

Stryker Air™ Pump

REF 2861

stryker®

Operation/Maintenance Manual


















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Symbols and Definitions

SYMBOLS

	Warning/Caution - Consult accompanying documentation
	Caution
	Refer to Instruction Manual
	Electrical Safety Mark
	Consult Instructions for Use
	Type BF Applied Part; Applied Part is the Support Surface
	Protective Earth Terminal
IPX4	Protection from Powerful Jets of Water Rating
	Equipment Emits Electromagnetic Energy
	Manufacturer
REF	Model Number
SN	Serial Number
	Date of Manufacture
	Power (ON/STANDBY)
	Lock
	Alarm Indicator
	Operating Mode (IsoFlex _{LAL} or SPR _{Plus})
	SPR _{Plus} Pressure Adjustment (Millimeters of Mercury = mmHg)

Symbols and Definitions

WARNING / CAUTION

The words **WARNING** and **CAUTION** 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 equipment 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.

Introduction

This manual is designed to assist with the operation and maintenance of the **Stryker Air™ Pump** (“Pump”) that is used to power both the Stryker SPR_{Plus}™ Single Patient Use Low Air Loss Overlay System (“SPR_{Plus}”) and IsoFlex_{LAL}™ Support Surface. ⚠ The SPR_{Plus} is only for use in the United States.

Carefully read this entire manual before using or beginning maintenance on the Pump. To ensure safe operation of this equipment, it is recommended that methods and procedures are established for educating and training staff on the safe operation of the Pump.

INTENDED USE OF THE PRODUCT

The Pump is an accessory used with the SPR_{Plus} and IsoFlex_{LAL} Support Surface to assist in the prevention and treatment of pressure ulcers. This therapy is recommended to be used in combination with clinical evaluation of risk factors and skin assessments made by a health care professional. Patients may be excluded due to some medical conditions such as unstabilized spinal cord injuries or other conditions as determined by the facilities professional staff.

This Pump is intended to be used:

- With the Stryker SPR_{Plus} or IsoFlex_{LAL} Support Surface only.
- With the hosing and connector assembly provided (Part Number 2861-001-001).
- In acute care, general hospital care, or other locations as prescribed by a physician.

This product is not intended to be used in a home health care environment.

PRODUCT DESCRIPTION

The Pump provides *Low Air Loss Therapy* and when used in conjunction with SPR_{Plus} or IsoFlex_{LAL} Support Surface assists in the prevention and treatment of pressure ulcers and includes the following features:

- The Pump is a versatile accessory that may be used with either the SPR_{Plus} or the IsoFlex_{LAL} Support Surface.
- Easily attaches to the Footboard of the Bed Frame.
- Incorporates an alarm for detection of hose disconnection from the Pump.
- Designed with a “User-Friendly” Control Panel.


OPERATING PRINCIPLE

The Stryker Air Pump is designed to work with either the IsoFlex_{LAL} (Low Air Loss) mattress or the SPR_{Plus} mattress overlay. When used with the IsoFlex_{LAL} mattress, the Pump provides a continuous flow of air to the mattress for the Low Air Loss feature of the mattress. Air flows inside the mattress to the underside of the cover to remove moisture. The mattress, by itself, provides all the necessary support for the patient. The Pump does not provide support of the patient.

When the Pump is used with the SPR_{Plus} mattress overlay, the Pump provides air for patient support and Low Air Loss. The patient is supported by air pressure in the mattress overlay. The Pump adjusts its air output to obtain the pressure value selected by the user. Small pin holes in the top side of the mattress overlay “leak” air to achieve the Low Air Loss therapy.

Introduction

SPECIFICATIONS

Pump	
Dimensions	Height: 8.5 in / 21.6 cm Width: 8 in / 20.3 cm Depth: 5 in / 12.7 cm
Weight	6 lbs/ 2.7kgs
Input Voltage AC	110 - 127 Volts
Input Frequency	50 - 60 Hz
Current Consumption	0.25 Amps
Power Consumption	< 60 VA
Circuit Protection	Dual Circuit Breakers, 240V, 1.0A
Mode of Operation	Continuous
Protection Against Electrical Shock	Class I, Type BF Applied Part 
Air Output	- 12.5 Liters / Minute @ 30 mmHg - 25 Liters / Minute @ 20 mmHg
Pressure Settings (mmHg)	18 to 30 mmHg in 3 mmHg Increments
Power Cord	3 ft / 0.91m (For Bed Frame Outlet) 15 ft / 4.6m; (For Wall Outlet)
Air Hose	56 in / 142 cm
Air Hose Connection	3/8 Inch Flow Quick Coupling
Packaging	1 Piece per Box
Latex Content	User accessible parts of the Pump are not made with natural rubber latex.
Alarms (See Page 14):	
Sound Pressure Level	63.1 dB(A)
Hose Disconnection Alarm (Low Priority Alarm)	- Indicated after 15 minutes for hose disconnection from Pump (SPR _{Plus} Mode)
Hose Disconnection / High Pressure Alarm (Medium Priority Alarm)	- Indicated after 30 minutes for hose disconnection from Pump (SPR _{Plus} Mode) - Indicated after 30 seconds for excessive Pump pressure
System Alarm (Medium Priority Alarm)	- If system error is detected - Stuck Button
Operating Conditions:	
Ambient Temperature	40 to 90 °F / 5 to 32 °C
Relative Humidity	30 to 75 % Non-Condensing
Atmospheric Pressure	700 to 1060 hPa
Storage and Shipping Conditions:	
Ambient Temperature	-40 to 158 °F / -40 to 70 °C
Relative Humidity	10 to 95 %, Non-Condensing
Atmospheric Pressure	500 to 1060 hPa
Protection Against Harmful Ingress of Liquids:	
Liquid Ingress Protection	IPX4
Product Compliance:	
Medical Equipment	IEC 60601-1 (3 rd Edition) UL 60601-1 CAN/CSA C22.2 No. 60601-1-08
Collateral Standards	Electromagnetic Compatibility IEC 60601-1-2 (See Pages 19-21) Usability IEC 60601-1-6

