

PD2A POD FIELD SERVICE MANUAL

Revision B

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REVISION HISTORY

Rev	Description	Date
A	Initial Release	9/26/22
A.01	Improvements to readability	9/27/22
B	Manual modernization and alignment with 2025 spare parts offerings	5/1/25

REPAIR TOOL LIST

- Wrench, adjustable, at least 1 1/2"
- Wrench, 1 1/2"
- Wrench, 1-5/16"
- Wrench, 7/16"
- Wrench, 3/16"
- Wrench, 7/8", for pump bushings
- Hex tool, 1/16" drive
- Hex tool, 1/8" drive
- Hex tool, 3/32" drive
- Hex tool, 2mm
- Philips screwdriver
- Pliers, Needle nose
- Pliers, diagonal cutter
- Sharkbite 1/2" fitting removal tool (or "disconnect tongs")

REPAIR CONSUMABLES LIST

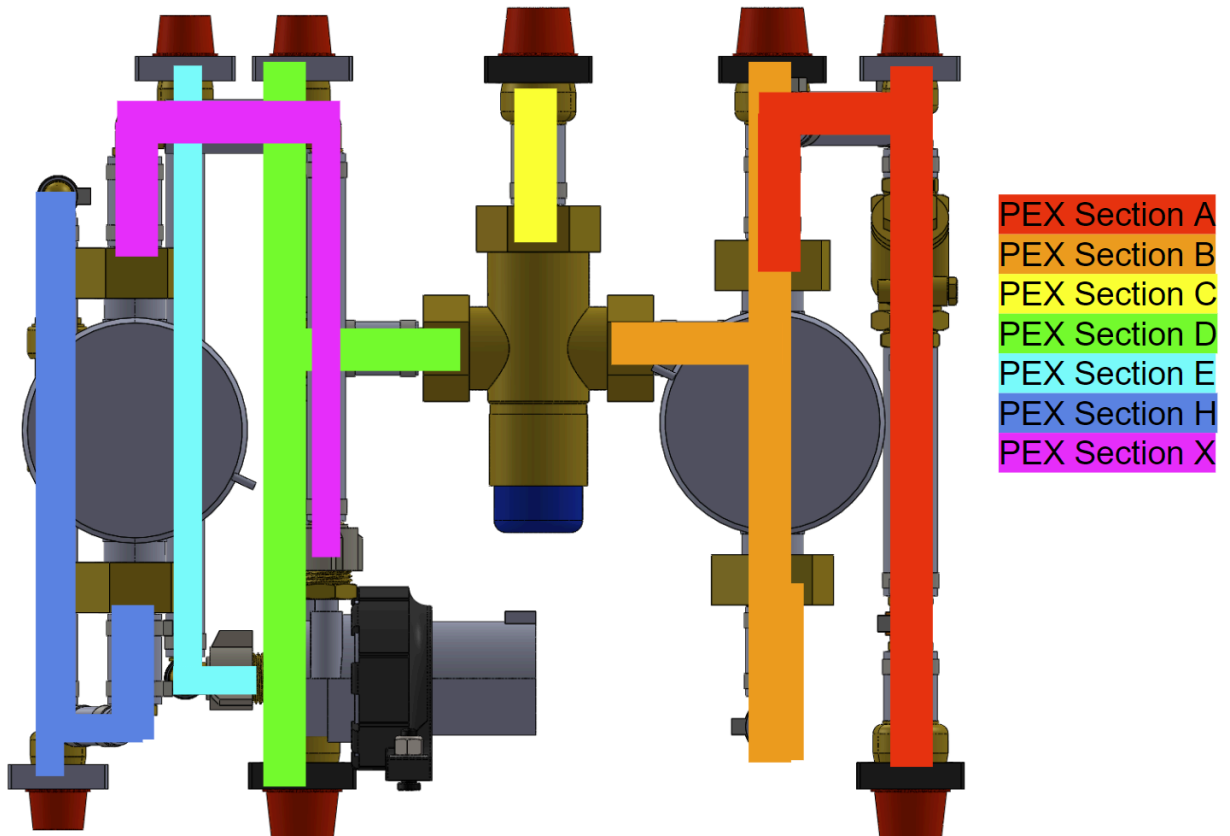
- Zip ties or Twist ties
- Pipe Thread sealant - Blue Monster
- Isopropyl alcohol
- Materials for labeling wires

DIAGNOSTIC TOOL LIST

- Digital manometer
- Cat 5 or 6 cable (qty 2)

- Cat 5 breakout junction box (qty 2)
- Digital multimeter and current clamp (ac capable, with low amp measurement)
- Pod internal sensor wiring - jumper cables
- [Kill-a-Watt](#) or equivalent power measurement device
- Outlet splitter
- USB extender
- Thermocouple
- Spare thermostat

PEX SECTION IDENTIFICATION GUIDE



SPARE PARTS LIST FOR PD2A

<u>Description</u>	<u>Part#</u>	<u>Note</u>
Circulator pump with bushings	201074	
Flow Meter, Flow IQ 2100 with connector	201083	
Bulkhead Cable	201087	
Omnibus Cable	201091	Procedure not described
PEX Section A	201097	Includes swing check valve
PEX Section B	201096	
PEX Section C	201095	
PEX Section E	201094	
PEX Section H	201093	Includes spring check valve
PEX Section X	201092	
Mixing Valve with Sensor	201697	
Electronics Assembly, for converting PD2A to PD2B	201827	
Wireless N USB Adapter (TP-Link TL-WN725N)	201352	Procedure not described
Airscape Air Handler Controller with Access Door	201611	
SanCo2 Wiring Harness	201863	Procedure in Install Guide

The following components are not available to order for field replacements. A full Pod replacement will be necessary:

- PEX Section D
- Electrical Bulkheads
- Enclosure Parts

The Spring Check Valve and Swing Check Valve by themselves are not orderable as spare parts. The corresponding PEX section must be replaced as a whole:

- Spring Check Valve: PEX Section H
- Swing Check Valve: PEX Section A

MIXING VALVE

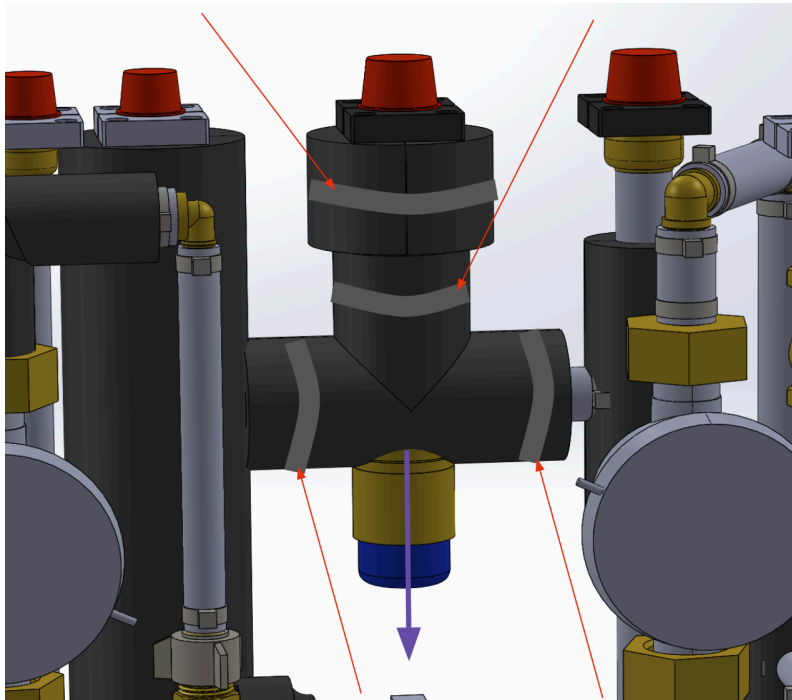
Use spare part # 201697

Adjustment:

- Open front panel
- Refer to mixing valve service manual for full adjustment instructions:
<https://customer.resideo.com/resources/Techlit/TechLitDocuments/62-0000s/62-3098.pdf>
- Loosen screw on locking cap (requires short screwdriver)
- Pull down locking cap to free the adjustment mechanism.
- Rotate clockwise for hotter, counter-clockwise for colder mix. 125 F is 180 degrees from max. The resolution is 30 degrees rotation per 4 degree F
- Replace locking cap to locked position

Removing:

- Drain the system
- Open front panel
- Remove velcro straps from insulation around mixing valve and DHW line (red arrows)



WARNING: COMPONENTS MAY STILL BE HOT

- Remove insulation from around top segment
- Pull down carefully on insulative tee to remove from mixing valve (purple arrow)

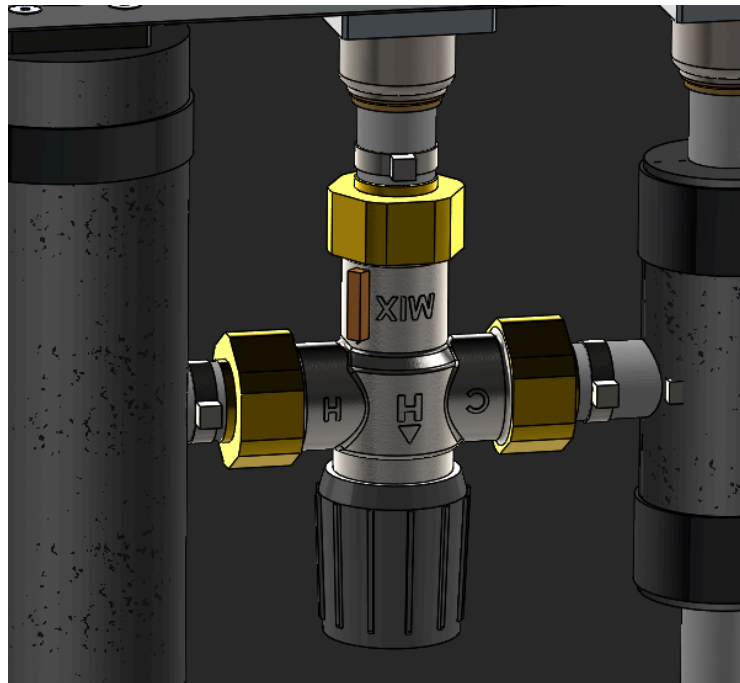
- Optional: place towel at bottom of enclosure to catch excess moisture during disassembly
- Unscrew 3 couplers on mixing valve (1 1/2" wrench)
- Remove mixing valve from enclosure

Service:

- For information on how to:
 - Clean or replace check valves
 - Clean or replace thermostat mechanism
- Refer to mixing valve service manual:
<https://customer.resideo.com/resources/Techlit/TechLitDocuments/62-0000s/62-3098.pdf>

Replacing:

- Use new gaskets:
 - Mfr PN: AMU200-RP
 - Manufacturer: Resideo Braukmann
- Put mixing valve into enclosure, and tighten the coupler nuts (1 1/2" wrench)
- Check the orientation - Hot port goes to left when facing the Pod (marked 'H')



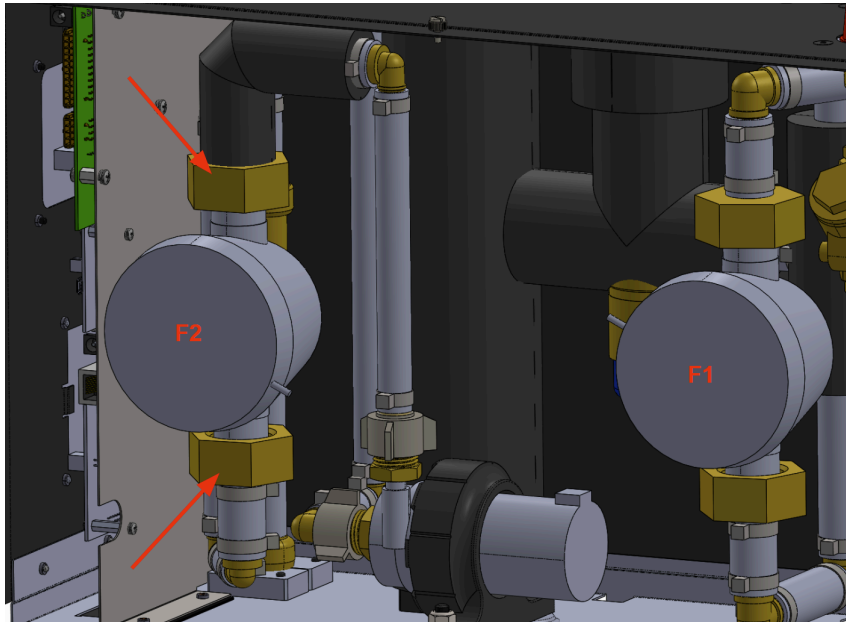
- Fill system, check for leaks
- Adjust to target temperature setting
- Add back insulation around valve and DHW line
- Add velcro clasps to insulation
- Leave sensor unconnected
- Close and secure front panel

FLOW METERS

Use spare part # 201083

Removing:

- Drain system
- Open front panel
- F1 is the meter on the **Right**, F2 is the meter on the **Left**.
- Find the connector labeled “F1” or “F2” depending on which you are replacing, and unplug it.
- Isolate the wire from the cable bundles. Cut cable zip ties where necessary
- If removing F2, remove the insulation on the elbow immediately above the meter. You will need to undo the two velcro straps to do this.
- Unscrew coupler nuts (red arrows) using a wrench (1 1/2” wrench) , while holding the meter in place. You can use a thin-profile 1-5/16”, wrench to hold on to the flow meter hex profile.
- Remove meter



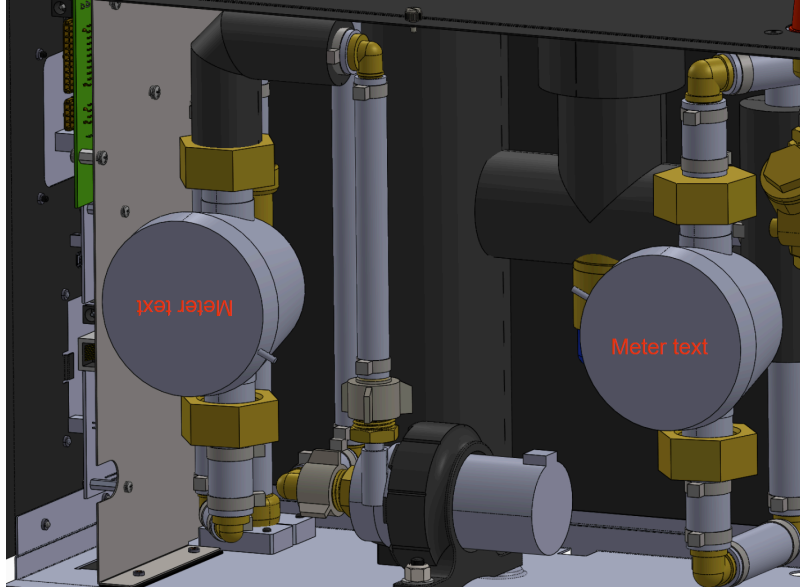
Service

- Limited service is possible, a clog at the inlet screen could be gently cleaned, but associated particles should not be pushed into the meter. Rinse with clean water afterwards

Replacing:

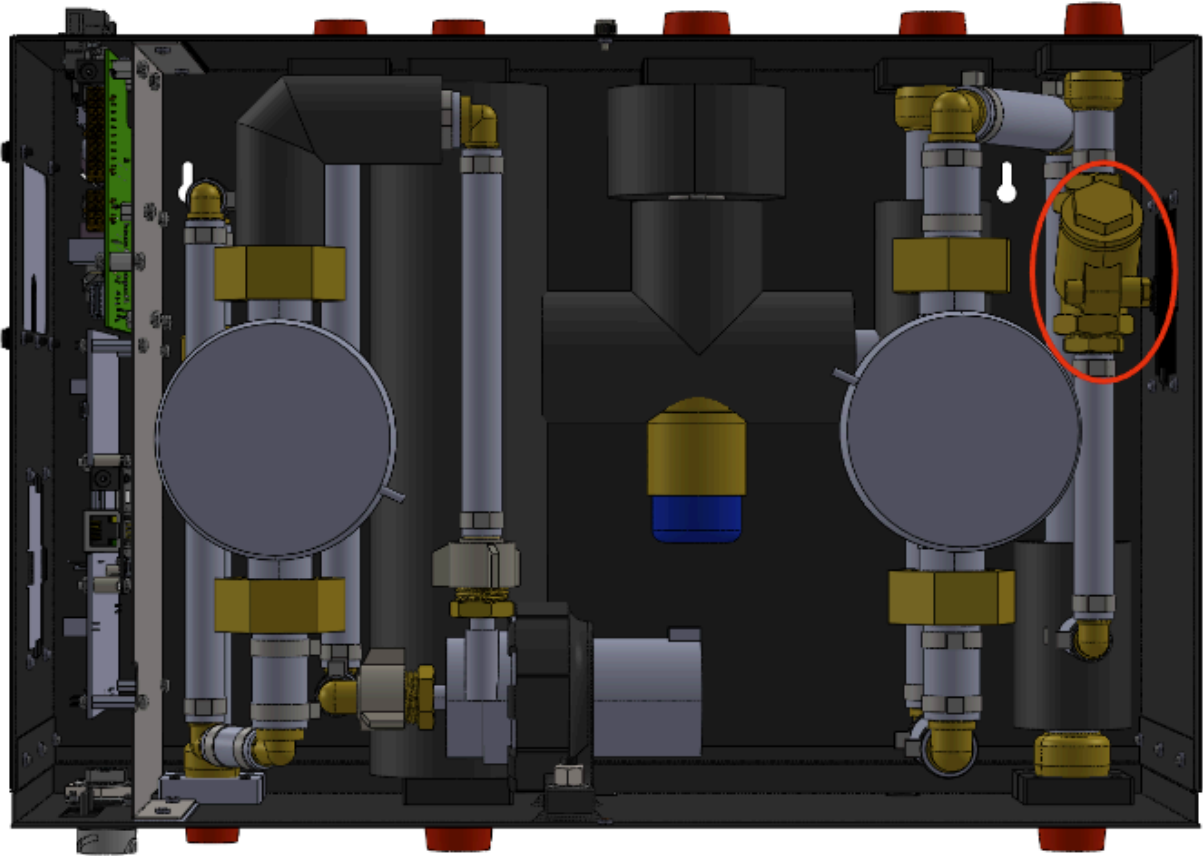
- Position meter in place, noting orientation:

- F2 (the left meter) must be installed with the display upside down and facing toward the front panel. Arrow on the side will be pointed DOWN.
- F1 must be installed upright with the display facing toward the front panel. Arrow on the side will be pointed UP. See below image.



- Screw on and tighten couplers (1 1/2" wrench), while holding the meter in place. You can use a thin-profile 1-5/16", wrench to hold on to the flow meter hex profile.
- Refill system, checking for leaks, tighten further as needed
- Plug in sensor to corresponding labeled connector. Either "F1" or "F2", depending.
- Secure wire in place with cable tie
- Reattach front panel

SWING CHECK VALVE SERVICING

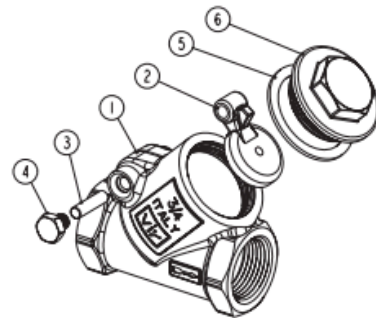


Removing:

In general, removal of the swing check valve is not recommended. The check valve contains an integrated service port, through which maintenance and repair can be performed. For full replacement, see PEX Section A.

Material

	Part	Material	Specification
1	Body	Lead Free Brass	ASTM B927 C28500
2	Disc	Lead Free Brass	ASTM B927 C28500
3	Stem	Lead Free Brass	ASTM B927 C28500
4	Screw	Lead Free Brass	ASTM B927 C28500
5	Gasket	PTFE	PTFE
6	Cap	Lead Free Brass	ASTM B927 C28500



Service or Repair

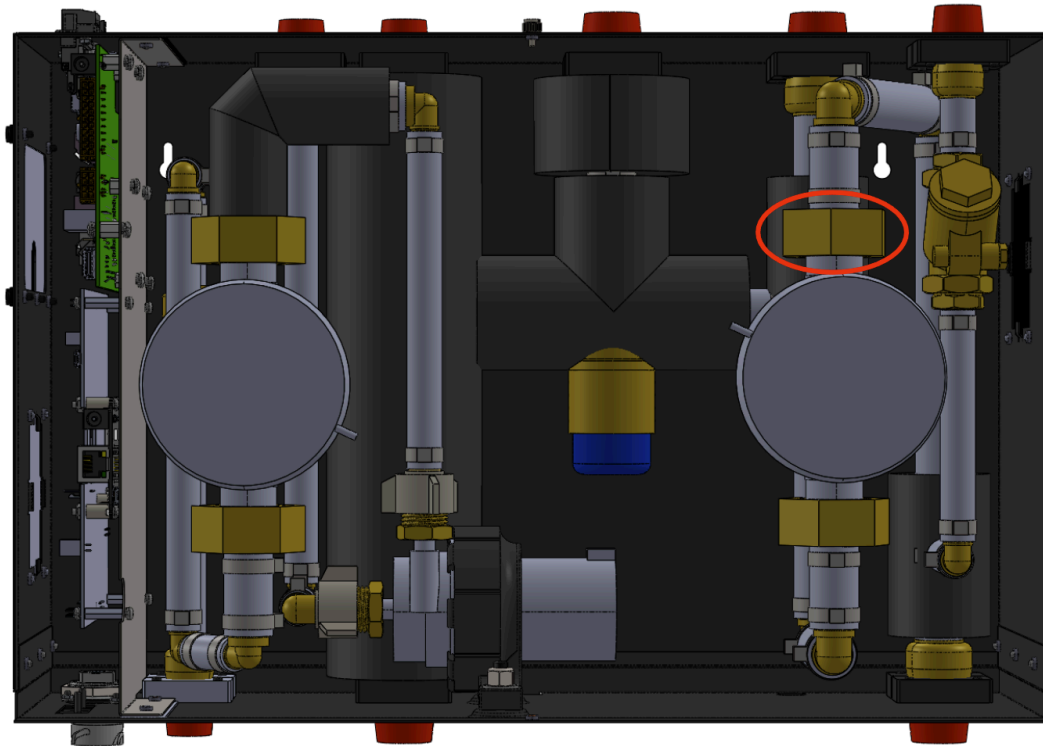
- Drain the system
- Remove service port cover (6)
- Remove and clean valve disc (2)
- Clean valve seat (inside of body) (1)
- Clean and reinstall stem (3), replace if necessary
- Fill and pressurize system, check for leaks and adjust as necessary
- Close front panel

PEX SECTION A

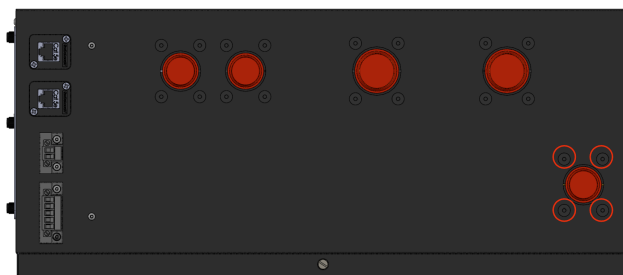
Use spare part# 201097

Removing:

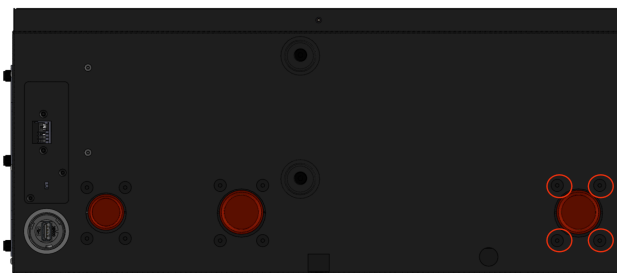
- Drain the system
- Remove external plumbing connections from NPT connections at ports A and F
- Open the front panel
- Find the connector labeled “T5” in the main plumbing compartment, and unplug it. Remove cable from any cable management ties inside the pod, so it is only attached on the one end buried in the PEX insulation.
- Unscrew the right Flow meter top coupler nut (1 1/2” wrench) shown below. You will need to hold the flow meter to provide counter rotation



- Unscrew the flat head hex screws from around ports A and F (circled in red below). Hold on to these screws for reattachment.



(top)



(bottom)

- Remove the 4 black brackets from behind the ports.
- Remove Pex Section A, and take off the insulation and insulation velcro straps.

Replacing:

Use spare part# 201097

- Add the insulation and velcro straps to the new PEX section.
- Insert the PEX section into the pod
- Loosely screw in the Flow Meter
- Add the black brackets onto the brass bulkhead adapters. The smaller brackets go on the inside of port A, the larger brackets inside port F. Make sure the brackets fit snugly and are aligned with the holes in the enclosure wall. If a bracket does not fit, you may need to rotate the adapter by hand to match the hex profile of the hex profile on the inside of the bracket. Contact support if the bracket still does not fit.
- Secure the brackets using the hex-socket flat head screws
- Fully screw on the coupling nut attaching the flow meter (1 1/2" wrench). Tighten.
- Reattach external connections to ports A and F
- Fill the system and check for leaks
- Locate the cable end in the plumbing compartment labeled "T5" and connect the wire coming off the segment with it.
- Close the front panel

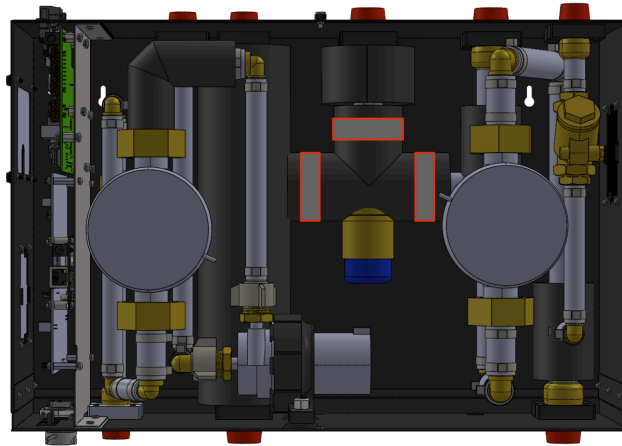
PEX SECTION B

Use spare part# 201096

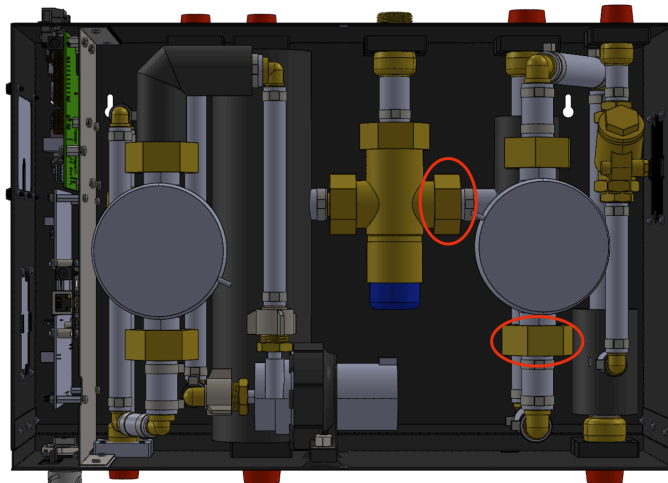
Removing:

- Drain the system
- Remove external plumbing connections from NPT thread at port B
- Open front panel
- Find the connector labeled "T2" in the main plumbing compartment, and unplug it. Remove cable from any cable management ties inside the pod, so it is only attached on the one end buried in the PEX insulation
- Remove velcro straps from insulation around mixing valve (shown outlined in red)

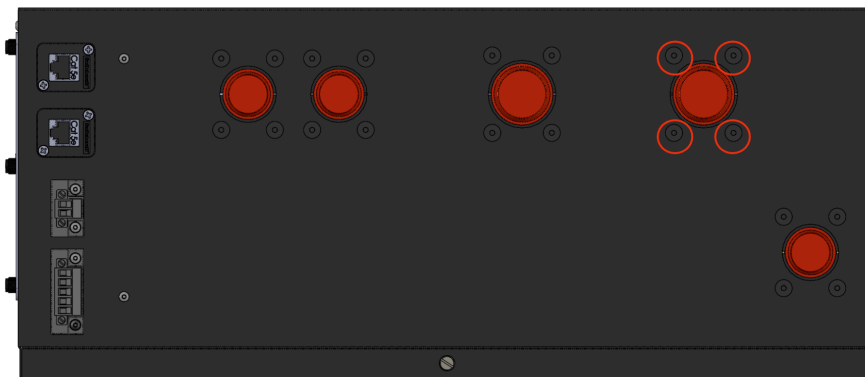
WARNING: COMPONENTS MAY STILL BE HOT



- Pull down carefully on insulative tee to remove from mixing valve
- Unscrew coupler at the bottom of the right side flow meter, and also the coupler on the right side of the mixing valve (1 1/2" wrench).



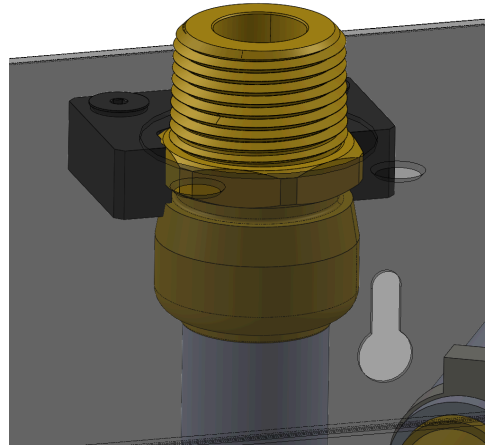
- Unscrew the 4 screws from the top of the pod that are located around port B. Circled in red below



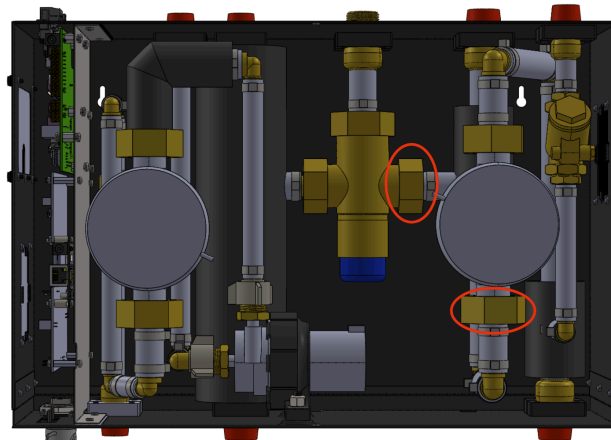
- Collect the screws and mounting brackets for later assembly.
- Remove Segment B from the Pod.
- Remove the velcro clasps around the insulation, and carefully remove the insulation from the PEX junction. Collect insulation and velcro for later assembly.

Replacing:

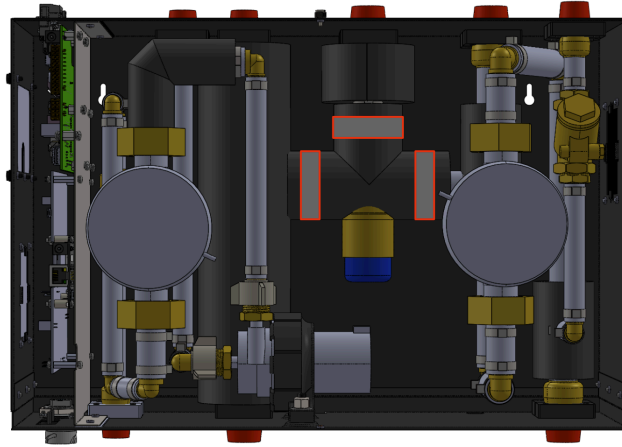
- Position the PEX section into the pod
- Screw in the brackets around the hex profile



- Add the second bracket on, and screw in fully.
Note: The hex profile may not be perfectly aligned. You can rotate the connection to the port on the top to align it better. This will not damage the section.
- Screw on the coupler to the mixing valve. The gasket inside the mixing valve coupler is:
Mfr PN: AMU200-RP
Manufacturer: Resideo Braukmann
- Screw on the coupler to the flow meter (1 1/2" wrench), holding the flow meter body when attaching to provide counter rotation.



