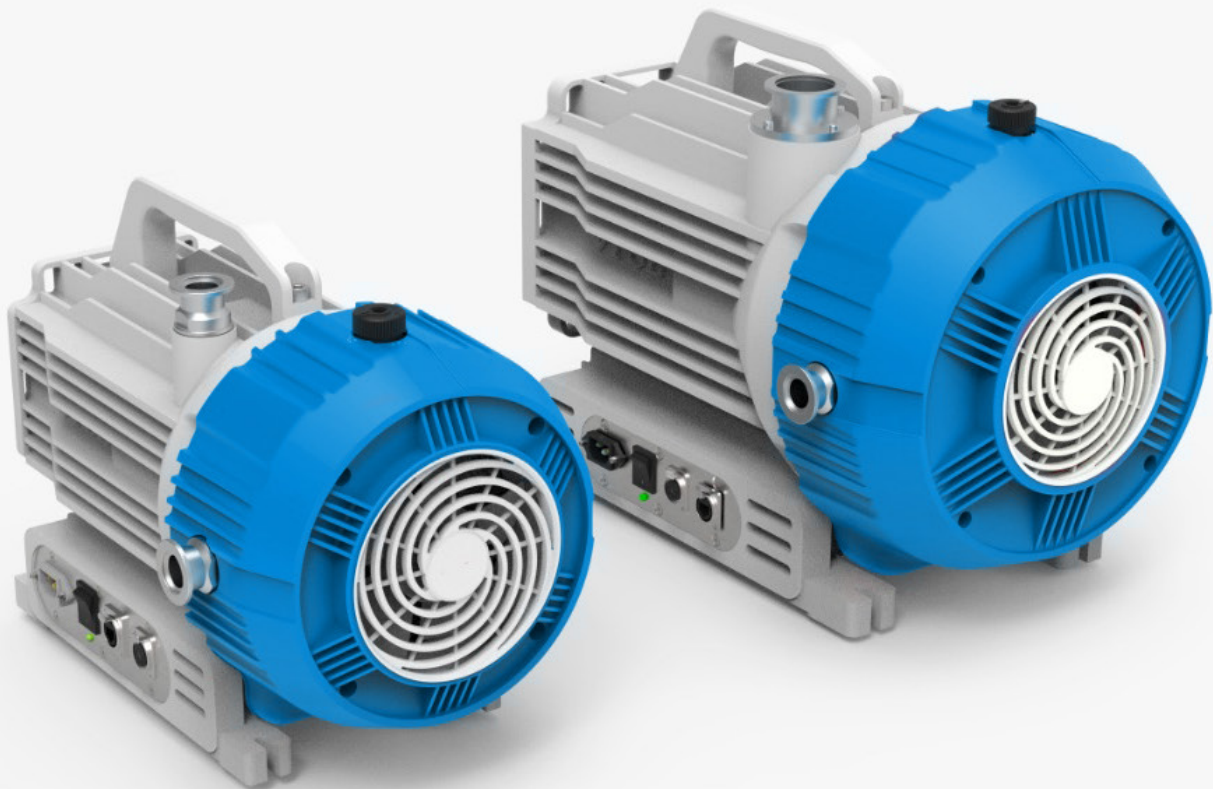


WAVE

WAVE

RADIUS 36

Instruction Manual



© Copyright
Wave Trockensysteme GmbH
Stiegengasse 11
1060 Vienna
Austria

+43 699 15852848
www.wave.cc
mike@wave.cc

CONTENTS

Importantp.03 Safety Notes

01p.04 Product Introduction

- 1.1.Features
- 1.2.Technical parameters

02p.06 Safety & Operation

- 2.1.Inspection
- 2.2.Packing list
- 2.3.Storage and transportation
- 2.4.Dimension drawing

03p.09 Interface

04p.09 Application

05p.10 Maintenance

06p.11 Troubleshooting

07p.13 Warranty

Important Safety Notes

WAVE Dry series scroll vacuum pump is a completely oil-free and clean vacuum pump. It adopts the most advanced bellows isolation structure in the world to completely isolate the compression chamber and the bearing. It also uses fewer bearings to make the pump quieter and more reliable. At the same time, it can extract non-corrosive organic solvents and has stronger water vapor processing capacity. The WAVE Dry scroll vacuum pump is equipped with an independent controller, which makes the pump more intelligent, and can realize the operation of speed regulation, current limiting, and voltage stabilization of the pump according to the end user's process. Due to the scroll compression and tip seal structure, the pump is not suitable for pumping flammable, explosive, highly corrosive and particulate-containing applications.

