














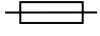


AIR+™ Pump

Maintenance Manual

REF 2863



Symbols

	Refer to instruction manual/booklet
	Operating instructions/Consult instructions for use
	General warning
	Caution
	Cardiopulmonary resuscitation (CPR)
	Catalogue number
	Serial number
	Manufacturer
	Mass of product
	In accordance with European Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE) as amended, this symbol indicates that the product should be collected separately for recycling. Do not dispose of as unsorted municipal waste. Contact local distributor for disposal information. Ensure infected equipment is decontaminated prior to recycling.
	Indicates that this product does not contain toxic and hazardous substances or elements above the maximum concentration of all 6 values defined by the China RoHS legislation. This product is an environmentally friendly product which can be recycled and reused.
	Class II electrical equipment: equipment in which protection against electric shock does not rely on basic insulation only, but in which additional safety precautions such as double insulation or reinforced insulation are provided, there being no provisions for protective earthing or reliance upon installation conditions.
	Type B applied part – SPR Plus ® 2790-100-000 and IsoFlex LAL ® Support Surface 2860
	Fuse
	Medical Equipment Classified by Underwriters Laboratories Inc. With Respect to Electric Shock, Fire, and Mechanical Hazards Only in Accordance with ANSI/AAMI ES60601-1:2012 and CAN/CSA-C22.2 No. 60601-1:14.
IP21	Solids: Protection from touch by fingers and objects greater than 12 mm Liquids: Protection from the fall of vertical water drops
	For US Patents see www.stryker.com/patents






	Keep dry
	Do not stack more than 6 high
	This side up
	Fragile
	Do not use sharp objects to open the package

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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

- Improper usage of the product can cause injury to the patient or operator. Operate the product only as described in this manual.
 - Do not modify the product or any components of the product. Modifying the product can cause unpredictable operation resulting in injury to patient or operator. Modifying the product also voids its warranty.
 - Always use a grounded static strap to prevent static coming into contact with the PCB assembly.
-

Introduction

This manual assists you with the operation or maintenance of your Stryker product. Read this manual before operating or maintaining this product. Set methods and procedures to educate and train your staff on the safe operation or maintenance of this product.

CAUTION

- Improper usage of the product can cause injury to the patient or operator. Operate the product only as described in this manual.
 - Do not modify the product or any components of the product. Modifying the product can cause unpredictable operation resulting in injury to patient or operator. Modifying the product also voids its warranty.
-

Note

- This manual is a permanent part of the product and should remain with the product even if the product is sold.
- Stryker continually seeks advancements in product design and quality. This manual contains the most current product information available at the time of printing. There may be minor discrepancies between your product and this manual. If you have any questions, contact Stryker Customer Service or Technical Support at 1-800-327-0770.

Product description

The Stryker Model 2863 **AIR+**™ Pump is an electric pump for use with Model 2860 **IsoFlex LAL**® support surface or Model 2790-100-000 **SPR Plus**® overlay. This pump provides Low Air Loss (LAL) for **IsoFlex LAL** support surface and continuous air to the **SPR Plus** overlay. LAL provides air flow to help manage microclimate of the skin. The hooks on the back of this product allows you to attach the pump to the footboard of the compatible bed frames.

Intended use

The **AIR+** pump when used with the **IsoFlex LAL** support surface or the **SPR Plus** overlay assists in the prevention and treatment of pressure injuries or pressure ulcers (all stages, Unstageable injury, and Deep tissue injury). We recommend you implement this product in combination with clinical evaluation of risk factors and skin assessments made by a healthcare professional.

This pump is for use in an acute care setting. This may include critical care, step down, progressive care, med/surg, sub-acute care, and post anesthesia care unit (PACU), or other locations as prescribed by a physician. Operators of this pump include healthcare professionals (such as caregivers, nurses, physicians, patient transporters, and other healthcare providers).

This product is not intended to be sterile, does not include a measuring function, and is not for use in a home healthcare environment.

Expected service life

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

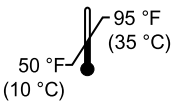
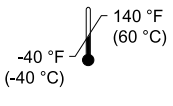
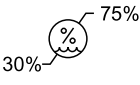
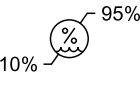
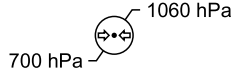
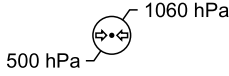
Contraindications

None known.

Specifications

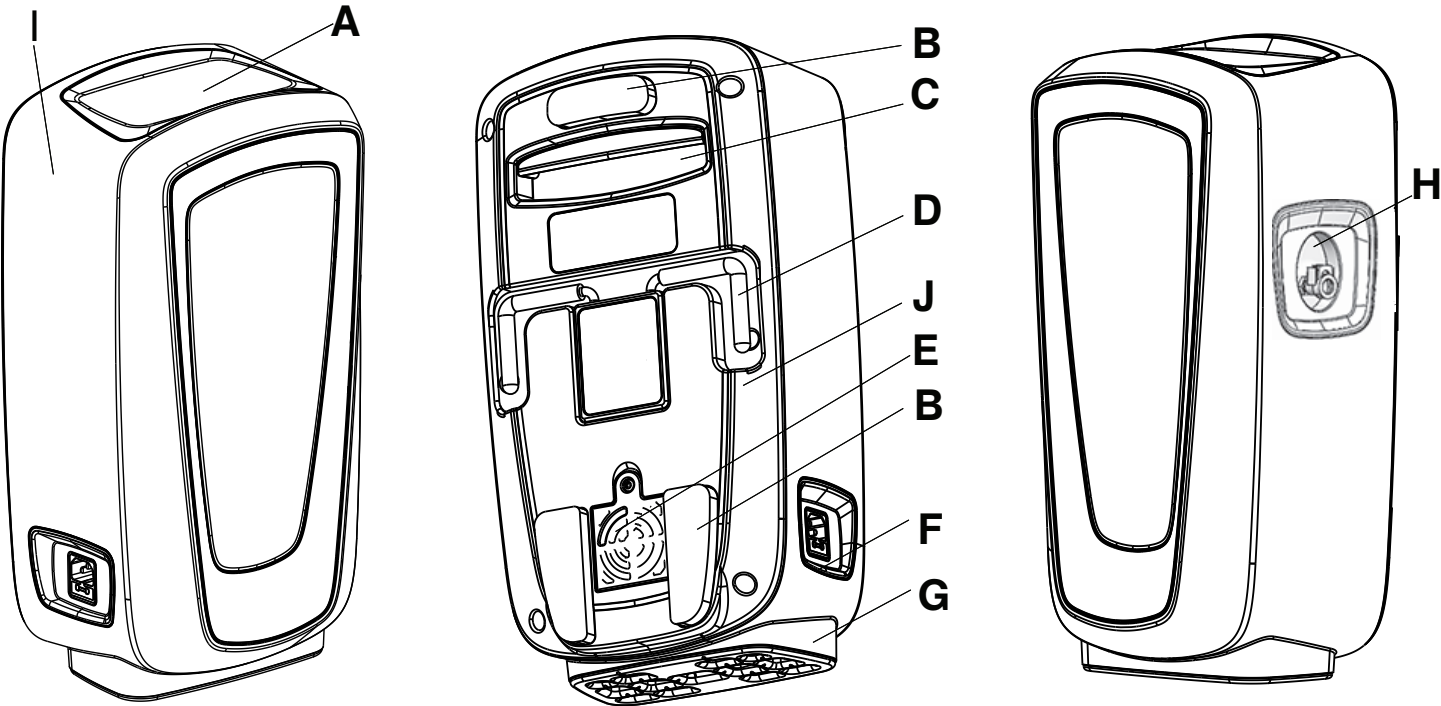
Height		17.25 in.	43.8 cm
Width		9.25 in.	23.5 cm
Depth		7.25 in.	18.4 cm
Weight		13.2 lb	6.0 kg
Interface control panel		LED	
Input voltage		120 V	
Electric current		0.6 A	
Input frequency		60 Hz	
Peak noise level		<50 dba	
Mode of operation		Continuous	
Power cord	Short	3.2 ft	1 m
	Long	16.4 ft	5 m
Compliance		IEC 60601-1 3.1 Edition; RoHS Directive 2002/95/EC Reach; IEC 60601-1-8:2012, IEC 60601-1-2:2014; CAN/ CSA C22.2 No. 601.1	
Compatible with bed frame		3002 S3™, 3005 S3™, InTouch®, Spirit Select™	