- Refill the system and test for leaks. Tighten further if needed.
- Add the insulation back on to the Mixing Valve, securing with the velcro clasps.



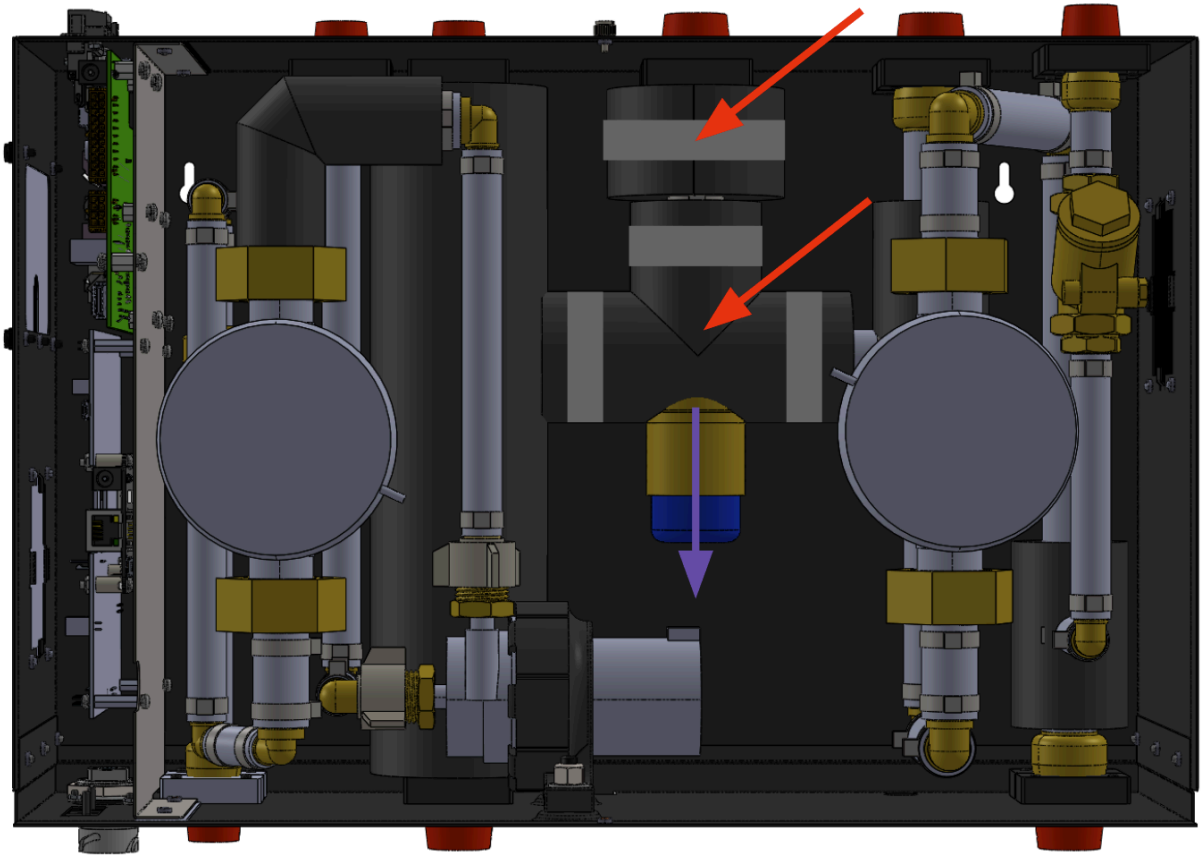
- Connect the sensor wire to the connector labeled T1
- Close Front panel

PEX SECTION C

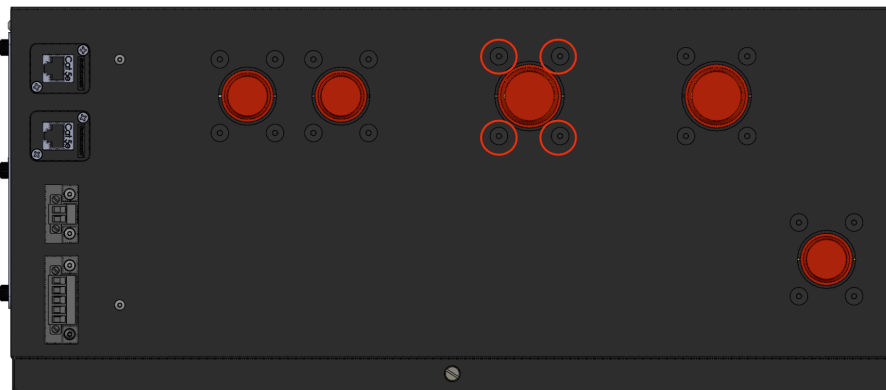
Use spare part# 201095

Removing:

- Drain the system
- Remove external connections to port C
- Open the front panel
WARNING: COMPONENTS MAY STILL BE HOT
- Remove the insulation sections indicated below (red), by first removing the velcro straps (shown in gray) holding them on.



- Unscrew the four hex screws around port C, circled in red below

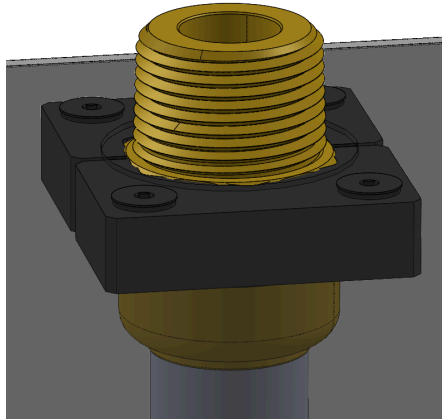


- Remove the black brackets on the inside of port C.
- Using two wrenches to minimize counter-rotation, unscrew the top union nut on the mixing valve (1 1/2" wrench). This port is labeled "MIX."
- Remove PEX Section C

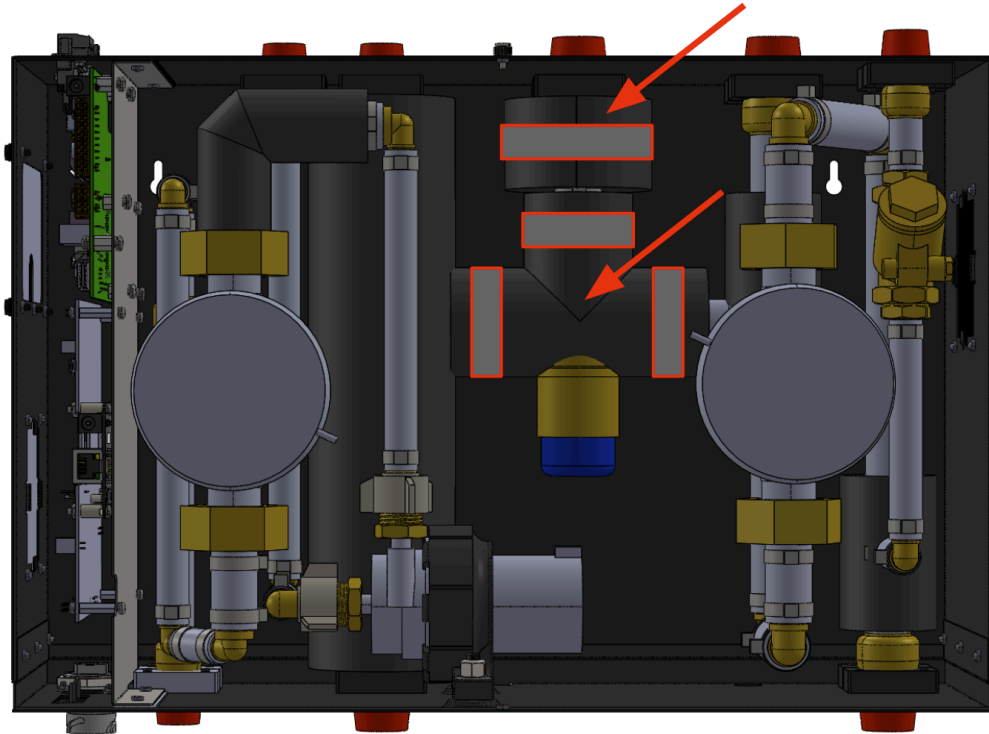
Replacing:

- Insert PEX Section C into place, and loosely screw onto the mixing valve, using a gasket. For replacement gaskets use:
Mfr PN: AMU200-RP
Manufacturer: Resideo Braukmann

- Add the two black brackets into place. They should fit snugly around the brass adapter. You may need to rotate the Section slightly to align the holes in the brackets with the holes in the top Pod wall. Screw them in from the outside of the pod.



- Tighten the nut attaching to the mixing valve (1 1/2" wrench), using a second wrench to provide counter-rotation. Fill the system and check for leaks before continuing.
- Add back the insulation, and secure with the velcro straps as shown:



- Close the front panel.
- Reattach external connection to port C

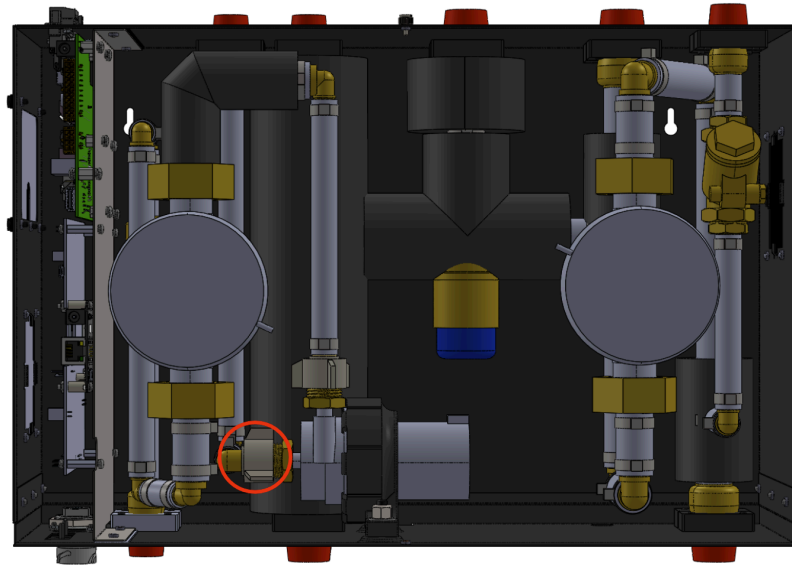
PEX SECTION E

Use spare part# 201094

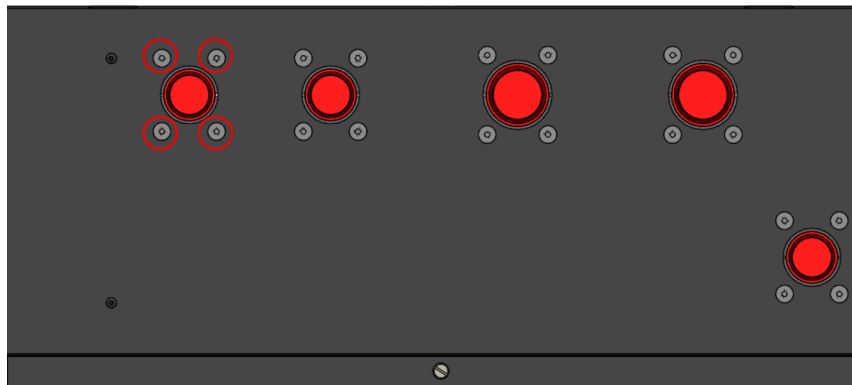
Removing:

- Drain the system
- Remove external connections to port E
- Open the front panel
- Unscrew the union elbow attaching this PEX section to the pump, circled in red below. You will need to use a wrench to prevent rotation of the threaded bushings attached to the pump.

WARNING: Pump housing is fragile and breaks easily. take care to put as little stress on the pump threads as possible.



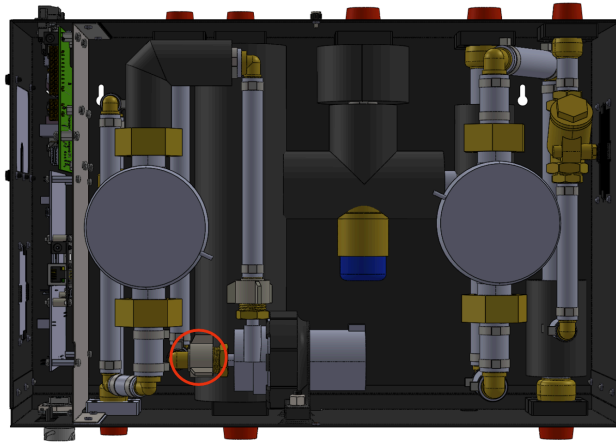
- Unscrew the four hex screws around port E, circled in red below.



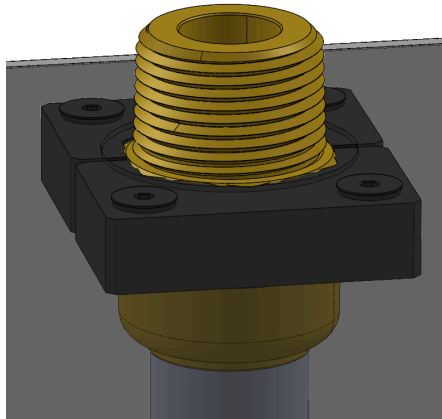
- Remove the brackets from under port E. Keep for future assembly.
- Remove Section E2

Replacing:

- Move Section E2 into position within the pod,
- Attach the elbow adapter loosely by hand-tightening



- Add brackets to the front and back of the fitting. You may need to rotate slightly to get the holes to line up with those on the enclosure.



- Screw in the brackets using the flat head screws
- Fully tighten the adapter to the pump by hand
- Reattach external connections to port E
- Fill the system and check for leaks
- Close the front panel

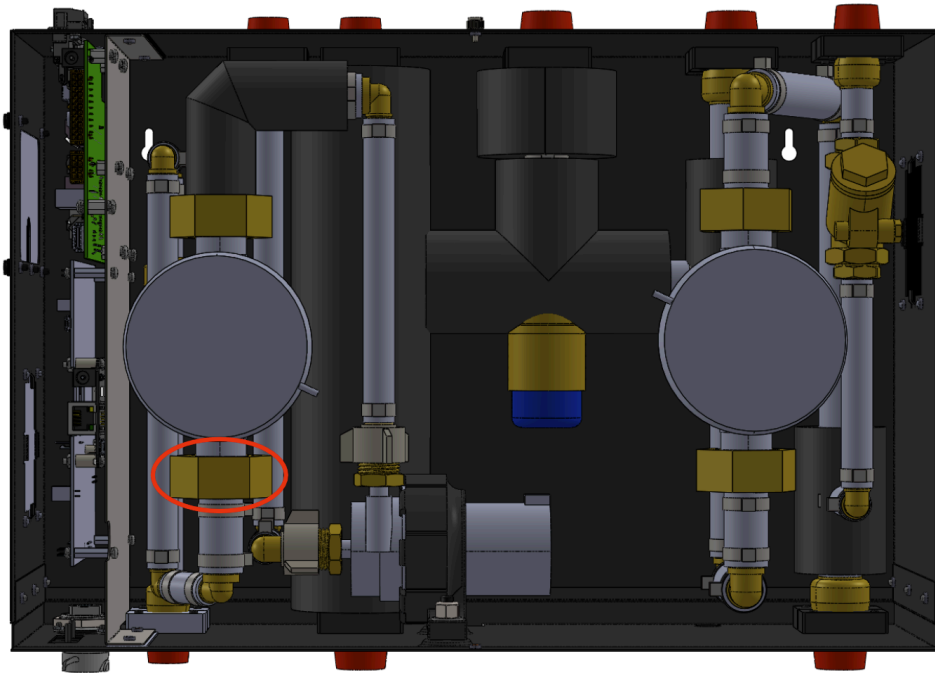
PEX SECTION H

Use spare part# 201093

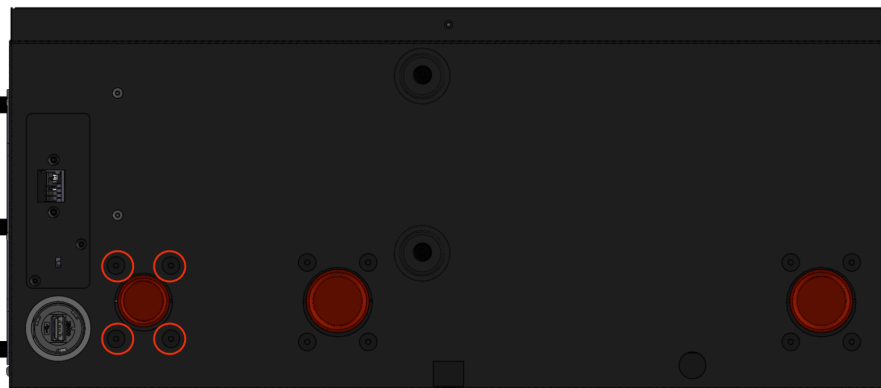
Removing:

- Drain the system
- disconnect external NPT connection to port H
- Open front panel

- Disconnect the bottom coupler from the left mixing valve (1 1/2" wrench), shown in red below



- Unscrew the 4 screws around port H, circled in red in the following view of the bottom of the Pod.



