

## Isolibrium PE support surface

### Maintenance Manual

REF 297300000000





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# Warning/Caution/Note Definition

The words **WARNING**, **CAUTION**, and **NOTE** carry special meanings and should be carefully reviewed.

## **WARNING**

Alerts the reader about a situation which, if not avoided, could result in death or serious injury. It may also describe potential serious adverse reactions and safety hazards.

## **CAUTION**

Alerts the reader of a potentially hazardous situation which, if not avoided, may result in minor or moderate injury to the user or patient or damage to the product or other property. This includes special care necessary for the safe and effective use of the device and the care necessary to avoid damage to a device that may occur as a result of use or misuse.

**Note** - Provides special information to make maintenance easier or important instructions clearer.

## Summary of safety precautions

Always read and strictly follow the warnings and cautions listed on this page. Service only by qualified personnel.

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### **CAUTION**

- Always use electrostatic discharge (ESD) protective equipment before you open antistatic bags and service electronic parts.
  - Do not place unprotected circuit boards on the floor.
  - Avoid stacking or placing equipment adjacent with other equipment to prevent improper operation of the product. If such use is necessary, carefully observe stacked or adjacent equipment to make sure that they operate.
  - The use of accessories, transducers, and cables, other than those specified or provided by the manufacturer, could result in increased electromagnetic emissions or decreased electromagnetic immunity and result in improper operation.
-

# Introduction for service

This manual assists you with the service of your Stryker product. Read this manual to service this product. This manual does not address the operation of this product. See the Operations Manual for operating and use instructions. To view your Operations Manual online, see <https://techweb.stryker.com/>.

## Expected service life

**Isolibrium** PE support surface has a five year expected service life under normal use, conditions, and with appropriate periodic maintenance.

**Isolibrium** PE covers (top and bottom) have a two year expected service life under normal use, and conditions.

## Contact information

Contact Stryker Customer Service or Technical Support at: 1-800-327-0770.

Stryker Medical  
3800 E. Centre Avenue  
Portage, MI 49002  
USA

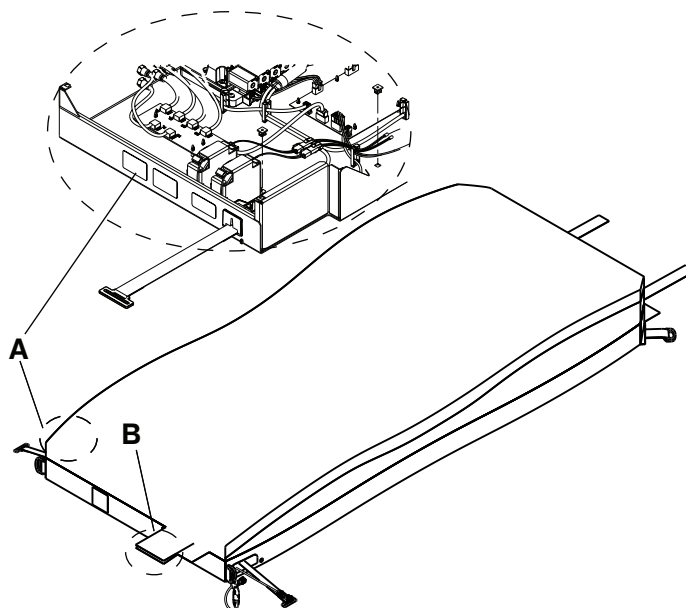
**Note** - The user and/or the patient should report any serious product-related incident to both the manufacturer and the Competent authority of the European Member State where the user and/or patient is established.

To view your operations or maintenance manual online, see <https://techweb.stryker.com/>.

Have the serial number (A) of your Stryker product available when calling Stryker Customer Service or Technical Support. Include the serial number in all written communication.

## Serial number location

The serial number (A) for your support surface is located on the patient right side of the foot box on the specification label. Unzip the support surface top cover to access the specification label. The serial number (B) is for the support surface cover.



# Preventive maintenance

Remove product from service before you perform preventive maintenance inspection. Check all items listed during annual preventive maintenance for all Stryker Medical products. You may need to perform preventive maintenance checks more frequently based on your level of product usage. Service only by qualified personnel.

## Note

- Clean and disinfect the exterior of the support surface before inspection, if applicable.
- If excessive wear is observed on the cover or the fire barrier, the recommendation is to replace the cover.

Inspect the following items:

- \_\_\_\_\_ All fasteners are secure
- \_\_\_\_\_ Zipper, snaps, and covers (top, bottom, and fire barrier) are free of tears, cuts, holes, or any other damage
- \_\_\_\_\_ Support surface cover labels are legible, adhere, and free of damage
- \_\_\_\_\_ Handles are free of rips or cracks
- \_\_\_\_\_ Magnetic break away cables (297300560804 and 297300560805) are free of damage
- \_\_\_\_\_ Cable tie is present on the magnetic break away cables
- \_\_\_\_\_ <sup>2</sup>Perform a functional test of the **Isolibrium** PE functions
- \_\_\_\_\_ <sup>2</sup>Perform system diagnostics and confirm there are no errors
- \_\_\_\_\_ <sup>1</sup>Internal components for signs of stains from fluid ingress or contamination by fully unzipping the cover
- \_\_\_\_\_ Pods do not leak or are not cracked
- \_\_\_\_\_ Hose connections to the manifold and sensor tubes (both ends) are seated
- \_\_\_\_\_ Foam is free from large tears or large gouges
- \_\_\_\_\_ Turn bladders are free of excessive wear and function
- \_\_\_\_\_ Low Air Loss fans rotate freely and are free of debris and dust
- \_\_\_\_\_ Left and right CPR releases function
- \_\_\_\_\_ Both foot box cooling fans rotate and are free of debris and dust
- \_\_\_\_\_ Pump spring mount has visible clearance from the foot box bottom
- \_\_\_\_\_ Listen for abnormal pump vibration and noise level
- \_\_\_\_\_ Clean the foot box intake metal screen
- \_\_\_\_\_ Clean the mesh on the bottom cover
- \_\_\_\_\_ Clean the fan filter screen on the foot box
- \_\_\_\_\_ Standoffs (feet of the foot box) are present

## Note

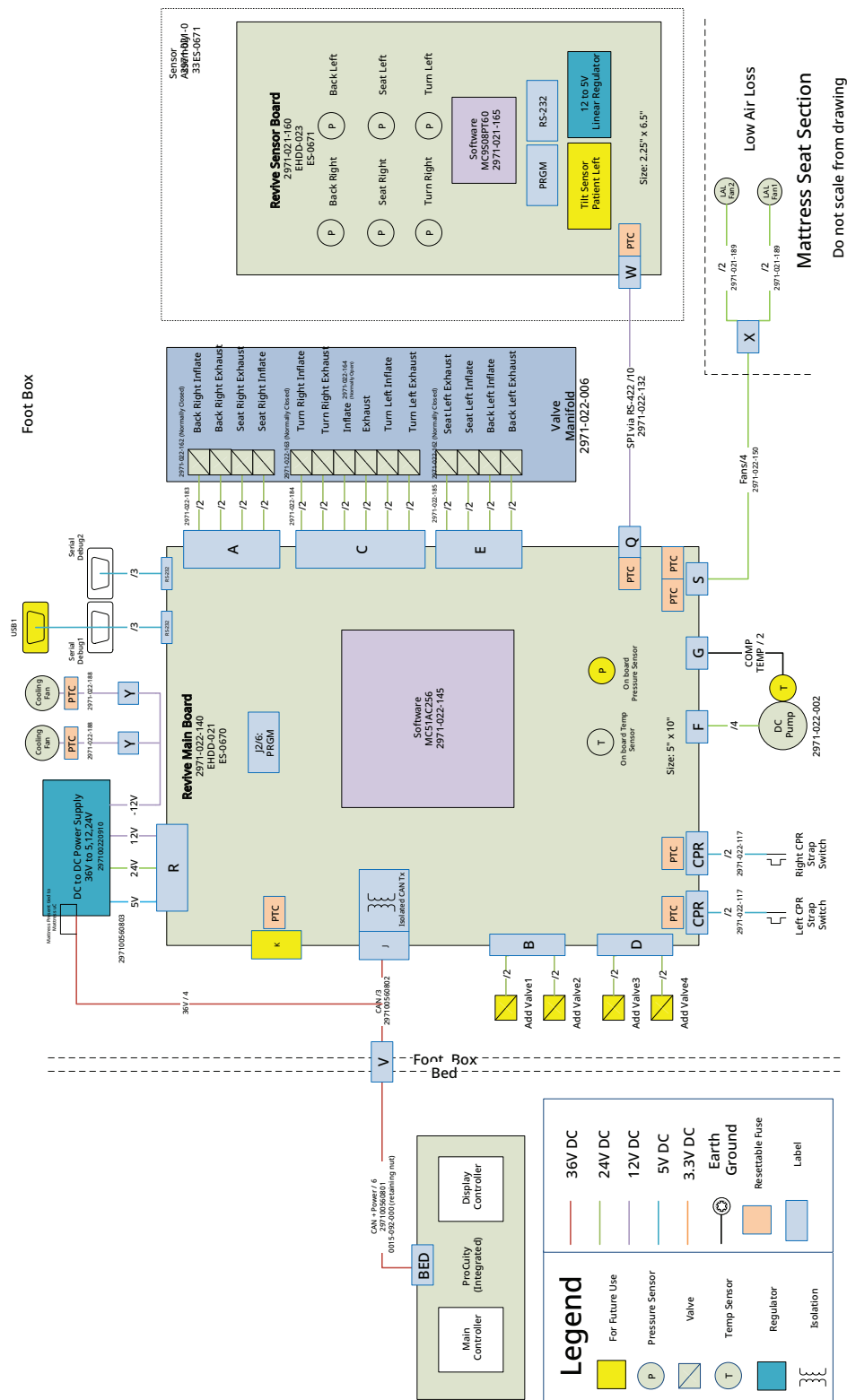
- <sup>1</sup>A zipper pull tool or equivalent is required to access the internal components of the support surface.
- <sup>2</sup>You cannot perform these preventive maintenance checks without the footboard, see the **ProCuity** Maintenance Manual.
- The zipper overlaps at the end and may appear to be misaligned per design.

Replace the following items every two years:

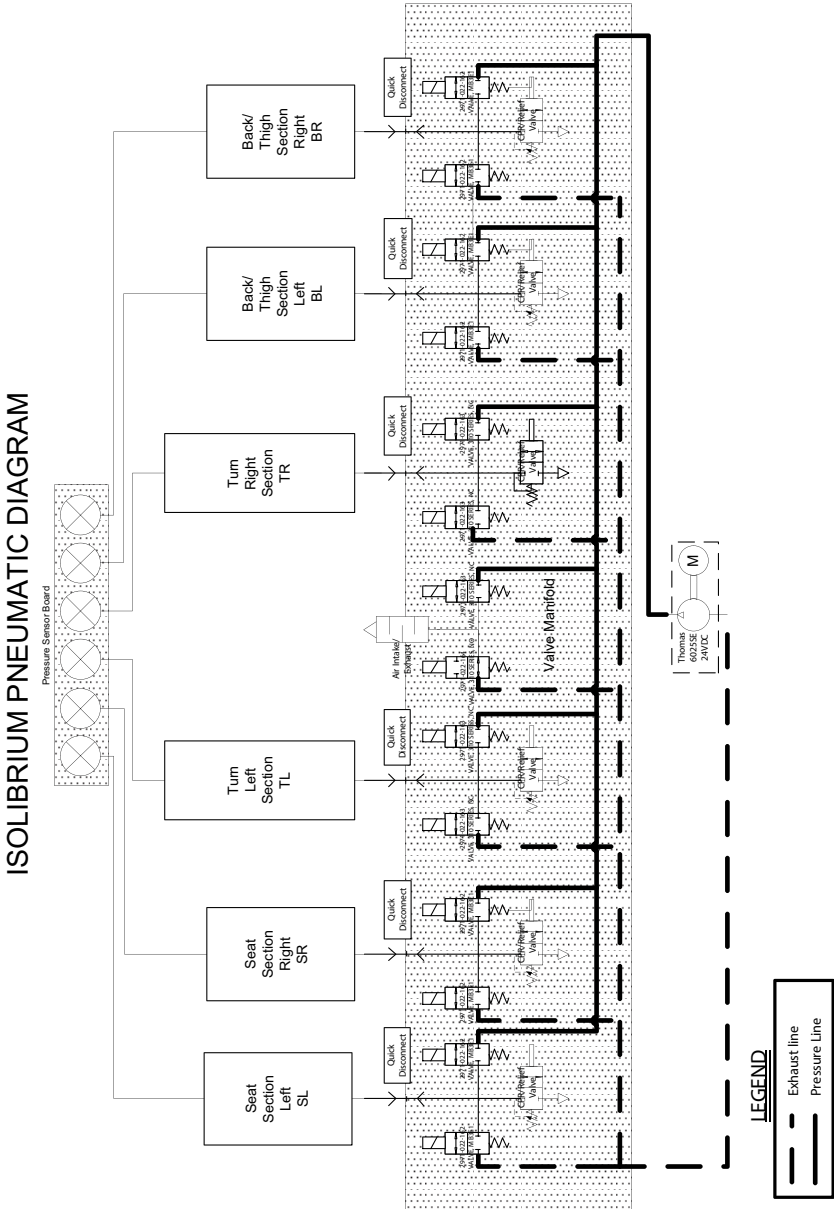
- Top cover assembly
- Bottom cover assembly

Product serial number:
Completed by:
Date:

## Isolibrium wiring



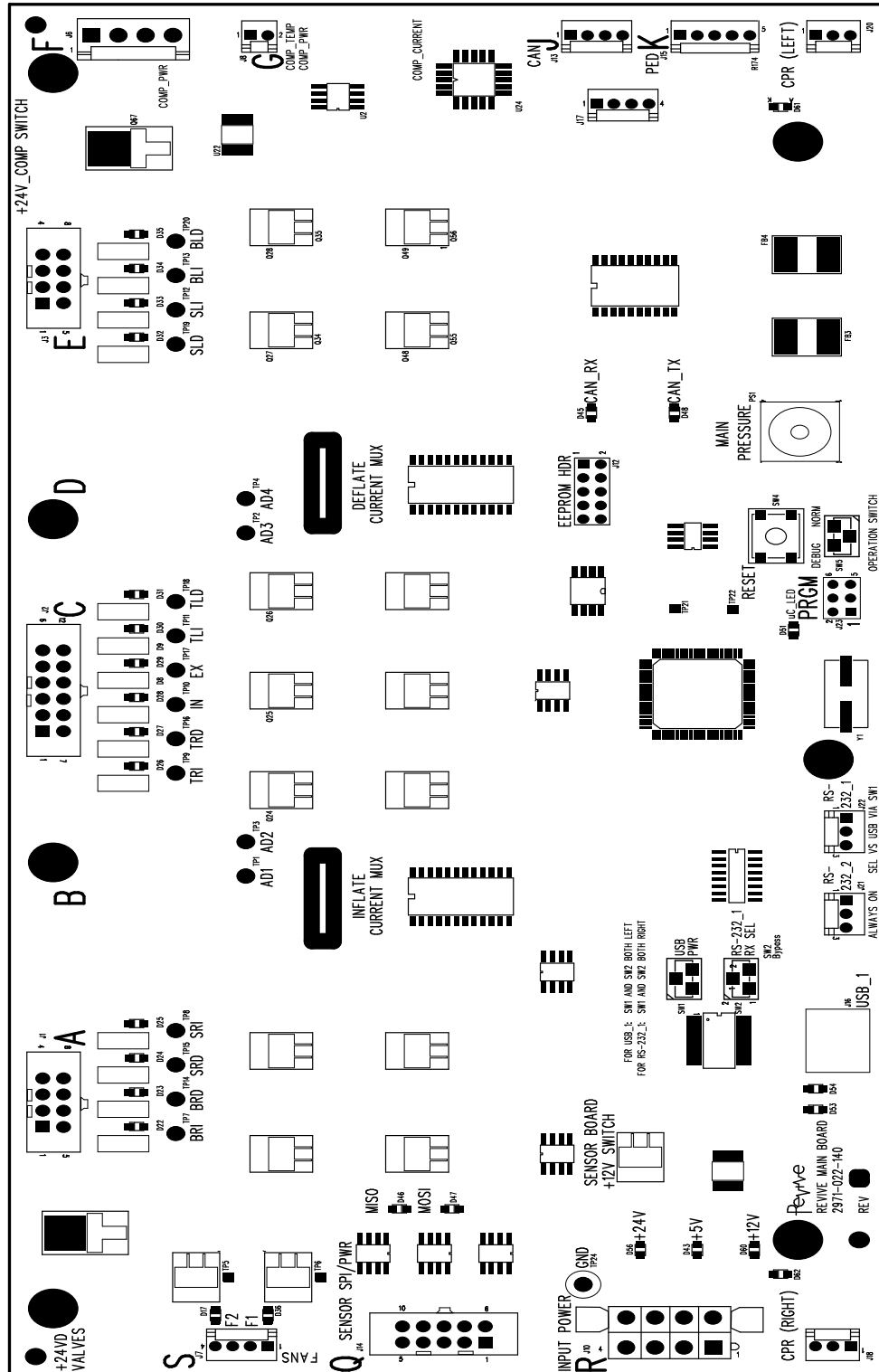
Pneumatic wiring diagram





# Main power board assembly

2971-022-140 Rev L (Reference only)



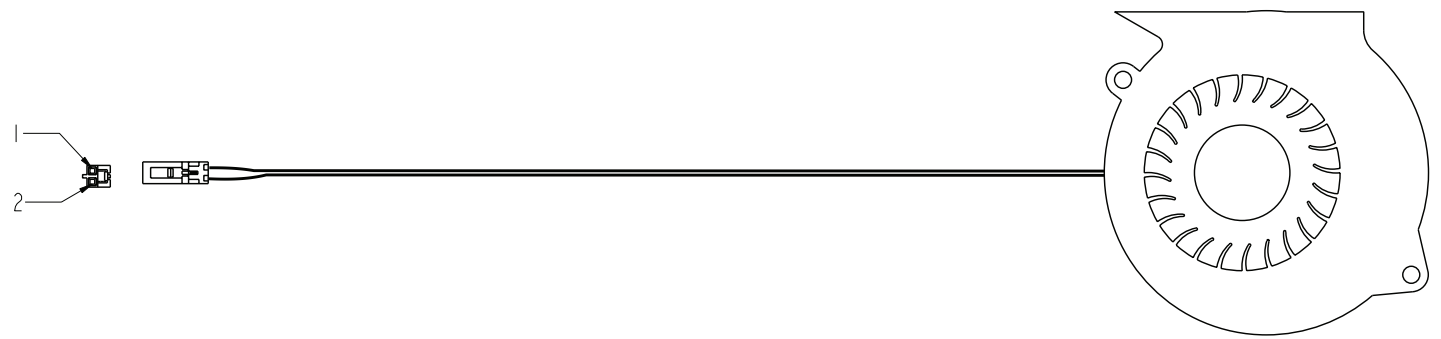
Cable and test point (LED) location	Voltage	Positive lead	Negative lead	Description
D43	+5 VDC	N/A	N/A	+5 VDC from power supply to main board
D60	+12 VDC	N/A	N/A	+12 VDC from power supply to main board
D56	+24 VDC	N/A	N/A	+24 VDC from power supply to main board
CPR (left)	+5 VDC	Pin 2 red	Pin 3 black	+5 VDC power out to CPR switch
CPR (right)	+5 VDC	Pin 2 red	Pin 3 black	+5 VDC power out to CPR switch
TLI (D30)	+24 VDC	TP11	TP24 GND	+24 VDC from main board to solenoid valve (Turn Left Inflate)
TLD (D31)	+24 VDC	TP18	TP24 GND	+24 VDC from main board to solenoid valve (Turn Left Deflate)
TRI (D26)	+24 VDC	TP9	TP24 GND	+24 VDC from main board to solenoid valve (Turn Right Inflate)
TRD (D27)	+24 VDC	TP16	TP24 GND	+24 VDC from main board to solenoid valve (Turn Right Deflate)
BLI (D34)	+24 VDC	TP13	TP24 GND	+24 VDC from main board to solenoid valve (Back Left Inflate)
BLD (D36)	+24 VDC	TP20	TP24 GND	+24 VDC from main board to solenoid valve (Back Left Deflate)
BRI (D22)	+24 VDC	TP7	TP24 GND	+24 VDC from main board to solenoid valve (Back Right Inflate)
BRD (D23)	+24 VDC	TP14	TP24 GND	+24 VDC from main board to solenoid valve (Back Right Deflate)
SLI (D33)	+24 VDC	TP12	TP24 GND	+24 VDC from main board to solenoid valve (Seat Left Inflate)

Cable and test point (LED) location	Voltage	Positive lead	Negative lead	Description
SLD (D32)	+24 VDC	TP19	TP24 GND	+24 VDC from main board to solenoid valve (Seat Left Deflate)
SRI (D25)	+24 VDC	TP8	TP24 GND	+24 VDC from main board to solenoid valve (Seat Right Inflate)
SRD (D24)	+24 VDC	TP15	TP24 GND	+24 VDC from main board to solenoid valve (Seat Right Deflate)
IN (D28)	+24 VDC	TP10	TP24 GND	+24 VDC from main board to solenoid valve (Air Intake)
EX (D29)	+24 VDC	TP17	TP24 GND	+24 VDC from main board to solenoid valve (Air Exhaust)
J14	+12 VDC	Pin 1 red	Pin 6 black	+12 VDC out to sensor board from main board
J6	+24 VDC	Pin 1 yellow	Pin 2 black	+24 VDC out to compressor from main board (variable voltage) - D65 = 24.4% - D66 = 48.8% - D67 = 73.2% - D68 = 97.6% - D71 = 110%

# Cables

## Fan and cable assembly

2971-021-189 Rev C (Reference only)



Item	Color
1	Red
2	Blue

## SPI cables (main board to foot box) assembly

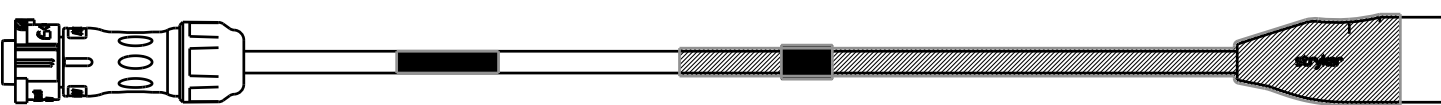
2971-022-132 Rev D (Reference only)



Item	Color
1	Red
6	Black
2	Black
3	Green
4	Black
5	White
7	Blue
8	Black
9	Brown
10	Black

