AIR+™ Pump

Maintenance Manual

REF 2863
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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.

WARNING

• Do not modify or change this device. Service should only be completed by qualified personnel. Failure could result in injury and void your warranty.
• 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.
• 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 AIR+, including cables specified by the manufacturer.
• Avoid stacking or placing equipment adjacent with other equipment to prevent improper operation of the products. If such use is necessary, carefully observe stacked or adjacent equipment to make sure that they are operating properly.

CAUTION

• Always use a grounded static strap to prevent static coming into contact with the PCB assembly.
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

The AIR+ pump has a 5 year expected service life under normal use, conditions, and with appropriate periodic maintenance.

Contact information

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

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

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

![Serial number location diagram]
Service

Powering OFF the pump
Press the power button and hold for two seconds to power OFF the pump.

Fuse replacement
Fuse: F3.5AH250V

Tools required:
• Slotted screwdriver
• Digital multimeter

Procedure:
1. Unplug the power cord from the wall outlet.
2. Unplug the support surface tubing from the pump.
3. Place the pump face down on a work surface.
4. Using a slotted screwdriver, remove the fuse cover located below the power inlet. Save the fuse cover.
   
   Note - If you need to check a fuse, use a digital multimeter.
5. Remove and discard the fuse.
6. Reverse steps to reinstall.
7. Verify proper operation before you return the product to service.

Bumper replacement

Tools required:
• Small slotted screwdriver
• Goof Off® Household Heavy Duty Remover

Procedure:
1. Unplug the power cord from the pump.
2. Unplug the gray AST and red CPR connector from the pump.
3. Using a small slotted screwdriver, scrape under each bumper to remove. Start from the corner of each bumper to remove the top bumper (A), bottom left bumper (B), and bottom right bumper (C) from the back cover (D) (Figure 1). Discard the bumpers.
4. Using **Goof Off** Household Heavy Duty Remover, a small slotted screwdriver, and towels, remove the adhesive from the back cover.

5. Using alcohol prep wipes, clean the back cover bumper pad areas and current compliance label (E).

6. Install the new top bumper (A), bottom left bumper (B), and bottom right bumper (C) to the back cover (D).

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

---

**Foot replacement**

**Tools required:**

- T20 Torx driver
- 6 mm socket
- Ratchet

**Procedure:**

1. Unplug the power cord from the wall outlet.
2. Unplug the support surface tubing from the pump.
3. Place the pump face down on a work surface.
4. Using a T20 Torx driver, remove the six screws that secure the back pump housing to the front pump housing. Save the screws.
5. Using two hands, rotate the pump assembly to the right so the front is on your left.
6. Separate the front and back pump housing. Place the back pump housing down on the work surface.
7. Using a ratchet and a 6 mm socket, remove the six nuts that secure the foot to the front pump housing. Save the nuts.
8. Remove and discard the foot.
9. Reverse the steps to reinstall (**Pump housing rubber foot assembly - 2874-007-022** (page 25)).
10. Verify proper operation before you return the product to service.
Filter replacement

Tools required:
- T20 Torx driver

Procedure:
1. Unplug the power cord from the wall outlet.
2. Unplug the support surface tubing from the pump.
3. Place the pump face down on a work surface.
4. Using a T20 Torx driver, remove the screw (A), washer (B), and flex grip (C) that secure the filter access door (D) to the cover (Figure 2). Save the screw, washer, and flex grip.
5. Remove and save the filter access door (D).
6. Remove and discard the filter (E).
7. Install the new filter (E).
8. Reverse steps 1 - 5 to reinstall.
9. Insert the power cord under the power cord retention flex grip (F) (Figure 3).

Figure 2 – Filter
10. Plug the support surface hose back into the pump (G) (Figure 3).
11. Secure the power cord (Figure 4).

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

**Flex grip replacement**

**Tools required:**
- T20 Torx driver

**Procedure:**
1. Unplug the power cord from the wall outlet.
2. Unplug the support surface hose from the pump.
3. Place the pump face down on a work surface.
4. Using a T20 Torx driver, remove the screw (A) that secures the filter access door (B) to the back cover (Figure 5). Discard the screw.

