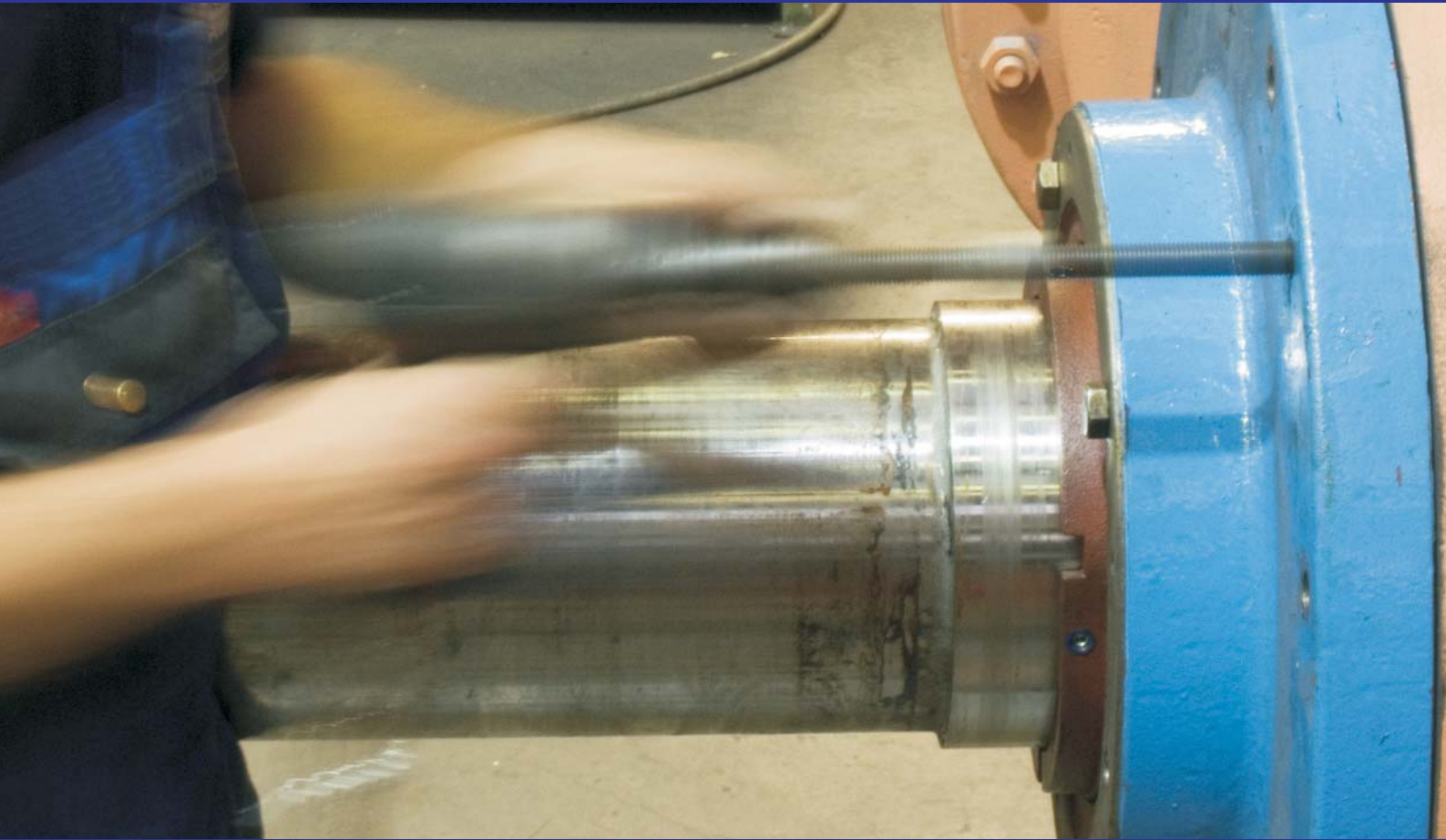


**Service for Liquid Ring Pumps
Service Center Performance Range**



The Service Centers of Gardner Denver Nash - High-Performance Equipment and Infrastructure

NASH liquid ring vacuum pumps and compressors are rugged, maintenance-friendly machines. But even the best systems still occasionally require maintenance and repairs. And sometimes these repairs are not possible locally. Then it's a matter of the right logistics and infrastructure. The Nash Service Centers are excellently equipped for this task.

Your liquid ring pump is in excellent hands with us. The extensive range of services offered by our Service Center guarantees a short throughput time and complete expert repair.



Professional assembly

Proper dismantling and assembly

Our equipment enables us to properly dismantle and reassemble any liquid ring pump of all manufacturers. Even heavyweights are no problem for our experienced, specially trained staff. We know all adjustment dimensions and tolerances and, of course, also the assembly specifications for every NASH pump and every NASH compressor. Professional service with optimum pump repair is the basis for the economical operation of your system.