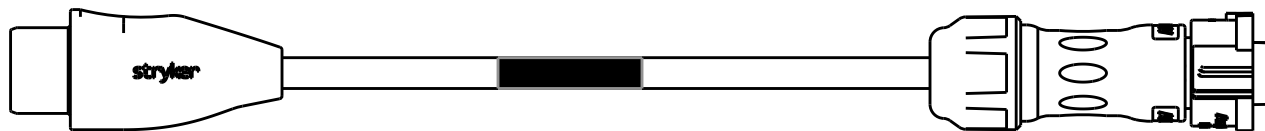
## Magnetic break away cable side A

297300560804 Rev AC (Reference only)



## Magnetic break away cable side B

297300560805 Rev AC (Reference only)



# Troubleshooting

Problem	Possible cause	Solution
Support surface will not inflate	Support surface has no power	See <i>No power</i>
	CPR pull is active	Pull down the CPR to reset
	Support surface menu is unavailable on the <b>ProCuity</b> bed screen	Check the connection of the support surface magnetic break away cable both sides
	Pod manifold connector is not set	Set the pod manifold connector and secure
	Pump does not run when you start Max Inflate	Check for 24VDC (variable) is going to the pump on connector F on the main board pin 1 (yellow) and pin 2 (black)  1. If voltage is present, replace pump assembly 2. If no voltage present, replace the control board
	Solenoids or pod assembly possible disconnected hose connections	Check the hose connections, solenoids, and pod assembly
No left turn inflate	Left turn bladder hose quick connection coupler loose or disconnected	Make sure that the left turn bladder hose quick connection coupler is together and locked
	Pod manifold connector loose or disconnected	Make sure that the pod manifold connector is set into the manifold and set
	Turn bladder possible leak	Listen for air flow into the turn bladder
		Look for a leak in the turn bladder
		If you find a leak, replace the turn bladder assembly
	Turn bladder no air enters	Make sure that the LED (D30) is lit to show the TLI solenoid is energized (see <i>Main power board assembly</i> (page 9))
		If energized, replace the TLI inflate solenoid
No left turn deflate	Left turn bladder hose quick connection coupler loose or disconnected	Make sure that the left turn bladder hose quick connection coupler is together and locked
	Turn bladder no air exits	Make sure that the LED (D31) is lit to show the TLD solenoid is energized (see <i>Main power board assembly</i> (page 9))
		If energized, replace the TLD inflate solenoid
No right turn inflate	Right turn bladder hose quick connection coupler loose or disconnected	Make sure that the right turn bladder hose quick connection coupler is together and locked

Problem	Possible cause	Solution
	Pod manifold connector loose or disconnected	Make sure that the pod manifold connector is set into the manifold and set
	Turn bladder possible leak	Listen for air flows into the turn bladder
		Look for a leak in the turn bladder
		If you find a leak, replace the turn bladder assembly
	Turn bladder no air enters	Make sure that the LED (D26) is lit to show the TLI solenoid is energized (see <i>Main power board assembly</i> (page 9))
		If energized, replace the TLI inflate solenoid
No right turn deflate	Right turn bladder hose quick connection coupler loose or disconnected	Make sure that the right turn bladder hose quick connection coupler is together and locked
	Turn bladder no air exits	Make sure that the LED (D27) is lit to show the TLD solenoid is energized (see <i>Main power board assembly</i> (page 9))
		If energized, replace the TLD inflate solenoid
No back right inflate	Pod manifold connector loose or disconnected	Make sure that the pod manifold connector is set into the manifold and secured
	Turn bladder possible leak	Listen for air flows into the turn bladder
		Look for a leak in the turn bladder
		If you find a leak, replace the turn bladder assembly
	Turn bladder no air enters	Make sure that the LED (D22) is lit to show the BRI solenoid is energized (see <i>Main power board assembly</i> (page 9))
No back right inflate	Turn bladder no air enters	If energized, replace the BRI inflate solenoid
No back right deflate	Pod manifold connector loose or disconnected	Make sure that the pod manifold connector is set into the manifold and secured
	Turn bladder no air exits	Make sure that the LED (D23) is lit to show the BRD solenoid is energized (see <i>Main power board assembly</i> (page 9))
		If energized, replace the BRD inflate solenoid
No back left inflate	Pod manifold connector loose or disconnected	Make sure that the pod manifold connector is set into the manifold and secured

Problem	Possible cause	Solution
	Turn bladder possible leak	Listen for air flows into the turn bladder
		Look for a leak in the turn bladder
		If you find a leak, replace the turn bladder assembly
	Turn bladder no air enters	Make sure that the LED (D34) is lit to show the BLI solenoid is energized (see <i>Main power board assembly</i> (page 9))
		If energized, replace the BLI inflate solenoid
No back left deflate	Pod manifold connector loose or disconnected	Make sure that the pod manifold connector is set into the manifold and secured
	Turn bladder no air exits	Make sure that the LED (D36) is lit to show the BLD solenoid is energized (see <i>Main power board assembly</i> (page 9))
		If energized, replace the BLD inflate solenoid
No seat right inflate	Pod manifold connector loose or disconnected	Make sure that the pod manifold connector is set into the manifold and secured
	Turn bladder possible leak	Listen for air flows into the turn bladder
		Look for a leak in the turn bladder
		If you find a leak, replace the turn bladder assembly
	Turn bladder no air enters	Make sure that the LED (D25) is lit to show the SRI solenoid is energized (see <i>Main power board assembly</i> (page 9))
		If energized, replace the SRI inflate solenoid
No seat right deflate	Pod manifold connector loose or disconnected	Make sure that the pod manifold connector is set into the manifold and secured
	Turn bladder no air exits	Make sure that the LED (D24) is lit to show the SRD solenoid is energized (see <i>Main power board assembly</i> (page 9))
		If energized, replace the SRD inflate solenoid
No power	Support surface magnetic break away cable is not plugged into the <b>ProCuity</b> bed	Plug the support surface magnetic break away cable into the <b>ProCuity</b> bed
	Pod manifold connector loose or disconnected	Make sure that the pod manifold connector is set into the manifold and secured

Problem	Possible cause	Solution
	Turn bladder possible leak	Listen for air flows into the turn bladder
		Look for a leak in the turn bladder
		If you find a leak, replace the turn bladder assembly
	Turn bladder no air enters	Make sure that the LED (D33) is lit to show the SLI solenoid is energized (see <i>Main power board assembly</i> (page 9))
		If energized, replace the SLI inflate solenoid
	Pod manifold connector loose or disconnected	Make sure that the pod manifold connector is set into the manifold and secured
	Turn bladder no air exits	Make sure that the LED (D32) is lit to show the SLD solenoid is energized (see <i>Main power board assembly</i> (page 9))
		If energized, replace the SLD inflate solenoid
	LAL fan not secure in frame or obstructed	If you find no obstruction and the fan is set in the frame, replace the LAL fan assembly
	Power supply quick connector loose or disconnected	Check the power supply quick connector is together and locked
	Foot box fans do not run	Use a voltmeter to check for -12VDC on pin 8 (+/- blue) and pin 6 (-/red)
		If no 12VDC, replace the power supply
	Fan cage not secure or obstructed	If you find no obstruction and the fan is set in the cage, replace the foot box fan assembly
	<b>ProCuity</b> bed power cord not plugged into a hospital grade outlet	Plug the <b>ProCuity</b> power cord into a hospital grade outlet
		Using a voltmeter, check the auxiliary outlet on the <b>ProCuity</b> bed for 120VAC

Problem	Possible cause	Solution
	Check the VDC voltage at the test points on the power supply	<ol style="list-style-type: none"> <li>1. Check the input into the power supply <ul style="list-style-type: none"> <li>• 36V – Probe between TP1 and the GND lug</li> </ul> <p><b>Note</b> - If no voltage is present on the input, check bed configurations, cable continuity to the Main Controller in the electronics box on the bed, and that the support surface is plugged into the bed.</p> </li> <li>2. Check output voltages on the power supply <ul style="list-style-type: none"> <li>• 24V – Probe between TP3 and the GND lug</li> <li>• 12V – Probe between TP5 and the GND lug</li> <li>• 5V – Probe between TP4 and the GND lug.</li> </ul> <p><b>Note</b> - If the voltage on A, B, or C are not correct, change out the power supply.</p> </li> </ol>

# Service

## Protecting against electrostatic discharge (ESD)

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### CAUTION

- Always use electrostatic discharge (ESD) protective equipment before you open antistatic bags and service electronic parts.
  - Do not place unprotected circuit boards on the floor.
- 

**Note** - Always ship the circuit boards back to Stryker. Use the antistatic bag that the new board was originally shipped in.

The electronic circuits in the product are completely protected from static electricity damage when factory assembled. Always use adequate static protection when you service the electronic systems of the product. All service personnel must use static protection whenever they touch wires.

Sample antistatic protection equipment includes:

- Antistatic wrist strap
- Grounding plug
- Test lead with a banana plug on one end and an alligator clip on the other end

Make sure that you follow the ESD manufacturer's instructions for appropriate protection against static discharge.

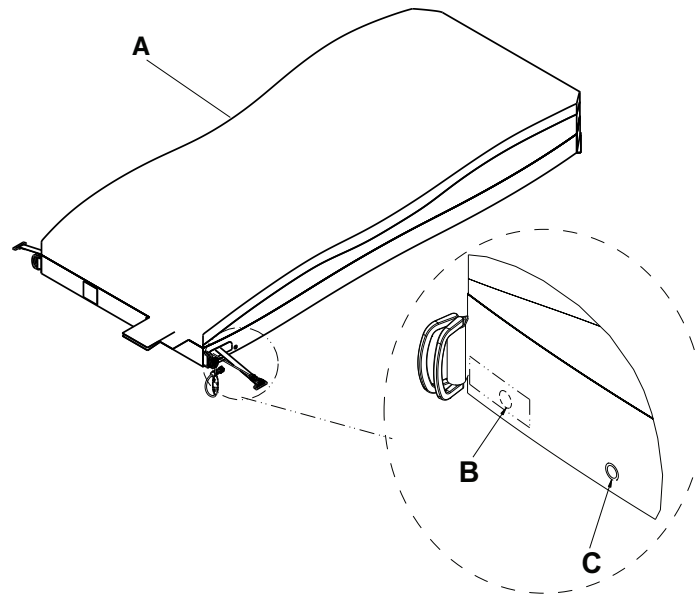
## Cover replacement, top

### Tools required:

- Zipper pull tool or equivalent

### Procedure:

1. Apply the brakes on the **ProCuity** bed.
2. Unplug the support surface magnetic break away cable (297300560805) from the bed.
3. Remove the headboard and footboard and set aside.
4. Lower all the siderails to the lowest height position.
5. Unsnap the two secure snaps (C) at the foot end corners (Figure 1).
6. Unsnap the four corner retainers (B).



**Figure 1 – Top cover**

**Note**

- When you install the new cover, lift up on the bottom cover fire barrier side panels, if equipped, and insert the side panels flat into the top cover. Zip the top and bottom covers together to close.
  - When you install, reconnect the corner retainers. Place the strap below each D-ring at the foot end corners and snap the cover.
  - The zipper starts on the patient right side near the foot end.
7. Insert the zipper pull tool or equivalent through the hole in the zipper slider to unlock.
  8. Using the zipper pull tool or equivalent, unzip the support surface top cover (A) from the bottom.
  9. Remove and discard the top cover.
  10. Reverse steps to install the new cover.

**Note**

- After you install, remove and save the zipper pull tool or equivalent from the zipper.
  - Cover the zipper with the support surface cover watershed.
11. Verify proper operation before you return the product to service.

## Cover replacement, bottom

**Tools required:**

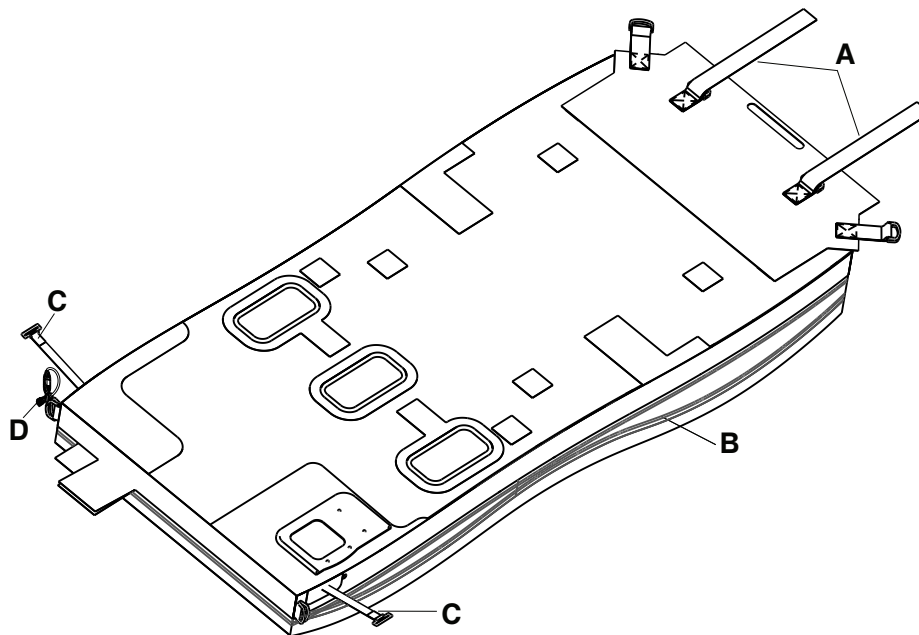
- Zipper pull tool (or equivalent)

**Note** - A minimum of two operators is required to replace the bottom support surface cover.

**Procedure:**

1. Apply the brakes on the bed.
2. Unplug the support surface magnetic break away cable (297300560805) from the bed.
3. Remove the headboard and footboard and set aside.
4. Lower all the siderails to the lowest height position.
5. Loosen and remove the retainer straps (A) that secure the support surface to the backrest (Figure 2).
6. Place a protective sheet on the support surface for the top cover to rest on before you turn the support surface over.

7. Using two operators, turn the support surface over.



**Figure 2 – Bottom support surface cover**

8. Unsnap the four corner cover snaps.

9. Unsnap the two secure snaps at the right and left foot end corners.

10. Insert the zipper pull tool through the hole in the zipper slider to unlock.

11. Using the zipper pull tool, pull to unzip the bottom cover from the top cover (B).

12. Insert the CPR release straps (C) and magnetic break away cable (D) through the bottom cover.

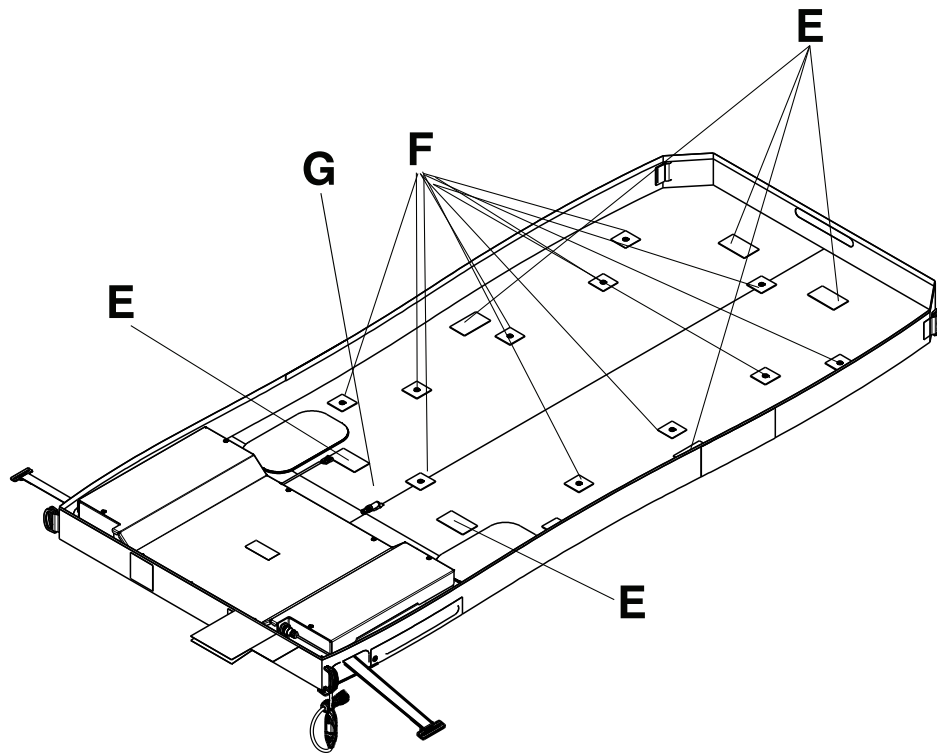
13. Unsnap the two snaps that secure the bottom support surface cover to the foot box.

**Note**

- When you install the supplied cover, lift up on the bottom cover fire barrier side panels, if equipped, and insert the side panels flat into the top cover. Zip the top and bottom covers together to close.
- When you install the supplied cover, align the foot box with the lines on the bottom cover.

14. Starting at the head end of the support surface, separate the six hook and loop fasteners from the bottom cover (E) (Figure 3).

15. Unsnap the twelve snaps and separate the hook and loop fasteners from the left and right sides of the turn bladder (F).



**Figure 3 – Pod hook and loop fasteners and snap retainers**

16. Remove the foot end foam crib from the bottom cover.
17. Disconnect the exhaust tube quick disconnect (G) from the bladder assembly.
18. Remove and discard the bottom cover.
19. Reverse the steps to install the supplied bottom cover.

**Note**

- When you install, align the hook and loop fasteners, snaps, and the foot box cover.
- When you install, connect the corner retainers. Place the strap below each D-ring and snap to the cover. Repeat for the other corners.

20. Cover the zipper with the support surface cover watershed.
21. Verify proper operation before you return the product to service.

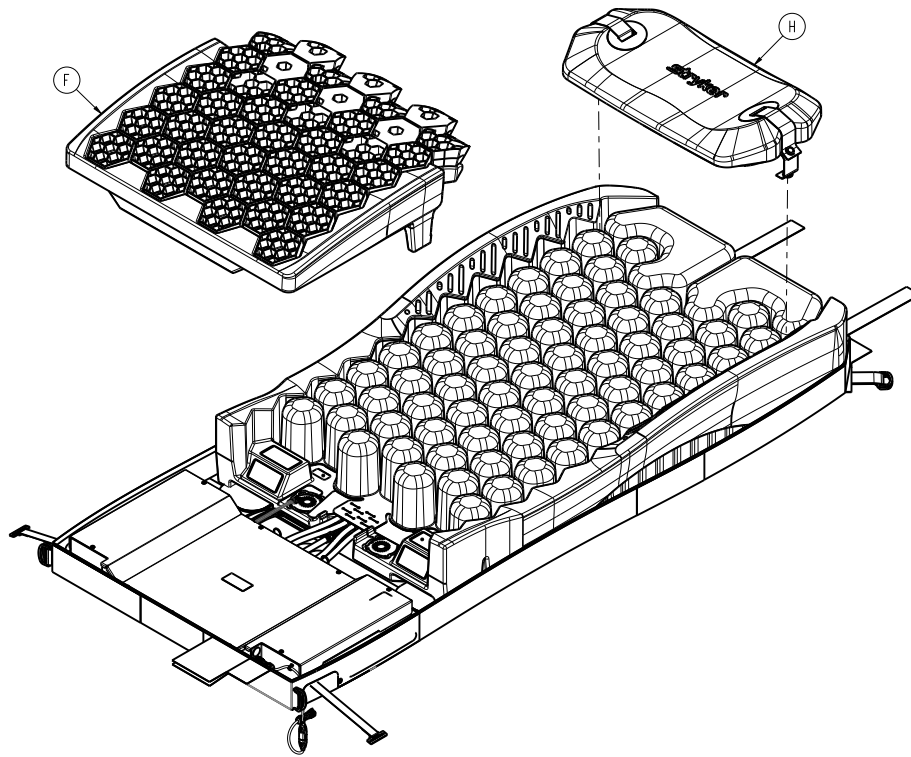
## Pod assembly replacement

**Tools required:**

- Zipper pull tool (or equivalent)

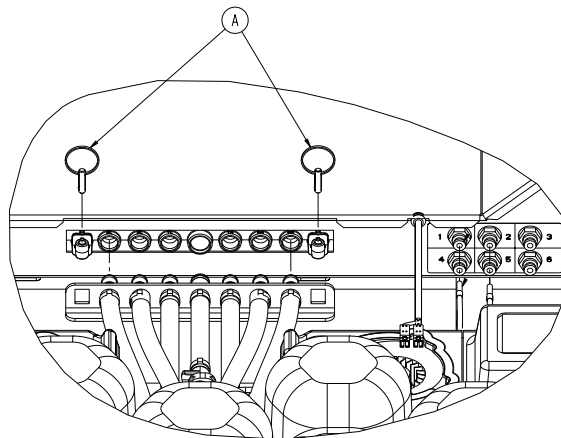
**Procedure:**

1. Remove the top cover. See *Cover replacement, top* (page 19).
2. Unsnap the pillow (H) from the left and right side of the pod assembly (Figure 4). Save the pillow.
3. Separate the six hook and loop fasteners that secure the foot section gel crib to the pod assembly.
4. Lift up on the foot section gel (F) to remove the gel crib from the pod assembly (Figure 4). Save the gel crib.



**Figure 4 – Gel crib, pillow, and quick disconnect fitting**

5. Disconnect the quick disconnect fitting.
6. Remove the two retaining pins (A) from the hose quick connection on the foot box assembly (Figure 5). Save the pins.

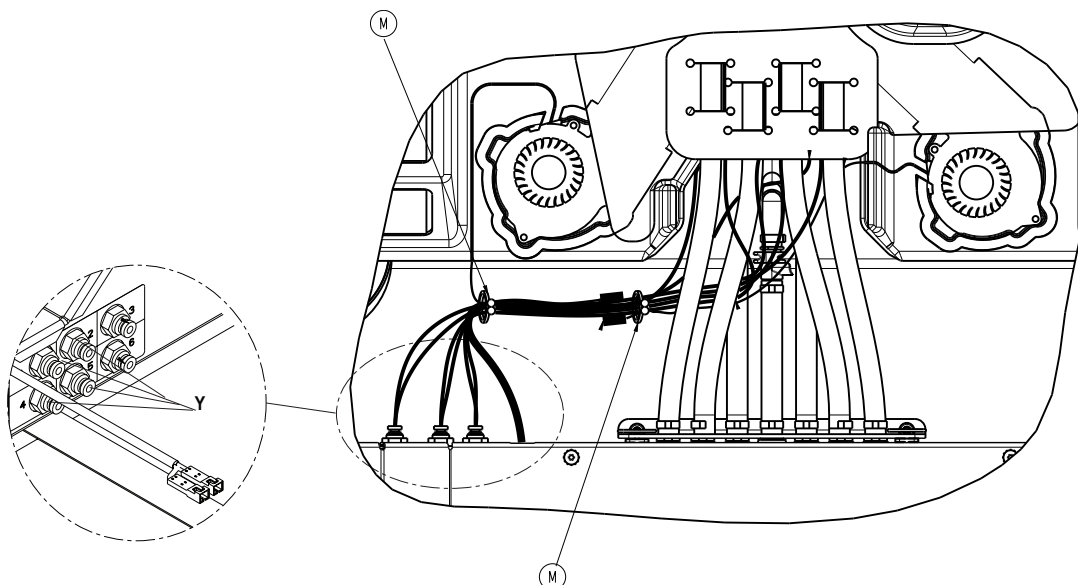


**Figure 5 – Retaining pins**

7. Grasp both sides of the hose quick connection on the pod assembly and pull toward the head end of the support surface to disconnect from the foot box manifold.
8. Disconnect the four pod sensor hoses (Y) (one blue, two yellow, four green, and five orange) from the foot box. Push into the coupling and pull out each of the hoses (Figure 6).

