

PB2 Conversion for New Control Box and Divert-to-Drain		TSB 2012011
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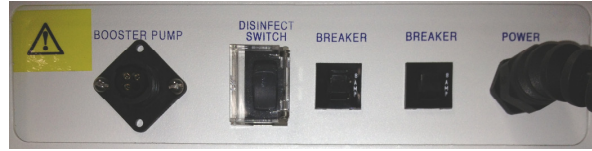
TECHNICAL SERVICE BULLETIN

OVERVIEW:

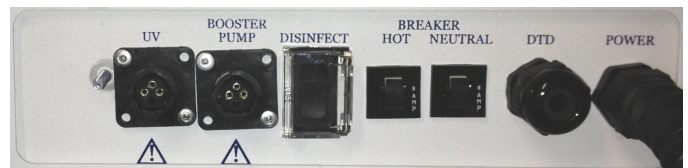
If a Divert-to-Drain is needed for PB2 models manufactured prior to 2013, a new control box must be installed in place of the original model. See the pictures to the right denoting the external differences between the two control boxes to determine which control box your PB2 has. A new bracket must also be installed on the cart on which the Divert-to-Drain will be mounted.

The following part number/kit is available which contains all the necessary items for retro-fitting older model PB2s with the Divert-to-Drain:

- Part# EQSUBPB2CB/DTD**
- New Control Box
 - Divert-to-Drain
 - Cart Mounting Bracket



Older model control box that is **NOT** Divert-to-Drain capable.



New model control box that **IS** Divert-to-Drain capable



The new Divert-to-Drain for the PB2 has been designed for renal dialysis applications

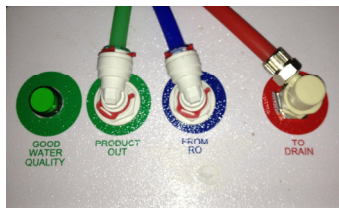
* The Divert-to-Drain has a 3-way solenoid valve and Good Water Quality LED Indicator light

* In good water conditions...
 ... the solenoid energizes
 ... the Good Water Quality LED indicator is lit

* In poor water conditions...
 ... the solenoid de-energizes
 ... product water from the PB2 is diverted to drain
 ... the Good Water Quality LED indicator is not lit

* The Divert-to-Drain is set to divert based on the PB2's Water Quality Monitor set-point setting

* If the Water Quality Monitor fails, the Divert-to-Drain will divert the product water to drain



Top view of the Divert-to-Drain showing tube connections and the LED

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INSTRUCTIONS:

The following instructions detail how to remove and replace the control boxes as well as how to mount the bracket on the cart and the Divert-to-Drain onto the bracket.



WARNING

To avoid electrical shock, turn the power to the PB2 OFF, and unplug it from the electrical outlet. A lock-out tag should be placed on the unit to prevent accidental use while this conversion is underway.

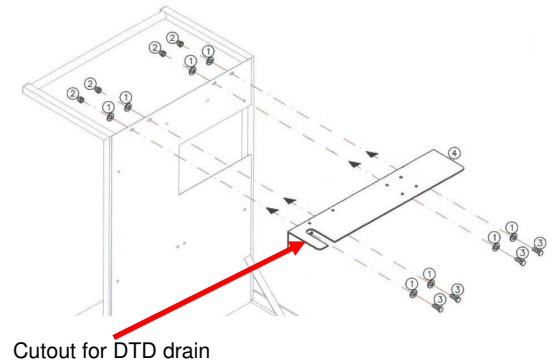
1. Turn the power to the PB2 OFF, and unplug it from the electrical outlet.

MOUNT the BRACKET to the CART

2. Mount the bracket onto the cart, attaching with the four screws, washers and nuts as shown.

NOTE: If Big Blue Filters are used, the same four screws that hold the filters on, can be undone and used to attach the bracket.

NOTE: The four holes for the bracket may have to be drilled on older model carts.



