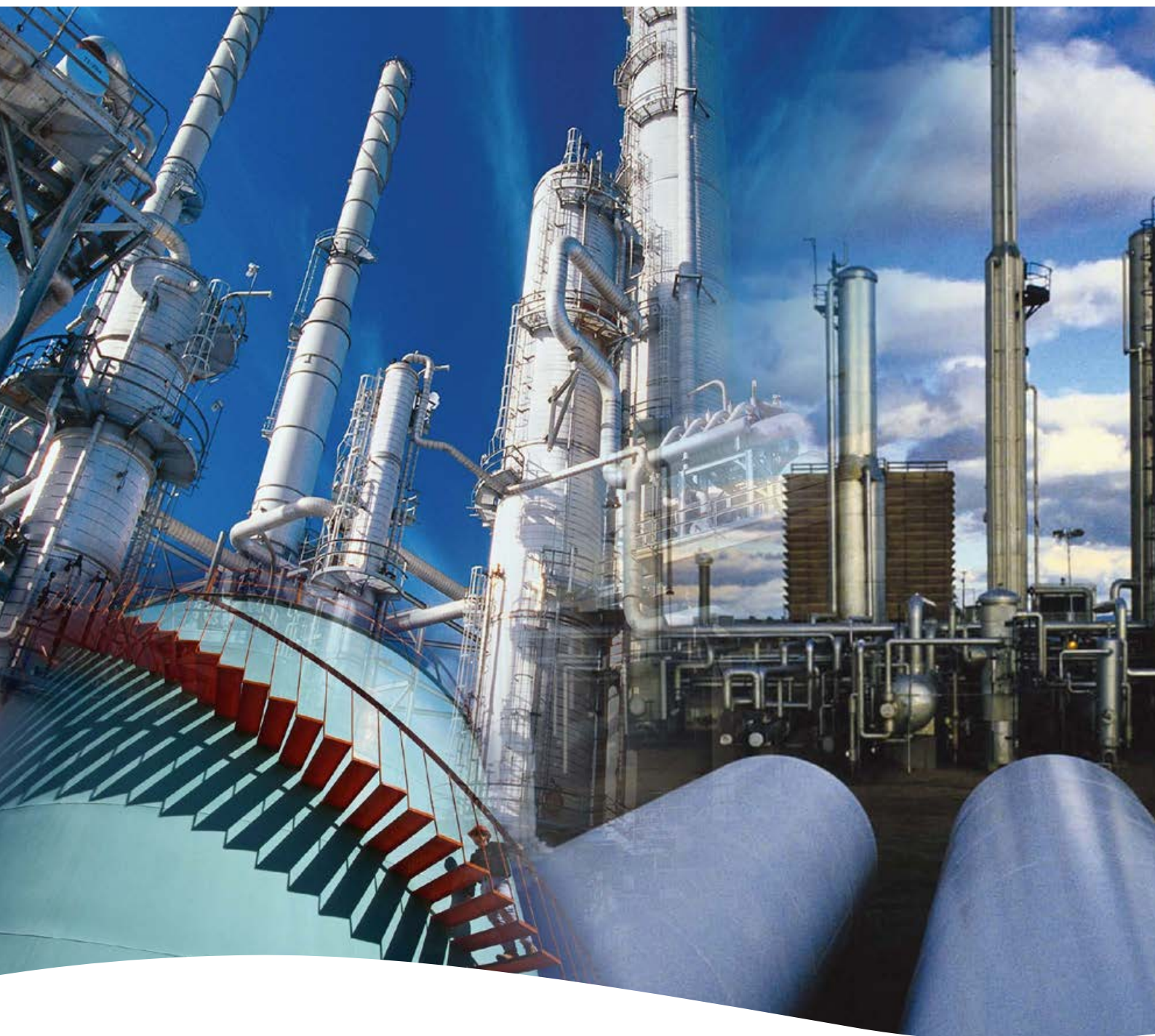




Flowserve Japan

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



Experience In Motion



Global reach, local presence

With approximately 15,000 employees in more than 50 countries, Flowserve Corporation (NYSE: FLS, headquartered in Dallas, Texas, U.S.), is a leading provider of flow control products and services for the global infrastructure markets, supplying products to refinery, power, coal, gas, chemical and other industries.

