

Cleaning or Replacing the Valve Rotors

When required	When the System Test keeps failing after simple cleaning
Tools required	Screw driver Pozidriv no. 1, P/N 8710-0899 Rotor mounting tool, P/N G4240-68708 Hex key 3mm, P/N 8710-2411 Abrasive Mesh, P/N 8660-0852
Parts required if cleaning is not possible	Inner rotor, 3 grooves, P/N G4240-23705 Outer rotor, 5 grooves, P/N G4240-25206 Guide ring for inner rotor, P/N G4240.21704

Preparations	<ul style="list-style-type: none">Use “Exchange valve rotors” on page 47 to bring the valve rotors into the maintenance position.Switch the pumps off, eject the HPLC-ChipOpen front coverSwitch the G4240A HPLC-Chip Cube Interface off at the power switch
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WARNING

Removing the valve rotors without running the “[Exchange valve rotors](#)” on page 47 function beforehand will leave the valve drives in erratic position. Reinstallation of rotors and rotor coupler with the alignment tool will not be possible.

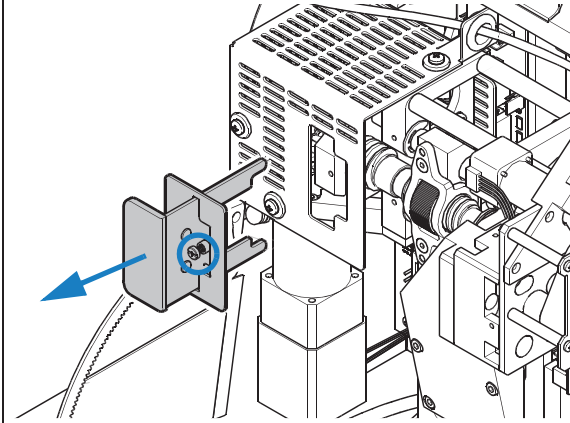
CAUTION

Switch the G4240A HPLC-Chip Cube Interface off before pulling off internal connectors to avoid shock hazards and possible instrument damage.

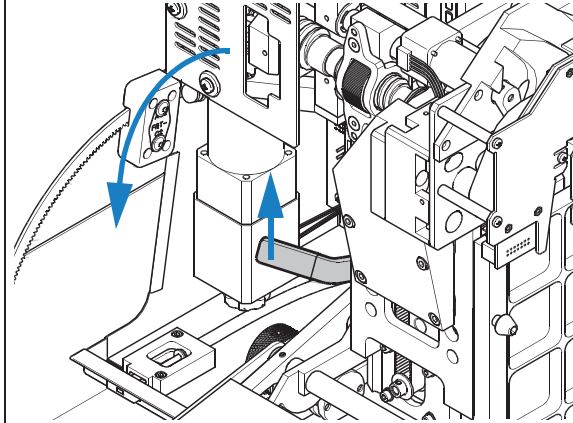
CAUTION

Only perform this procedure if the G4240A HPLC-Chip Cube Interface is mounted on the MS or sitting flat on a table as the center of gravity is shifting and the instrument will tip over if adequate support is missing.

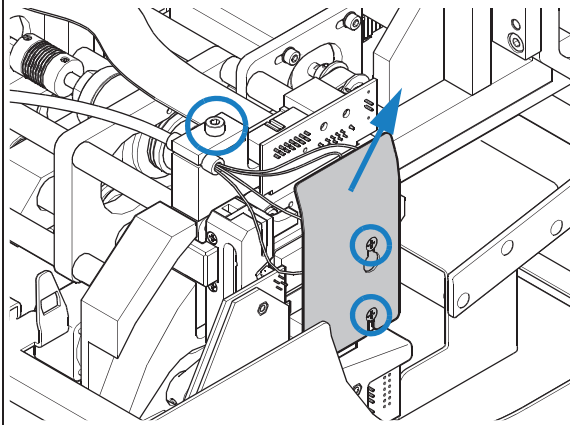
1 Open the screw of the clamp latch and pull the latch out of the holder out.