Warning! Failure to observe the following precautions could result in serious personal injury.



Disconnect all power sources before starting any maintenance or repair work on the WAVE Radius 36 vacuum pump



Do not touch the air inlet or the air inlet of the cooling fan of the pump with hands or tools to prevent inhalation and damage to the human body when the pump is running



WAVE Radius 36 vacuum pumps are not suitable for operation in potentially explosive atmospheres. Please contact us before planning to use the pump in this condition



When the WAVE Radius 36 vacuum pump is running, the exhaust temperature is high, so it is not advisable to directly touch the exhaust port with your hands to prevent burns.

Warning! Failure to observe the following precautions could result in damage to the pump



Do not allow ingestion of small objects (screws, nuts, washers, wire pieces, etc.) through the pump inlet port



Foreign matter is not allowed to poke into or cover the air inlet port of the cooling fan



Do not cover the exhaust port of the pump to prevent damage to the pump due to excessive exhaust pressure



Do not use this pump for applications producing abrasive or cohesive powders or condensable vapors.



The pump is only suitable for operation within the specified water vapor tolerance



The pump is only suitable for use with the specified power supply;

INTRO- DUCTION

Features

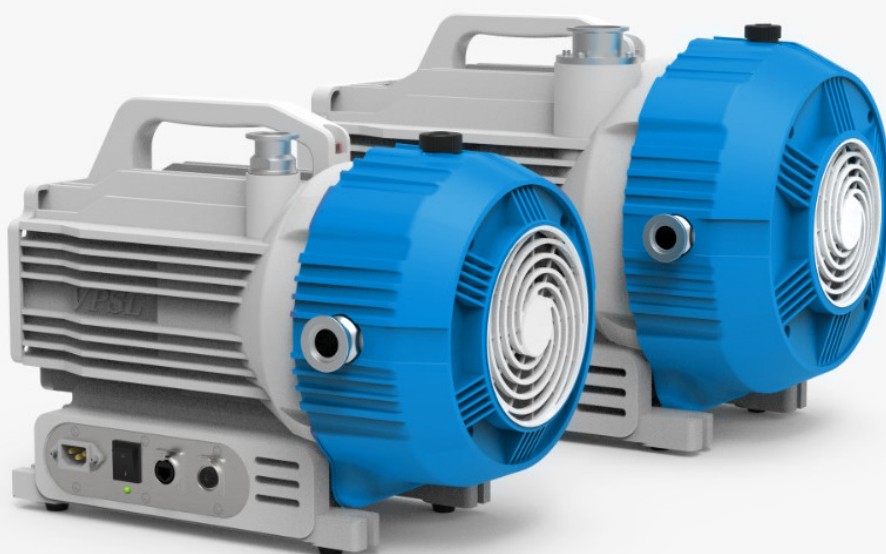
The WAVE Radius 36 vacuum pump is a completely oil-free, clean vacuum pump with no risk of oil and gas contamination with following advantages;

01 Simple structure, few parts, low vibration and noise, high reliability

02 The working pressure range is wide, because the change of the compression volume is continuous, so the change of the driving torque is small, and the change of the power is small

