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VP3 Vacuum Pump



Operating Instructions

CE

ivoclar vivadent technical

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KONFORMITÄTSERKLÄRUNG
DECLARATION OF CONFORMITY
CERTIFICAT DE CONFORMITÉ
DICHIARAZIONE DI CONFORMITÀ
DECLARACIÓN DE CONFORMIDAD
DECLARAÇÃO DE CONFORMIDADE

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CE

Produkt / Product / Produit / Prodotto / Producto / Produto

Vakuumpumpe VP 3

DE Hiermit erklären wir in alleiniger Verantwortung, dass das oben aufgeführte Produkt den erwähnten Normen entspricht.
Gemäss den Bestimmungen der EU-Richtlinie(n):

GB We herewith declare that the product listed above complies with the mentioned standards.
Following the provisions of Directive(s):

FR Par la présente, nous déclarons que le produit ci-dessus indiqué est conforme aux normes énoncées.
Conformément aux dispositions de la (des) Directive(s) CE:

IT Con la presente dichiariamo sotto la nostra responsabilità, che il prodotto sopra menzionato corrisponde alle norme citate.
Secondo le disposizioni della/e Direttiva/e CEE:

ES Por la presente declaramos que el producto arriba indicado cumple con las normas citadas.
Siguiendo las indicaciones de la Directiva:

PT Declaramos que o produto citado cumpre as normas mencionadas.
De acordo com as especificações da(s) Diretriz(es):

