

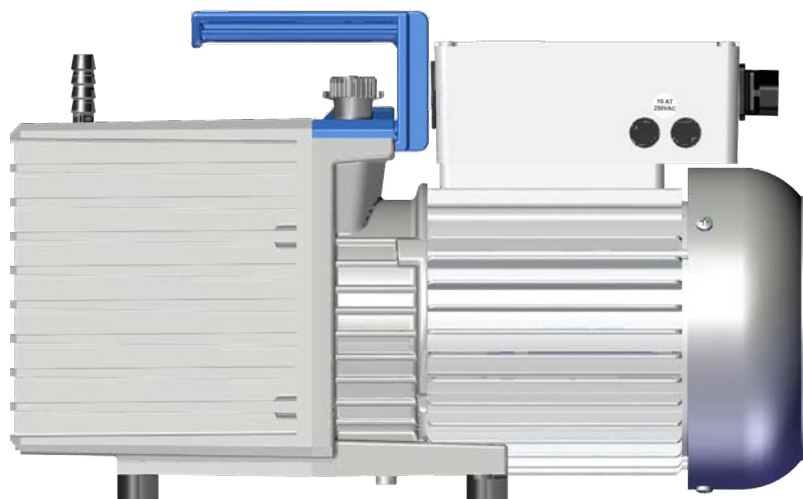
ROTARY VANE PUMPS

RE 2.5

RZ 2.5

RE 6

RZ 6



Instructions for repair



**Original instructions
Keep for further use!**

This manual is only to be used and distributed in its complete and original form. It is strictly the user's responsibility to carefully check the validity of this manual with respect to the product.

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*Thank you for purchasing this product from **VACUUBRAND GMBH + CO KG**. You have chosen a modern and technically high quality product.*

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1 Introduction

Make yourself familiar with the device.

Use this manual as reference for the repair of your device.

1.1 User information

Safety

Instructions for use
and safety



- Read this manual thoroughly and completely before starting repair. Keep this manual in an easily accessible location.
- Observe all safety instructions provided also in the instructions for use of the device and in the document “Safety instructions for vacuum equipment”! The document ”Safety information for vacuum equipment - Sicherheitshinweise für Vakuumgeräte” is part of the instructions for use!
- In addition to this manual, adhere to any relevant local accident prevention regulations and comply with industrial safety regulations.

General

General
information

- The illustrations in this manual are provided as examples. They are intended to aid in your understanding.
- **VACUUBRAND GMBH + CO KG** reserves the right to modify or change the product design and/or technical specifications at any time without advanced notice.

Copyright

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Contact

Contact us

- Please ask for replacement in case of incomplete instructions for use. Alternatively, you can download instructions for use on our web page: www.vacuubrand.com.
- Contact us regarding any questions about this product, if you need further information, or to provide us with feedback.
- When contacting our Customer Service Department, please be sure to have the data from the rating plate.

1.2 About this document

1.2.1 Symbols and icons

Safety symbols



Warning symbol.

Additional icons



Refers to content of other documents.

Additional notes

IMPORTANT! Information or specific use recommendation, which must be observed.

Convention for additional notes






- ⇒ Helpful tips
- ⇒ Additional information

1.2.2 Display conventions

Warning levels

Convention for warnings

	DANGER
	<p>Indicates an imminent hazardous situation.</p> <p>Disregarding the situation will result in serious and even fatal injury or death.</p> <p>⇒ Take appropriate action to avoid dangerous situation!</p>
	WARNING
	<p>Indicates a potentially hazardous situation.</p> <p>Disregarding the situation could result in serious, even fatal injury or massive damage to property.</p> <p>⇒ Observe instruction to avoid dangerous situation!</p>
	CAUTION
	<p>Indicates a potentially hazardous situation.</p> <p>Disregarding the situation could result in slight or minor injury or damage to property.</p> <p>⇒ Observe instruction to avoid dangerous situation!</p>

Individual step (single step)

Design of steps

- ⇒ Do the described step.
- Result of action.

Multiple steps

Graphic

1. First step,
 2. next step.
- Result of action.

Follow steps in the described order.

2 Safety instructions

All safety instructions must be observed by all individuals working with the products described here.

Maintenance and repair are intended to ensure the functional condition or the return to function in the event of a failure.

Repair includes troubleshooting and remedy.

2.1 Target groups

Qualified personnel

Maintenance and repair may only be carried out by suitable qualified personnel.

The qualified personnel has to carry out the necessary work in accordance with the statutory requirements (e.g., safety at work, environmental protection).

The function and safety of the device must not be impaired.

The qualified personnel must be adequately informed of the risk involved in their intervention.

The qualified personnel must be adequately informed of potentially hazardous substances in the device.

2.2 Safety precautions

Quality standards and safety

Products of **VACUUBRAND GMBH + CO KG** are subject to high quality tests with goals for safety and operation. Prior to delivery each product has been tested thoroughly.

Nevertheless, during operation unforeseen dangerous situations may occur which may lead to injuries or damage of property. Therefore observe the following chapter and take the appropriate safety precautions.

2.2.1 Personal responsibility

Qualification and
personal
responsibility

Ensure that only authorized and skilled personnel works with the equipment. This is particularly important with regard to troubleshooting and remedy.

- ⇒ Carefully read these instructions for repair before starting work.
- ⇒ Replace wear parts regularly.
- ⇒ Never operate a defective or damaged device.
- ⇒ Personal safety has top priority!
- ⇒ Always be conscious of safety.
- ⇒ Observe the owners' directives at work, the national accident prevention regulations and occupational safety provisions.

2.2.2 Eliminate sources of danger

Use only in proper
working condition

Only use the vacuum system when it is in proper working condition.

- ⇒ Carry out maintenance and repair outside the hazardous area, i.e., outside potential explosive atmospheres.

Safe work

The owner must determine additional protective measures to ensure safe personal protection if work has to carry out inside a hazardous area.

- ⇒ Observe the operating instructions of the owner.
- ⇒ Switch off the device prior to maintenance and repair.
- ⇒ Secure the device against restarting.

Dangerous voltage

Parts may carry dangerous voltages for some minutes even when the device is switched off.

To avoid fatal injuries to not carry out any work during this period.

- ⇒ Mark activities at the device appropriately, e. g. using a instruction plate. Ensure that the instruction plate is available also during temporary interruption.
- ⇒ Afterwards restore the protective equipment immediately, if you have deactivated safety functions and protective equipment due to maintenance or repair work.
- ⇒ Replace defective components by new components with the same order number or by equivalent components.
- ⇒ Prevent the entry of liquids or dust in the device.

Health hazards

The device may be contaminated with substances dangerous to health or otherwise dangerous substances.

- ⇒ Decontaminate or clean the device prior to maintenance or repair, if necessary.
- ⇒ Observe safety and protective measures when working with hazardous substances.
- ⇒ Ask regularly for actual material safety data sheets.
- ⇒ Observe the owners' hazardous substances operating instructions.
- ⇒ Wear your personal protective equipment.

2.3 Environmental protection

Observe environmental regulation

Observe the national and international environmental regulations for disposal of your product as well as spare parts. This is especially valid for all components that are contaminated with hazardous substances. Dispose of chemicals, e. g., cleaning agent, according to regulations.

Scrapping and waste disposal

Proper disposal

As a result of increased environmental awareness and more stringent general requirements imposed by environmental legislation a proper scrapping and disposal of no longer usable or non-reparable equipment is required.



If you wish to dispose of a VACUUBRAND electrical or electronic device, this must be done separately from unsorted municipal waste. This is indicated by the symbol of the crossed-out wheelie bin (see illustration).

VACUUBRAND offers to dispose of your device with this symbol for you.

To do this, please contact our service team.





Please note the data privacy rules and delete all data on the device.

service@vacuubrand.com

Tel.: +49 9342 808 5660

3 Notes concerning repair

IMPORTANT! Replace defective parts in any case.

	WARNING
	<p>Risk of injury due to a disassembled device. Operating a disassembled device may lead to personal injury.</p> <ul style="list-style-type: none"> ⇒ Never operated a opened or disassembled device. ⇒ Ensure that a disassembled device never starts unintentionally.
	WARNING
	<p>Damage due to an overaged motor capacitor. If an old motor capacitor fails, the capacitor may get hot. It may even melt or emit a flame,</p> <ul style="list-style-type: none"> ⇒ Check every capacitor regularly by measuring its capacity and estimating its operation time. Exchange old capacitors early enough to prevent a failure. ⇒ The capacitors have to be replaced by a qualified electrician.
	CAUTION
	<p>Damage due to defective wear parts. Defective wear parts may lead to failure of the device.</p> <ul style="list-style-type: none"> ⇒ Wear parts have to be replaced in time.
	DANGER
	<p>Danger of electric shock. Improperly executed repairs will result in an electrical shock.</p> <ul style="list-style-type: none"> ⇒ Check the electrical safety of the device according to IEC 61010 and national regulations after repair. ⇒ Check the protective conductor resistance. ⇒ Check the insulation resistance. ⇒ Carry out a high voltage test. ⇒ Check the leakage current according to DIN EN 50678:2021 (EN 50678:2020) and national regulations.

3.1 General notes

- Oils
- ⇒ Comply with all relevant laws and regulations for the handling, storage and disposal of oils.
 - ⇒ Use only oil of the recommended type. Other oils or operating fluids may damage the pump or cause hazards.
 - ⇒ Prevent oil from entering sewers or bodies of water.
 - ⇒ Do not spill oil. Clean up spilled oil immediately. Spilled oil means danger of slipping!
 - ⇒ Prevent the release of hazardous, toxic, explosive, corrosive, harmful or environmentally hazardous fluids, gases or vapors as well as oil vapors, e.g. by using suitable laboratory equipment with fume hood and ventilation control.
 - ⇒ Ensure that the installation site of the vacuum pump is well ventilated.
 - ⇒ Do not breathe in oil vapors.
 - ⇒ Use your personal protective equipment when working with pump oils to avoid skin contact and possible irritation.
 - ⇒ Wet all sliding surfaces with the vacuum pump oil you are using to operate the pump before reassembly.
 - ⇒ Use new sealing rings / O-rings.
 - ⇒ Stretch new O-rings before insertion for better fit if necessary.



Sealing rings

3.2 Prior to maintenance and repair

Preparation

Genuine spare parts

⇒ Use only genuine spare parts and accessories.

When using components of other manufacturers the safety and performance of the equipment as well as the electromagnetic compatibility of the equipment might be reduced.

Possibly the CE mark or the C/US conformity (see rating plate) becomes void if not using genuine spare parts.

⇒ Check that the required tools and parts are available and of the correct type before you start your work.

⇒ Check the operating sequence mentally on feasibility, safety requirements and consequences on safety and function of the equipment using the exploded drawing, spare parts lists and, if necessary, the electrical circuit diagrams.

Separate from
mains

⇒ Separate the device from mains prior to maintenance or repair. Switch off the device and unplug.

⇒ Vent the device.

⇒ Allow the device to cool down.

⇒ Allow the capacitors to discharge.

3.3 After maintenance and repair

Testing

Testing

Check operability and safety after maintenance and repair.

⇒ Check the electrical safety according to IEC 61010 and national regulations after maintenance and repair.

⇒ Check the leakage current according to DIN EN 50678:2021 (EN 50678:2020) and national regulations.



In case of problems return the device to the factory for inspection or repair if necessary.

⇒ Observe section „Return“.

3.4 Cleaning the components



- ⇒ Dispose of used oil and solvents, taking into account any contamination from pumped-off substances / chemicals, in accordance with the relevant regulations.
- ⇒ Avoid damage to running and sealing surfaces.
- ⇒ Use clean oil and a lint-free cloth to clean sealing rings. Replace defective sealing rings.
- ⇒ Check the silencer nozzle for dirt. Clean a dirty noise damping nozzle with a wire (diameter 0.2 mm).
- ⇒ Use benzine or technical solvent to clean all other parts. Observe the regulations for handling solvents.
- ⇒ Dry all parts after cleaning.

3.5 Notes on pressing in shaft seals



- ⇒ Shaft seals should only be fitted using a special press-fit mandrel.
- ⇒ When pressing in, pressure must only be applied to the outer ring of the shaft seal.
- ⇒ When pressing in rotary shaft seals using a press-in mandrel, care must be taken to ensure that the mandrel can exit unhindered on the underside of the seal ring.

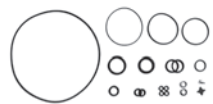
4 Maintenance



Dismantle the separator and the exhaust filter, if present, before servicing.



In the event of oil leakage from the pump (oil dripping from the bottom of the housing), it is often sufficient to replace only the replacement sleeve or the oil reservoir seal. The pump oil does not have to be drained for this.



During maintenance, all seals / O-rings should always be replaced.

Maintenance kit RE/RZ 2.5 and RE/RZ 6: 20648977

4.1 Tools



Tool kit 22612186

- Puller sleeve for coupling
- Press-in mandrel 3 for shaft seal
- Press-in mandrel 4 for shaft seal
- Press-in mandrel 7 for shaft seal
- Puller for coupling with cap screws and wing screw
- Screwdriver M4 negative
- Screwdriver M5 negative

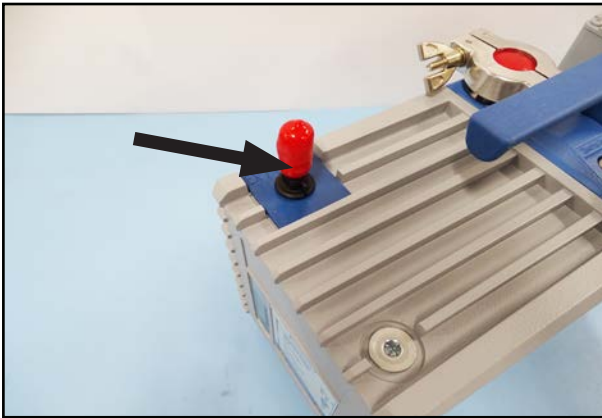
⇒ The tool set contains parts which are not required in individual cases.



Tools

- Hexagon socket SW 3/4/5
- Open-end wrench SW 14
- Phillips screwdriver size 2
- Screwdriver with flat blade size 1/2
- Needle nose pliers
- Puller for coupling
- Ring wrench (for puller)

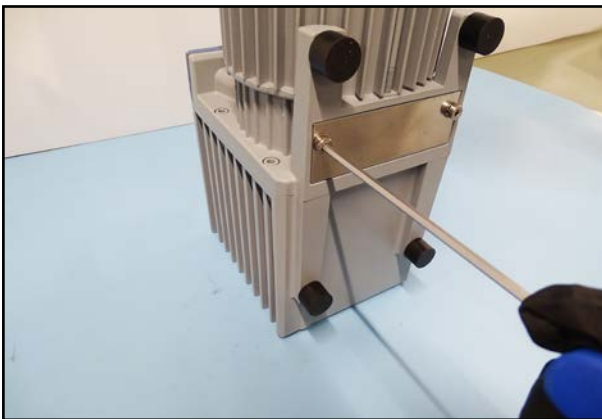
4.2 Replacing the removable sleeve



1. Close the pump outlet.



2. Place the pump on the oil reservoir (on the rating plate).



3. Unscrew the suction felt cover.



4. Replace the suction felt if it is soaked with oil.



5. Unscrew the fan cover.



6. Lift the fan cover by tilting it sideways over the fan wheel.
 ⇒ Avoid damaging the fan wheel.



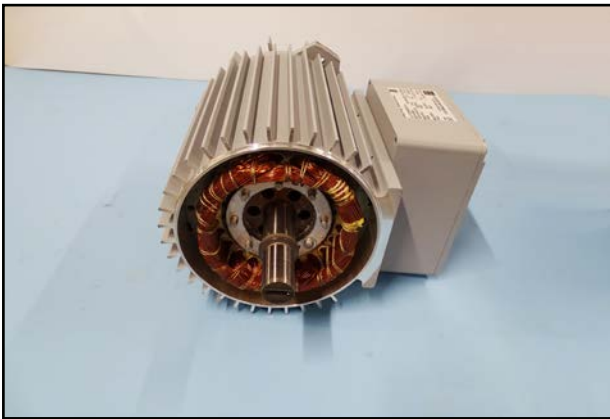
7. Loosen the screws.