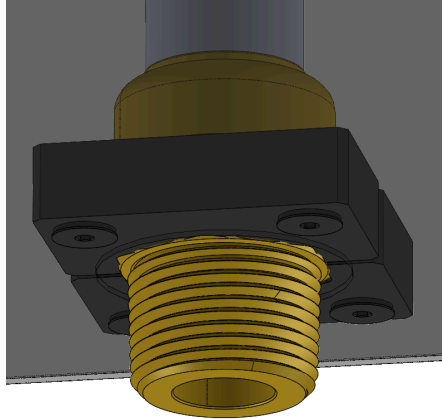
- Remove PEX Segment H from the pod, along with the pair of brackets that go on the inside of port H.

Options to Perform maintenance/replacement on Check Valve

1. Use compressed air and clean water to blow debris or clogs out of the check valve, and re-establish secure seating of the plunger.
2. Replace.

Replacing:

- Position the PEX Section in place in the pod, and screw on the nut loosely to the flow meter.
- Add the brackets around the hex profile. You may need to rotate the adapter to match the hex profile on the bracket.



- Screw in the brackets.
- Tighten the flow meter coupling (1 1/2" wrench), holding the meter in place for counter rotation.
- Add back external connections
- Refill system, checking for leaks
- close front panel

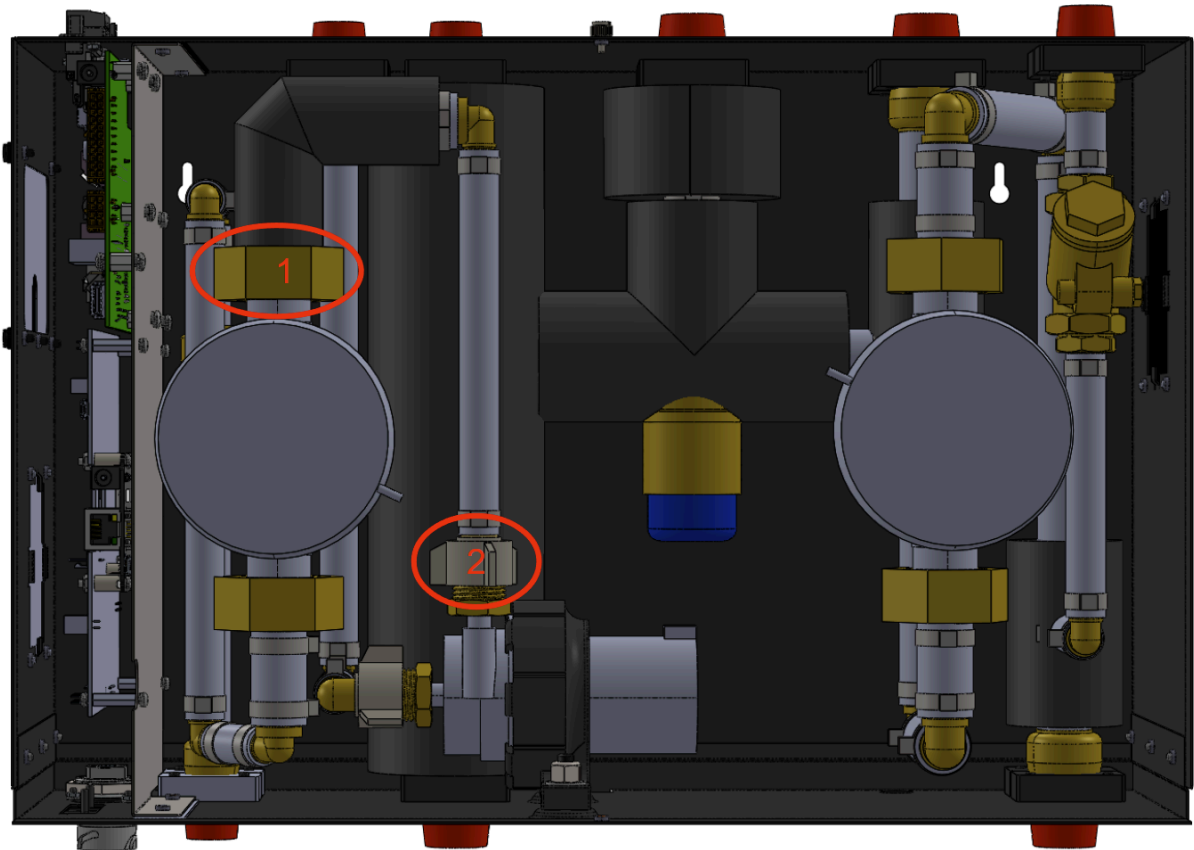
PEX SECTION X

Use spare part# 201092

Removing:

- Drain the loop in question.
- Locate the connector labeled T3 in the plumbing compartment, and unplug it. Remove the wire to the plumbing from any cable management on that side.
- Unscrew the adapters shown below in red. You will need to use a 7/8" wrench to provide counter rotation on "2" so that the pump to brass bushing connection remains. You will need to hold on to the flow meter to prevent counter rotation of the meter when removing "1."
WARNING: Pump housing is fragile and breaks easily. Take care to put as little stress on the pump threads as possible.
- Remove the Insulation and velcro clasps from around the section. set aside.

WARNING: Pump housing is fragile and breaks easily. Take care to put as little stress on the pump threads as possible.



Replacing:

- Position Section X in place, and loosely screw on both adapters.
- Union “1” must be tightened with a 1 1/2” wrench, holding on to the flow meter for counter rotation. Union “2” must be hand-tightened.
WARNING: Pump housing is fragile and breaks easily. Take care to put as little stress on the pump threads as possible.
- Refill the system and check for leaks.
- Add back the foam insulation elbow. The shorter side of the elbow points toward the flow meter (“1”).
- Connect the loose cable marked “T3” to the correspondingly labeled receptacle that was unplugged early. Secure the wires using existing tie points.

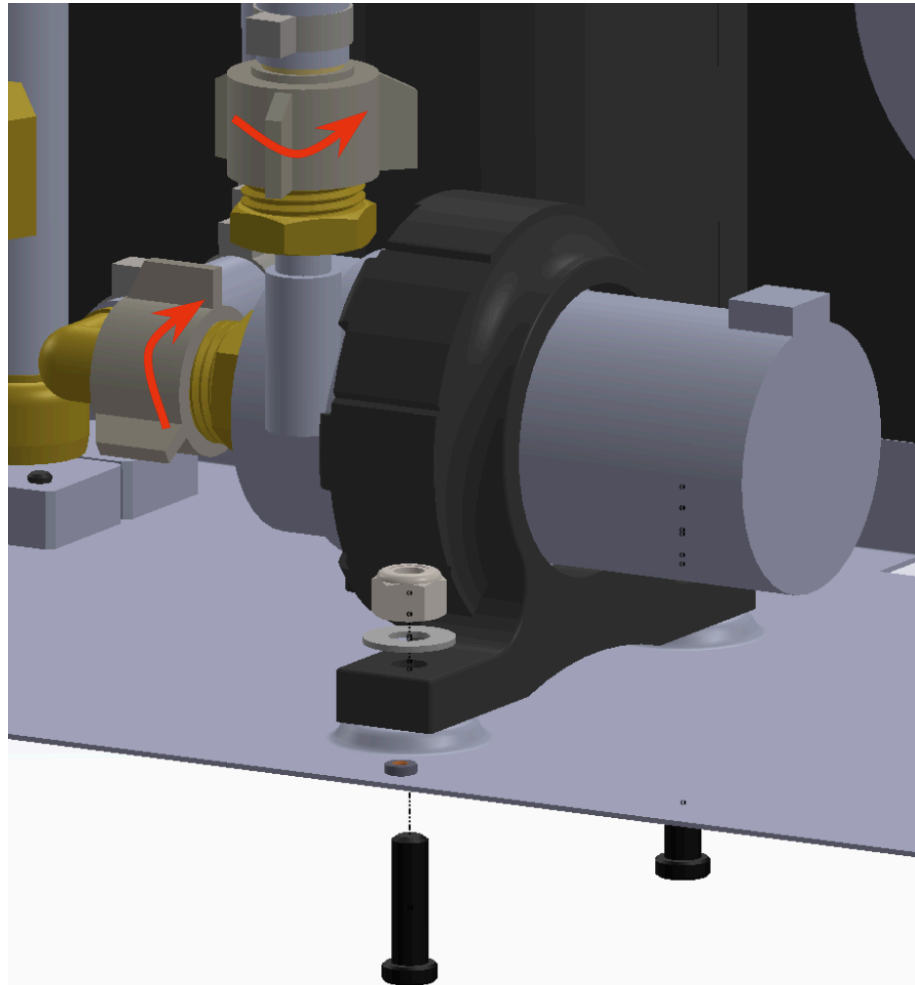
CIRCULATOR PUMP

Use spare part# 201074

Removing:

- Drain the system
- Open the front panel
- Unscrew PEX-npt swivel couplers by hand - use 7/8" wrench to prevent rotation of the threaded bushings attached to the pump.

WARNING: Pump housing is fragile and breaks easily. Take care to put as little stress on the pump threads as possible.



- Separate cable from routing and unplug
Cut cable zip-ties as necessary
- Unscrew screws from pump mount, collect fasteners for later reassembly
- Remove pump

Maintenance:

Maintenance not recommended, replace pump if required

Replacing:

- Insert pump, securing with hex screws from the outside of the pod and lock nut and washer from above. (see pic from pump removal section) Avoid over-compressing the rubber grommet.
- Hand-tighten PEX-NPT swivel couplers - use wrench to prevent rotation of the threaded fittings of the pump.
- Refill system, checking for leaks
- Tighten further only if necessary
- Plug in pump cable to “C” connector, secure cable using twist tie.
- Reattach front panel

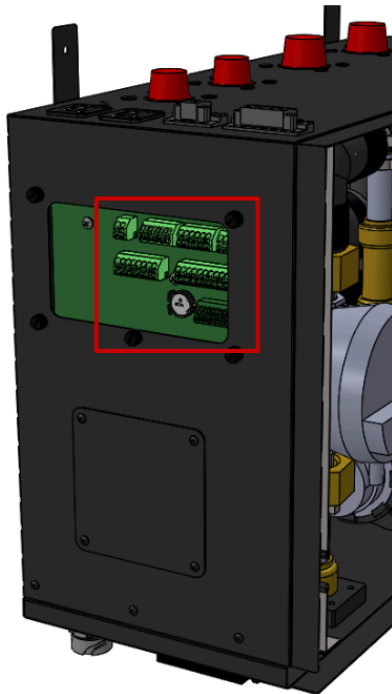
POD ELECTRONIC BOARD

Use spare part# 201827

You will also need to replace the bulkhead cable, Part #201087

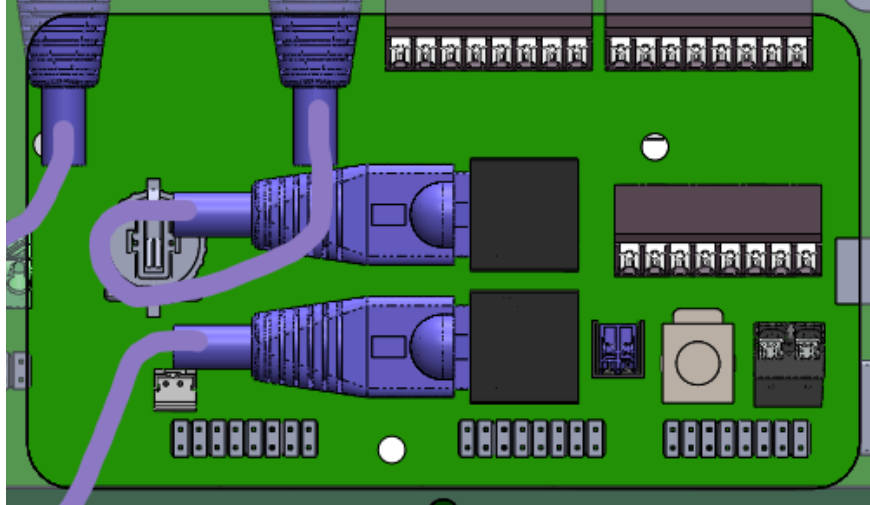
PREPARING PD2A FOR UPGRADE

- Disconnect power to Pod
- Open side access panel. Hold onto the screws for reassembly.