Environmental conditions

Environmental conditions	Operation	Storage and transportation
Ambient temperature		
Relative humidity (non-condensing)		
Atmospheric pressure		

Stryker reserves the right to change specifications without notice.

Product illustration



A	User interface
B	Bumpers
C	Transport handle
D	Hooks
E	HEPA filter

F	Power inlet
G	Anti-vibration foot
H	Hose port
I	Back pump housing
J	Front pump housing

Contact information

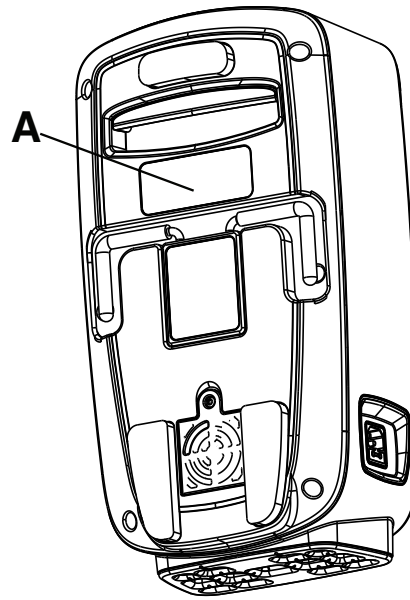
Contact Stryker Customer Service or Technical Support at: 1-800-327-0770.

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



Date of manufacture

The year of manufacture is the first four digits of the serial number.

Service

Powering OFF the pump

Press the power button and hold for 2 seconds to power OFF the pump.

Fuse replacement

Fuse: F3.5AH250V

Tools required:

- Flat head screwdriver

Procedure:

1. Unplug the pump from AC power.
2. Unplug the mattress tubing from the pump.
3. Place the pump front down on a work surface.
4. Using a flat head screwdriver, remove and save the fuse cover located below the power inlet.
5. Remove and dispose of the fuse.
6. Reverse the steps to reinstall.
7. Verify proper operation before you return the product to service.

Bumper replacement

Tools required:

- Pick

Procedure:

1. Unplug the pump from AC power.
2. Unplug the mattress tubing from the pump.
3. Place the pump with the front pump housing side down on a work surface.
4. Using a pick, remove and discard the bumper from the back pump housing (*Bumper pack 2874-007-020 (page 20)*).
5. Place and press the bumper in place.

Foot replacement

Tools required:

- T20 Torx driver
- 6 mm socket
- Ratchet

Procedure:

1. Unplug the pump from AC power.
2. Unplug the mattress tubing from the pump.
3. Place the pump front 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 23)).
10. Verify proper operation before you return the product to service.

Filter replacement

Tools required:

- T20 Torx driver

Procedure:

1. Unplug the pump from AC power.
2. Unplug the mattress tubing from the pump.
3. Place the pump front down on a work surface.
4. Using a T20 Torx driver, remove and save the screw that secures the filter access door.
5. Remove and save the access door.
6. Remove and dispose of the filter.
7. Reverse the steps to reinstall (*Air filter guard 2874-007-027* (page 21)).
8. 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 pump from AC power.
2. Unplug the mattress tubing from the pump.
3. Place the pump front down on a work surface.
4. Using a T20 Torx driver, remove and save the six screws that secure the back pump housing to the front pump housing.
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 and save the five screws that secure the back board to the back pump housing.
8. Remove and save the back board.
9. Using a #2 Phillips screwdriver, remove and save the four screws that secure the handles to the back pump housing.
10. Remove and discard the handle.
11. Reverse the steps to reinstall (*Handle assembly 2874-007-031* (page 24)).
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 pump from AC power.
2. Unplug the mattress tubing from the pump.
3. Place the pump front down on a work surface.
4. Using a pick, remove and discard the information label on the hook assembly.
5. Using a #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 and save the six screws that secure the back pump housing to the front pump housing.
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 #2 Phillips screwdriver, remove and save the four Phillips screws and washers that secure the power supply to the main frame.
11. Remove the power supply to the side and fish paper.
12. Using a #2 Phillips screwdriver, remove and save the four screws that secure the pump frame to the main frame and set aside.
13. Using a #2 Phillips screwdriver remove and save the six screws that secure the hook assembly to the back pump housing.
14. Remove and discard the hook assembly.
15. Reverse the steps to reinstall (*Hook assembly 2874-007-019* (page 25)).
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 pump from AC power.
2. Unplug the mattress tubing from the pump.
3. Place the pump front down on a work surface.
4. Using a T20 Torx driver, remove and save the six screws that secure the back pump housing to the front pump housing.
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 and save the three screws that secure the board to the screen.
10. Remove the PCB assembly.
11. Grasp the air hose and pull out from the mattress 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 15).
15. 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 pump from AC power.
2. Unplug the mattress tubing from the pump.
3. Place the pump front down on a work surface.
4. Using a T20 Torx driver, remove and save the six screws that secure the back pump housing to the front pump housing.
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 29)).
12. Run and pass the *Testing functionality* (page 15).
13. Verify proper operation before you return the product to service.

Power inlet replacement

Tools required:

- T20 Torx driver
- Flat blade screwdriver

Procedure:

1. Unplug the pump from AC power.
2. Unplug the mattress tubing from the pump.
3. Place the pump front down on a work surface.
4. Using a T20 Torx driver, remove and save the six screws that secure the back pump housing to the front pump housing.
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 flat blade 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 15).
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 pump from AC power.
2. Unplug the mattress tubing from the pump.
3. Place the pump front down on a work surface.
4. Using a T20 Torx driver, remove and save the six screws that secure the back pump housing to the front pump housing.
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 PCBA assembly to the front pump housing.
11. Unlock the keypad ribbon connector and remove the ribbon cable from the PCBA assembly.
12. Reverse the steps to reinstall (*PCBA assembly 2863-007-004* (page 31)).
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 pump from AC power.
2. Unplug the mattress tubing from the pump.
3. Place the pump front down on a work surface.
4. Using a T20 Torx driver, remove and save the six screws that secure the back pump housing to the front pump housing.
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 pump from AC power.
2. Unplug the mattress tubing from the pump.
3. Place the pump front down on a work surface.
4. Using a T20 Torx driver, remove and save the six screws that secure the back pump housing to the front pump housing.
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 and save the screw that secures the pump cable p-clamp to the main frame. Remove and save the p-clamp.
 11. Using a T20 Torx driver, remove and save the four screws that secure the pump frame to the main frame.
 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 15).
 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 pump from AC power.
2. Unplug the mattress tubing from the pump.
3. Place the pump front down on a work surface.
4. Using a T20 Torx driver, remove and save the six screws that secure the back pump housing to the front pump housing.
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 and save the two mounting screws that secure the muffler to the back support plate.
9. Reverse the steps to reinstall (*Muffler 2863-007-005* (page 32)).
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.