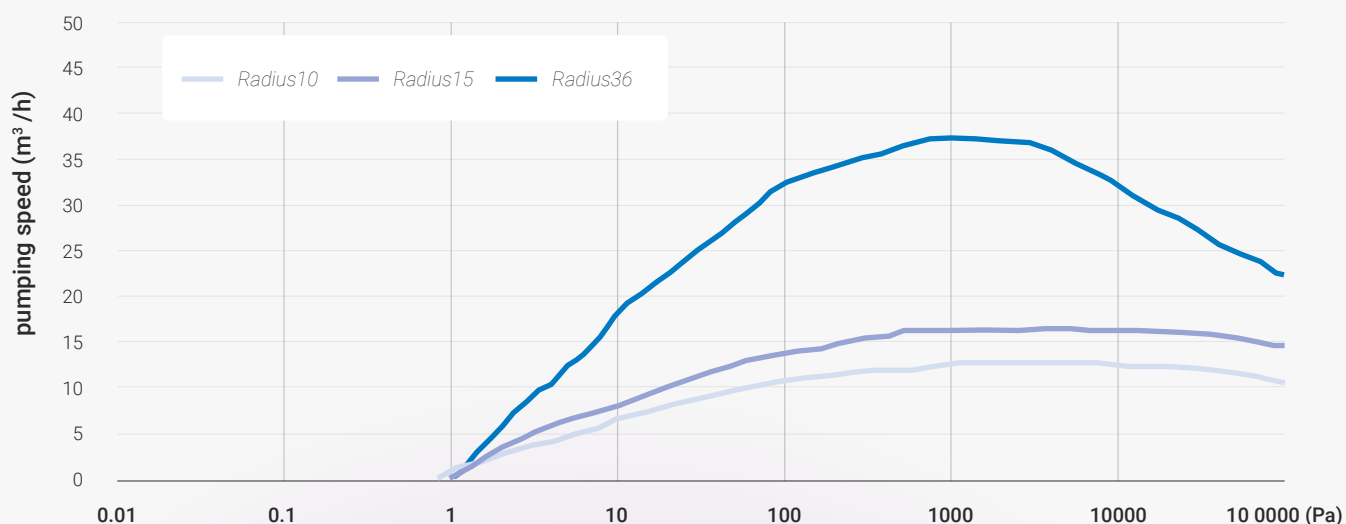
03 Since it works in an oil-free environment, there is no pollution to the pumped container, and condensable gases can be pumped out

04 Since the main parts of the compression chamber are made of anodized aluminum and PTFE, it cannot pump out corrosive, especially strong acid and strong alkali gases/liquids; (if only pumping out common organic solvent media, it can be used normally)



Technical Parameters

Data	Model	Radius10	Radius15	Radius36
Pumping speed	m ³ /h	12.2	16.0	36.0
Ultimate vacuum	mbar	0.007	0.007	0.009
Leak rate	W	400	400	1200
Voltage input	V	220-240	220-240	220-240
Rated power	dB (A)	53	53	56
Rotation speed	-	KF25/KF25	KF25/KF25	KF40/KF25
Noise level	g/hr	136	268	270
Inlet port flange	mbar·l/s	<1X10 ⁻⁶		
Outlet port flange	mm	438×268×300		517×325×358
Water vapor tolerance	kgs	26	27	47
Vibration at inlet port	-	air-cooled		
Cooling	°C	0~40		
Ambient temperature	50/60	50/60	50/60	50/60
Weight	-	KF25/KF25	KF25/KF25	KF40/KF25
Dimension L×W×H	g/hr	136	268	270



INSTALLATION & OPERATION

WAVE Radius 36 vacuum pumps are inspected and carefully packed before shipment to avoid damage from mishandling.

Inspection



Check to see if the product model is consistent with the model you ordered



Inspect the surface of the pump for signs of bumps, chipped paint or damage



Check whether the product and quantity are complete according to the packing list

If there is any inconsistency, please contact the factory's after-sales personnel or sales personnel as soon as possible after receiving the product.

Packing List

#	Name	Qty	Unit	Remark
1	Scroll vacuum pump	1	pc	
2	Instruction manual	1	pc	<i>Including warranty</i>
3	Inspection certificate	1	pc	
4	KF flange cover	2	pc	
5	Power cable	1	pc	
6	KF meshed screen	1	pc	<i>Including O-ring</i>

Storage & Operation

storage ambient temperature -
30 °C to 70 °C

Operating ambient temperature
0 °C to 40 °C

If the pump must be installed in an enclosed area, air circulation fans may be required to ensure adequate cooling