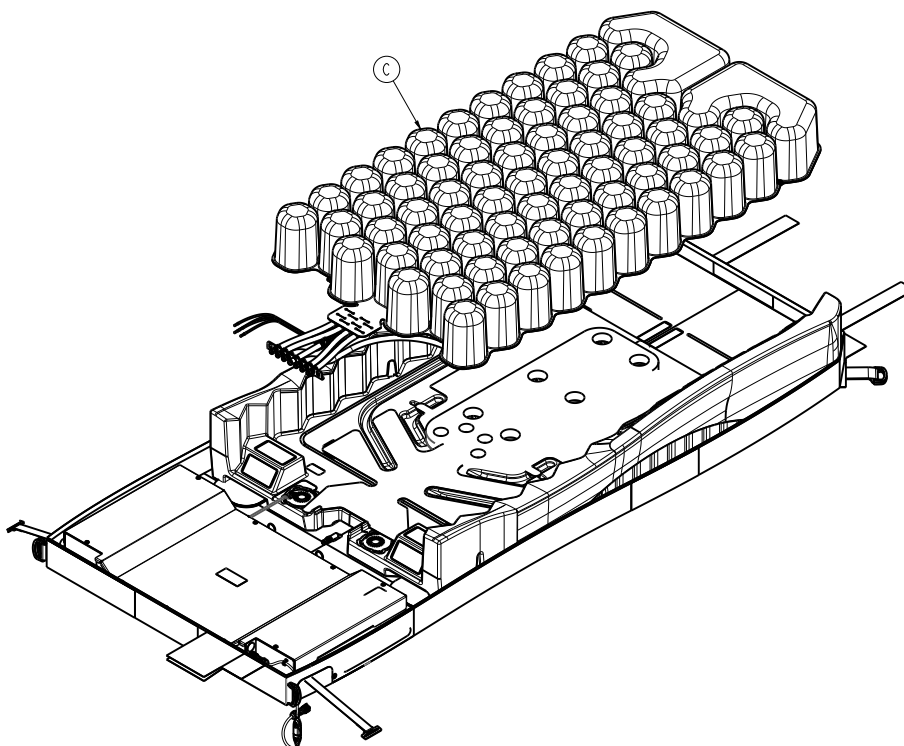
**Note**

- Do not bend or kink the pod sensor hoses.
- Pay attention to the sensor hose position, insertion color, and label numbers.
- When you reinstall, insert the hose. Once you hit a stop, continue to push until you reach a hard stop.



**Figure 6 – Pod sensor hoses and purse lock wire tie**

9. Remove the sensor hoses from the purse lock wire ties (M) (Figure 6).
10. Reach under the pod assembly (C) from the patient right side near the middle to access the turn bladder. Disconnect the turn bladder quick disconnect. Repeat for the patient left side (Figure 7).



**Figure 7 – Pod assembly**

11. Separate the hook and loop fasteners from the head end of the pod assembly (C) and insert the turn bladder hose quick connection through the foam crib.
12. Remove and discard the pod assembly (C).
13. Reverse the steps to install the supplied pod assembly.

**Note**

- When you reinstall, make sure to align the hook and loop fasteners.
- After you reinstall, remove the zipper pull tool from the zipper.

14. Cover the zipper with the support surface cover watershed.

15. Run the leak diagnostic test. See *Service Menu* in the ProCuity Maintenance Manual.

16. Verify proper operation before you return the product to service.

## Foot box cover access

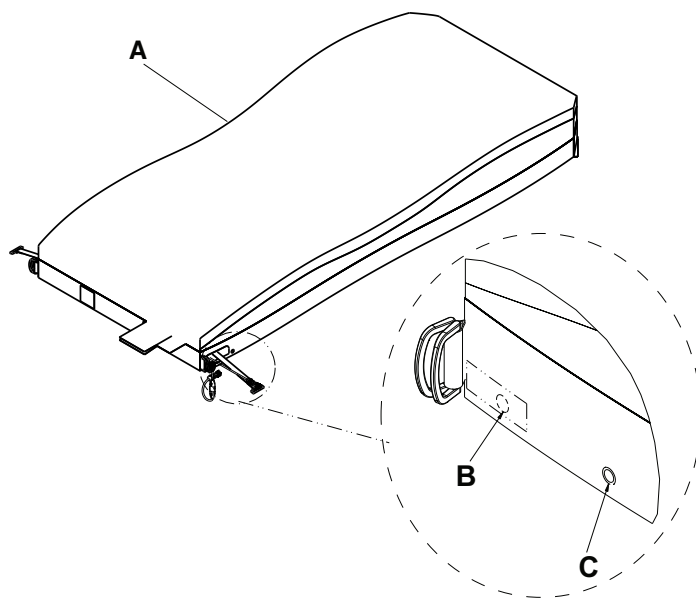
**Tools required:**

- Zipper pull tool (or equivalent)
- T15 Torx driver

**Procedure:**

1. Apply the brakes on the bed.
2. Unplug the support surface magnetic break away cable (297300560805) from the bed.
3. Remove the headboard and footboard and set aside.
4. Lower all the siderails to the lowest height position.
5. Unsnap the two secure snaps (C) at the foot end corners (Figure 8).
6. Unsnap the two foot end corner retainers (B) (Figure 8).
7. Insert a zipper pull tool through the hole in the zipper slider to unlock.
8. Using the zipper pull tool, unzip the support surface top cover from the bottom cover (A) (Figure 8) and stop unzipping at the middle of the opposite side (D).

**Note** - The zipper starts on the patient right side near the foot end.



**Figure 8 – Top cover**

9. Fold the cover up toward the head end.
10. Separate the six hook and loop fasteners that secure the foot section gel crib to the pod assembly.
11. Lift up on the foot section gel (F) to remove the gel crib from the pod assembly (Figure 9). Save the gel crib.

12. Unsnap the two snaps that secure the bottom support surface cover to the foot box.

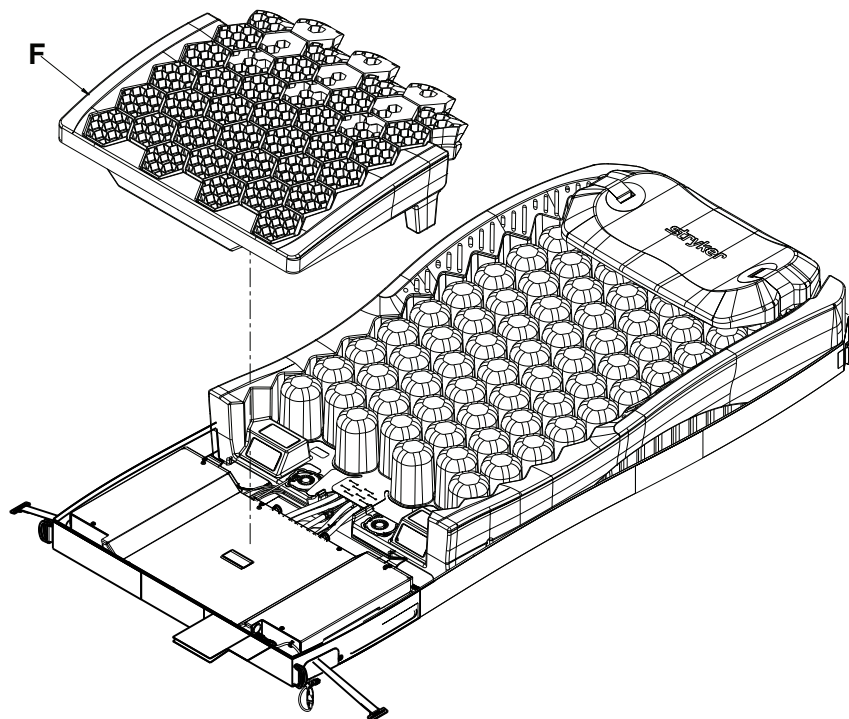


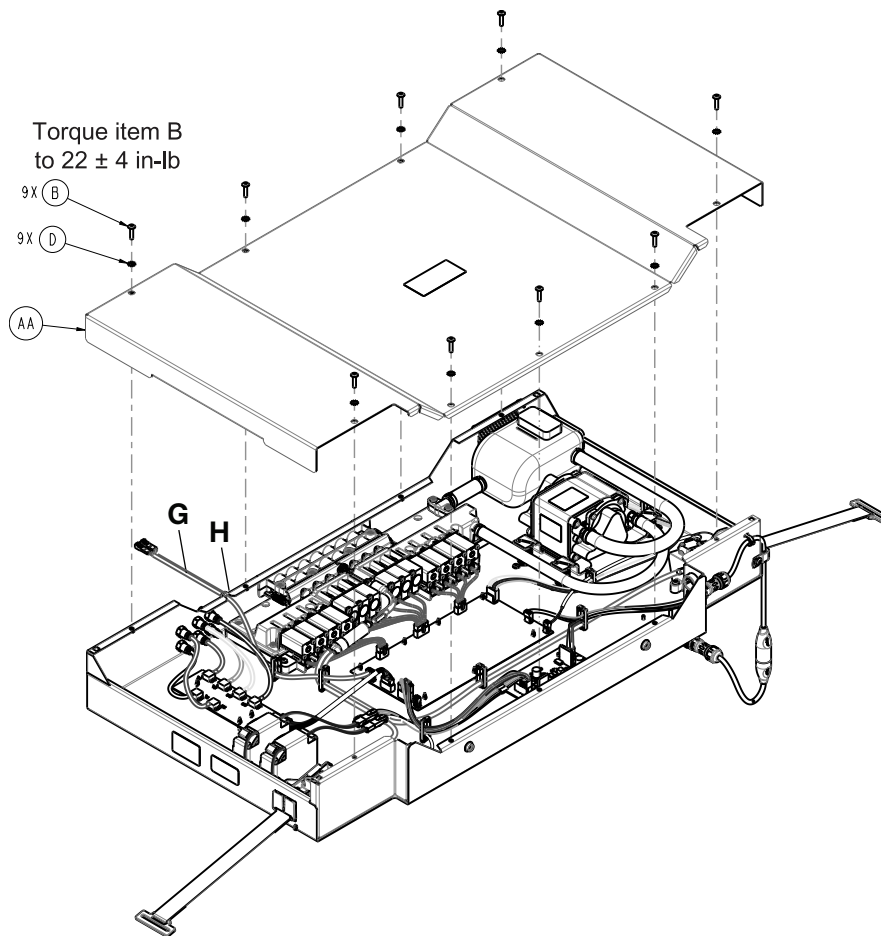
Figure 9 – Gel crib

13. Using a T15 Torx driver, remove the nine ground screws (B) and the nine star washers (D) (Figure 10). Save the ground screws and the star washers.

**Note**

- When you reinstall, tighten the screws equally and do not over tighten. Using a T15 Torx driver, torque the nine ground screws (B) to  $22 \pm 4$  in-lb.
- When you reinstall, make sure that the LAL fan cable (G) and grommet (H) are in place before you replace the foot box cover (Figure 10).
- After you reinstall, remove the zipper pull tool from the zipper.

14. Remove the foot box cover (AA). Save the foot box cover.



**Figure 10 – Foot box cover**

15. Reverse the steps to reinstall the foot box cover.
16. Cover the zipper with the support surface cover watershed.
17. Verify proper operation before you return the product to service.

## Solenoid valve replacement

### Tools required:

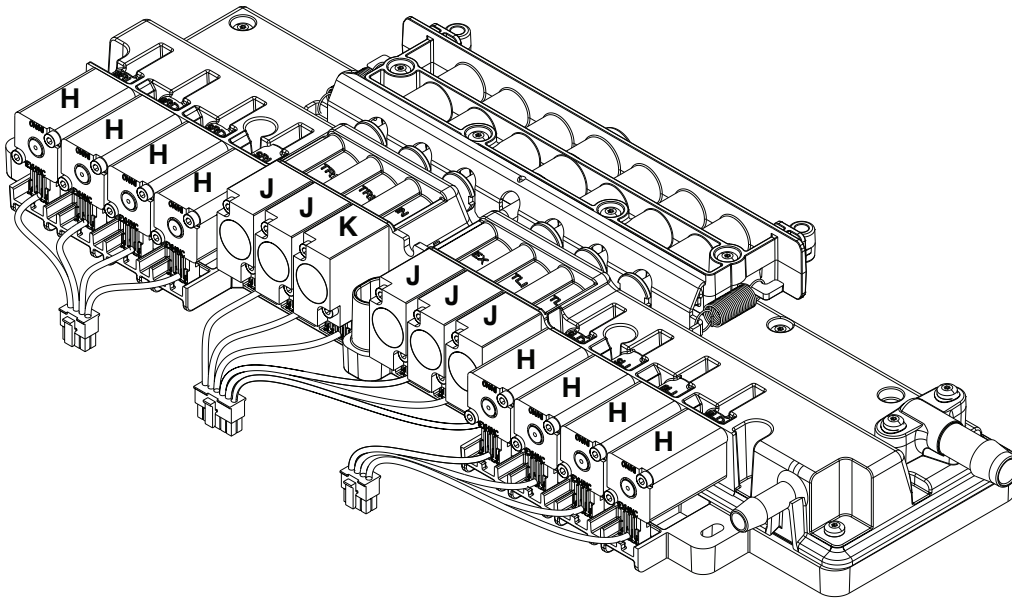
- ESD system
- Zipper pull tool (or equivalent)
- Torque driver

### Procedure:

**Note** - Use ESD protection when necessary. See *Protecting against electrostatic discharge (ESD)* (page 19).

1. Remove the foot box cover. See *Foot box cover access* (page 25).
2. Using a torque driver, remove the two screws that secure the solenoid valve (H, J, or K) to the manifold assembly (Figure 11). Save the screws.

**Note** - When you reinstall, tighten the screws equally and do not over tighten. Using a torque driver, torque the two screws to 4.4 in-lb.



**Figure 11 – Solenoid valve**

3. Remove the solenoid valve.
4. Disconnect the connector for the solenoid valve.

**Note** - Inspect the replacement solenoid valve to make sure that the O-ring is in place. If the O-ring is not in place, transfer the O-ring from the removed solenoid valve to the supplied solenoid valve.

5. Discard the solenoid valve.
6. Reverse the steps to install the supplied solenoid valve.

**Note**

- When you reinstall, align the hook and loop fasteners.
- After you reinstall, remove the zipper pull tool from the zipper.

7. Cover the zipper with the support surface cover watershed.
8. Verify proper operation before you return the product to service.

## Power board replacement

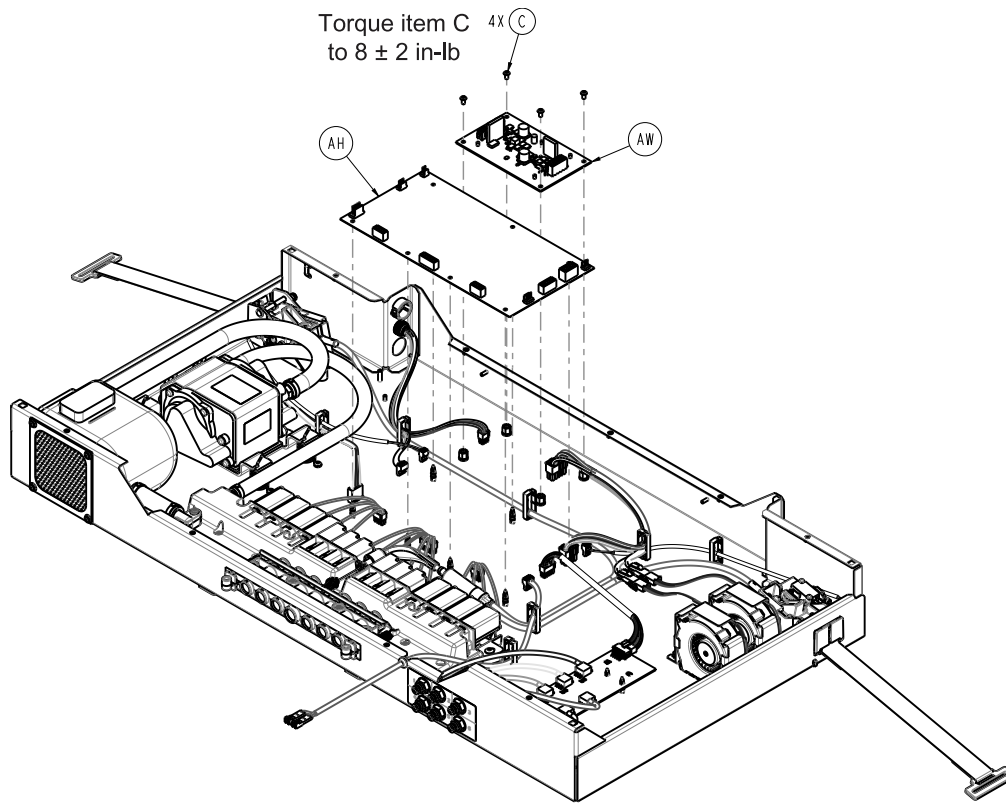
**Tools required:**

- ESD system
- Zipper pull tool (or equivalent)
- T10 Torx driver

**Procedure:**

**Note** - Use ESD protection when necessary. See *Protecting against electrostatic discharge (ESD)* (page 19).

1. Remove the foot box cover. See *Foot box cover access* (page 25).
2. Using a T10 Torx driver, remove the four screws (C) that secure the power board (AW) to the foot box (Figure 12). Save the screws.



**Figure 12 – Power board**

**Note** - When you reinstall, tighten the screws equally and do not over tighten. Using a T10 Torx driver, torque the four screws (C) to  $8 \pm 2$  in-lb.

3. Remove and discard the power board.

**Note**

- Do not dispose of as unsorted municipal waste. See your local distributor for return or collection systems available in your country.

4. Reverse the steps to install the supplied power board.

**Note**

- When you reinstall, align the hook and loop fasteners.
- After you reinstall, remove the zipper pull tool from the zipper.

5. Cover the zipper with the support surface cover watershed.
6. Verify proper operation before you return the product to service.

## Main board replacement

**Tools required:**

- ESD system
- Zipper pull tool (or equivalent)
- Needle nose pliers

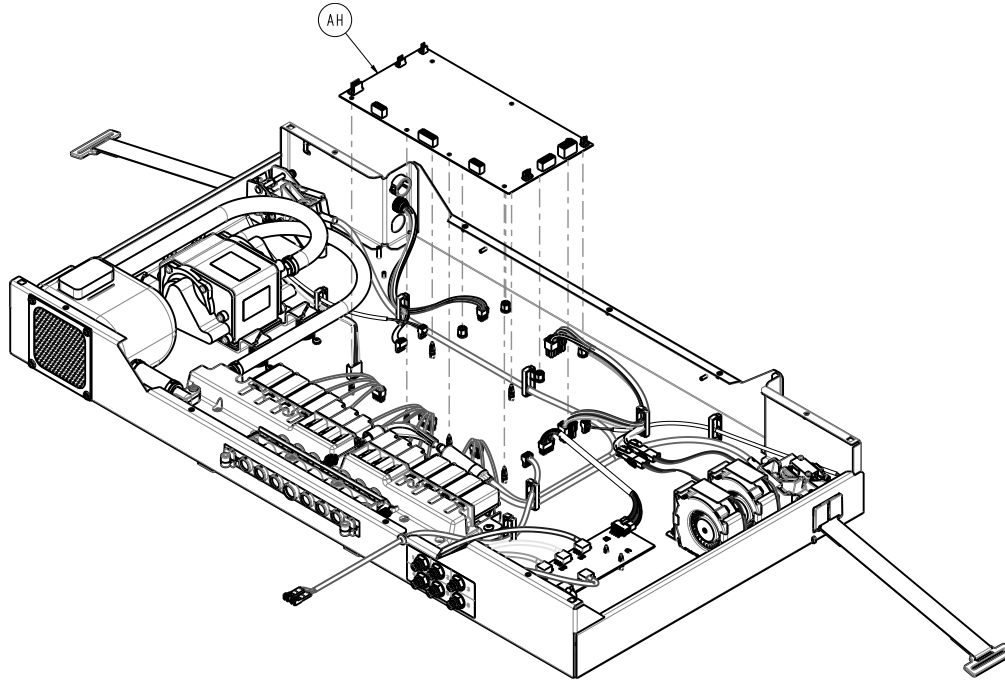
**Procedure:**

**Note** - Use ESD protection when necessary. See *Protecting against electrostatic discharge (ESD)* (page 19).

1. Remove the foot box cover. See *Foot box cover access* (page 25).

2. Remove all wiring connections from the main board (AH) (Figure 13).

**Note** - Pay attention to all connection points before you disconnect.



**Figure 13 – Main board**

3. Using needle nose pliers, apply a slight upward pressure on the main board to unclip the seven plastic standoffs.

**Note** - When you reinstall, align the standoffs to the main board and press near the standoffs to seat the main board. Do not bend the board.

4. Remove and discard the main board.

**Note**

- Do not dispose of as unsorted municipal waste. See your local distributor for return or collection systems available in your country.

5. Reverse the steps to install the supplied main board.

**Note**

- When you reinstall, align the hook and loop fasteners.
- After you reinstall, remove the zipper pull tool from the zipper.
- Do not dispose of as unsorted municipal waste. See your local distributor for return or collection systems available in your country.

6. Cover the zipper with the support surface watershed.
7. Verify proper operation before you return the product to service.