73/23 EWG 89/336 EWG	EN 55014 EN 50081-1 EN 50082-1 EN 60555-2 EN 60555-3 EN 61010-1	1993 1992 1992 1987 1987 1994

Schaan, 16.01.2002

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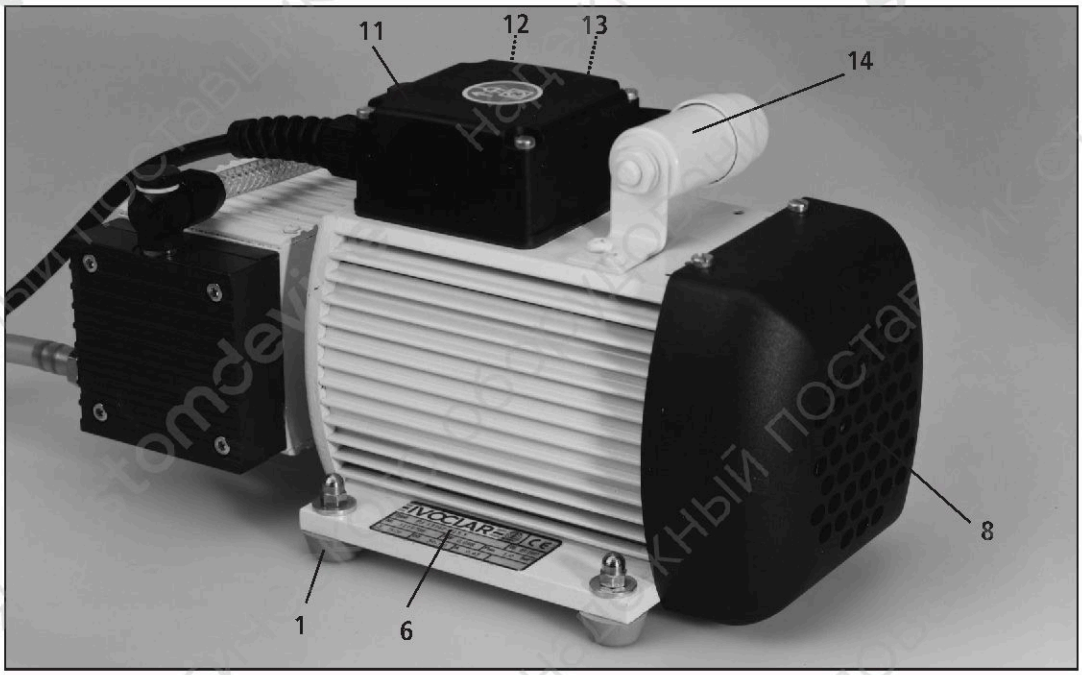
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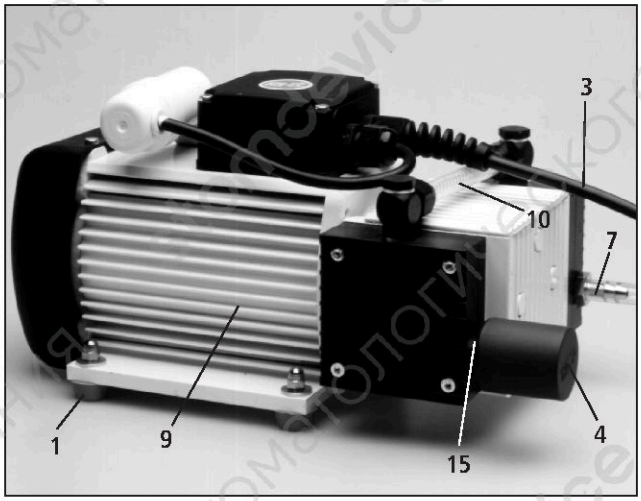
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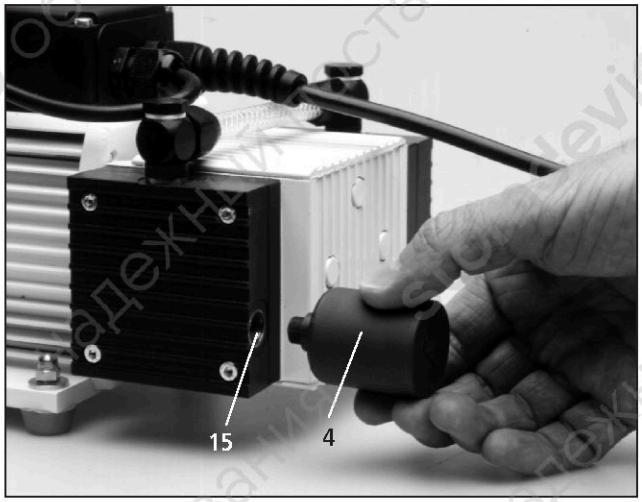
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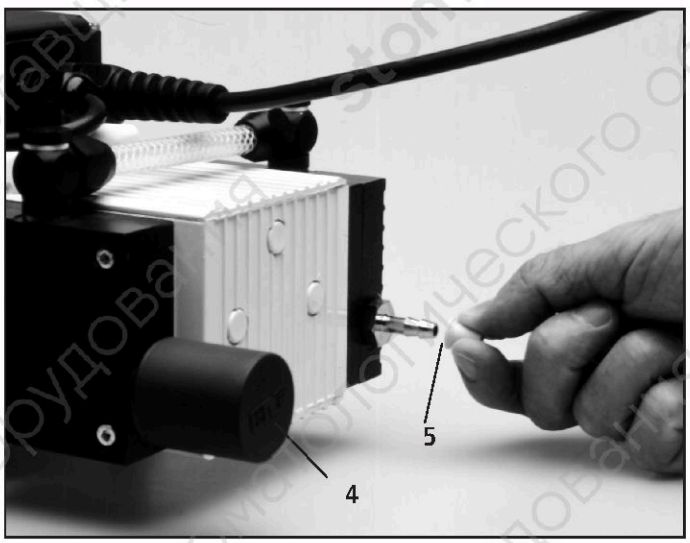
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List of Parts:

1 Rubber feet
2 Pump power plug
3 Power cord
4 Sound absorber
5 Protective cap
6 Rating plate
7 Vacuum hose connection
8 Air vents
9 Housing
10 Connection tube
11 Connection cover
12 Fuse holder
13 Fuse
14 Condenser
15 Sound absorber connection

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1. Introduction

1.1 Preface

Dear Customer
Thank you for having purchased the
Programat® Vacuum Pump. This apparatus is a high-quality, technical product. Please read the Operating Instructions carefully and use the apparatus according to the Instructions. Should your have any further questions, please do not hesitate to contact your local distributor or Ivoclar Vivadent AG directly.

1.2 Introduction

Apparatus: VP3 Vacuum Pump
Target group:
Dental lab personnel

This vacuum pump is suitable for evacuating the firing chamber of the Programat ceramic furnace and the IPS Empress® press furnace. It is a quietly-running double-diaphragm pump with high vacuum performance.