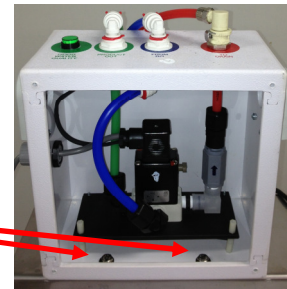
MOUNT the DIVERT-TO-DRAIN to the CART

3. Remove the front cover of the Divert-to-Drain, by removing the four screws that hold it in place.

4. Place the Divert-to-Drain onto the bracket, where the drain slides into the cutout on the bracket.

5. Attach the Divert-to-Drain using two screws, washers, and nuts, through the holes in the bottom.

6. Replace the Divert-to-Drain front cover using the four screws removed initially.



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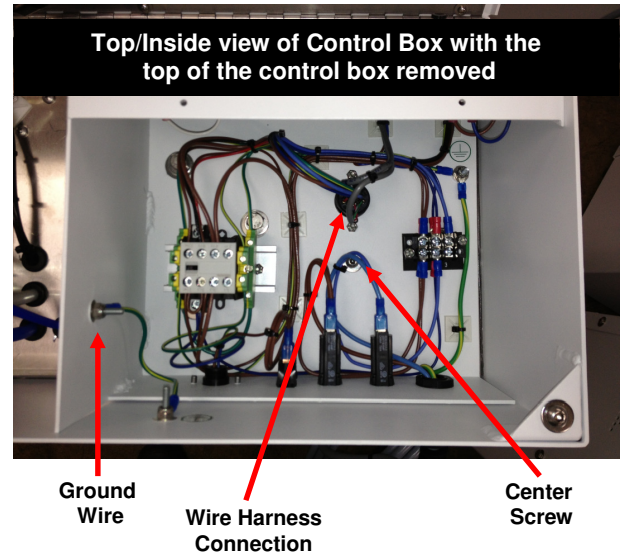
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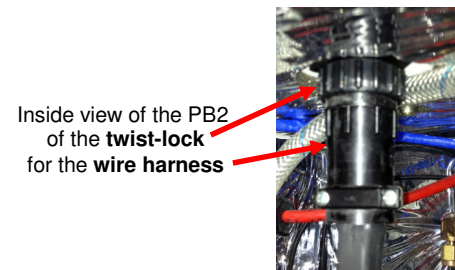
REMOVE OLD CONTROL BOX

7. Open the top cover of the PB2 to reveal the control box.
8. Remove the two screws that hold the top of the control box on, and remove that top.
9. Disconnect the **ground wire** that connects to the left side of the control box.
10. Locate the black **wire harness connector** inside the control box.
11. From inside the PB2 unscrew the **twist-lock** that holds that **wire harness** to the wire harness connection. Once the **twist-lock** is free, pull down on the **wire harness** to disconnect it from the **wire harness connection**.
12. Unscrew the **center screw** located in the center of the control box that holds the control box to the PB2 frame
13. Remove old control box, from the PB2 frame.



INSTALL NEW CONTROL BOX

14. Place new control box into top of PB2.
15. Replace the **center screw** to hold the control box to the PB2 frame.
16. From inside the PB2 reattach the **wire harness** to the **wire harness connection** in the control box by realigning the wire pins and re-screw the **twist-lock** on to hold it into place.
17. Reattach the **ground wire** to the side of the control box.
18. Connect the Divert-to-Drain wiring to the control box:
 - a. Locate the Hubble Strain Relief adaptor on the back of the control box and unscrew the Belden Compression Nut off.
 - b. Take the 5 wires from the Divert-to-Drain and pull through the compression nut, then through the Hubble adaptor into the control box.
- *Red, Brown, Black, White, and Green wires*
 - c. Cut the Red and Brown Wires as they will not be used.
 - d. Strip the Black, White, and Green wires back 1/4" so they can be connected.