![Figure 5 – Back cover](image)

5. Using a T20 Torx driver, install the supplied delta screw (C) (0023-162-000), flat washer (D) (2941-007-002), and power cord retention flex grip (E) (2941-007-004) to secure the filter access door (B) to the back cover (Figure 6).

![Figure 6 – Install the pump power cord p-clamp](image)

6. Insert the power cord under the power cord retention flex grip (F) (Figure 7).
7. Plug the support surface hose back into the pump (G) (Figure 7).
8. Secure the power cord (Figure 8).

9. Plug the pump back into the wall outlet.
10. Verify proper operation before you return the product to service.

Transport handle replacement

Tools required:
- T20 Torx driver
- #2 Phillips screwdriver

Procedure:
1. Unplug the power cord from the wall outlet.
2. Unplug the support surface tubing from the pump.
3. Place the pump face down on a work surface.

4. Using a T20 Torx driver, remove the six screws that secure the back pump housing to the front pump housing. Save the screws.

5. Using two hands, rotate the pump assembly to the right so the front pump housing is to your left.

6. Separate the front and back pump housing. Place the back pump housing down on the work surface.

7. Using a #2 Phillips screwdriver, remove the five screws that secure the back board to the back pump housing. Save the screws.

8. Remove and save the back board.

9. Using a #2 Phillips screwdriver, remove the four screws that secure the handles to the back pump housing. Save the screws.

10. Remove and discard the handle.

11. Reverse the steps to reinstall (Handle assembly - 2874-007-031 (page 26)).

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

Hook replacement

Tools required:
- T20 Torx driver
- Stubby #2 Phillips screwdriver
- Pick

Procedure:
1. Unplug the power cord from the wall outlet.

2. Unplug the support surface tubing from the pump.

3. Place the pump face down on a work surface.

4. Using a pick, remove and discard the information label on the hook assembly.

5. Using a stubby #2 Phillips, remove the screw (under the label removed in step 4) that secure the hook assembly to the back pump housing.

6. Using a T20 Torx driver, remove the six screws that secure the back pump housing to the front pump housing. Save the screws.

7. Using two hands, rotate the pump assembly to the right so the front is to your left.

8. Separate the front and back pump housing. Place the back pump housing down on the work surface.

9. Unplug the power input cable and the power output cable from the power supply.

10. Using one hand to hold the fish paper and a stubby #2 Phillips screwdriver, remove the four Phillips screws and washers that secure the power supply to the main frame. Save the screws and washers.

11. Remove the power supply to the side and fish paper.

12. Using a stubby #2 Phillips screwdriver, remove the four screws that secure the pump frame to the main frame and set aside. Save the screws.

13. Using a stubby #2 Phillips screwdriver remove the six screws that secure the hook assembly to the back pump housing. Save the screws.

14. Remove and discard the hook assembly.

15. Reverse the steps to reinstall (Hook assembly - 2874-007-019 (page 27)).

16. Verify proper operation before you return the product to service.
Front pump housing replacement

Tools required:

- T20 Torx driver
- #2 Phillips screwdriver

Procedure:

1. Unplug the power cord from the wall outlet.
2. Unplug the support surface tubing from the pump.
3. Place the pump face down on a work surface.
4. Using a T20 Torx driver, remove the six screws that secure the back pump housing to the front pump housing. Save the screws.
5. Using two hands, rotate the pump assembly to the right so the front is to your left.
6. Separate the front and back pump housing. Place the back pump housing down on the work surface. 

**CAUTION -** Always use a grounded static strap to prevent static coming into contact with the PCB assembly.

7. Unplug all cables from the PCB assembly.

**Note** - Pay attention to the cable connection locations for reinstallation.

8. Using a #2 Phillips screwdriver, remove the two screws that secure the support bracket holding the PCB assembly and the screen to the front pump housing. Save the screws and support bracket.
9. Using a #2 Phillips screwdriver, remove the three screws that secure the board to the screen. Save the screws.
10. Remove the PCB assembly.
11. Grasp the air hose and pull out from the support surface hose connector to detach the hose from the connector.
12. Remove and discard the front pump housing.
13. Reverse the steps to reinstall.
14. Run and pass the **Testing functionality** (page 17).
15. Verify proper operation before you return the product to service.

