



Agilent Technologies

Vacuum Products Division

CE

TriScroll™ 600 Series Dry Scroll Vacuum Pump

*MODULE REPLACEMENT
MANUAL*



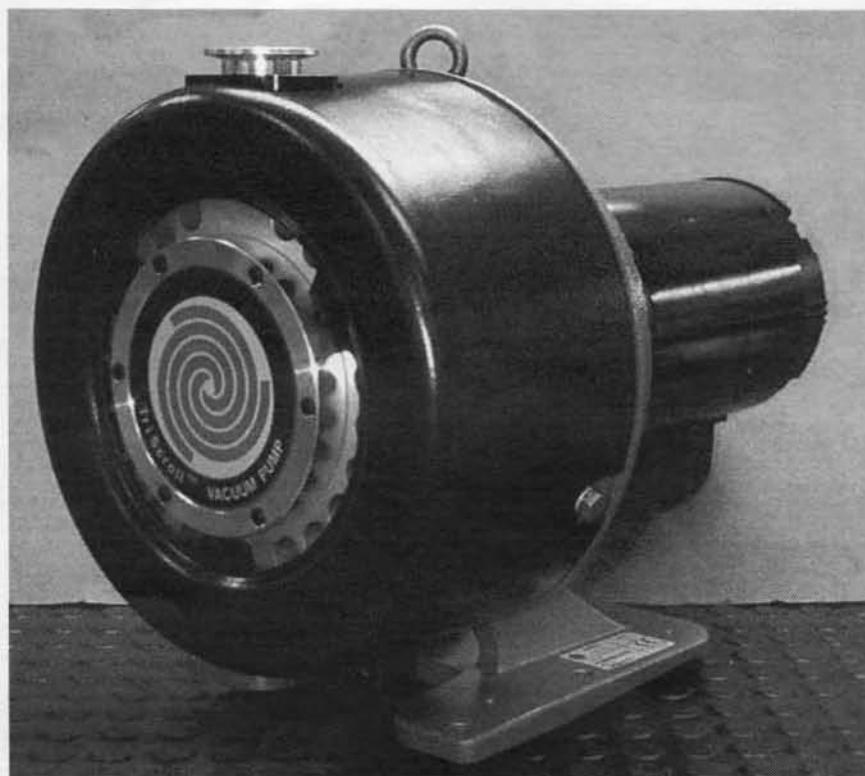
Manual No. 699904305

Revision E

November 2014

TriScroll™ 600

Dry Scroll Vacuum Pump



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Preface

This manual provides the information you need to successfully perform replacement of the entire module of your AgilentTriScroll™ Dry Vacuum Pump. Module replacement is performed as an alternative to performing a complete overhaul and rebuild (Major Maintenance) and is sold as one of the options recommended when the pump base pressure has risen to an unacceptably high level for your application. If you have questions that are not addressed in this manual, please contact the nearest Agilent service facility listed on the rear cover of this manual.

Safety Considerations

READ THE FOLLOWING INSTRUCTIONS. TAKE ALL NECESSARY PRECAUTIONS.

The following format is used in this manual to call attention to hazards:

WARNING



The warning messages are for attracting the attention of the operator to a particular procedure or practice which, if not followed correctly, could lead to serious injury.

CAUTION



The caution messages are displayed before procedures, which if not followed, could cause damage to the equipment.

NOTE



The notes contain important information taken from the text.

Maintenance personnel must be aware of all hazards associated with this equipment. They must know how to recognize hazardous and potentially hazardous conditions, and know how to avoid them. The consequences of work performed by unskilled or improperly trained maintenance personnel, or careless operation of the equipment employed in the specified maintenance procedures can be serious. Every maintenance person must read and thoroughly understand the materials discussed and the instructions provided in this manual, as well as any additional information provided by Agilent.

All warnings and cautions must be read carefully, fully understood, and strictly observed. Consult local, state/province, and national agencies regarding specific requirements and regulations. Address any safety, operation, and/or maintenance questions to the nearest Agilent location.

TriScroll 600 Dry Scroll Vacuum Pump

WARNING



Disconnect power from the TriScroll 600 before performing any maintenance procedure.

Allow the pump to cool before performing any maintenance procedure. Approximate cool-down time is one to two hours.