These Operating Instructions are designed to assure the correct, safe, and economic use of the VP3 Vacuum Pump. They are divided into several, clearly structured chapters to help you find specific topics quickly and easily.

Signs and symbols (pictographs) are used to inform you quickly and clearly about health risks, important details, and contraindications.

We recommend keeping the Instructions in a safe place near the pump so that they are immediately accessisble if necessary. Should you lose the Operating Instructions, extra copies can be ordered at a nominal fee from your local Ivoclar Vivadent Service Center.

1.3 Signs and symbols

The signs and symbols in these Operating Instructions and on the pump facilitate the finding of important points and have the following meanings:

Operating Instructions:


Risks and dangers


Information


Contraindication

Pump:


Alternating current

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2. Safety First

This chapter is especially important for personnel who work with the VP3 Vacuum Pump or who have to carry out maintenance or repair work. This chapter must be read and the corresponding instructions followed.

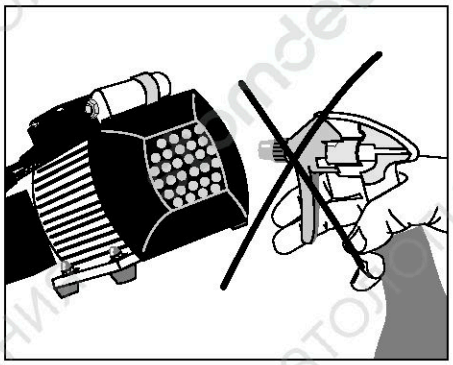
2.1 Indications

This vacuum pump has been developed especially for the evacuation of Programat ceramic furnaces and IPS Empress press furnaces from Ivoclar Vivadent and it should be used for this purpose only.

Other uses than the ones stipulated are contraindicated. The manufacturer does not assume any liability for damage resulting from misuse. The user is solely responsible for any risk resulting from failure to observe these Instructions.

Further instructions to assure proper use of the pump:

- The instructions, regulations, and notes in the vacuum pump Operating Instructions must be observed.
- The pump must be operated under the indicated environmental and operating conditions (Chapter 9).
- The VP3 must be properly maintained.

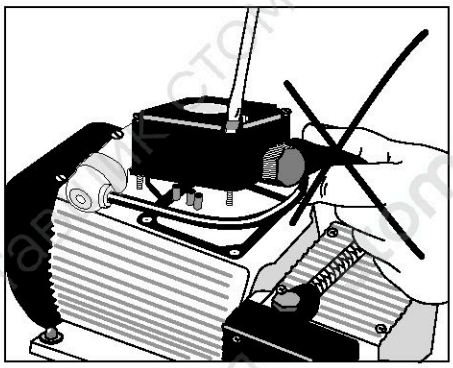


2.1.1

⚠

Risks and dangers

Foreign objects or liquids must not enter the air vents, since this may block the motor or result in an electrical shock.



2.1.2

⚠

Risks and dangers

The connection cover must not be opened while the pump is connected to the power socket, since this may result in an electrical shock. The connection cover may only be opened by ther personnel of a certified Ivoclar Vivadent Service Center.

The connection cover, which is marked with the label shown below, may only be opened once the power has been disconnected (interruption of the power supply) by qualified service personnel. Please observe the relevant rules and regulations, as well as other recognized safety and medical regulations.



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2.2 Health and Safety Instructions

- Make sure that the pump is only used for the indications stipulated in these Operating Instructions.
- Do not use the pump in areas where there is an explosion hazard.
- Components connected with the pump must comply with the pneumatic data of the pump.
- Observe the corresponding safety regulations wenn connecting the pump to the electronic network.
- If the operation of the pump is interrupted by the thermoswitch because of over-heating, the pump starts automatically once it has cooled down. Make sure that no danger results from such an incidence.
- Observe the corresponding safety instructions for the media used.
- Use only original spare parts.
- The pump complies with the safety regulations of the following EC guidelines:
  73/23 EEC (low voltage guideline)
  89/336/EEC (electromagnetic compatibility)
- If the pump has been stored at very low temperatures or high atmospheric humidity, the pump as to be dried or left to adjust to the room temperature for approx. 1 hour (do not connect to the power yet).