Note

- 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.
- Remove product from service before you perform preventive maintenance.
- 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
- _____ Hooks that hang the pump on the bed frame are not damaged
- _____ Check for secure hose connections
- _____ User interface is not cracked or damaged
- _____ HEPA filter (replace each year)

Product serial number:
Completed by:
Date:

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 hospital-grade 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

Problem	Screen	Cause	Recommended action
Power loss, product does not turn ON	 The screen displays the Stryker logo at the top. Below it, there are two main sections: 'SPRplus' on the left and 'IsoFlex LAL' on the right. Each section has an up arrow and a down arrow. On the right side of the screen, there is a vertical scale with values 30, 27, 24, 21, 18, and 15. At the bottom, there is a power button icon and a lock icon.	Power cord not seated, power cord unplugged from outlet, or possible internal damage	Make sure that the power cord is plugged into the product and the outlet.
Button not responsive	 The screen displays the Stryker logo at the top. Below it, there are two main sections: 'SPRplus' on the left and 'IsoFlex LAL' on the right. Each section has an up arrow and a down arrow. On the right side of the screen, there is a vertical scale with values 30, 27, 24, 21, 18, and 15. At the bottom, there is a power button icon and a lock icon.	Lock is ON	Press and hold the lock button for 2 seconds to turn lock OFF.
Alarm icon is ON	 The screen displays the Stryker logo at the top. Below it, there are two main sections: 'SPRplus' on the left and 'IsoFlex LAL' on the right. Each section has an up arrow and a down arrow. On the right side of the screen, there is a vertical scale with values 30, 27, 24, 21, 18, and 15. At the bottom, there is a power button icon and a lock icon.	Pressure alert	Check air hose for kink. Check the hose for connection.
		Mode selected does not match the connected product. For example, if you selected SPRplus mode but you are connected to an IsoFlex LAL support surface.	Make sure that you are connected to the correct product for the mode selected.
		Mode or pressure setting changed	Wait for the pressure to stabilize. The error will clear when the pump reaches the new target pressure. Power cycle the unit. If not resolved, call service.

Software version location

You can find the software version (B) on the circuit board (Figure 1).