2 Unlock the stages assembly and flip it out.

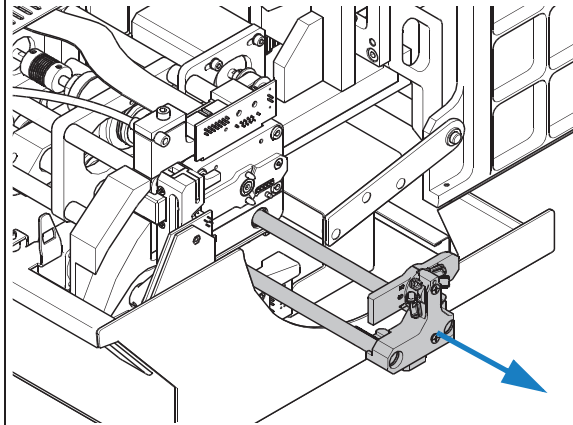


3 Open the thumb screw and remove the capillary guide tube from the strain relief...



4 Pull the stator assembly out.

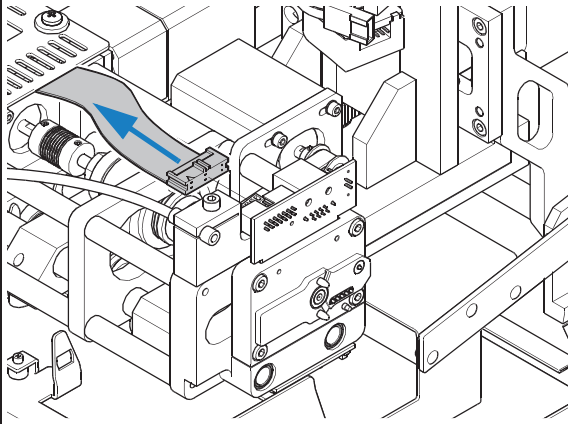
Note: if the capillaries are long enough it is not necessary to remove the capillary cover and detach them from the stator.



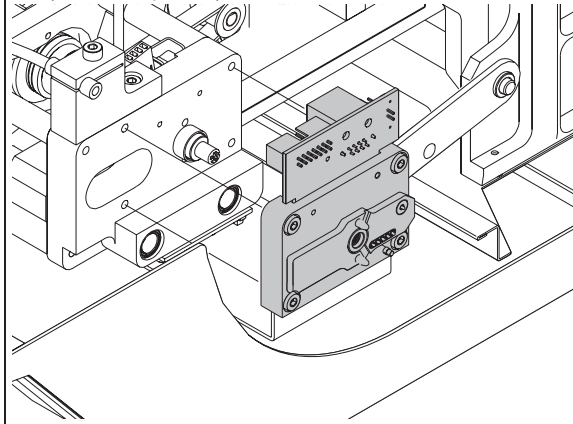
4 Repair of the Chip Cube

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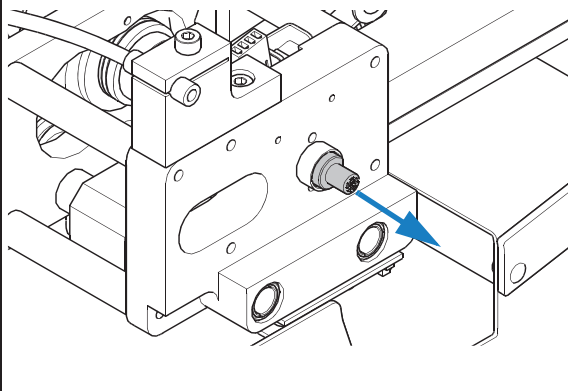
5 Pull the grey flat ribbon cable out of the valve housing front cover connector.



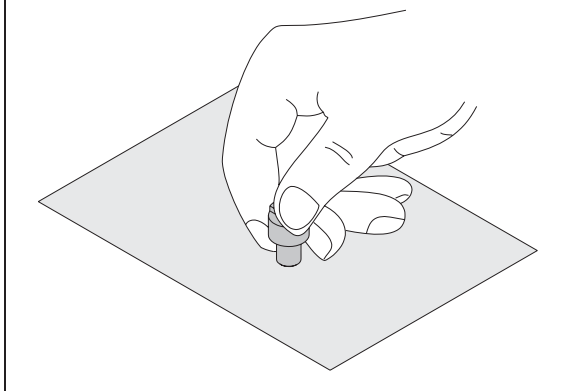
6 Using the 3mm hex key, loosen the 4 valve housing front cover screws and pull the valve housing front cover off (can be very hard!)