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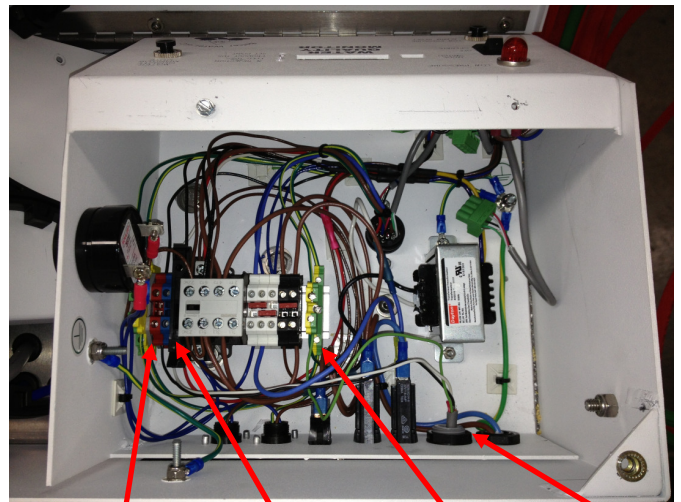
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- e. Locate the Red, Blue, and Green/Yellow Phoenix Blade Connectors.
- f. Place the Black Wire into the Red Phoenix Connector.
- g. Place the White Wire into the Blue Phoenix Connector.
- h. Place the Green Wire into the Green/Yellow Phoenix Connector.
- i. Screw the Belden Compression Nut back on and hand-tighten.

19. Reattach the top cover to the control box using the 2 screws that hold it in place.

20. Close the top cover of the PB2.



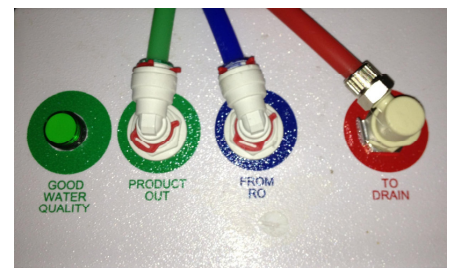
Red Phoenix Blade Connector (**black wire**) Blue Phoenix Blade Connector (**white wire**) Green/Yellow Phoenix Blade Connector (**green wire**) DTD wires through the Hubble adaptor

CONNECT THE DIVERT-TO-DRAIN

21. Connect the DTD hoses...

- a. Red Tube from the DTD **TO DRAIN port** to **DRAIN**
- b. Blue Tube from the DTD **FROM RO port** to the PB2 **PRODUCT port**
- c. Green Tube from the DTD **PRODUCT OUT Port** to the DIALYSIS MACHINE

22. Remove the lock-out tag from the PB2 and reconnect it to the electrical Outlet.



Top view of Divert-to-Drain showing tube connections

*** PB2 with Divert-to-Drain is ready to use.**

TEST the DIVERT-TO-DRAIN AFTER INSTALLING:

- 1. Place the Green Product Tube and the Red Drain Tube to Drain.
- 2. Before starting the PB2, make sure all air has been purged from the pretreatment.
- 3. Set the switch to OPERATE. The RO should start-up and the Water Quality Monitor should go into Poor Water Quality.
- 4. Verify that during this poor water quality condition that...
 - a. No product water flow from the Green **PRODUCT OUT Tube**
 - b. Product water is going to drain through the Red **TO DRAIN Tube**
 - c. The **GOOD WATER QUALITY LED** should NOT be lit on the Divert-to-Drain during poor water quality

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5. Verify that once the Water Quality Monitor gets above the set-point and there is a good water quality condition that...

- a. The Divert-to-Drain should have flow coming out of the Green **PRODUCT OUT Tube**
- b. No product flow should be going through the Red **TO DRAIN Tube**
- c. The **GOOD WATER QUALITY LED** should be lit green on the Divert-to-Drain

6. If the items as detailed in steps 4 and 5 can be verified, the Divert-to-Drain is functioning properly. If not recheck connections and contact technical support if necessary.