humidity (during operation)
Not higher than 90%

Altitude (during operation)
Not higher than 2000m

Notes

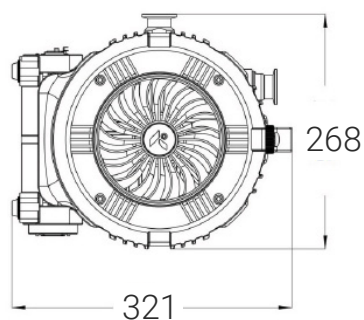
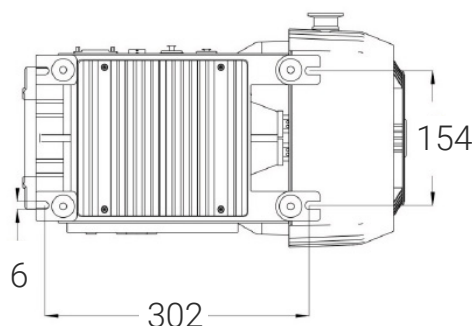
Use flexible stainless steel bellows in the pipeline to reduce vibration transmission during operation

Before starting, check the conditions of each connection interface to ensure that there is no problem with the connection seal and will not affect the vacuuming rate

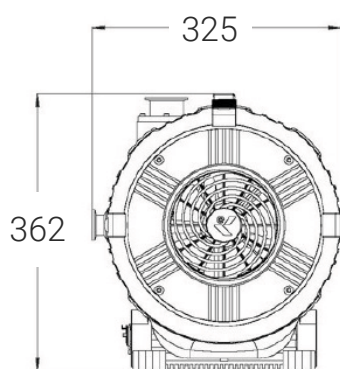
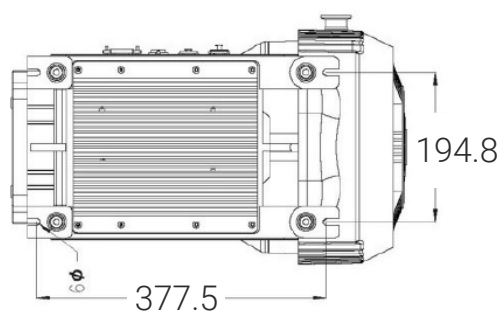
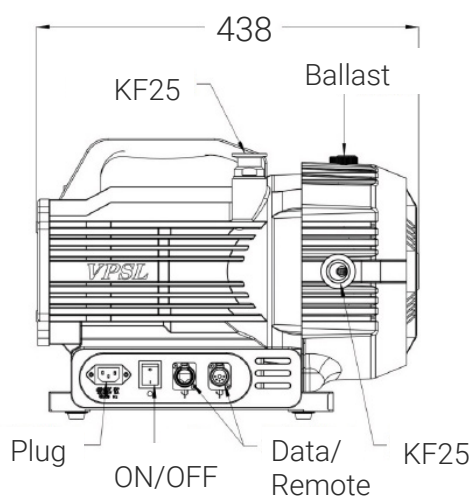
Make sure the airflow to the exhaust port is not obstructed or restricted in any way.

When the pump is started for the first time or after it has been idle for a long time, it is recommended to open the air inlet and outlet first, and run it for an appropriate amount of time. If the new pump is started for the first time, it can run for 15 seconds without opening. If the pump is idle for a long time after use, it can be operated for 15 seconds with the open mouth open and 30 seconds with the closed mouth closed, so that it can be operated in multiple cycles (generally controlled within 5 times). The purpose of open operation is to remove the possible residual water vapor and a small amount of wear in the compression chamber, so that the pump can perform better when vacuuming. (Note that when the pump is running open, due to gas compression, there will be a pulse effect with the atmosphere when the pump outlet is discharged, and there will be a loud noise of "puff puff").

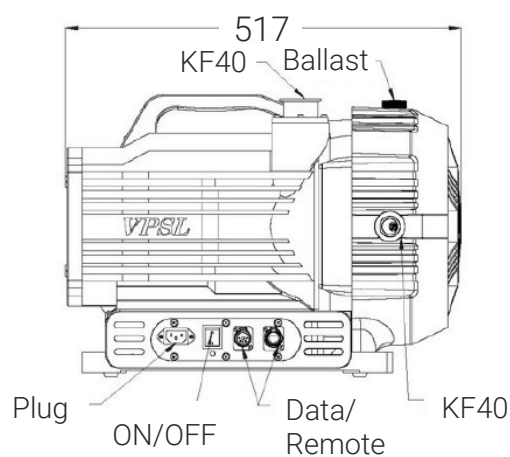
Installation Diagram



Radius10, 15



Radius36



INTERFACE

At present, the Radius series vacuum pumps all adopt the driver with 485 communication protocol.