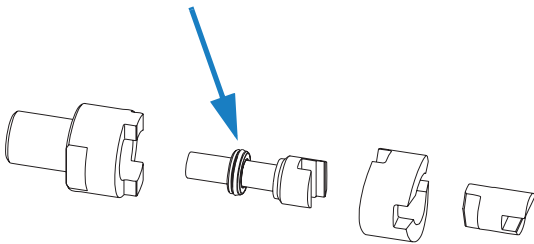
7 Remove rotor assembly and couplers from the valve. Steps 8 explains rotor cleaning. If it is desired to use new rotors continue with step 9.



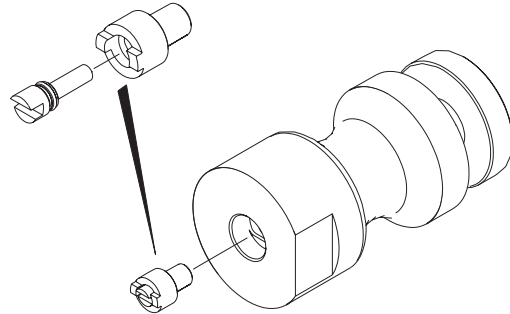
8 In most cases it is possible to clean dirty valve rotors by taking them apart and rubbing the front face with the supplied abrasive mesh. Sonicate or flush the cleaned rotors with isopropanol and reassemble them.



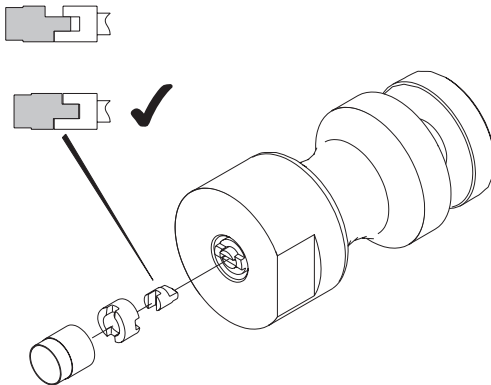
9 When assembling new rotors, push the bearing ring onto the inner rotor before inserting the inner rotor into the outer rotor. When rotors are reassembled after cleaning, the ring is mostly swaged into the outer rotor. In that case it can be left in place..



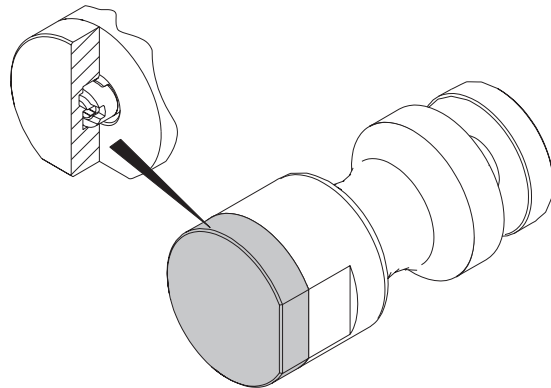
10 Place the assembled rotors into the rotor assembly tool and turn them until the outer rotor locks in place.



11 Attach the inner coupler to the inner rotor. Mind the correct orientation (see detail view below)
Note: Incorrect orientation may damage your Chip Cube...



12 After adding the outer coupler and the guide ring (smaller side sticking out) put the tool cover on and turn it until the flat sides cover and body match..