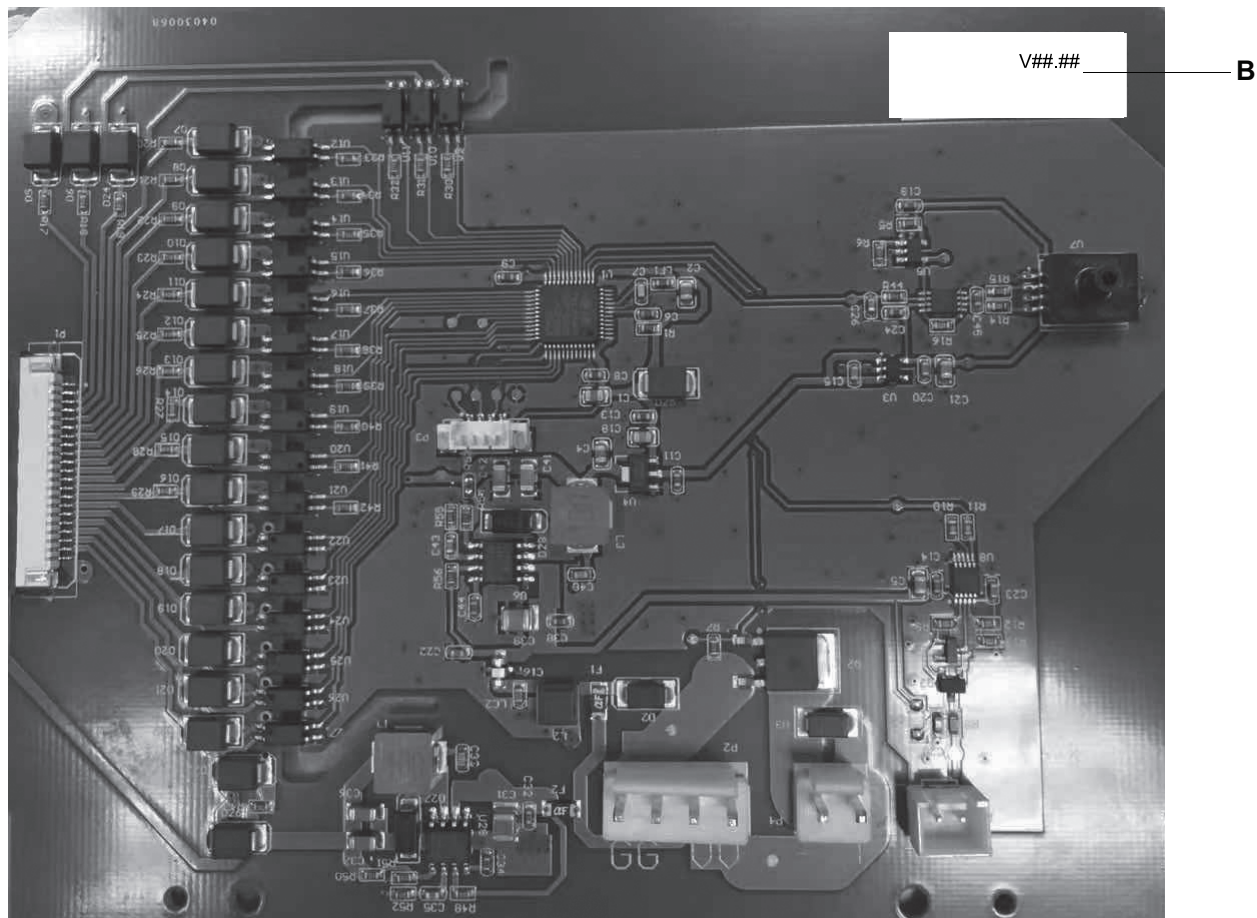


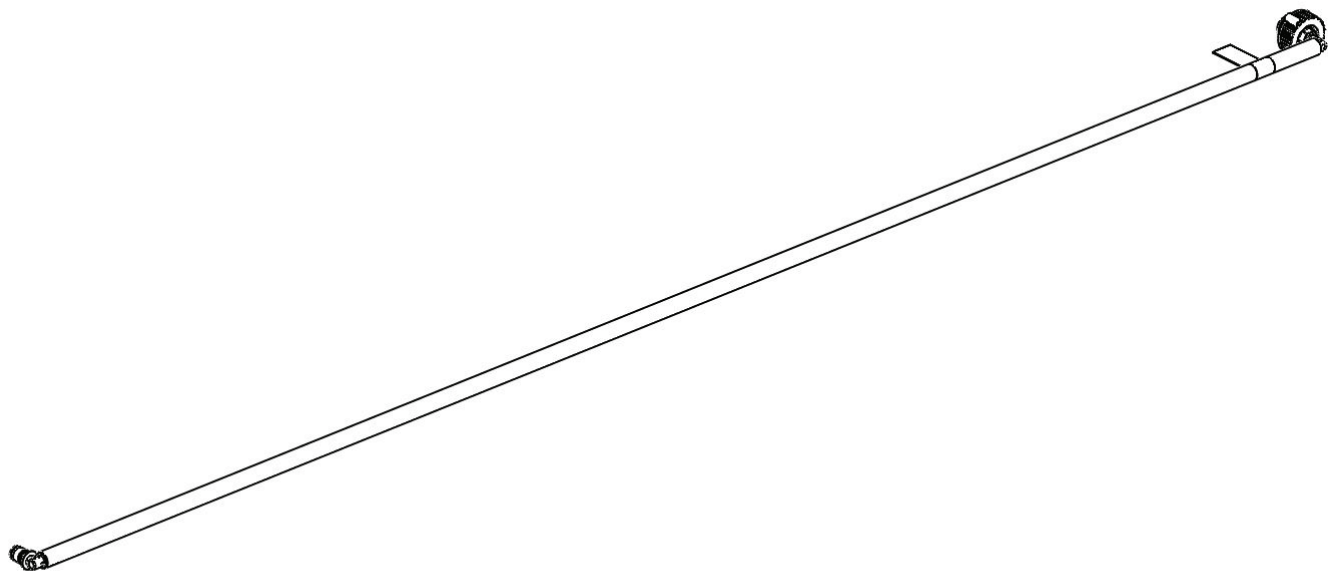
Figure 1 – Software version location on circuit board

Replacement parts

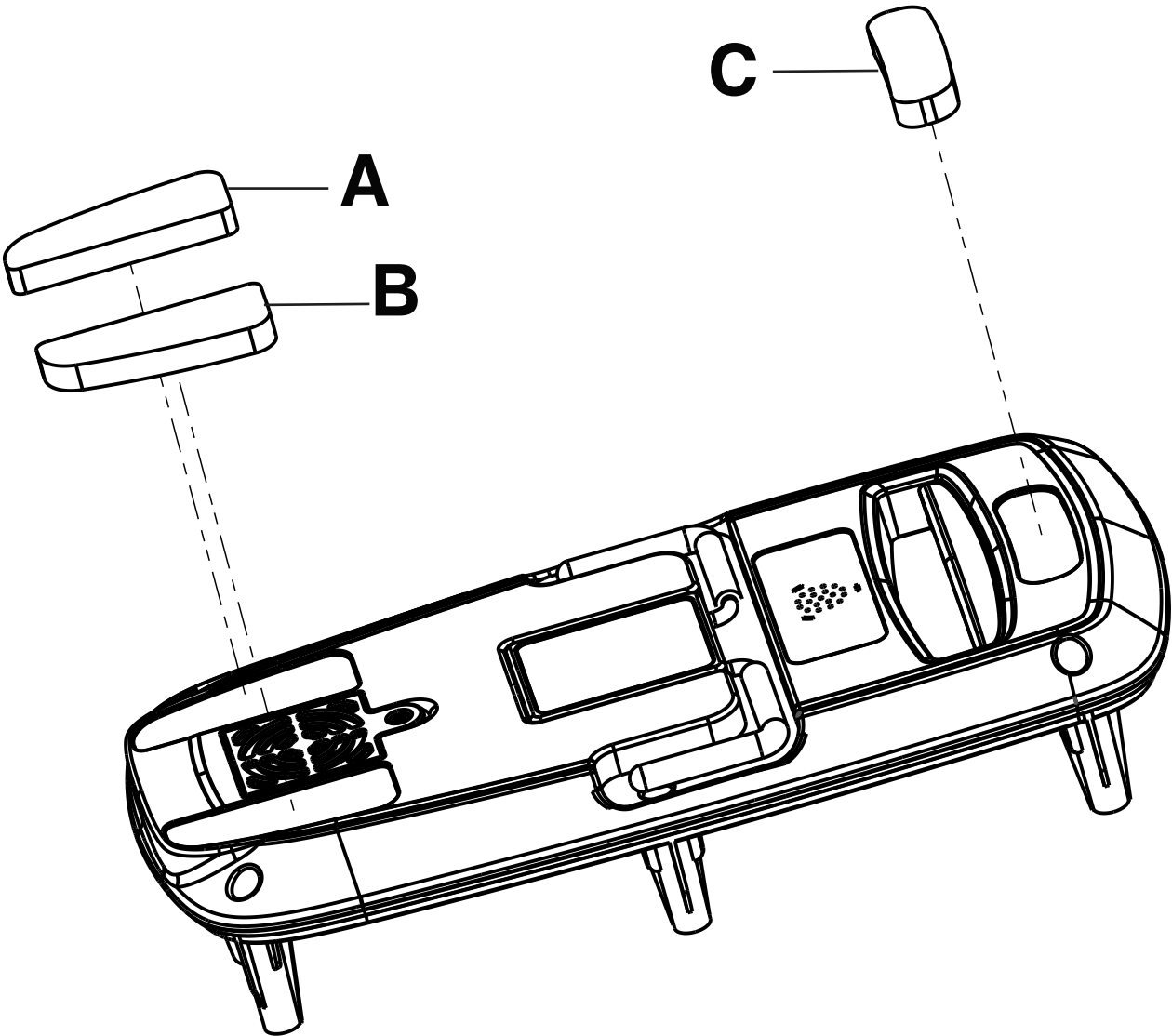
These parts are currently available for purchase. Call Stryker Customer Service: 1-800-327-0770 for availability and pricing.

Part	Number
Power cord, type B, 1 meter	2874-007-001
Power cord, type B, 5 meter	2874-007-002
Internal hose lengths	2863-007-007
Wire harness	2874-007-035
Fuse	2874-007-021