CAUTION



Wipe all O-rings clean with a lint-free cloth before installation to ensure that no foreign matter is present to impair the seal.

Do not use alcohol, methanol or other solvents on O-rings. To do so causes deterioration and reduces their ability to hold a vacuum.

If applicable, apply a small amount of Krytox[®] GPL 224 grease and wipe the O-rings "shiny" dry.

NOTE



Agilent recommends replacing all O-rings during routine maintenance or during any maintenance procedure requiring that O-rings be removed.

Unless otherwise stated, apply Loctite[®] 242 or Loctite PST[®] 567 to the first few threads only. Apply just enough to obtain a seal.

WARNING



The TriScroll 600 weighs 32 kg (70 lbs). To avoid injury, use proper lifting techniques when moving the pump.

Related TriScroll Manuals

Manuals related to the installation and operation, tip seal replacement, and major maintenance for the TriScroll 600 series pumps are listed in the following table:

Title	Applicable TriScroll Model	Part Number
Major Maintenance Manual	All TriScroll 600 Series Models	699904300
Tip Seal Replacement Manual	All TriScroll 600 Series Models	699904310
Installation and Operation Manual	All TriScroll 600 Series Models	699904290

Maintenance and Tool Kits

Material and tooling required to perform maintenance on TriScroll pumps is provided in kit form. A description of each kit and ordering information is provided in the following table:

Description	Contents	Applicable TriScroll Model	Part Number
Major Maintenance Kit	All bearings, bearing seals, bearing lubricant, O-rings, and tip seals required to rebuild TriScroll 600 Series pumps.	All TriScroll 600 Series models	PTSS0600MK
Maintenance Tooling Kit	All fixtures and tools required to perform any maintenance on TriScroll 600 Series pumps.	All TriScroll 600 Series models	PTSS0600TK
Replacement Tip Seal Set	Replacement tip seals and static O-rings for TriScroll 600 Series pumps.	All TriScroll 600 Series models	PTSS0600TS
<i>NOTE: The Maintenance Tool Kit is also required for tip seal replacement.</i>			

Factory Service Options

Agilent offers factory-rebuild service or advance exchange of complete TriScroll Pumps or TriScroll Pump Modules. Contact your nearest Agilent sales office for price and availability information. Select your preferred service option from the table below.

Factory Service Options	Part Number
Advance Exchange TriScroll 600 Single Phase	EXPPTS06001
Advance Exchange TriScroll 600 Three Phase	EXPPTS06003
Advance Exchange TriScroll 610 Single Phase	EXPPTS06101
Advance Exchange TriScroll 610 Three Phase	EXPPTS06103
Advance Exchange TriScroll 600 Pump Module Only	EXPTS0600SC
Advance Exchange TriScroll 610 Pump Module Only	EXPTS0610SC
Service/Rebuild TriScroll 600 Pump (Single or Three Phase)	PTS0600KMA
Service/Rebuild TriScroll 610 Pump (Single or Three Phase)	PTS0610KMA
Service/Rebuild TriScroll 600 Pump Module Only	PTS0600SCRP
Service/Rebuild TriScroll 610 Pump Module Only	PTS0610SCRP

Contacting Agilent

In the United States, you can contact Agilent Customer Service at 1-800-882-7426. See the back cover of this manual for a listing of our sales and service offices.

Visit our web site at:

<http://www.chem.agilent.com/en-US/Products/Instruments/vacuum/pages/default.aspx>.

General Information

AgilentTriScroll 600 series pumps are designed to provide years of trouble-free service if maintenance procedures and intervals are observed. Bearing grease replenishment and tip seal replacement is recommended when the pump base pressure has risen to an unacceptably high level for your application. Bearings, rotary seals and O-rings should also be replaced if the pump exhibits humming or grinding noises from the bearings. Main bearing life may be shortened if your application requires the pumping of high quantities of water vapor. Use of the bearing purge will keep this water from impacting bearing life.