Pump housing side fitting replacement - 2863-007-009

Tools required:

- Adjustable wrench

Procedure:

1. Unplug the power cord from the pump.
2. Unplug the support surface hose from the pump.
3. Place the pump on a work surface with the pump housing side fitting face up.
4. Remove the broken fitting. Remove any Teflon tape that may remain.
5. Using your hand, thread in the new side fitting. Tighten as much as you can by hand.
6. Using an adjustable wrench, make sure that the side fitting hose release button faces the top of the pump housing.

**Note** - Make sure that the inside of the adjustable wrench is tight to the round part of the fitting.

7. Plug the power cord back into the pump.
8. Plug the support surface hose back into the pump.
9. Verify proper operation before you return the product to service.
Power supply replacement

Tools required:
- T20 Torx driver
- #2 Phillips screwdriver

Procedure:
1. Unplug the power cord from the wall outlet.
2. Unplug the support surface tubing from the pump.
3. Place the pump face down on a work surface.
4. Using a T20 Torx driver, remove the six screws that secure the back pump housing to the front pump housing. Save the screws.
5. Using two hands, rotate the pump assembly to the right so the front is to your left.
6. Separate the front and back pump housing. Place the back pump housing down on the work surface.
7. Grasp the hose at the manifold coming from the pump and pull to remove the hose from the manifold.
8. Unplug the power input cable and the power output cable from the power supply.
9. Using one hand to hold the fish paper and a #2 Phillips screwdriver, remove the four Phillips screws and washers that secure the power supply to the main frame. Save the screws, washers, and fish paper.
10. Remove and discard the power supply.
11. Reverse the steps to reinstall (Power supply assembly - 2874-007-024 (page 32)).
12. Run and pass the Testing functionality (page 17).
13. Verify proper operation before you return the product to service.

Power inlet replacement

Tools required:
- T20 Torx driver
- Slotted screwdriver

Procedure:
1. Unplug the power cord from the wall outlet.
2. Unplug the support surface tubing from the pump.
3. Place the pump face down on a work surface.
4. Using a T20 Torx driver, remove the six screws that secure the back pump housing to the front pump housing. Save the screws.
5. Using two hands, rotate the pump assembly to the right so the front is to your left.
6. Separate the front and back pump housing. Place the back pump housing down on the work surface.
7. Unplug the power inlet from the power supply.
8. Using a slotted screwdriver and your finger, push out on the power inlet while you push in on each of the power inlet locks to loosen the power inlet from the front pump housing. Repeat on the other side to remove.
9. Remove and discard the power inlet.
10. Reverse the steps to reinstall.
11. Run and pass the Testing functionality (page 17).
12. Verify proper operation before you return the product to service.
PCBA assembly replacement

Tools required:

- T20 Torx driver
- #2 Phillips screwdriver

Procedure:
1. Unplug the power cord from the wall outlet.
2. Unplug the support surface tubing from the pump.
3. Place the pump face down on a work surface.
4. Using a T20 Torx driver, remove the six screws that secure the back pump housing to the front pump housing. Save the screws.
5. Using two hands, rotate the pump assembly to the right so the front is to your left.
6. Separate the front and back pump housing. Place the back pump housing down on the work surface.
7. Grasp and remove the pressure hose at the PCBA.
8. Unplug the three cables from the PCBA.
9. Using a #2 Phillips screwdriver, remove the two screws that secure the support bracket that hold the PCB assembly and screen to the front pump housing.
10. Using a #2 Phillips screwdriver, remove the three screws that secure the board to the PCB assembly to the front pump housing.
11. Unlock the keypad ribbon connector and remove the ribbon cable from the PCB assembly.
12. Reverse the steps to reinstall (PCBA assembly - 2863-007-004 (page 34)).
13. Verify proper operation before you return the product to service.