Stryker reserves the right to change specifications without notice.

Introduction

CONTACT INFORMATION

Contact Stryker Customer Service or Technical Support at: **(800) 327-0770** or **(269) 324-6500**.

Stryker Medical

3800 E. Centre Avenue
Portage, MI 49002
USA

Please have the serial number 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 is located on the back of the Pump, on the rear label.

SERIAL NUMBER FORMAT (8 DIGITS):

Serial Number Example: 15J00234

1	5	J	0	0	2	3	4
Y	Y	M	N	N	N	N	N

Manufacture Date (YY/M): 2015 September
Sequential Number (NNNNN): 00234

Year Legend (YY)	
2015	15
2016	16
2017	17
2018	18
2019	19

Month Legend (M)	
January	A
February	B
March	C
April	D
May	E
June	F
July	G
August	H
September	J
October	K
November	L
December	M

Sequential # Legend (NNNNN)
00001 - 99999

Summary of Safety Precautions

Carefully read and strictly follow the warnings and cautions listed in this section.



WARNING

- Before operating this medical equipment:
 - ✓ Read this manual to understand the operating instructions and safety precautions. Failure to do this could result in patient injury and/or damage to the product.
 - ✓ To avoid the risk of electric shock inspect Pump and power cord for damage. If damage is observed, take the Air Supply Unit out of operation immediately and contact Customer Service. **(See Page 7 for Contact Information).**
 - ✓ Pump is only to be used with the SPR_{Plus} or IsoFlex_{LAL} Support Surface mattresses. Read the User's Manual for the SPR_{Plus} or IsoFlex_{LAL} Support Surface before using it with the Pump.
 - ✓ Entrapment and Falls: Consult the instructions for use of the compatible support surface and overlay for additional cautions and warnings. Failure to do so could result in injury or death.
- Do not modify or change this device. Service should only be completed by qualified personnel. Failure to do so could result in injury and void warranty.
- This equipment radiates radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to other devices in the vicinity (See **Pages 19-21**). However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to other devices, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
 - ✓ Reorient or relocate the receiving device.
 - ✓ Increase the separation between the Pump and other equipment.
 - ✓ Connect the equipment into an outlet on a circuit different from that to which other device(s) are connected.
 - ✓ Consult with Stryker Technical Support for assistance.
- Grounding reliability can only be achieved when the Pump is connected to *Hospital Grade* receptacle. Failure to provide proper grounding could result in a risk of electric shock.
- Do not use multiple socket outlets or extensions.
- Improper use, or handling, of the power cord could result in damage. If damage has occurred to the power cord, remove from use and call qualified maintenance personnel for replacement (See **Page 7**).
- Only use approved *Hospital Grade* power cords. Use of unapproved power cords could result in a risk of fire or electric shock.
- Do not use in the presence of flammable anesthetics, nitrous oxide, or in oxygen-rich environments. Risk of explosion can result.
- Exposure of the Pump to any liquid while it is plugged in could result in a severe electrical hazard.
- Risk of Electric Shock. Do not open or attempt to repair or service the electronic Pump. Repairs and service should only be done by authorized personnel. If the Pump is not functioning properly, or has been damaged, unplug the unit and take it out of service immediately and contact Technical Support. See **Page 7** for contact information.
- There are no batteries in the unit, if power fails the product will not work nor continue air flow.
- If the SPR_{Plus} is not inflating properly, inspect the hose connection to overlay to ensure connection is seated properly.
- To avoid damage to the Pump or potential injury, only trained personnel should open the Pump.
- When hanging the controller on the foot board, ensure the hangers are seated as the hangers are not spring loaded and may come dislodged if not properly hung.

Summary of Safety Precautions (continued)

- Do not spray disinfectant directly on the electrical Pump, or immerse the Pump in any type of liquid. This could result in a severe electrical hazard.
- Initiate deflation of the SPR_{Plus} Overlay before starting CPR. Failure to do so may result in ineffective CPR.
- SPR_{Plus} is a mattress overlay and should not be used as a mattress replacement. Failure to use the SPR_{Plus} on a mattress may result in damage to the overlay or injury to the patient. Refer to SPR_{Plus} Support Surface User's Manual.



