



# *Malaysia Seal Quick Response Centers*

Service and Repair • On-Site Services  
Seal Change-outs and Upgrades  
Mechanical Seals • Parts and Components



*Experience In Motion*



## ***Repair Service and Technical Support***

*The Flowserve Malaysia Seal Quick Response Centers (QRC) are focused on providing customers with uncompromising manufacturing of mechanical seals and spare parts, service and repairs.*

*Staffed by highly skilled engineers and technicians around the clock, the Malaysia Seal QRCs are available to respond to customer requests for support in troubleshooting problems and providing reliable solutions for their rotating equipment seals.*

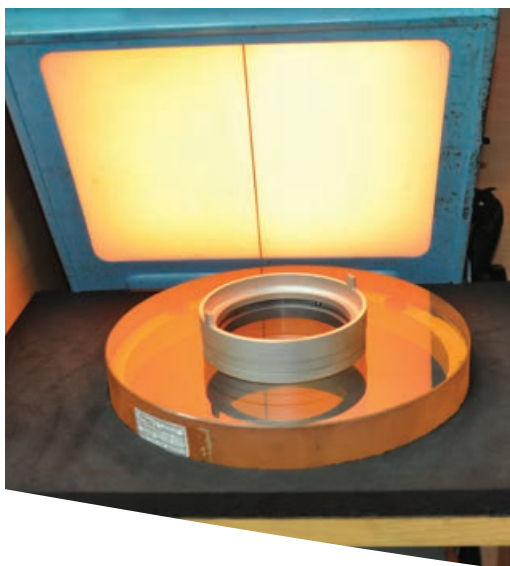
### ***Premier, Value-Added Service***

With unequalled seal knowledge, design expertise and manufacturing capabilities, the Malaysia Seal QRCs specialize in value-added manufacturing and repair services. QRC engineers and technicians service most types of rotating equipment seals.

The dynamic range of services offered by the Malaysia QRCs includes:

- Manufacturing of mechanical seals and spare parts
- Maintenance, repair and inspection service
- Installation and commissioning service
- On-site repair and diagnostic services
- Parts and components supply





### ***Seal Repairs to the Flowserve Standard***

The QRCs have in-house capabilities to perform quick repairs to seals, including:

- Ultrasonic cleaning
- Seal face lapping
- Repair or replacement of worn parts
- Parts measurement and testing
- Seal testing, including ISO 21049/API 682 standards
- Packaging
- Bellow seal leak testing

The QRCs are equipped and staffed to support our alliance partners on a 24-hour basis. Key manufacturing capabilities include:

- Vertical and radial milling machines
- High precision lathes
- Seal lapping machine
- Heat treatment oven
- Ultrasonic cleaning equipment
- Optical flatness equipment
- Surface roughness tester

### ***Customer Focused Service***

To ensure the availability and quick turnaround of standard parts, the QRCs have real-time access to information regarding inventory available in Singapore, Europe and U.S. facilities. The Malaysia Seal QRCs also have access to supply chain consignment stock to meet urgent customer requirements.

When requested, the QRCs will supply root cause analysis reports on the returned seals. Recommendations regarding repairs or upgrades are also provided to ensure improved performance of the equipment once placed back into the field.







## ***Seal Change-Outs, Upgrades and Repairs***

To assist customers who need to turn equipment repair around as quickly as possible, the Malaysia Seal QRCs can design and manufacture engineered seals to meet specific applications within a few days. Strategic inventory stocking of standard seals and spare parts within the facility is a critical component of this capability.

Through real-time electronic access, QRC engineers can retrieve the latest design drawings and bills of material information. QRC engineers can utilize the Flowserve application engineering program to simulate operating conditions allowing them to validate the correct seal selection and system configuration for the application.



### ***Extended Seal Life through Upgrades***

Utilizing the proven knowledge and expertise of Flowserve Rotating Equipment Specialists, together with the application of best practices and the latest technology, Flowserve is able to offer an extensive array of seal upgrades to extend the life of the customer's primary seals in operation throughout their facilities.



***2010 Flow Control Innovation Award Winner***  
*Flowserve ISC2 Series Cartridge Mechanical Seal*



## On-Site Services

### Installation and Commissioning Service

Customers are often fully engaged in the operation of their plants and do not have the necessary time to devote to supervising the ongoing equipment-related activities. The Malaysia Seal QRCs provide valuable on-site services to help lighten the customers' manpower constraints.