Keypad membrane replacement

Tools required:

- T20 Torx driver
- #2 Phillips screwdriver
- Pick

Procedure:
1. Unplug the power cord from the wall outlet.
2. Unplug the support surface tubing from the pump.
3. Place the pump face down on a work surface.
4. Using a T20 Torx driver, remove the six screws that secure the back pump housing to the front pump housing. Save the screws.
5. Using two hands, rotate the pump assembly to the right so the front is to your left.
6. Separate the front and back pump housing. Place the back pump housing down on the work surface.
7. Grasp and remove the pressure hose at the PCB.
8. Unplug the three cables from the PCB.
9. Using a #2 Phillips screwdriver, remove the two screws that secure the support bracket. The support bracket holds the PCB assembly and the screen to the front pump housing.
10. Using a #2 Phillips screwdriver, remove the three screws that secure the board to the PCB assembly to the front pump housing.
11. Unlock the keypad ribbon connector and remove the ribbon cable from the PCB assembly.
12. Using a pick, carefully peel up the keypad from the front pump housing. Remove and discard the keypad.
13. Reverse the steps to reinstall.
14. Verify proper operation before you return the product to service.

**Pump replacement**

**Tools required:**
- T20 Torx driver
- Wire cutters
- #2 Phillips screwdriver

**Procedure:**
1. Unplug the power cord from the wall outlet.
2. Unplug the support surface tubing from the pump.
3. Place the pump face down on a work surface.
4. Using a T20 Torx driver, remove the six screws that secure the back pump housing to the front pump housing. Save the screws.
5. Using two hands, rotate the pump assembly to the right so the front is to your left.
6. Separate the front and back pump housing. Place the back pump housing down on the work surface.
7. Grasp the hose at the manifold coming from the pump and pull to remove the hose from the manifold.
8. Using wire cutters, cut the four zip ties that secure the pump power cable to the rest of the cables.

**CAUTION - Always use a grounded static strap to prevent static coming into contact with the PCB assembly.**

**Note**
- Use care when you cut the zip ties that you do not cut or damage the cables.
- Replace the zip ties when you reinstall.
9. Unplug the pump power cable from the PCB assembly.
10. Using a #2 Phillips screwdriver, remove the screw that secures the pump cable p-clamp to the main frame. Remove the p-clamp. Save the p-clamp and screw.
11. Using a T20 Torx driver, remove the four screws that secure the pump frame to the main frame. Save the screws.
12. Remove the spring from the hose and insert into the new pump assembly hose.
13. Remove and discard the pump assembly.
14. Reverse the steps to reinstall.
15. Run and pass the **Testing functionality** (page 17).
16. Verify proper operation before you return the product to service.

**Muffler replacement**

**Tools required:**
- T20 Torx driver
- #2 Phillips screwdriver

**Procedure:**
1. Unplug the power cord from the wall outlet.
2. Unplug the support surface tubing from the pump.
3. Place the pump face down on a work surface.
4. Using a T20 Torx driver, remove the six screws that secure the back pump housing to the front pump housing. Save the screws.
5. Using two hands, rotate the pump assembly to the right so the front is to your left.
6. Separate the front and back pump housing. Place the back pump housing down on the work surface.
7. Grasp the inlet hose and remove it from the muffler, repeat for the outlet hose.
8. Using a #2 Phillips screwdriver, remove the two mounting screws that secure the muffler to the back support plate. Save the screws.
9. Reverse the steps to reinstall (Muffler - 2863-007-005 (page 35)).
10. Verify proper operation before you return the product to service.
Preventive maintenance

**WARNING** - Do not modify or change this device. Service should only be completed by qualified personnel. Failure could result in injury and void your warranty.

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

**Note** - Consult your local regulations to dispose of electronic equipment.

Inspect the following items:

- All fasteners are secure
- Pump housing or components (hose, power cords, or case) for cracks, holes, or damaged
- Bed frame pump hooks are not damaged
- Check for secure hose connections
- User interface is not cracked or damaged
- Fuse
- HEPA filter (replace each year)

<table>
<thead>
<tr>
<th>Product serial number:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed by:</td>
</tr>
<tr>
<td>Date:</td>
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</table>
Testing functionality

Complete this functional test procedure where indicated. Make sure that you pass all acceptance criteria.