Mattress hose assembly 2863-007-006

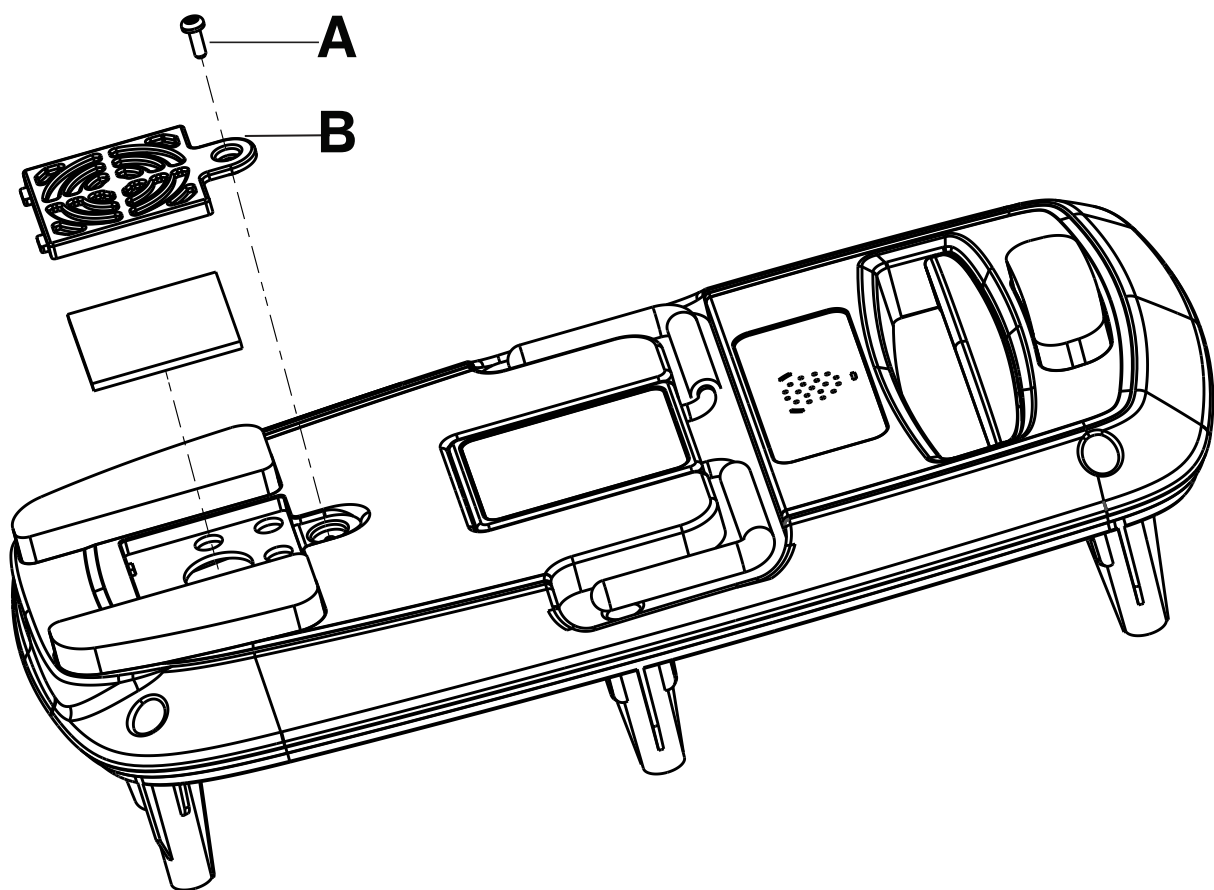


Bumper pack 2874-007-020



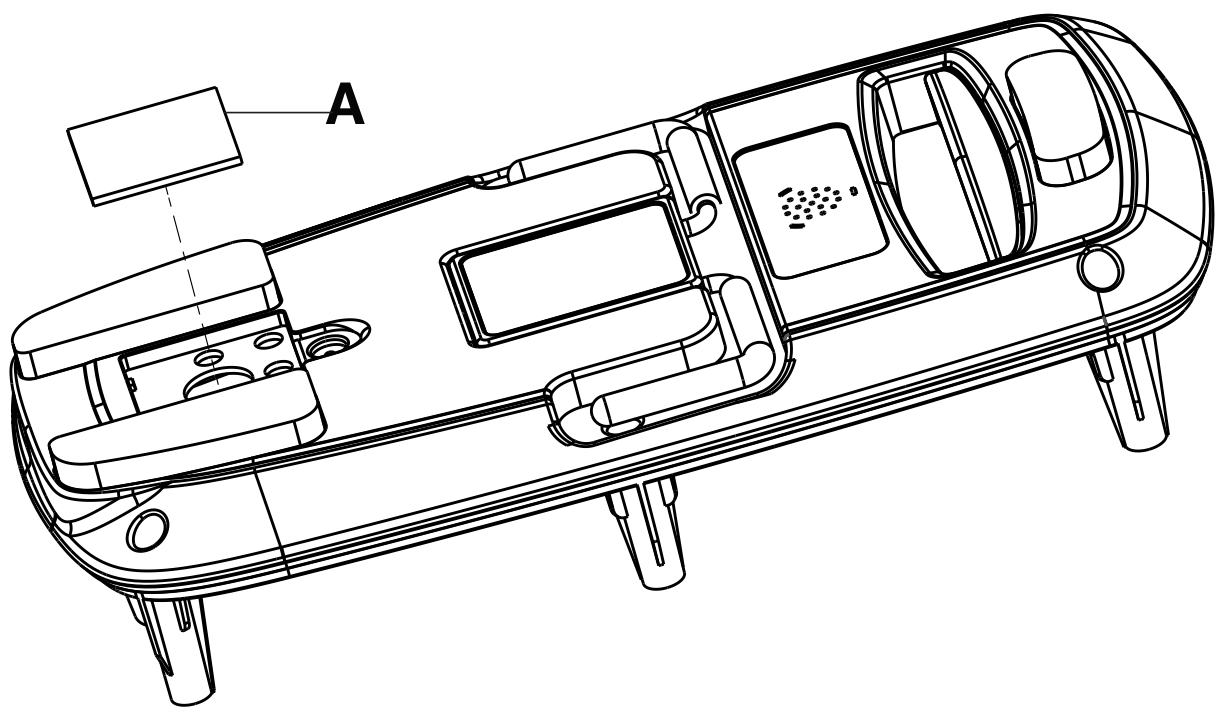
Item	Number	Name	Quantity
A	517M104004	Bumper left bottom	1
B	517M104005	Bumper right bottom	1
C	517M104006	Bumper top	1

Air filter guard 2874-007-027



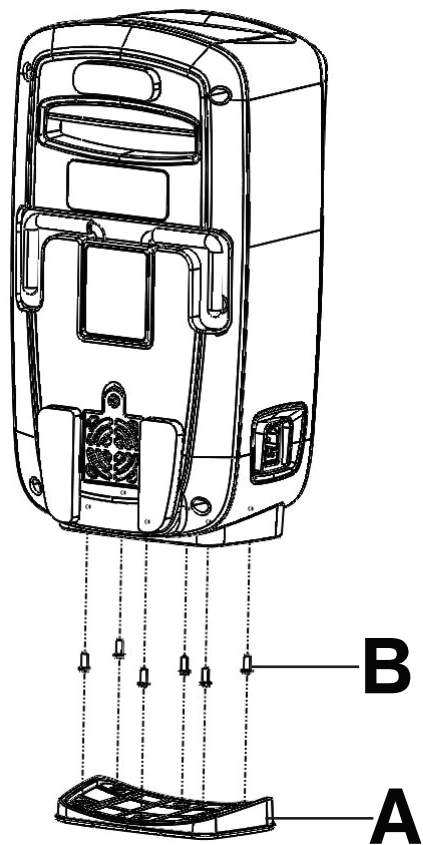
Item	Number	Name	Quantity
A	511M104015	Molded air filter guard	1
B	521M064029	Screw	1