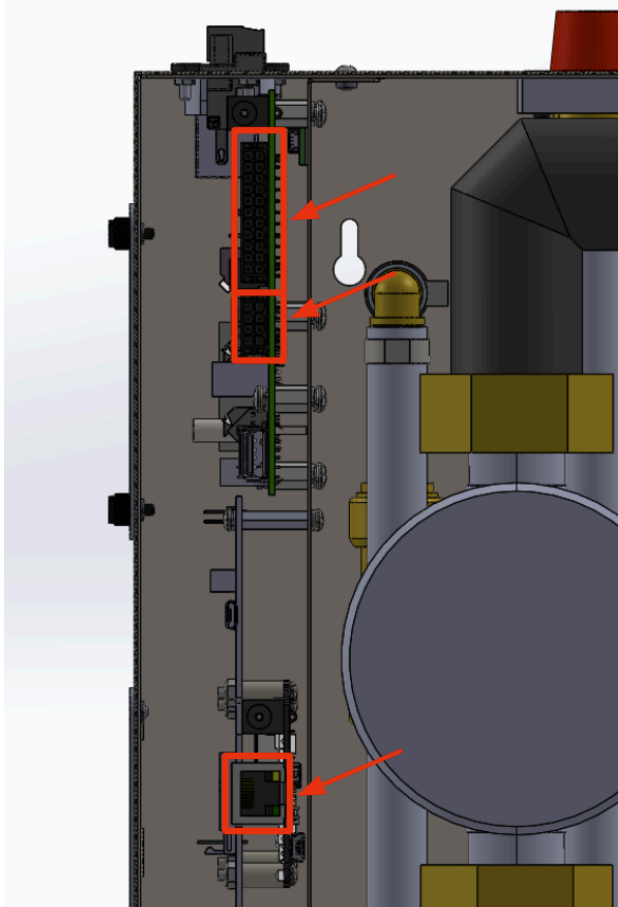


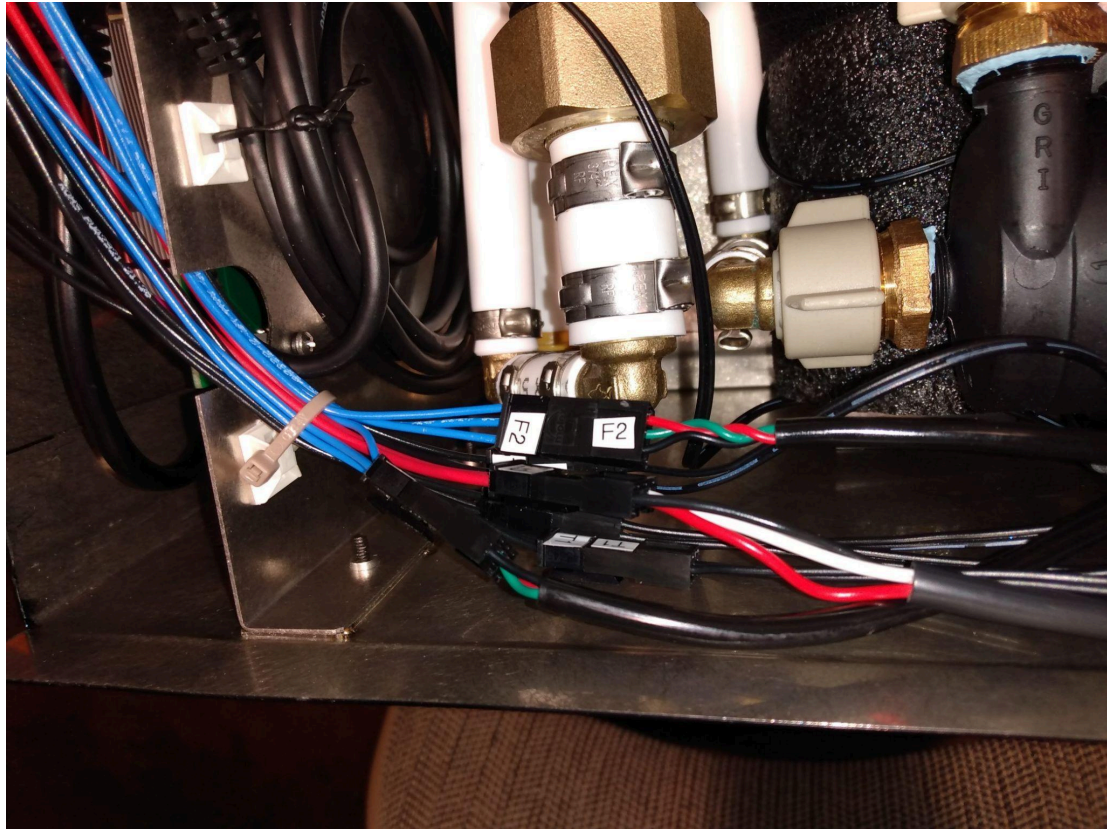
- Disconnect all wires exiting through the panel. If inside the panel does not match below picture, your system has already been upgraded. Contact support for correct manual.

Tip: label wires before disconnecting for easy reattachment later

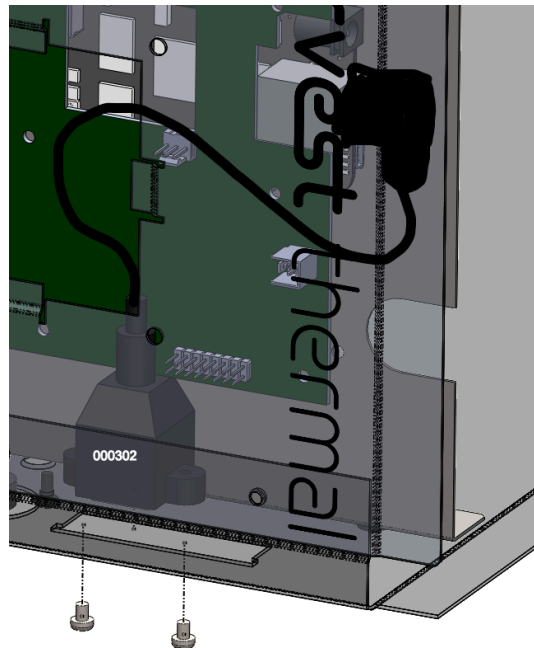


- Disconnect the two ethernet cables visible in the panel
- Open front panel. Hold on to the screws for later replacement.
- Disconnect large black connectors (22-pin and 8-pin) near top of pod from the side headers on the board by first pressing on the release catch. Also disconnect the ethernet jack (see picture)

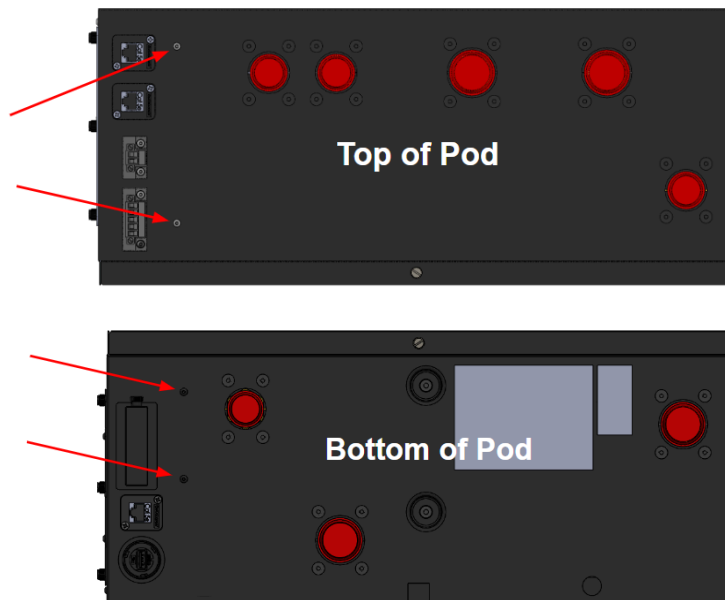




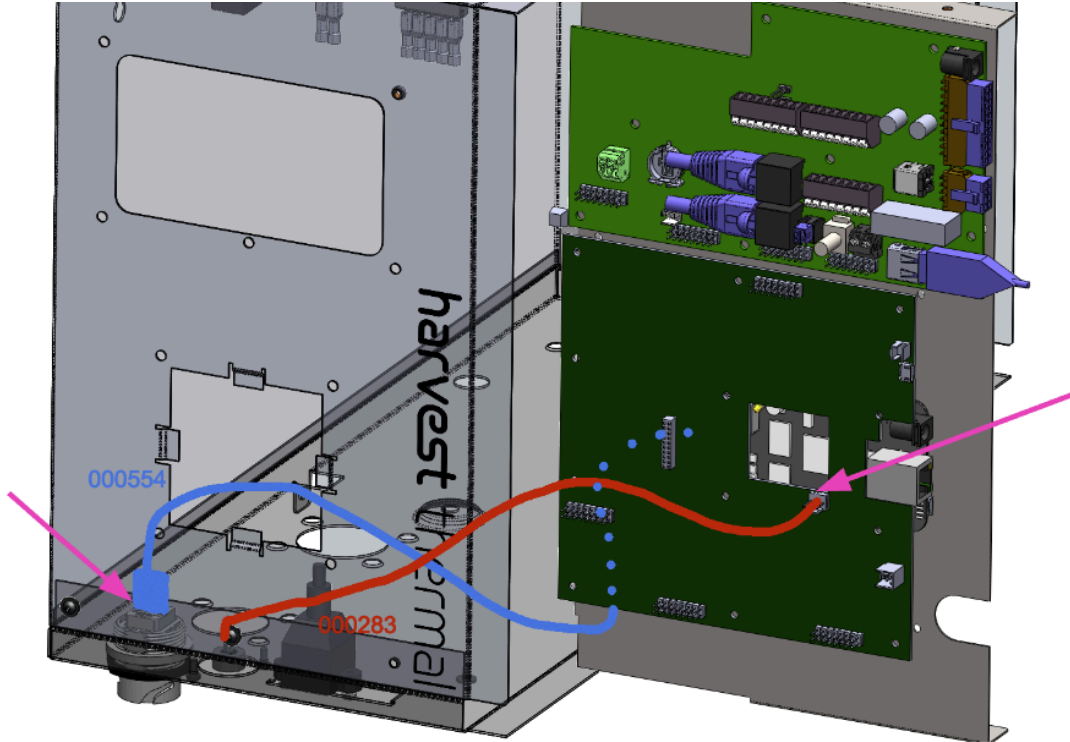
- Remove any cable ties holding wires to the plumbing side of the metal mounting plate dividing plumbing and electronics.
- Unscrew the two metric screws holding the bottom ethernet port.



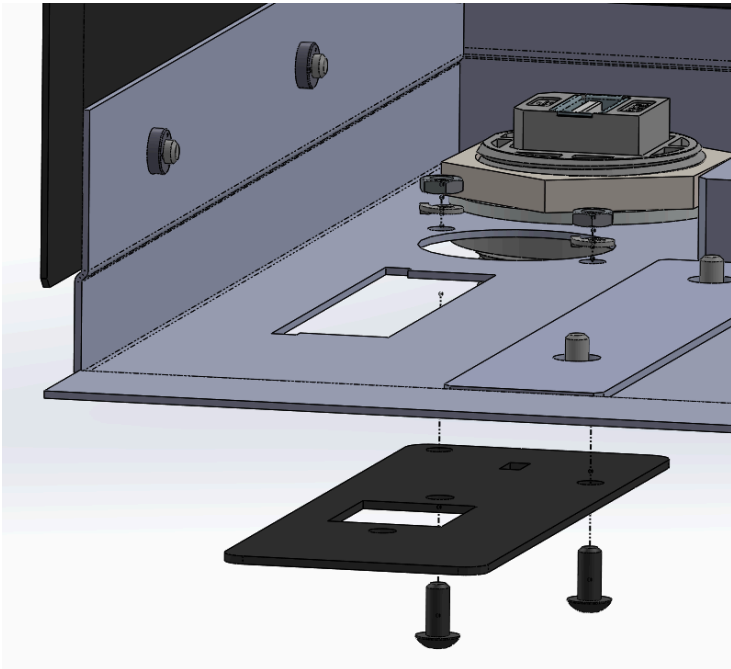
- Using a 1/16" hex bit, Unscrew the 4 round-head hex drive screws located on the top and bottom of the pod where they meet the mounting plate. Make sure to hold onto the screws for reassembly.



- Pull the board out HALFWAY. Disconnect the 3-wire pink-orange-green cable from its header on the board (red line shown below), and disconnect the black USB cable (shown in blue) from its port inside the Pod. Disconnection points shown with pink arrows.



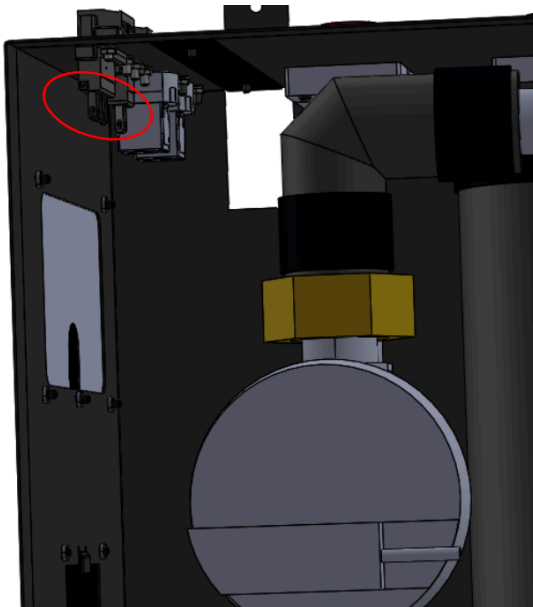
- Fully remove the board. You may need to cut one more cable tie before removing the board fully.
- Remove the ethernet extension cable from the enclosure
- Unscrew the two screws holding on the LED plate (see below picture). The LED Cable will still be attached (cable not shown below).



- Disconnect the black USB-A cable from the electronics assembly, and plug back into the inside of the Pod.
- Remove the ethernet cables on the inside of the enclosure where they connect to the top bulkheads.
- From the kit**, mount the ethernet coupler (PN 100999) in the circular cutout in the bottom of the pod next to the USB port. Use the provided countersunk screws, washers, and nuts.
- Take the three ethernet cables in the kit and attach them to the inside of the 3 ethernet coupler bulkheads- two on the top and one on the bottom.

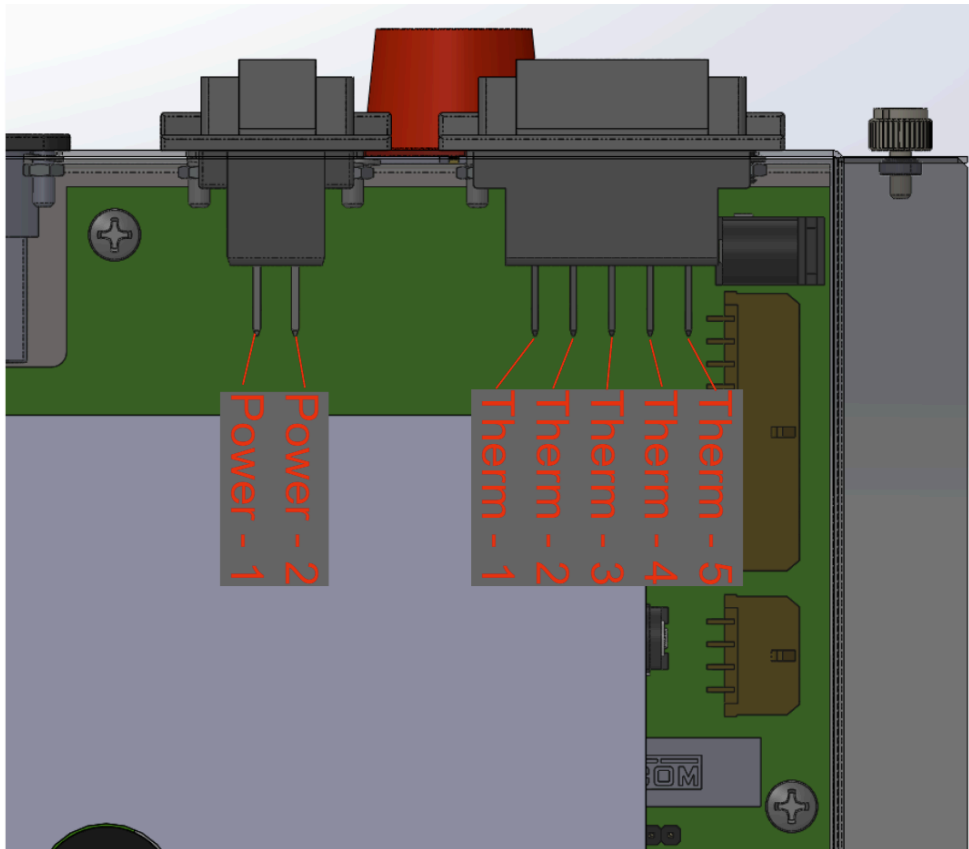
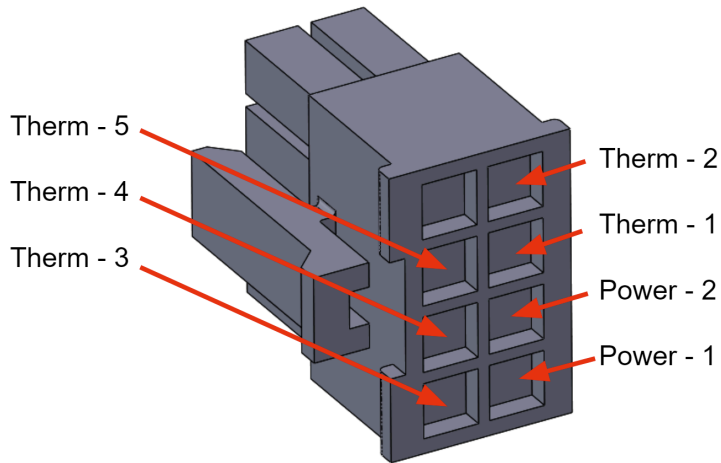
REPLACING THE BULKHEAD CABLE

- Disconnect the spade connectors on the cable where they attach to these spades on the pod.