Procedure:

1. Plug the power cord from the controller into a wall outlet.

2. Press the Power button.
   
   Acceptance criteria:
   
   ______ Pump turns on.

3. Press the SPR Plus button.
   
   Acceptance criteria:
   
   ______ Button is tactile and toggles to SPR Plus mode.
   ______ SPR Plus button lights.
   ______ Up/Down buttons light.

4. Press the Up/Down buttons. Continue to press the Up/Down buttons to test the pressure mmHg value settings.
   
   Acceptance criteria:
   
   ______ The mmHg pressure value settings light up.
   ______ Button is tactile and increases the mmHg pressure value setting to the maximum value then sequences to the lowest value.

5. Press the IsoFlex LAL button.
   
   Acceptance criteria:
   
   ______ Button is tactile and toggles to IsoFlex LAL mode.
   ______ The Up/Down and SPR Plus lights turn off.
## Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Screen</th>
<th>Cause</th>
<th>Recommended action</th>
</tr>
</thead>
</table>
| Power loss, product does not turn ON         |        | Power cord not seated, power cord unplugged from outlet, or possible internal damage | 1. Make sure that the power cord is plugged into the product and the outlet.  
2. Make sure that the power cord is routed through the flex grip. |
| Button not responsive                        |        | Lock is ON                                                            | Press and hold the lock button for 2 seconds to turn lock OFF.                        |
| Alarm icon is ON                             |        | Pressure alert                                                        | 1. Check air hose for kink.  
2. Check the hose for connection. |
|                                              |        | Mode selected does not match the connected product.                  | Make sure that you are connected to the correct product for the mode selected.      |
| Mode or pressure setting changed             |        |                                                                      | 1. Wait for the pressure to stabilize. The error will clear when the pump reaches the new target pressure.  
2. Power cycle the unit.  
3. If not resolved, call service. |
Software version location

You can find the software version (B) on the circuit board (Figure 9).

Figure 9 – Software version location on circuit board
# Replacement parts

These parts are currently available for purchase. Call Stryker Customer Service: 1-800-327-0770 for availability and pricing.

<table>
<thead>
<tr>
<th>Part</th>
<th>Number</th>
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<tbody>
<tr>
<td>Power cord, type B, 1 meter</td>
<td>2874-007-001</td>
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<tr>
<td>Power cord, type B, 5 meter</td>
<td>2874-007-002</td>
</tr>
<tr>
<td>Internal hose lengths</td>
<td>2863-007-007</td>
</tr>
<tr>
<td>Wire harness</td>
<td>2874-007-035</td>
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<tr>
<td>Fuse</td>
<td>2874-007-021</td>
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</table>
Support surface hose assembly - 2863-007-006

Rev AA (Reference only)
Bumper pack - 2874-007-020

Rev AB (Reference only)

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<th>Number</th>
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<tr>
<td>A</td>
<td>517M104004</td>
<td>Bumper bottom, left</td>
<td>1</td>
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<tr>
<td>B</td>
<td>517M104005</td>
<td>Bumper bottom, right</td>
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<tr>
<td>C</td>
<td>517M104006</td>
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Air filter guard - 2874-007-027

Rev AA (Reference only)

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<tbody>
<tr>
<td>A</td>
<td>511M104015</td>
<td>Molded air filter guard</td>
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<td>B</td>
<td>521M064029</td>
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HEPA filter - 2874-007-026

Rev AA (Reference only)

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<tbody>
<tr>
<td>A</td>
<td>517M104015</td>
<td>HEPA filter</td>
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</table>
Pump housing rubber foot assembly - 2874-007-022

<table>
<thead>
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<th>Item</th>
<th>Number</th>
<th>Name</th>
<th>Quantity</th>
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<tr>
<td>A</td>
<td>517M104001</td>
<td>Molded rubber foot</td>
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<td>B</td>
<td>521096N01</td>
<td>Nut fasteners</td>
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Rev AB (Reference only)
Handle assembly - 2874-007-031

Rev AB (Reference only)

