



**5280**  
PROSTHETICS



# Technical Guide

ZP-100

ZP-200

**5280 PROSTHETICS, LLC** | 1-800-460-0288



**THE ZEROPUCK™ CAN BE USED WITH SLEEVE SUSPENSION  
OR  
INTERNAL SEALING LINERS AND ANNULAR SEAL SYSTEMS  
(SEAL-IN LINERS™, AURA/ECHO™ SEALS, ETC.)**

**USING AND SETTING UP THE ZEROPUCK™ APP  
REQUIRES:**

WIFI CONNECTION IN FACILITY OFFICE

SETTING UP THE PATIENT'S APPLE  
ID/ITUNES ACCOUNT OR GMAIL ACCOUNT

ZEROPUCK SP™ REQUIRES DEVICES WITH  
BLUETOOTH 4.0(5TH GENERATION IPOD TOUCH, IPHONE 5  
AND NEWER, ANDROID OS 4.4 AND NEWER

PATIENT WILL NEED A VALID EMAIL ADDRESS TO SIGN UP  
FOR AN APPLE ID OR GMAIL ACCOUNT









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## Symbol Definitions

Symbol	Description
	Consult the Operating Instructions
	Type B Applied Part
	Direct Current
	Alternating Current
	Caution, Consult Instructions
	Radio Transmission

## Warnings And Safety Notices



**READ THESE INSTRUCTIONS FOR USE CAREFULLY AND PAY SPECIAL ATTENTION TO ALL SAFETY CONSIDERATIONS AND WARNINGS.**



**THIS MANUAL PROVIDES STEP-BY-STEP INSTRUCTIONS FOR SETUP AND OPERATIONS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN SERIOUS INJURY.**



The ZeroPuck™ and its accompanying accessories do not contain any serviceable parts and should under no circumstances be opened.



If the ZeroPuck™ or any of its accompanying accessories show any signs of damage, they must not be used.



Do not immerse the ZeroPuck™ or any of its accompanying accessories in water or any other liquid.



Avoid all explosive/combustible materials while using the ZeroPuck™ System.



Battery Level of the ZeroPuck™ should be checked periodically to guarantee proper pressure levels.



## Introduction

The ZeroPuck™ is a modular socket computer system that utilizes an electronic vacuum pump to create negative pressure inside the prosthetic socket. The ZeroPuck™ improves the linkage between the residual limb and the prosthesis. The ZeroPuck™ is equipped with an easy to use iDevice and application interface, allowing the user to quickly and easily set and adjust vacuum pressure settings of their prosthesis.

### ZeroPuck™ System advantages include:

- Reduction in daily volume differences
- Improved proprioception
- Improved adhesion / suspension
- Reduction in the forces that are applied to the residual limb

### What's Included:

- 1) ZeroPuck™ Vacuum system
- 2) Charger
- 3) Magnetic Wand
- 4) Puck Lube
- 5) Instructions
- 6) Extra O-Ring Kit



## Unit Overview

**The ZeroPuck™ System consists of the following key components:**

- ZeroPuck™
- Socket (in which the ZeroPuck™ is installed)
- Prosthetic Liner
- Air Wick
- Sealing Sleeve or Annular Seal
- Distal Pad or Flexible inner liner

**NOTE: THE ZEROPUCK™ SYSTEM CAN BE USED WITH SLEEVE SUSPENSION OR INTERNAL MECHANICAL SEALS SUCH AS SEAL-IN™ LINERS AND SIMILAR SYSTEMS.**

The ZeroPuck™ creates an elevated vacuum in the space between the socket and the liner when the ZeroPuck™ is activated.

### **ZEROPUCK SP™ (Smart)**

The user can configure and activate the ZeroPuck SP™ through the use of an easy to use Smart Device APP or manually using the included Magnet. User configured settings in the Smart Device APP are wirelessly transmitted to the ZeroPuck™ through a Bluetooth LE connection without the inconvenience of cables and connectors.

### **ZEROPUCK OD™ (On Demand)**

The user can activate and regulate the ZeroPuck OD™ through the use of a magnet. This system allows the user to adjust the vacuum level by holding a magnet next to the unit which turns on the pump. Removing the magnet from the unit turns the unit off.