Do not work with liquids near the pump. Should a liquid accidentally enter the pump, disconnect power and consult Customer Service. Do not operate the pump

- The pump is tested for use at altitudes of up to 2000 m above sea level.
- The furnace may only be used indoors.



Any disruption of the protective conductor either inside or outside the pump or any loosening of the protective conductor connection may lead to danger for the user in case of malfunction. Deliberate interruptions are not tolerated.



Do not use furnaces of other manufacturers that are not coordinated with the pump. Ask the corresponding manufacturer for further details. The vacuum pump has been especially developed for use with the Programat ceramic furnaces and must be used for this -purpose only.

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3. Product Description

3.1 Components

The VP3 Vacuum Pump consists of the following components:

- Vacuum pump with power cord
- Vacuum hose (accessory)

3.2 Functional description

The diaphragm squeezed between the cylinder head and the housing is moved up and down by a con-rod. The vacuum is built up by means of suction and eduction valves in the cylinder head.

3.3 Hazardous areas and safety equipment

Description of the hazardous areas of the pump:

Hazardous area	Type of risk
Fuse holder	Electrical shock
Air vents	Electrical shock

Description of the safety features of the pump:

Safety equipment	Protective effect
Protective conductor	Protection from electrical shock
IP44 (protection type)	Protection from electrical shock
Thermoswitch	Protection from overheating

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4. Installation

4.1 Unpacking and checking the contents

Remove the pump from its packaging and check it for any transportation damage. We recommend keeping the original packaging for any transportation purposes. Use only the original packaging for shipping.

Do not carry the pump by holding it by the connection hose (10), condenser (14), or sound absorber (4). Support the bottom of the pump with both hands when carrying it.

4.2 Selecting the location

Place the pump on a flat surface using the rubber feet (1). Make sure the pump is not exposed to direct sunlight. Do not place the pump in the immediate vicinity of heaters or other sources of heat.

4.3 Making the connections

Checking the rating plate and power supply
Make sure that the voltage indicated on the rating plate (6) complies with the local power supply. Should this not be the case, do not connect the pump.

Connecting the vacuum hose
Remove protective cap (5) from the vacuum hose connection (7) and slip vacuum hose on the vacuum hose connection (7). Connect the other end of the vacuum hose with the furnace.

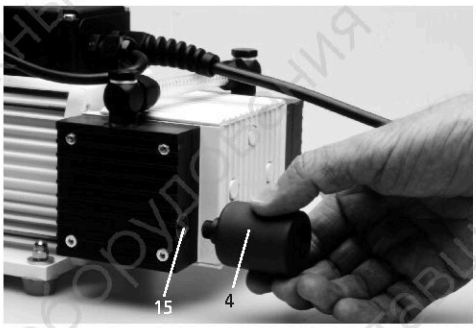
Please check if the hose is properly connected.

Connecting the power
Plug pump power plug (2) of the power cord (3) into the corresponding socket in the Programat.

The electrical installation in the room where the pump is used must comply with the local and IEC requirements.

4.4 Mounting the sound absorber

The sound absorber must be mounted prior to setting the VP3 Vacuum Pump in operation. Mount the sound absorber (4) at the sound absorber connection (15) (see picture below).



The sound absorber is supplied dismounted to avoid damage during transportation.

Sound absorber for the Vacuum Pump VP3

Depending on the intended use, there are two sound absorbers available for the Vacuum Pump VP3.

Sound absorber **Type B** (small) **551 718** VP3 for use in conjunction with ceramic furnaces (e.g. Programat P100, Programat X1)

Sound absorber **Type P** (large) **561 756** VP3 for use in conjunction with press furnaces (e.g. EP 600)



The sound level with the sound absorber Type P is slightly higher than that with the Type B sound absorber.

For assembly instructions, please refer to the Operating Instructions of the Vacuum Pump VP3.

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5. Start-Up

The vacuum pump is automatically controlled by the furnace, once the power cord of the pump has been connected with the Programat furnace.

6. Operation

The pump is operated by the furnace programs.

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7. Maintenance, Cleaning, and Diagnosis

For safety reasons, disconnect pump power plug (2) before maintenance and cleaning.