HEPA filter 2874-007-026



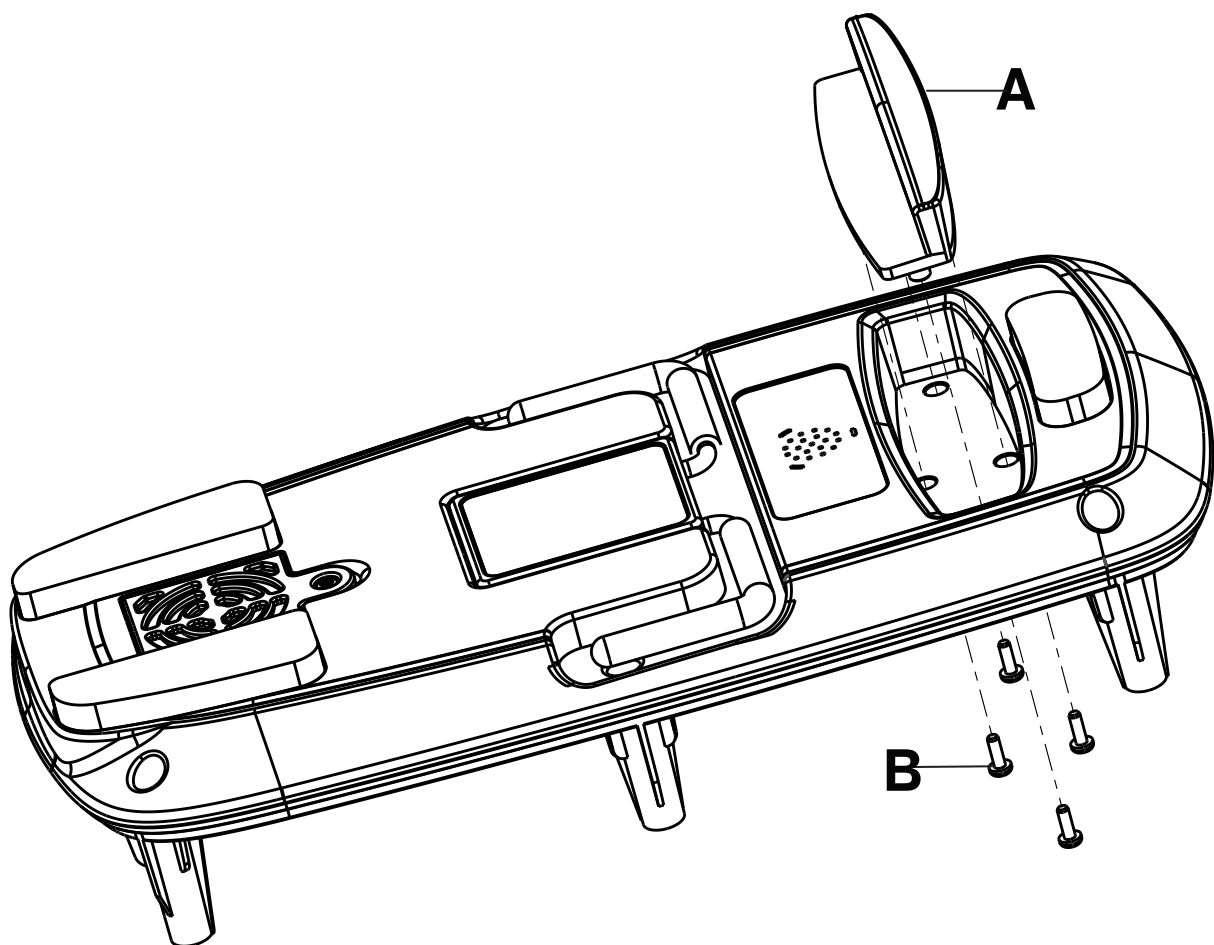
Item	Number	Name	Quantity
A	517M104015	HEPA filter	1

Pump housing rubber foot assembly 2874-007-022



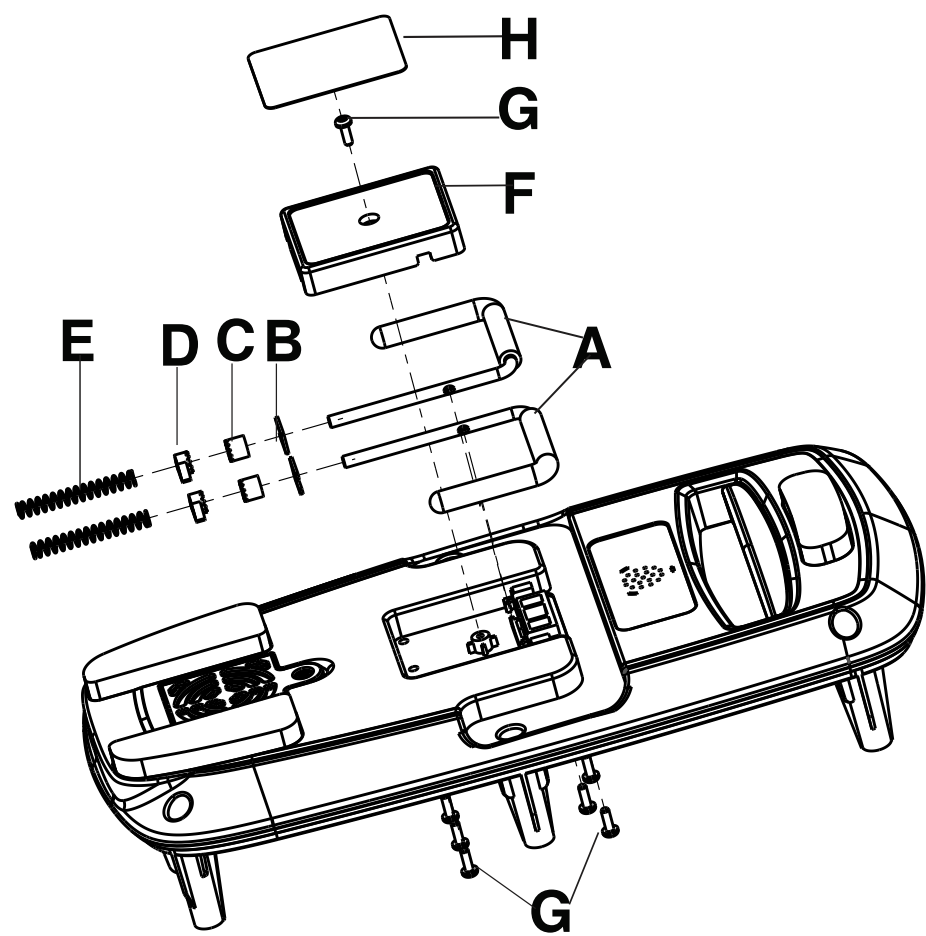
Item	Number	Name	Quantity
A	517M104001	Molded rubber foot	1
B	521096N01	Nut fasteners	6

Handle assembly 2874-007-031



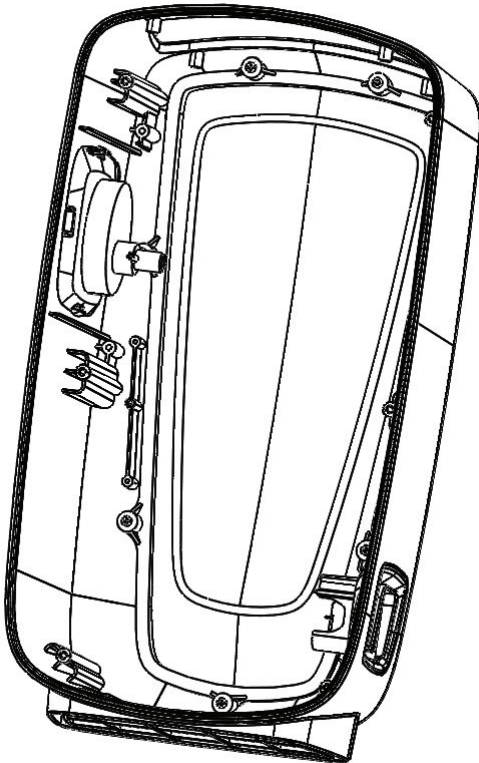
Item	Number	Name	Quantity
A	511M104017	Molded handle	1
B	521M064005	Screws	4