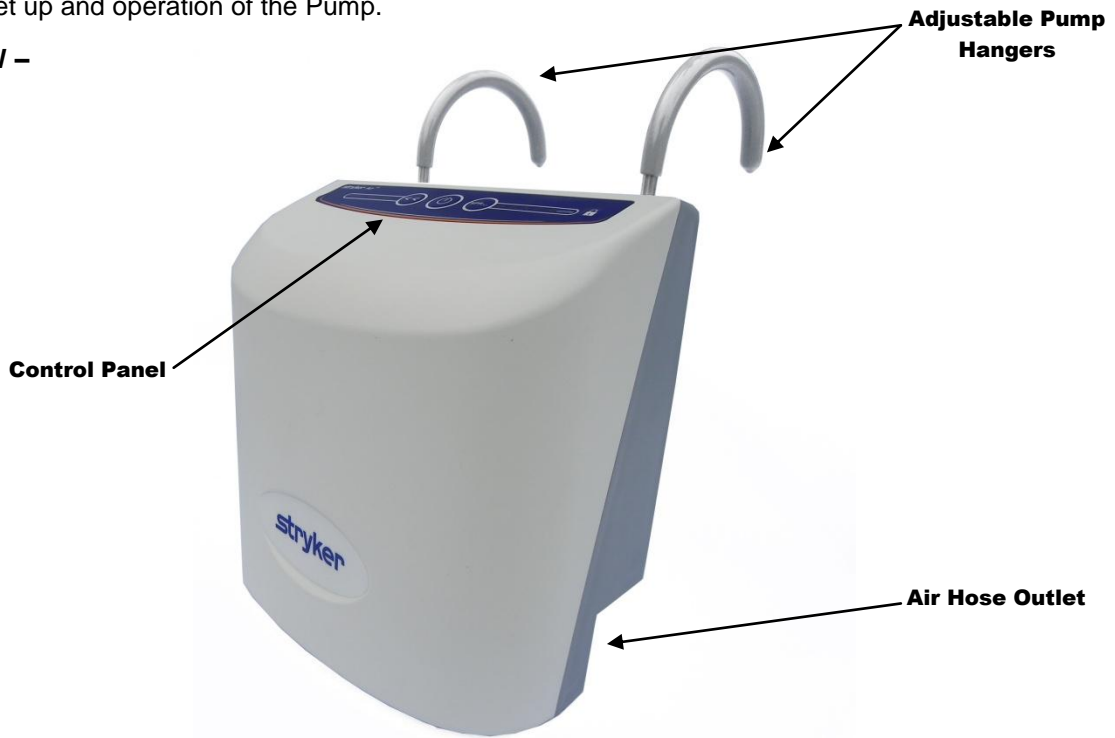
CAUTION

- The Pump is a precision electronic product. Use care when handling or transporting. Dropping, or other sudden impacts, may result in damage to the Pump.
- After exposure to extreme high or low temperatures, allow the Pump to equilibrate for at least one (1) hour before operating.
- The Pump circulates room air during operation. Exposure to smoke may cause the Pump to fail. Therefore, smoking by patients, or visitors, while using this product is contraindicated.
- The power cord to the Pump should be positioned to avoid a tripping hazard and/or damage to the cord. Stryker recommends placing the cord under the bed frame and plugging it into an electrical outlet by the head end of the bed.
- Before plugging in the Pump, check the power cord for electrical hazards, e.g., cuts, exposed wires, worn insulation, etc. If hazards are present, remove from use immediately and contact Customer Service (See **Page 7** for Contact Information).
- To ensure optimal performance electrical-safety testing of your Pump should be performed at least annually. Contact Technical Support, **Page 7**, for service information.
- Disinfect the Pump and Hosing Assembly between patient installations and when servicing, utilizing standard hospital protocol and disinfectants. Failure to disinfect may risk cross-contamination and infection.
- Do not return a Pump for any reason without first contacting Customer Service to obtain authorization.
- Consult your local regulations to properly dispose of electronic equipment

