

Drain Valve Replacement

This procedure helps facilitate the replacement of the A2000 drain valve, including the valve motor.

1. Start with turning the power OFF and unplugging the A2000 Fiber Analyzer. Lay the instrument on its face on a foam pad or other non-abrasive surface as shown in Figure 1. Remove the clear back panel.

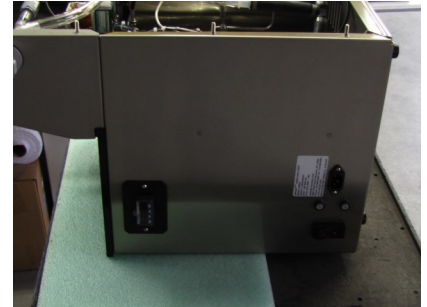


Figure 1

2. Remove the bottom panel from the instrument to access the internal components. There are six screws to be removed using an 1/8" hex wrench. See Figure 2.

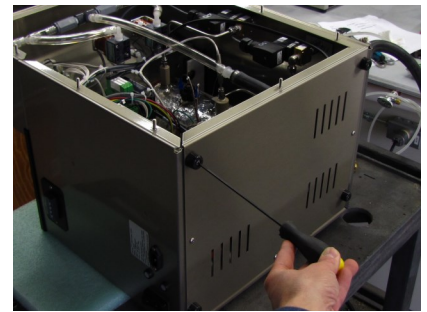


Figure 2

3. Loosen the hose clamp which connects the black tubing to the valve. Use a flat head screwdriver as shown in Figure 3.

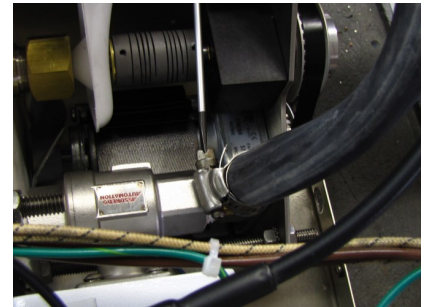


Figure 3

4. Disconnect the hose from the brass elbow as depicted in Figure 4. **IMPORTANT:** Avoid getting water from the hose in the instrument or on the electronics.

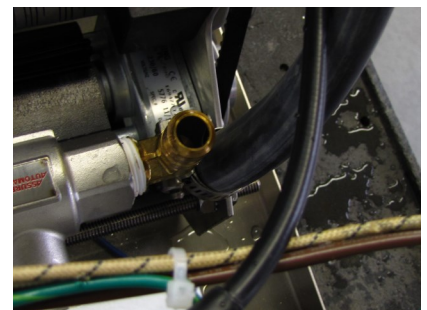


Figure 4

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5. Remove the three nuts on the threaded rods that hold the agitator motor in place. See Figure 5.

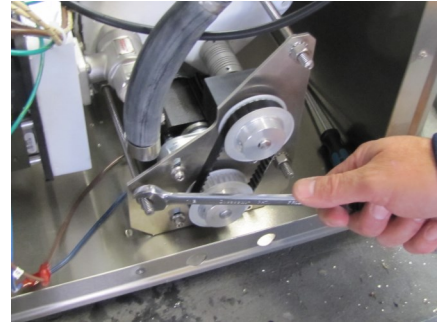


Figure 5

6. Figure 6 shows the agitator motor assembly with the three nuts removed.

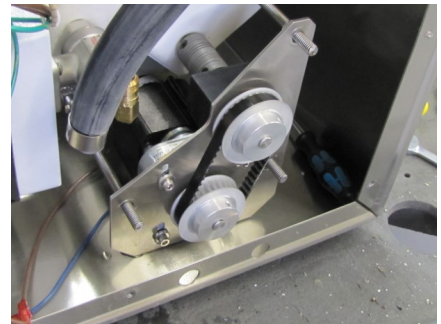


Figure 6

7. Loosen one of the set screws on the coupler to facilitate removing the agitator motor assembly. Reference Figure 7.

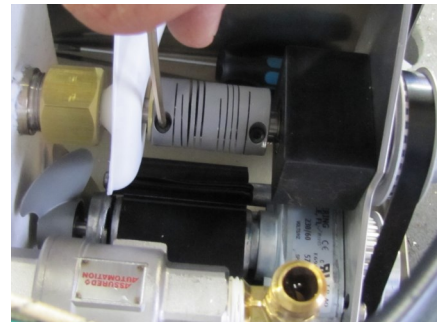


Figure 7

8. Remove the agitator motor assembly and set it aside as shown in Figure 8.

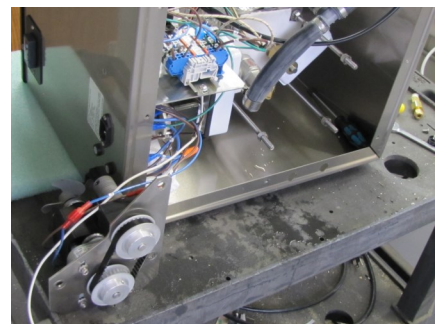


Figure 8

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9. Remove the four screws that secure the valve to the valve motor. See Figure 9.