Equipment Required to Install Pump Module

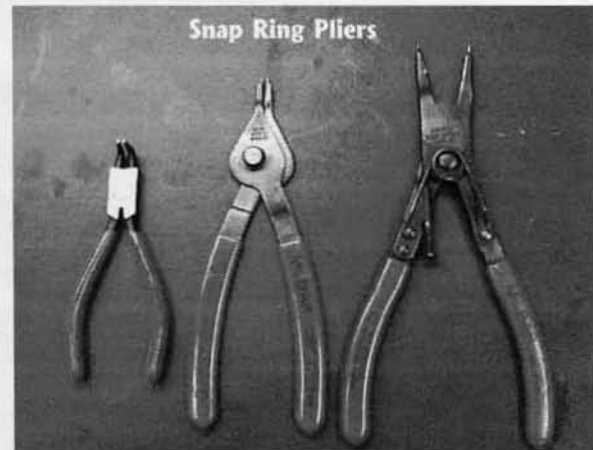
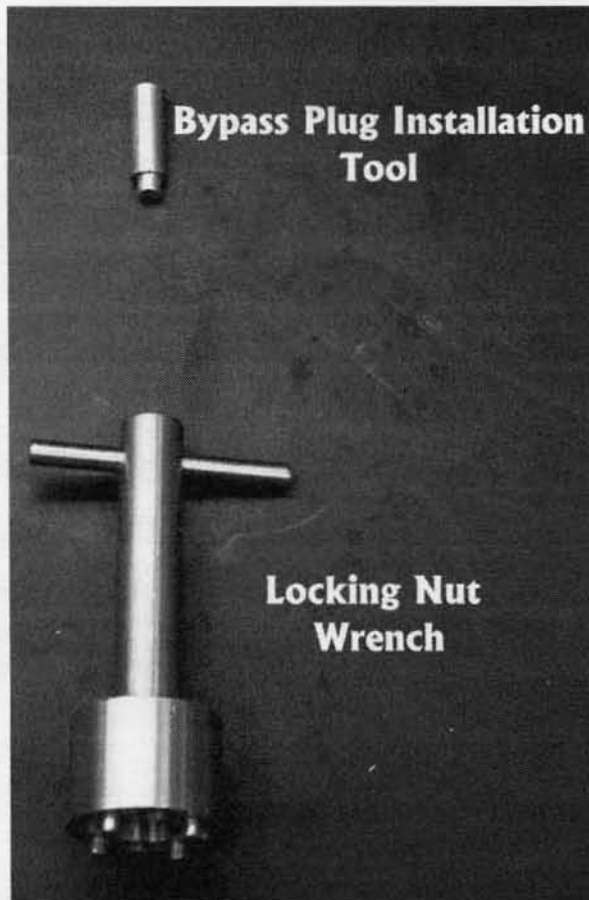
- ☐ Pump Module