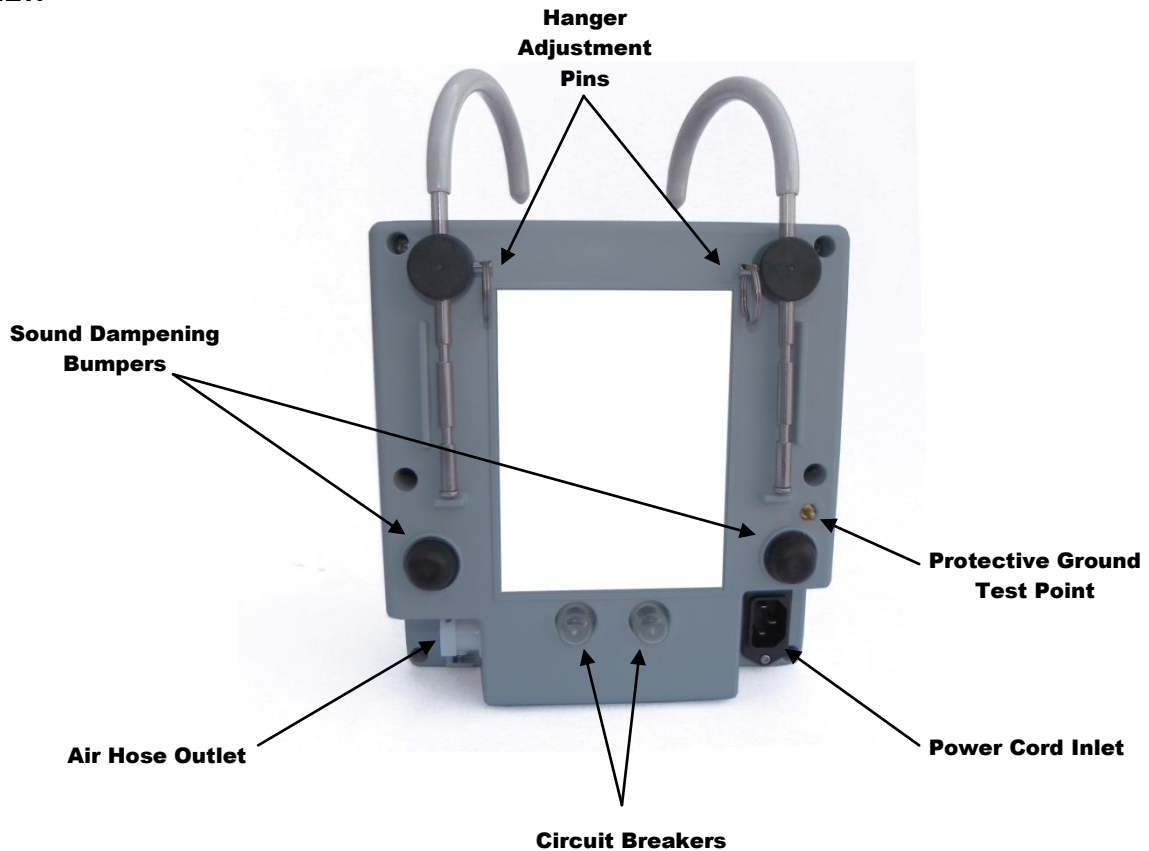
Pump Assembly

The location of features and connections on the Pump are presented below. Please refer to these during installation, set up and operation of the Pump.

FRONT VIEW -



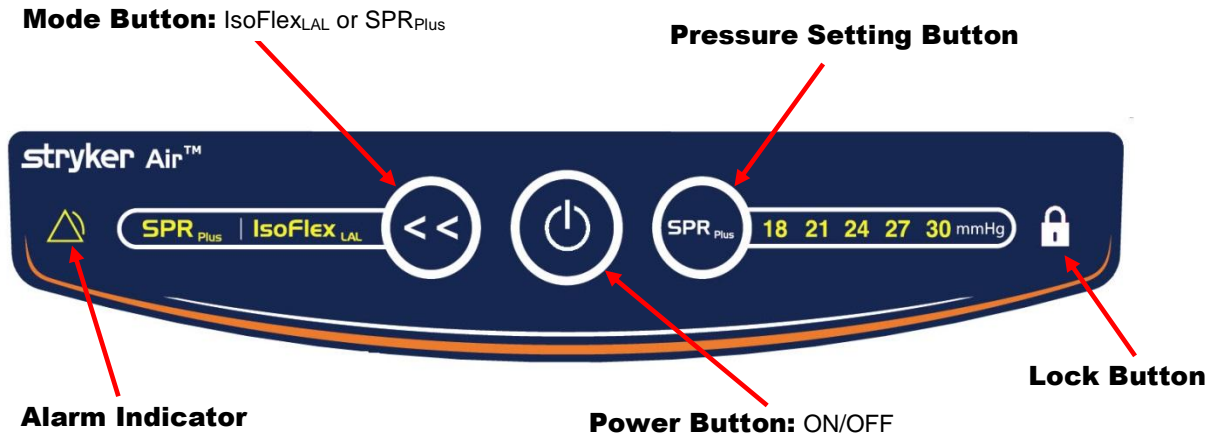
BACK VIEW -



Pump Operation

CONTROL PANEL

The control panel of the Pump is shown in the picture below.



KEY FUNCTIONS:

The keypad has four (4) touch keys as shown in the picture above:

1. **<< Button:** Selects the MODE, either IsoFlex_{LAL} Support Surface or SPR_{Plus} Mode
2. **SPR_{Plus} Button (Pressure Setting):** Adjusts Pressure in 3 mmHg Increments
3. **POWER Button:** Turns unit ON or OFF
4. **Lock Button:** Locks settings

MODE FUNCTION:

Pressing the << Key will toggle between the IsoFlex_{LAL} Support Surface and SPR_{Plus} modes.

PRESSURE SETTING FUNCTION:

Pressing the SPR_{Plus} Button will allow selection of the desired pressure. The Pump defaults to previous setting when turned ON.

POWER FUNCTION:

Pressing the POWER Button turns the Pump ON or OFF. After a power failure the Pump will revert back to previous MODE and PRESSURE setting.

LOCK FUNCTION:

Pressing the LOCK Button will lock the current settings to avoid unintended changes. Pressing the LOCK Button again will allow setting(s) to be changed.