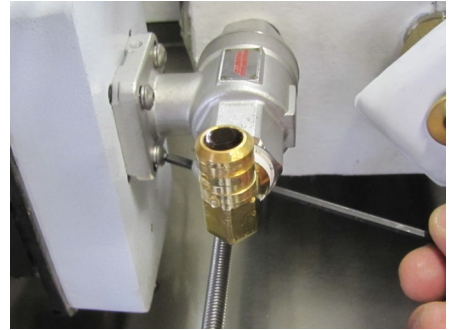


Figure 9

10. Remove the valve motor from the valve and set it aside as shown in Figure 10.

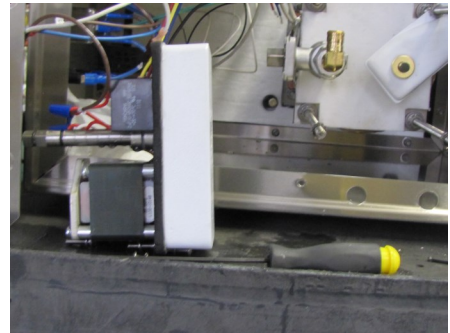


Figure 10

11. Remove the valve from the bottom of the A2000 vessel. See Figure 11.

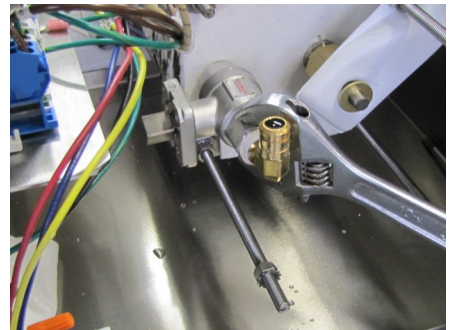


Figure 11

12. Use a small flat head screwdriver to loosen the screw that holds the #15 brown wire on the high voltage DIN rail. Pull the wire out of the connector. Refer to Figure 12.

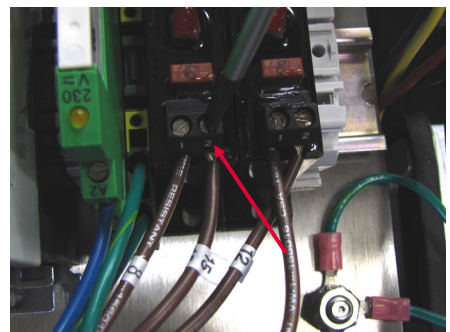


Figure 12

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13. Use a small flat head screwdriver to loosen the pinch on the #9 white wire. Insert the small flat head screwdriver into the square hole immediately adjacent to the white wire. Press straight down with the screwdriver and the wire will be released.

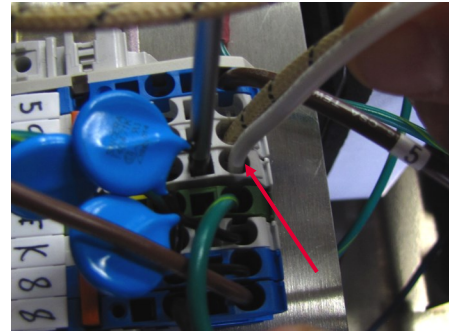


Figure 13

14. Identify the four [blue(i1), yellow(i2), red(4) and black(4)] wires coming from the valve motor as shown in Figure 14.

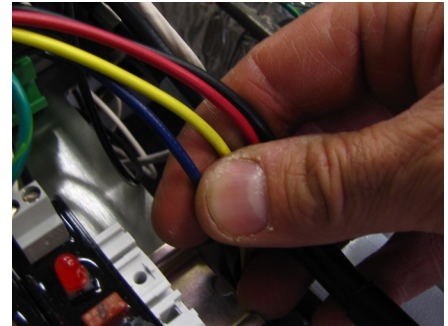


Figure 14

15. Use a small flat head screwdriver to loosen the pinch on the #i1 blue, #i2 yellow, #4 red, and #4 black wires. Insert the small flat head screwdriver into the square hole immediately adjacent to the wire. Press straight down with the screwdriver and the wire will be released. Pull the wire from the connector and remove the screwdriver. See Figure 15.