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<thead>
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<th>Item</th>
<th>Number</th>
<th>Name</th>
<th>Quantity</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>511M104017</td>
<td>Molded handle</td>
<td>1</td>
</tr>
<tr>
<td>B</td>
<td>521M064005</td>
<td>Phillips pan head screw</td>
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</table>
# Hook assembly - 2874-007-019

Rev AB (Reference only)

<table>
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<th>Item</th>
<th>Number</th>
<th>Name</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>A</td>
<td>515M064013</td>
<td>Hook</td>
<td>2</td>
</tr>
<tr>
<td>B</td>
<td>515M064014</td>
<td>Hook stopper</td>
<td>2</td>
</tr>
<tr>
<td>C</td>
<td>511M064104</td>
<td>Hook clutch gear A</td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td>511M064105</td>
<td>Hook clutch gear B</td>
<td>2</td>
</tr>
<tr>
<td>E</td>
<td>523M064001</td>
<td>Hook spring</td>
<td>2</td>
</tr>
<tr>
<td>F</td>
<td>511M104016</td>
<td>Hook back cover</td>
<td>1</td>
</tr>
<tr>
<td>G</td>
<td>521M064005</td>
<td>Internal screw</td>
<td>7</td>
</tr>
<tr>
<td>H</td>
<td>622M104003</td>
<td>Label, hook back cover</td>
<td>1</td>
</tr>
</tbody>
</table>
Side fitting service part - 2863-007-009

Rev AA (Reference only)
Membrane keypad assembly - 2863-007-002

Rev AA (Reference only)
Compressor assembly - 2863-007-003

Rev AA (Reference only)

<table>
<thead>
<tr>
<th>Item</th>
<th>Number</th>
<th>Name</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2863-007-003</td>
<td>Compressor subassembly</td>
<td>1</td>
</tr>
<tr>
<td>B</td>
<td>521M064026</td>
<td>Screw</td>
<td>4</td>
</tr>
<tr>
<td>C</td>
<td>511M092013</td>
<td>Nylon wire tie (not shown)</td>
<td>6</td>
</tr>
</tbody>
</table>
Power supply assembly - 2874-007-024

Rev AB (Reference only)

<table>
<thead>
<tr>
<th>Item</th>
<th>Number</th>
<th>Name</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>521096B07</td>
<td>Mounting screw</td>
<td>4</td>
</tr>
<tr>
<td>B</td>
<td>521M064024</td>
<td>Isolation paper</td>
<td>1</td>
</tr>
<tr>
<td>C</td>
<td>553M104003</td>
<td>Power supply</td>
<td>1</td>
</tr>
<tr>
<td>D</td>
<td>521M064050</td>
<td>Screw gasket</td>
<td>8</td>
</tr>
<tr>
<td>E</td>
<td>555M064028</td>
<td>Cable (not shown)</td>
<td>1</td>
</tr>
<tr>
<td>F</td>
<td>511M092013</td>
<td>Cable nylon tie (not shown)</td>
<td>4</td>
</tr>
</tbody>
</table>
## Power inlet - 2874-007-032

Rev AA (Reference only)

<table>
<thead>
<tr>
<th>Item</th>
<th>Number</th>
<th>Name</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4M01M104086</td>
<td>IEC power inlet socket</td>
<td>1</td>
</tr>
</tbody>
</table>
PCBA assembly - 2863-007-004

Rev AB (Reference only)

<table>
<thead>
<tr>
<th>Item</th>
<th>Number</th>
<th>Name</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>511M104013</td>
<td>PCBA subassembly</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>reference only</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>521096S05</td>
<td>Screw</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>521M064051</td>
<td>Screw</td>
<td>5</td>
</tr>
<tr>
<td>C</td>
<td>511M104013</td>
<td>Molded PCB holder</td>
<td>1</td>
</tr>
</tbody>
</table>
Muffler - 2863-007-005

Rev AB (Reference only)

<table>
<thead>
<tr>
<th>Item</th>
<th>Number</th>
<th>Name</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>521M064025</td>
<td>Screw</td>
<td>2</td>
</tr>
<tr>
<td>B</td>
<td>Reference only</td>
<td>Muffler subassembly</td>
<td>1</td>
</tr>
</tbody>
</table>
EMC information

**WARNING** - 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**
- 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.
- This equipment is suitable for use in hospitals except for near active HF surgical equipment and the RF shielded room of an ME system for magnetic resonance imaging, where the intensity of EM disturbances is high.