As part of the Flowserve worldwide network, Flowserve Japan is regarded as the main manufacturing base in the Asia-Pacific region.

Flowserve Japan

Name	(Japanese)	日本フローサーブ株式会社
	(English)	Flowserve Japan Co., Ltd.
Established		November 10, 1953 (Showa 28)
Holding Company		US Flowserve Corporation
Scope of Business		Design, manufacturing, sales, maintenance of pumps, mechanical seals, solid-liquid separators, steam turbines, compressors and other rotating machines, and diagnosis of rotating machines
Registration		Special construction contractor permit by Construction Minister (Toku-5) No. 15624; Installation of machinery and apparatus ISO 9001 (96QR039) Certified offices for high-pressure gas equipment testing and manufacturing
URL		https://www.flowserve.co.jp



History

Since its establishment in 1953 (Showa 28), Niigata Worthington™ has been engaged in the design, manufacturing and sales of pumps, compressors and steam turbines for the refining, petrochemical, power, steel, shipbuilding, utilities and many other general industries, making great contributions to backbone industries in Japan.

Established in 1987, Niigata Equipment Maintenance Co. Ltd. (NEMCO) specialized in the maintenance of rotating equipment, which subsequently expanded its business scope to include manufacturing, equipment diagnostic capabilities, consultancy, and repairs and maintenance of rotating equipment, earning themselves a high reputation in sectors such as refining, chemical, nuclear power and more. Among other developments, the company has also made progress in ultra-high performance centrifuges. Entering the 21st century, Niigata Worthington has been working on the development and manufacturing of various rotating equipment, to provide customers with efficient and effective solutions to maintain their rotating equipment. In 2008, Niigata Worthington became a Japanese subsidiary of Flowserve.

In December 2011, Flowserve Niigata Worthington merged with Flowserve Seal Business in Japan to form Flowserve Japan Co. Ltd., engaging in the manufacturing, sales and maintenance of mechanical seals. As a subsidiary of Flowserve, Flowserve Japan supplies world-renowned pump brands such as Worthington®, Ingersoll-Dresser, Pacific®, Byron Jackson®, Pleuger® and Durco®.

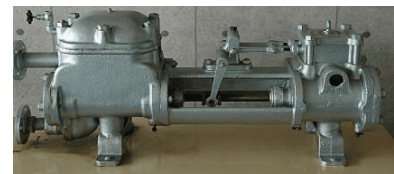


Worthington pump exhibited at Lazona Kawasaki Plaza



Timeline

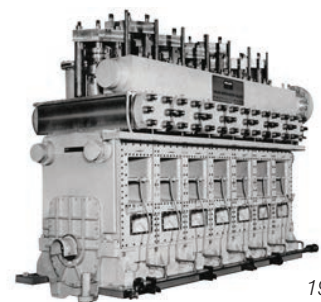
- 1840** Henry R. Worthington, an American mechanical engineer, invented the world's first direct-acting steam pump.
- 1900** Kashiwazaki sub-factory, Niigata Iron Works (now called Kashiwazaki plant of Niigata Worthington) was opened by Nippon Oil Co. Ltd.
- 1923** Worthington (USA) supplied the world's first centrifugal boiler feed pumps for a plant operating at 70 barg.
- 1953** Worthington (USA) and Niigata Teikō established Niigata Worthington Co. Ltd. to manufacture and sell pumps, turbines and air compressors.
- 1954** Niigata Worthington developed and launched the first high-speed (greater than 3,600 rpm), high-temperature and high-pressure process pump in Japan.
- 1971** Niigata Worthington developed, manufactured and launched the HDS and WTB as new types of high-temperature and high-pressure API process pumps.
- 1985** Niigata Worthington developed, manufactured and launched the world's largest (3,200 kW) septuplex plunger pumps.
Worthington (US) became a member of U.S.-based Dresser Industries, a world-class company engaged in the development of oil and natural gas resources.
- 1991** Niigata Worthington developed, manufactured and launched the barrel type, high-temperature and high-pressure process Type BP pumps.



