

# *Instructions*

## RV Pump Outer Shaft-Seal Kit

Description	Item Number
RV Pump Outer Shaft-Seal Kit	A652-01-134



## Important safety Information

- Vacuum pumps are potentially dangerous if incorrectly used, repaired or maintained, so please approach the repair or maintenance with caution.
- Any incorrectly fitted spare parts could damage your pump and could be potentially dangerous.
- Never allow unqualified personnel to attempt to remove or replace any part of the pump.
- If you have any doubts about the servicing procedures or the products capabilities please contact Edwards.
- Before returning any equipment to Edwards for repair please follow the Edwards HS1 procedure and complete an HS2 declaration form to warn of any substances used or produced in the equipment that can be dangerous. The procedure and forms are included with the pump instruction manuals and can be downloaded together with Edwards local contact details from [www.edwardsvacuum.com](http://www.edwardsvacuum.com)
- Always conform to service schedules unless adverse conditions necessitate more frequent servicing.
- Report any defect before an accident or consequential damage can occur.
- Observe local and country specific regulations, norms and guidelines.
- Never allow anyone to remove large or heavy components without adequate lifting equipment.
- Before maintenance work is begun, ensure the pump is switched off and isolated from the mains.
- The pump may have been exposed to processes which use hazardous substances or produces by-products which are dangerous to human health and safety, for example, chemically active, biologically active or radioactive substances.
- Before working on a pump, ensure that the correct personal protective equipment is available and being used. Always wear safety goggles. Wear a breather mask with positive air pressure and take other precautions if you believe the pump may be contaminated with hazardous substances and dusts.
- When applying sealants and lubricants, prevent contact with the skin by wearing suitable gloves.
- Seals may contain fluoroelastomer, which when properly handled is not dangerous but which may produce a toxic and corrosive residue (hydrogen fluoride or hydrofluoric acid) in the event of excessive heat or fire depending on the circumstances of degradation and other materials involved.
- On completion of maintenance, check the pump functions correctly and that all guards and protection devices are fitted and working correctly and that the pump is electrically safe.
- If the pump is used for handling hazardous substances check the pump for leak-tightness before use.
- Dispose of waste oil and any process by-products in accordance with local and national safety and environmental requirements. It is usually illegal to dispose of waste oil into drains or water courses, or to bury it.

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# 1 Introduction

## 1.1 Scope and definitions

This manual provides installation instructions for the Edwards Outer Shaft-Seal Kit for the Edwards RV Rotary Pumps. You must use the Outer Shaft-Seal Kit as specified in this manual.

Use the Outer Shaft-Seal Kit to replace the outer shaft-seal in an RV rotary pump. We recommend that you use all of the components in the Outer Shaft-Seal Kit when you service the pump.

The contents of the kit are defined in [Section 2](#). [Section 3](#) describes how to install the kit components in the pump.

Read this manual before you use the Kit. Important safety information is highlighted as WARNING instructions; you must obey these instructions. The use of WARNINGS is defined below.



### **WARNING**

Warnings are given where failure to observe the instruction could result in injury or death to people.

## 1.2 Safety



### **WARNING**

Do not touch or inhale the thermal breakdown products of fluorinated materials which may be present if the pump has been heated to 210 °C and above. These breakdown products are very dangerous. Some of the seals in the pump are made from fluorinated materials.

The dynamic seals and O-rings used in this pump are made from fluorinated materials. Fluorinated materials are safe in normal use but can decompose into very dangerous materials (which may include hydrofluoric acid) if they are heated to 210 °C and above.

The pump may have overheated if it was misused or if it was in a fire. If the pump has overheated, take extreme care to avoid skin contact with any part of the pump and to avoid inhalation of vapours from the pump. Material Safety Data Sheets for fluorinated materials used in the pump are available on request: contact your supplier or Edwards.

## 2 Unpack and inspect

Remove all the packing materials and protective covers and check the components of the kit.