## Cable assembly power supply replacement

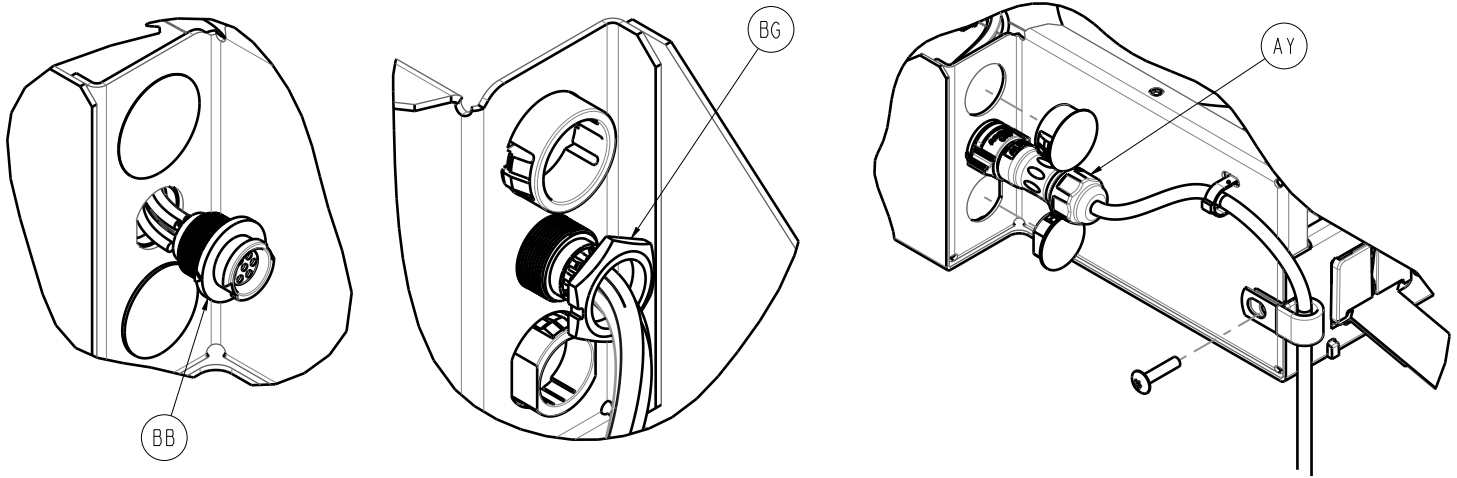
**Tools required:**

- Zipper pull tool (or equivalent)
- 7/8" combination wrench

**Procedure:**

1. Remove the foot box cover. See *Foot box cover access* (page 25).

2. Using your fingers, disconnect the magnetic break away cable (297300560804) (AY) from the foot box and rotate the turn-lock counterclockwise (Figure 14).



**Figure 14 – Cables**

3. Using a 7/8" combination wrench, remove the retention nut (BG) from the cable assembly power supply (BB) that secures the cable to the foot box. Save the nut.
4. Remove and discard the cable assembly power supply.
5. Reverse the steps to install the supplied cable assembly power supply.

**Note**

- When you reinstall, align the hook and loop fasteners.
  - After you reinstall, remove the zipper pull tool from the zipper.
6. Cover the zipper with the support surface cover watershed.
  7. Verify proper operation before you return the product to service.

## Magnetic break away cable side A and side B replacement

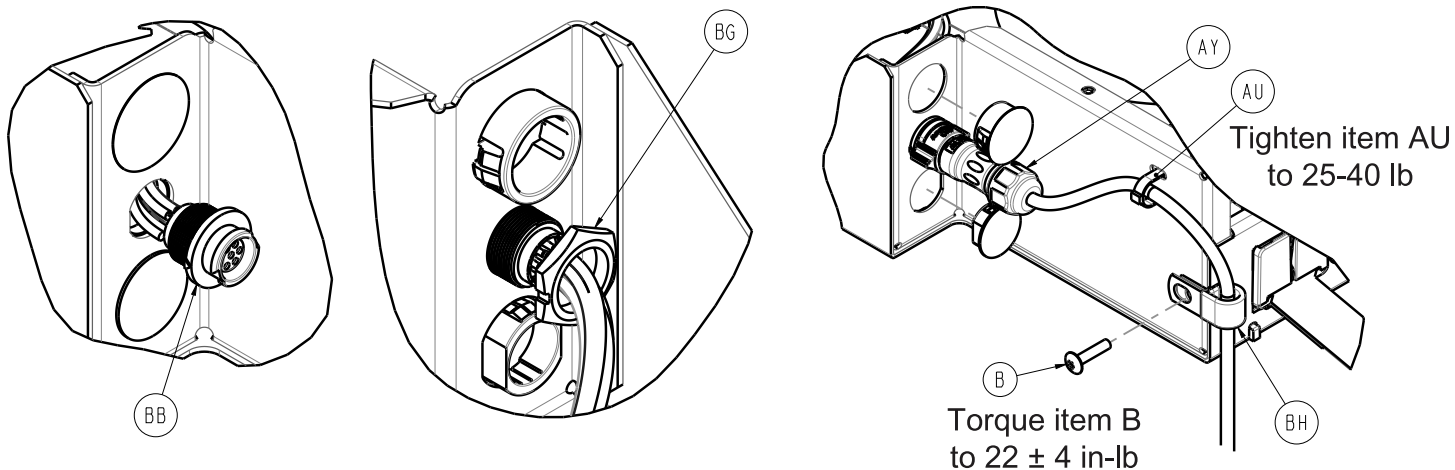
**Tools required:**

- Zipper pull tool (or equivalent)
- T15 Torx driver
- Diagonal pliers

**Procedure:**

1. Apply the brakes on the bed.
2. Raise the bed to the highest height position.
3. Raise the backrest to the full up position.
4. Unplug the power cord from the wall outlet.
5. Turn off the battery disconnect switch to turn the bed off.
6. Remove the foot box cover. See *Foot box cover access* (page 25).
7. Using diagonal pliers, cut the cable tie (AU) that secures the magnetic break away cable side A (297300560804) (AY) to the foot box (Figure 15). Discard the cable tie.

**Note** - Tighten the cable tie (AU) to 25 - 40 lb when you reinstall.



**Figure 15 – Magnetic break away cable**

8. Using a T15 Torx driver, remove the screw (B) from the cable clamp (BH). Save the screw.

**Note**

- When you reinstall, do not over tighten the screw. Using a T15 Torx driver, torque the screw (B) to  $22 \pm 4$  in-lb to the cable clamp.

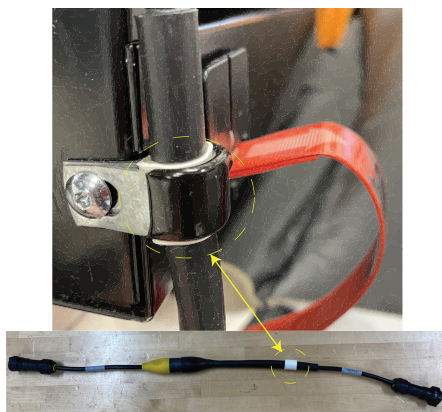
9. Remove and save the cable clamp.

10. Unlock both connectors (BB, BG) and the end of the magnetic break away cable (297300560804) (AY) to disconnect the magnetic break away cable. Discard side A and B of the magnetic break away cable (297300560804 and 297300560805).

11. Reverse the steps to install the supplied magnetic break away cable.

**Note**

- When you reinstall, center the metal cable clamp over the white heat shrink. Secure to the foot box (Figure 16).



**Figure 16 – Reinstall magnetic break away cable**

12. Route the magnetic break away cable side A (297300560804) (AY) through the bottom cover near the CPR activation cable.

**Note**

- When you reinstall, align the hook and loop fasteners.
- After you reinstall, remove the zipper pull tool from the zipper.

13. Cover the zipper with the support surface cover watershed.

14. Verify proper operation before you return the product to service.

## Pump assembly replacement

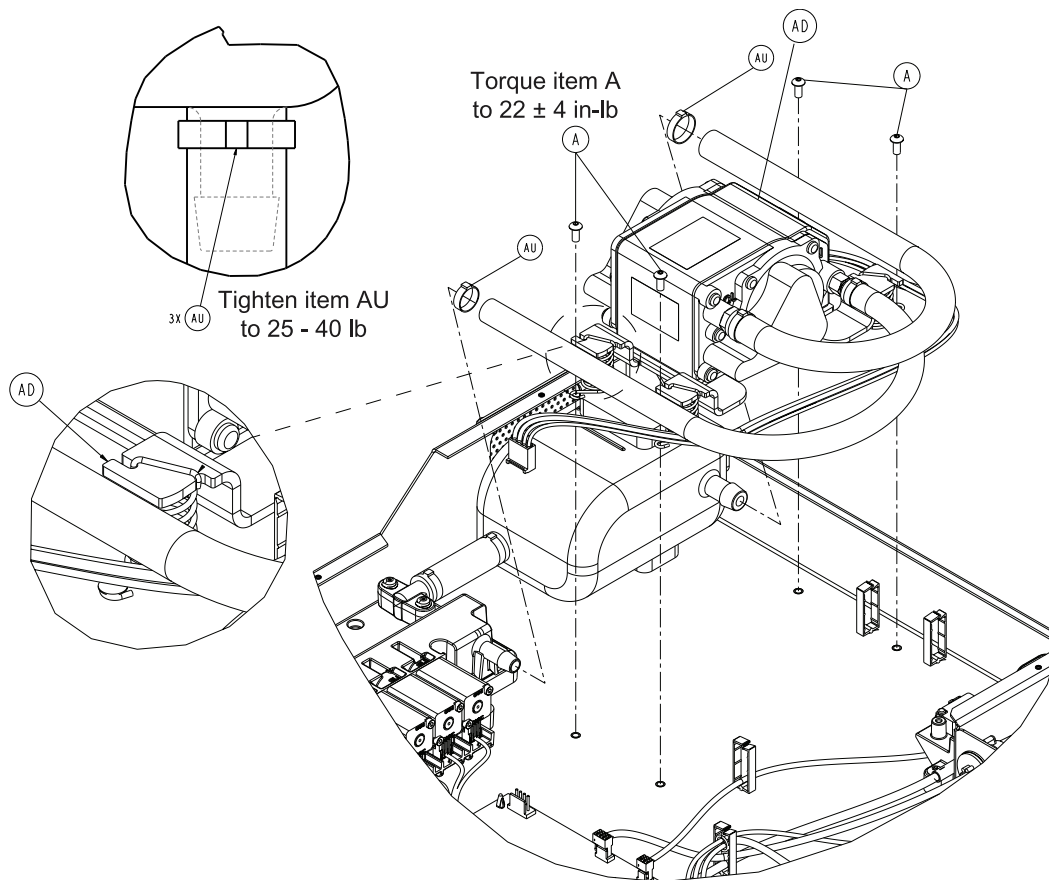
### Tools required:

- Zipper pull tool (or equivalent)
- Diagonal pliers
- T15 Torx driver

### Procedure:

1. Remove the foot box cover. See *Foot box cover access* (page 25).
2. Disconnect the pump power connector from the main board (connector F).
3. Disconnect the cable from the three wire retainers.
4. Using diagonal pliers, cut the cable ties where the inlet hose connects to the manifold (AU) and the exhaust hose connects to the resonator (Figure 17). Do not cut the manifold barb.

**Note** - When you reinstall, before you cut the end off of the cable tie, use the diagonal pliers to pry the slack out of the cable tie (one to two clicks).



**Figure 17 – Pump assembly**

5. Using a T15 Torx driver, remove the four screws (A) that secure the pump assembly (AD) to the foot box. Save the screws.

**Note** - When you reinstall, tighten the screws equally and do not over tighten. Using a T15 Torx driver, torque the four screws (A) to 22 ± 4 in-lb.

6. Move the pump assembly to the side to clear the area in front of the manifold.
7. With a firm grasp on the manifold hose, pull straight out and twist to remove the hose from the manifold.

**Note** - Try not to damage the manifold barb when you remove or install.

8. Grasp the resonator hose and hold the resonator while you pull the resonator hose out.
9. Remove and discard the pump assembly.

**Note**

- Do not dispose of as unsorted municipal waste. See your local distributor for return or collection systems available in your country.

10. Reverse the steps to install the supplied pump assembly.

**Note**

- When you reinstall, hold the pump springs while you tighten so the pump springs do not turn.
- When you reinstall, do not allow the pump hose to kink or bend.
- When you reinstall, align the hook and loop fasteners.
- After you reinstall, remove the zipper pull tool from the zipper.

11. Cover the zipper with the support surface cover watershed.
12. Verify proper operation before you return the product to service.

## Low Air Loss (LAL) fan replacement

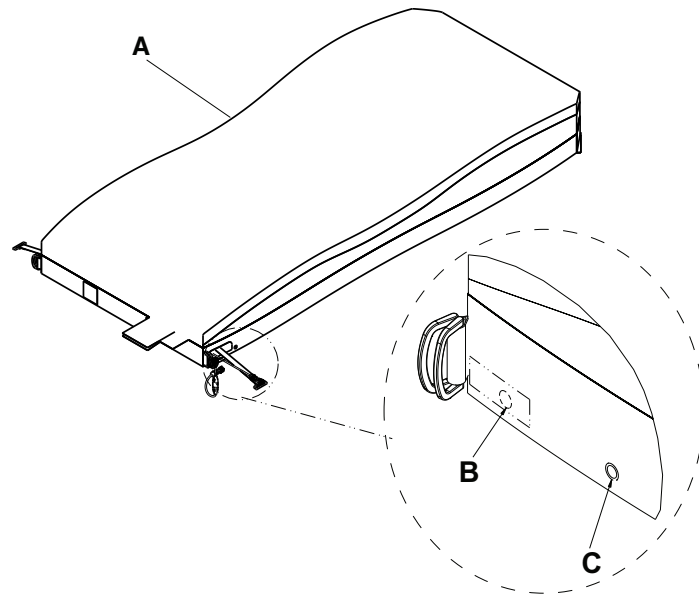
**Tools required:**

- Zipper pull tool (or equivalent)

**Procedure:**

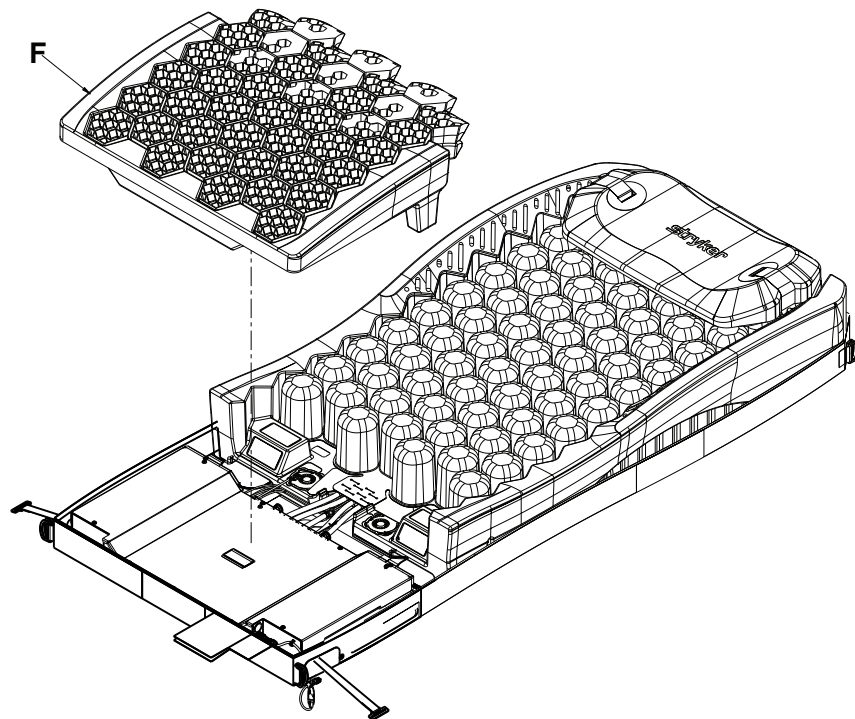
1. Apply the brakes on the bed.
2. Unplug the support surface magnetic break away cable from the bed.
3. Remove the headboard and footboard and set aside.
4. Lower all the siderails to the lowest height position.
5. Unsnap the two secure snaps (C) at the foot end corners (Figure 18).
6. Unsnap the two foot end corner retainers (B).
7. Insert a zipper pull tool through the hole in the zipper slider to unlock.
8. Using the zipper pull tool, unzip the support surface top cover from the bottom cover (A) and stop unzipping at the middle of the opposite side.

**Note** - The zipper starts on the patient right side near the foot end.



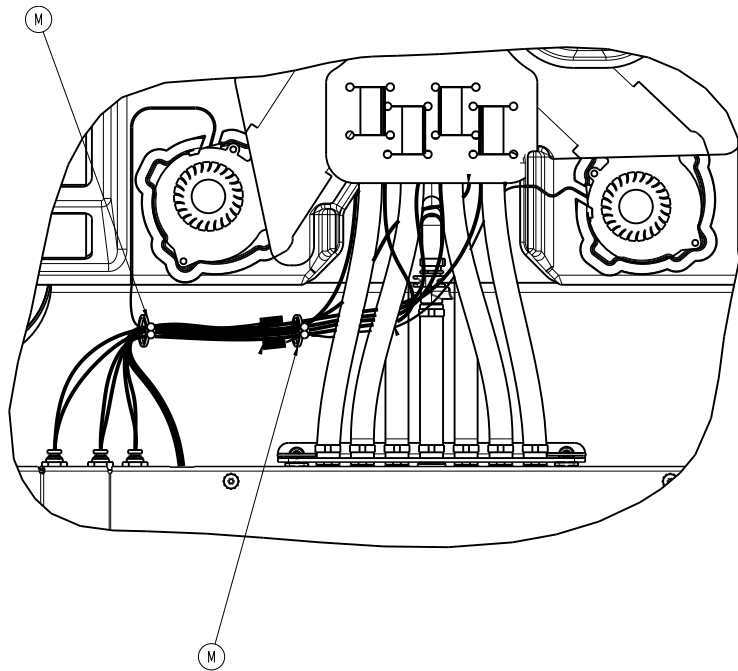
**Figure 18 – Top cover**

9. Fold the cover up toward the head end.
10. Separate the six hook and loop fasteners that secure the foot section gel crib to the pod assembly.
11. Lift up on the foot section gel (F) to remove the gel crib from the pod assembly (Figure 19). Save the gel crib.



**Figure 19 – Gel crib**

12. Remove the two purse lock wire ties (M) (Figure 20). Save the purse lock wire ties.

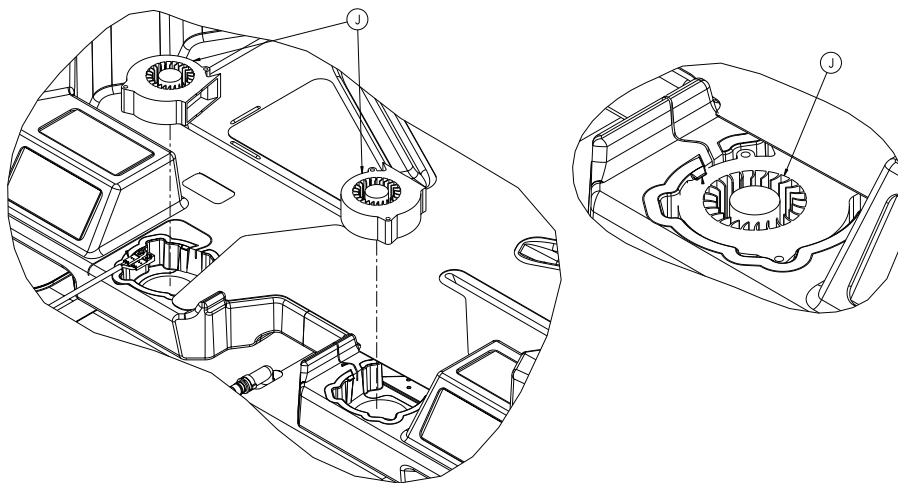


**Figure 20 – Purse lock wire tie**

13. Disconnect the LAL fan from the quick connection.

14. Remove the LAL fan from the LAL fan nest. Discard the LAL fan (J) (Figure 21).

**Note** - When you reinstall, route the cable back through the foam. Make sure that the supplied fan is seated into the LAL fan nest.



**Figure 21 – LAL fan**

15. Reverse the steps to install the supplied LAL fan.

**Note**

- When you reinstall, align the hook and loop fasteners.

16. Cover the zipper with the support surface cover watershed.

17. Verify proper operation before you return the product to service.

## Foot box cooling fan replacement

### Tools required:

- Zipper pull tool (or equivalent)
- 5/16" nut driver

### Procedure:

1. Remove the foot box cover. See *Foot box cover access* (page 25).
2. Disconnect the cooling fan from the quick connection.
3. Using a 5/16" nut driver, remove the nut (F) and the washer (D) that secure the fan cage to the foot box (Figure 22). Save the nut and the washer.

**Note** - When you reinstall, do not over tighten the nut. Using a 5/16" nut driver, torque the nut (F) to  $22 \pm 4$  in-lb.

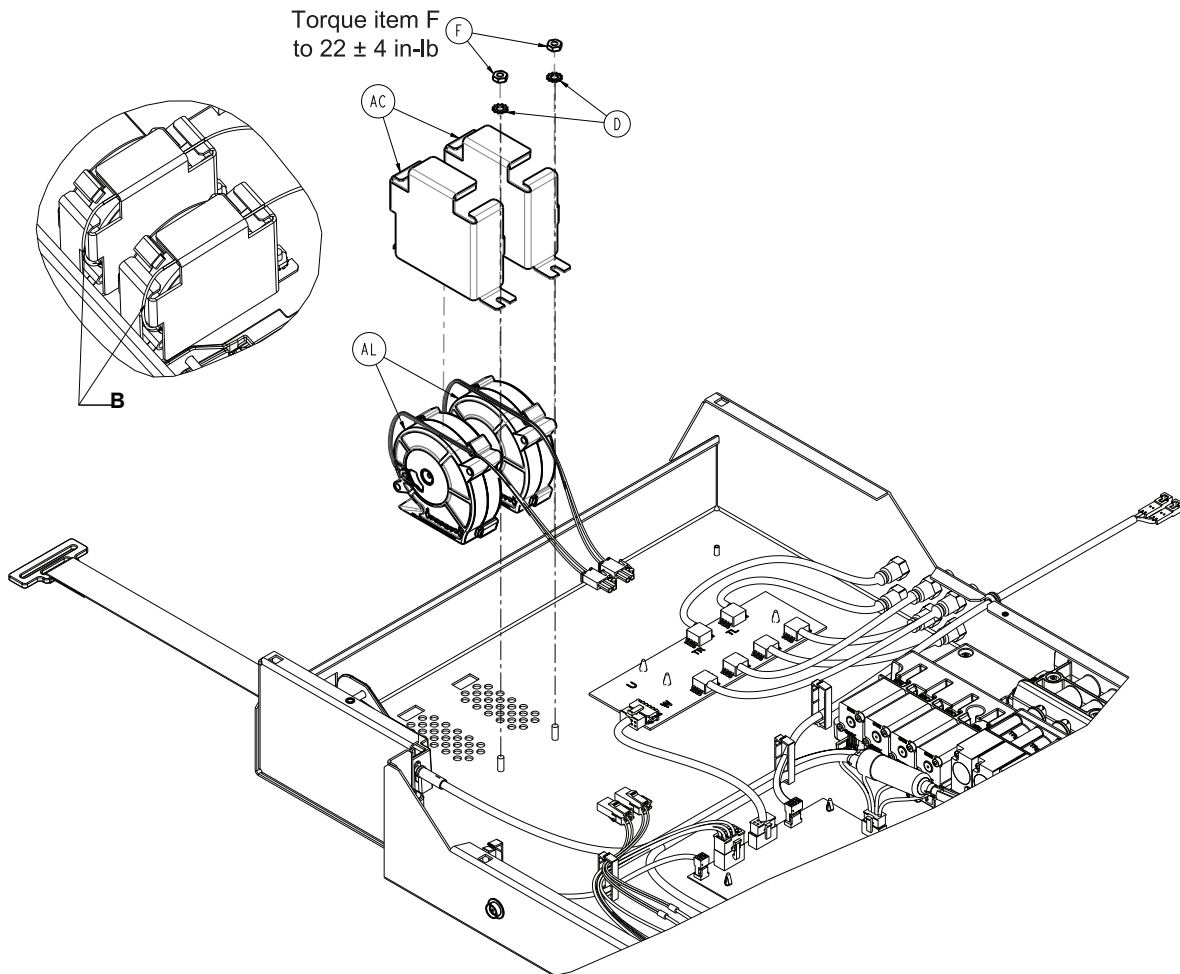


Figure 22 – Cooling fan and cage

4. Remove the cooling fan (AL) from the fan cage (AC). Discard the cooling fan.

**Note** - When you reinstall, route the fan power cables (B) over the top of the supplied fan and under the foam tape.

5. Reverse the steps to install the supplied cooling fan.

### Note

- When you reinstall, align the hook and loop fasteners.
  - After you reinstall, remove the zipper pull tool from the zipper.
6. Cover the zipper with the support surface cover watershed.