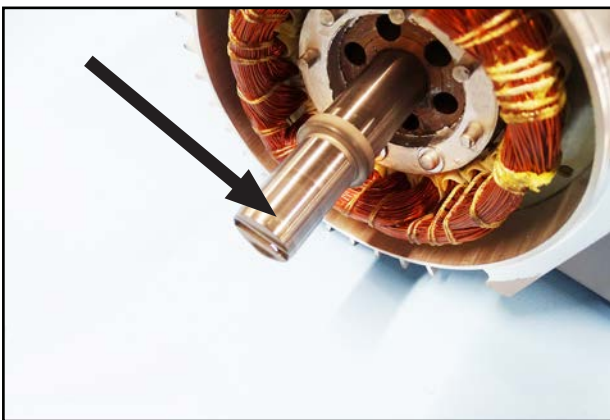
8. Pull out the screws.



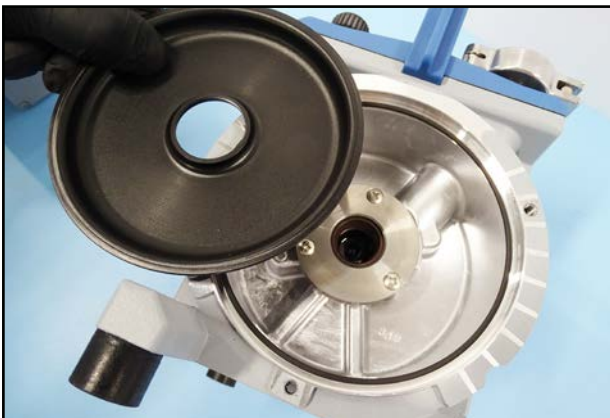
9. Lift the motor out of the housing.



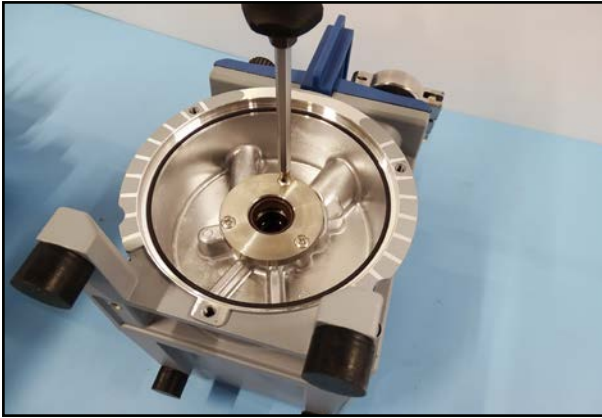
10. Lay the motor down as shown.
⇒ Avoid pulling the rotor out of the stator pack.



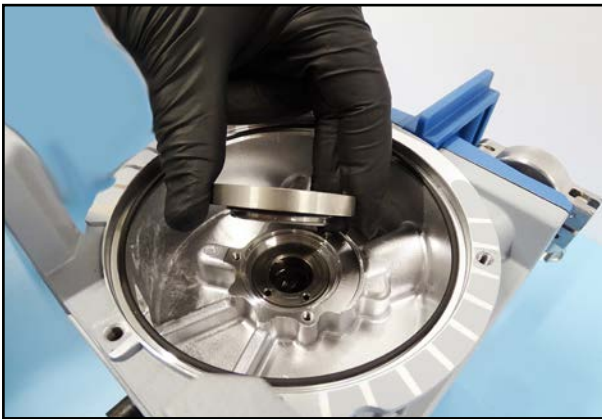
11. Check the coupling for run-in marks (“fingernail test”).
⇒ Replace the coupling if indentations can be detected, see section “Maintenance”.



12. Lift the protective wall out of the housing.



13. Unscrew the removeable sleeve.



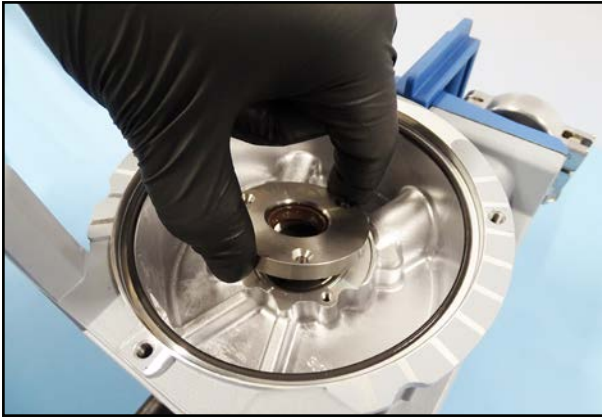
14. Lift out the removeable sleeve.



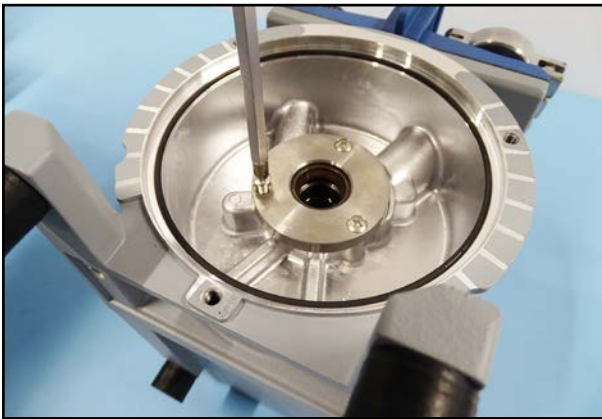
15. Place a new O-ring around the new removeable sleeve.



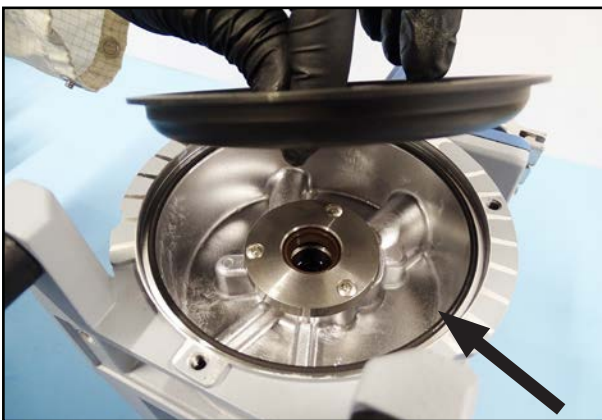
16. Fill the space in front of the removeable sleeve with the vacuum pump oil with which you operate the pump.



17. Insert the removeable sleeve.



18. Screw the removeable sleeve tight.



19. Insert the protective wall.

- ⇒ Ensure that the O-ring is correctly seated in the housing.
- ⇒ Alternatively, the O-ring can also be placed around the protective wall for installation. Use a little grease for better hold of the O-ring.



20. Carefully place the motor in the housing.

- ⇒ The terminal box of the motor must be aligned in the direction of the pump.



⇒ A gap may occur when inserting the motor.



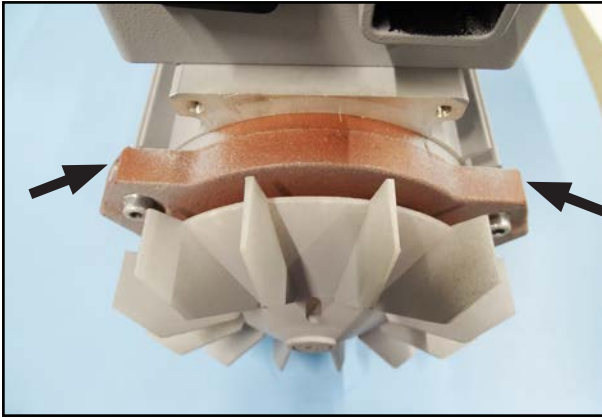
21. Turn the fan wheel slightly until the motor slides completely into the housing.



22. Screw the motor tight.



23. Note the orientation of the fan cover.



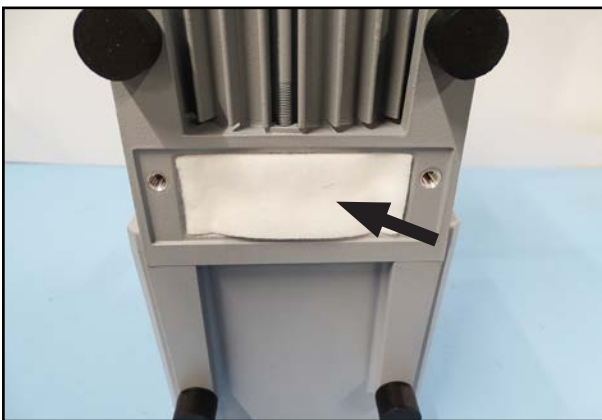
24. Align the fan cover at the marked points.



25. Thread the fan cover onto the motor flange by tilting it sideways over the fan wheel.

⇒ Avoid damaging the fan wheel.

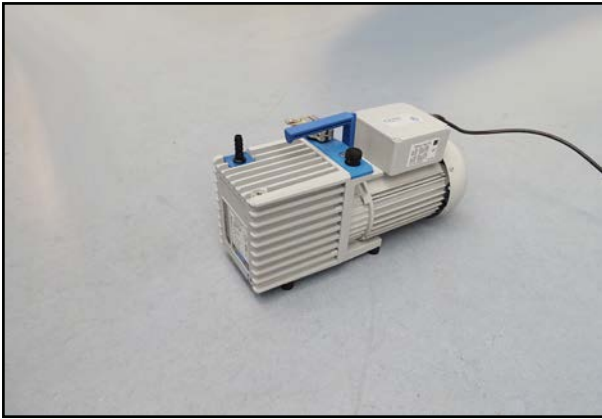
26. Screw the fan cover tight.



27. Place (if necessary a new) suction felt in the housing.



28. Screw the cover of the suction felt.



29. Place the pump on the pump feet.
30. Let the pump run for approx. 1 hour with the outlet open, the gas ballast valve open and the inlet port closed.



DANGER

Danger of electric shock.

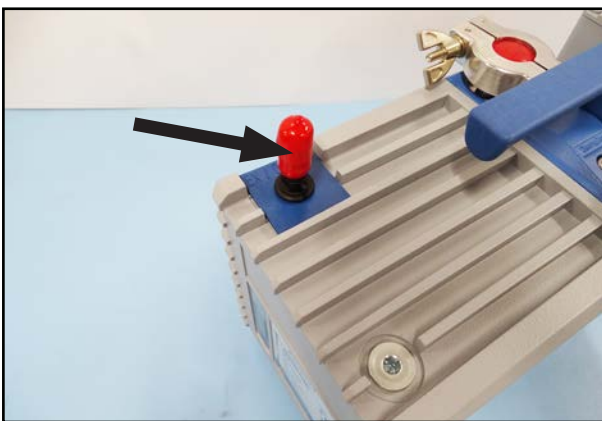
Improperly executed repairs will result in an electrical shock.

- ⇒ Check the electrical safety of the device according to IEC 61010 and national regulations after repair.
- ⇒ Check the protective conductor resistance.
- ⇒ Check the insulation resistance.
- ⇒ Carry out a high voltage test.
- ⇒ Check the leakage current according to DIN EN 50678:2021 (EN 50678:2020) and national regulations.

4.3 Maintenance RE 2.5 and RE 6



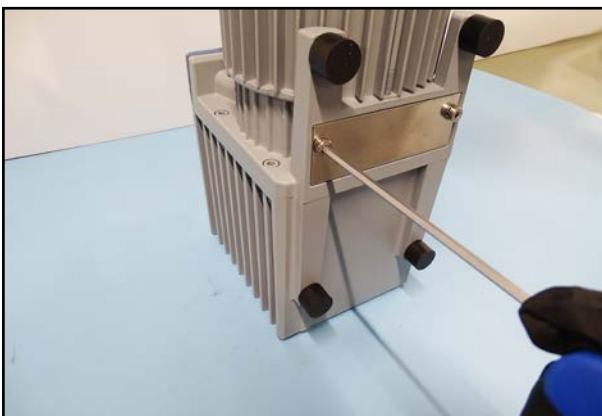
1. Unscrew the oil drain plug and drain the oil.
2. Screw the oil drain plug back in.



3. Close the pump outlet.



4. Place the pump on the oil reservoir (on the rating plate).



5. Unscrew the suction felt cover.



6. Replace both suction felts if soaked with oil.



7. Unscrew the fan cover.



8. Lift the fan cover by tilting it sideways over the fan wheel.

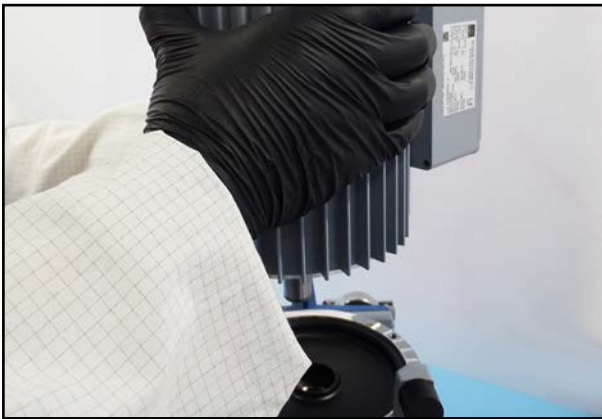
⇒ Avoid damaging the fan wheel.



9. Loosen the screws.



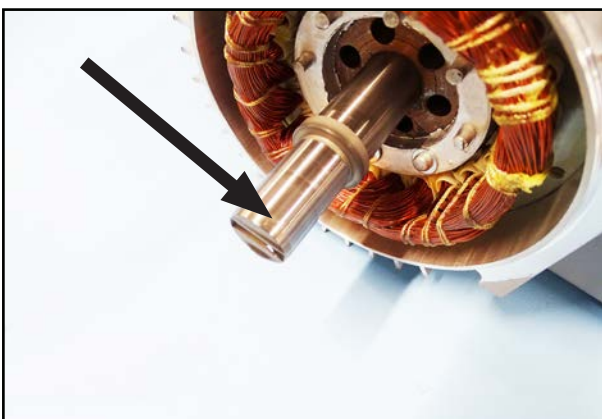
10. Pull out the screws.



11. Lift the motor out of the housing.



12. Lay the motor down as shown.
⇒ Avoid pulling the rotor out of the stator pack.



13. Check the coupling for run-in marks (“fingernail test”).
14. Replace the coupling if indentations can be detected.



15. Place the motor on the fan wheel.
16. Put the extraction sleeve onto the motor shaft.



17. Position the puller on the extraction sleeve and coupling as shown.



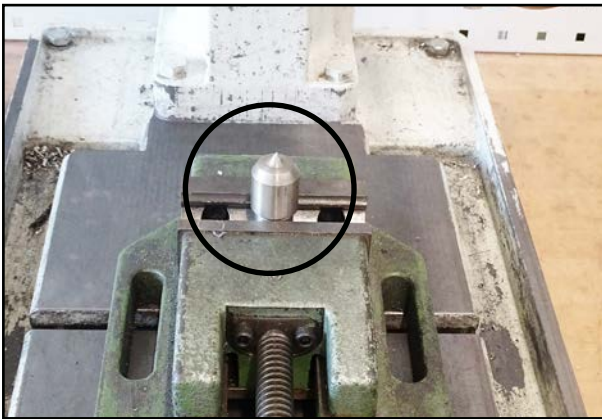
18. Place a ring wrench on the puller.
 19. Turn the puller with the ring wrench until the coupling is pulled off.
- ⇒ The shim washers must not be removed.