Tools Required to Install Pump Module

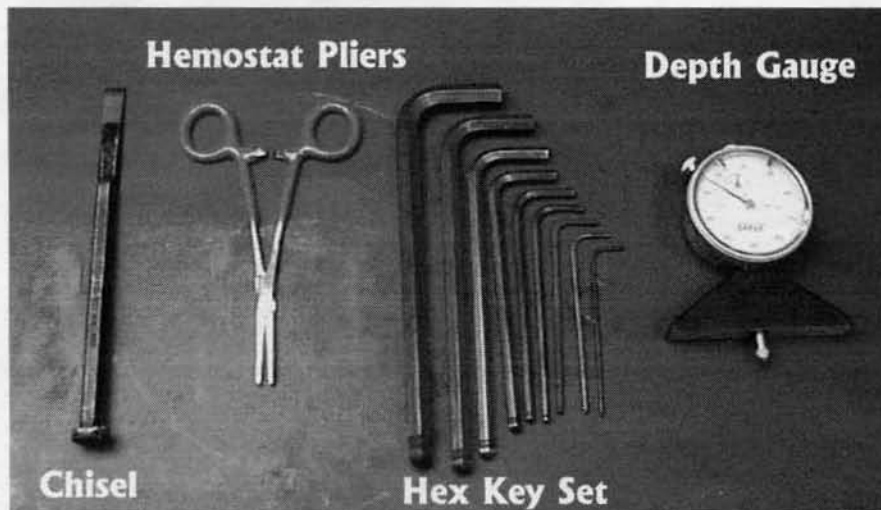
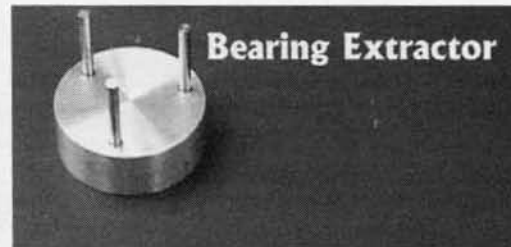
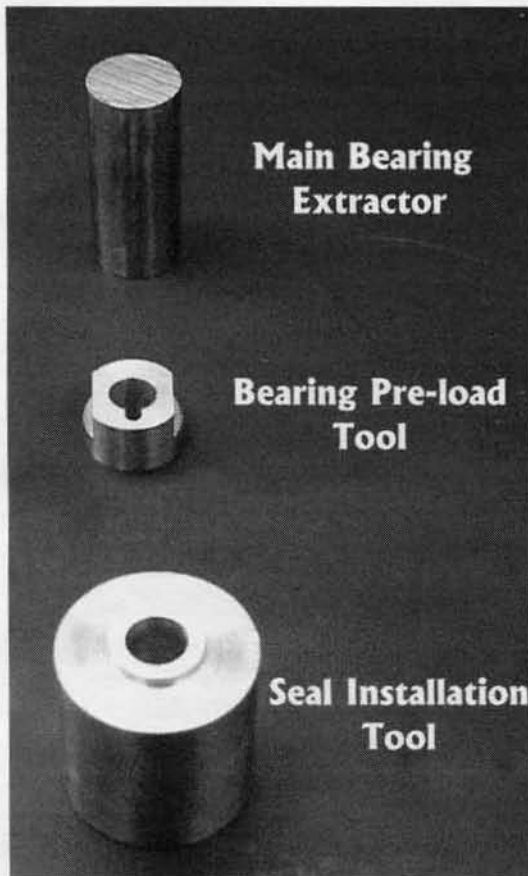
- ☐ 4 MM Hex key
- ☐ 5 MM Hex key
- ☐ 6 MM Hex key

Included in **Maintenance Tool Kit: #PTSS0600TK** (page 2)

Maintenance Tool Kit



Maintenance Tool Kit (continued)



TriScroll Disassembly

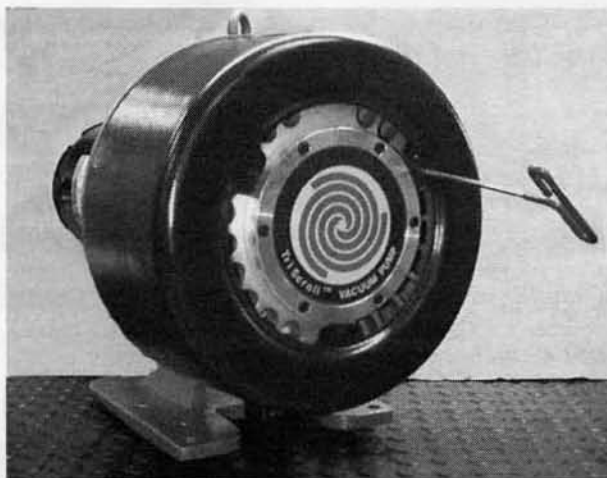


1. Remove the two M5x16 screws from the intake assembly.

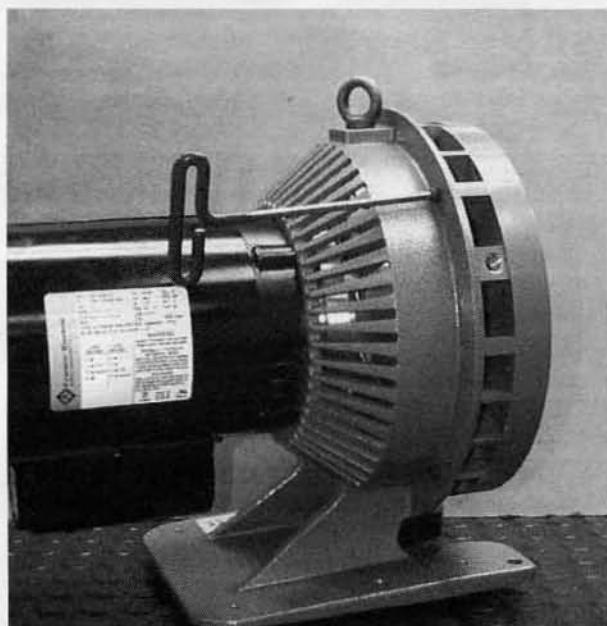


2. Remove the intake assembly from the top of the pump.
3. Remove and discard the O-ring from the groove on the underside of the intake fitting.

