

# Turbomolecular Pump

Service options guide



# How To Use This Guide

This guide describes service options for your Agilent turbomolecular pump. Service options include exchange, upgrade, and extended warranty.

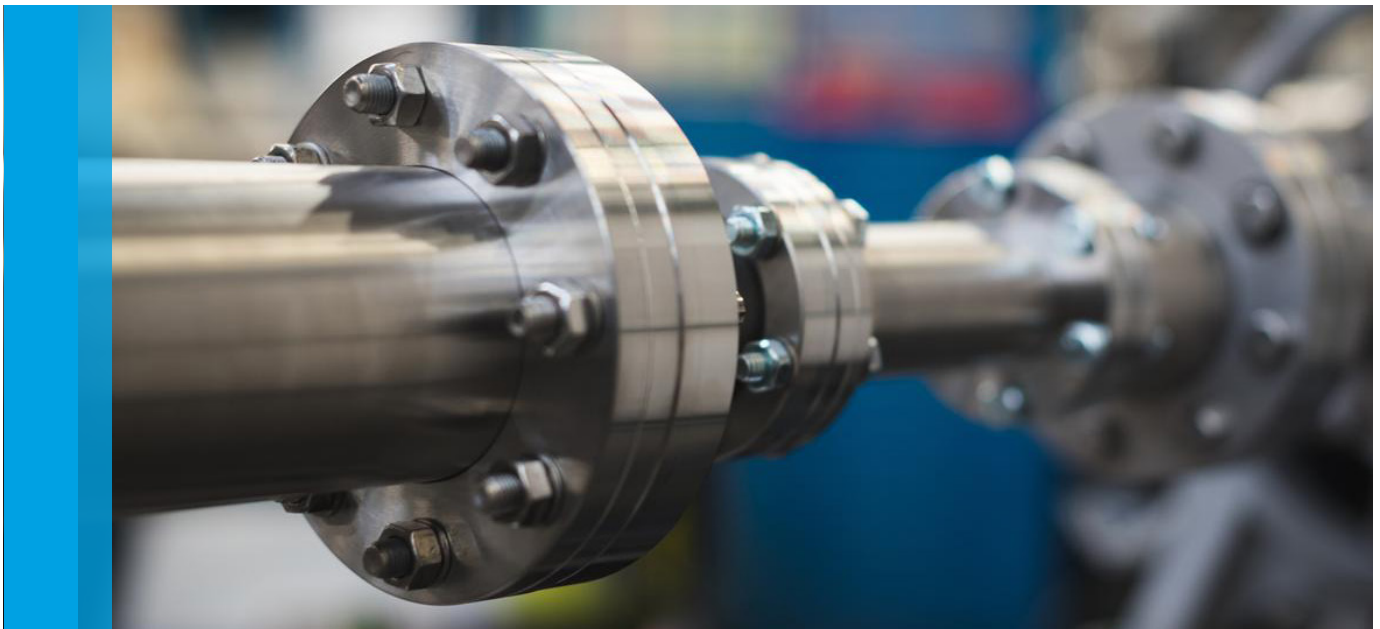
Tables 1 and 2 summarize each service option and provide an overview of the services included. Detailed descriptions of each option are given on the following pages.

**Table 1.** Summary of turbo pump service options

	When to Choose	Includes	Location	Availability	Packaging	Shipping	Warranty
<b>Onsite Diagnostics</b>	All pumps	Vibration analysis	Onsite	FSE/AE availability	-	-	-
	Health check	Fourier analysis					
	Application consulting	Application optimization					
<b>Rechanneling</b>	Unused pumps only	Controlled grease distribution	Regional service center	<2 weeks	Customer supplied	Pickup and delivery included	-
	Longer idle periods < 24 months old	Proprietary algorithm for process control					
		Monitoring of power, current, and temperature at predefined frequency steps					
		Rebalancing input, if required					
		Final test and Fourier analysis					
<b>Fast Track Service</b>	< 5 years of infrequent use	Bearing replacement only	Regional service center	<2 weeks	Customer supplied	Pickup and delivery included	6 months
	Clean applications only						
	Maintenance for pumps that still operate						
	Pump is not crashed						
<b>Repair</b>	Nonfunctional	Full pump repair, including cleaning and bearing replacement, balancing, and final test	Regional service center	<2 weeks	Customer supplied	Pickup and delivery included	12 months
	Pump is not crashed						
<b>Advance Exchange</b>	Nonfunctional	Fully rebuilt	Regional warehouse	From stock	Included	Pickup and delivery included	12 months
	Exchange is available	As-new performance and aesthetics					
	Downtime reduction						
	Pump is crashed <i>(plus additional fee)</i>						
<b>Upgrade</b>	Technology refresh	Fully rebuilt	Regional warehouse	From stock	Included	Pickup and delivery included	12 or 24 months, model dependent
	Downtime reduction	As-new performance and aesthetics					
	Out of support	NEW pump option					