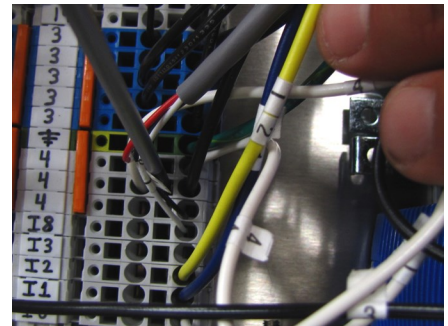


Figure 15

16. Now that the wires to the old valve motor have been disconnected, remove the old valve motor and set aside. Apply three wraps of Teflon thread tape to the threads of the valve port on the bottom of the A2000 vessel as shown in Figure 16.



Figure 16

Drain Valve Replacement

17. Install the new valve making sure it is tight and oriented as shown in Figure 11. Also make sure that the square tube coupling is in place as shown in Figure 17.

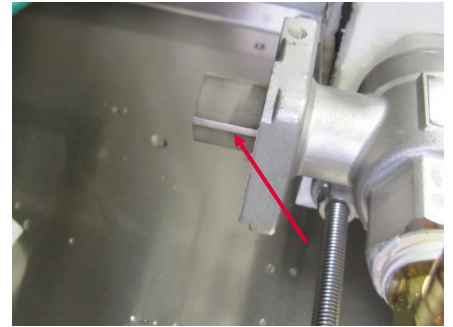


Figure 17

18. Install the new valve motor by attaching with the four screws removed in step 9. Use an 1/8" hex wrench to tighten the screws securely. See Figure 18.

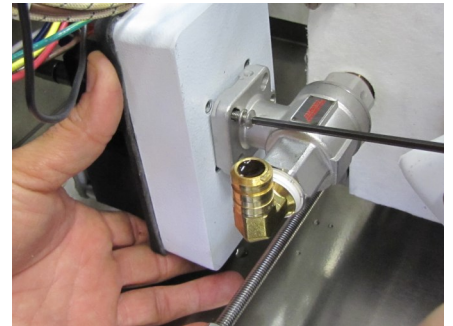


Figure 18

19. Identify the four [blue(i1), yellow(i2), red(4) and black(4)] wires coming from the valve motor as shown in Figure 19.

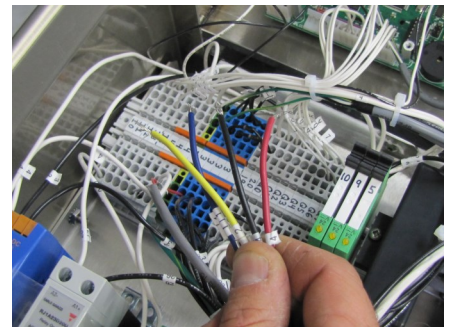


Figure 19

20. Connect the wires into the high voltage DIN rail as shown in Figure 20 — Blue goes to #1, yellow to #2, red and black to #4. Insert a small flat head screwdriver into the square hole immediately adjacent to the wire hole. Press straight down with the screwdriver and the wire pinch will be opened to receive the wire. Insert the wire and remove the screwdriver. Give the wire a slight tug to make sure it is secure.

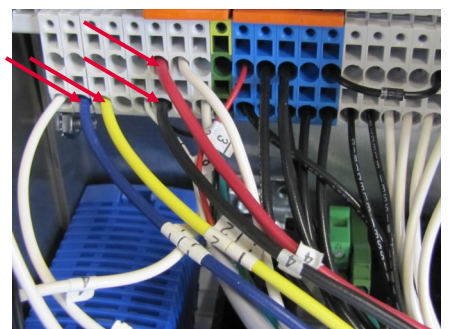


Figure 20

Drain Valve Replacement

21. Feed the #15 brown and #9 white wires from the valve motor through the grommet as shown in Figure 21.

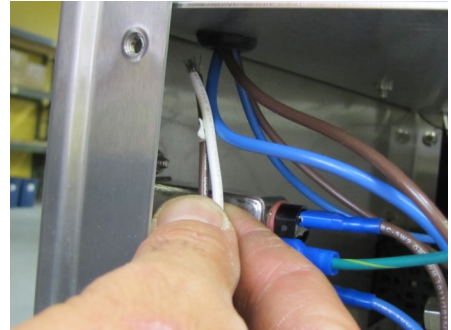


Figure 21

22. Bring the #15 brown and #9 white wires through the grommet. See Figure 22.

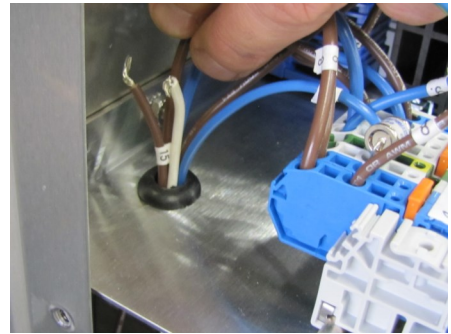


Figure 22

23. Reconnect the #9 white wire into the DIN rail as depicted in Figure 23. Insert a small flat head screwdriver into the square hole immediately adjacent to the wire hole. Press straight down with the screwdriver and the wire pinch will be opened to receive the wire. Insert the wire and remove the screwdriver. Give the wire a slight tug to make sure it is secure.