<table>
<thead>
<tr>
<th>Guidance and manufacturer’s declaration - electromagnetic emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>The 2863 <strong>SPR+</strong> pump is intended for use in the electromagnetic environment specified below. The customer or the user of the 2863 <strong>SPR+</strong> pump should assure that it is used in such an environment.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Emissions test</th>
<th>Compliance</th>
<th>Electromagnetic environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF Emissions CISPR 11</td>
<td>Group 1</td>
<td>The 2863 <strong>AIR+</strong> pump uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.</td>
</tr>
<tr>
<td>RF Emissions CISPR 11</td>
<td>Class A</td>
<td>The 2863 <strong>AIR+</strong> pump is suitable for use in all establishments other than domestic and those directly connected to the public low voltage power supply network that supplies buildings used for domestic purposes.</td>
</tr>
<tr>
<td>Harmonic Emissions IEC 61000-3-2</td>
<td>Class A</td>
<td></td>
</tr>
<tr>
<td>Voltage Fluctuations Flicker Emissions IEC 61000-3-3</td>
<td>Complies</td>
<td></td>
</tr>
</tbody>
</table>

**WARNING**
- 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 **AIR+**, including cables specified by the manufacturer.
- Avoid stacking or placing equipment adjacent with other equipment to prevent improper operation of the products. If such use is necessary, carefully observe stacked or adjacent equipment to make sure that they are operating properly.

<table>
<thead>
<tr>
<th>Recommended separation distances between portable and mobile RF communication equipment and the 2863 <strong>AIR+</strong> pump</th>
</tr>
</thead>
<tbody>
<tr>
<td>The 2863 <strong>AIR+</strong> pump is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the 2863 <strong>AIR+</strong> pump can help prevent electromagnetic interferences by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the 2863 <strong>AIR+</strong> pump as recommended below, according to the maximum output power of the communications equipment.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Band (MHz)</th>
<th>Service</th>
<th>Maximum Power (W)</th>
<th>Minimum Separation Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>380-390</td>
<td>TETRA 400</td>
<td>1.8</td>
<td>0.3</td>
</tr>
<tr>
<td>Frequency Range</td>
<td>Equipment Bands</td>
<td>Recommended Separation Distance</td>
<td>Notes</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------</td>
<td>----------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>430-470</td>
<td>GMRS 460; FRS 460</td>
<td>2.0 m; 0.3 m</td>
<td></td>
</tr>
<tr>
<td>704-787</td>
<td>LTE Band 13, 17</td>
<td>0.2 m; 0.3 m</td>
<td></td>
</tr>
<tr>
<td>800-960</td>
<td>GSM 800/900; TETRA 800; iDEN 820; CDMA 850; LTE Band 5</td>
<td>2.0 m; 0.3 m</td>
<td></td>
</tr>
<tr>
<td>1,700-1,990</td>
<td>GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1, 3, 4, 25; UMTS</td>
<td>2.0 m; 0.3 m</td>
<td></td>
</tr>
<tr>
<td>2,400-2,570</td>
<td>Bluetooth; WLAN; 802.11 b/g/n; RFID 2450; LTE Band 7</td>
<td>2.0 m; 0.3 m</td>
<td></td>
</tr>
<tr>
<td>5,100-5,800</td>
<td>WLAN 802.11 a/n</td>
<td>0.2 m; 0.3 m</td>
<td></td>
</tr>
</tbody>
</table>

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.

### Guidance and manufacturer’s declaration - electromagnetic immunity

The 2863 **AIR+** pump is suitable for use in the electromagnetic environment specified below. The customer or the user of the 2863 **AIR+** pump should assure that it is used in such an environment.