7. Verify proper operation before you return the product to service.

## Sensor board replacement

### Tools required:

- ESD system
- Zipper pull tool (or equivalent)
- Needle nose pliers

### Procedure:

**Note** - Use ESD protection when necessary. See *Protecting against electrostatic discharge (ESD)* (page 19).

1. Remove the foot box cover. See *Foot box cover access* (page 25).
2. Disconnect all six of the pod sensor hoses from the foot box. Push in on the coupling and pull each hose out.

#### Note

- Do not bend or kink the pod sensor hoses.
  - Pay attention to the sensor hose position, insertion color, and number labels.
  - When you reinstall, insert the sensor hose and once you hit a stop, continue to push until you reach a hard stop.
3. Disconnect the SPI cable (AG) from the sensor board (U) (Figure 23).
  4. Using needle nose pliers, lift the sensor board (U) up enough to disconnect it from the three plastic standoffs.

**Note** - When you reinstall, align the plastic standoffs to the sensor board and press near the standoffs to seat the sensor board. Do not bend the sensor board.

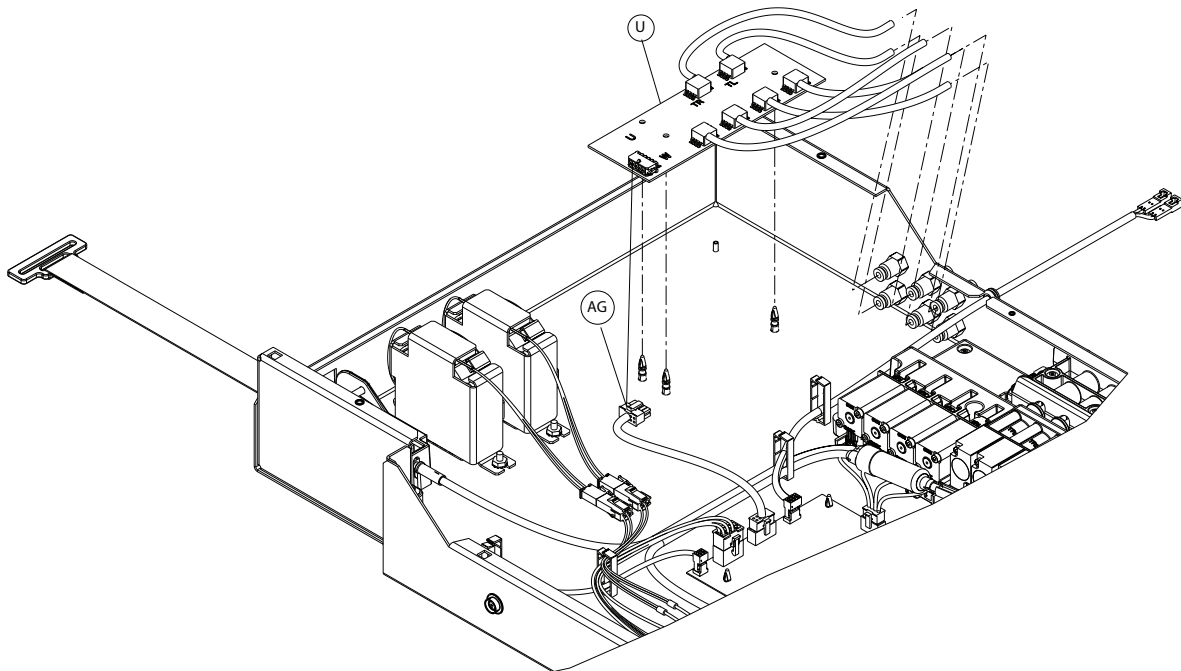


Figure 23 – Sensor board

5. Remove and discard the sensor board.

#### Note

- Do not dispose of as unsorted municipal waste. See your local distributor for return or collection systems available in your country.
6. Reverse the steps to install the supplied sensor board.

**Note**

- When you reinstall, align the hook and loop fasteners.
- After you reinstall, remove the zipper pull tool from the zipper.
- Do not dispose of as unsorted municipal waste. See your local distributor for return or collection systems available in your country.

7. Cover the zipper with the support surface cover watershed.
8. Run the leak diagnostic test. See *Service Menu* in the ProCuity Maintenance Manual.
9. Verify proper operation before you return the product to service.

## Resonator replacement

**Tools required:**

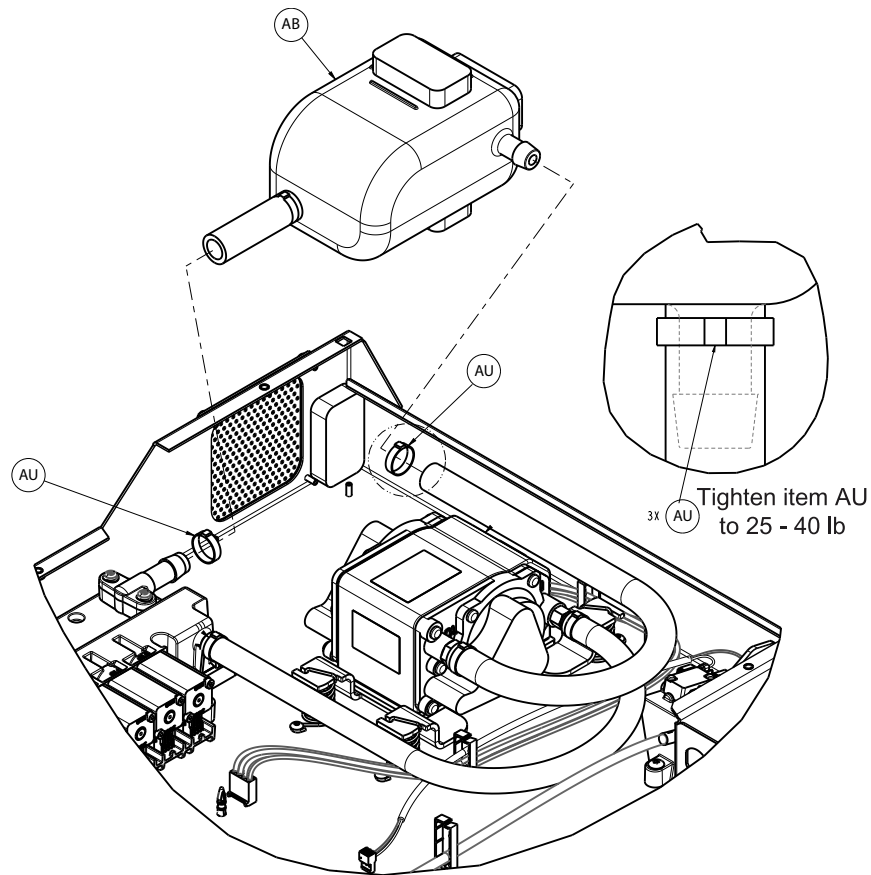
- Zipper pull tool (or equivalent)
- Diagonal pliers

**Procedure:**

1. Remove the foot box cover. See *Foot box cover access* (page 25).
2. Using diagonal pliers, cut the cable ties (AU) from the inlet and outlet hoses of the resonator (AB) (Figure 24). Discard the cable ties.

**Note**

- When you reinstall, before you cut the end off of the cable tie, use the diagonal pliers to pry the slack out of the cable tie (one to two clicks).
- Tighten the cable tie (AU) to 25 - 40 lb when you reinstall.



**Figure 24 – Resonator**

3. Pull to disconnect each hose from the resonator (AB) and the manifold.
4. Remove and discard the resonator.
5. Reverse the steps to install the supplied resonator.

**Note**

- When you reinstall, make sure that you do not kink or bend the compressor supply hose.
  - When you reinstall, align the hook and loop fasteners.
  - After you reinstall, remove the zipper pull tool from the zipper.
6. Cover the zipper with the support surface cover watershed.
  7. Verify proper operation before you return the product to service.

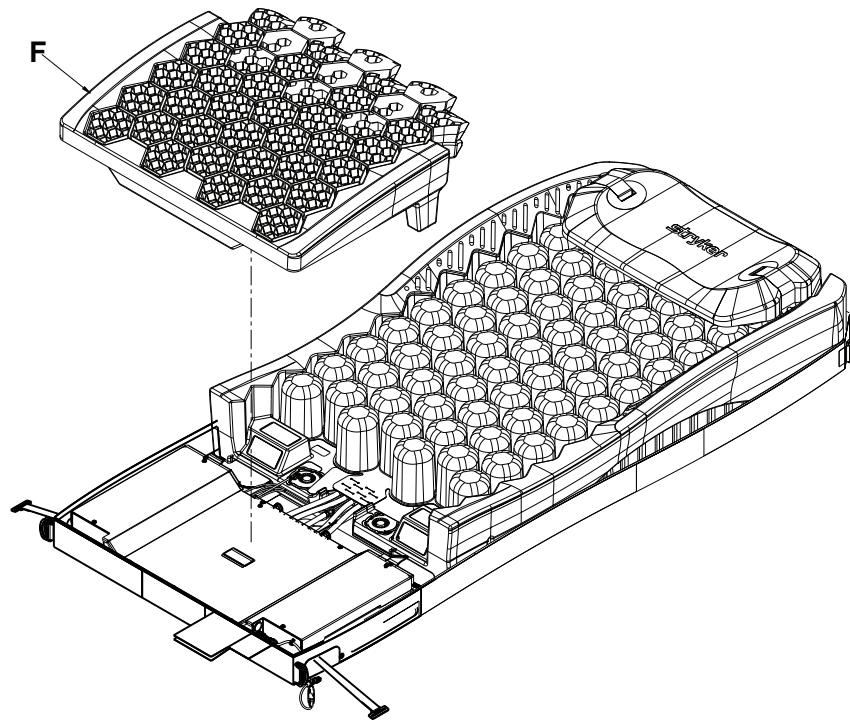
## Turn bladder assembly replacement

**Tools required:**

- Zipper pull tool (or equivalent)
- Diagonal pliers

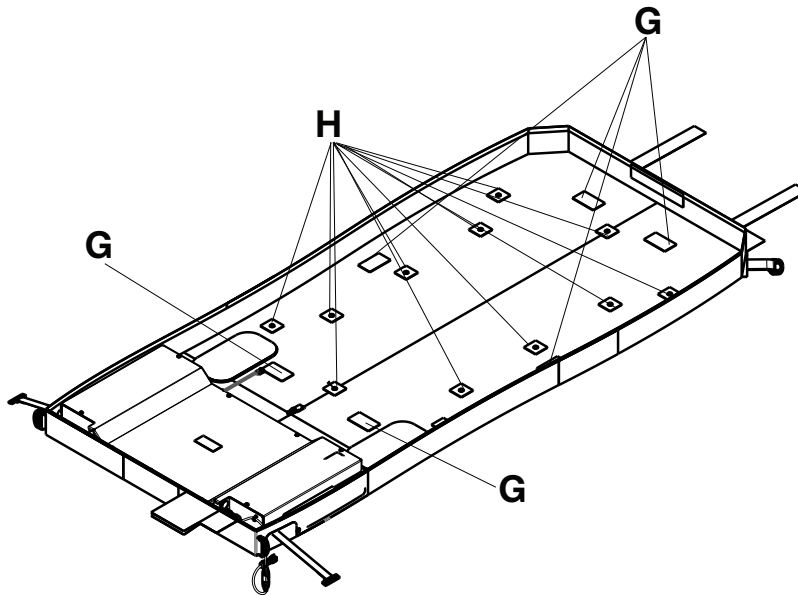
**Procedure:**

1. Remove the top cover. See *Cover replacement, top* (page 19) .
2. Separate the six hook and loop fasteners that secure the foot section gel crib to the pod assembly.
3. Lift up on the foot section gel (F) to remove the gel crib from the pod assembly (Figure 25). Save the gel crib.



**Figure 25 – Gel crib**

4. Lift up on the bottom corner of the pods assembly and foam crib to disconnect the turn bladder quick disconnect. Repeat for the opposite side.
  5. Remove the turn bladder and the red and black sensor hoses from the foot box. Push in on the sensor hose quick connector and then pull outward on the hose.
- Note** - Do not kink or bend the hoses.
6. Remove the hoses from the purse clips.
  7. Lift up on the foam crib and reach between the foam crib and the bottom cover to unhook the six hook and loop fasteners (G) and unsnap the 12 snap retainers (H) (Figure 26).



**Figure 26 – Pod hook and loop fasteners and snap retainers**

8. Remove and discard the turn bladder assembly.
9. Reverse the steps to install the supplied turn bladder assembly.

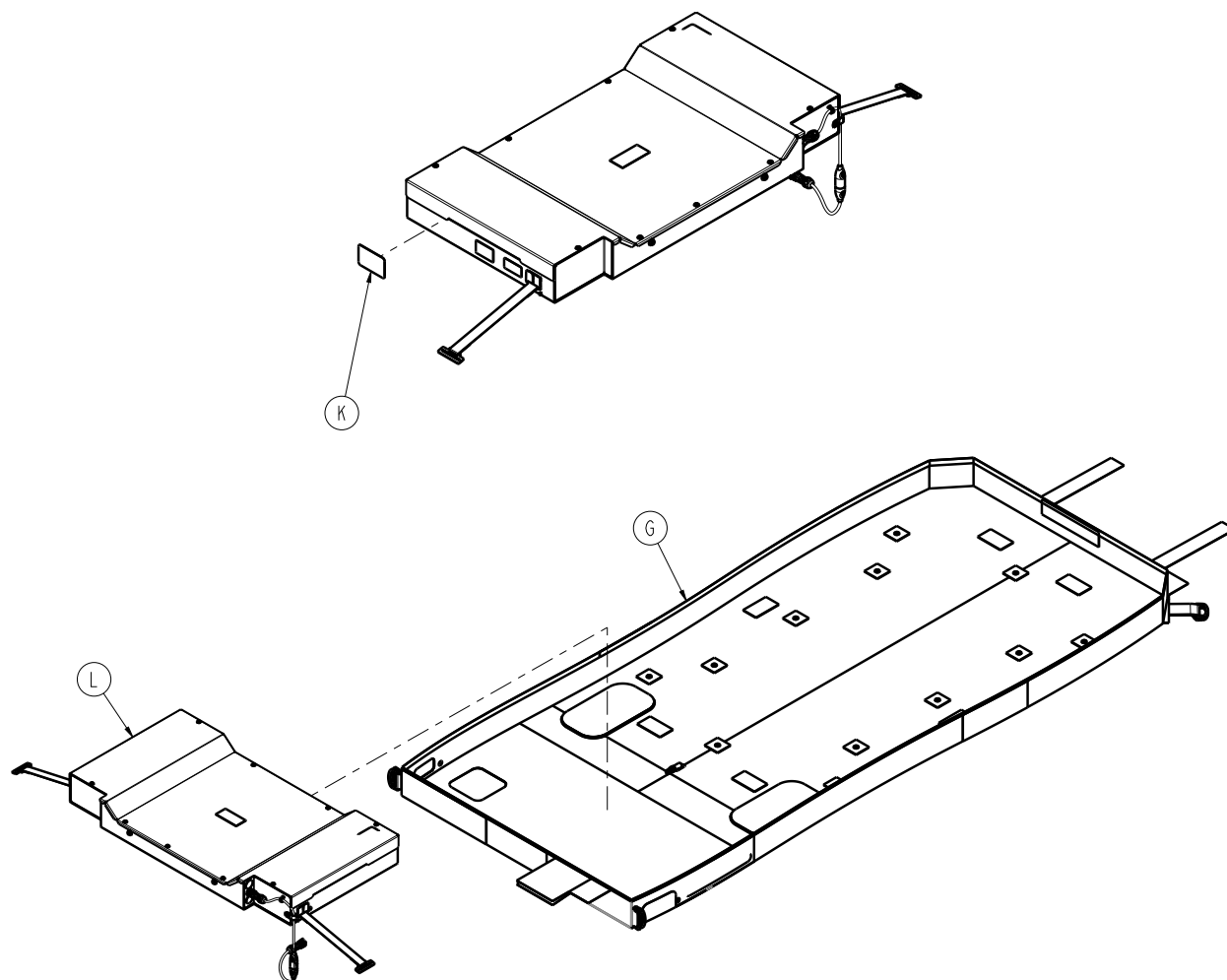
**Note**

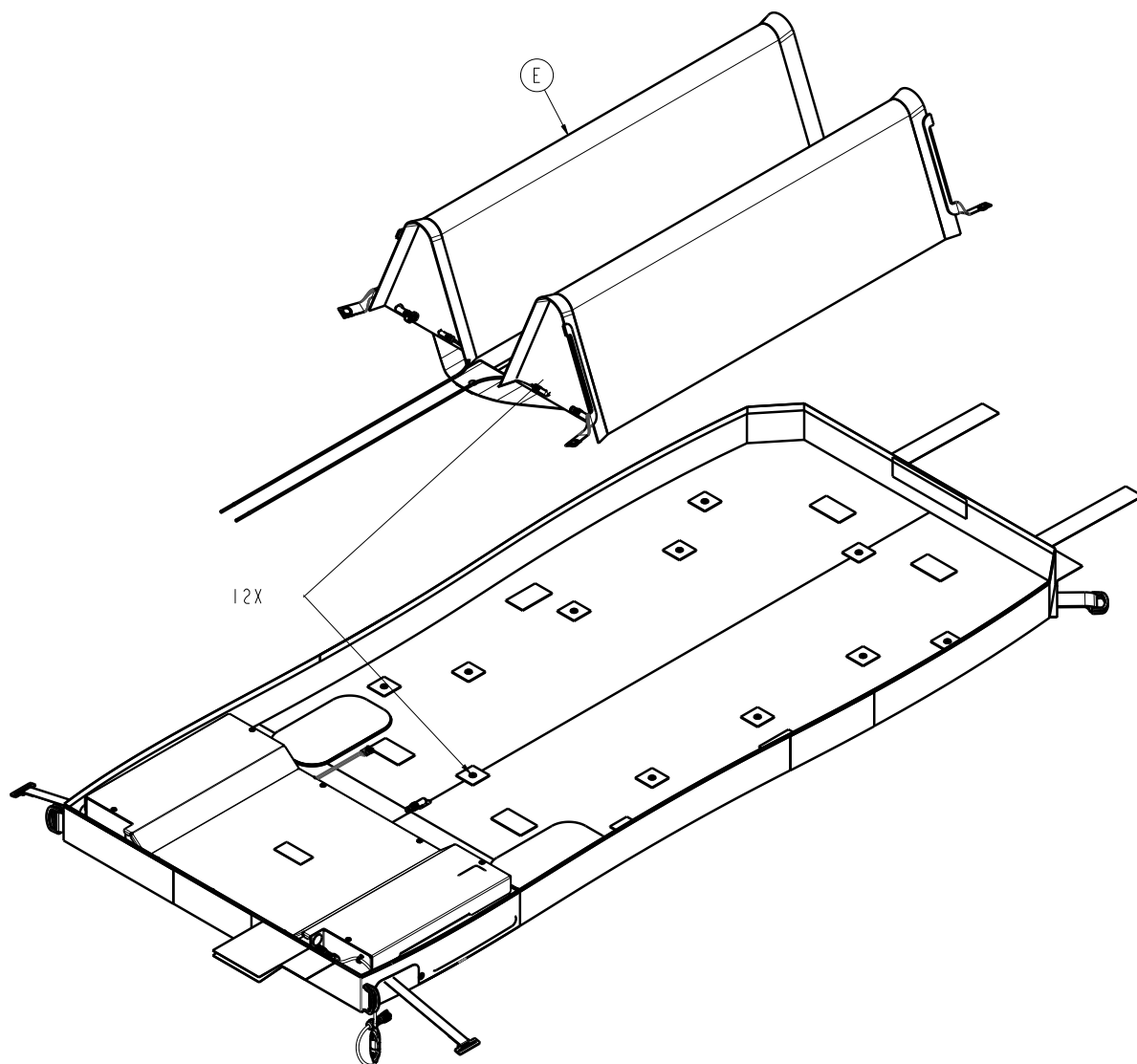
- When you reinstall, align the hook and loop fasteners.
- After you reinstall, remove the zipper pull tool from the zipper.