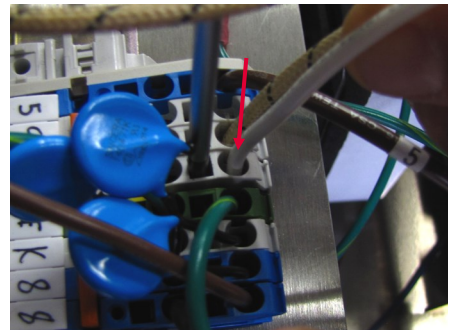


Figure 23

24. Reinstall the #15 brown wire as shown in Figure 24. Use a small flat head screwdriver to securely connect the wire.

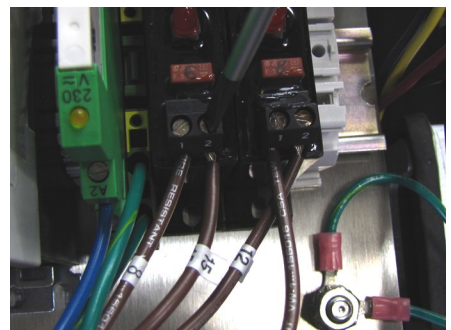


Figure 24

Drain Valve Replacement

25. Replace the agitator motor assembly that was removed in step 6. See Figure 25.

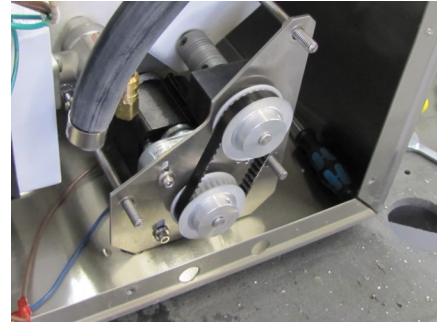


Figure 25

26. While replacing the agitator motor, be sure the fan blade, identified with the red arrow in Figure 26 is clear of the white drip tray. Tighten the set screw on the coupling, identified with a yellow arrow.

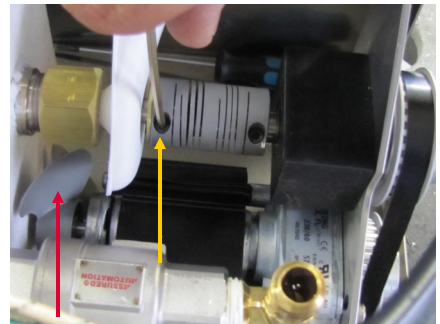


Figure 26

27. Secure the agitator motor assembly in place with the three nuts removed in step 5. Reference Figure 27.

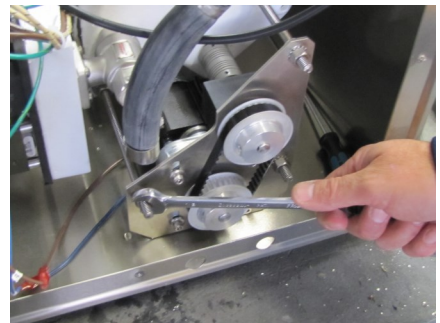


Figure 27

28. Replace the black tube and tighten the hose clamp with a flat head screwdriver as shown in Figure 28.

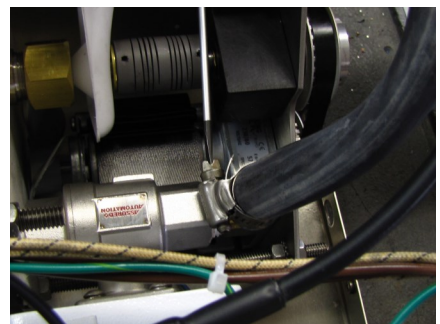


Figure 28

Drain Valve Replacement

29. Replace the bottom panel using an 1/8" hex wrench as shown in Figure 29. Also replace the clear plastic back panel.

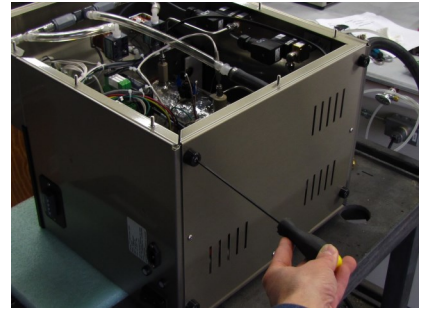


Figure 29