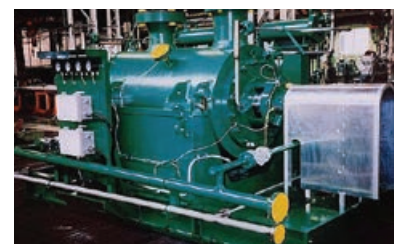
1840



1900



1985



1991



- 1992** Dresser Industries and Ingersoll Rand combined their pumps businesses to establish Ingersoll Dresser Pump (IDP), with IDP in the U.S. as the holding company.
- 1996** Received ISO 9001 quality management and control certification. Kashiwazaki plant was certified in Nov. 1996.
- 1997** Niigata Worthington developed, manufactured and launched Type WXH ring-section, high-pressure multistage pumps.
- 1998** Niigata Worthington developed, manufactured and launched a high-performance, solid-liquid separator.
- 2008** Niigata Worthington became a Japanese subsidiary of Flowserve.
- 2011** The Flowserve Japan seal business, engaged in manufacturing, selling and maintenance of mechanical seals, merged with Niigata Worthington to form a new company: Flowserve Japan Co. Ltd.
- 2012** Introduced large type overhung pump 16HNN-27 for FCC bottom pump.
- 2017** Moved headquarters from Kawasaki to Kashiwazaki in Niigata.



1997



1998



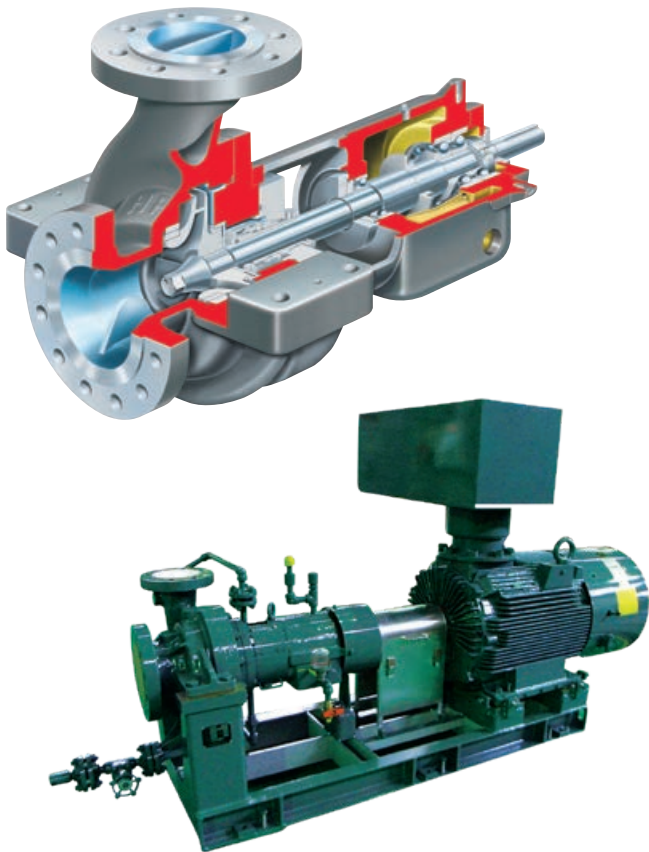
Kashiwazaki plant



Pump

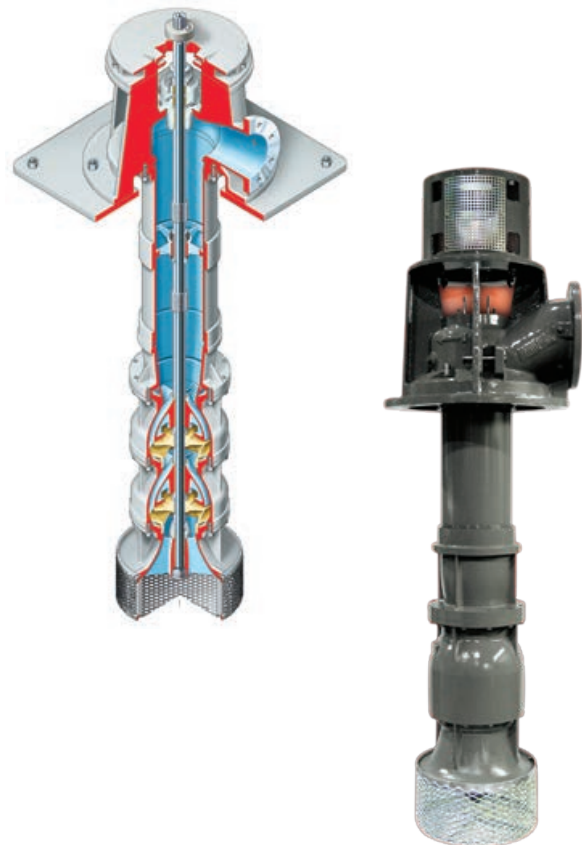
Horizontal centrifugal pump

Used in the oil refinery, petrochemical and chemical industries.