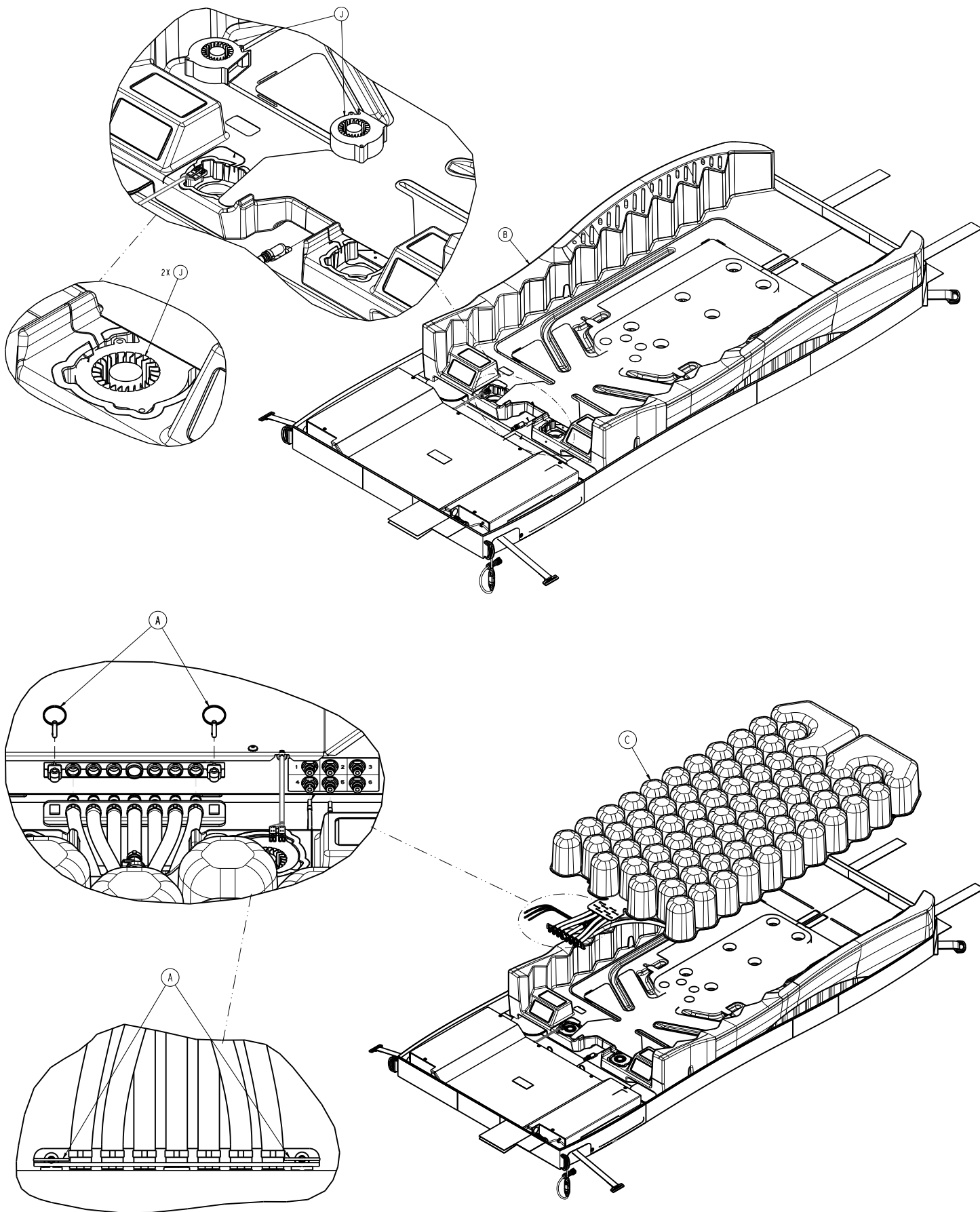
10. Cover the zipper with the support surface cover watershed.
11. Run the leak diagnostic test. See *Service Menu* in the ProCuity Maintenance Manual.
12. Verify proper operation before you return the product to service.

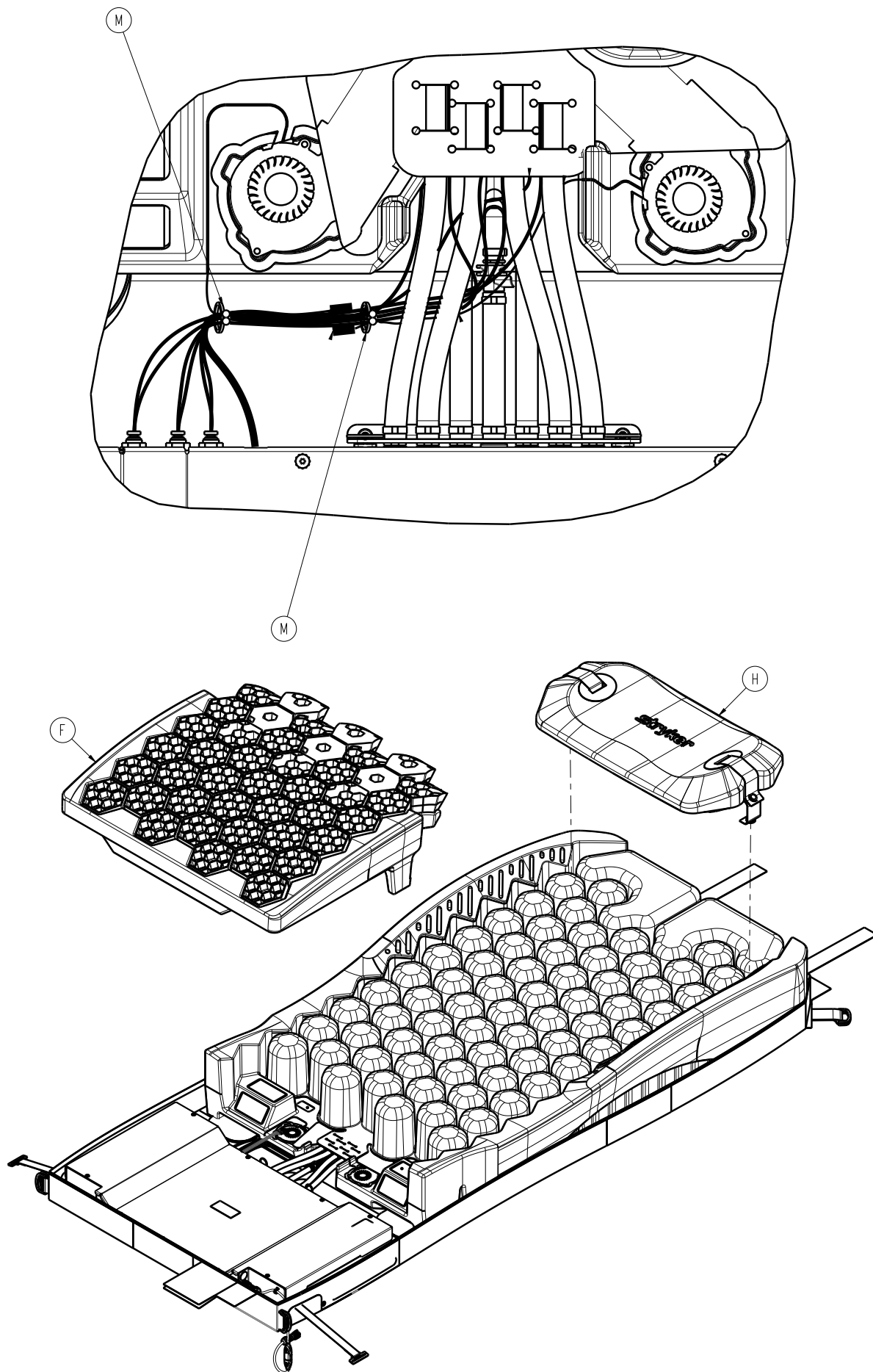
# Isolibrium PE assembly

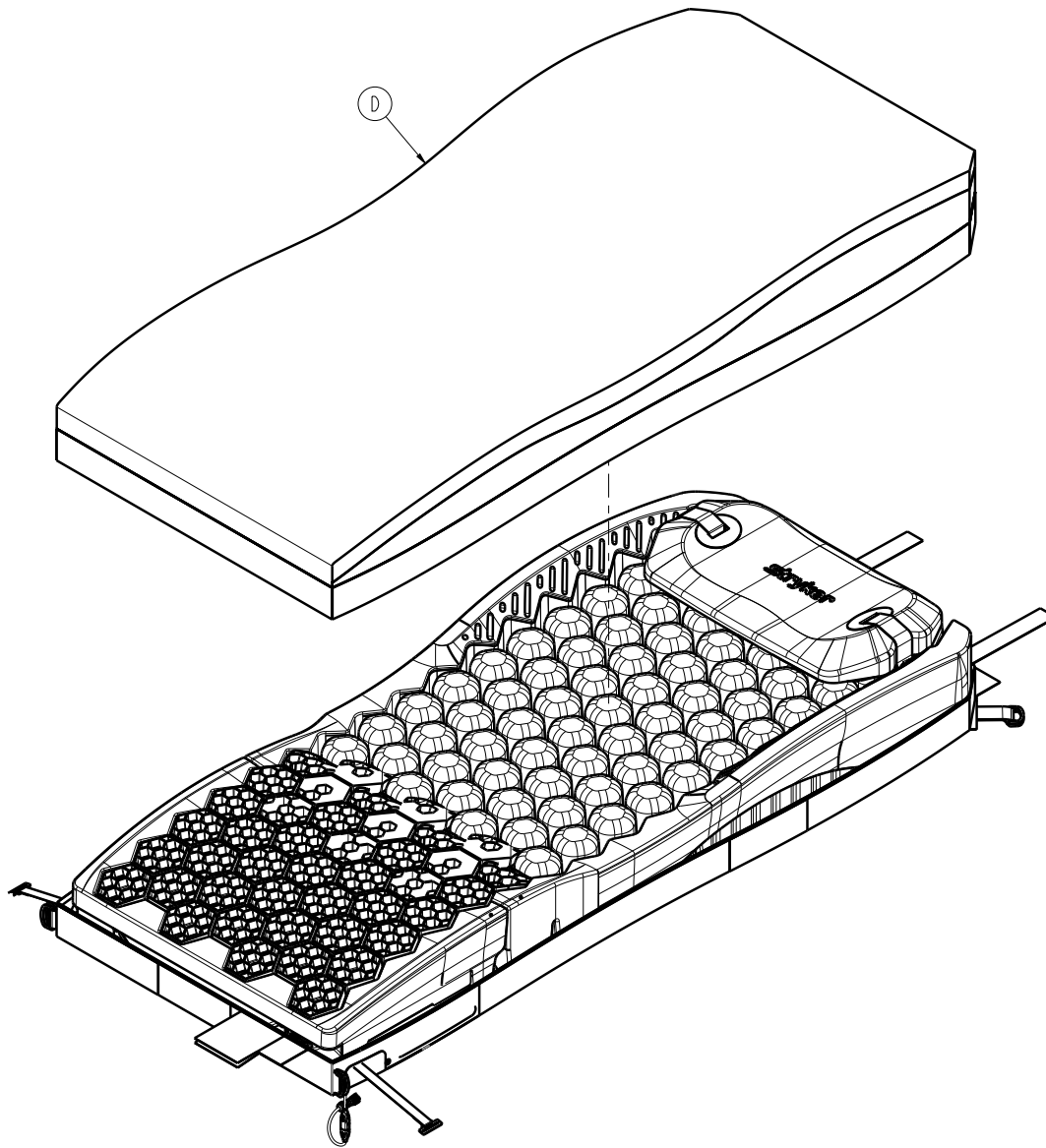
297300210001 Rev AE (Reference only)









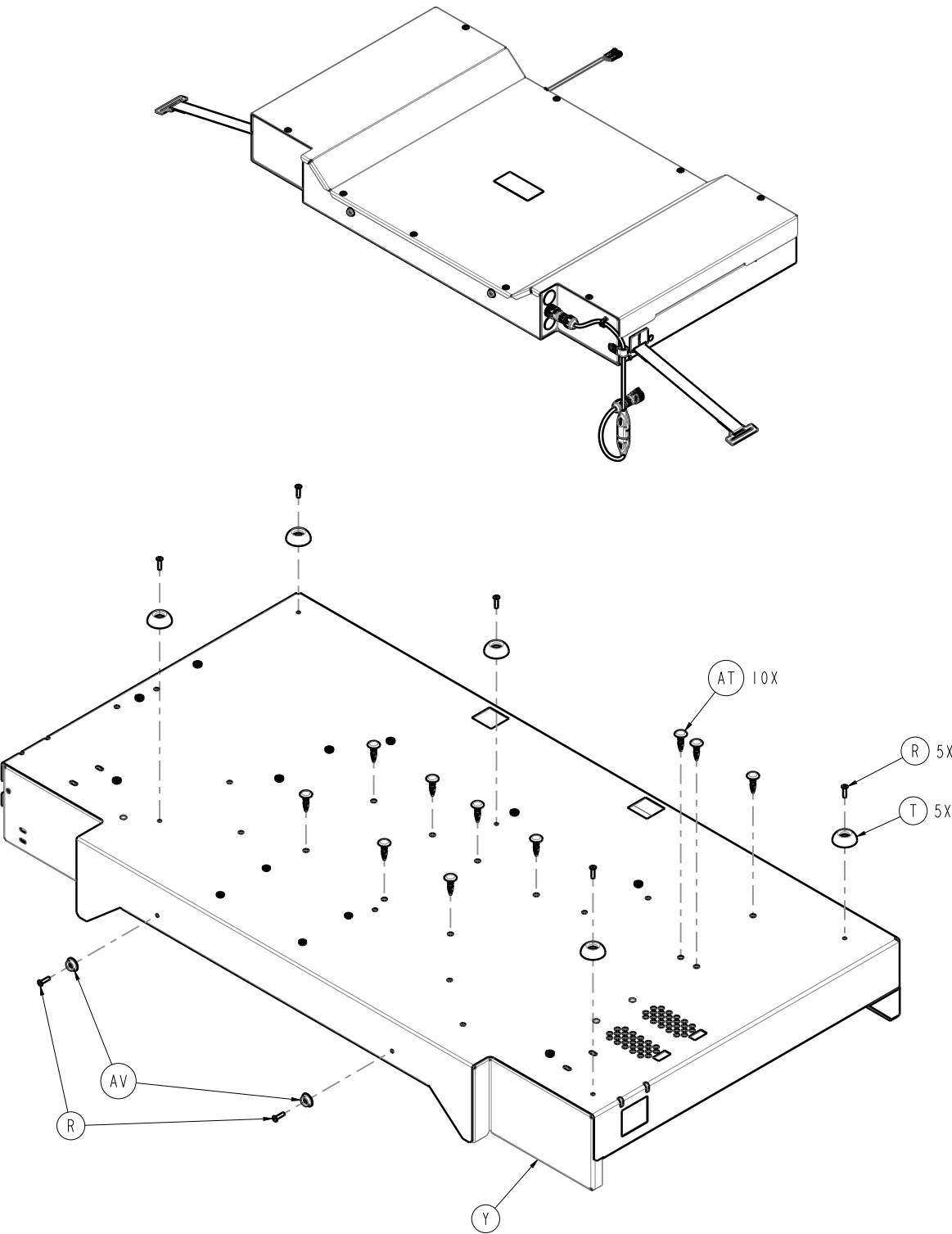


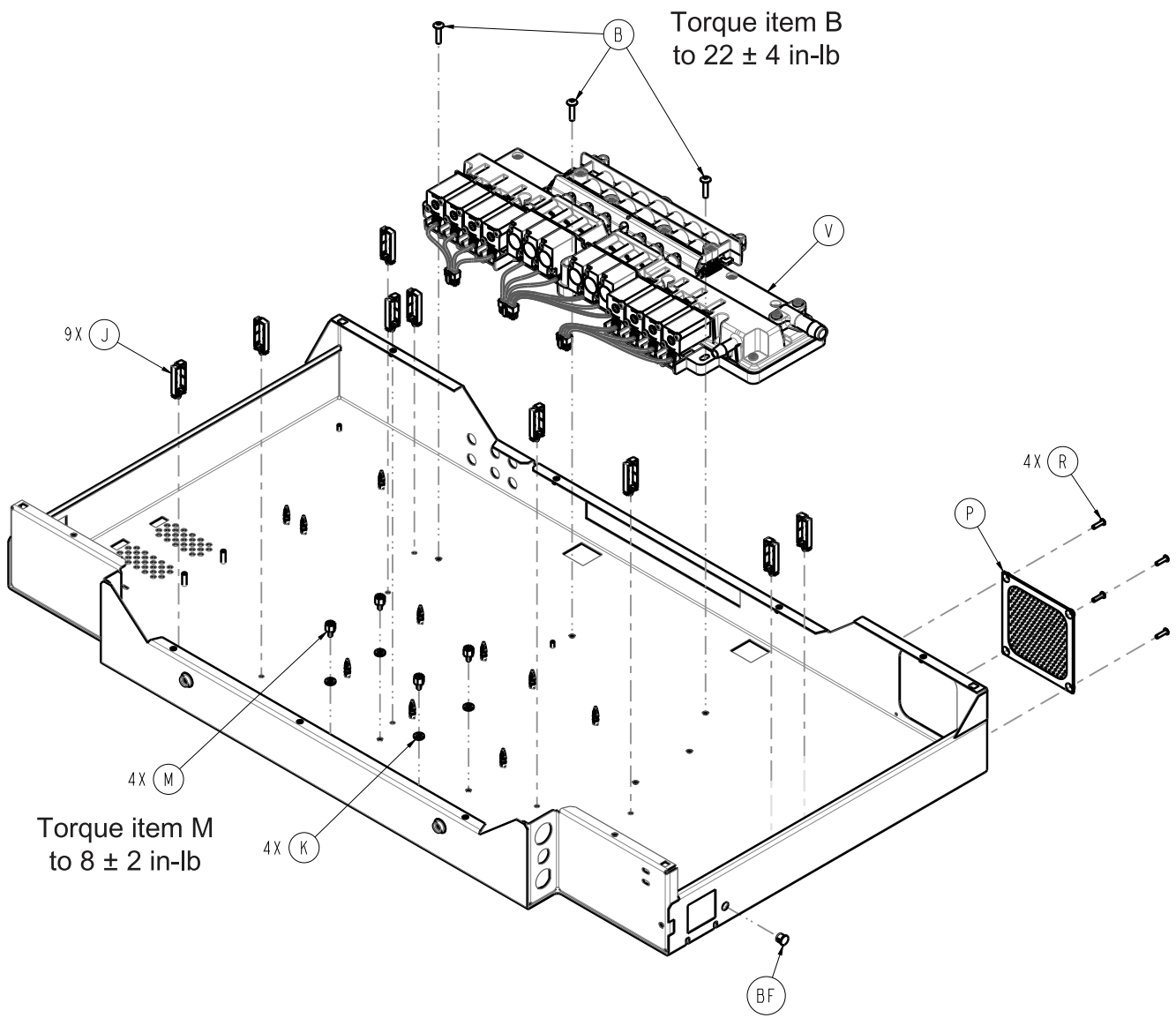
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A	0026-672-000	Quick release pin	2
B	2971-021-005	Foam crib assembly	1
C	297300210003	Pods layer assembly	1
D	2972-021-004	Top cover assembly	1
E	297300210007	Turn bladder assembly	1
F	2971-021-011	Foot foam crib assembly	1
G	297300210017	Bottom cover assembly	1
H	2971-021-045	Pillow assembly	1
J	2971-021-189	Fan cable assembly	2
K	2971-021-901	Label, serial number	1

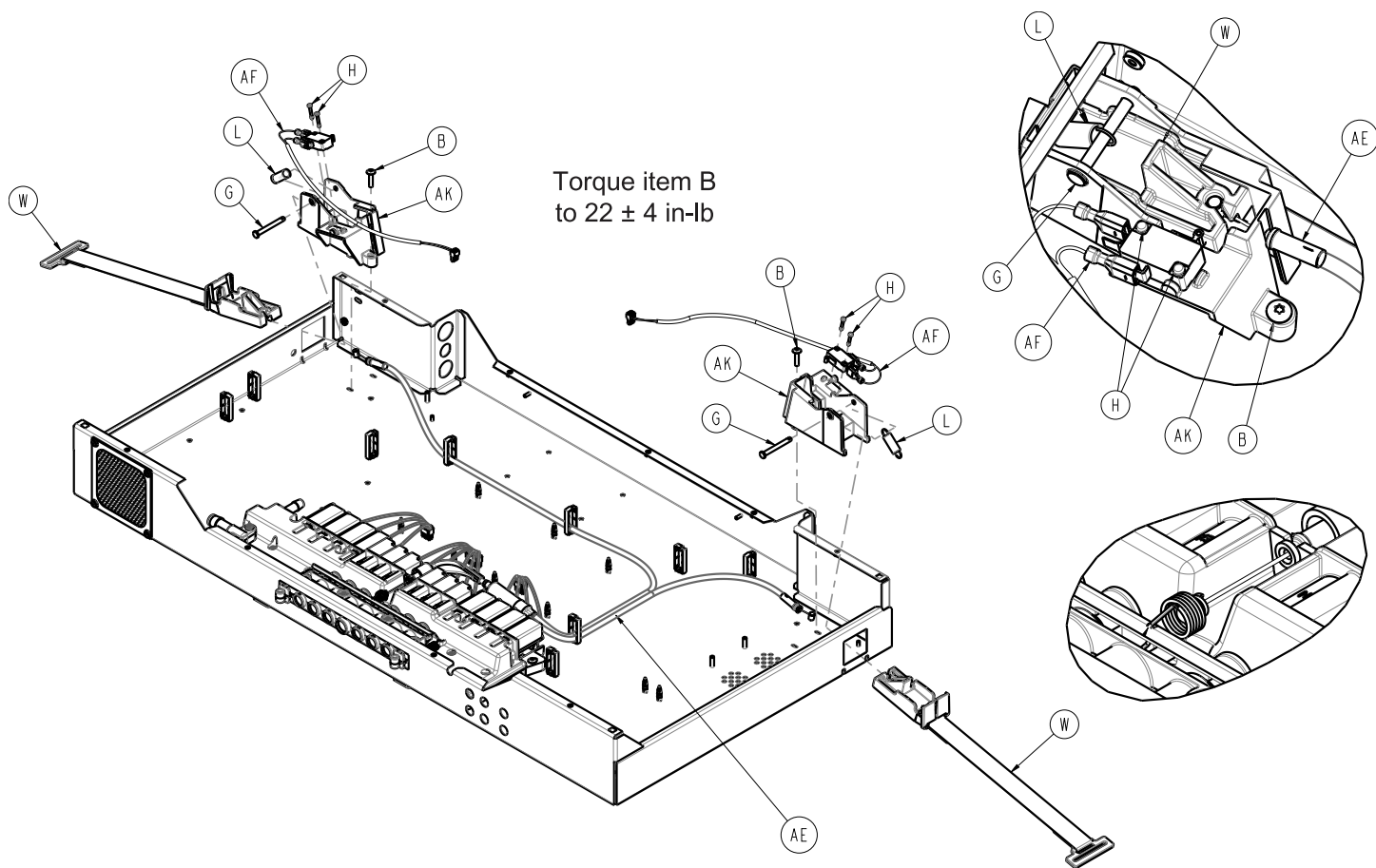
Item	Number	Name	Quantity
L	297301220008	<i>Foot box assembly</i> (page 49)	1
M	0058-383-000	Purse lock wire tie	2