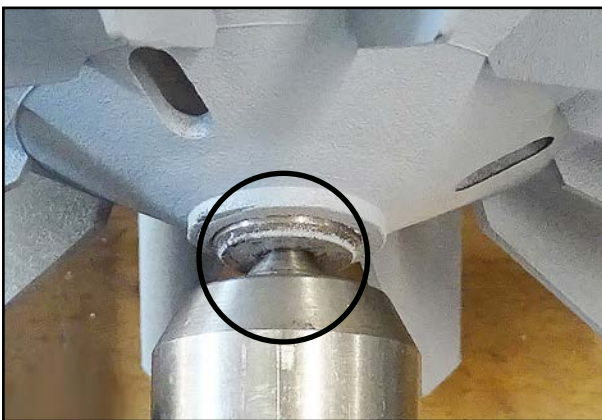
20. Remove the tolerance ring from the motor shaft using a flat blade screwdriver.



21. Slide a new tolerance ring over the motor shaft using a flat-blade screwdriver.



22. Clamp a mandrel, e.g. in a pillar drill or hand lever press.



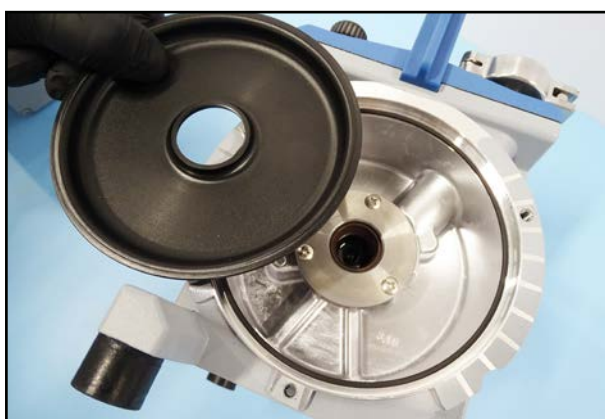
23. Position the motor shaft on the mandrel as a counter bearing.



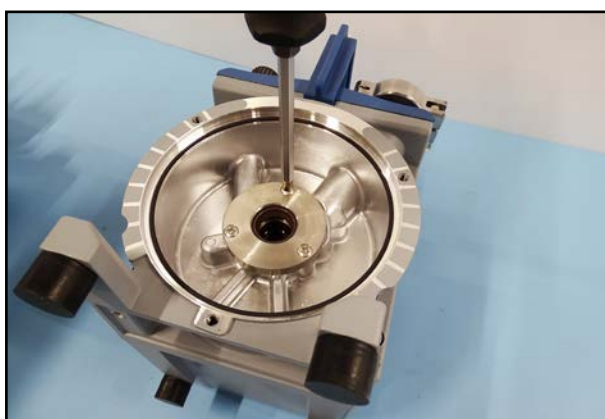
24. Place the coupling on the motor shaft.



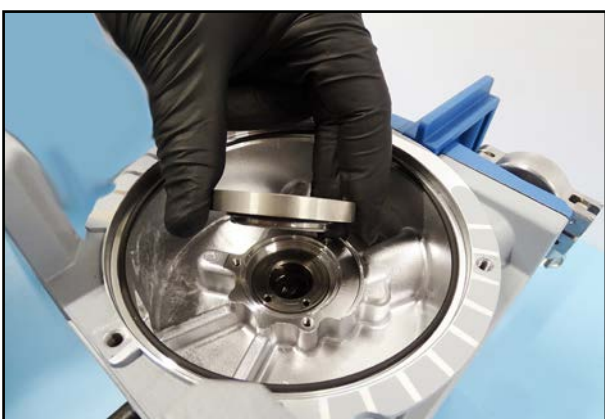
25. Press the coupling in as far as it will go.



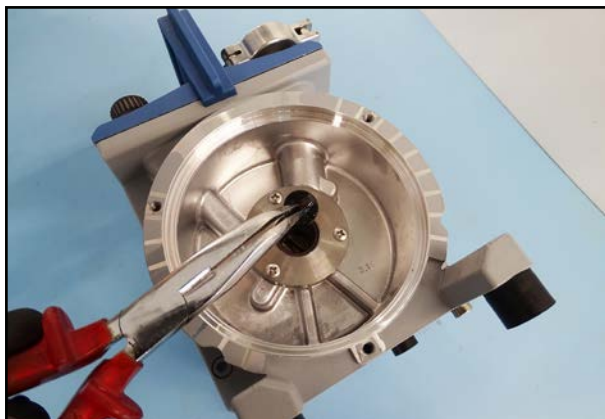
26. Lift the protective wall out of the housing.



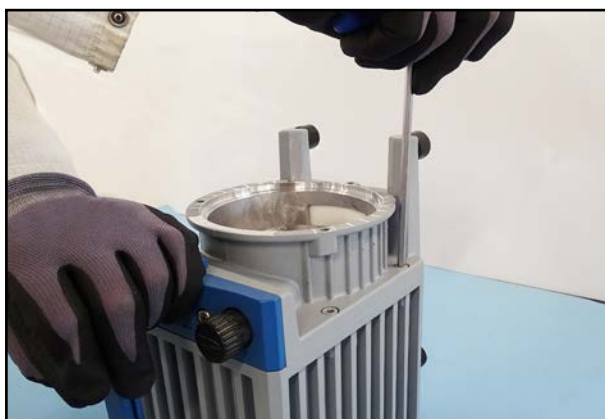
27. Unscrew the removable sleeve.



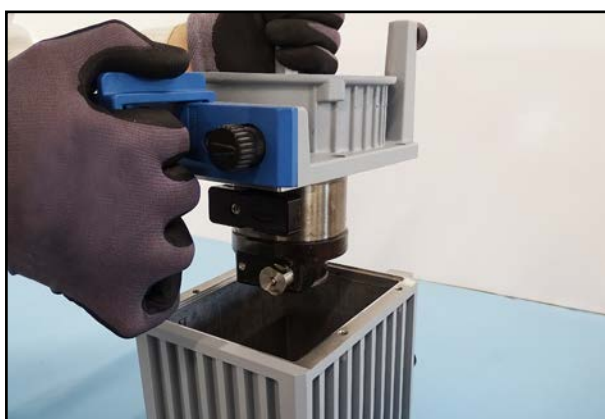
28. Lift out the removable sleeve.



29. Remove the cross coupling.



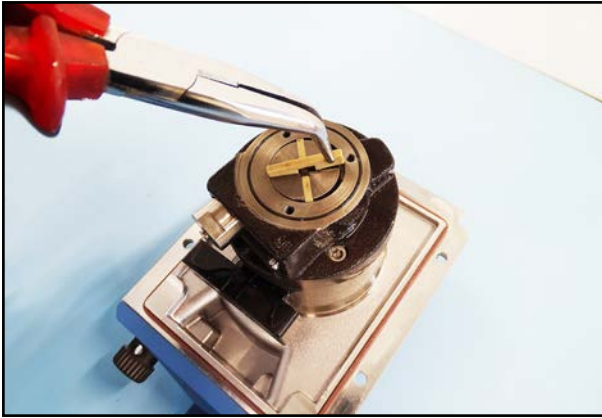
30. Loosen the screws on the oil reservoir.



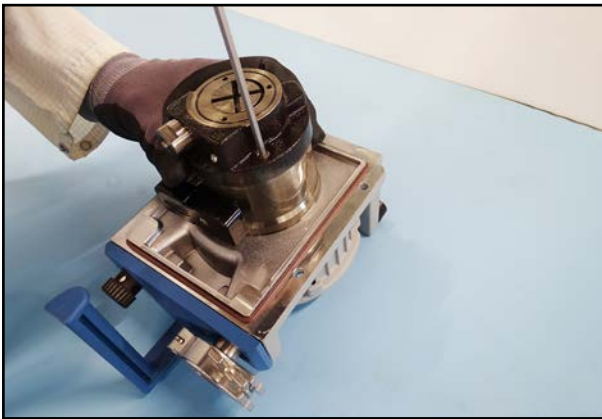
31. Lift the housing with the aggregate out of the oil reservoir.



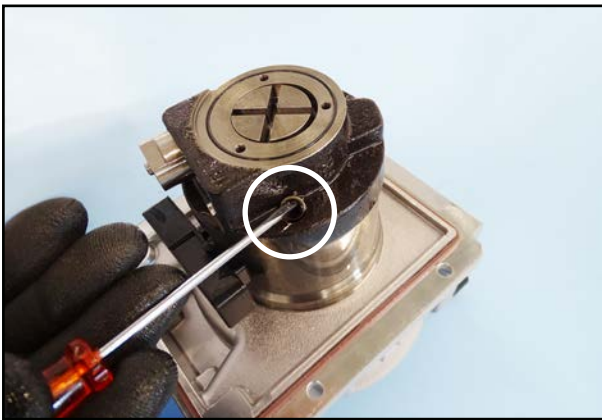
32. Unscrew the cover plate.



33. Pull the vanes out of the rotor.



34. Unscrew the screws on the aggregate.



35. Pay attention to the Usit rings in the bearing cover.

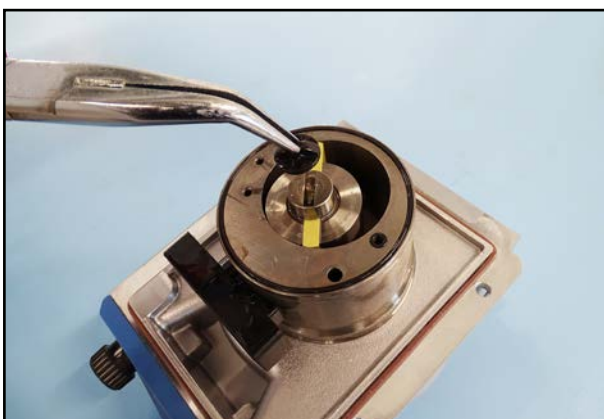
⇒ The Usit rings must be reinstalled during assembly.



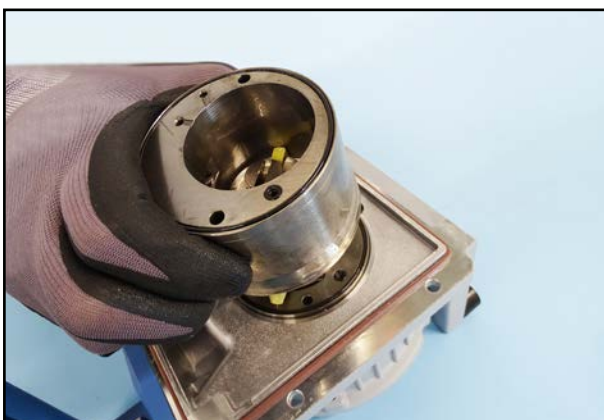
36. Lift off the bearing cover.



37. Lift the oil pump rotor out of the bearing cover.



38. Remove the cross coupling.



39. Lift off the stator.



40. Pull the vanes out of the rotor.



41. Lift off the rotor and the bearing plate.



42. Pull the rotor and the bearing plate apart.



43. Remove the seals on the bearing plate.



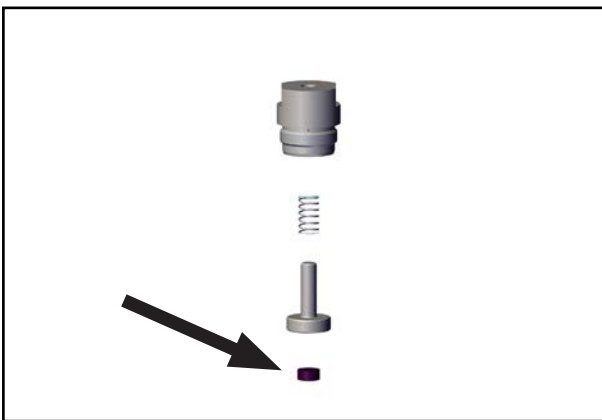
44. Remove the seal on the bearing plate on the other side.



45. Remove all seals in the housing.



46. Unscrew the screw plug of the oil retention valve from the bearing cover.



47. Disassemble the oil retention valve.

48. Replace the oil retention valve seal.



49. Unscrew the noise damping nozzle from the bearing cover.

⇒ Attention: The nozzle is glued in place with Omnifit® 50M locking adhesive.

50. Check the nozzle for continuity.

51. Replace a dirty nozzle.

52. Use Omnifit® 50M locking adhesive and screw the nozzle back in.



53. Unscrew the oil separator.



54. Lift off the oil separator.



55. Replace the cap and the spring.



56. Press the shaft seal out of the bearing plate using a flat-blade screwdriver.

⇒ Do not damage the surfaces.



57. Press the shaft seal out of the bearing cover using a flat blade screwdriver.
⇒ Do not damage the surfaces.



58. Clamp the press-fit mandrel 4 in a pillar drilling machine.
59. Observe the correct alignment of the shaft seal, see also section „Press-fit mandrel“.
60. Place the shaft seal on the press-fit mandrel.



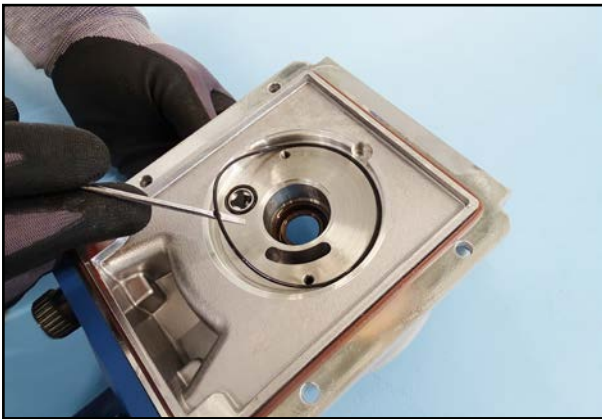
61. Press the shaft seal into the bearing plate as far as it will go.



62. Clamp the press-fit mandrel 7 in a pillar drilling machine.
63. Observe the correct alignment of the shaft seal, see also section „Press-fit mandrel“.
64. Place the shaft seal on the press-fit mandrel.



65. Press the shaft seal into the bearing cover as far as it will go.



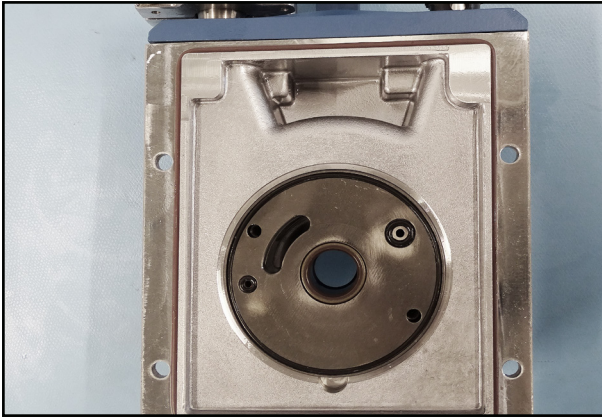
66. Place new seals in the housing.