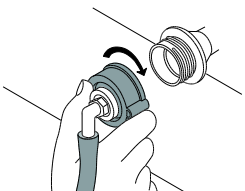
ALARM FUNCTION:

The Pump is equipped with a flashing/audible alarm to alert the user that the hose is disconnected from the pump or excessive pressure is detected by the Pump, such as in the case of a kinked hose. These conditions require resolution before continuing use (See **Page 14, Troubleshooting Guide and Alarm Priority Table**).

Pump Operation

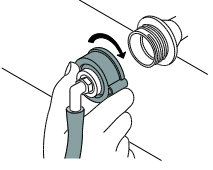
PROCEDURE

Installation and Operation of the Stryker Air Pump for Use With the SPR_{Plus} Support Surface

Step	Installation Procedure	Cautions and Warnings
1	Refer to the SPR _{Plus} User's Manual for installation of the Support Surface.	<p>⚠ WARNING</p> <ul style="list-style-type: none"> – Consult the user's manual for the SPR_{Plus} Support Surface <u>before</u> attaching it to the Pump. Failure to do so could result in patient injury and/or improper therapy. – Grounding reliability can only be achieved when the Pump is connected to a Hospital Grade Receptacle. Failure to provide proper grounding could result in a risk of electric shock. – Do not use in the presence of flammable anesthetics, nitrous oxide, or oxygen-rich environments. Risk of explosion can result. – Exposure of the electronic Pump to any liquid while it is plugged in could result in a severe electrical hazard. – The Pump radiates radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to other devices in the vicinity.
2	<p>Installing the Pump:</p> <ol style="list-style-type: none"> 1) Hang the unit on the foot panel of the bed. 2) The Pump is equipped with a detachable power cord. To apply power, the cord must be attached to the Pump and the electrical outlet on the wall. To disconnect power, the cord may be detached from either the Pump or the wall outlet. 3) Stretch the power cord beneath the bed to an outlet at the head end of the bed, making sure the cord is out of the way. 4) If you are installing the Support Surface on a Stryker bed frame, use the optional power outlet located under the foot end of the frame and the short power cord provided. Ensure the outlet is a Hospital Grade receptacle. 	
3	<p>Screw the Red Hose Connector Cap tightly onto the Support Surface connector as shown below. Use caution so as not to cross the threads of the connector.</p> 	
4	Attach other end of hose to the Pump using the Quick-Disconnect connector.	
Step	Operation Procedure	<p>⚠ CAUTION</p> <ul style="list-style-type: none"> – If “Button-Click” sound is not heard during Step 1 of the Operation Procedure, remove from use. – Only use SPR_{Plus} Overlay on a mattress.
1	While standing in front of the Pump, press the POWER Button located on the Control Panel to turn the Pump ON. Listen for a “Button-Click” sound to verify operation of audio-alarm system. If controller lights do not come on, see Troubleshooting Page 14 .	
2	Select the SPR_{Plus} mode using the << key The “SPR _{Plus} ” will then be illuminated. The Pump will start inflating the cushion. The cushion will inflate in approximately 10 minutes. Start with the pressure set to 18mmHg.	
3	The SPR_{Plus} Pump is capable of adjusting the cushion pressure to five set points over a range of 18 to 30 mmHg. The five set points can be adjusted directly by the SPR_{Plus} Button. The settings will return to the last used setting if the unit experiences a loss of power.	
4	The only way to assure that the patient is getting the proper therapy is with periodic HAND CHECKS to establish the correct pressure setting. Please refer to the SPR _{Plus} User's Manual for how to perform the HAND CHECK .	
Step	CPR	<ul style="list-style-type: none"> – After exposure to extreme high or low temperatures, allow the Pump to equilibrate for at least one (1) hour before operating. – Before plugging in the Pump, check the power cord for electrical hazards, e.g., cuts, exposed wires, worn insulation, etc.
1	Refer to the SPR _{Plus} User's Manual for CPR procedure.	
2	Disconnect hose from the Pump using the Quick-Disconnect connector.	

Pump Operation

Installation and Operation of the Stryker Air Pump for Use With the IsoFlex_{LAL} Plus Support Surface