**Table 2.** Services included

	Rechanneling	Fast Track Service	Pump Repair	Pump Exchange
Bearing Conditioning	●	●	●	●
Bearing Replacement		●	●	●
Rotor Balancing	●	●	●	●
Cleaning			●	●
Full Inspection		●	●	●
Helium Leak Check		●	●	●
Vacuum Performance Check		●	●	●
Update to "As-new" Condition			●	●
Two Week Turnaround time (TAT)	●	●	●	
Two day turnaround time (TAT)				●



# Table of Contents

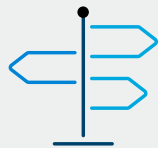
- Learn ..... 4**
  - Description
  - Basic vacuum practice and custom classes
  - Application support
  - Web resources
  
- Protect ..... 5**
  - Extended warranty
  - Contractual coverage
  
- Fix/Maintain ..... 6**
  - Onsite diagnostics
  - Rechanneling
  - Fast Track Service (FTS)
  - Service Center Repair
  
- Replace ..... 9**
  - Exchange
  - Upgrade



At Agilent vacuum is more than a part. It's a partnership. Our sales and application engineers have a wealth of vacuum and leak detection experience. We can help you develop the right methodology to operate and maintain your vacuum equipment. With experience in applications including high energy physics, thin-film coatings, space simulation, nuclear fusion, and eMobility, Agilent can help with virtual and onsite consultations.

Gain the practical knowledge to properly characterize, operate, and maintain your vacuum system for maximum uptime.

### Best practices and custom classes



Basic vacuum practice, helium leak detection, and custom classes are available to educate vacuum users on principles and operating practices. Single or multiday courses with an experienced Agilent application engineer are available onsite or virtually.

Custom onsite training can be tailored to address your application(s) and requirements. Length of training and number of attendees can be adjusted to fit your needs.

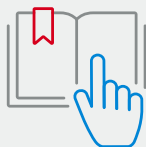
### Application support



Both remote and onsite consultations with application engineers are available to help design and optimize your vacuum system.

If you encounter issues, Agilent is available to help you troubleshoot, identify, and correct problems to get your system operating properly.

### Resources



Agilent has a rich curriculum of vacuum training, webinars, and reference materials.

The growing library of Agilent on-demand and live webinars cover best practices and methods for many applications.

- [Webinars](#)
- [Videos](#)
- [Vacuum Made Simple](#)
- [Vacuum Community](#)

# Protect



All Agilent vacuum products come with a standard warranty that includes parts and labor, should an issue arise. Agilent warrants products against defects in materials and workmanship to conform to specifications.

## Extended warranty



If desired, factory warranty coverage can be extended beyond the standard term.

Control the cost of ownership of your turbo pump for peace of mind and to minimize expenses.