<table>
<thead>
<tr>
<th>Immunity Test</th>
<th>IEC 60601 Test Level</th>
<th>Compliance Level</th>
<th>Electromagnetic Environment-Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrostatic Discharge (ESD)</td>
<td>+8 kV contact, ±15 kV air</td>
<td>+8 kV contact, ±15 kV air</td>
<td>Floors should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.</td>
</tr>
<tr>
<td>Electrostatic fast transient/burst</td>
<td>±2 kV for power supply lines, ±1 kV for input/output lines</td>
<td>±2 kV for power supply lines, ±1 kV for input/output lines</td>
<td>Main power quality should be that of a typical commercial or hospital environment.</td>
</tr>
<tr>
<td>Surge</td>
<td>±1 kV for input/output lines</td>
<td>±1 kV for input/output lines</td>
<td>Main power quality should be that of a typical commercial or hospital environment.</td>
</tr>
<tr>
<td>Voltage dips, voltage variations and short interruptions on power supply input lines</td>
<td>IEC 61000-4-11</td>
<td>0%U&lt;sub&gt;T&lt;/sub&gt; for 0.5 cycle at 0°, 45°, 90°, 135°, 180°, 225°, 270°, and 315°</td>
<td>0%U&lt;sub&gt;T&lt;/sub&gt; for 0.5 cycle at 0°, 45°, 90°, 135°, 180°, 225°, 270°, and 315°</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>0%U&lt;sub&gt;T&lt;/sub&gt; for 1 cycle</td>
<td>0%U&lt;sub&gt;T&lt;/sub&gt; for 1 cycle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0% U&lt;sub&gt;T&lt;/sub&gt; for 250/300 cycles</td>
<td>0% U&lt;sub&gt;T&lt;/sub&gt; for 250/300 cycles</td>
</tr>
</tbody>
</table>

| 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. |

**Note** - U<sub>T</sub> is the a.c. mains voltage before applications of the test level.
### Conducted RF

<table>
<thead>
<tr>
<th>IEC 61000-4-6</th>
<th>3 Vrms</th>
<th>150 kHz to 80 MHz</th>
</tr>
</thead>
</table>

### Radiated RF

<table>
<thead>
<tr>
<th>IEC 61000-4-3</th>
<th>3 V/m</th>
<th>80 MHz to 2.7 GHz</th>
</tr>
</thead>
</table>

Portable and mobile RF communications equipment should be used no closer to any part of the 2863 AIR+ pump, including cables, than the recommended separation distance calculated from the equation appropriate for the frequency of the transmitter.

**Recommended separation distance**

\[
D = \begin{cases} 
(1.2) \sqrt{P} & \text{80 MHz to 800 MHz} \\
(2.3) \sqrt{P} & \text{800 MHz to 2.7 GHz} 
\end{cases}
\]

where \( P \) is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and \( d \) is the recommended separation distance in meters (m).

Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey\(^a\), should be less than the compliance level in each frequency range\(^b\).

Interference may occur in the vicinity of equipment marked with the following symbol:

\[\text{Warning symbol}\]

**Note**

- At 80 MHz and 800 MHz, the higher frequency range applies.
- 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.

\(^a\)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 2863 AIR+ pump is used exceeds the applicable RF compliance level above, the 2863 AIR+ pump should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the 2863 AIR+ pump.

\(^b\)Over the frequency range 150 kHz to 80 MHz, field strengths are less than 3 Vrms.
Recycling passport

553M104003

Rev A

<table>
<thead>
<tr>
<th>Item</th>
<th>Recyclable part number</th>
<th>Material code</th>
<th>Important information</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>553M104003</td>
<td>Circuit board with surface &gt; 10cm²</td>
<td>SMPS power supply</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Capacitors &gt; 25mm in height or diameter</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Shown 511M064098 External cable Power cord, type B, 1 meter 1
## Item List

<table>
<thead>
<tr>
<th>Item</th>
<th>Recyclable part number</th>
<th>Material code</th>
<th>Important information</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shown</td>
<td>511M064099</td>
<td>External cable</td>
<td>Power cord, type B, 5 meter</td>
<td>1</td>
</tr>
</tbody>
</table>