Checking the parts

We check the dismantled parts of each pump for dimensional accuracy and damage. Wearing parts are replaced routinely.

Cleaning

Soiled components can cause considerable reductions in output. We properly remove deposits and soiling. In the process, we use both chemical solutions and mechanical processes like sand-blasting, high-pressure cleaning, etc.

Reclamation and repair of parts

The existing components are reclaimed or repaired if it is economically and technically practical. Our modern machine tools enable compliance with all important dimensions and tolerances in accordance with the applicable drawings. Professional welding technology allows us to weld onto shafts and perform welding repair on housings and impellers.

Painting also according to customer specifications

All pumps are repainted prior to being shipped out. When doing so we naturally also take your specifications, e.g. color or layer thickness, into account.

Optional: Performance test in our test field 95 % of suction capacity of a new pump

Before being shipped out, vacuum pumps and compressors can be thoroughly tested in our test field. If all specified parts were replaced with new parts we could guarantee 95% of the suction capacity of a new pump. Testing of pumps can also be carried out locally at the customer's plant on request.



Refinishing of an impeller

The Service Centers of Gardner Denver Nash - Competence Centers for Liquid Ring Pumps

A fair offer

Repair costs are based on defined work steps. We dismantle your pump, inspect the parts in order to determine whether reworking of parts is possible or whether components have to be replaced. Then you receive a detailed offer with a description of all defects and digital photos to document the damage. A local inspection provides another aid for helping our customers make a decision. Our price list describes the costs for standardized work.



Cleaning by sandblasting

Wearing parts

Components like seals and bearings are always replaced with new OEM parts in accordance with defined criteria when we make repairs. This enables improvements to parts and pumps to be automatically integrated in the process. We will also provide you with proof of the material used if necessary. Exchanging these parts on a regular basis increases the reliability of a pump and reduces downtime costs.

Wearing part kits

Kits containing all common wearing parts for repairs are available for selected standard pump models. These kits are prepackaged at the factory, immediately available for shipping out and offer a viable alternative to ordering the individual components with regard to the costs involved.

Conversion and upgrade: materials and seals

Performance and corrosion resistance can be considerably improved through upgrading or the use of other materials: Critical parts like the impeller, side plate or cone of gray cast iron can be replaced with stainless-steel components. We can also install a packing gland or an axial face seal depending on your requirements.

Coatings and linings

Production processes also change; aggressive media are used or systems are modified and run in a closed circuit. Our pump-specific know-how enables us to efficiently extend the period of use and increase the service life of gray cast-iron pumps in particular:

Lining with stainless steel

- Housings, cones, cam disks and side plates are lined with stainless steel to protect them from aggressive media.

Coating with polyisoprene

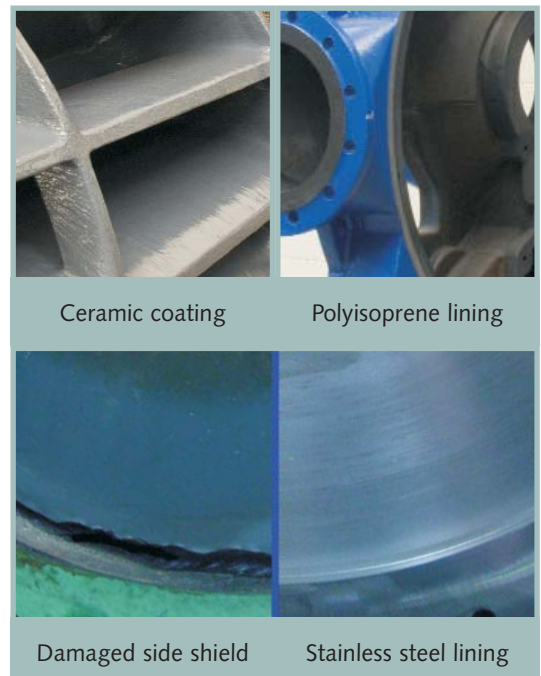
- Housings and side plates lined with polyisoprene increase the service life of the pump.

Ceramic coating

- For impellers, coating with ceramic materials is (compared to replacement with a stainless-steel impeller) an inexpensive alternative.

Warranty

As a certified company, quality is important to us. That's why we provide a 1 year guarantee on all labor, wearing and spare parts.