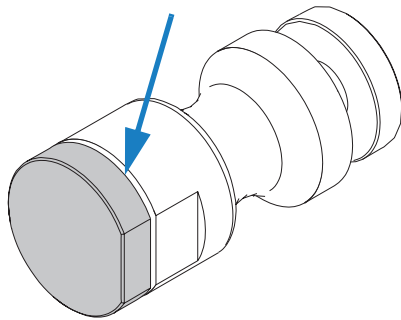


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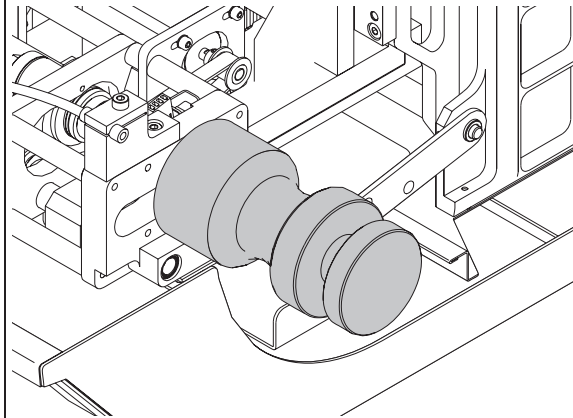
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13 If tool cover and body are not flush but a gap remains, take the cover off, turn it by 180 degrees and try again. Should the gap remain, the inner rotor has been installed in the wrong orientation. Return to step 11.

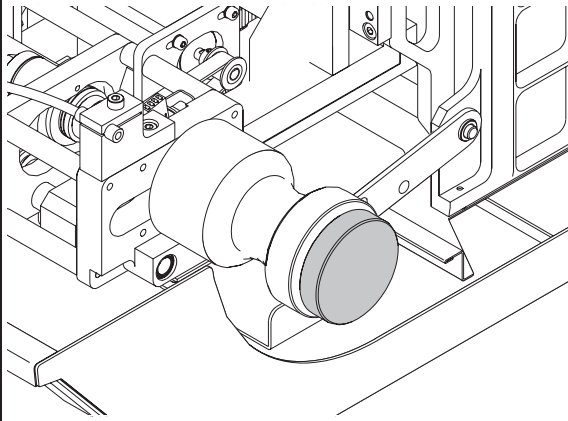
Note: Wrong installation of rotors or coulters will damage your Chip Cube...



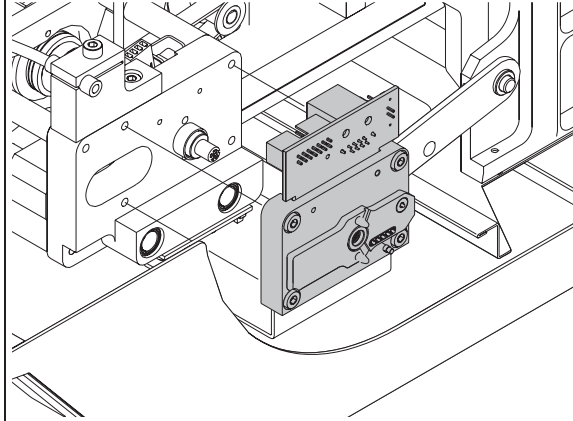
14 Remove the tool cover. Place the flat side of the tool onto the nose of the stages assembly.



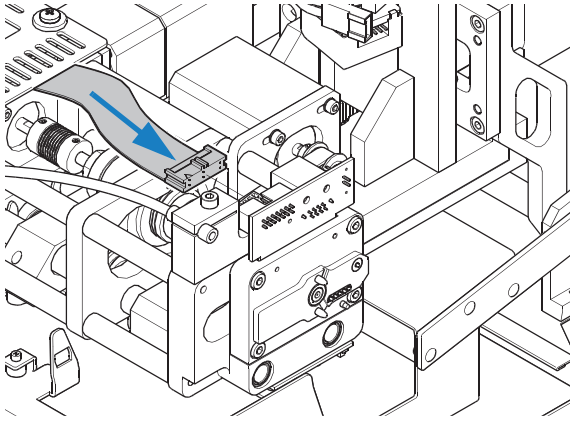
15 Inject the valve pack into the stages assembly (the tool is used like a syringe)..