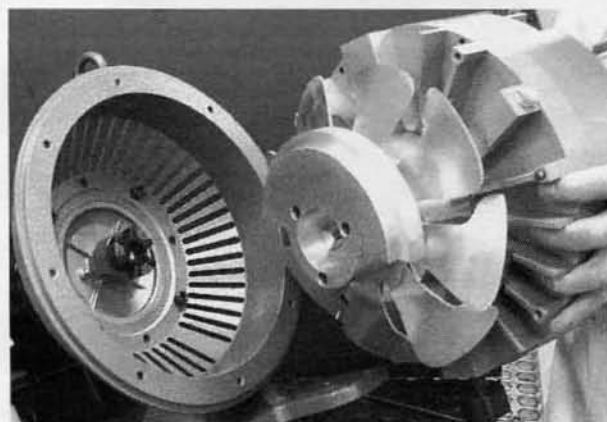
TriScroll Disassembly (continued)



4. Remove the three M5x16 screws that attach the cowl to the module.
5. Remove the cowl.

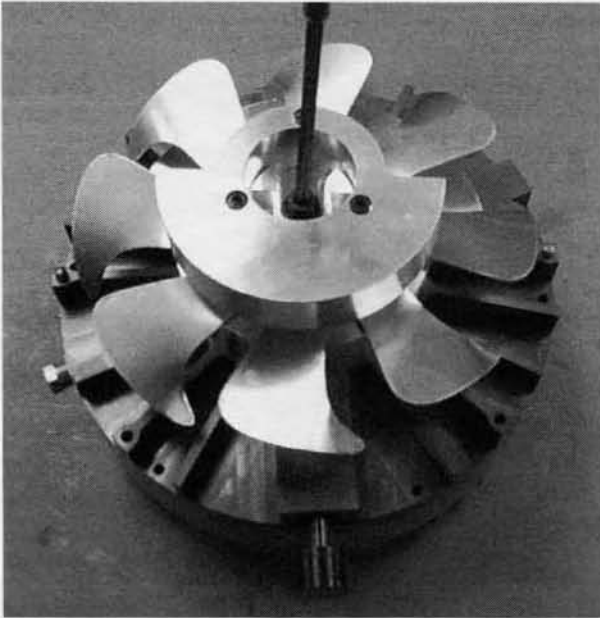


6. Remove the four M6x16 screws that attach the pump module to the frame.

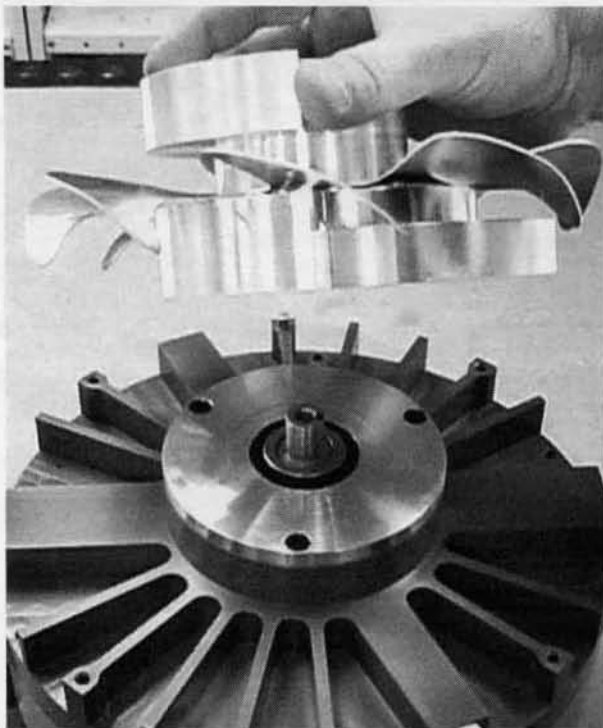


7. Remove pump module from the frame.

TriScroll Disassembly (continued)