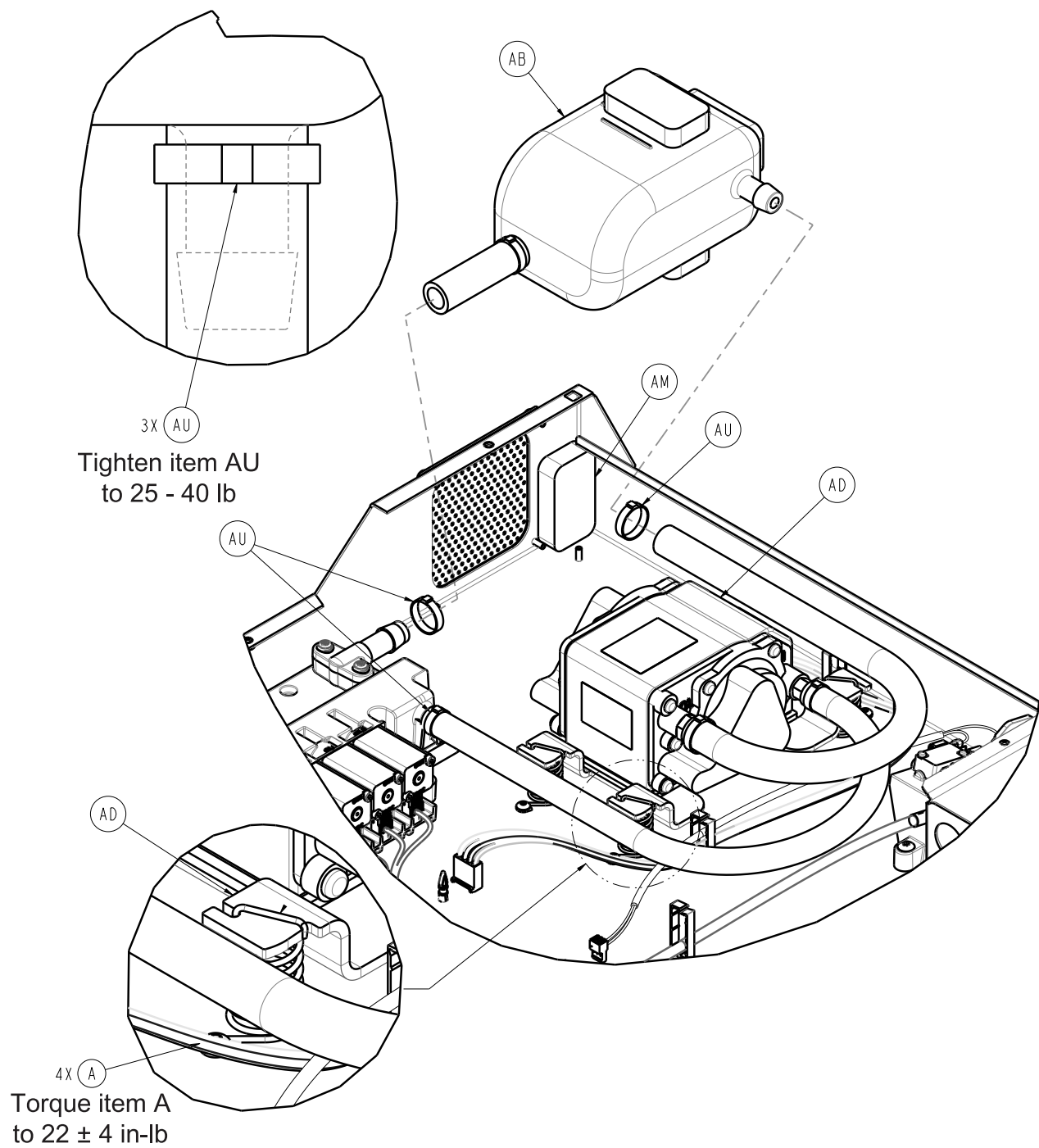
# Foot box assembly

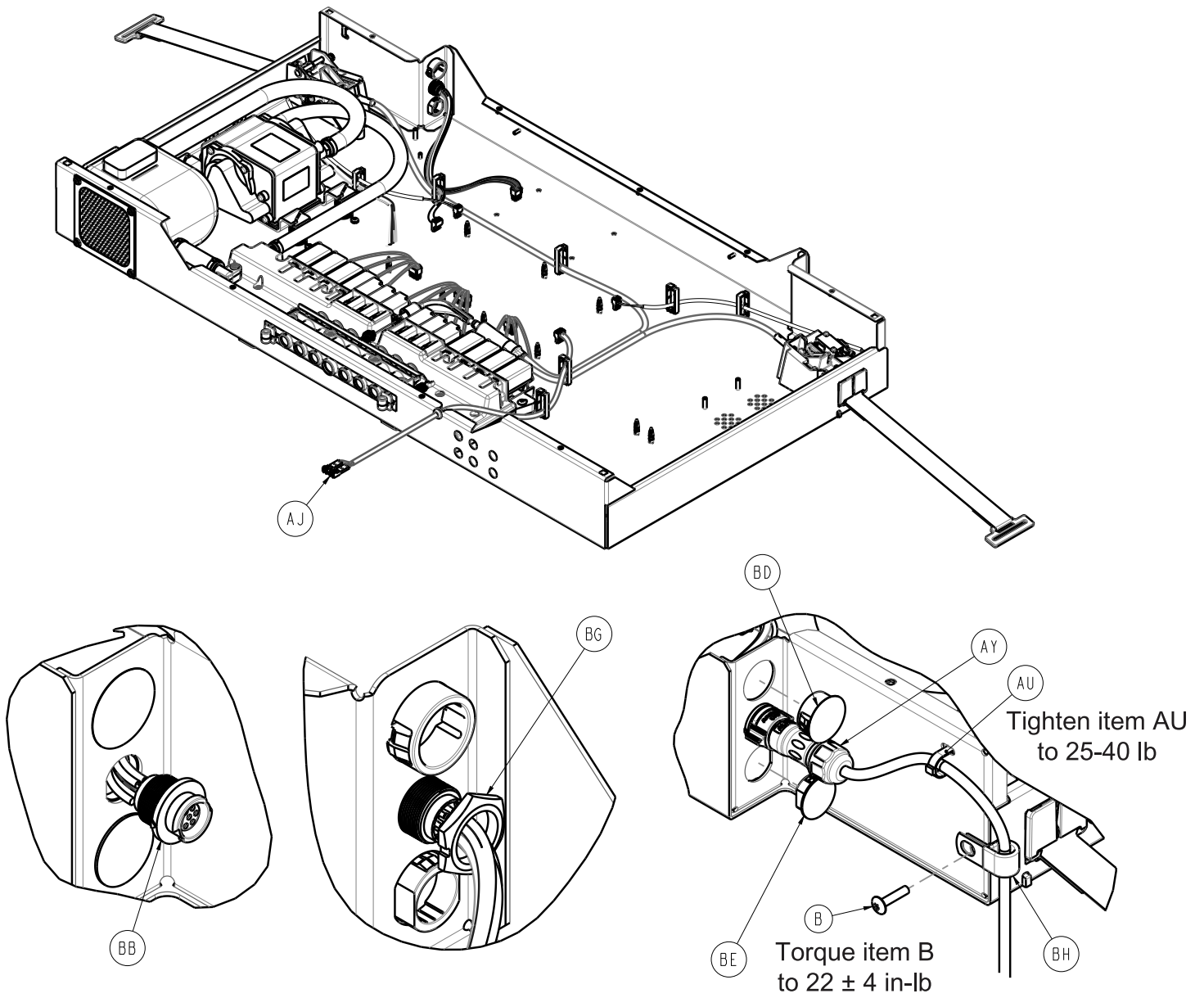
297301220008 Rev AA (Reference only)

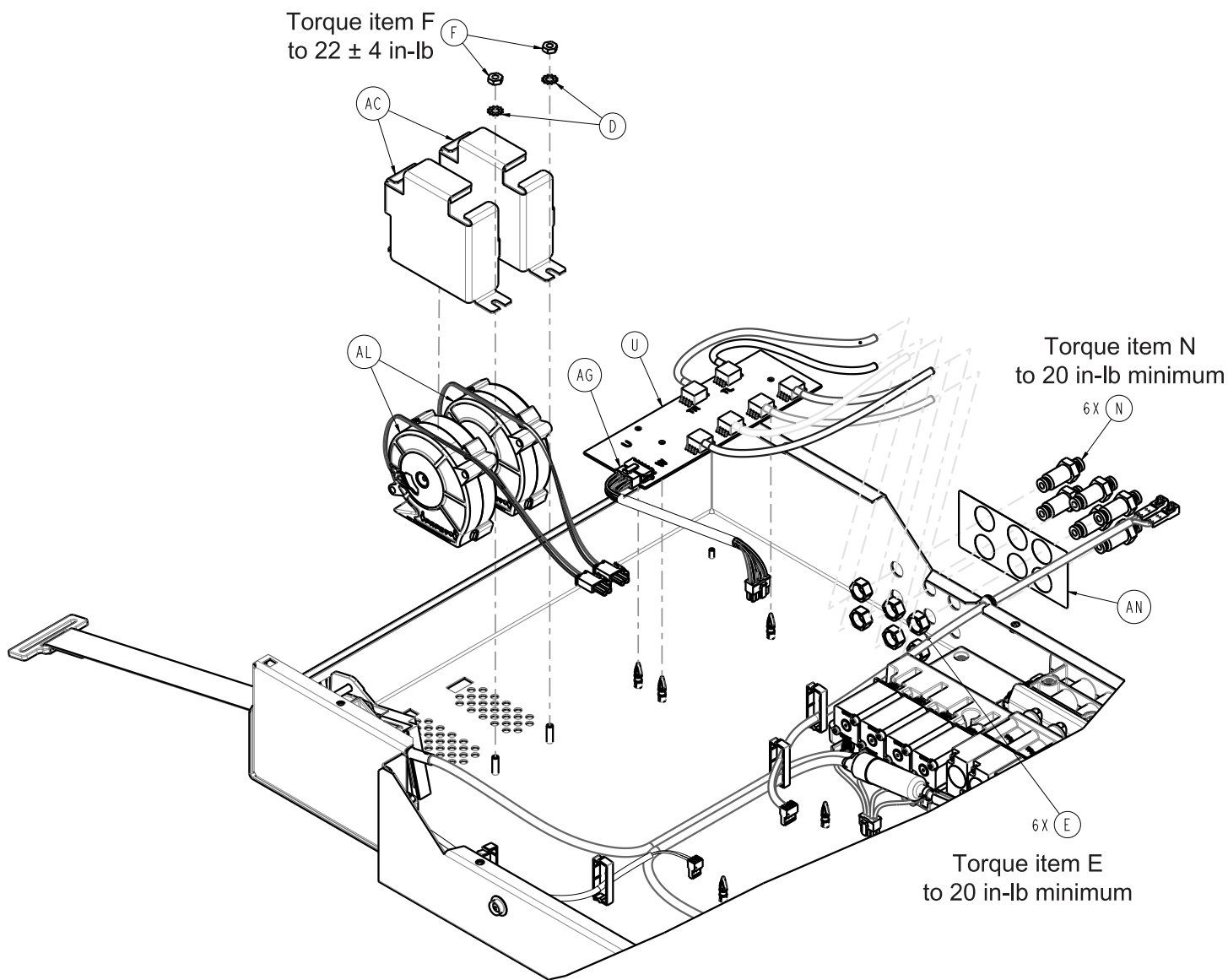


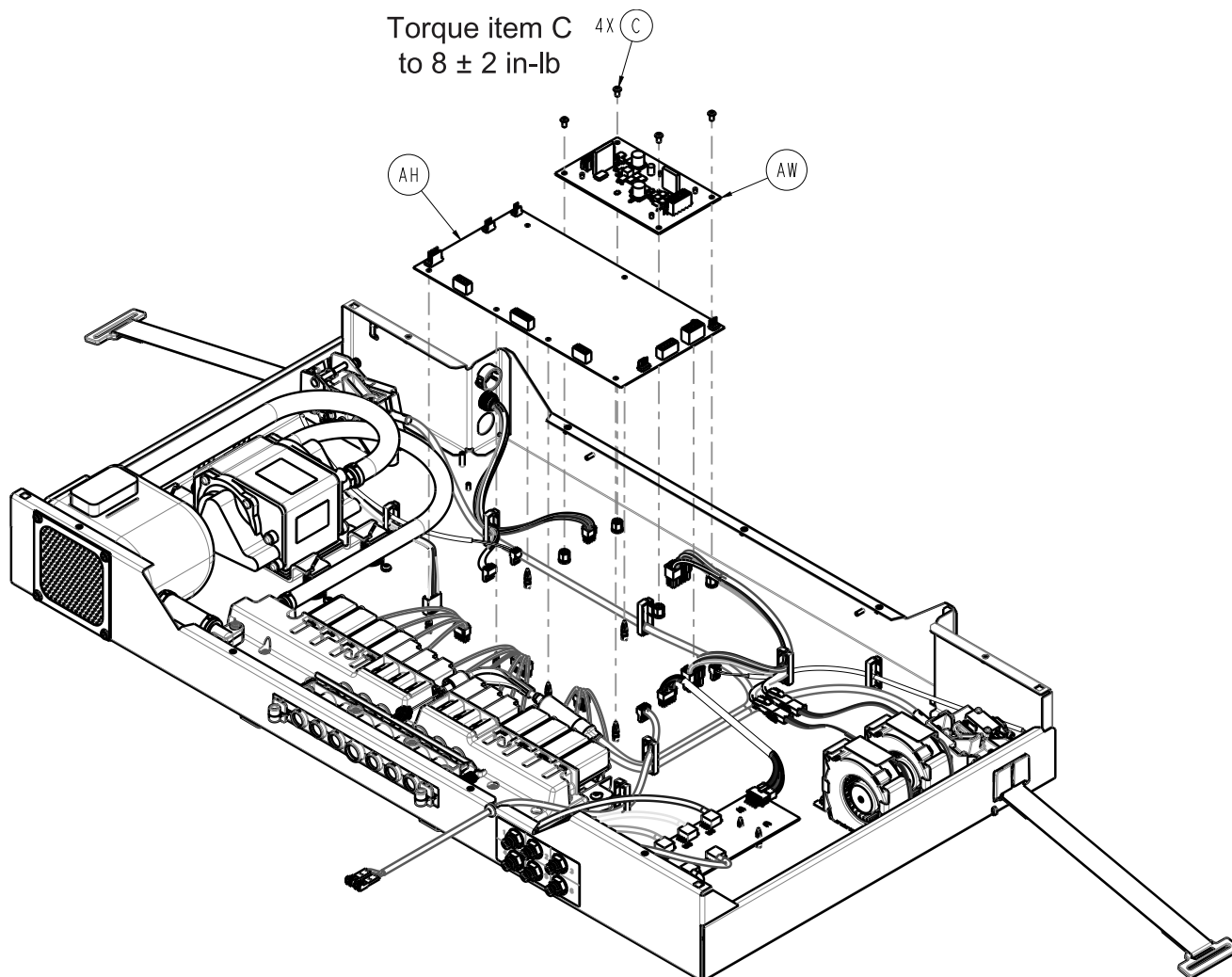


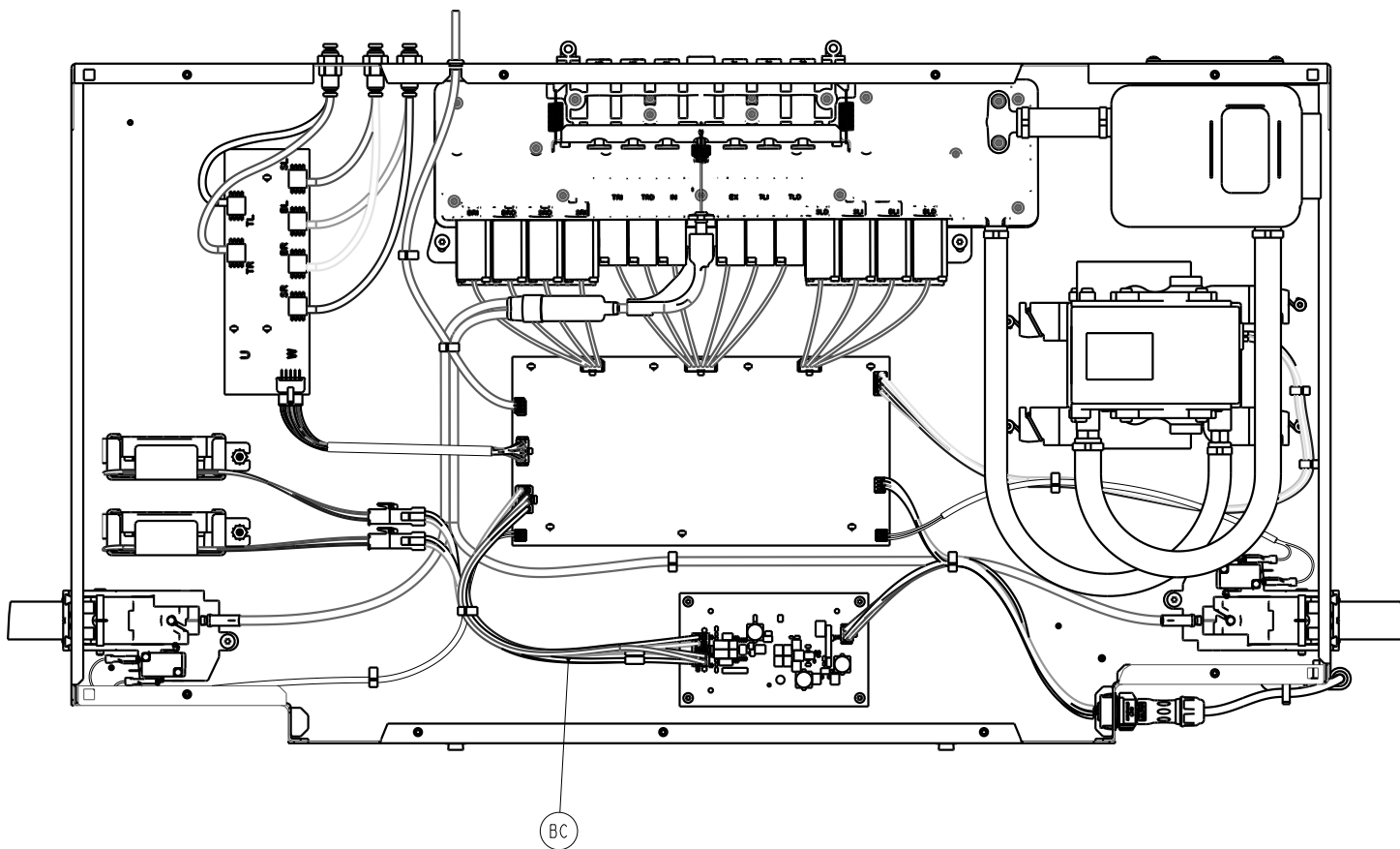


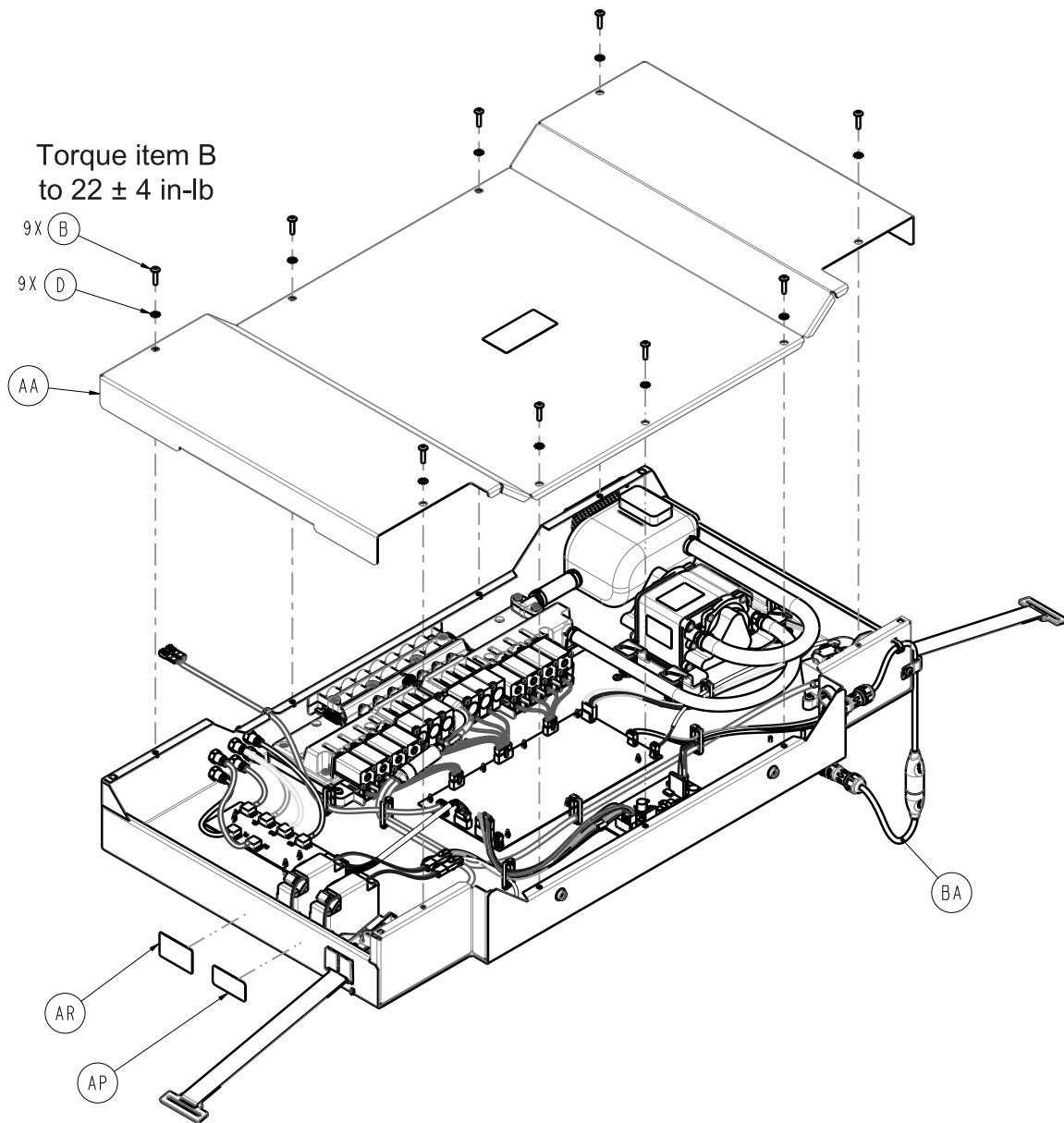












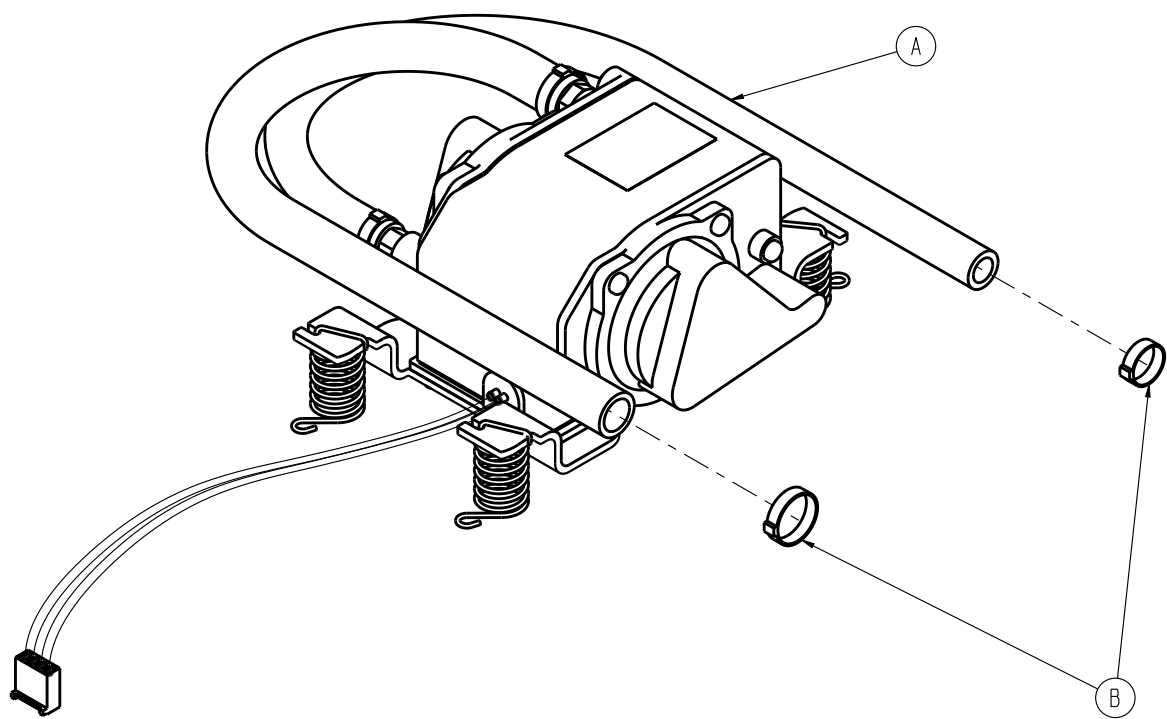
Item	Number	Name	Quantity
A	0004-880-000	Button head cap screw, Torx with star washer	4
B	0007-094-000	Truss head machine screw	15
C	0004-883-000	Button head cap screw	4
D	0013-018-000	Tooth lock washer	11
E	0015-093-000	Nut	6
F	0015-094-000	Hex nut, small	2
G	0027-041-000	Cotter pin, spring detent	2
H	0029-028-000	Push pin	4
J	0029-029-000	Wire clip	9
K	0011-436-000	Washer	4