Replacing:

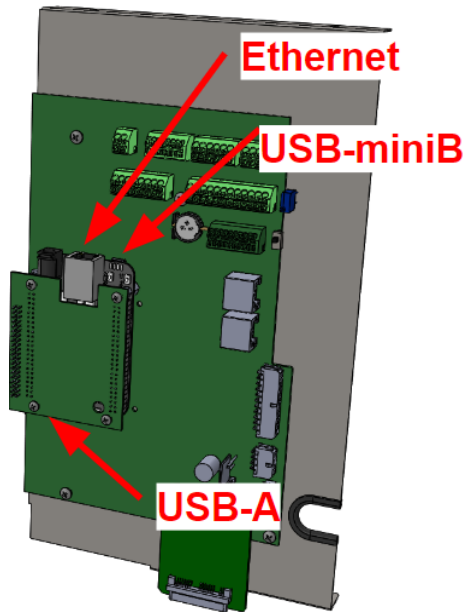
- Discard the old cable and locate the new cable, provided in Part #201087
- Attach the quick connects as follows. You will need needle nose pliers to do this:



MOUNTING THE NEW ASSEMBLY

- Position the Electronics assembly near the left side of the pod. Make sure the cables still attached on the inside of the pod are pulled out of the way.
- Attach the loose end of the black USB-A cable (carrying Wifi signal) to the electronics assembly, at the port indicated in the figure below.

- Attach the loose end of the lower Ethernet Cable to the electronics assembly, at the port on the top of the beaglebone. THIS CABLE COMES FROM THE BOTTOM OF THE POD. DO NOT CONNECT THE ETHERNET CABLES FROM THE TOP YET.



- Slide the board in, taking care not to let the cables catch on the features on the inside surface of the enclosure. You may need to press down on the bottom panel so that the lowermost daughterboard components clear the edge.
- Secure with screws.

POST-MOUNTING PROCEDURE

- Inside the AUX window, identify which of the ethernet cables extending from the top bulkhead connects to the port labeled “Air Handler”. Connect this to the receptacle on the edge of the board labeled “Air Handler”. Do the same with the cable from the “Heat Pump” port going to the “Heat Pump” receptacle.
- Connect the 22-pin header of the Omnibus cable, the 8-pin bulkhead cable, and make sure the cable latches into place.
- Reconnect any wires going to the AUX window terminal blocks, taking care to connect to the same terminals as before.
- Attach CTA Retention Sleeve (201632) if using a EcoPort (CTA-2045) module.
 - Align the sleeve with the rectangular hole on the bottom of the Pod
 - Remove the tape backing
 - Attach in orientation with the screw sticking out toward you.
- Remove the tape from the back of the CTA sleeve (201632) and align to the hole on the bottom of the Pod labeled “ecoport”

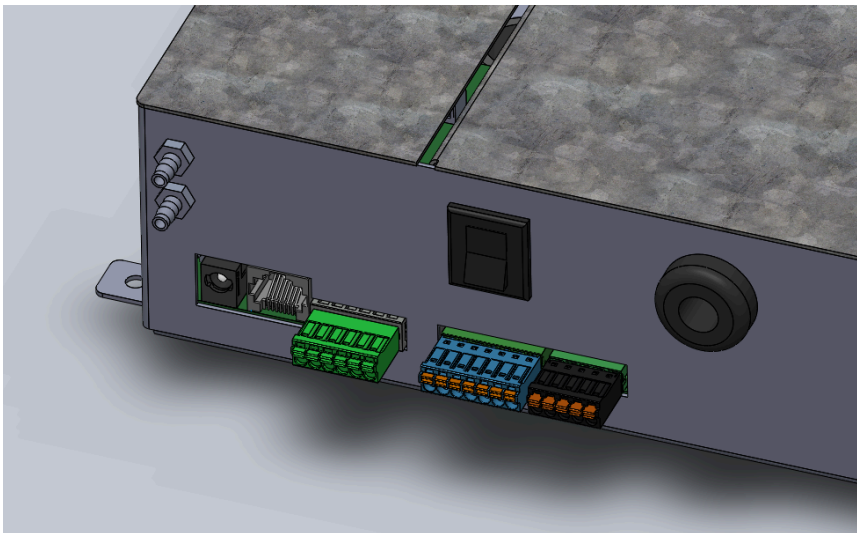
- When finished reinstalling the board, reconnect power and turn the pod back on via the power switch.
- Before reattaching the front panel, Check for any wires that will get pinched or bent improperly by the replacement of front panel. Then close front panel.

AIR HANDLER CONTROLLER WITH ACCESS DOOR

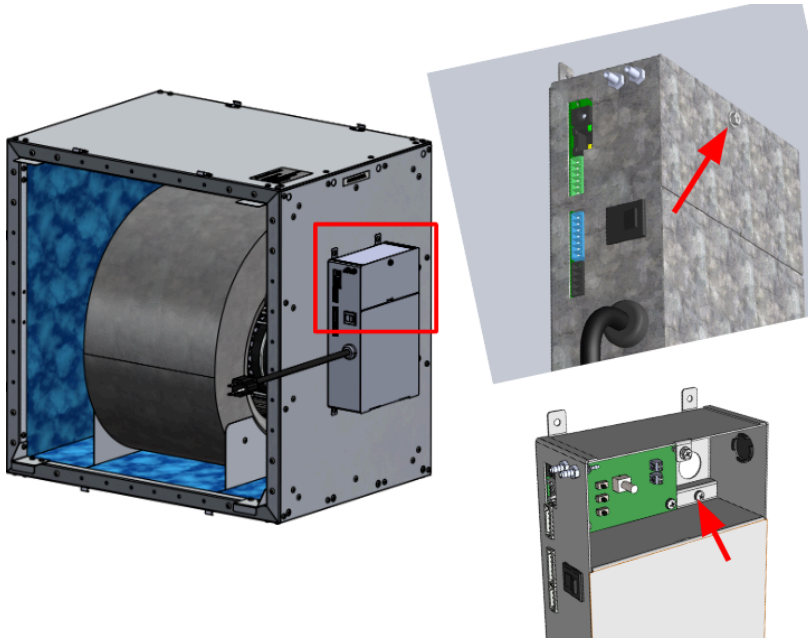
Use spare part #201611

Removing:

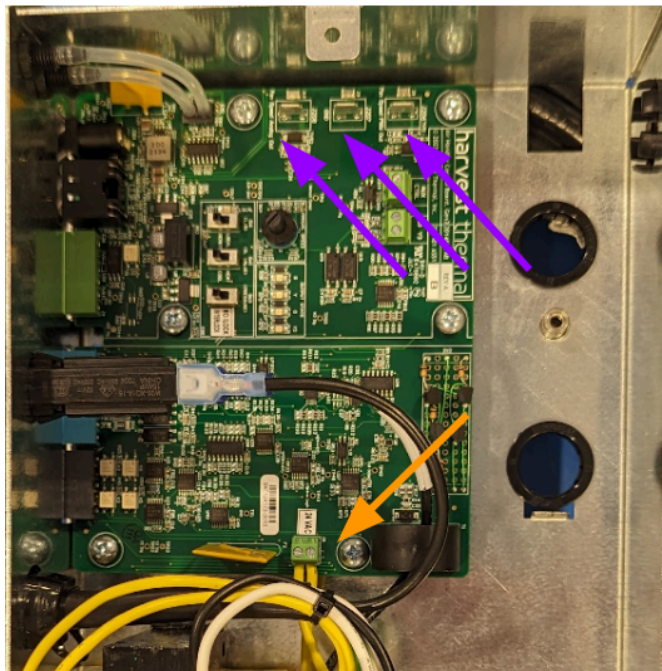
WARNING HIGH VOLTAGE! DO NOT ATTEMPT WITHOUT FIRST UNPLUGGING ALL POWER SOURCES FROM AIR HANDLER



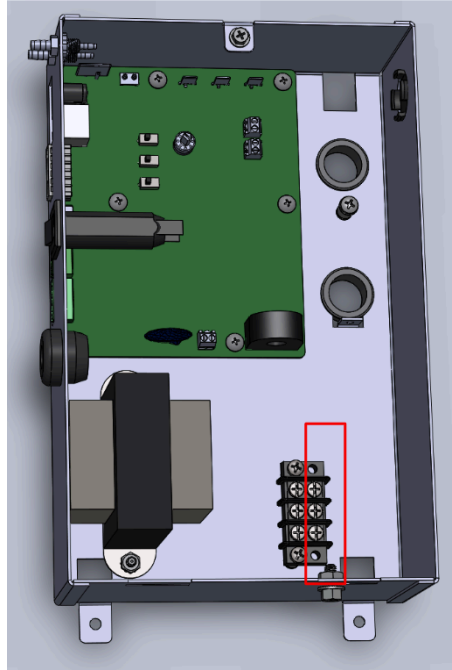
- Disconnect power barrel connector and ethernet jack from the outside of the Controller box, and also unplug power from wall AC outlet.
- Disconnect all external terminal blocks (shown in green, blue, black). Don't unplug the wires from the blocks, just pull the blocks out.
- If applicable, disconnect the rubber tubing from the barbs in the top left corner of the controller box
- Open the controller access panel at the indicated screw, then undo the screw inside holding the high voltage cover on (see arrows below).



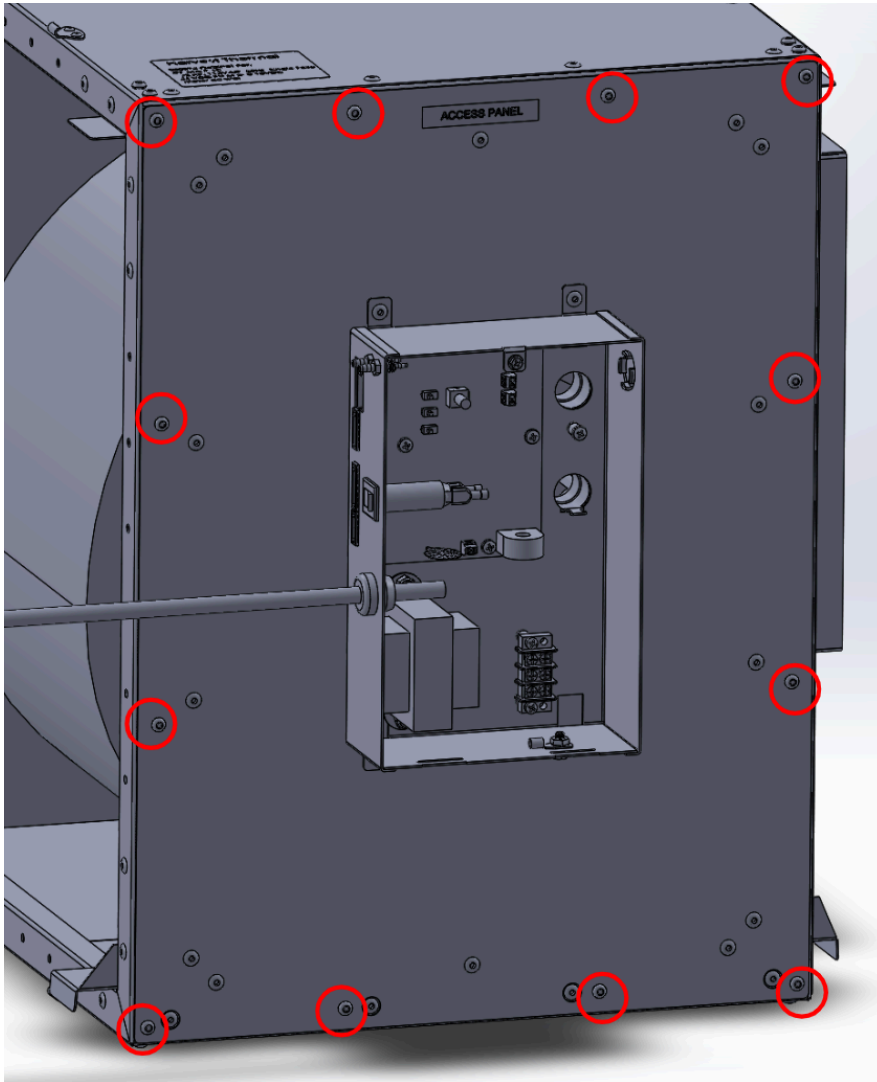
- Take a picture of the inside to record the connection points of the wires coming out of the grommets.
- Disconnect spade terminals in the corner of the board. (purple arrow). Feed the wires back through the grommet.



- Unscrew the screws on the grommet side of the barrier block (inside red rectangle below.) These screws go to the fan motor. feed them back through the grommet.



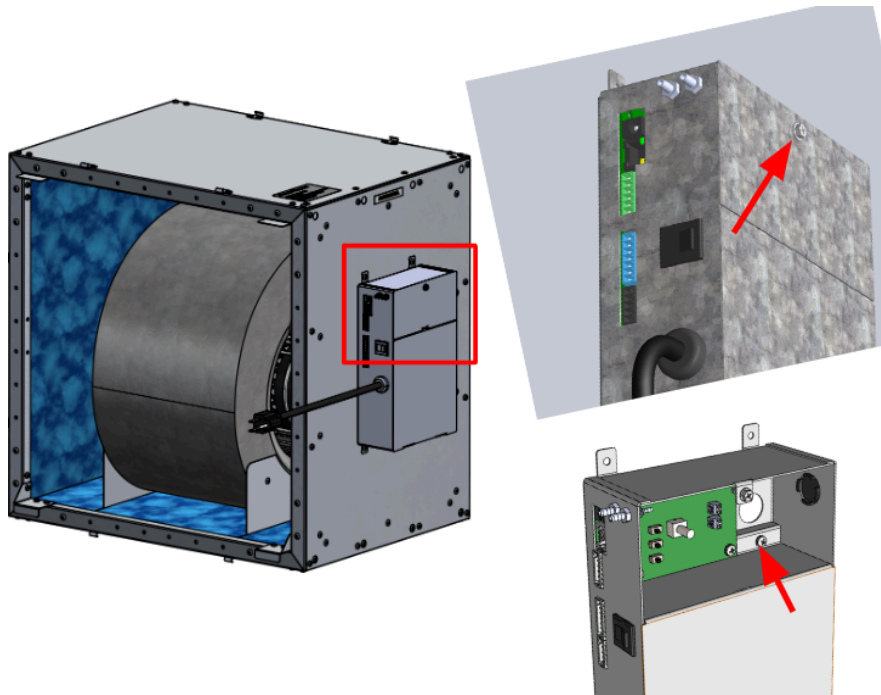
- Remove the panel on the side of the air handler, by removing the screws circled below. Hold onto the screws for later:



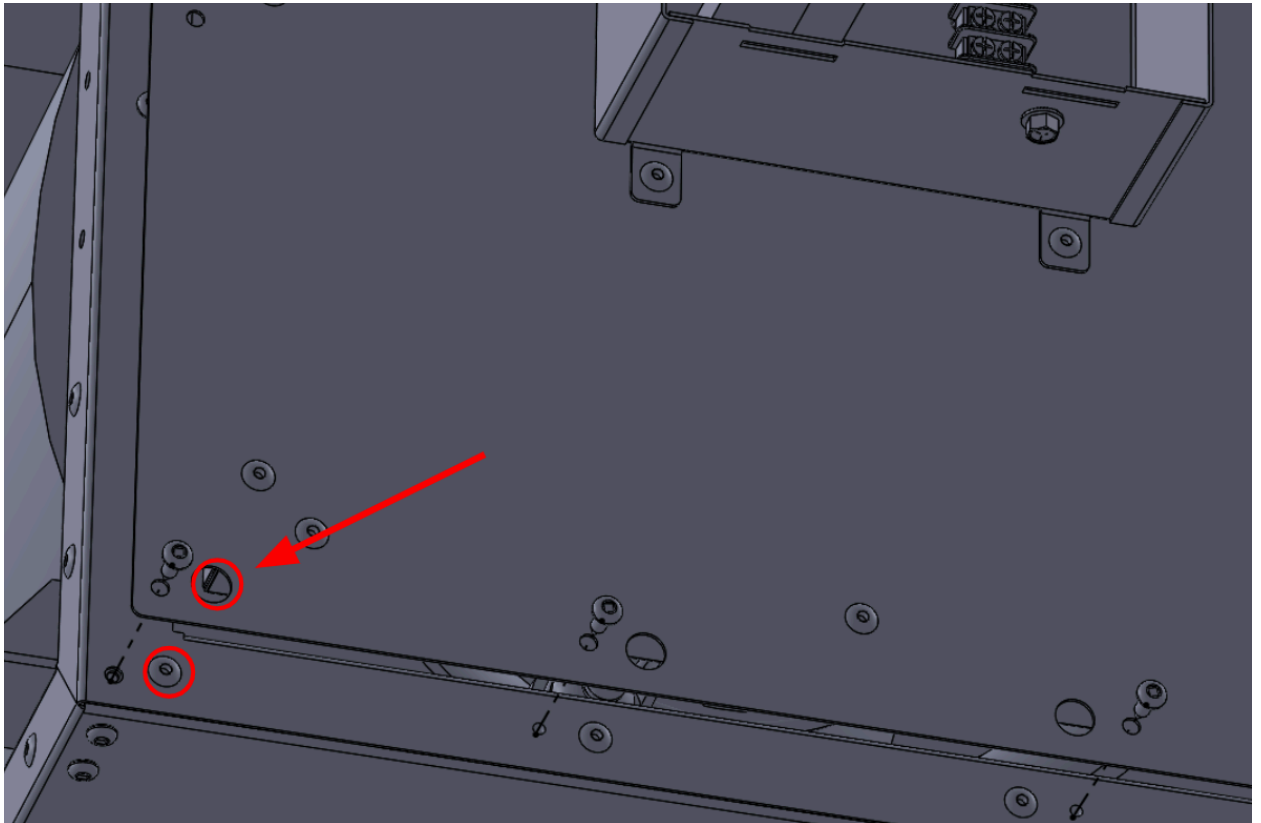
Replacing:

For definitive source on wiring, refer to DOC# 10141

- Remove the two panels from the controller



- Position the panel in front of the module, making sure to orient it so that the large holes along one edge of the panel line up with the rivet heads beneath:

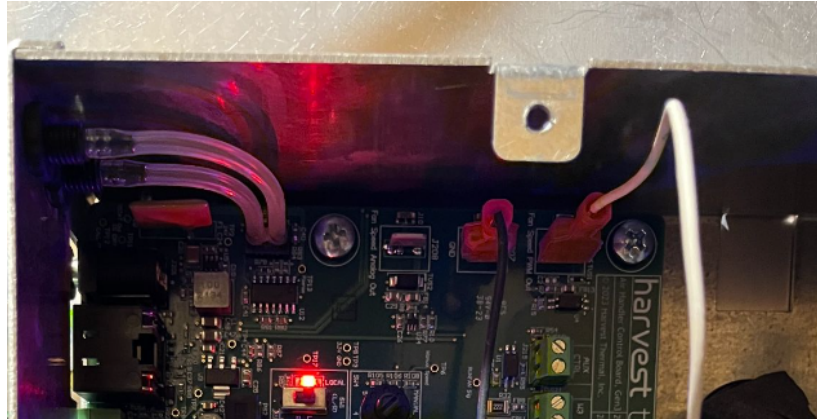


- Feed the control wires through the top grommet and the motor power wires through the bottom grommet

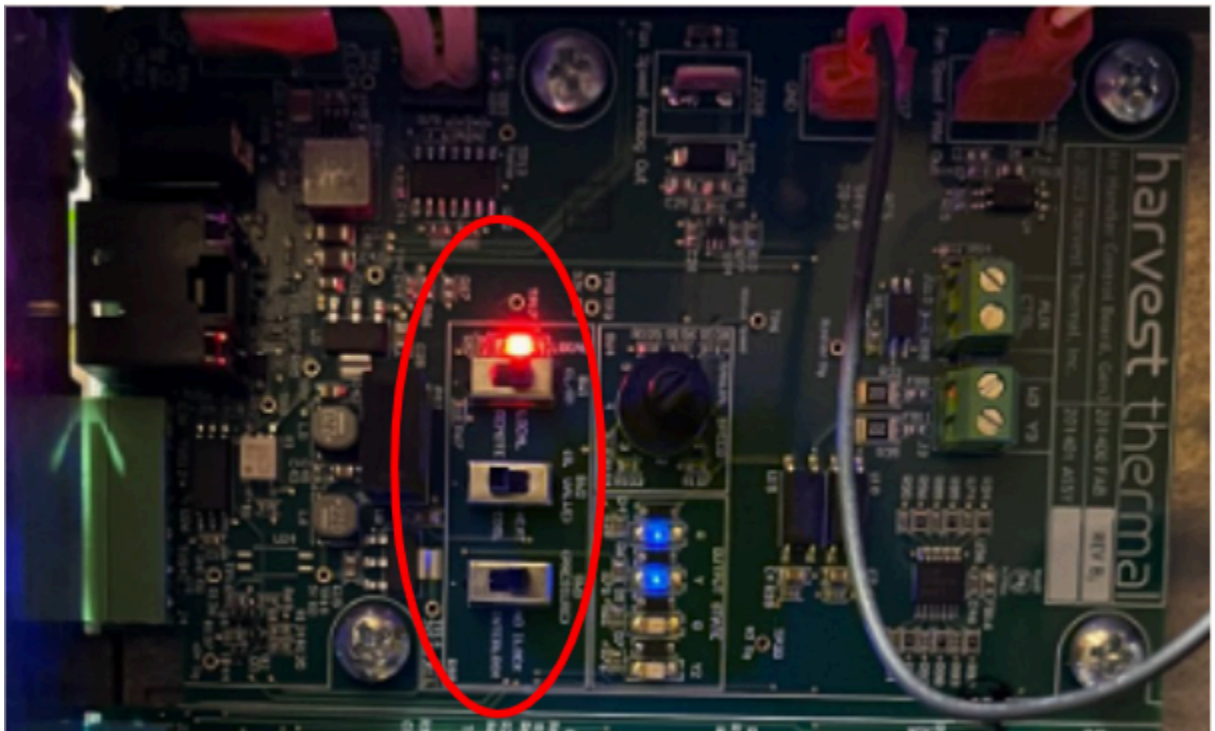
- Screw on the panel with the 12 original screws.

Plug in:

- Fan motor connections to barrier block (not shown)
- White spade connector to PWM
- Black spade connector to GND



- Check that the switches on the board are in the same positions as before



- Reattach the high voltage cover using the screw with the captured washer

- Reconnect external cables to the control box
 - AC wall plug
 - Ethernet cable
 - Barrel jack power cable
 - Pluggable terminal blocks
- Reattach the controller access panel

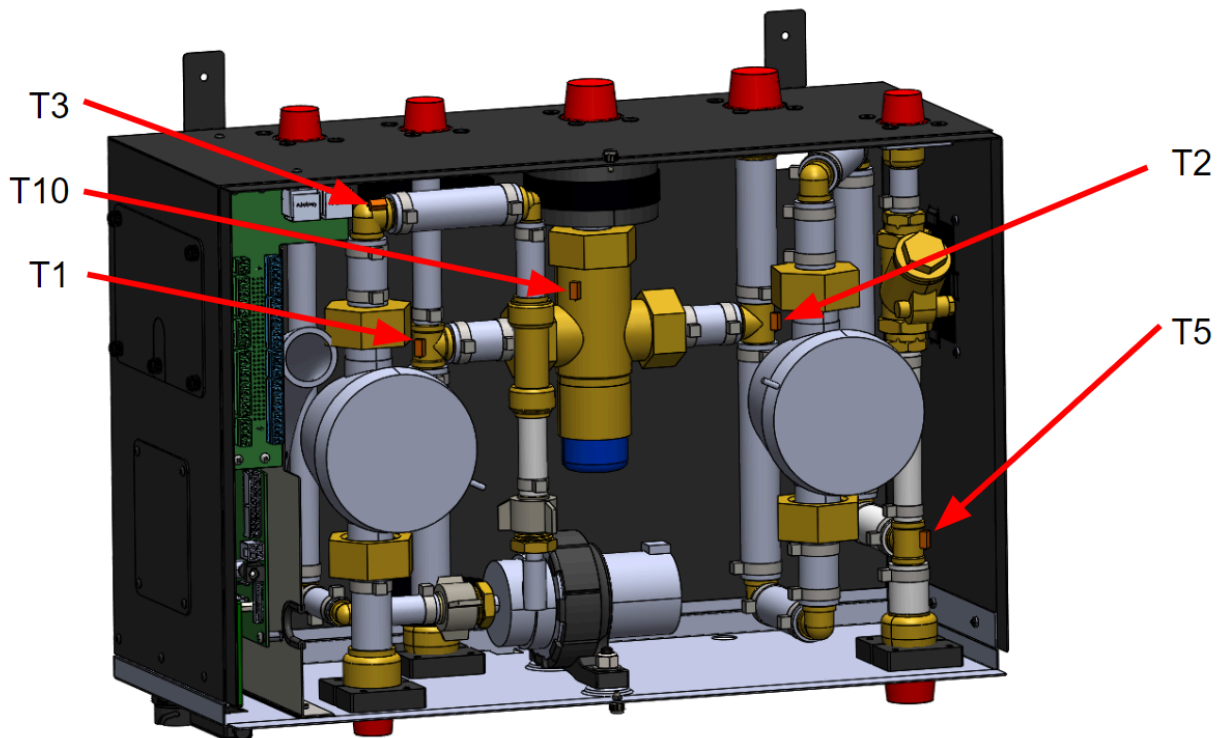
BULKHEAD CABLE

Use spare part# 201087

THERMISTORS

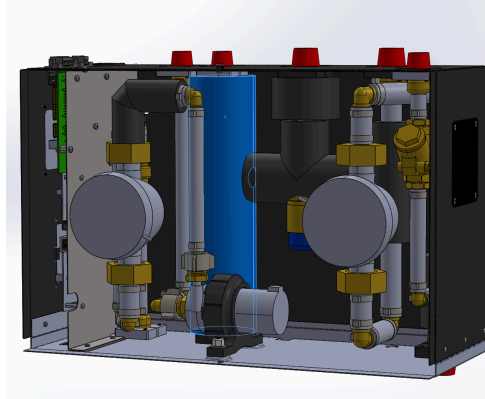
Removing:

- Identify which thermistor needs to be replaced.
- Open front panel. See below photos for exact locations of thermistors.



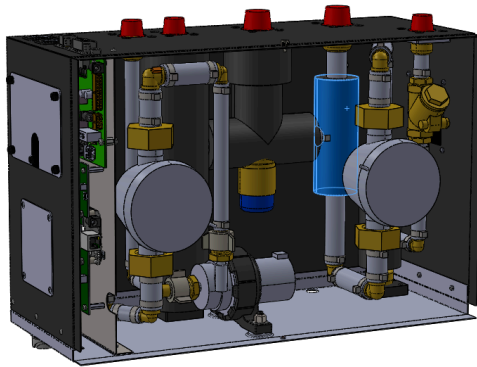
Accessing T1:

- The insulation shown below in blue will need to be removed. to do this, first undo and remove the velcro straps holding it closed. Then remove the insulation.

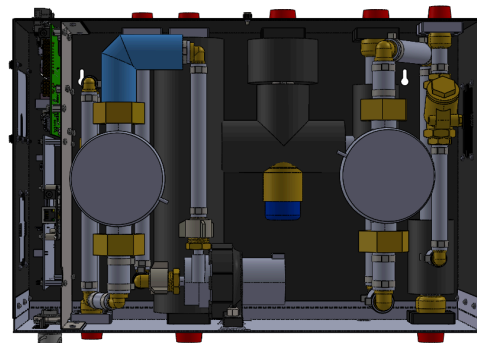


Accessing T2:

- The insulation shown below in blue will need to be removed. to do this, first undo and remove the velcro straps holding it closed. Then remove the insulation.

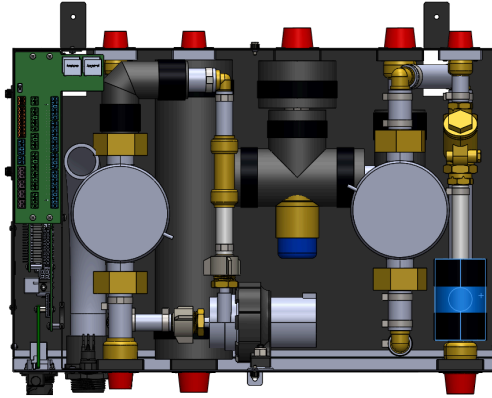


Accessing T3:



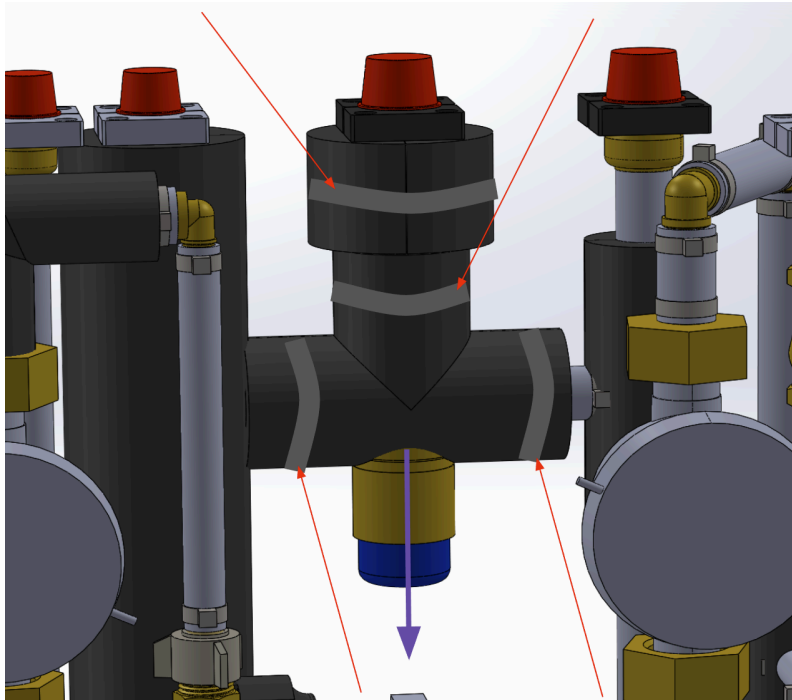
Accessing T5:

- The insulation shown below in blue will need to be removed. to do this, first undo and remove the velcro straps holding it closed. Then remove the insulation.



Accessing T10:

- Open front panel
- Remove velcro straps from insulation around mixing valve and DHW line (red arrows)



WARNING: COMPONENTS MAY STILL BE HOT

- Remove insulation from around top segment
- Pull down carefully on insulative tee to remove from mixing valve (purple arrow)

Removal process:

- First gain access to the desired thermistor as described above. Remove the tape covering the thermistor (or the zip tie in the case of T10). **Make a note** of where on the fitting it was located, and which direction the wire comes out. Pull the thermistor off, and clean any residue off the brass fitting using isopropyl alcohol.

- Disconnect the thermistor's 2-pin cable, and remove from any ties holding it in place.

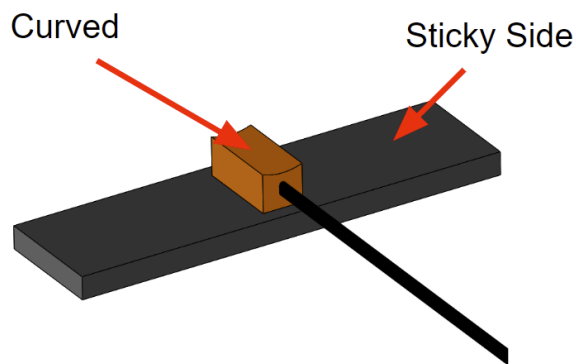
Replacing:

Use spare part# 201078

- Label the thermistor wire according to which thermistor you are replacing: T1, T2, T3, T5.