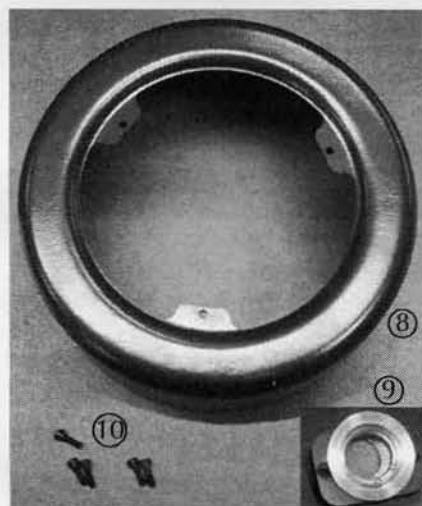
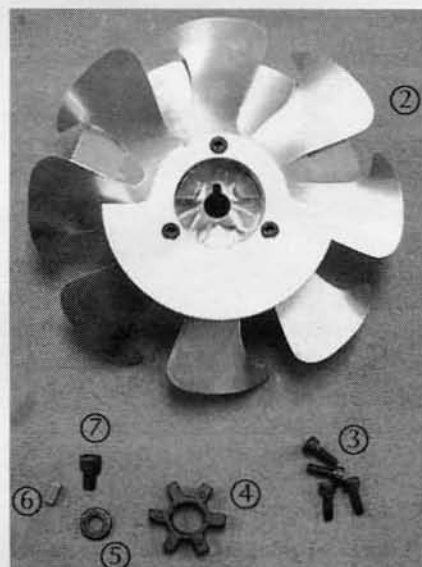
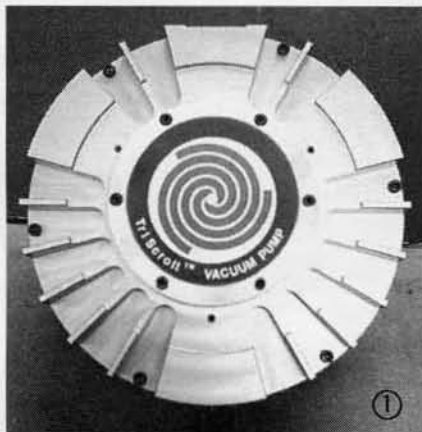


8. Remove M8x12 screw and washer attaching fan assembly to crankshaft.



9. Remove fan assembly from crankshaft.
10. Remove key from slot in crankshaft.

TriScroll Reassembly



Tool required:

Allen wrench

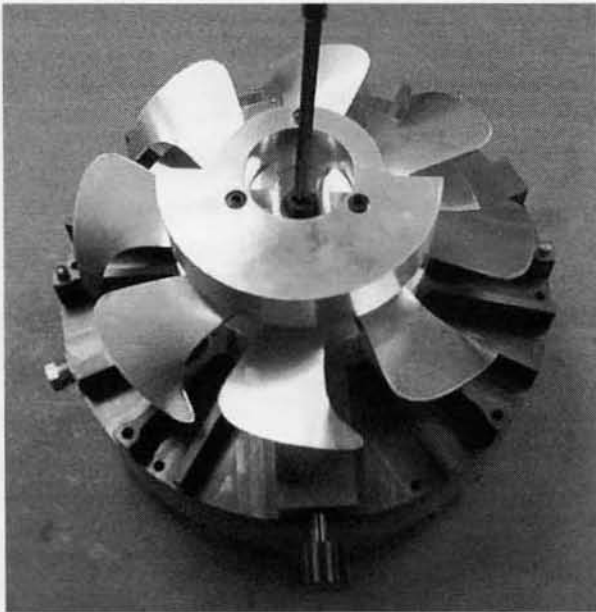
Krytox[®] GPL 224 grease

Locate the following items shown in the photos on the left:

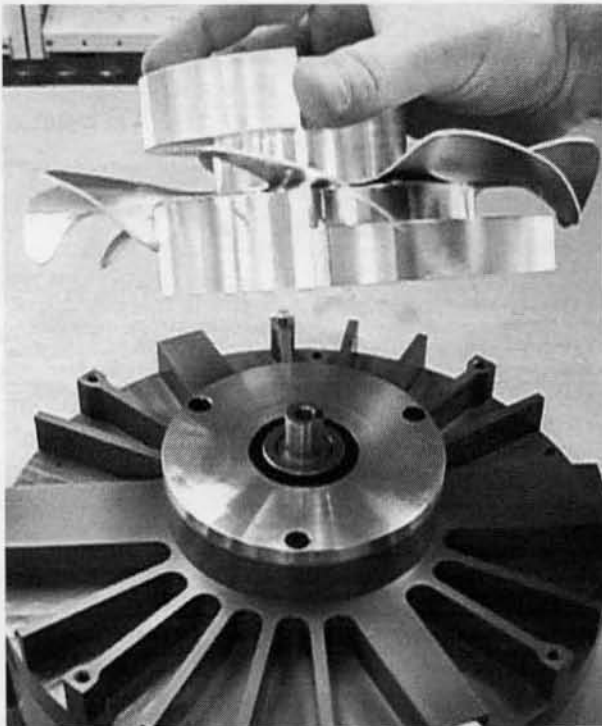
- ① Pump Module Assembly
- ② Fan Assembly
- ③ M6x16 screws (4)
- ④ Spider Coupling
- ⑤ Washer
- ⑥ Key
- ⑦ M8x12 screw
- ⑧ Cowling
- ⑨ Intake Fitting Assembly
- ⑩ M5x16 screws (5)

O-ring (2-127), included in pump module replacement kit (not shown in photo)

TriScroll Reassembly (continued)

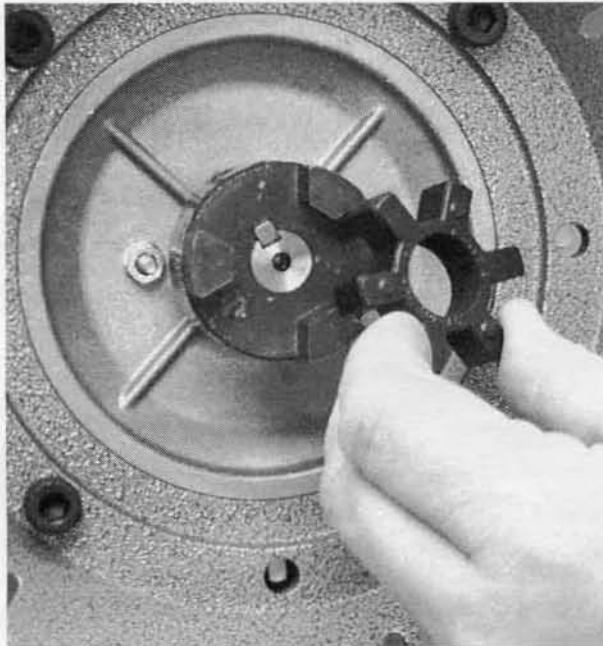


1. Install key in slot on crankshaft.

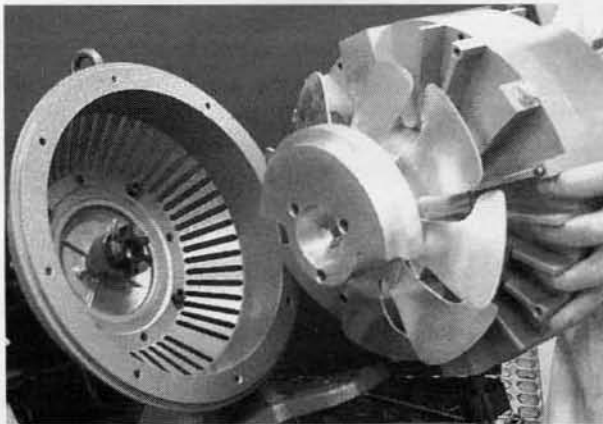


2. Slide fan assembly onto crankshaft engaging key and against seal spacer.
3. Secure fan assembly to crankshaft with M8x12 screw and washer previously removed in step 8 on page 6.