67. Place the O-ring around the bearing plate.



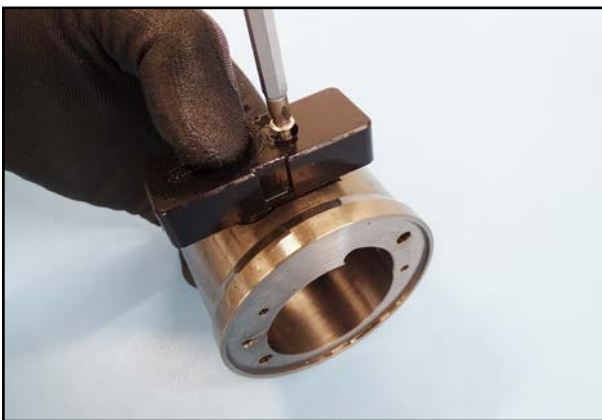
68. Place the O-rings in the bearing plate on the opposite side.



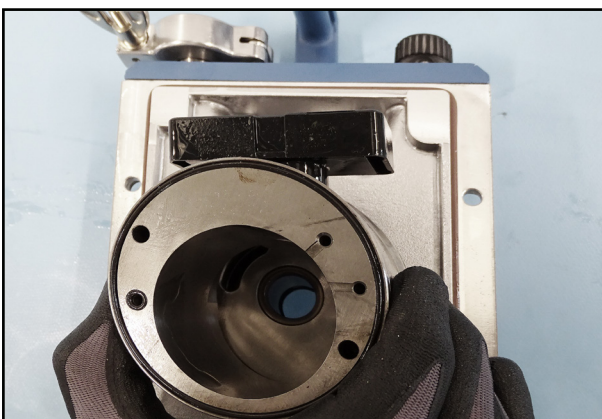
69. Place the bearing plate in the housing.



70. Place the oil separator with spring and cap into the stator.

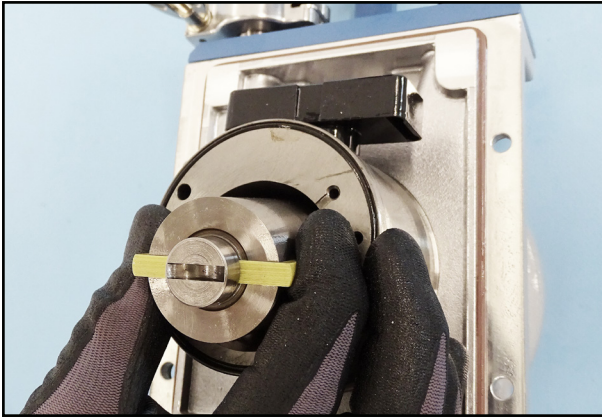


71. Screw the oil separator tight.



72. Insert the stator.

⇒ The oil separator must point in the direction of the pump handle.



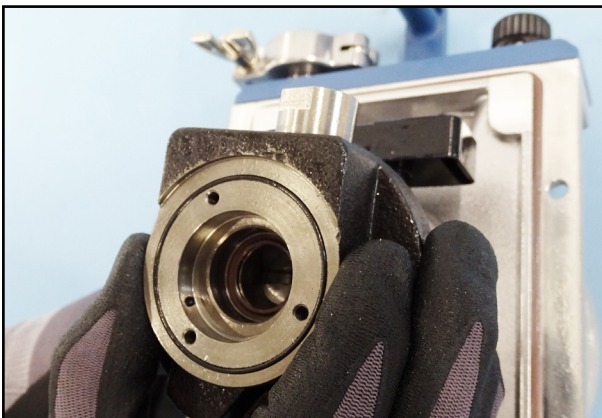
73. Place the rotor with vanes into the stator.



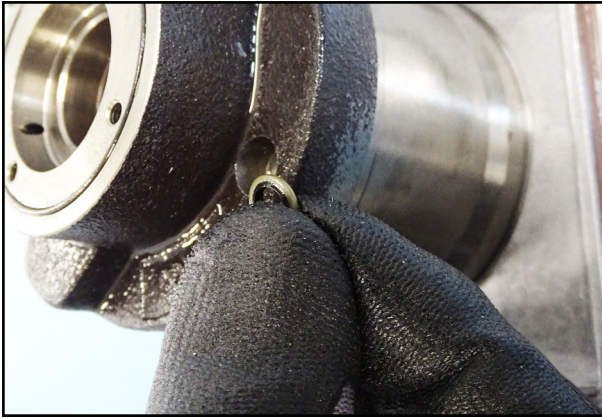
74. Assemble the oil retention valve with housing.



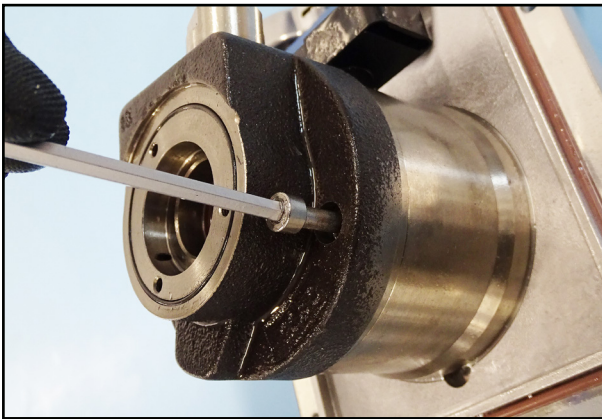
75. Screw the retaining device into the bearing cover.



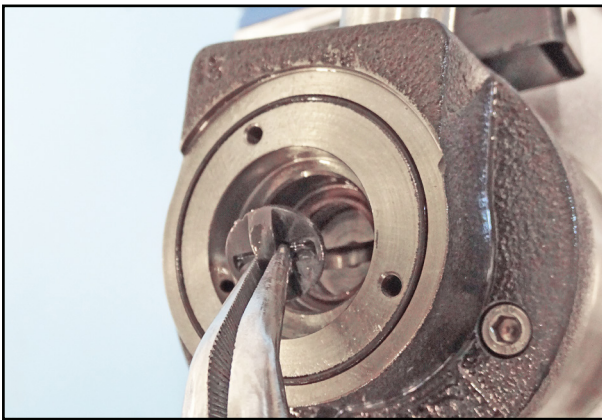
76. Insert the bearing cover.



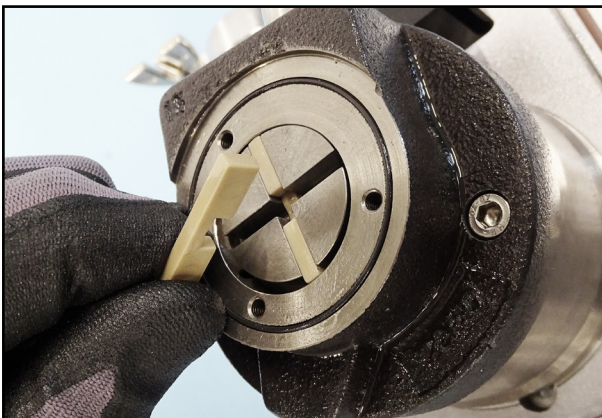
77. Place the Usit rings in the holes of the bearing cover.



78. Screw the aggregate parts together.



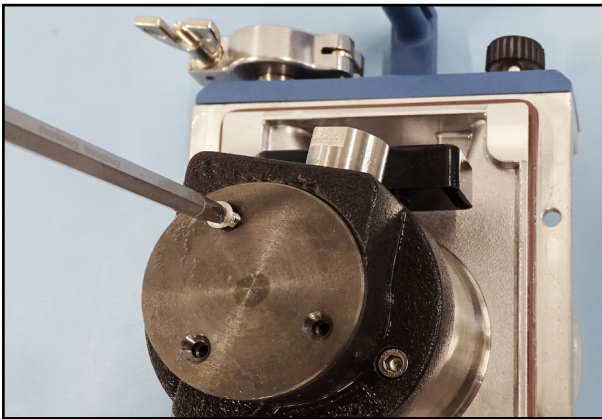
79. Insert the cross coupling.



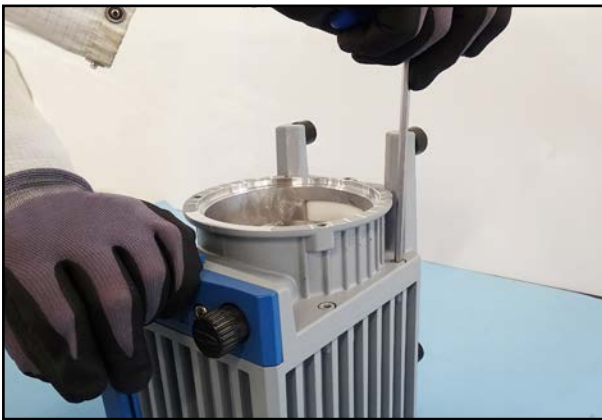
80. Insert the rotor and the vanes.



81. Fill the space around the rotor with the vacuum pump oil with which you operate the pump.



82. Screw the cover plate tight.



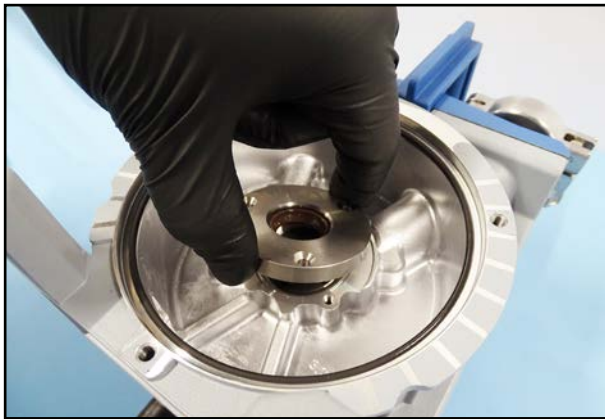
83. Screw the aggregate to the oil reservoir.



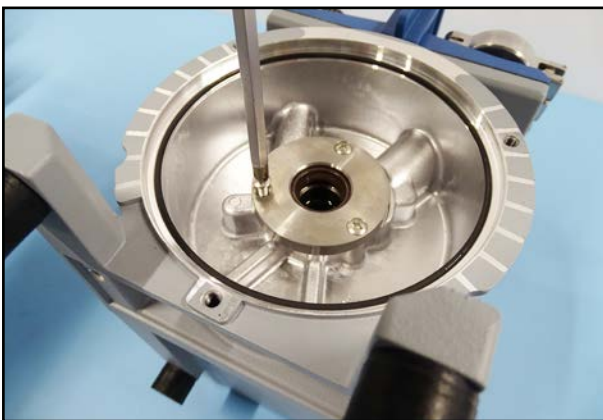
84. Place a new O-ring around the new removable sleeve.



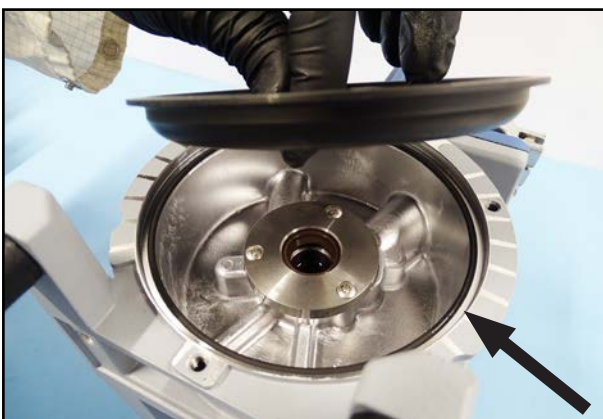
85. Fill the space in front of the removeable sleeve with the vacuum pump oil with which you operate the pump.



86. Insert the removeable sleeve.



87. Screw the removeable sleeve tight.



88. Insert the protective wall.

⇒ Ensure that the O-ring is correctly seated in the housing.

⇒ Alternatively, the O-ring can also be placed around the protective wall for installation. Use a little grease for better hold of the O-ring.



89. Carefully place the motor in the housing.
 ⇒ The terminal box of the motor must be aligned in the direction of the pump handle.



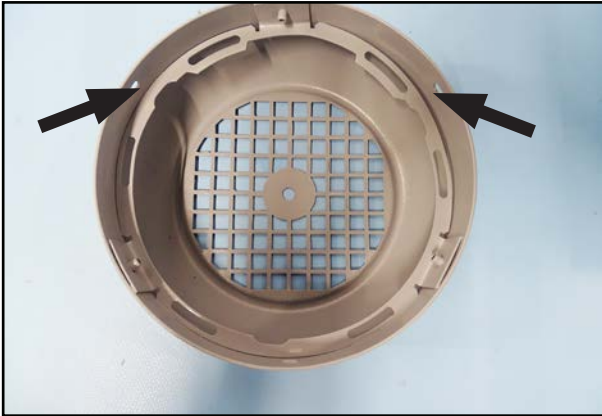
- ⇒ A gap may occur when inserting the motor.



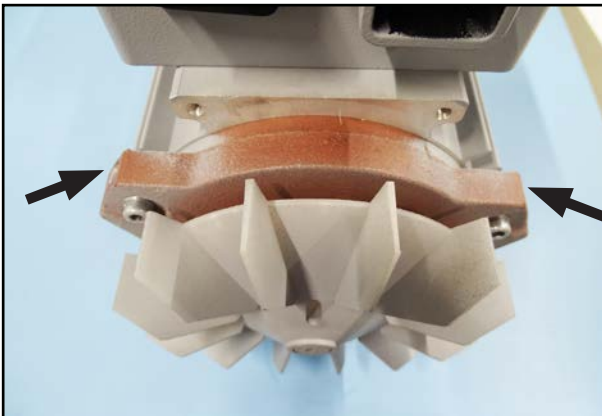
90. Turn the fan wheel slightly until the motor slides completely into the housing.



91. Screw the motor tight.



92. Note the orientation of the fan cover.



93. Align the fan cover at the marked points.



94. Thread the fan cover onto the motor flange by tilting it sideways over the fan wheel.
⇒ Avoid damaging the fan wheel.

95. Screw the fan cover tight.



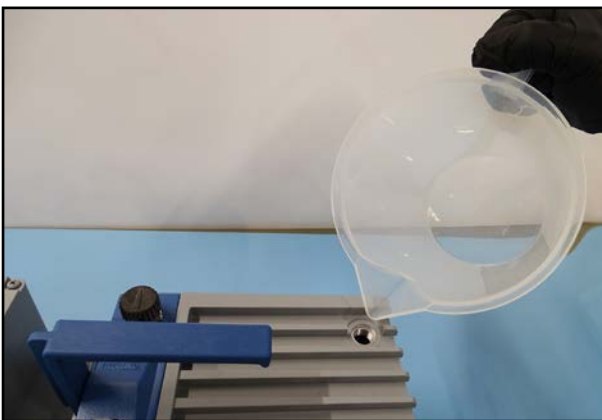
96. Place (new ones if necessary) suction felts in the housing.



97. Screw the cover of the suction felt.



98. Place the pump on the pump feet.



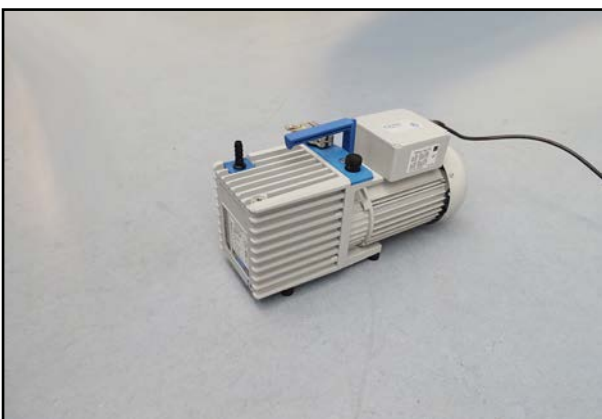
99. Pull the cap off the outlet.

