

**Maximum availability of vacuum systems  
We'll show you how to get it**



# Maximum plant availability - the Gardner Denver Nash solution

The generation of vacuum and the compression of gases can be a complicated and costly process. In many cases, the fundamental process parameters are adjusted before the plant is started up, after which the settings are hardly ever modified. If however the system is left to itself for any length of time, problems can arise which will significantly reduce the availability of the plant and the efficiency of the system.

Gardner Denver Nash looks back on over 100 years of experience with vacuum and compressor systems. We have an eye for plant as a whole and an expert understanding of the finer points of machinery and processes. Our comprehensive service package can optimize your vacuum and compressor system and support you with measures to improve plant availability.

## Preventative actions minimize failures

Achieving the maximum degree of plant availability means preventing failures. Gardner Denver Nash offers a comprehensive package of measures to minimize this risk. In doing so, we work entirely in accordance with your time-table.



### Inspections, maintenance and repairs

Gardner Denver Nash offers a complete range of services covering maintenance, inspection and repairs, either on site or at our service centers, and all from a single source. For these purposes, we have a comprehensive range of machines at our disposal. All repairs are guaranteed to bring your pump up to 95% of the capacity of a brand new equivalent. We use OEM spare parts exclusively and all new, reconditioned and repaired parts comply with the applicable specifications. Any technical improvements to individual parts are automatically passed on to the customer. Pumps are disassembled or inspected with a fiberscope in order to locate the causes of faults, after which we let you know why a pump has failed. Following a joint consultation, we can then introduce further measures. If required alternatives can even be offered during repair work.



### Fiberscope inspections

By means of a fiberscope inspection, the interior of the pump, the rotor, the housing and the side shields/cones can be visually inspected. As a result our trained service personnel can not only identify damage to the pump, even at an early stage, but also find any foreign bodies inside it. Contamination adversely affecting efficiency and impermissible tolerances are thus identified and eliminated in good time. We can spot signs of wear and determine the condition of your pumps without dismantling the machine, then plan any repairs which may be necessary before a failure occurs. Gardner Denver Nash will carry out fiberscope inspections while the plant is stopped or at any other time appropriate to your operations.

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## Bearing condition monitoring

Specialists in the Gardner Denver Nash Service Centers collect data by monitoring the condition of the bearings in the machines you are using and evaluate them in order to forewarn you of the need for early repairs before the machines fail. The monitoring process is carried out while the plant is operating, eliminating any necessity for it to be shut down.

As a further option for the permanent monitoring of your vacuum plant, we offer the alternative of installing an online monitoring system.



## Service contract

Regular, planned servicing will help you with cost management and improve the efficiency of your vacuum pump or compressor. Gardner Denver Nash offers a service contract tailored to your needs and embracing a comprehensive range of services, including:

### Plant inspection during operation:

- Visual inspection of the pump
- Checks on operating parameters such as suction capacity, bearing temperature, Shaft speed and energy consumption and a check on the condition of the bearings.

### Inspection during downtime:

- Fiberscope examination or inspection through service openings.
- Flow rate measurement.



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## Reducing downtime

Even in the most efficient production process, planned machine shutdowns are unavoidable. We use these times for maintenance work and inspections or repairs. In order to reduce downtime, we will even make replacement machines available to you and assist you in starting up the system.

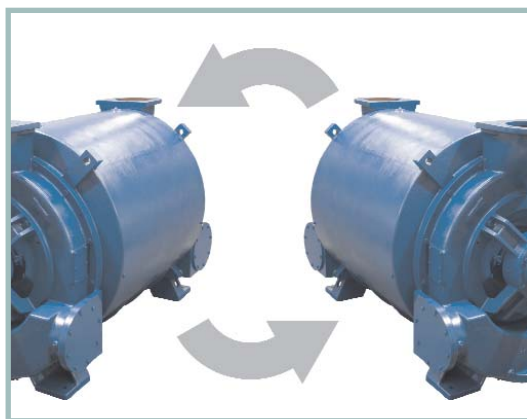
## Pump exchange program / Swap Out Program

With the Gardner Denver Nash pump swap out program, you can minimize the downtime of your plant. At a convenient time for you, we will make a fully reconditioned exchange pump available from our pool of pumps. This will be built in accordance with your specifications (rpm, material, single or double-acting seals and numerous other options). In this program, we use new and used stock parts.

### Our range of services:

You receive an exchange pump complying with your specifications and send your own pump to one of our service centers. The exchange pump stays with you. For this, we will only invoice you for the costs incurred in repairing your old pump.

On the basis of a comprehensive inspection, we charge only for the spare parts we determine as being necessary for the repair.



## Installation and start-up assistance

Gardner Denver Nash will assist you in installing and setting up your vacuum/compressor system and, in so doing, help to reduce costly stoppage times. Our specialists have years of experience in complex systems of this type. We will check the installation and connections to the machines, start up the plant and adjust and check the process parameters. In addition, we will train your personnel.

## Quick support in the event of system failures

Even the best system can fail under unfavorable conditions. For these emergency cases, we will support you from our pool of replacement pumps.

## Remanufactured pump pool

Gardner Denver Nash offers a wide range of reconditioned pumps. We repair used pumps and make them usable again. Following an exhaustive factory inspection, we guarantee that these pumps will have 95 % of the capacity of a brand new pump.

# Maximum plant availability - a simple Gardner Denver Nash formula:

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

Our common objective is to achieve the maximum availability of your plant. 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 benefit:** **Maximum plant availability**

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.

- Availability of the vacuum system
- Reducing downtime
- Technical support from the very first second
- Reduction in life-cycle costs
- Reduced energy consumption of the plant
- Optimum adjustment of the vacuum system



## We have engineered liquid ring vacuum and compressor systems for more than 100 years.



### And we provide best the NASH Service to make them run even longer.

You may have known us as Nash Engineering, Siemens/elmo, or nash\_elmo. Now we are Gardner Denver Nash.

We have been manufacturing liquid ring pumps for more than 100 years, and we know how to make them run. And we provide the best NASH Service and know how to make them run even longer.



### Best NASH Service for every pump model

Special NASH Service is available for the following NASH and Siemens/elmo liquid ring pump series:

2BE1..	2BE2..	2BE3..	2BG1..	2BK..	GARO
CL	AT	904	TC	Vectra	SC

Of course, we also provide the best NASH service for all liquid ring pumps, no matter who the manufacturer.



### Locations

Our European Service Centers are located in

- Winsford, England
- Assendelft, The Netherlands
- Paris, France
- Motala, Sweden
- Wetzlar and Nuremberg, Germany

Our experienced service technicians check your pump, in our Service Centers or on site. Test us.



**Gardner Denver Nash  
Deutschland GmbH  
Service Center Nürnberg**  
Katzwanger Straße 150  
90461 Nuremberg, Germany  
phone: +49 911 1454-5256  
fax: +49 911 1454-5252

**Gardner Denver Nash  
Deutschland GmbH  
Service Center Wetzlar**  
Grube Juno 1  
35580 Wetzlar, Germany  
phone: +49 6441 924 710  
fax: +49 6441 232 57

europe.service@de.gardnerdenver.com  
GDNash.com