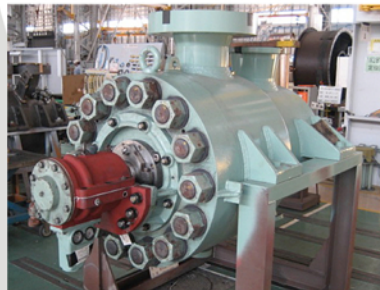
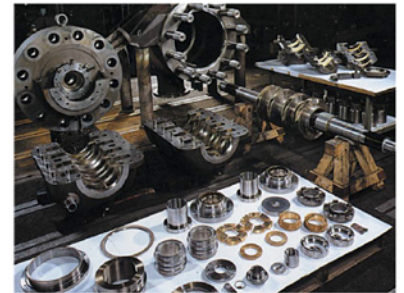


EBARA Global Service

Overhaul Service Leaflet



EBARA Overhaul Service

Pumps are often operated continuously, their operation is stopped only for planned or condition-based overhauling. These pumps, as well as their drive and peripheral systems, become exposed to aging problems along their use. EBARA Pump Overhaul Service offers the best solutions to such aging problems. EBARA's accumulated diagnostic and preventive engineering expertise and know-how are fully made use of to maximize the reliability and life of pump systems. This high quality overhauling service can also be provided for other manufacturers.



1. Planned Overhaul Service

This service supports the overhauling of pump units during periodical shutdowns of plants. Precise inspection of pumps, operated without problems over a prescribed period, is carried out. Inspection results can be compared with relevant data stored in EBARA's engineering database, Test operation can be supported by EBARA..

1) Clearance Recovery

Improvement on the functionality of pump bearings, wearing and seals, optimization on the material of pump parts, are worked out when periodical inspection results.

2) Vibration Recovery

Long term pump operation can lead to pump bearings, wearing and seals to contact other parts and be subject to abrasion. Unbalanced and misaligned movement of impellers and rotors may also cause vibration problems.

3) Performance Recovery

Impellers, casing volutes and the like are re-manufactured when it becomes necessary to optimize pump performance to match specific operational conditions of plants.



Receiving



Dismantling & Inspection



Assembling & shipping



Dynamic balancing & repair

2. Condition-based Overhaul Service

This service specializes in the monitoring pump unit conditions based on relevant trends. Making use of inspection results and state data, analysis is conducted implementing pump design know-how. This enables extending the maintenance interval MTBF to the maximum.

1) Pump and Parts Aging Evaluation

When periodical inspection results indicate that a pump or its parts have aging problems and need to be replaced, equivalents are manufactured and installed in their stead.

2) Parts Inspection and Repair

In case there is a need to optimize performance to match specific operations, impellers and volute are newly manufactured.

Demands for improved seal functions and optimized materials are also fulfilled.

3) Parts Lifecycle Management

Pump parts featuring preventive measures for problem reoccurrences, including those that implement preventive maintenance schemes are provided.



3. Emergency based Overhaul Service

This service features emergency recovery overhauling when sudden and unexpected failures occur on pump. This service also applies to failures of peripherals such as gears and fluid couplings. Parts replacement and repairs based on know-how on pump design and servicing are done. It is of utmost importance to investigate the cause of the failure and to conduct a speedy recovery of pump operation.

1) Trouble Diagnosis

The operation and performance of an EBARA is evaluated based on transitional pump data obtained from periodical inspection and monitoring results.

2) Parts Repair and Modification Proposals

The damaged pump and parts due to trouble are evaluated and we will propose the most suitable repairing or modification.

3) Trouble Shooting

Causes of pump failures are investigated and preventive measures against recurrences are provided. We provide highly reliable repaired parts and replacement parts as well as auxiliary equipment.



4. Consultation and LTSA Service

EBARA's sales and technical staff are always ready to visit you to hear your overhaul demands, work out an appropriate proposal and submit reports. Collaborated work making use of our LTSA Service is an effective way to improve the reliability of the overall pump system. (See Field Service Leaflet)

1) Consultation on Overhauling

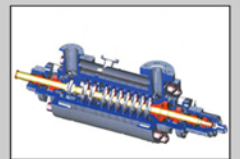
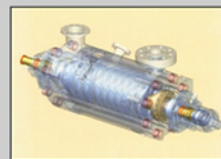
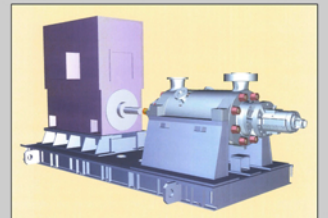
Diagnosis of pump, as well on pump unit conditions, is conducted and consultation is given on overhauling and modification using a 3D model.

2) Backup Support for Overhauling

We are ready to provide technical assistance such as providing skilled field service engineering. Our assistance also extends to providing a proposal and specifications on pump.

3) LTSA (Long Term Service Agreement) Service

The LTSA service provides reliability to the pumps and auxiliary equipment. Collaborated monitoring, by both EBARA and the customer, is carried out to avoid any damage caused by a failure of a pump system with aging problems.



Contact & Communicate

1) Contact

EBARA Pump Overhaul Service is organized by EBARA Japan and Local Service Offices. EBARA Corporation/ Fluid Machinery & Systems Company/ Custom Pump Div.
www.ebara.co.jp

2) Communicate

Users can communicate by E-mail, Telephone, Fax, and Directly In-person with our Service Staff.
Please feel free to tell us your specific needs via our "Kind and Speedy" Service.





EBARA CORPORATION

11-1, Haneda Asahi-cho, Ohta-ku,
Tokyo 144-8510, Japan

TEL (03)3743-6111 FAX (03)5736-3100
<http://www.ebara.co.jp>

contact