100. Unscrew the oil inlet screw.

101. Fill in oil.

⇒ The oil level must be between the „Min.“ and „Max.“ markings on the rating plate.

102. Screw in the oil inlet screw.



103. Let the pump run for approx. 1 hour with the gas ballast valve open and the suction port closed.

**DANGER****Danger of electric shock.**

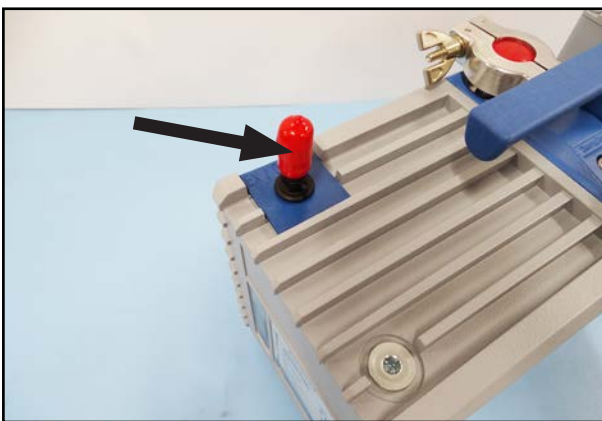
Improperly executed repairs will result in an electrical shock.

- ⇒ Check the electrical safety of the device according to IEC 61010 and national regulations after repair.
- ⇒ Check the protective conductor resistance.
- ⇒ Check the insulation resistance.
- ⇒ Carry out a high voltage test.
- ⇒ Check the leakage current according to DIN EN 50678:2021 (EN 50678:2020) and national regulations.

4.4 Maintenance RZ 2.5 and RZ 6



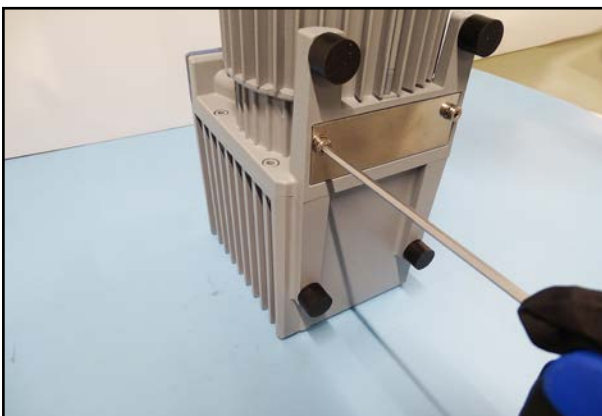
1. Unscrew the oil drain plug and drain the oil.
2. Screw the oil drain plug back in.



3. Close the pump outlet.



4. Place the pump on the oil reservoir (on the rating plate).



5. Unscrew the suction felt cover.



6. Replace both suction felts if soaked with oil.



7. Unscrew the fan cover.

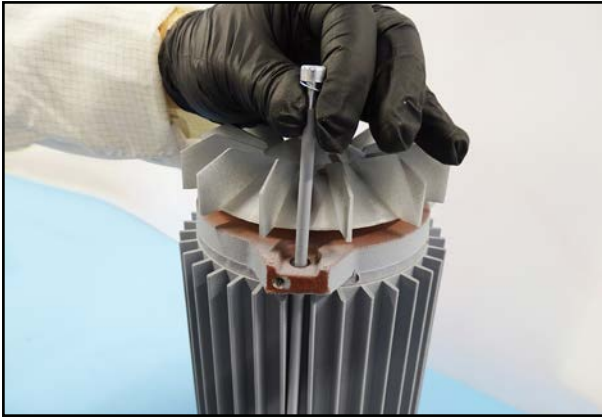


8. Lift the fan cover by tilting it sideways over the fan wheel.

⇒ Avoid damaging the fan wheel.



9. Loosen the screws.



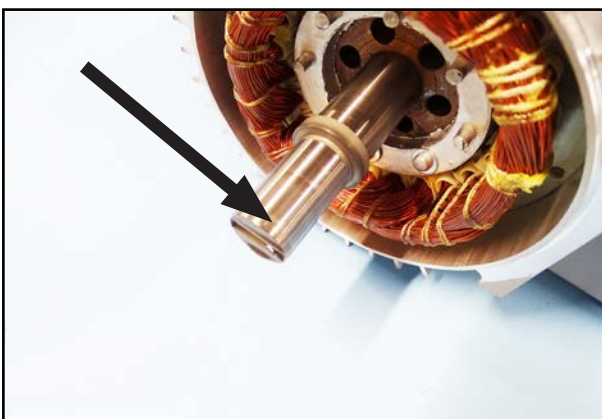
10. Pull out the screws.



11. Lift the motor out of the housing.



12. Lay the motor down as shown.
 ⇒ Avoid pulling the rotor out of the stator pack.



13. Check the coupling for run-in marks (“fingernail test”).
 ⇒ Replace the coupling if indentations can be detected.



14. Place the motor on the fan wheel.
15. Put the extraction sleeve onto the motor shaft.



16. Position the puller on the extraction sleeve and coupling as shown.



17. Place a ring wrench on the puller.
⇒ Turn the puller with the ring wrench until the coupling is pulled off.

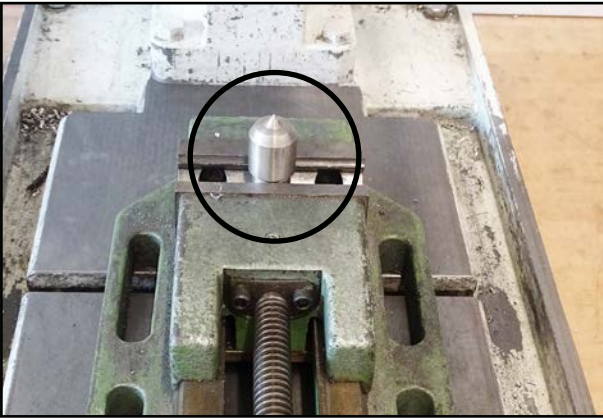
18. The shim washers must not be removed.



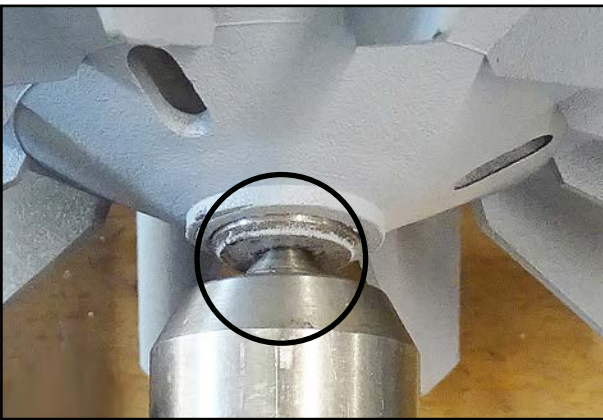
19. Remove the tolerance ring from the motor shaft using a flat blade screwdriver.



20. Slide a new tolerance ring over the motor shaft using a flat-blade screwdriver.



21. Clamp a mandrel, e.g. in a pillar drill or hand lever press.



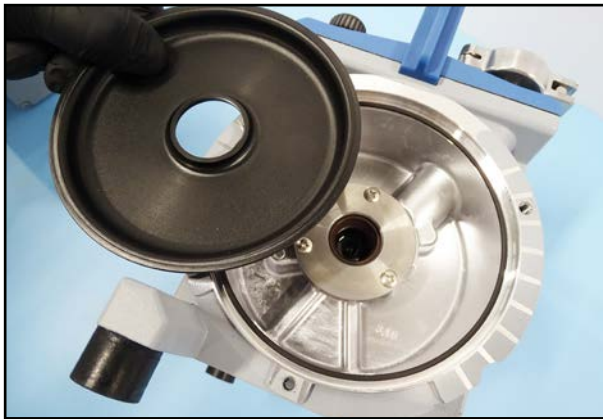
22. Position the motor shaft on the mandrel as a counter bearing.



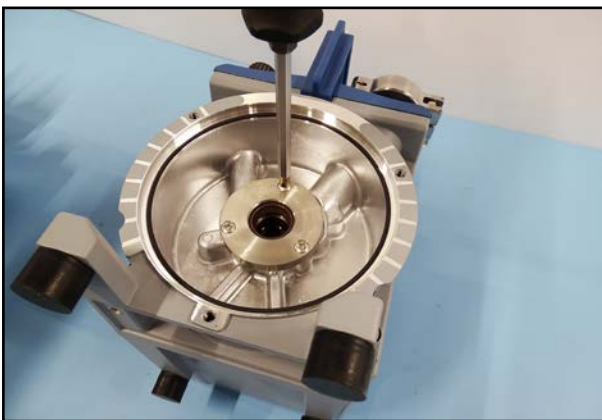
23. Place the coupling on the motor shaft.



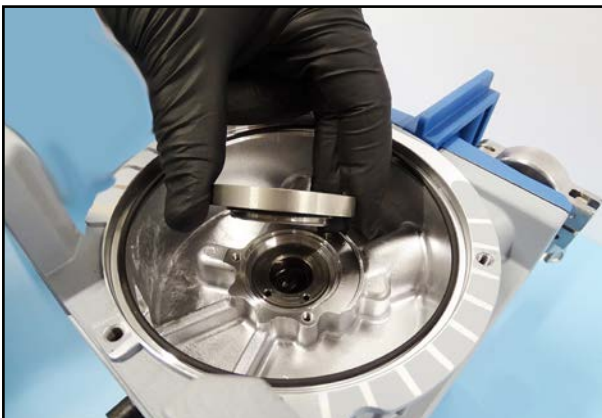
24. Press the coupling in as far as it will go.



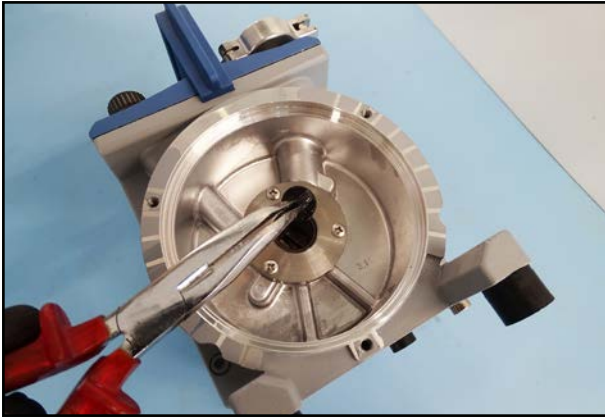
25. Lift the protective wall out of the housing.



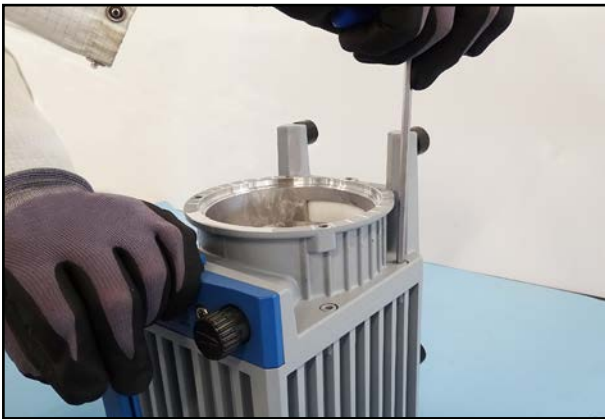
26. Unscrew the removable sleeve.



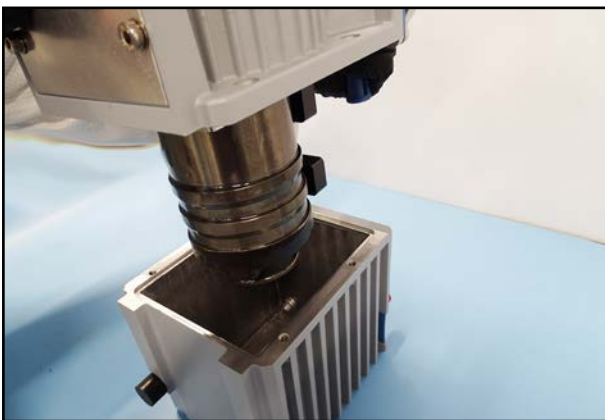
27. Lift out the removable sleeve.



28. Remove the cross coupling.



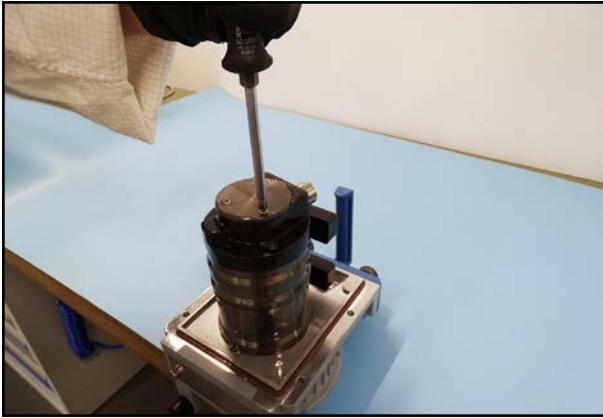
29. Loosen the screws on the oil reservoir.



30. Lift the housing with the aggregate out of the oil reservoir.



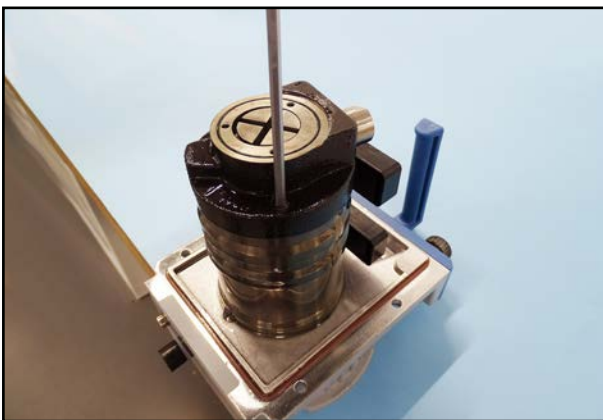
31. Position the aggregate suitably, e.g. on the edge of a table.



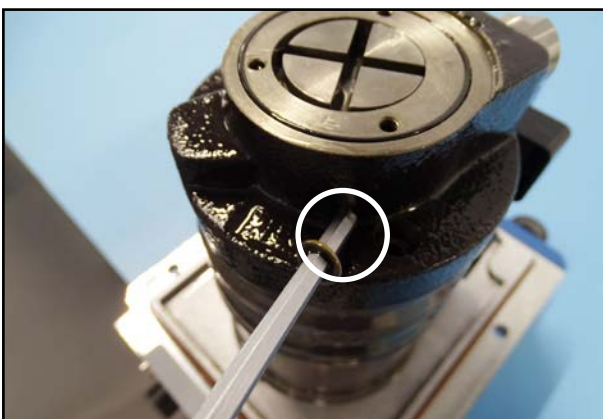
32. Unscrew the cover plate.