Vertical centrifugal pump

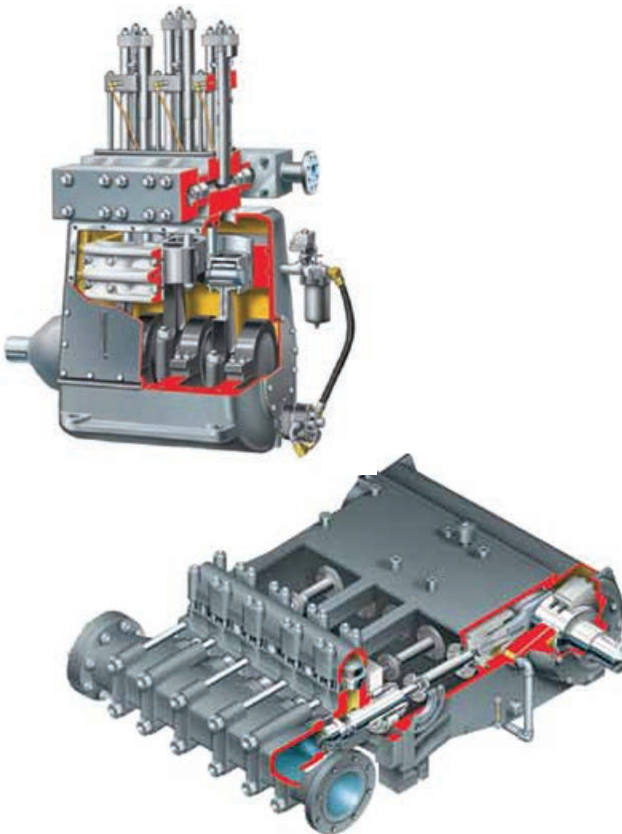
Widely used in oil, hydrocarbon, liquid gas, condensate, LPG, industrial water and other fields.





Plunger pump

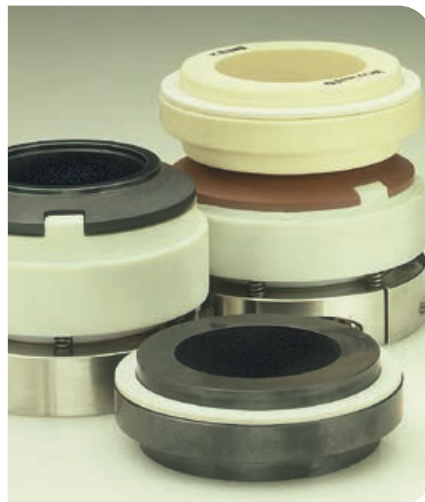
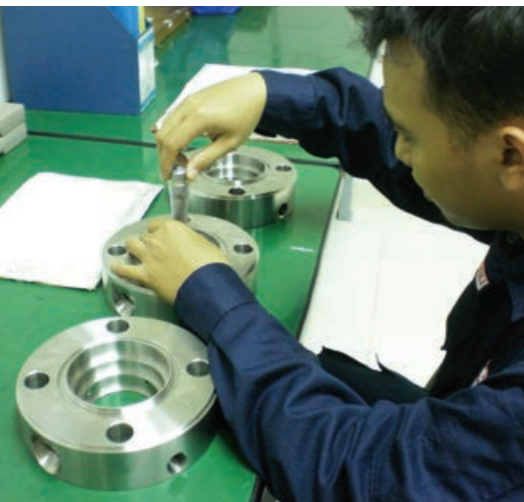
Designed as high-pressure pumps for all industrial fields, and widely used in descaling, water press, coal liquefaction, ammonia, etc.



Solid-liquid separator

The high-performance separator makes the best use of its vertical structure; they can smoothly and continuously separate ultra-micron products that are hard to be separated by traditional centrifuges.