7.1 Monitoring and Maintenance

Basically, the diaphragm vacuum pump does not require maintenance. However, the time for maintenance procedures depends on the frequency of use and the location of the pump. For that reason the recommended times are only approximates.

This apparatus has been developed for typical use in the dental laboratory.

If the product is used in a production facility, for industrial applications, or in continuous firing operation, premature ageing of certain spare parts have to be expected.

These spare parts are e.g.:
- Heating muffle
- Insulation material
- Lamps

These spare parts are not covered by the warranty. Please also observe the shorter service and maintenance intervals.

What	Part	When
Check all plug-in connections for correct fit.	Connections	weekly
Check the hose to make sure that no condensation water has accumulated in the system.	Vacuum hose	weekly

7.2 Cleaning

Remove dust from the pump from time to time. Use a vacuum cleaner with a cleaning brush for that purpose.

Item	Frequency	Cleaning material
Housing	if required	soft, dry cloth
Sound absorber (4)	if it is dirty	sound absorber has to be replaced

7.3 Notes on maintenance

Changing the fuse
The diaphragm may only be changed by an Ivoclar Vivadent Service Center. The fuse must be changed by qualified personnel.

Please observe the relevant rules and regulations for the prevention of accidents as well as the safety and medical regulations. The connection cover that is marked with the label shown below may only be opened by qualified personnel after the power has been disconnected.

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8. What if ...

8.1 Technical malfunctions

Malfunction	Double-check	Action
1 The pump is not working	Is the pump correctly connected?	Connect pump correctly.
	Are the fuses OK?	Have the fuses changed by qualified personnel.
	Has the thermoswitch been activated because of overeating?	Allow the pump to cool and switch on again.
		Check pump location for adequate circulation of air.
		If the problem cannot be solved, contact your local Ivoclar Vivadent Service Center.
	Sound absorber clogged	Replace sound absorber.
2 The vacuum performance is declining or is bad	Has the test program for the pump been carried out?	Carry out the test program for the pump (PX1).
		Send vacuum pump to Service Center for maintenance
3 Vacuum pump is unusually noisy.	Is the sound absorber defective or incorrectly mounted?	Connect sound absorber correctly or replace it, if it is defective.
	Is there a leak in the furnace system or the pump?	Check connections and hose for tightness.
		Clean sealing of the furnace head.
		Check pump performance with the corresponding test program in the Programat X1 furnace.

8.2 Repairs

Repairs may only be carried out by the personnel of a certified Ivoclar Vivadent Service Center. Please contact your customer Service representative.

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9. Product Specifications

9.1 Delivery form

Vacuum pump
Operating Instructions
Warranty Card

9.2 Technical data

Power supply:
200–240 V / 50–60 Hz
100–120V / 50–60 Hz

Tolerated voltage fluctuations: ±10%

Power consumption: 100 W

Suction strength: 14 NL / min

Final vacuum: below 20 mbar

Dimensions:
271 x 140 x 156 mm

Weight: 6.6 kg

Temperature range for operation:
+5 °C bis +40 °C
(+ 41 °F bis 104 °F)

Types of fuses:
200–240V = 1 AT
110–120V = 2.5 AT
Diameter 5 x 20 mm

Safety information
The VP3 Vacuum Pump complies with the following guidelines:

- EN 61010, Part 1
- EMV tested

9.3 Acceptable operating conditions

Acceptable temperature range
+ 5 °C bis + 40 °C
(+ 41 °F bis 104 °F)

Acceptable height
The pump is tested for use at altitudes of up to 2000 m above sea level. Ambient pressure of 500 mbar to 1060 mbar.

9.4 Acceptable transportation conditions

Ambient temperature of
-20 °C to +55 °C
(-4 °F to +131 °F).
80 % maximum relative humidity.

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Version: 3
Date information prepared: 10/2004

This apparatus has been developed solely for use in dentistry. Start-up and operation should be carried out strictly according to the Operating Instructions. Liability cannot be accepted for damages resulting from misuse of failure to observe the Instructions. The user is solely responsible for testing the apparatus for its suitability for any purpose not explicitly stated in the Instructions. Descriptions and data constitute no warranty of attributes and are not binding.

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ivoclar vivadent: technical

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