33. Pull the vanes out of the rotor.



34. Unscrew the screws on the aggregate.



35. Pay attention to the Usit rings in the bearing cover.

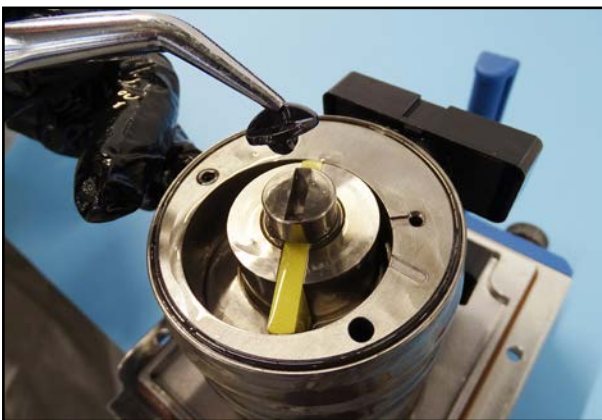
⇒ The Usit rings must be reinstalled during assembly.



36. Lift off the bearing cover.



37. Lift the oil pump rotor out of the bearing cover.



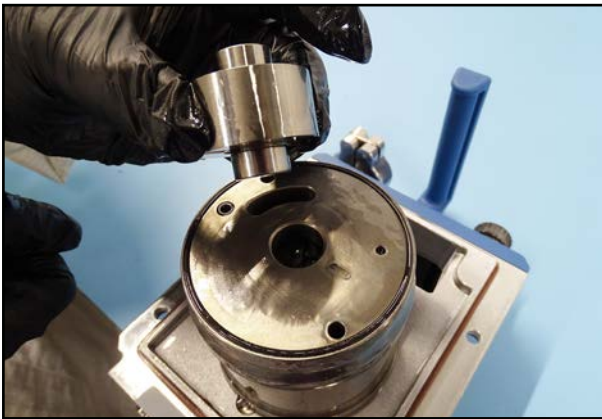
38. Remove the cross coupling.



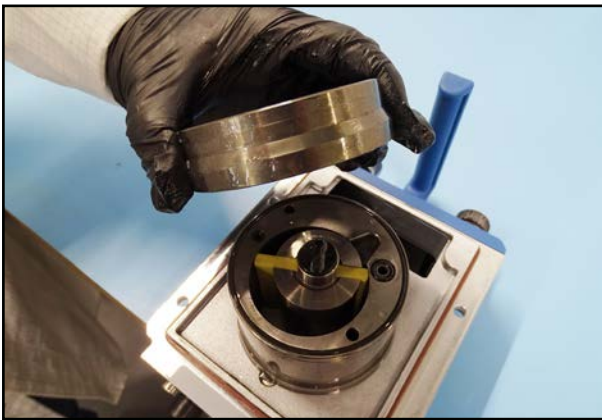
39. Lift off the stator.



40. Pull the vanes out of the rotor.



41. Lift off the rotor.



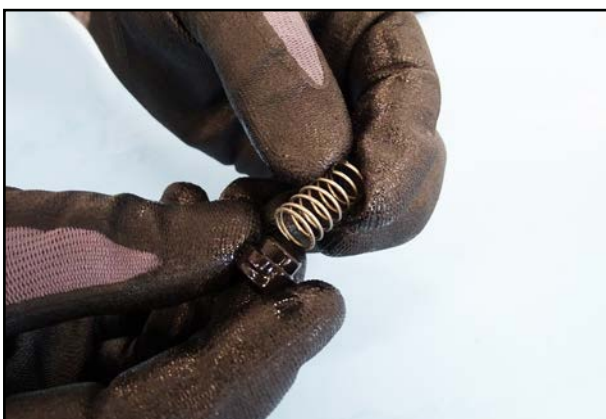
42. Remove the intermediate bearing plate.



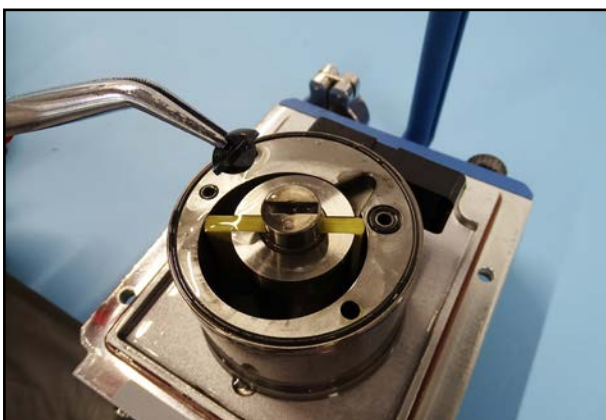
43. Unscrew the oil separator.



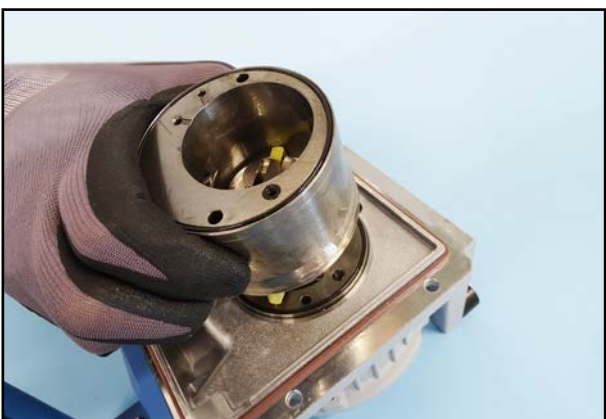
44. Remove the oil separator.



45. Replace the cap and the spring.



46. Remove the cross coupling.



47. Remove the stator.



48. Pull the vanes out of the rotor.



49. Lift off the rotor and the bearing plate.



50. Pull the rotor and the bearing plate apart.



51. Remove the seals on the bearing plate.



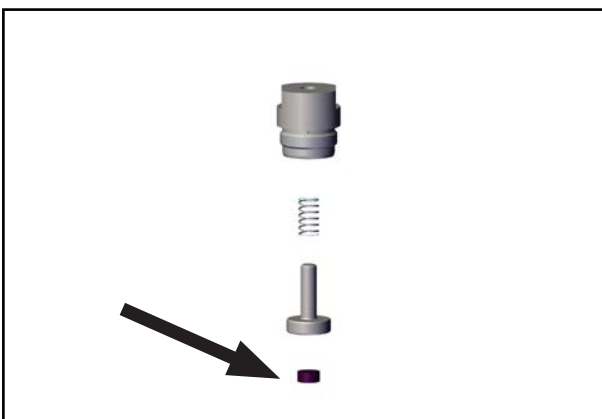
52. Remove the seal on the bearing plate on the other side.



53. Remove all seals in the housing.



54. Unscrew the screw plug of the oil retention valve from the bearing cover.



55. Disassemble the oil retention valve.

56. Replace the oil retention valve seal.



57. Unscrew the noise damping nozzle from the bearing cover.

⇒ Attention: The nozzle is glued in place with Omnifit® 50M locking adhesive.

58. Check the nozzle for continuity.

59. Replace a dirty nozzle.

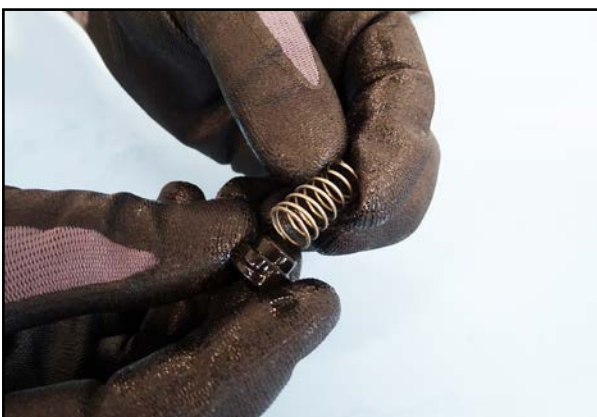
60. Use Omnifit® 50M locking adhesive and screw the nozzle back in.



61. Unscrew the oil separator.



62. Lift off the oil separator.



63. Replace the cap and the spring.



64. Press the shaft seal out of the bearing plate using a flat-blade screwdriver.
 ⇒ Do not damage the surfaces.



65. Press the shaft seal out of the bearing cover using a flat blade screwdriver.
 ⇒ Do not damage the surfaces.



66. Clamp the press-fit mandrel 4 in a pillar drilling machine.
 67. Observe the correct alignment of the shaft seal, see also section „Press-fit mandrel“.
 68. Place the shaft seal on the press-fit mandrel.



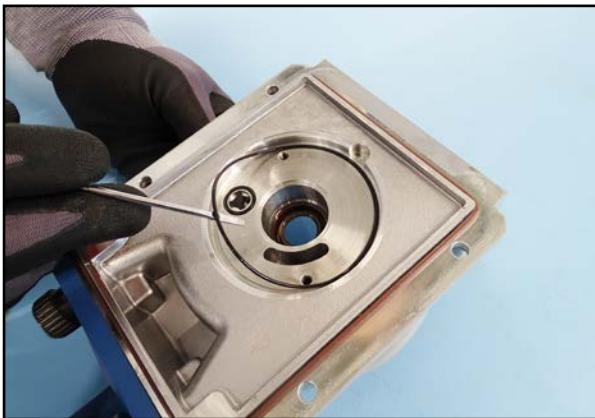
69. Press the shaft seal into the bearing plate as far as it will go.



70. Clamp the press-fit mandrel 7 in a pillar drilling machine.
71. Observe the correct alignment of the shaft seal, see also section „Press-fit mandrel“.
72. Place the shaft seal on the press-fit mandrel.



73. Press the shaft seal into the bearing cover as far as it will go.



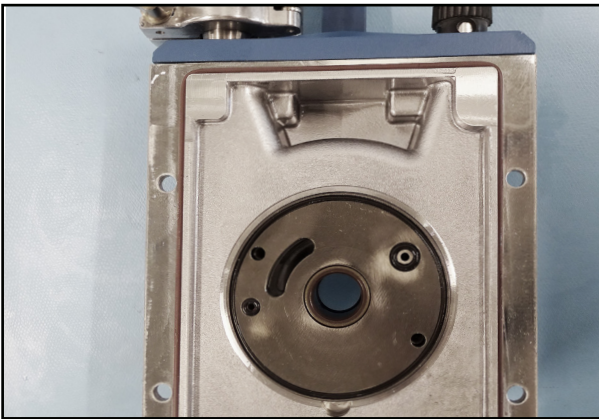
74. Place new seals in the housing.



75. Place the O-ring around the bearing plate.



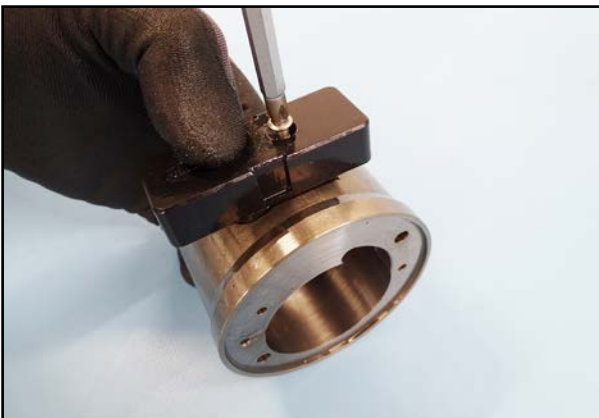
76. Place the O-rings in the bearing plate on the opposite side.



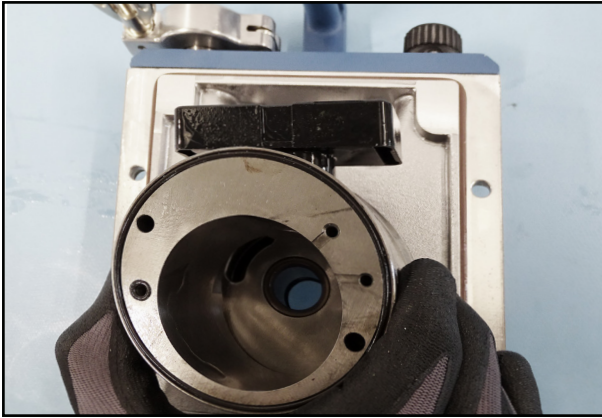
77. Place the bearing plate in the housing.



78. Place the oil separator with spring and cap into the stator.

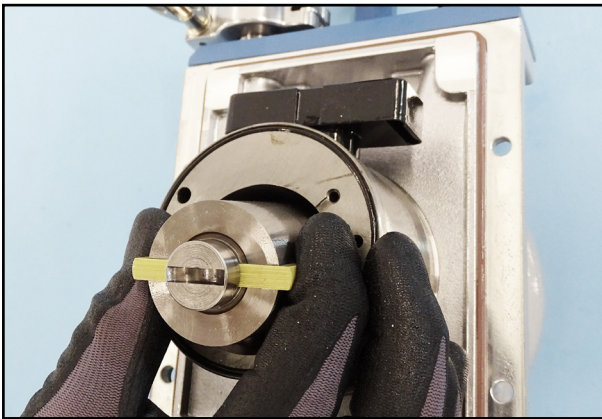


79. Screw the oil separator tight.



80. Insert the stator.

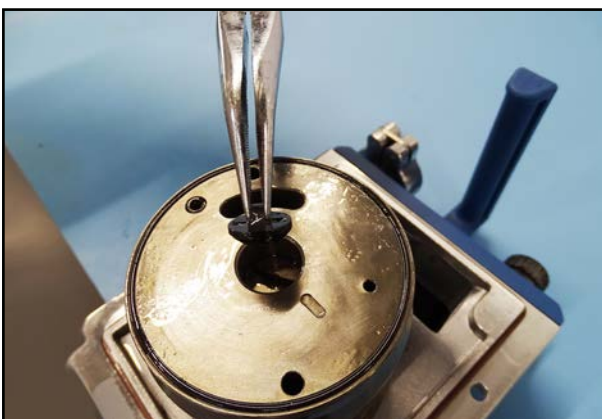
⇒ The oil separator must point in the direction of the pump handle.



81. Place the rotor with vanes into the stator.



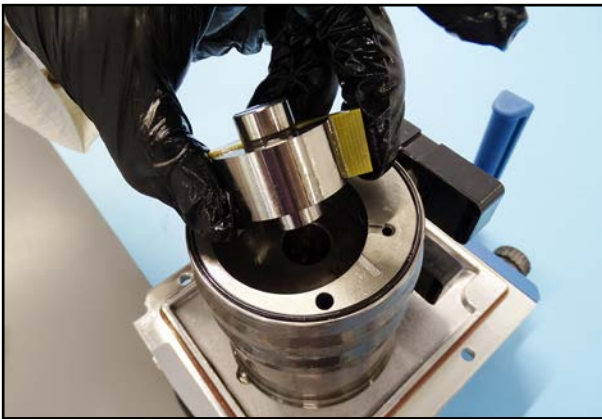
82. Insert the intermediate bearing plate.



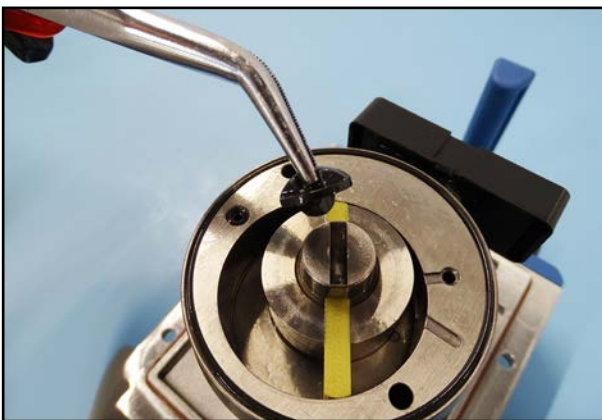
83. Insert the cross coupling.