TriScroll Reassembly (continued)



4. Insert spider in motor coupling.



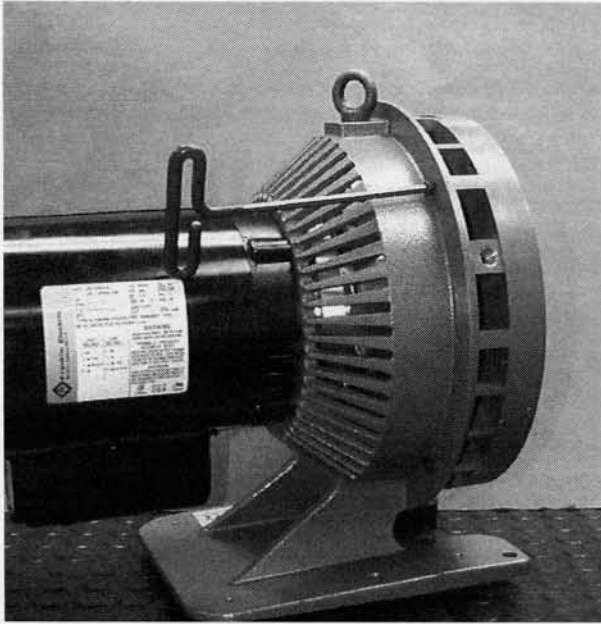
5. Install pump module on frame, aligning fingers on fan assembly with fingers on coupling. Assure proper fit of dowel pins on mating holes in frame.

NOTE

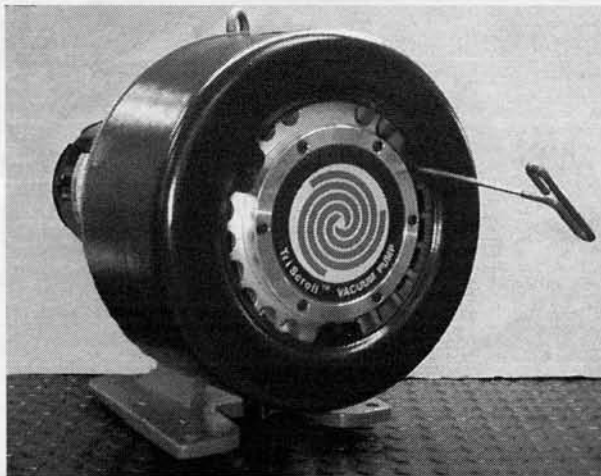


Exhaust fitting in the downward position.

TriScroll Reassembly (continued)

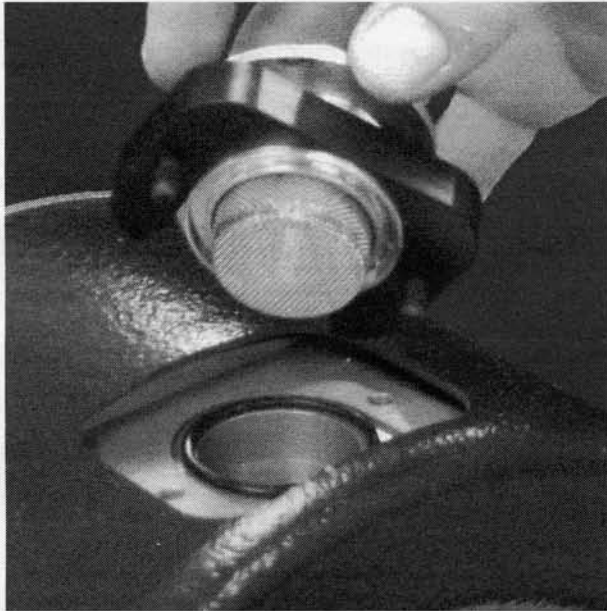


6. Secure pump module to frame with four M6x16 screws.



7. Install cowling over pump module. Secure with three M5x16 screws.

TriScroll Reassembly (continued)



8. Lightly grease the 2-127 O-ring and insert it into the groove on the intake fitting.
9. Place the intake assembly into the top of the pump.



10. Secure the fitting with two M5x16 screws.

TriScroll Reassembly (continued)



This figure illustrates a fully reassembled TriScroll 600 Series Pump.

Pump Conditioning and Performance Verification

Pump Module conditioning and performance verification has been performed at Agilent factory. Further conditioning or performance verification is not necessary.