Hook assembly 2874-007-019

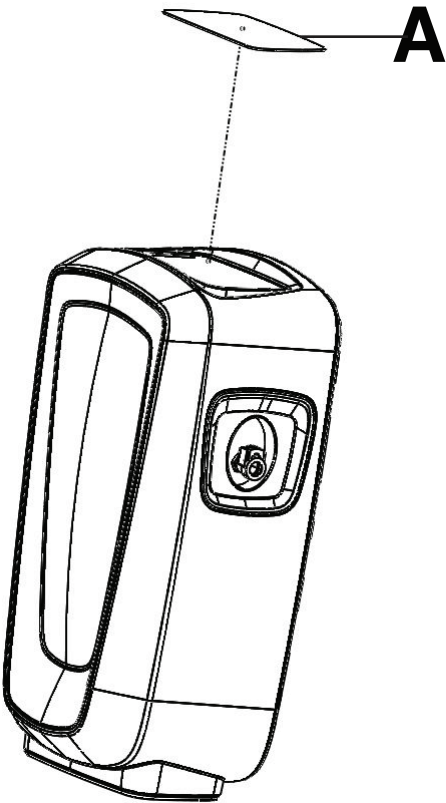


Item	Number	Name	Quantity
A	515M064013	Hook	2
B	515M064014	Hook stopper	2
C	511M064104	Hook clutch gear A	2
D	511M064105	Hook clutch gear B	2
E	523M064001	Hook spring	2
F	511M104016	Hook back cover	1
G	521M064005	Internal screws	7
H	622M104003	Hook, back cover label	1

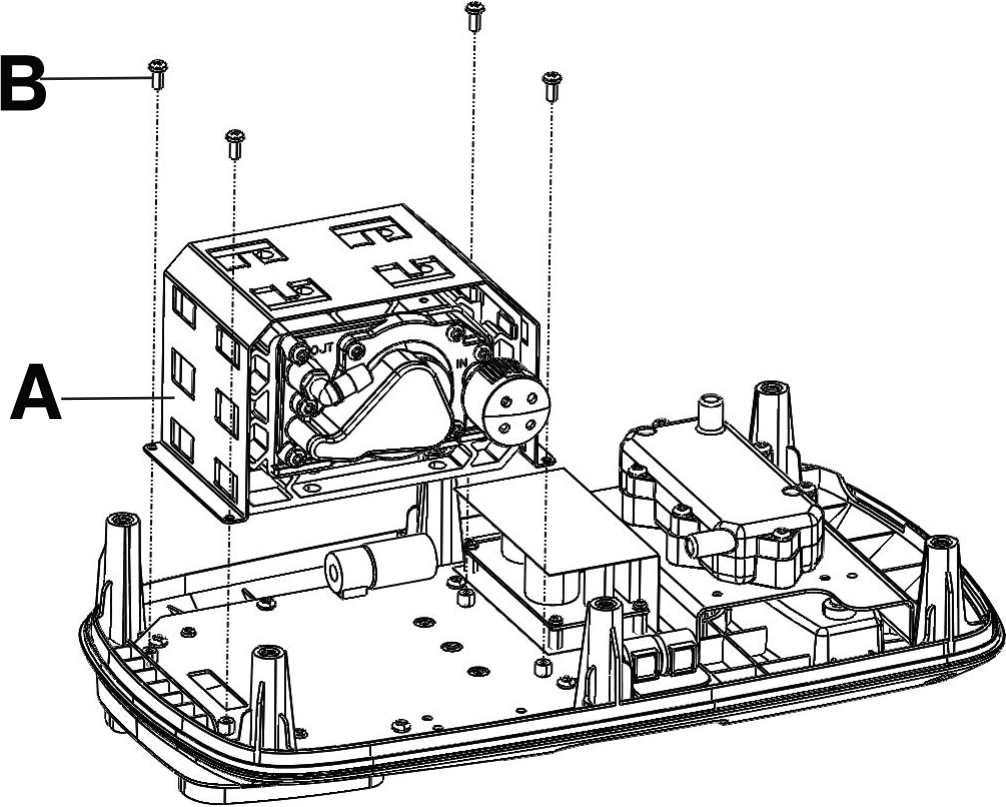
Pump housing assembly 2863-007-001



Membrane keypad assembly 2863-007-002

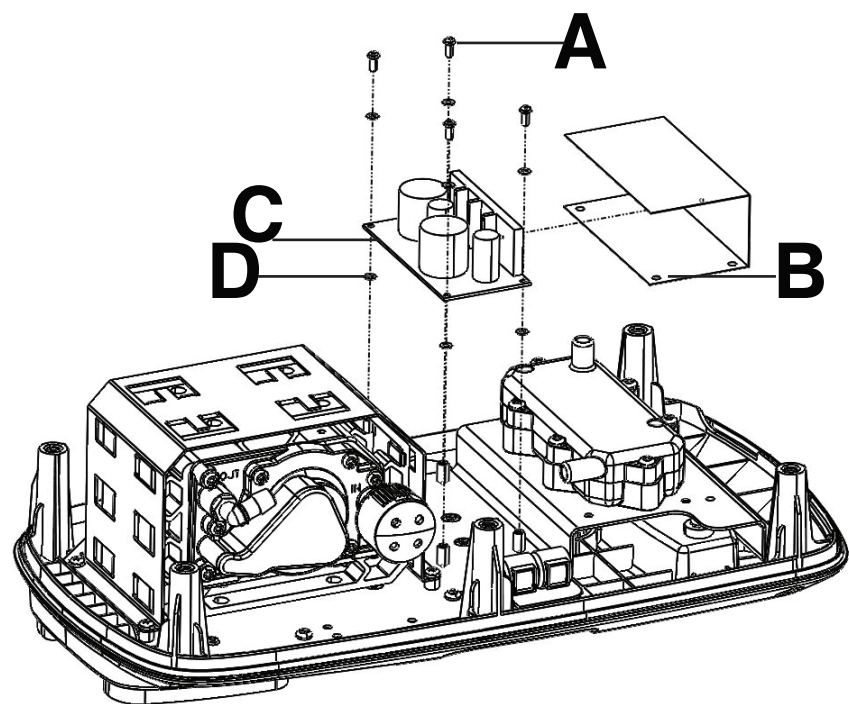


Compressor assembly 2863-007-003



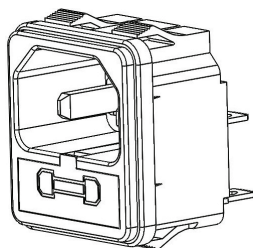
Item	Number	Name	Quantity
A	2863-007-003	Compressor subassembly	1
B	521M064026	Screws	4
C	511M092013	Nylon wire tie (not shown)	6