If any component is damaged, notify your supplier and the carrier in writing within three days; state the Item Number of the kit together with your order number and the supplier's invoice number. Retain the packing materials for inspection. Do not use the kit if it is damaged.

Check that your kit contains the components listed in [Table 1](#). If any component is missing, notify your supplier in writing within three days.

If the kit is not to be used immediately, replace the protective covers and repack the components of the kit in the packing materials. Store the kit in cool, dry conditions until it is required for use.

Table 1 - Checklist of kit components

Quantity	Description	Figure 1 item	Check (✓)
1	Seal carrier (with shaft-seal) *	110	<input type="checkbox"/>
1	Shaft-seal spacer *	D	<input type="checkbox"/>
1	Printed gasket (seal carrier)	120	<input type="checkbox"/>

\* *Supplied assembled together.*

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### 3 How to use the Outer Shaft-Seal Kit

Refer to [Figure 1](#) which shows an exploded view of the RV pump and use the following procedure to install the components of the kit. Where necessary, refer to the RV pump instruction manual.

1. Switch off the RV pump, disconnect it from the electrical supply and allow the pump to cool.
2. Drain the oil from the pump.
3. Undo the four screws and remove the motor top cover (A) from the motor. Undo and remove the four screws (421) which secure the motor to the pump and remove the motor.
4. Undo the screw (420) and remove the side panel from the pump.
5. Remove the coupling element (312) from the coupling hub (308), then use a hexagonal key to loosen the screw (325) on the coupling hub and remove the coupling hub.
6. Remove the two screws (129) which secure the seal carrier (110). Place the screws in the two jack-off holes and alternately tighten the screws to remove the seal carrier from the pump. Remove the printed gasket (120) from the pump.
7. Use a suitable cleaning solution to clean all the surfaces of the components in the Outer Shaft-Seal Kit and the surfaces of the dismantled pump, then lightly lubricate the lip of the shaft-seal with pump oil.
8. Fit the new printed gasket (120) to the pump. Ensure that the cut-outs in the gasket align with the securing screw holes on the cartridge and that the correct face of the gasket is placed against the cartridge; note that 'cartridge side' is marked on this face of the gasket.
9. Fit the new seal carrier (110, complete with shaft-seal spacer, D) on the pump shaft and secure with the two screws (129). Tighten the screws to a torque of 10 to 12 Nm.
10. Fit the coupling hub (308) onto the pump shaft; ensure that the screw holes align with the flat part of the shaft. Use the screw (325) to secure the coupling hub to the shaft. Tighten the screw to a torque of 10 to 12 Nm.
11. Lubricate the coupling element (312) with a suitable lubricant, then fit it to the coupling hub (308).
12. On the RV3 and RV5 pumps, ensure that the handle (405) is fitted to the adaptor.
13. Fit the motor back onto the pump and secure with the four screws (421). On the RV8 and RV12 pumps, ensure that the lifting-plate (413) and cover (414) are fitted to the motor.
14. Refit the motor top cover (A) to the motor and secure with the four screws removed in [Step 3](#).
15. Refit the side panel (408) to the pump and secure with the screw (420).
16. Refill the pump with the correct quantity of new oil, connect the pump to the electrical supply and connect the pump inlet and outlet as described in the RV pump instruction manual. Refer to the RV pump instruction manual for normal operation of the pump.
17. Dispose of the old components and used oil safely in accordance with all local and national safety and environmental requirements.