It is advisable to use gloves for the following steps of this process.

- Kit includes two sizes of tape. If you are replacing T1 or T2, use the wider 3/4" tape. If you are replacing T3 or T5, use the narrower 1/2" tape. Remove the protective backing. Place the copper head of the thermistor on the tacky side of the tape, in the center, leaving the curved face of the thermistor facing up

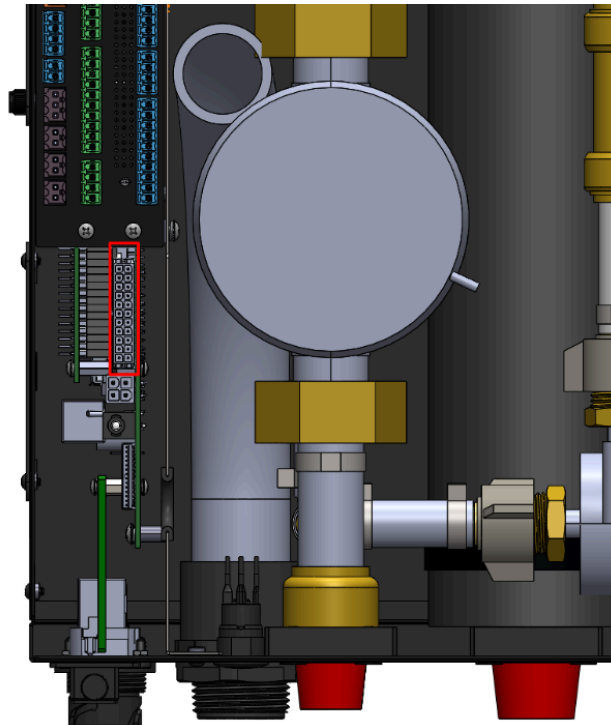


- Apply a bead of the silicone from the kit to the curved face of the thermistor. Use a generous amount, like the thermistor is a toothbrush and you're in a toothpaste commercial.
- Apply the thermistor to the fitting: press the thermistor into the fitting, silicone-coated side first, to establish good contact. Then wrap the ends of the tape around the sides, keeping a bit of tension in the tape as you do in order to keep the contact between the thermistor and the fitting.
- Put the insulation back on, taking care to make sure the wire is not pulling on the thermistor and is exiting the insulation cleanly.
- Add back the velcro clasps. It is important in this step that they are tight enough to close the air gap so that heat does not escape.
- Close the main panel.

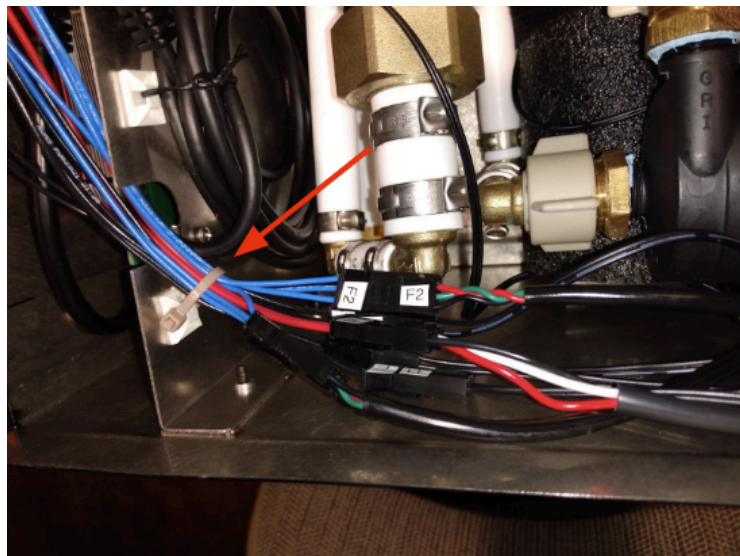
OMNIBUS CABLE

Removing:

- Disconnect power to the Pod
- Open the front panel
- Disconnect the large black 22-pin connector from the electronics assembly. You will need to press down on the latch and pull.



- Remove the cable tie holding down the Omnibus cable to the divider wall

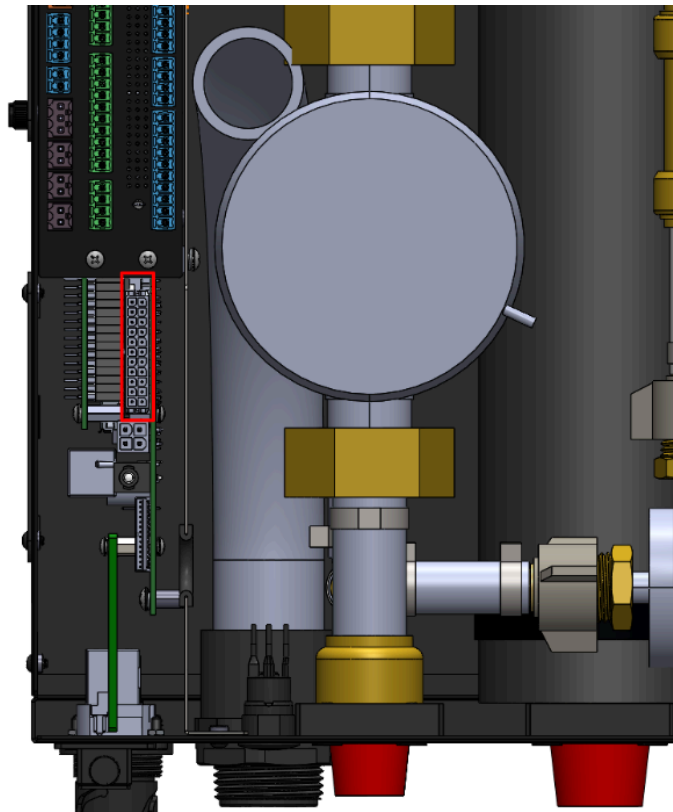


- Unplug all other connections to the Omnibus Cable.
- Remove cable from Pod.

Replacing:

Use spare part# 100741

- Plug in cable to rectangular header on the edge of the board



- Locate the Plugs in the main plumbing compartment, and connect them to the correspondingly 7 labeled receptacles on the Omnibus cable. Labels are F1, F2, C, T1, T2, T3, T5, and T10 (also called Tx). Leave Ty unconnected.

- Secure the cable by routing through the notch in the divider wall



- Close the front panel
- Reconnect power to the pod

APPENDIX

Regular Maintenance

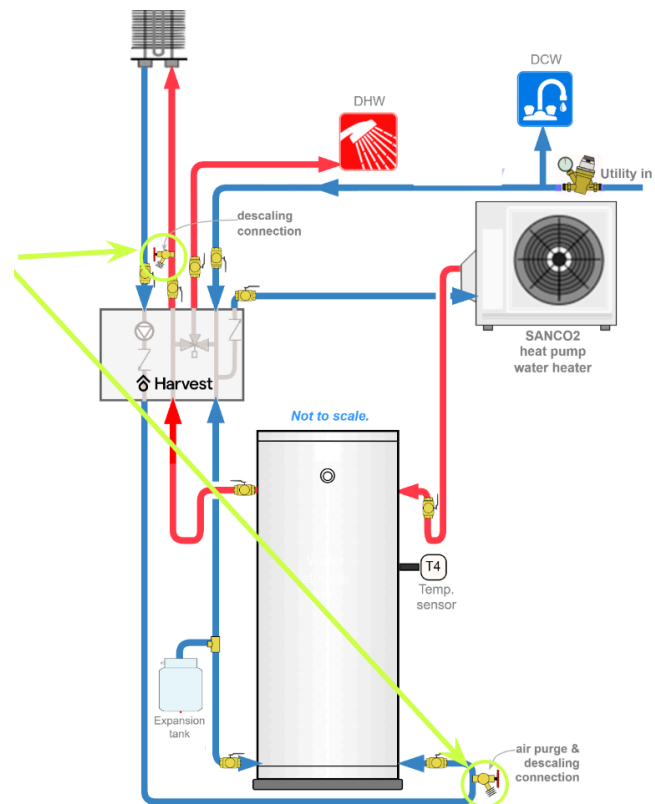
FILTER CHANGES

Change air filters regularly per the air handler manufacturer's instructions. This is important for good indoor air quality and system performance. Change (MERV 13) filters per air handler manufacturer recommendations.

DESCALING

Descal the heating coil **every 3 to 5 years** depending on water hardness to maintain good heat exchanger performance.

Use a **tankless water heater descaler kit** and the drain taps on **valves D and H**.



Real-Time Clock Battery Replacement

The Pod contains a real-time clock with battery backup to keep track of time when it loses power and isn't connected to the internet. The battery is a CR1220 coin cell.

Replacement is recommended every 20 years. Replacement parts must be a high quality brand name part such as Murata P/N CR1220 or Digikey P/N 490-18640-ND, and must be performed by a certified and trained professional, not by the homeowner.

CAUTION:

- There is a risk of explosion if the battery is replaced by an incorrect type.
- Dispose of used batteries according to battery manufacturer instructions.

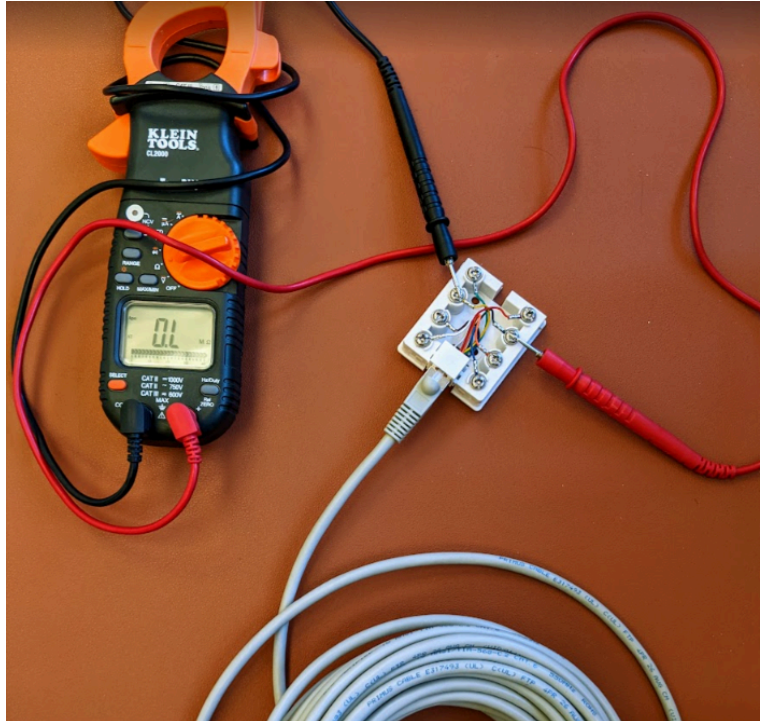
TROUBLESHOOTING

A. Field Troubleshooting Tools









Cat 5 tester

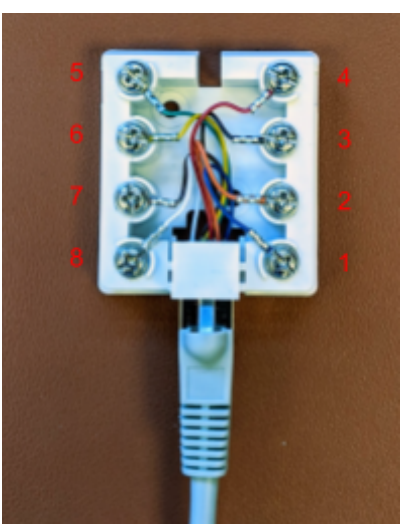
To test if the cat 5 cable and any junctions in the cable are working as expected. Can also be used to measure what the Pod and AHU board are signaling on each line.

Cat5 tester shown on right with multimeter measuring resistance on pins 3 and 6.



Heat Pump Pin-Out:

Cat5 pin		Tester pin
1		Blue
2		Orange
3		Black
4		Red
5		Green
6		Yellow
7		Brown
8		White



[10k ohm thermistor chart](#): Print it out, or click this link, it could be useful for troubleshooting.

Temp(°C)	Temp(°F)	Resistance Ohms	Temp(°C)	Temp(°F)	Resistance Ohms
-40	-40	239,686.00	60	140	2,488.00
-35	-31	242,660.00	65	149	2,083.00
-30	-22	176,960.00	70	158	1,752.00
-25	-13	130,410.00	75	167	1,479.00
-20	-4	97,072.00	80	176	1,255.00
-15	5	72,951.00	85	185	1,070.00
-10	14	55,326.00	90	194	915.4
-5	23	42,326.00	95	203	786.6
0	32	32,650.00	100	212	678.6
5	41	25,391.00	105	221	587.6
10	50	19,899.00	110	230	510.6
15	59	15,711.00	115	239	445.2
20	68	12,492.00	120	248	389.6
25	77	10,000.00	125	257	341.9
30	86	8,057.00	130	266	301.0
35	95	6,531.00	135	275	265.8
40	104	5,326.00	140	284	235.4
45	113	4,368.00	145	293	209.0
50	122	3,602.00	150	302	186.1
55	131	2,986.00			

B. SANCO2 Heat Pump Won't Start Or Has An Error Code

- Does the heat pump have power?** (light blinking)
- Error code H7**
 - If the SANCO2 has error code H7, check IDC connectors and other connections on orange/white wires. IDC heads must be pushed fully in and completely flat.
 - Is the heat pump receiving the right tank temperature signal?** - Disconnect the **orange white** and **orange** cat 5 wires (pins 1 and 2) from the heat pump terminals and use a multimeter to measure resistance between the two wires. If the Pod is in control mode, the resistance will be approx 7,550 ohms. If it is in Basic mode, it should signal the temperature of the tank at the thermowell (use this [10k ohm thermistor chart](#) to decode the temperature), it should be between 15 kOhm (60 F) and 2 kOhm (150 F). If the resistance is higher than expected check for bad connections.
- Other SANCO2 has error codes:** look them up in the SANCO2 manual
- Does the heat pump start if dry contact is closed?** - Unplug the dry contact connector (white wire), short the heat pump dry contact by inserting a closed loop wire into the female connector. Wait up to 3 minutes for the heat pump to start.

- Is the Pod sending a “Heat Pump ON” signal?** - Disconnect the heat pump cat 5 cable at the Pod. Plug in a short Cat 5 cable and plug in the **Cat 5 Tester** at the other end. Measure resistance between **pins 3 and 6**. It should be **less than 15 ohms** if the Pod is sending the Heat Pump ON signal. If it is not, check IDC and other connections on dry contact wires (green/white)

- Is the heat pump receiving the Heat Pump ON signal?** - Disconnect the dry contact connector. Push two wires into the male piece and use a multimeter to measure the resistance. It should be **less than 15 ohms** if the Heat Pump ON signal is received. If it is sent from the Pod but not received at the heat pump:
 - Check cat 5 cable integrity (not cut or pinched) and any junctions for bad connections.

 - Check cat5 cable is properly inserted at the Pod

- If none of this works, email support@harvest-thermal.com or call 510.962.6898, we'll get back to you within 24 hours.

C. SANCO2 Heat Pump Running But Water Is Not Circulating

It is most likely an obstruction on the heat pump loop: valve closed or not properly open, check valve, too many elbows or pipe too long.

D. Pod Circulator Humming But No Flow

- Check if there is air trapped in the heating loop. Thoroughly purge the heating loop through the H drain valve, with the tank side closed. Wait until the water gets hot and continue to purge several gallons of water at high flow rate.
- Circulator speed may be too low. If setting up Basic mode, increase Basic mode circulator speed (D4).

E. Harvest Pod Not Working

If the heat pump or heating won't turn on and there is no error code on SANCO2, AHU is powered on, and all signals are received as expected, there may be an issue with the Pod hardware or software.

- Check that the Pod is powered on and LED light below the Pod is lit.
- Place the system in Basic mode: flip the switch on the connector board from CONTROL to BASIC.
- Contact support@harvest-thermal.com or call 510.962.6898.