84. Assemble the oil separator and insert the stator.
⇒ The oil separator must point in the direction of the pump handle.



85. Place the rotor with vanes into the stator.



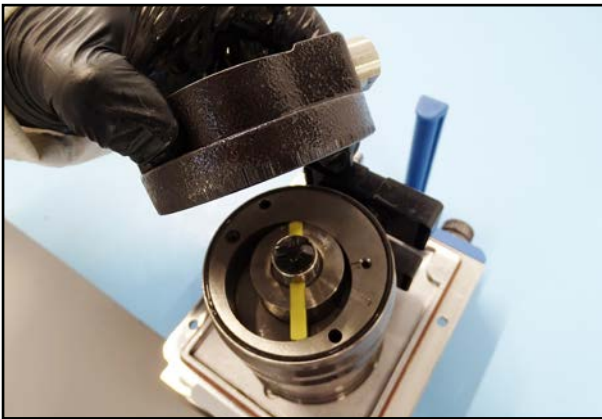
86. Insert the cross coupling.



87. Assemble the oil retention valve with housing.



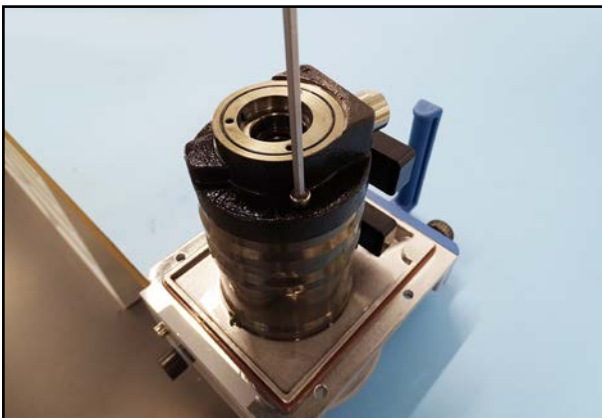
88. Screw the retaining device into the bearing cover.



89. Insert the bearing cover.



90. Place the Usit rings in the holes of the bearing cover.



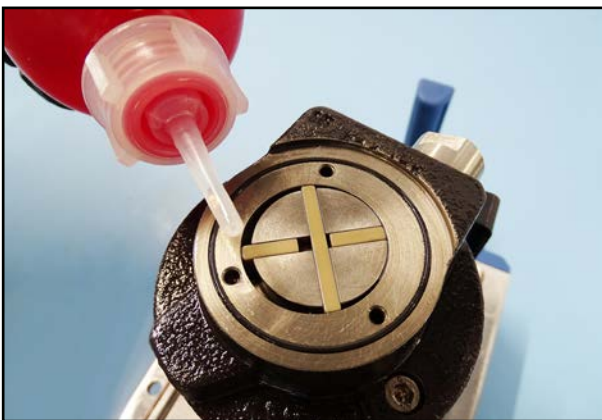
91. Screw the aggregate parts together.



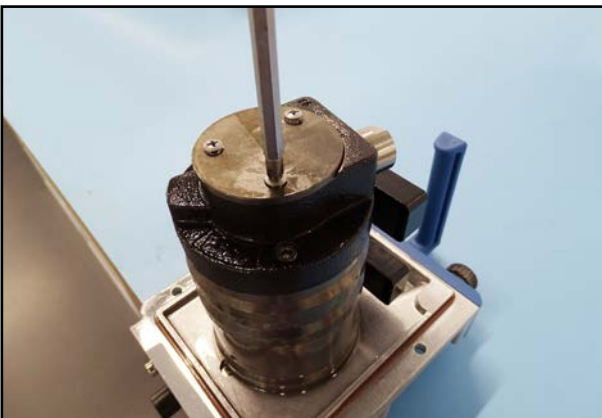
92. Check the correct fit of the cross coupling and place the rotor in the stator.



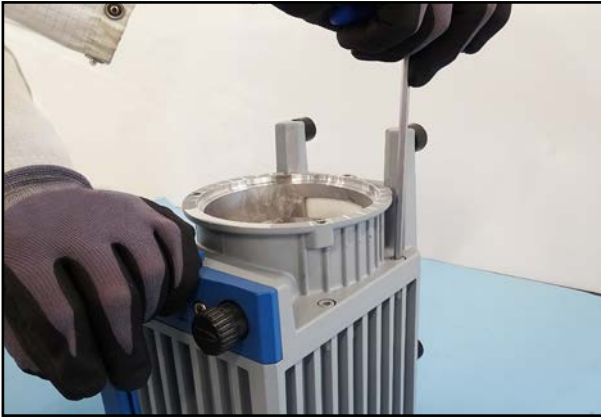
93. Insert the rotor and the vanes.



94. Fill the space around the rotor with the vacuum pump oil with which you operate the pump.



95. Screw the cover plate tight.



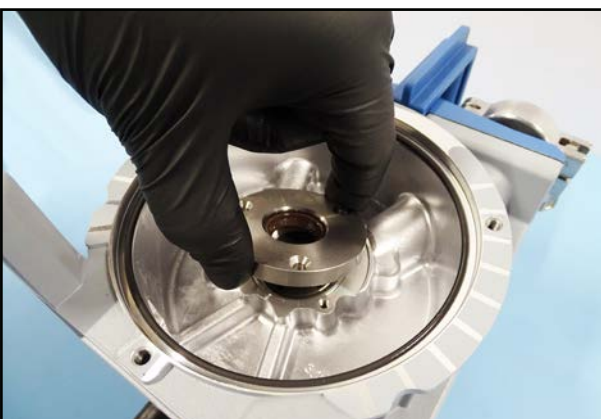
96. Screw the aggregate to the oil reservoir.



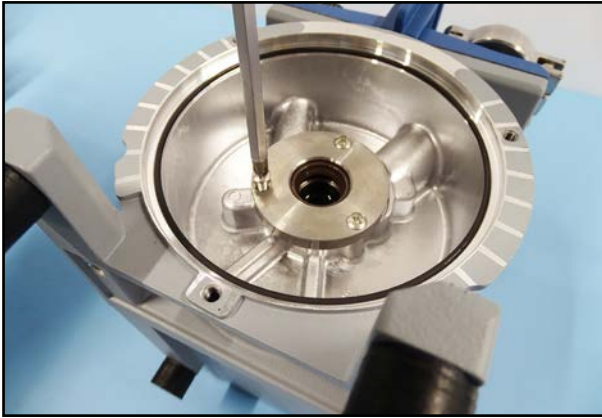
97. Place a new O-ring around the removeable sleeve.



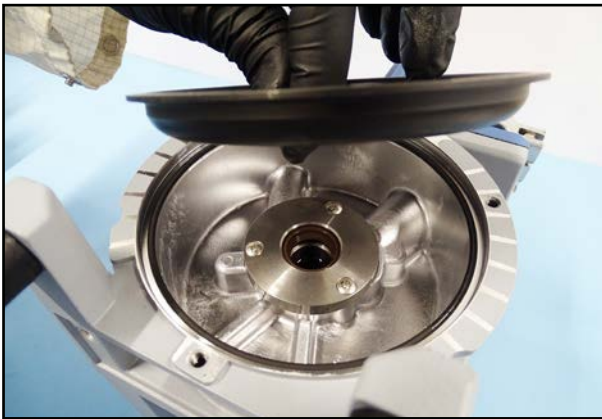
98. Fill the space in front of the removeable sleeve with the vacuum pump oil with which you operate the pump.



99. Insert the removeable sleeve.



100. Screw the removeable sleeve tight.



101. Insert the protective wall.

- ⇒ Ensure that the O-ring is correctly seated in the housing.
- ⇒ Alternatively, the O-ring can also be placed around the protective wall for installation. Use a little grease for better hold of the O-ring.



102. Carefully place the motor in the housing.

- ⇒ The terminal box of the motor must be aligned in the direction of the pump.



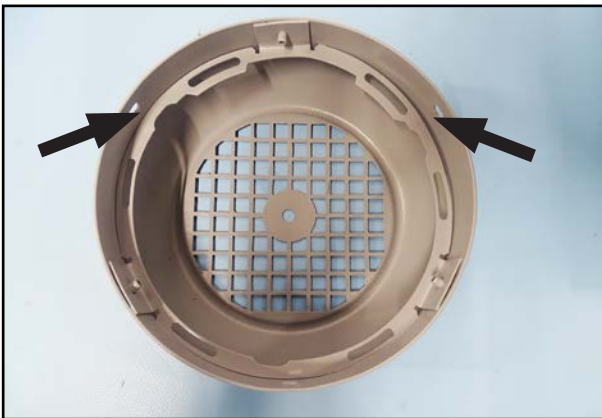
- ⇒ A gap may occur when inserting the motor.



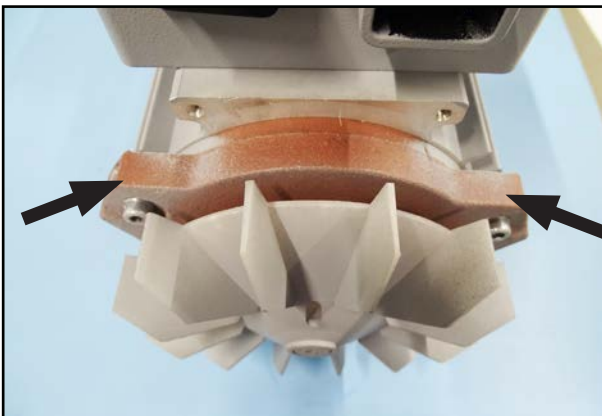
103. Turn the fan wheel slightly until the motor slides completely into the housing.



104. Screw the motor tight.



105. Note the orientation of the fan cover.



106. Align the fan cover at the marked points.



107. Thread the fan cover onto the motor flange by tilting it sideways over the fan wheel.
 ⇒ Avoid damaging the fan wheel.
 108. Screw the fan cover tight.



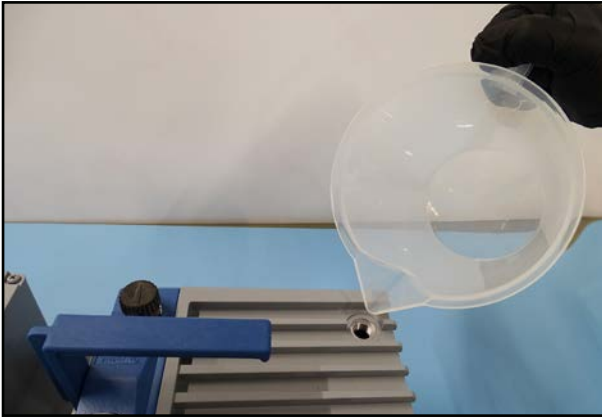
109. Place (new ones if necessary) suction felts in the housing.



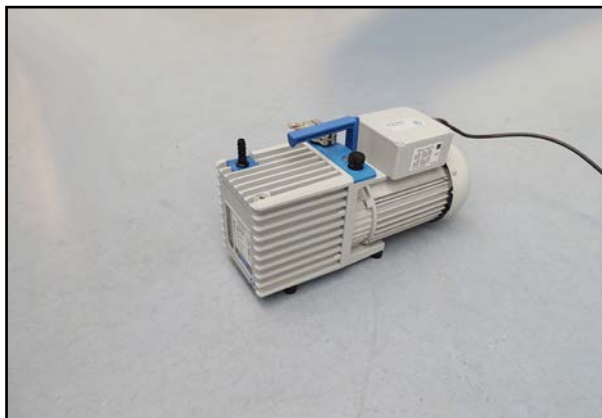
110. Screw the cover of the suction felt.



111. Place the pump on the pump feet.



112. Pull the cap off the outlet.
113. Unscrew the oil inlet screw.
114. Fill in oil.
 - ⇒ The oil level must be between the „Min.“ and „Max.“ markings on the rating plate.
115. Screw in the oil inlet screw.



116. Let the pump run for approx. 1 hour with the gas ballast valve open and the suction port closed.



DANGER

Danger of electric shock.

Improperly executed repairs will result in an electrical shock.

- ⇒ Check the electrical safety of the device according to IEC 61010 and national regulations after repair.
- ⇒ Check the protective conductor resistance.
- ⇒ Check the insulation resistance.
- ⇒ Carry out a high voltage test.
- ⇒ Check the leakage current according to DIN EN 50678:2021 (EN 50678:2020) and national regulations.

5 Press-in mandrels

- ⇒ The press-in mandrels are designed for mounting shaft sealing rings in VACUUBRAND rotary vane pumps.
- ⇒ Shaft sealing rings should only be mounted with a special press-in mandrel.
- ⇒ Press only on the outer ring of the shaft seal.
- ⇒ When pressing in rotary shaft seals by means of a press-in mandrel, make sure that the mandrel can exit unhindered on the underside of the seal ring.

5.1 Selection of the press-in mandrel

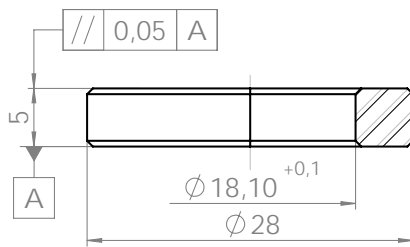
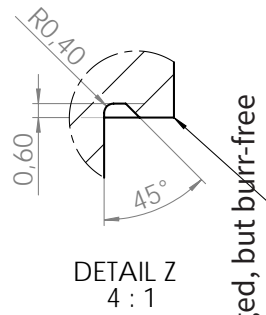
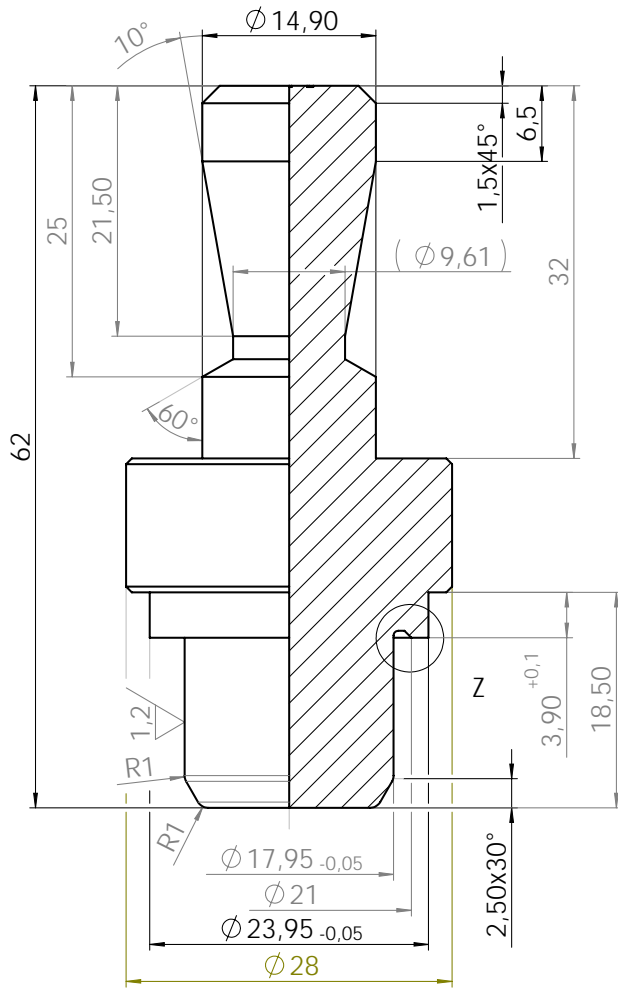
Mandrel 4

