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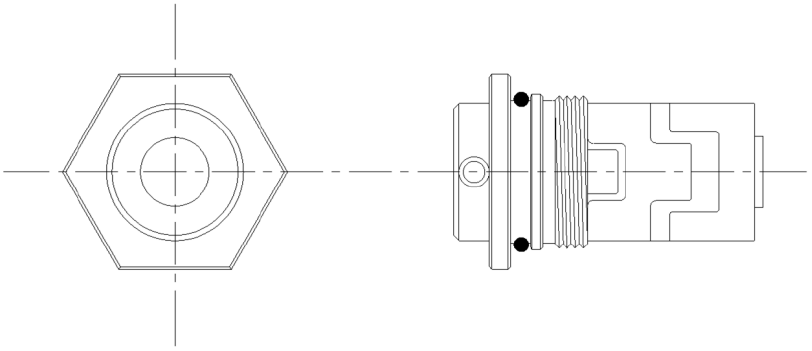
Pump Seal Replacement
All Variable Speed Grundfos CRIE models – BTAB & BTAF

Warning - mains voltage – isolate before maintenance

Replacement pump seal kits are available from the online shop



Grundfos Mechanical Pump Seal

Code	Description
PMP 96455086	Seal Kit HQQE

Symptoms of Pump Seal Failure –
All variable speed Grundfos CRIE models BTAB, BTAF & BPE, single pump and Dual pump sets
Water leaks between the motor and pump - generally continuing when the pump is not running.
To confirm seal failure, isolate power and then remove the coupling guard to inspect.

Dual Pump Sets
Duty Standby sets have a rotary switch on the control box. This is normally set to “Auto”. If one pump develops a fault, rotate the switch to run the other pump. If the set has a pump inlet serving valve from the cistern, this can then be isolated until the pump is repaired. **Warning – the complete pump set must be electrically isolated at source before any maintenance.**

Tools Required For Replacing the Pump Seal
- 10 mm and 13 mm combination spanner
- Adjustable spanner (36 mm jaw capacity) or 36 mm Box Spanner
- Hex keys
- Screwdrivers
- Torx keys
- Torch

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Pump Seal Replacement

1. If there is no servicing valve to the pump, isolate the water supply to the inlet solenoid(s) and then draw off some water from the boosted system until the pumps stop due to low level.
2. Isolate electrical power.
3. Dual pumps - remove the tie bar between the pumps by unclipping the clevis pin from each end.
4. Indirectly connected transducer (Blue hose) - Release the pressure transducer plug after loosening the screw. Directly connected transducer (Fitted to pump) – Remove pump terminal cover and detach transducer wires after noting position.
5. Detach the two coupling guards.
6. Detach the coupling by removing the four hex screws.
7. Prise apart the two halves of the coupling; the second half may require a little tap to come loose.
8. Remove the four motor bolts.
9. Take off the motor and set it aside – **taking great care not to strain the cables.**
10. Loosen the three grub screws on the shaft seal.
11. Remove the shaft pin.
12. Unscrew the pump seal from the pump housing with a wide jaw adjustable spanner or 36mm box spanner and slide the seal off the shaft.
13. Inspect shaft for burrs, if necessary remove with curved abrasive tool supplied.
14. Take the new pump seal and lubricate the O-rings and pump shaft with soapy water.
15. Tighten the pump seal, first by hand and then with adjustable spanner. *If using a wide jaw adjustable - Arrow Valves recommend backing off the seal by one flat (60^{o}) and only fully tightening after the 3 seal grub screws*.
16. Insert the shaft pin.
17. Raise and lower the shaft by holding the pin to determined length of travel and then hold the shaft mid-travel.
18. Tighten the three grub screws on the seal to 2.5 Nm.
19. Restore the motor into place at the same orientation as it was before.
20. Replace and tighten the four motor bolts.
21. Fit both halves of the coupling together with the four screws finger tight.
22. Reconnect the coupling ensuring that the pump shaft pin is sat in the hole in the middle of the coupling housing. Replace the bolts and tighten - checking that the gap between the coupling housing is even. Tighten to 13 Nm (M6), 31 Nm (M8).
23. If the pump seal was not fully tightened earlier – fully tighten with adjustable spanner to 35 Nm.
24. Fit the coupling guards, tightening the two screws.
25. Reconnect the transducer.
26. Dual Pumps – replace the tie bar.
27. Open all servicing valves and restore power.
28. Inspect for leaks.

Useful Links

Grundfos small CR shaft seal repair in real time video
Grundfos webcaps CRIE 3 videos

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