Step	Installation Procedure	Cautions and Warnings
1	Refer to the IsoFlex _{LAL} Support Surface User's Manual for installation of the Support Surface.	<p>⚠ WARNING</p> <ul style="list-style-type: none"> - Consult the user's manual for the IsoFlex_{LAL} Support Surface <u>before</u> attaching it to the Pump. Failure to do so could result in patient injury and/or improper therapy. - Grounding reliability can only be achieved when the Pump is connected to a Hospital Grade receptacle. Failure to provide proper grounding could result in a risk of electric shock. - Do not use in the presence of flammable anesthetics, nitrous oxide, or oxygen-rich environments. Risk of explosion can result. - Exposure of the electronic Pump to any liquid while it is plugged in could result in a severe electrical hazard. - The Pump radiates radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to other devices in the vicinity. - If "Button-Click" sound is not heard during Step 1 of the Operation Procedure, remove from use - Only use SPR_{Plus} Overlay on a mattress. <hr/> <p>⚠ CAUTION</p> <ul style="list-style-type: none"> - After exposure to extreme high or low temperatures, allow the Pump to equilibrate for at least one (1) hour before operating. - Before plugging in the Pump, check the power cord for electrical hazards, e.g., cuts, exposed wires, worn insulation, etc.
2	<p>Installing the Pump:</p> <ol style="list-style-type: none"> 1) Hang the unit on the foot panel of the bed. 2) The Pump is equipped with a detachable power cord. To apply power, the cord must be attached to the Pump and the electrical outlet on the wall. To disconnect power, the cord may be detached from either the Pump or the wall outlet. 3) Stretch the power cord beneath the bed to an outlet at the head end of the bed, making sure the cord is out of the way. 4) If you are installing the Support Surface on a Stryker bed frame, use the optional power outlet located under the foot end of the frame and the short power cord provided. Ensure the outlet is a Hospital Grade receptacle. 	
3	<p>Screw the Red Hose Connector Cap tightly onto the Support Surface connector as shown below. Use caution so not to cross the threads of the connector.</p> 	
4	Attach other end of hose to the Pump using the Quick-Disconnect connector.	
Step	Operation Procedure	
1	While standing in front of the Pump, press the POWER Button located on the Control Panel to turn the Pump ON. Listen for a "Button-Click" sound to verify operation of audio-alarm system. If controller lights do not come on, see Troubleshooting Page 14 .	
2	<p>Select the IsoFlex_{LAL} mode using the << Button. The "IsoFlex_{LAL}" will then be illuminated.</p> <p>Note: In IsoFlex_{LAL} mode the pump operates to provide optimal air flow to the Support Surface. There are no additional adjustments required. Refer to the IsoFlex LAL support surface User's Manual for operation of the support surface.</p>	

Troubleshooting

TROUBLESHOOTING GUIDE

Problem	Cause	Recommended Action
1. Alarm is activated (See Alarm Priority Table Below)	1) The alarm light will activate after 15 minutes if the hose is disconnected from the Pump. (SPR _{Plus} Mode). Air leaks within the system may also cause an alarm.	a) Check that the hose is properly connected. b) Check the hose for cuts, holes or kinks. The hoses should also be tightly connected to their respective connectors. c) Check the SPR _{Plus} overlay for holes.
	2) The Alarm light flashes and audible alarm sounds after 30 minutes if the hose is disconnected from the Pump (SPR _{Plus} Mode). Air leaks within the system may also cause an alarm.	d) Once the leak or kink has been resolved, the alarm will automatically turn off. To reset the alarm more quickly, turn the power OFF for 5 seconds and then ON again.
	3) The Alarm light flashes and audible alarm sounds after 30 seconds if the Pump measures excessive pressure.	a) Check for the correct MODE selection, i.e., IsoFlex _{LAL} or SPR _{Plus} . b) Check for kinked hose.
	4) If an audible alarm is present and a button indicator other than the alarm is flashing, then a STUCK BUTTON is occurring.	Press the button to stop the alarm. If alarm condition persists, call Stryker Technical Support, Page 7 .
	5) An audible alarm and all of the lights are flashing indicate a SYSTEM ERROR.	If alarm condition persists, take Pump out of service and call Stryker Technical Support, Page 7 .
2. Power loss	Facility power outage, tripped circuit breaker, or possible internal damage.	a) Make sure the power cord is plugged in and POWER Button is ON. b) Check Circuit Breakers; See Page 16 .
3. Unit Does Not Turn On	May be caused by other internal damage/failure.	Check circuit breakers on back of the Pump. See Page 16 for circuit breaker location.
4. Buttons not responding	May be caused by LOCK function.	Check LOCK Button for activation.

ALARM PRIORITY TABLE:

Priority	Condition	Control Panel Indicator				
		Alarm Signal	SPR _{Plus}	Power Button	<< (Mode Setting)	Lock Button
1	System Problem	Blink ¹	Blink		Blink	Blink
2	Stuck Button	Blink	Flash ²	Flash	Flash	Flash
3	Medium Priority Alarm	Blink				
4	Low Priority Alarm	Continuous ³				

1. Blink = Every 2 seconds
2. Flash = 10 times per second
3. Continuous = Stays on until condition corrected

OPERATORS POSITION

The operator is intended to be standing directly in front of the Pump during operation.

Cleaning and Disinfection

CLEANING / DISINFECTION

The exterior of the Pump and hosing assembly should be wiped down between patient use with a cloth dampened with disinfectant.



WARNING

- DO NOT spray disinfectant directly on the electrical Pump, or immerse the Pump in any type of liquid. This could result in a severe electrical hazard.
- All disinfection should be done using a “hospital-grade” disinfectant registered with the Environmental Protection Agency (EPA).
- When disinfecting is required, check manufacturer’s instructions before use, and use disinfectant in accordance with the manufacturer’s instructions.