- 1 Power connect
AC 220V~240**
- 2 3-pin cannon plug
External signal such
as pressure gauge**
- 3 5-pin cannon plug
Connect the operator/
PLC to communicate
with the host computer
(485 communication
protocol interface)**
- 4 Cannon plug
male**

Users who need to modify the operating parameters of the pump or need to use the 485 protocol for communication can consult us, or ask the salesman for the relevant instructions of the driver. You can also directly purchase operators, XLR interfaces, data cables, etc.

The company's existing data cable: 2 meters in length, one end is a 5-pin XLR interface (male, docked with the panel on the pump), the other end is a 5-pin cable connector (SF1210/P, docked with the PLC end), 5-pin

connector. The method is that the No. 1 needle is 485+, the No. 5 needle is 485-, and the remaining three pins are reserved.



Application

This product should not be used to pump out acidic or alkaline solutions or gases, especially mediums containing strong acidity and alkalinity. Such substances will corrode the static plate, moving plate and other materials of the pump to a certain extent, thereby affecting the performance of the pump and reducing the service life of the pump; This series of products can be used in the application of extracting organic solvent components. If the pumped medium or target contains water vapor or liquid water, or water vapor or liquid water will be generated during the vacuuming process, in order to improve the drainage performance, the gas ballast valve needs to be opened, this application process will affect the effective pumping rate of the pump, which will prolong the time to obtain a better vacuum degree, and also lead to the deterioration of the ultimate vacuum degree;

If you have other special requirements, please contact us in time.

MAINTENANCE

In order to achieve a good sealing effect, the WAVE Radius 36 vacuum pump uses a PTFE-based Tip-seal in the compression chamber. During normal use, the seal will produce a small amount of powder. This is a normal phenomenon. The sealing material is Eco-friendly material.

During the pumping process, if the customer feels that the exhaust sound of the pump is too noisy (due to the gas pulse at the exhaust port during the operation of the pump, the pump will produce a certain amount of airflow noise), a muffler with a filter must be installed (at best It is best to use the muffler filter device designated by the manufacturer to prevent the filter aperture of the muffler filter device from being small, the flow resistance is too large, and damage to the machine), it is recommended that the customer regularly (operating time not exceed six months) internally check the filter part of the muffler Cleaning, cleaning or direct replacement of the internal filter element. After adding the muffler, due to the flow resistance, the exhaust pressure of the pump will increase slightly, which will cause the power and pump body of the pump to increase slightly during operation, which is a normal phenomenon.

At the same time, this product is not suitable for pumping the medium containing a lot of dust particles. The composition, size and content of the dust particles will have a certain impact on the normal operation of the pump.

Parts	Maintenance interval (Two years or 13000 hours)	Remark
Tip seal	○	
Back bearing assembly	○	
Main bearing	○	

- - Replace original parts

The maintenance work is done by the manufacturer or designated dealers, and users are not recommended to disassemble the machine by themselves. If it is found that the customer has disassembled the machine by himself during the warranty period, the warranty service for the machine will not be granted

In some special and complicated working conditions, the maintenance interval is shortened, please contact us for details.

When the pump meets the normal requirements and reaches a certain running time, some inspection and maintenance work is required, otherwise the performance index and service life of the pump will be affected.

When the machine is returned to the factory or the designated dealer for maintenance, the customer's packaging must ensure that the machine will not be damaged during transportation, and the packaging material must meet environmental protection requirements, otherwise the manufacturer or dealer will not be able to perform maintenance, and the pump will be returned to Shipping party.

TROUBLE-SHOOTING

! Trouble The pump does not run

🔍 Causes

⚙️ Processing method

Power line break

Check whether the power supply circuit is normal

The power terminal is loose and disconnected

Check for bad connections and repair, replace faulty wires

The supply voltage does not match the rated value of the motor

Check power

Defect pump

Return to factory for repair

! Trouble Poor ultimate vacuum

🔍 Causes

⚙️ Processing method

Improper measurement method or measuring instrument

Use the correct measurement method or measuring instrument. Measures the pressure directly at the inlet of the pump.