- Unlimited remote support
- Access to factory service centers
- Access to the Agilent Advance Exchange Program

**Eligible pumps:** Extended warranties apply to pumps running in clean, dry applications only.

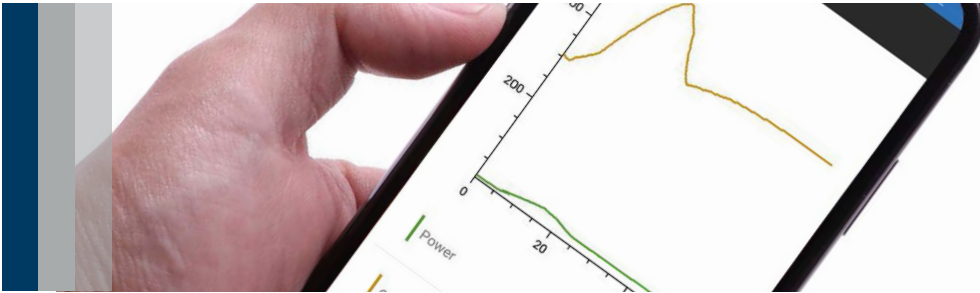
## Contractual coverage



If you want guaranteed fixed costs and maximum uptime, a comprehensive plan can be established to go beyond the factory warranty. A custom contract can include:

- Diagnostic inspections
- Preventive maintenance
- Prepaid turbo repair
- Prepaid advanced exchange

To discuss the proper contract to fit your requirements, contact [Agilent vacuum support](#).



### Onsite diagnostics



Agilent can evaluate the health of your turbomolecular pump by analyzing the instrument's operating parameters and vibration spectra. Agilent will provide guidance in optimizing pump performance for your application.

Agilent's on-site analysis and diagnostics service is performed by specialized technicians trained by Agilent.

### Examples of when onsite diagnostics are indicated:



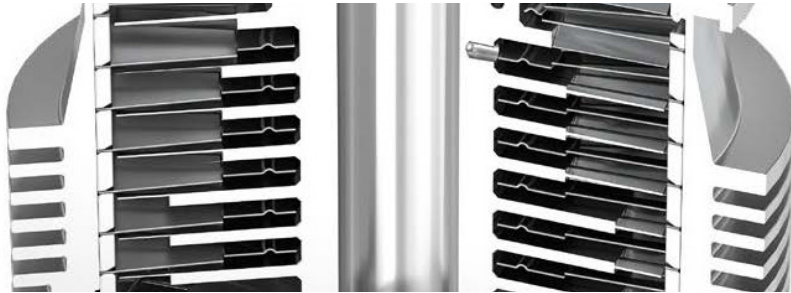
- A planned maintenance of your system is approaching, and you would like to ensure that your turbomolecular pumps are in good working condition
- Some key pump parameters such as power, current, noise, and temperature have changed, and you would like to make sure the pump is still operating within specifications
- A yearly health check is due as part of the service contract on your turbo pump

### Included in this service:



- Turbo pump health check and vibration analysis
- Pump cycle testing related to power consumption, current, noise, and temperature
- Review of applications and best practices

## Fix/Maintain



### Rechanneling

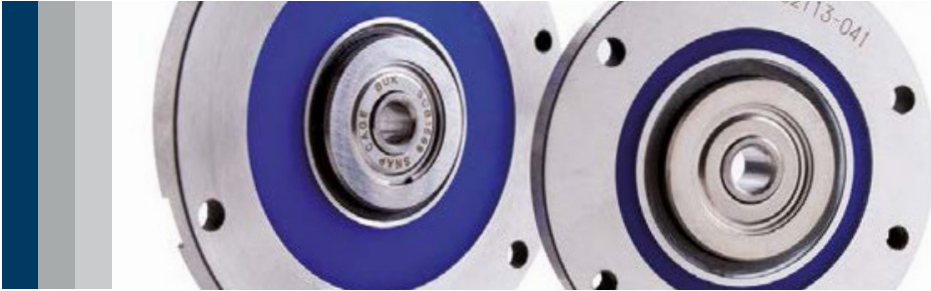


Agilent turbo pumps have permanently lubricated bearings that use a proprietary grease formulation. If your new turbo pump has been unused between 12 and 24 months, servicing of the bearings is necessary to ensure optimal lifetime of the pump.

The rechanneling process redistributes the grease within the bearing to provide optimal lubrication and pump operation.

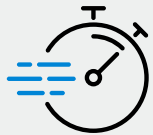
The process involves using proprietary control software, electronics, accelerometers, and power and thermal measurements to monitor the pump's health as the algorithm steps through specific rotational speeds. During this process, if pump operating parameters cannot be restored, the rechanneling will stop, and the technician will recommend Fast Track Service.