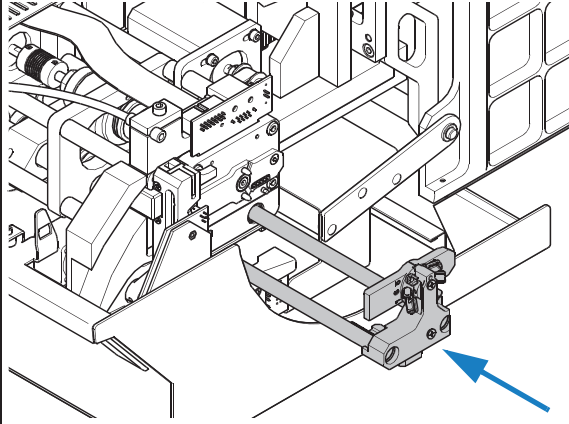
16 Push the valve housing front cover onto the stages assembly and tighten the four hex screws equally until they are tight.



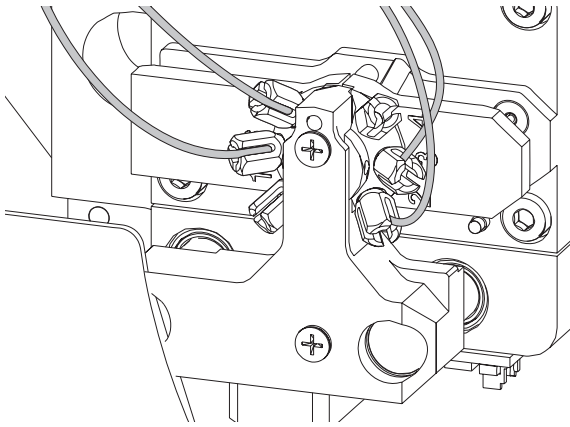
17 Reconnect the flat ribbon cable to the valve housing front cover...



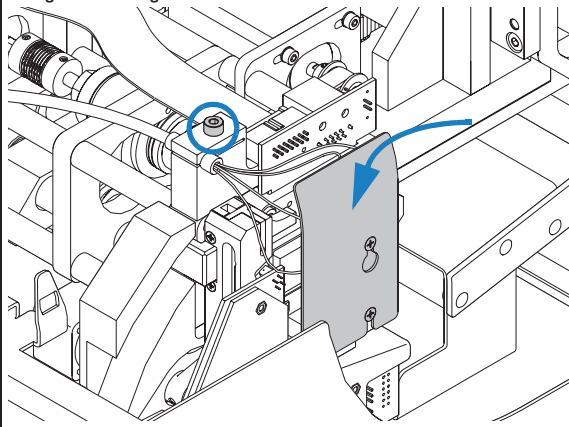
18 Push the stator assembly into the guide rods.



19 If the capillaries have been detached in step them to the stator assembly. (hydraulic scheme can be found on the capillary cover label)..



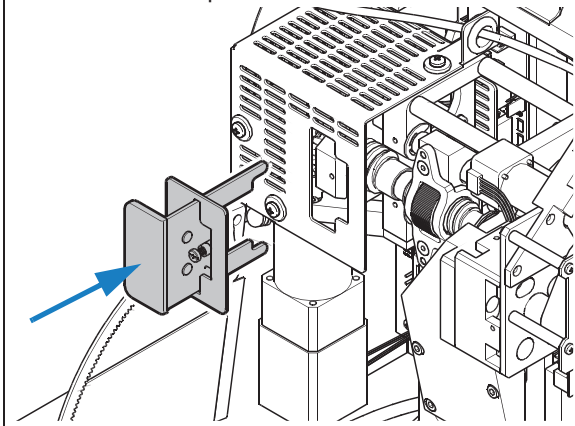
20 Mount the capillary cover. Make sure no capillaries are trapped between valve stator and cover (not necessary if the capillaries haven't been detached). Secure the capillary guide tubing in the strain relief..



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21 Flip the stages assembly into the upright position and reinstall the clamp latch. Secure it with the screw.



22 Mount the capillary cover. Make sure no capillaries are trapped between valve stator and cover.

23 lose the front panel

24 Switch the instrument ON

25 f new valve rotors have been installed, run the “[HPLC - Valve Calibration](#)” on page 51 from the Chemstation **Maintenance** Screen.