

132a Helpshe

Hardware

2Hz Minidyn

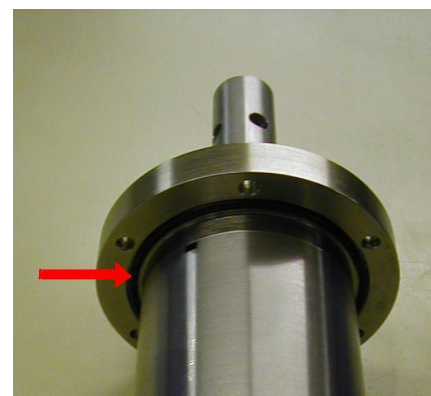
Removing Balanced Ram (Minidyn/Maxidyn)

1. Removing the Ram

- 1.1. For safety reasons, first make sure your machine is switched off and that all connections to mains electricity are removed.
- 1.2. The inside of the system should be thoroughly cleaned and all rust removed. If water has penetrated to the ballscrew this should be re-lubricated with grease to prevent further rusting.
- 1.3. Completely remove the Swagelok connector from the supplied balanced ram.



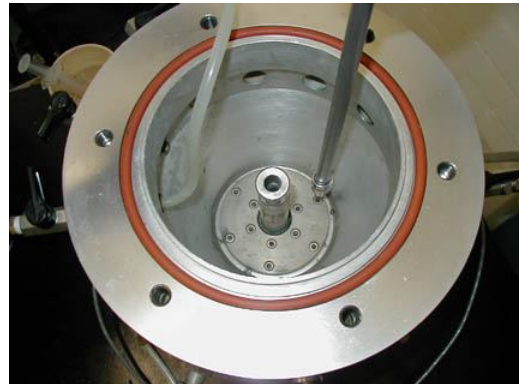
- 1.4. Ensure that the flange O-ring is in place. Use silicone grease to "stick" the O-ring in place if needed while the balanced ram is placed into the machine.



1.5. Thoroughly clean the inside of the cell first as any trapped material could stop the ram assembly from sealing into place. The ram can now be completely replaced through the top of the machine



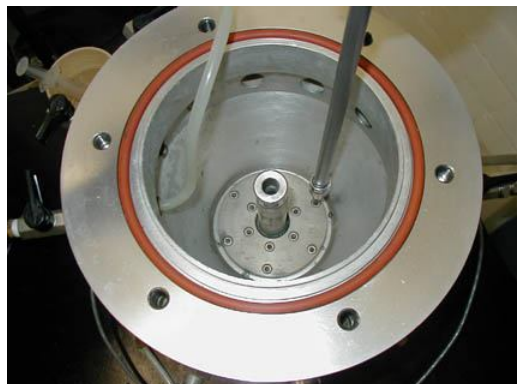
1.6. The 6 M5 ram retaining bolts inside the cell base should then be loosely replaced.



1.7. Replace the 6 bolts attaching the ram to the main machine

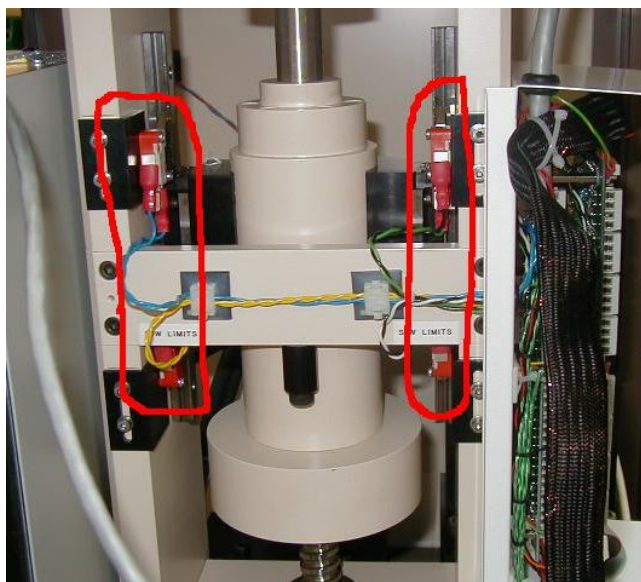


1.8. Re-place the Swagelok and sealing washer onto the balanced ram



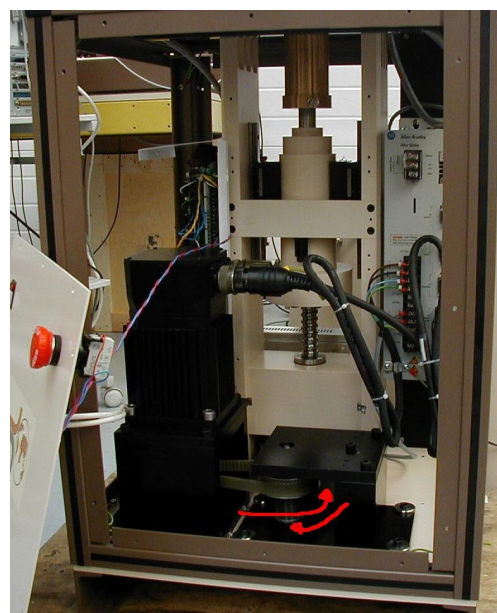
1.9. The 6 M5 ram retaining bolts inside the cell base should then be tightened.

- 2.1. Once the balanced ram is in position the actuation of the limit switches must be checked to make sure that they will engage before the end of the ram travel. There are two pairs sets of limit switches, Hardware and software. Each pair is made up of a switch for the upward travel direction and a switch for the downward travel direction. Which ever direction the system is travelling in the software limits should always engage before the hardware limits by about 5mm. You can hear when the switch engages by a soft “click” noise. The rollers for the switches engage onto the carriage of the linear guides.



- 2.2. WITH THE POWER STILL SWITCHED OFF AND THE PLUG REMOVED FROM THE MAINS the ram can be moved up and down by hand. The pulleys can be turned manually but please take care not to trap your fingers or clothing between the pulleys and the belts.

- 2.3. Firstly, rotate the pulleys so that the ram travels upwards. You should hear both the hardware and software limits engage before you reach the end of the travel (which should be around 5mm after the hardware limit engages). If you hit the physical end of travel for the ram before both sets of limits are engaged then the switches must be adjusted down until they both engage before the end of travel. Remember that the software limits must engage 5mm before the hardware limits.



- 2.4. Now repeat this with the travel in the downwards direction.

- 2.5. Now wind the piston from bottom to top and back again by hand. The travel should be very easy and you should not be able to feel any stiff points. If you can then please release the balanced ram coupling (in item 1.7 above) and rotate the shaft of the ram by 1 fixing hole. Then repeat the test, continue this until a position is found where the system runs freely over the whole travel. If no free position is found then please contact GDS.

- 2.6. Run the system to test the limit switches are working

- 2.7. Put the top of the cell in place with no sample and fill with water and pressure test while looking for any signs of leakage.

- 2.8. Replace the covers and plug the machine back into the mains.

- 2.9. Carry on with normal testing