This service is performed at the regional service centers. Technicians at the service centers are factory trained and use factory supplied instrumentation.



## Fix/Maintain

### Fast Track Service (FTS)



FTS provides a bearing replacement on your turbo pump. It is an option for pumps used in a clean application, that are less than five years old and still able to run, or for recently built pumps that have experienced a bearing failure.

Examples of when Fast Track Service is recommended:

- If your new turbo pump has been unused for more than 24 months
- If a used pump has been out of service for 12 months
- Preventive maintenance of a pump in a clean application
- In the case of bearing failure without rotor damage
- In the event a pump cannot be rechanneled

The service center installs new bearings and rebalances the pump to ensure maximum reliability and lifetime. No cleaning of the pump rotors, stators, or body is included. The pump is restored to factory performance specifications. FTS includes a six-month warranty on parts and labor.

### Service center repair overhaul



Overhaul is a comprehensive service for your Agilent or Varian turbo pump. Factory-trained technicians rebuild pumps using genuine Agilent parts, so they meet the same quality and performance standards as new turbo pumps.

### Repair includes the following:



- Failure diagnosis
- Multistep cleaning of internal pump parts
- New bearings, suspension, and o-rings
- Balancing, verification of base pressure, and Helium leak check
- Typical turnaround is two weeks

### Examples of when to use Repair:



- If the original pump serial number is needed for inventory control
- If you are looking for a cost-effective solution as compared to a new pump
- If an exchange pump is not available



# Replace



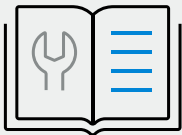
Fast replacement of your nonfunctioning pump\* through either the Advance Exchange or upgrade programs to get you back up and running as early as the next day.

## Advance Exchange Program



This program offers remanufactured pumps built to the same specifications as new pumps. Agilent maintains stock of the most popular models. Upon receipt of your exchange pump, simply return the old one in the same packaging to minimize costs and environmental impact. Use this cost-effective program to minimize downtime and get a replacement pump quickly.

### Key features of the program:



- Pumps in stock for quick turnaround
- Remanufactured to as-new factory standards
- One year warranty
- Reusable packaging for pump return
- Complimentary shipping for both the exchange and return product\*\*

### Examples of when to use Advance Exchange:



- If you need a pump quickly
- If you are looking for a cost-effective solution as compared to a new pump

\* The Exchange program requires the return of the pump with an undamaged rotor

- If the material cannot be reworked or returned, an additional fee may apply
- Contaminated pumps may have a cleaning charge applied

\*\* Not available in all countries

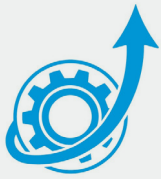
[Instructions for exchange](#)

[Request for Return form](#)



Replace

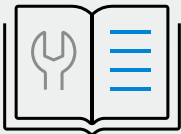
## Upgrade



The Agilent Technology Refresh program provides a cost-effective upgrade path to the newest TwisTorr turbomolecular pumps. The upgrade program supports a greener environment by recycling old material.

Varian or Agilent legacy turbo pumps qualify for an upgrade. Most models are locally stocked for immediate shipment in days, not weeks. Call or use the online chat to talk to our experts today to determine which upgrade model best fits your needs.

### Key features of program:



- Upgrade to the latest technology at a reduced cost by gaining value from your old equipment
- Avoid waiting for a pump repair. Popular pump and controller configurations are in stock, with fast delivery options
- Protect your investment and extend the life of your vacuum system
- Up to two-year warranty

### Examples of when to upgrade pump:



- Upgrade your legacy Varian/Agilent V70, V81, V250, V300 HT, V301, 304FS, or V550 to the newest Agilent TwisTorr turbo pump
- Replace obsolete or discontinued equipment that cannot be repaired or exchanged
- Other manufacturers' pumps also qualify for an upgrade
- Find the **Request for Return** form below to initiate the process

[Instructions for Upgrade](#)

[Request for Return form](#)

Learn more:

[www.agilent.com/en/support/vacuum-technologies/vacuum-products-technical-support](http://www.agilent.com/en/support/vacuum-technologies/vacuum-products-technical-support)

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