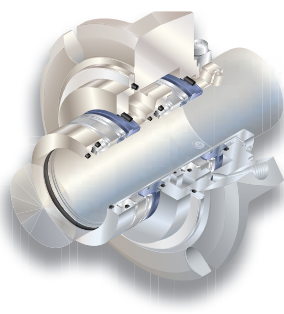
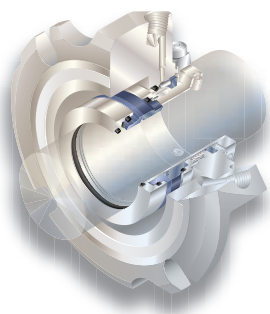


Mechanical seals

Flowserve Corporation had been engaged in mechanical seal manufacturing for more than 90 years. In Japan, it has been manufacturing and selling mechanical seals for 40 years, supplying products to many industrial fields for pumps and other rotating machineries. Mechanical seals supplied by Flowserve were used in many different extreme conditions, ranging from ultra-low to high-temperature, high speeds, high-pressure, dry running and high-concentration slurries.

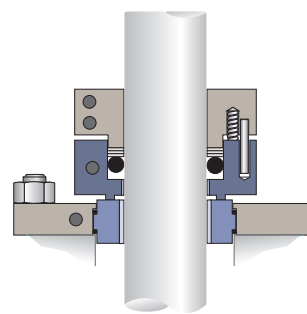
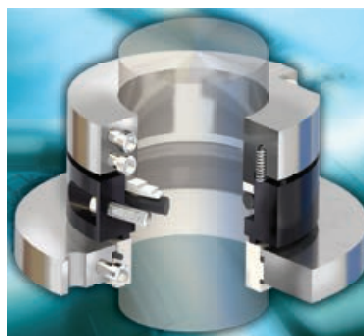
ISC2 Series cartridge seal

ISC2 Series seals conform to various international standards, and are designed to fit many pump types supplied by major manufacturers in Japan. ISC2 Series seals provide solutions to many sealing problems due to their wide liquid specification and application range, which can be applied to shaft diameters of up to 200 mm (7.87 in).



MSS split seal

This economical split seal can be installed easily on mixers, reactors and other pressure vessel equipment. The MSS seal is highly adaptable and accommodating to old equipment with shaft deflections and eccentricities fitted with conventional seal packings.



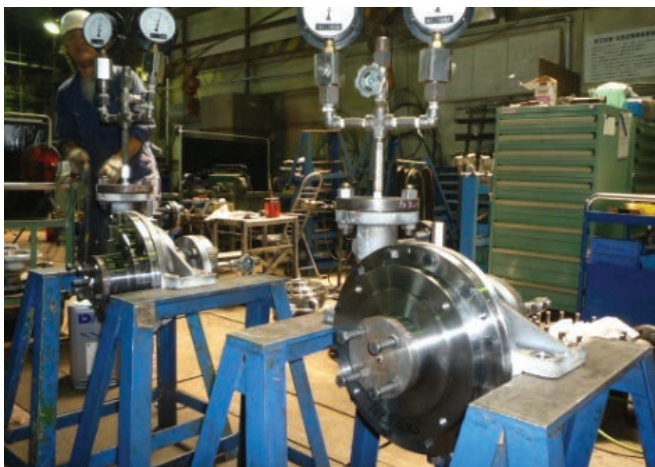


Aftermarket

Supported by the Kashiwazaki plant and Osaka QRC to provide excellent repair services and technical support, Flowserve Japan supplies rotating equipment, compressors and mixers, regardless of its manufacturer, with mechanical seals, components and related services ranging from repairs, upgrades, retrofits and root cause diagnostic analysis. In addition, the company can also provide engineers to perform on-site technical and field services to offer solutions as needed by customers.

Repair service

Perform equipment and components checks; test equipment and components in the Kashiwazaki plant or perform in-situ repairs.