Ceramic coating

Polyisoprene lining

Damaged side shield

Stainless steel lining

The Service Centers of Gardner Denver Nash - Field Service and More

Swap-Out Pump Exchange Program

Your system's downtimes are minimized with the Gardner Denver Nash pump exchange program. Regardless of the manufacturer or the pump model: We can provide you with an overhauled exchange pump from our pump pool at the time most suitable for you. It is assembled according to your specifications (speed, material, single or dual-acting seals and many other options). In the process we use new and used stock parts.



Repair welding of impellers

Service agreement

Maintenance planned at regular intervals support you in planning your costs and improve the performance of your vacuum pump or compressor. Gardner Denver Nash offers you a service agreement customized to exactly meet your needs. Our extensive range of services includes:

Inspection of the system during operation:

- Visual inspection of the pump
- Measuring of operating parameters like suction capacity, bearing temperature, speed and energy consumption, as well as a measurement of the bearing conditions

Inspection during downtimes:

- Fibrescope inspection
- Recording and documentation of operating data

ATEX repairs

Our experienced, competent engineers also conduct repairs in accordance with the ATEX guidelines: We know our machines and the processes, we have the necessary proof of materials used and tests conducted, and we are certified in accordance with ISO 9001 and 94/9/EC. Our trained expert staff can also convert a pump to the ATEX standard.

Field Service on site

Gardner Denver Nash also offers you the entire range of services for maintenance, inspection and repair on site. We base this on the dates preferable to you and on system arranged downtimes. On request we also offer you various alternatives for the repair work to be performed.

Start-up Service

Gardner Denver Nash supports you when commissioning systems and during troubleshooting, which reduces expensive breakdown times. Our employees have many years of experience in complete vacuum and compressor systems. With our experience and our close cooperation with customers, we ensure the optimum operation of your systems - right from the start.



Pump during performance test in the test field

High-Performance Service Centers - A simple Gardner Denver Nash formula:

$$\begin{aligned} & \text{Our Know-How} \\ + & \text{ Our Commitment} \\ \hline = & \text{ Your Advantage} \end{aligned}$$

Our common objective is the efficient maintenance and repair of your liquid ring pump. You will benefit from our know-how and services.

Our know-how: **Over one hundred years experience of vacuum and compressor systems.**

Our experience of vacuum and compressor systems goes back over a hundred years. We not only have an eye for plant as a whole but also an expert understanding of the finer points of machinery and processes.

Our commitment: **A network of service centers and professional staff**

Gardner Denver Nash operates a worldwide network of Service Centers, equipped with the latest technology. Our capable, highly motivated personnel can even provide on-site services.

Your advantage: **Professional service, maintenance and repairs**

With us, your plant will be in the best possible hands. You will benefit from the experience of our personnel and the modern equipment in our Service Centers, ensuring e.g.

- Collection and delivery service: We organize the transport of your pumps
- Short turn around times at the Service Centers
- First-class machine equipment of the Service Centers
- Inspection and testing before shipping out: If all worn parts were replaced with new parts we could guarantee 95% of the suction capacity of a new pump.
- Exclusive use of OEM spare parts and original drawings
- Increased flexibility and improved service life of the system
- Factory guarantee of pump performance
- One contact - all services from one supplier
- Many decades of experience of our service specialists



Our brand is NASH. From our range of services:

Over
100 years of
experience

For over 100 years we have been developing, producing and configuring liquid-ring vacuum pumps, compressors and customer-specific systems for the most demanding, toughest applications. Our systems have been operating reliably for decades in chemical process engineering and in filter applications, in the paper industry and power plant technology, in refineries and in many other applications.



Service,
maintenance
and repairs

We have the know-how, the experience and the specialists: Our professional service team will support you during many decades of economical operation of your pumps and systems, at our Service Centers around the world and with professional on-site customer service.



Energy savings
and system
availability

The specific measures of Gardner Denver Nash ensure a reduction in energy costs and the efficient, economical operation of a system. System availability is increased and failures are avoided with an extensive package of measures. And we carry out all our work on your time schedule.



Service
locations
worldwide

We are close to our customers the world over. You will find our Service Centers in

- Australia
- Brazil
- China
- Germany
- Korea
- The Netherlands
- Singapore
- South Africa
- UK
- US



Service
for all
pump models

Our first-class NASH service is available for all liquid-ring vacuum pumps and compressors from NASH and Siemens/elmo. These include the model lines 2BA, 2BB, 2BE1, 2BE2, 2BE3, 2BG1, 2BK, GARO, CL, AT, 904, TC, Vectra, SC and HP. Of course, we also offer our NASH service for all other liquid ring pumps - regardless of the manufacturer.



Nash - Zweigniederlassung der Gardner Denver Deutschland GmbH

Katzwanger Str. 150
90461 Nuremberg, Germany
Phone: +49 911 1454-5256
Fax: +49 911 1454-5252
nash.de@gardnerdenver.com
www.GDNash.com