Poorly sealed vacuum line

Check the tightness of the pipes (leak detection)

Water vapor is sucked into the pump

1 Install a filter to prevent water vapor from entering

Exhaust port or exhaust duct is not smooth

2 Open the air inlet and let the pump work for a few minutes, plug the air inlet to open the gas ballast, and let the pump work for a while (about 1hr)

Gas ballast hole stuck or not closed

Check the exhaust line

Check the gas ballast



Trouble

Abnormal noise and vibration

Causes

Processing method

Loose connections

Tighten the screws on the connection

Mounted or placed shock feet not at the same height

Adjust the installation position of the pump so that the shock- absorbing feet of the pump touch the installation plane at the same time

Foreign matter has entered the main body of the pump

Return to factory for repair

Abnormal air outlet

Return to factory for repair

Abnormal motor

Return to factory for repair

Foreign matter enters cooling fan

Check the cooling fan for foreign objects



Trouble

The pressure in the system goes up too quickly after shutting off the pump

Causes

Processing method

Exhaust valve stuck

Clean the exhaust valve



Trouble

The pump is hotter than previously observed

Causes

Processing method

Cooling fan air intake is blocked

Check the cooling fan

Exhaust port is blocked

Check the exhaust port

The working environment temperature is too high

Improve working environment

Product Warranty

Model _____

Serial No _____

Date of manufacture _____

User _____

Date

Maintenance content

Personel

Notes

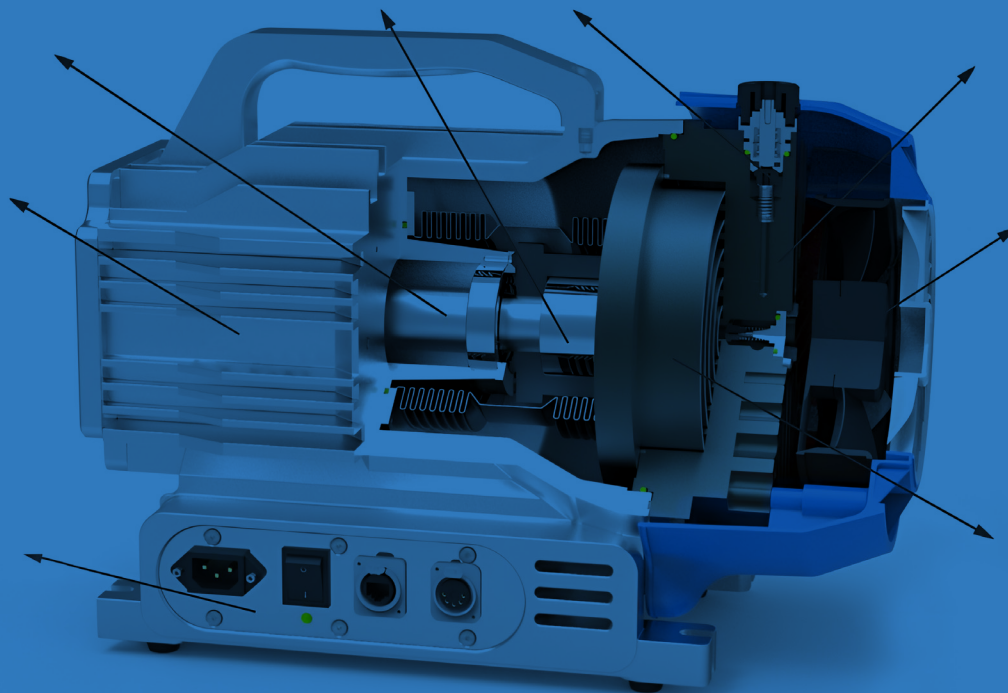
Anyone who purchases the WAVE Radius 36 scroll vacuum pump series products produced by our company will be guaranteed for 12 months from the date of purchase with the warranty card. Any damage caused by non-users within the warranty period will not be charged for repairs.

In any of the following cases, no warranty or warranty charges;

- 1 The user disassembles the product without authorization or modifies or processes.
- 2 Improper storage or use by the user.
- 3 The damage caused by other reasons belongs to the user.

WAVE RADIUS 36 VACUUM PUMP

Instruction Manual



© Copyright
Wave Trockensysteme GmbH
Stiegengasse 11
1060 Vienna
Austria
+43 699 15852848
www.wave.cc
mike@wave.cc