Item	Number	Name	Quantity
L	0038-330-000	Extension spring	2
M	0052-916-000	Hex standoff	4
N	0058-380-000	Push in coupler	6
P	0058-381-000	Fan filter screen	1
R	0025-650-000	Dome head blind rivet	11
T	0946-001-155	Bumper	5
U	2971-021-033	Sensor assembly	1
V	2971-022-006	Valve manifold assembly	1
W	297300220007	CPR puller assembly	2
Y	2971-022-009	Foot box bottom weldment	1
AA	2971-022-016	Foot box top cover assembly	1
AB	2971-022-012	Resonator assembly	1
AC	2971-022-013	Fan bracket assembly	2
AD	297300220014	Mounted pump assembly	1
AE	2971-022-113	CPR activation cable	1
AF	2971-022-117	CPR switch cable assembly	2
AG	2971-022-132	Main board to foot box SPI cable	1
AH	2971-022-140	Main board PCB assembly	1
AJ	2971-022-150	Fan box cable assembly	1
AK	297300220165	Base CPR	2
AL	2971-022-188	Fan foot box cable assembly	2
AM	2971-022-192	Resonator foam	1
AN	2971-022-903	Label, color foot box	1
AP	2971-022-904	Label, serial number foot box	1
AR	2971-022-905	Label, pass foot box	1
AT	3000-300-115	Standoff	10
AU	8815-029-200	Cable tie	4
AV	0029-003-000	Brass eyelet	2
AW	297100220910	PCBA, <b>Isolibrium</b> PE power supply	1
AY	297300560804	Magnetic break away cable side A	1
BA	297300560805	Magnetic break away cable side B	1
BB	297100560802	Cable assembly, <b>Isolibrium</b> PE box to <b>Isolibrium</b> PE power supply	1

Item	Number	Name	Quantity
BC	297100560803	Cable assembly, <b>Isolibrium</b> PE power supply to <b>Isolibrium</b> PE main controller	1
BD	700000875057	Locking hole plug	1
BE	700001380898	Double D hole plug	1
BF	700001423846	Dome hole plug	1
BG	700001435032	Retention nut	1
BH	700001483804	Cable clamp	1

# Pump assembly kit - 297307000001

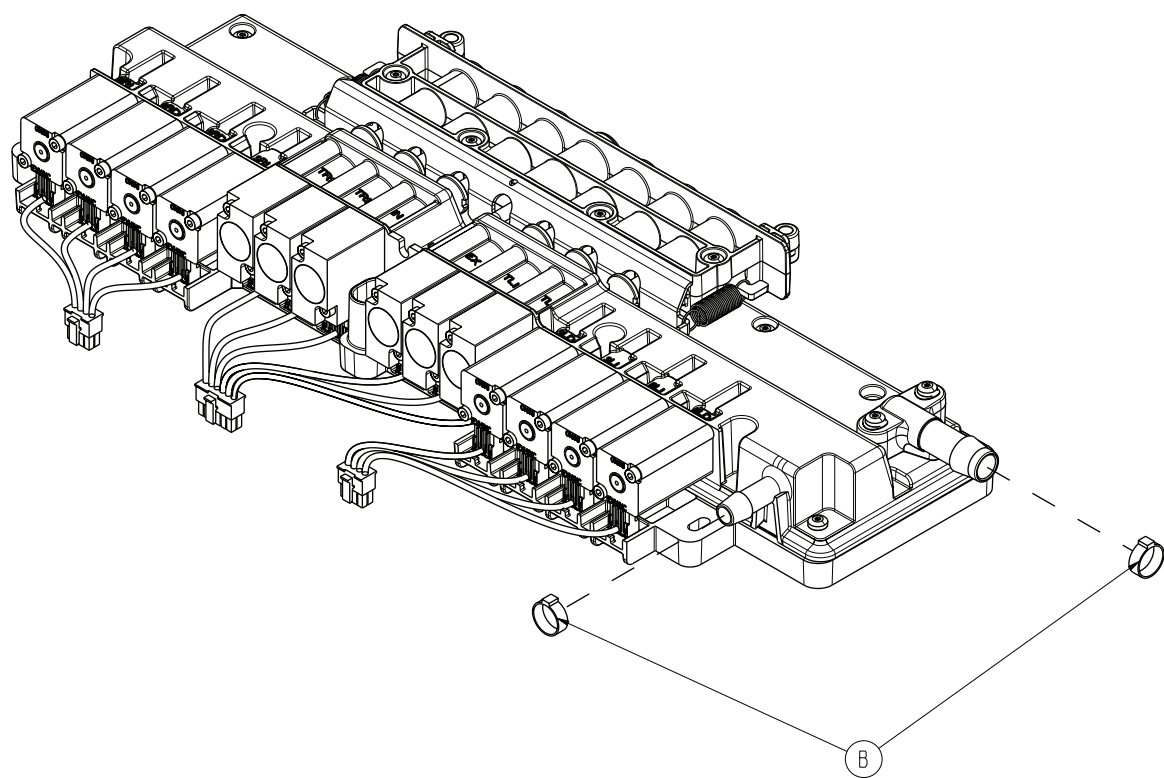
Rev AA (Reference only)



Item	Number	Name	Quantity
A	297300220014	Pump mounted assembly	1
B	8815-029-200	Cable tie	2

# Valve manifold assembly kit - 2971-700-007

Rev A (Reference only)



Item	Number	Name	Quantity
A	2971-022-006	Valve manifold assembly	1
B	8815-029-200	Cable tie	2

# EMC information

## CAUTION

- Avoid stacking or placing equipment adjacent with other equipment to prevent improper operation of the product. If such use is necessary, carefully observe stacked or adjacent equipment to make sure that they operate.
- The use of accessories, transducers, and cables, other than those specified or provided by the manufacturer, could result in increased electromagnetic emissions or decreased electromagnetic immunity and result in improper operation.

**Note** - Portable RF communications equipment, including peripherals such as antenna cables and external antennas, should be no closer than 12 inches (30 cm) to any part of **Isolibrium** PE support surface, including cables specified by the manufacturer.

The Model 297300000000 **Isolibrium** PE support surface was evaluated using the following cables:

Cable	Length (m)
Isolibrium PE to bed	1.0

## Guidance and manufacturer's declaration - electromagnetic emissions

The Model 297300000000 **Isolibrium** PE support surface is intended for use in the electromagnetic environment specified below. The customer or the user of the Model 297300000000 **Isolibrium** PE support surface should assure that it is used in such an environment.


Emissions test	Compliance	Electromagnetic environment
RF Emissions CISPR 11	Group 1	<b>Note</b> - The emissions characteristics of this equipment make it suitable for use in industrial areas and hospitals (CISPR 11 class A). If it is used in a residential environment (for which CISPR 11 class B is normally required) this equipment might not offer adequate protection to radio-frequency communication services. The user might need to take mitigation measures, such as relocating or re-orienting the equipment.
RF Emissions CISPR 11	Class A	
Harmonic Emissions IEC 61000-3-2	Class A	
Voltage Fluctuations Flicker Emissions IEC 61000-3-3	Complies	

## Guidance and manufacturer's declaration - electromagnetic immunity

The Model 297300000000 **Isolibrium** PE support surface is suitable for use in a professional healthcare facility environment and not in environments exceeding immunity test conditions that the product was evaluated to, such as near high frequency (HF) surgical equipment and inside of the radio frequency (RF) shielded room of magnetic resonance imaging (MRI) equipment. The customer or the user of the Model 297300000000 **Isolibrium** PE support surface should assure that it is used in such an environment and that the electromagnetic environment guidance listed below is followed.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment-guidance
Electrostatic Discharge (ESD) IEC 61000-4-2	±8 kV contact ±15 kV air	±8 kV contact ±15 kV air	Floors should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrostatic fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for power supply lines ±1 kV for input/output lines	Main power quality should be that of a typical commercial or hospital environment.

Guidance and manufacturer's declaration - electromagnetic immunity			
Surge IEC 61000-4-5	$\pm 0.5$ kV, $\pm 1$ kV lines to lines $\pm 0.5$ kV, $\pm 1$ kV, $\pm 2$ kV lines to earth	$\pm 0.5$ kV, $\pm 1$ kV lines to lines $\pm 0.5$ kV, $\pm 1$ kV, $\pm 2$ kV lines to earth	Main power quality should be that of a typical commercial or hospital environment.
Voltage dips, voltage variations and short interruptions on power supply input lines IEC 61000-4-11	<p>0% <math>U_T</math> for 0.5 cycle at 0°, 45°, 90°, 135°, 180°, 225°, 270°, and 315°</p> <p>0% <math>U_T</math> for 1 cycle</p> <p>70% <math>U_T</math> (30% dip in <math>U_T</math>) for 25/30 cycles</p> <p>0% <math>U_T</math> for 250/300 cycles</p>	<p>0% <math>U_T</math> for 0.5 cycle at 0°, 45°, 90°, 135°, 180°, 225°, 270°, and 315°</p> <p>0% <math>U_T</math> for 1 cycle</p> <p>70% <math>U_T</math> (30% dip in <math>U_T</math>) for 25/30 cycles</p> <p>0% <math>U_T</math> for 250/300 cycles</p>	Main power quality should be that of a typical commercial or hospital environment. If the user of the Model 297300000000 <b>Isolibrium</b> PE support surface requires continued operation during power main interruptions, it is recommended that the device be powered from an uninterrupted power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
<b>Note</b> - $U_T$ is the a.c. mains voltage before applications of the test level.			

<p>Conducted RF IEC 61000- 4-6</p> <p>Radiated RF IEC 61000-4-3</p>	<p>3 Vrms 150 kHz to 80 MHz 3 V/m 80 MHz to 2.7 GHz</p>	<p>3 Vrms 3 V/m</p>	<p>Portable and mobile RF communications equipment should follow the guidance in the table titled “Recommended separation distances between portable and mobile RF communication equipment and the Model 297300000000 <b>Isolibrium</b> PE support surface.” If the mobile service is not listed in the table, the recommended separation distance should be calculated from the equation appropriate for the frequency of the transmitter.</p> <p>Recommended separation distance  <math>D=(2)(\sqrt{P})</math>  where <math>P</math> is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and <math>d</math> is the recommended separation distance in meters (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey<sup>a</sup>, should be less than the compliance level in each frequency range<sup>b</sup>. Interference may occur in the vicinity of equipment marked with the following symbol: </p>
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#### Note

- These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.
- The ISM (Industrial, Scientific, and Medical) bands between 0.15 MHz and 80 MHz are 6.765 MHz to 6.795 MHz; 13.553 MHz to 13.567 MHz; 26.957 MHz to 27.283 MHz; and 40.66 MHz to 40.70 MHz.

<sup>a</sup>Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast, and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the Model 297300000000 **Isolibrium** PE support surface is used exceeds the applicable RF compliance level above, the Model 297300000000 **Isolibrium** PE support surface should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the Model 297300000000 **Isolibrium** PE support surface.

<sup>b</sup>Over the frequency range 150 kHz to 80 MHz, field strengths are less than 3 Vrms.

**Recommended separation distances between portable and mobile RF communication equipment and the Model 297300000000 Isolibrium PE support surface**

The Model 297300000000 **Isolibrium** PE support surface is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Model 297300000000 **Isolibrium** PE support surface can help prevent electromagnetic interferences by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Model 297300000000 **Isolibrium** PE support surface, including cables, as recommended below, according to the maximum output power of the communications equipment.

<b>Band (MHz)</b>	<b>Service</b>	<b>Maximum power (W)</b>	<b>Minimum separation distance (m)</b>
380-390	TETRA 400	1.8	0.3
430-470	GMRS 460; FRS 460	2.0	0.3
704-787	LTE Band 13, 17	0.2	0.3
800-960	GSM 800/900; TETRA 800; iDEN 820; CDMA 850; LTE Band 5	2.0	0.3
1,700-1,990	GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1, 3, 4, 25; UMTS	2.0	0.3
2,400-2,570	Bluetooth; WLAN; 802.11 b/g/n; RFID 2450; LTE Band 7	2.0	0.3
5,100-5,800	WLAN 802.11 a/n	0.2	0.3

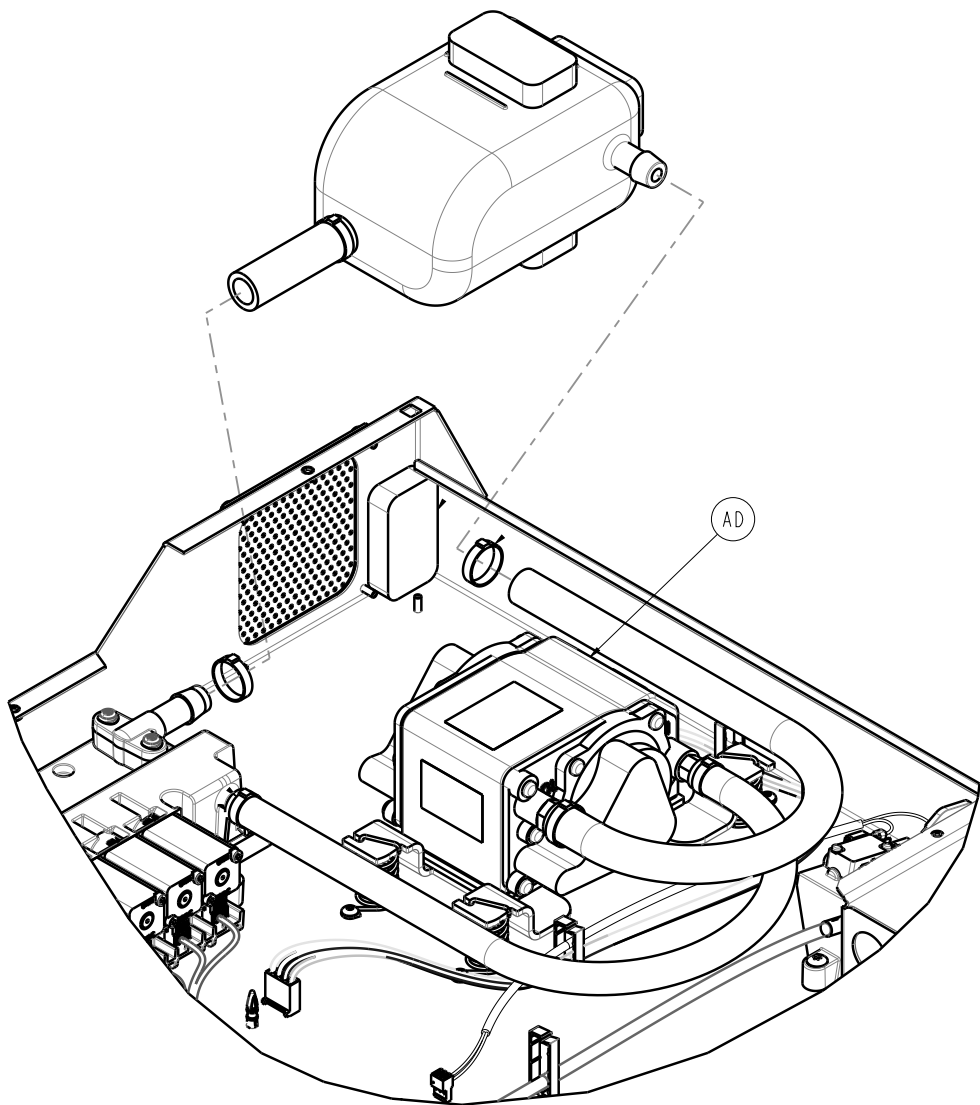
For transmitters rated at a maximum output power not listed above, the recommended separation distance  $d$  in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where  $P$  is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

**Note** - These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

# Recycling passport

297301220008

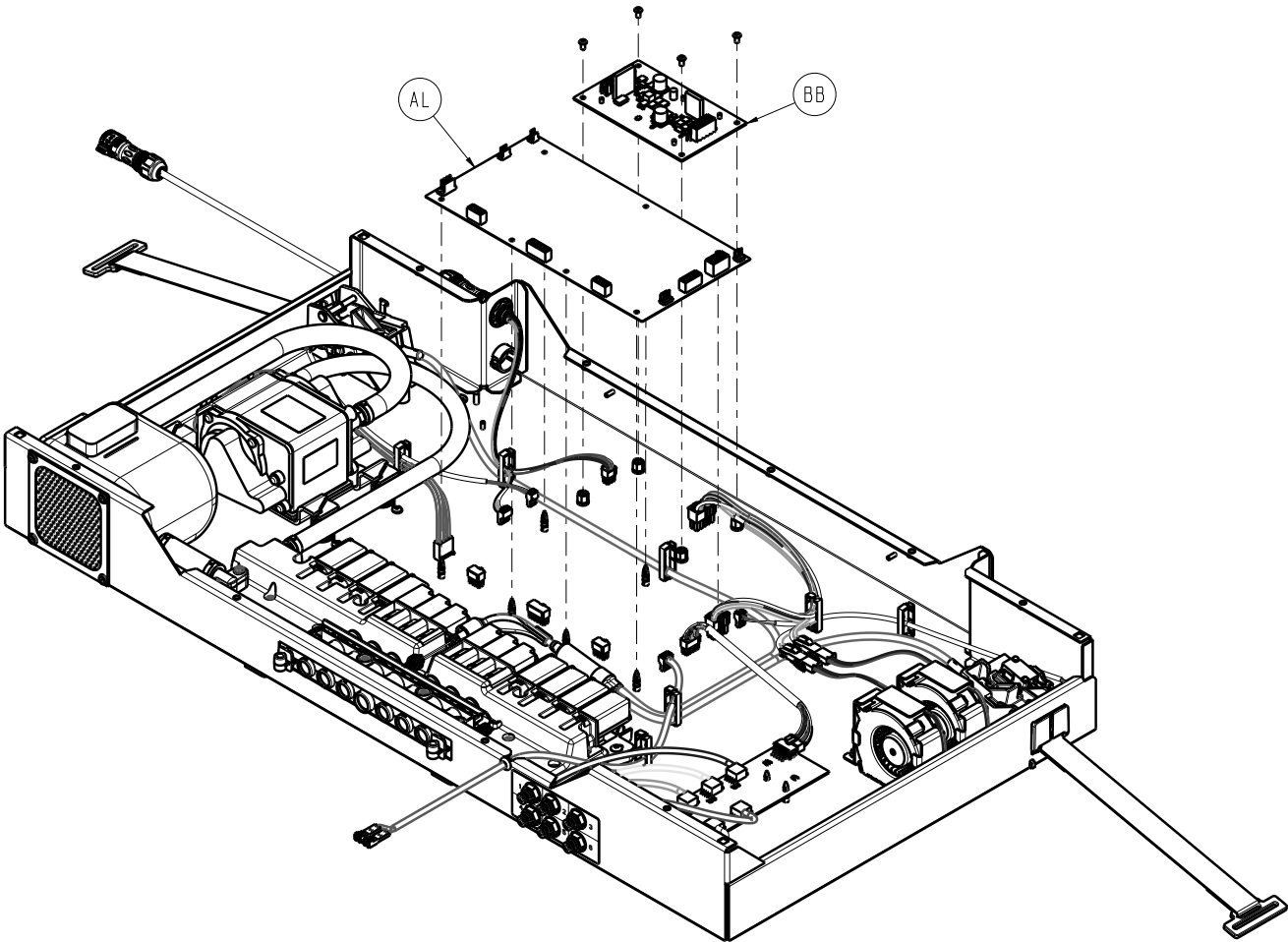
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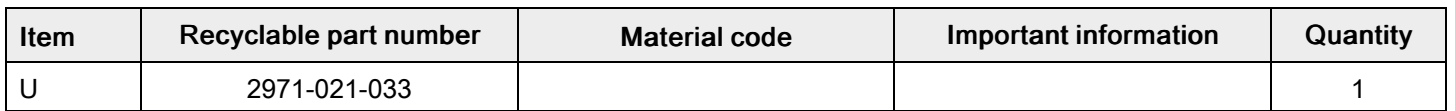
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AD	297300220014			1

297301220008

Rev AA (Reference only)



Item	Recyclable part number	Material code	Important information	Quantity
AL	2971-022-140			1
BB	297100220910			1







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