Power supply assembly 2874-007-024

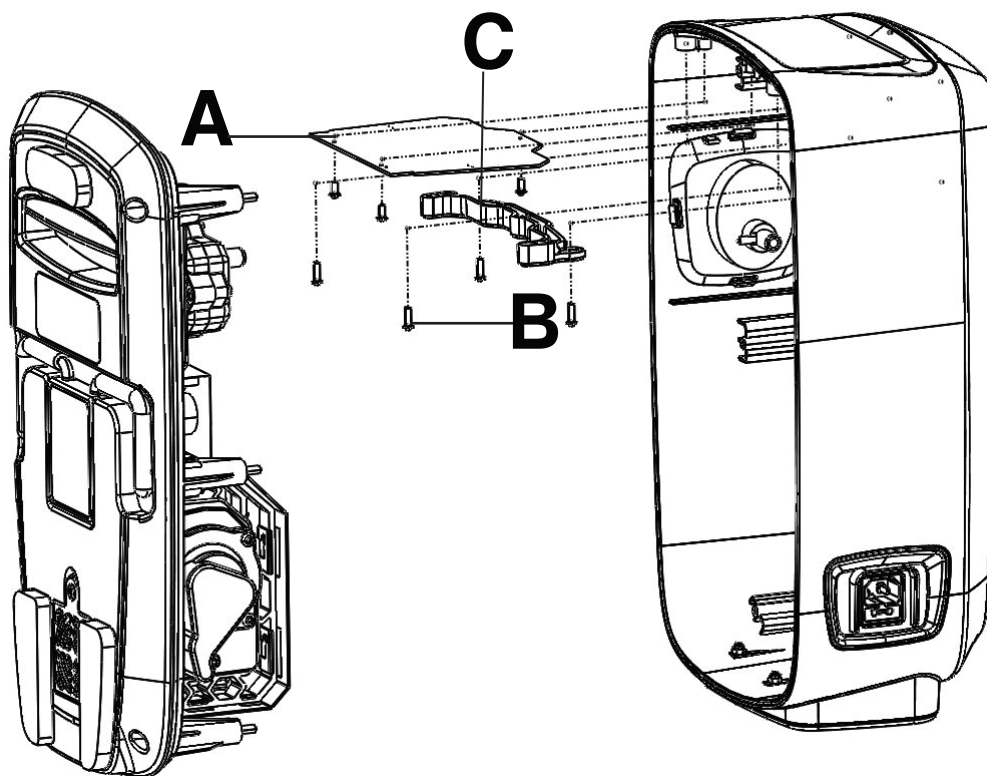


Item	Number	Name	Quantity
A	521096B07	Mounting screws	4
B	521M064024	Isolation paper	1
C	553M104003	Power supply	1
D	521M064050	Screw gasket	8
E	555M064028	Cable (not shown)	1
F	511M092013	Cable nylon tie (not shown)	4

Power inlet 2874-007-032

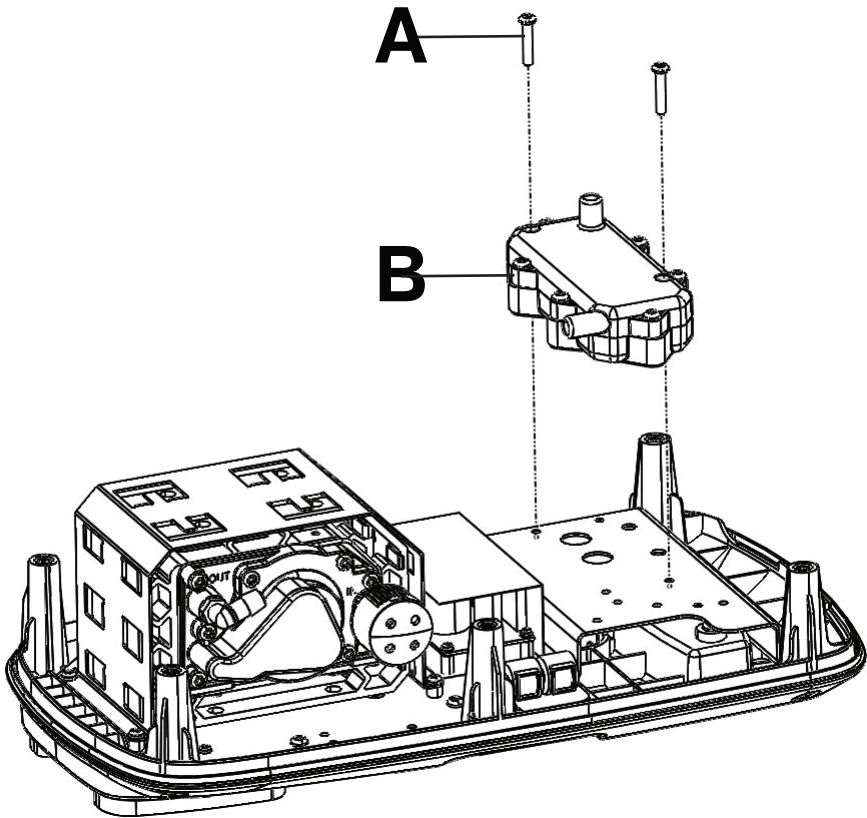


PCBA assembly 2863-007-004



Item	Number	Name	Quantity
A	Reference only	PCBA subassembly	1
B	521096S05 / 521M064051	Screws	4 / 5
C	511M104013	Molded PCB holder	1

Muffler 2863-007-005



Item	Number	Name	Quantity
A	521M064025	Screws	2
B	Reference only	Muffler subassembly	1

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.

Guidance and manufacturer's declaration - electromagnetic emissions		
The 2863 SPR+ pump is intended for use in the electromagnetic environment specified below. The customer or the user of the 2863 SPR+ pump should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic environment
RF Emissions CISPR 11	Group 1	The 2863 AIR+ 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.
RF Emissions CISPR 11	Class A	The 2863 AIR+ 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.
Harmonic Emissions IEC 61000-3-2	Class A	
Voltage Fluctuations Flicker Emissions IEC 61000-3-3	Complies	

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.

Recommended separation distances between portable and mobile RF communication equipment and the 2863 AIR+ pump			
The 2863 AIR+ pump is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the 2863 AIR+ pump can help prevent electromagnetic interferences by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the 2863 AIR+ pump as recommended below, according to the maximum output power of the communications equipment.			
Band (MHz)	Service	Maximum Power (W)	Minimum Separation Distance (m)

Recommended separation distances between portable and mobile RF communication equipment and the 2863 AIR+ pump			
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
<p>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.</p> <p>Note - These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.</p>			

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.			
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.
Surge IEC 61000-4-5	± 1 kV for input/output 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			
<p>Voltage dips, voltage variations and short interruptions on power supply input lines</p> <p>IEC 61000-4-11</p>	<p>0%U_T for 0.5 cycle at 0°, 45°, 90°, 135°, 180°, 225°, 270°, and 315°</p> <p>0%U_T for 1 cycle</p> <p>70%U_T (30% dip in U_T) for 25/30 cycles</p> <p>0% U_T for 250/300 cycles</p>	<p>0%U_T for 0.5 cycle at 0°, 45°, 90°, 135°, 180°, 225°, 270°, and 315°</p> <p>0%U_T for 1 cycle</p> <p>70%U_T (30% dip in U_T) for 25/30 cycles</p> <p>0% U_T for 250/300 cycles</p>	<p>Main power quality should be that of a typical commercial or hospital environment. If the user of the 2863 AIR+ pump requires continued operation during power main interruptions, it is recommended that the device be powered from an uninterrupted power supply or a battery.</p>
<p>Power frequency (50/60 Hz) magnetic field</p> <p>IEC 61000-4-8</p>	<p>30 A/m</p>	<p>30 A/m</p>	<p>Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.</p>
<p>Note - U_T is the a.c. mains voltage before applications of the test level.</p>			

<p>Conducted RF IEC 61000- 4-6</p> <p>Radiated RF IEC 61000-4-3</p>	<p>3 Vrms 150 kHz to 80 MHz</p> <p>3 V/m 80 MHz to 2.7 GHz</p>	<p>3 Vrms</p> <p>3 V/m</p>	<p>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.</p> <p>Recommended separation distance</p> <p>$D=(1.2) (\sqrt{P})$ 80 MHz to 800 MHz</p> <p>$D=(2.3) (\sqrt{P})$ 800 MHz to 2.7 GHz</p> <p>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).</p> <p>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.</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> 
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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.

^aField 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.

^bOver the frequency range 150 kHz to 80 MHz, field strengths are less than 3 Vrms.



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