Radial shaft seal 23121003 (18 x 24 x 3 mm) in bearing plate 20636159

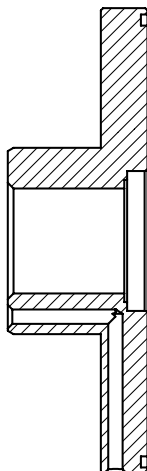
Mandrel 7

Radial shaft seal 23121003 (18 x 24 x 3 mm) in bearing cover 20636448

5.2 Mandrel 4

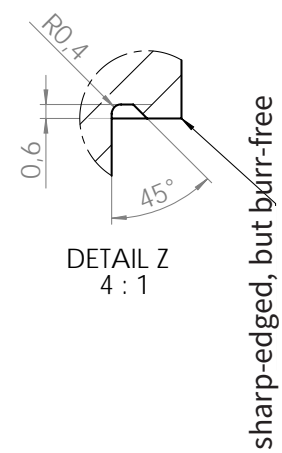
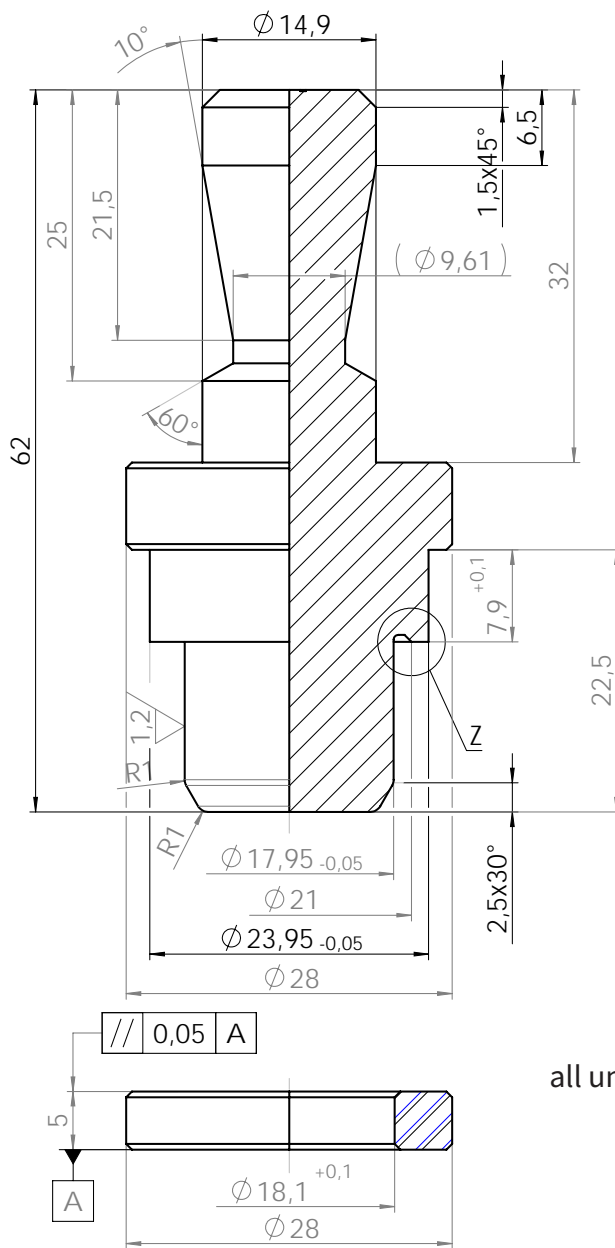


all undimensioned chamfers 0.5 x 45°

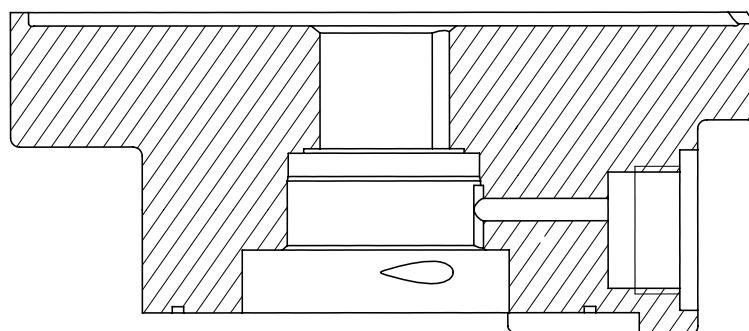


Bearing plate
20636159

5.3 Mandrel 7

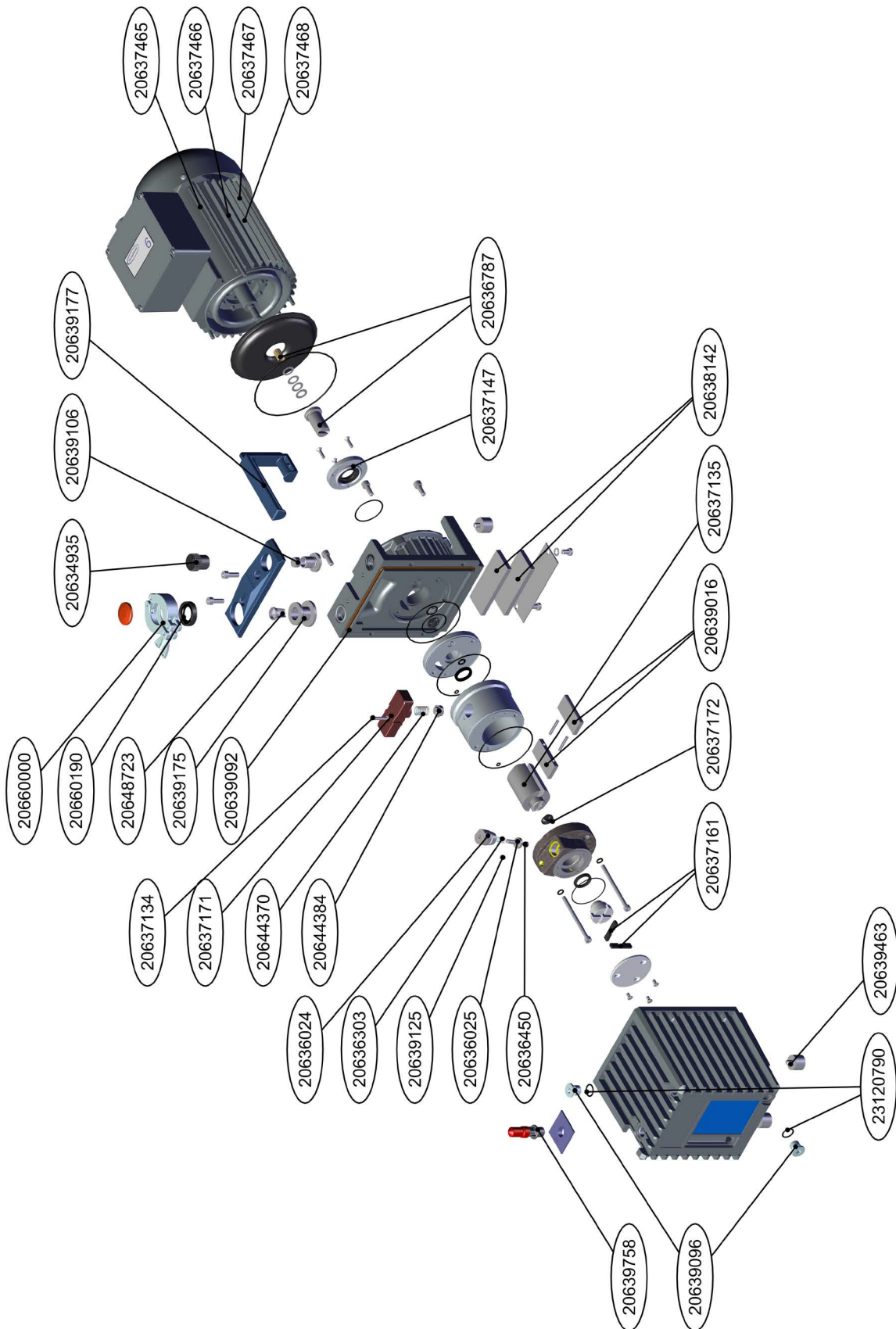


all undimensioned chamfers 0.5 x 45°

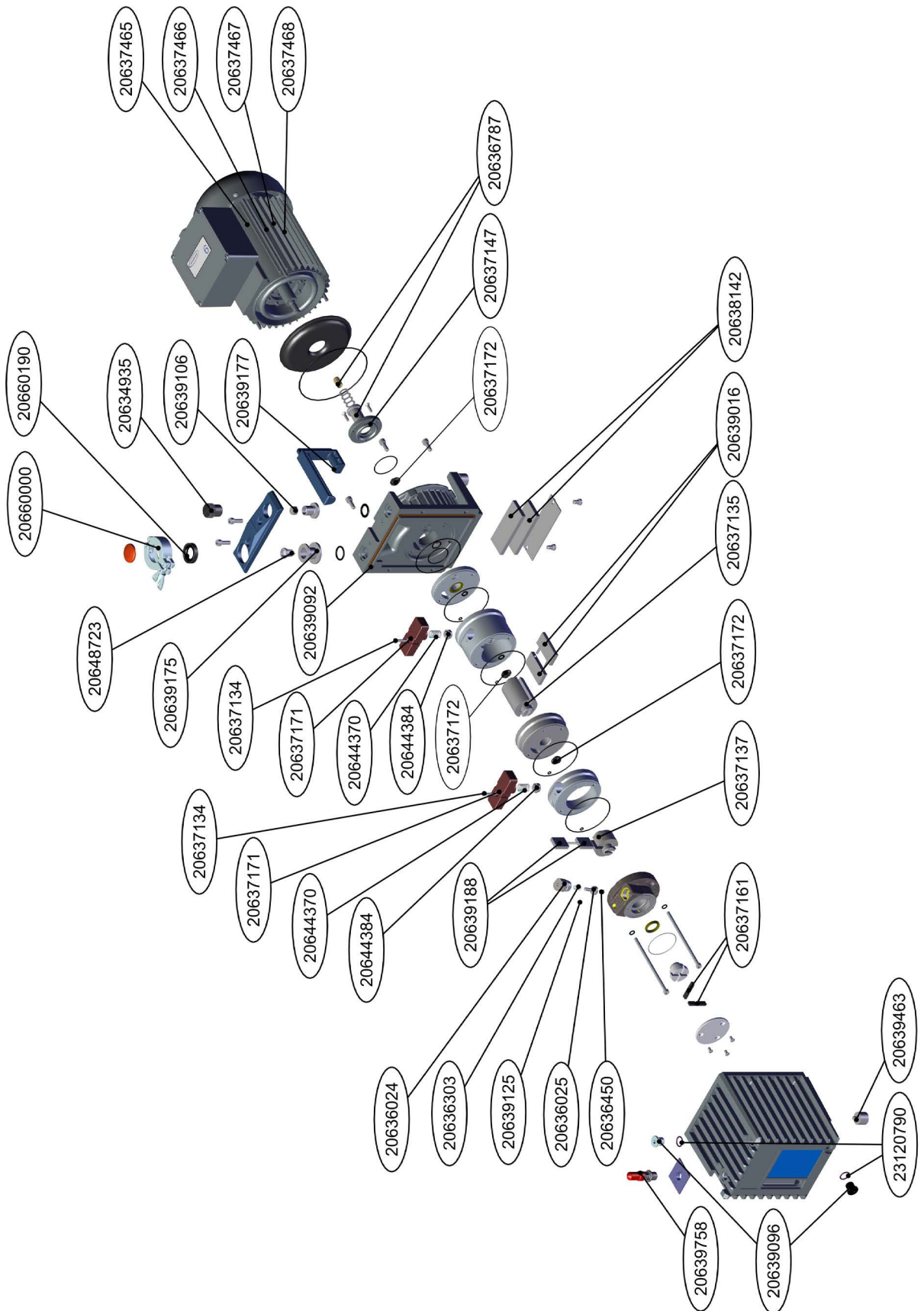


Bearing cover
20636448

6 Exploded drawing RE 2.5 / RE 6



7 Exploded drawing RZ 2.5 / RZ 6



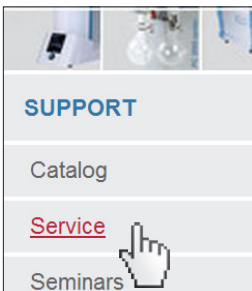
8 Spare parts

Order no.	Designation
20634935	Gas ballast cap
20636024	Oil non-return valve housing
20636025	Oil non-return valve plunger
20636303	Oil non-return valve spring
20636450	Oil non-return valve plate
20636787	Shaft coupling for R 2.5 / R 6
20637134	Screw M4x25mm
20637135	Rotor for R 2.5 / R 6
20637137	Rotor high vacuum stage RZ 6
20637147	Shaft seal unit for R 2.5 / R 6, complete
20637161	Oil-pump vane R 2.5 / R 6
20637171	Oil separator R 2.5 / R 6
20637172	Cross coupling
20637374	Pumping assembly RE 6
20637378	Pumping assembly RZ 2.5
20637379	Pumping assembly RZ 6
20637391	Pumping assembly RE 2.5
20637465	Motor 230 V / 50-60 Hz
20637466	Motor 100-230 V / 50-60 Hz
20637467	Motor 230 V / 50-60 Hz
20637468	Motor 100-230 V / 50-60 Hz
20638142	Absorbent felt
20639016	Vane L50
20639092	O-ring, 140mm x 3mm, FPM
20639096	Screw plug G1/4"
20639106	Rubber foam insert
20639125	Orifice 0.2mm
20639175	Small flange KF DN 16, suction side R2 - R6
20639177	Handle
20639188	Vane L20
20639463	Rubber foot with thread M6x8
20639758	Hose nozzle DN 10mm, thread G1/4"
20644370	Valve spring
20644384	Valve seat seal
20648723	Sieve unit (suction port) KF DN 16
20648977	Maintenance kit RE/RZ 2.5 and RE/RZ 6
20660000	Clamping ring, aluminum, NW 10/16 KF
20660190	External centering ring, PBT, sealing ring NBR, KF DN 10/16
23120790	O-ring, 13mm x 2mm, FPM

Other spare parts on request.

9 Service

Service range Take advantage of the comprehensive range of services available from **VACUUBRAND GMBH + CO KG**.



Services in detail

- Product consultation and practical solutions
- Fast delivery of spare parts and accessories
- Professional maintenance
- Immediate repairs processing
- On-site service (on request)
- With Health and Safety Clearance form: return, disposal.

⇒ Visit our website for further information: www.vacuubrand.com.

Service handling

⇒ Follow the description on: VACUUBRAND > Support > [Service](#)

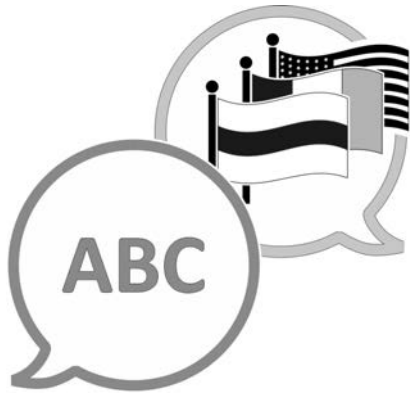
Meet the terms of
service



Reduce downtime, speed up processing. Please have the required data and documents at hand when contacting our Service Department.

Ihr Auftrag lässt sich schnell und einfach zuordnen.

- ▶ Your order can be quickly and easily processed.
- ▶ Hazards can be prevented.
- ▶ A brief description and/or photos will help locate the source of the error.



[VACUUBRAND > Support > Manuals](#)

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