Suggested Disinfectants

1. Quaternary Cleaners
2. Phenolic Cleaners
3. Chlorinated Bleach Solution (5.25% bleach diluted 1 part bleach to 10 parts water)
4. 70% Isopropyl Alcohol
5. Accelerated Hydrogen Peroxide (AHP)



CAUTION

- Disinfect the Pump, Power Cord, and Hosing Assembly between patient installations and when servicing, utilizing standard hospital protocol and disinfectants. Failure to disinfect may risk cross-contamination and infection.
- DO NOT autoclave the Pump OR the Hosing Assembly.
- Unplug Pump from its source prior to cleaning.
- Do not use harsh cleansers, solvents, or detergents on the Pump. Equipment damage could occur.

Service Information

CIRCUIT BREAKER RESET

Tools Required:

- None

Procedure:

1. Locate the circuit breakers on the lower back cover.
2. Press each circuit breaker to RESET.

HOSE ASSEMBLY REPLACEMENT



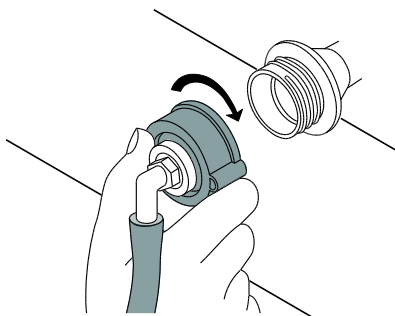
Disinfect the Pump and Hosing Assembly between patient installations and when servicing, utilizing standard hospital protocol and disinfectants. Failure to disinfect may risk cross-contamination and infection.

Tools Required:

- None

Procedure:

1. Wipe the hosing assembly down between patients with a cloth dampened with disinfectant.
2. Disconnect the air hose from the Quick Disconnect fitting on the Pump.
3. Loosen the **RED Hose Connector Cap** from the Support Surface connector by turning it COUNTER CLOCKWISE.
4. Discard old hose assembly in accordance with hospital waste management policy.
5. Open the new Air Hosing Assembly (Part Number 2861-001-001).
6. Connect the air hose with the Quick Disconnect fitting to the Pump.
7. Thread the **RED Hose Connector Cap** onto the Support Surface connector by turning it CLOCKWISE (See Figure Below). Tighten firmly by hand, but do not over tighten and cross the threads.



Preventive Maintenance

 **CAUTION!**

To ensure optimal performance, electrical safety testing of your Pump should be performed at least annually. Contact Stryker Technical Support for information, see **Page 7**.

Preventive maintenance should be performed annually, at a minimum. A preventive maintenance program should be established for all Stryker Medical equipment. Preventive maintenance may need to be performed more frequently based on the usage level of the product. Use this sheet for your records and keep on file.

CHECKLIST

_____ Verify that there are no cracks, holes or damages on the Pump Housing, or its components (Hoses, Power Cord, and Case).

_____ Verify the hooks used to hang the Pump on the bed frame are intact and not damaged. The tension in the hooks should be enough to secure the Pump to the frame.

_____ Verify the POWER Button is working properly.

_____ While in operation, verify there are no air leaks from the Pump or the attached connectors/hosing.

_____ Check Air Filter.

Air Pump Serial Number

MAINTENANCE RECORD

Completed By:	Date

Quick Reference Replacement Parts List

The parts and accessories listed on this page are currently available for purchase. Some of the parts identified on the assembly drawing parts in this manual may not be individually available for purchase. Please call Stryker Customer Service USA at **1-800-327-0770** for availability and pricing.

Part Name	Stryker Part Number	Part Description
Hose/Connector Assembly	2861-001-001	Air Hose Assembly for IsoFlex _{LAL} Support Surface and SPR _{Plus} Support Surfaces
3 foot/15 foot Power Cords	2861-001-024	Hospital Grade Electrical Cords
Hanging Brackets	2861-001-004	Attachment Hangers on Pump
Hanging Brackets - Rings	2861-001-005	Hanger Adjustment Ring
Hanging Brackets - Pins	2861-001-006	Hanger Adjustment Pin
Operation Manual	2861-001-039	Operation Manual

Product Compliance Declarations

GUIDANCE AND MANUFACTURER'S DECLARATION – ELECTROMAGNETIC EMISSIONS


Guidance and Manufacturer's Declaration – Electromagnetic Emissions		
The Pump is intended for use in the electromagnetic environment specified below. The customer or the user of the Pump should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic environment – guidance
RF emissions CISPR 11	Group 1	The 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. The 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.
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

Guidance and Manufacturer's Declaration – Electromagnetic Immunity			
The Pump is intended for use in the electromagnetic environment specified below. The customer or the user of the 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	±6 kV contact	±6 kV contact	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
	±8 kV air	±8 kV air	
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines	±2 kV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment.
	±1 kV for input/output lines	Not Applicable	
Surge IEC 61000-4-5	±1 kV line(s) to line(s)	±1 kV line(s) to line(s)	Mains power quality should be that of a typical commercial or hospital environment.
	±2 kV line(s) to earth	±2 kV line(s) to earth	
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5 % <i>UT</i> (>95 % dip in <i>UT</i>) for 0,5 cycle	<5 % <i>UT</i> (>95 % dip in <i>UT</i>) for 0,5 cycle	Mains power quality should be that of a typical commercial or hospital environment. If the user of the Pump requires continued operation during power mains interruptions, it is recommended that the Pump be powered from an uninterruptible power supply or a battery.
	40 % <i>UT</i> (60 % dip in <i>UT</i>) for 5 cycles	40 % <i>UT</i> (60 % dip in <i>UT</i>) for 5 cycles	
	70 % <i>UT</i> (30 % dip in <i>UT</i>) for 25 cycles	70 % <i>UT</i> (30 % dip in <i>UT</i>) for 25 cycles	
	<5 % <i>UT</i> (>95 % dip in <i>UT</i>) for 5 sec	<5 % <i>UT</i> (>95 % dip in <i>UT</i>) for 5 sec	
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A / m	3 A / m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE! <i>UT</i> is the a.c. mains voltage prior to application of the test level.			