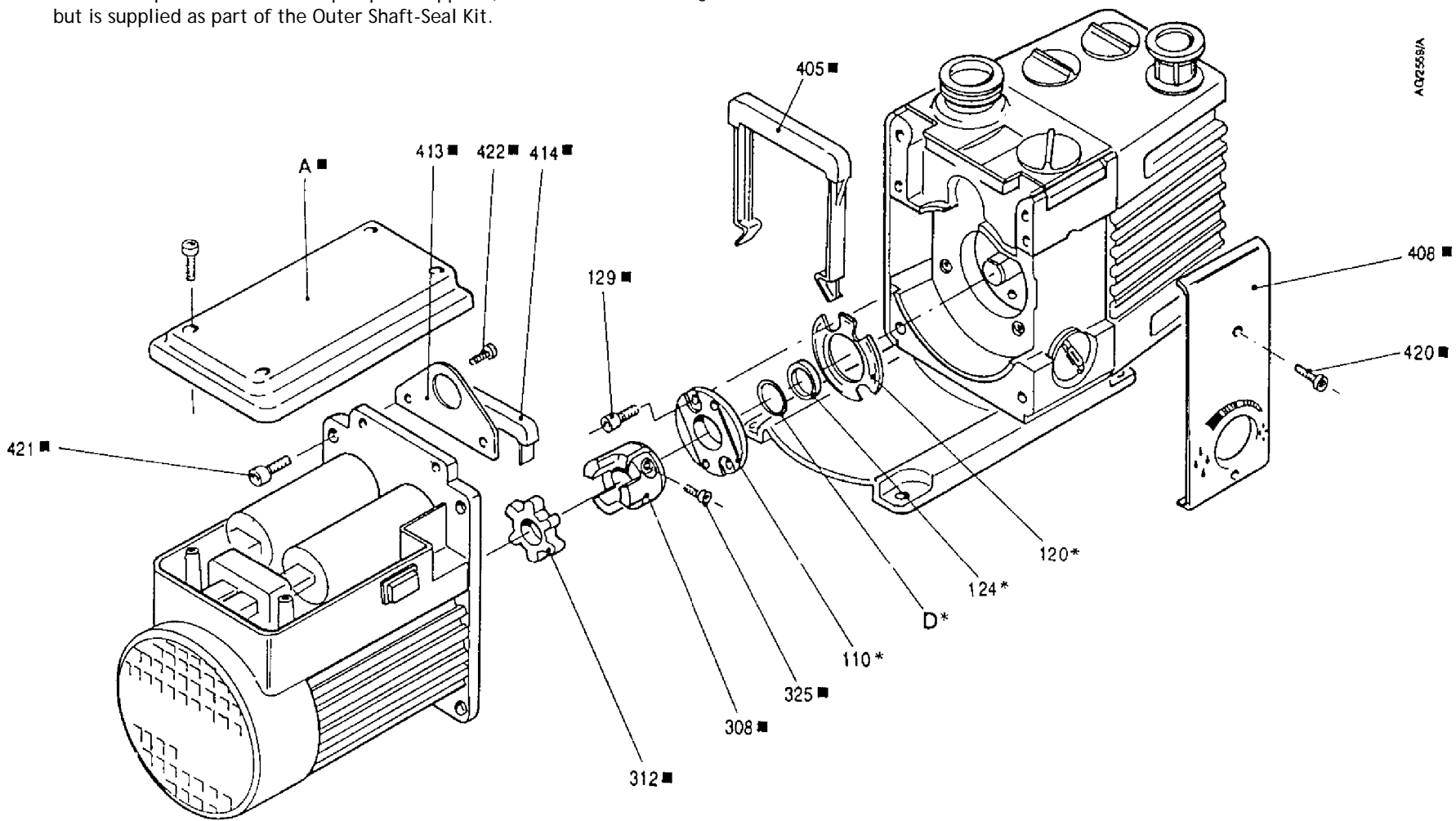


# How to use the Outer Shaft-Seal Kit

Figure 1 - Exploded view of the RV pump

- Shown for reference only: see key at right.
- \* Included in the Cartridge Kit: see Table 1
- A Motor top cover
- D Shaft-seal spacer: not fitted to pumps as supplied, but is supplied as part of the Outer Shaft-Seal Kit.

- |     |                  |     |               |
|-----|------------------|-----|---------------|
| 129 | Screw            | 408 | Side panel    |
| 308 | Coupling hub     | 413 | Lifting-plate |
| 312 | Coupling element | 414 | Cover         |
| 325 | Screw            | 420 | Screw         |
| 405 | Lifting-handle   |     |               |



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