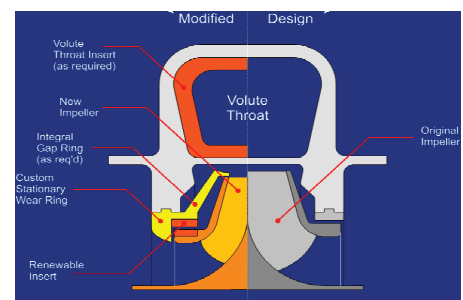
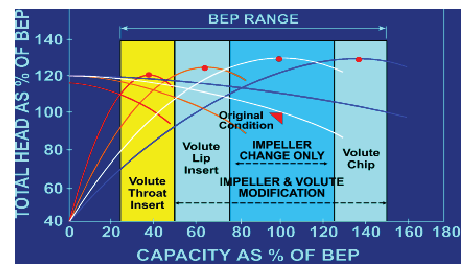


Upgrades, re-rates and retrofits

Provide the latest “retrofitting scheme” combined with extensive professional experiences, upgrade and retrofit rotating equipment and accessories (auxiliary pipings, auxiliary equipments, etc.).

Benefits

- Extend lifetime by replacing materials
- Increase efficiency with improved design
- Energy savings with applicable specifications





Parts and components

With professional design and process techniques, Flowserve Japan can re-engineer and produce non-Flowserve components with quality, complying to OEM specifications.

Diagnosis

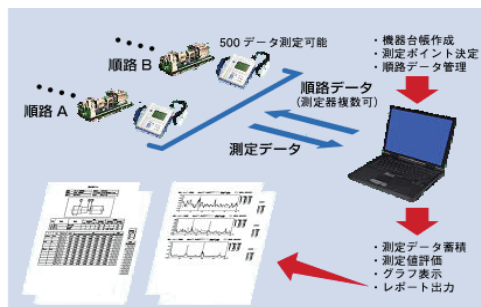
Measuring and diagnosing rotating equipment, finding causes to malfunctions, asset re-evaluation, lifetime prediction and offering solutions.



Technical support

Flowserve Japan field service experts are available to set up pumps and other rotating machines on-site.

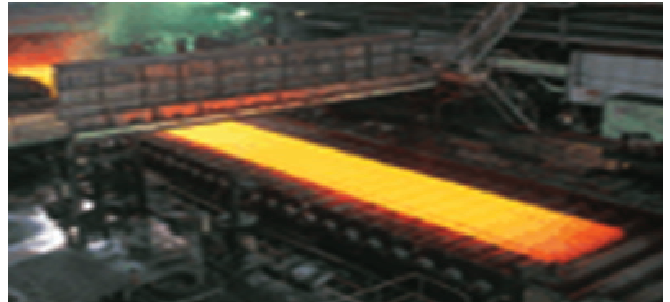
- Technical instructions and management of regular checks on rotating machines
- Assign engineers to assist customer's plant construction





Key industries

- Hydrocarbon processing
- Petrochemical processing
- Chemical processing
- Food processing
- Power generation
- Pulp and paper
- Steel industry
- General industry





Japan

Head Office and Kashiwazaki Plant
1-32, Shimbashi, Kashiwazaki-shi,
Niigata, 945 0096, Japan
TEL: 0257-22-2141
FAX: 0257-23-4454

Osaka QRC
710, Mitsushima, Kadoma-shi,
Osaka, 571 0015, Japan
TEL: 072-885-5571
FAX: 072-885-5575

Kawasaki Sales Office
Muromachi Bldg. 11F
1-8-1, Isago, Kawasaki-ku, Kawasaki-shi,
Kanagawa, 210-0006, Japan
TEL: 044-381-8777
FAX: 044-381-8784

Osaka Sales Office
710, Mitsushima, Kadoma-shi,
Osaka, 571 0015, Japan
TEL: 072-392-7271
FAX: 072-392-7273

Niigata Sales Office
1-32, Shimbashi, Kashiwazaki-shi,
Niigata, 945 0096, Japan
TEL: 0257-23-0379
FAX: 0257-23-0483

Nuclear Plant Maintenance Team
3-1, Aoyama, Kashiwazaki-shi,
Niigata, 945 0016, Japan
TEL: 0257-31-8200
FAX: 0257-31-8205

USA and Canada

Flowserve Corporation
5215 North O'Connor Blvd.
Suite 2300
Irving, Texas, 75039, USA
TEL: +1 937 890 5839

Asia Pacific

Flowserve Pte. Ltd
10 Tuas Loop
Singapore 637345
TEL: +65 6771 0600
FAX: +65 6862 2329

Flowserve Corporation
5215 North O'Connor Blvd.
Suite 2300
Irving, Texas 75039-5421 USA
Telephone: +1 937 890 5839

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SEBR000159-03 (EN/A4) October 2020