Product Compliance Declarations

GUIDANCE AND MANUFACTURER'S DECLARATION – ELECTROMAGNETIC IMMUNITY - NON LIFE SUPPORTING

Guidance and Manufacturer's Declaration – Electromagnetic Immunity			
The Pump is intended for use in the electromagnetic environment specified below. The customer or the user of the Pump should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment – guidance
<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 2,5 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 Stryker Pump, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p>Recommended separation distance</p> $d = 1.2\sqrt{P}$ $d = 1.2\sqrt{P} \text{ 80 MHz to 800 MHz}$ $d = 2.3\sqrt{P} \text{ 800 MHz to 2,5 GHz}$ <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 metres (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</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> <div style="text-align: center;">  </div>
<p>NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.</p> <p>NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.</p>			
<p>^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 Pump is used exceeds the applicable RF compliance level above, the Pump should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the Pump.</p> <p>^b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.</p>			

Product Compliance Declarations

GUIDANCE AND MANUFACTURER'S DECLARATION – RECOMMENDED SEPARATION DISTANCES

Recommended Separation Distances Between Portable And Mobile RF Communications Equipment And The Pump			
The Pump is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Pump can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Pump as recommended below, according to the maximum output power of the communications equipment.			
Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter M		
	150 kHz to 80 MHz	80 MHz to 800 MHz	800 MHz to 2,5 GHz
	$d = 1.2\sqrt{P}$	$d = 1.2\sqrt{P}$	$d = 2.3\sqrt{P}$
0,01	0.12	0.12	0.23
0,1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23
For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (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 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.			
NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			

Warranty

LIMITED WARRANTY

The Stryker Air™ Pump has a warranty of THREE (3) YEARS under normal use, conditions, and with appropriate periodic maintenance as described in this manual. The Stryker Air™ Pump has an expected service life of FIVE (5) YEARS.

This statement constitutes Stryker's entire warranty with respect to the aforesaid equipment. Stryker makes no other warranty or representation, either expressed or implied, except as set forth herein. There is no warranty of merchantability and there are no warranties of fitness for any particular purpose. In no event shall Stryker be liable here under for incidental or consequential damages arising from or in any manner related to sales or use of any such equipment.

CONDITIONS AND LIMITATIONS

This statement constitutes Stryker's entire warranty with respect to the aforesaid equipment. Stryker makes no other warranty or representation, either expressed or implied, except as set forth herein. There is no warranty of merchantability and there are no warranties of fitness for any particular purpose. This warranty does not extend to, nor cover:

- Normal wear and tear; or
- Damage or product failure due to causes beyond Stryker's control such as, but not limited to abuse, theft, fire, flood, wind, lightning, freezing, clogging of support surface pores due to tobacco smoke, unusual atmosphere conditions, material degradation due to exposure to moisture; or
- Damage to support surface or support surface handles through the use of the support surface for patient transfer or transport.

Normal use is defined as normal hospital or facility usage. Damages arising from abnormal use such as those caused by needle punctures, burns, chemicals, negligent use or improper care or improper cleaning or staining resulting from it are exempt from warranty coverage.

TO OBTAIN PARTS AND SERVICE

Stryker products are supported by a nationwide network of dedicated Stryker Field Service Representatives. These representatives are factory trained, available locally, and carry a substantial spare parts inventory to minimize repair time. Simply call your local representative or call Stryker Customer Service USA at (800) 327-0770 or (269) 324-6500.

RETURN AUTHORIZATION

Merchandise cannot be returned without approval from the Stryker Customer Service Department. An authorization number will be provided which must be printed on the returned merchandise. Stryker reserves the right to charge shipping and restocking fees on returned items. Special, modified, or discontinued items not subject to return.

DAMAGED MERCHANDISE

ICC Regulations require that claims for damaged merchandise must be made with the carrier within fifteen (15) days of receipt of merchandise. Do not accept damaged shipments unless such damage is noted on the delivery receipt at the time of receipt. Upon prompt notification, Stryker will file a freight claim with the appropriate carrier for damages incurred. Claim will be limited in amount to the actual replacement cost. In the event that this information is not received by Stryker within the fifteen (15) day period following the delivery of the merchandise, or the damage was not noted on the delivery receipt at the time of receipt, the customer will be responsible for payment of the original invoice in full. Claims for any short shipment must be made within thirty (30) days of invoice.

Notes