The Malaysia Seal QRCs Field Service Teams are available to provide support to our customers with equipment start-up requirements, including:

- Troubleshooting seal related problems
- Supervising the removal and installation of seals
- Providing assistance during change out of seal parts
- Ensuring correct seal installation and start-up

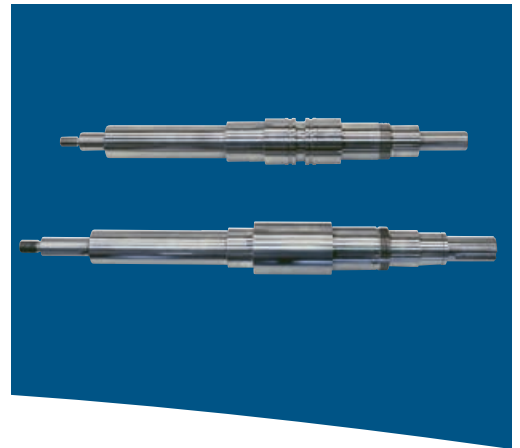


### Customer Training

To support customer efforts to improve the operational efficiency of their facilities, Flowserve offers a small group training program within the Malaysia Seal QRCs for key operational and maintenance staff. Through this program, the customer's staff can become better equipped to handle the operation and maintenance of their rotating equipment and associated seals.







## Parts and Components

Quality parts that comply to OEM specifications for the entire range of Flowserve product brands are readily available through the Malaysia Seal QRCs. As all parts conform to original design and materials, specifications, customers are of ensured reliable operation and lowest equipment ownership costs.

The QRCs can also re-engineer and produce components for equipment that has been obsoleted.



## 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 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



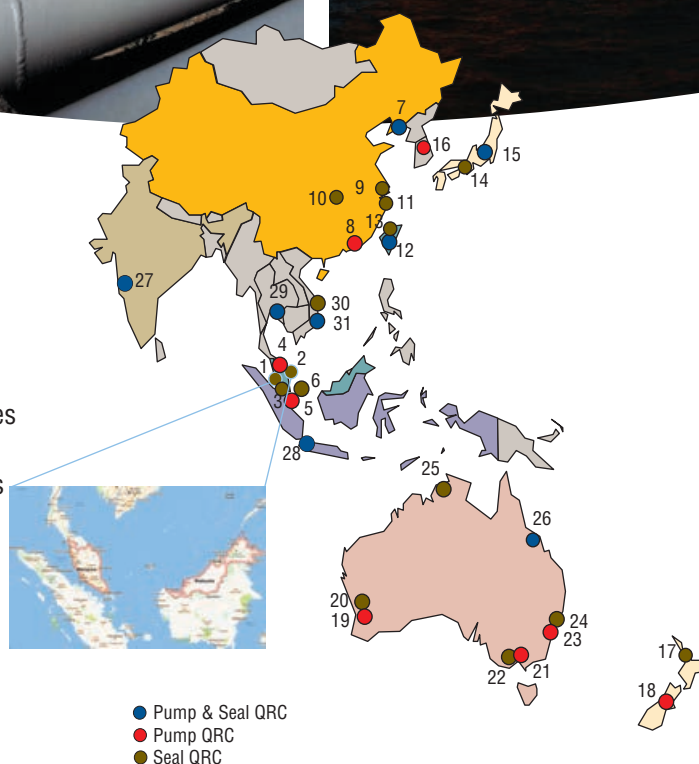


## Global Presence Serving Key Industries

### Strength of Experience, Commitment to Excellence

Flowserve, through the Malaysia Seal QRCs, daily serves customers from various industries to ensure superior equipment performance and service life. Key industries currently served by the Malaysia Seal QRCs include:

- Oil and gas production
- Hydrocarbon processing
- Chemical processing
- Water resources
- Power generation
- General industry



#### **MALAYSIA**

1. Balakong (Seal)
2. Kemaman (Seal)
3. Malacca (Seal)
4. Kuantan (Pump)

#### **SINGAPORE**

5. Tuas (Pump)
6. Changi (Seal)

#### **CHINA**

7. Dalian (Pump & Seal)
8. Huizhou (Pump)
9. Shanghai (Seal)
10. Chongqing (Seal)
11. Ningbo (Seal)

#### **TAIWAN**

12. Kaohsiung (Pump & Seal)
13. Mailiao (Seal)

#### **JAPAN**

14. Osaka (Seal)
15. Kawasaki (Pump & Seal)

#### **KOREA**

16. Cheonan (Pump)

#### **NEW ZEALAND**

17. Auckland (Seal)
18. Christchurch (Pump)

#### **AUSTRALIA**

19. Welshpool (Pump)
20. Henderson (Seal)
21. Mulgrave (Pump)
22. Mulgrave (Seal)
23. Wetherill Park (Pump)
24. Marayong (Seal)
25. Darwin (Seal)
26. Townsville (Pump & Seal)

#### **INDIA**

27. Vadodara (Pump & Seal)

#### **INDONESIA**

28. Jakarta (Pump & Seal)

#### **THAILAND**

29. Rayong (Pump & Seal)

#### **VIETNAM**

30. Dung Quat (Seal)
31. Dong Nai (Pump & Seal)





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