**CAUTION:** The socket **MUST** be fabricated following the ZeroPuck™ socket fabrication technique. The use of other techniques may cause health risks for the patient.



**CAUTION:** Attempting to modify or use the ZeroPuck™ System in any other configuration other than its intended use may cause health risks for the patient.

## Accessories

### ZeroPuck™ Charger

The ZeroPuck™ System comes equipped with a smart charger. The charger uses an air tight coupling to charge the ZeroPuck's™ internal LiPO battery.

Once the prosthesis has been removed from the patient's residual limb, the charger should be inserted into the ZeroPuck through a pre-fabricated hole in the socket.

The charger's LED indicator will show a solid Amber color while the ZeroPuck™ is charging. Once fully charged, the LED will illuminate Solid green.



**CAUTION:** Using any other charger other than the one supplied with the ZeroPuck™ System can result in damage to the product.

### ZeroPuck™ Smart Device Application

An application is available for the ZeroPuck™ System and can be downloaded from the APP Store™ or Google Play™. The SmartPuck™ application provides an intuitive interface giving the user control over the various ZeroPuck™ settings and controls as well as sensor readings. The application allows the user to preset settings which the ZeroPuck™ will retain even in the absence of the Smart Device. Details of the Smart Device application are provided in the System Operation section of this manual.

### MagneticWand

If the user does not intend on using the ZeroPuck™ Smart Device Application or an iDevice is not available, the ZeroPuck's™ internal pump can still be activated using the Magnetic Wand. The Wand allows the user to turn the ZeroPuck's™ pump on and off by simply waving the wand along the bottom of the unit. Bringing the magnetic wand to the bottom of the Puck while the pump is enabled will disable the pump. Performing the same task while the pump is disabled will activate the pump. Details of the Magnetic Wand are provided in the System Operation section of this manual.

### Quick Start Kit

The quick start kit includes a Charger, Puck lubricant and vacuum sealant for installing the ZeroPuck™, magnet and Instruction guides.

# Installation



**WARNING:** The user must be trained by the prosthetist or practitioner who will be performing the product fitting.



**WARNING:** Installation of the ZeroPuck™ into the socket must be done by a certified prosthetic technician or practitioner who is fitting the user.

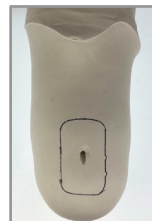
For clinical or technical assistance please contact 5280 Prosthetics LLC  
(Certified Prosthetists on staff)

## 5280 PROSTHETICS, LLC

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1(800) 460-0288 | [www.5280Prosthetics.com](http://www.5280Prosthetics.com) | [www.Smartpuck.net](http://www.Smartpuck.net)  
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### CHECK SOCKETS

- 1) Typically we DO NOT recommend forming the ZeroPuck™ Dummy into the check socket. The check socket can be fit with a threaded elbow into the socket material and utilize a inline one way valve and brake bleed pump to evaluate the liner, seal and socket fit.
- 2) If desired the ZeroPuck™ can be integrated into the check socket. Follow the instructions as detailed in the 5280 Fabrication Guide.
- 3) USE OR-FIT Trans Stiff™ (Curbell Plastic™) or Thermolyn Stiff™ (Otto Bock™) plastic for the check socket material. These materials will conform around the molding dummy and sealing surface during thermoforming process. PETG, Durplex, Vivak will not conform and the Puck will not seal the socket.
- 4) There MUST be a vacuum source under the molding dummy (typically through the model).



**NOTE:** Ensure there is complete continuity between the molding dummy and the pulled plastic socket. Any gap between the Molding dummy and the plastic with in the post recess will cause a vacuum leak.

**1) CRITICAL: CHECK CONTINUITY OF SOCKET PULL**

**2)** Reinsert the Molding Dummy Body (remove post) into the void in the socket. The inside of the recess between the dummy and the pulled plastic should be seamless. Run your finger around the post hole, no transition should be felt. Any gap that exists indicates a poor socket pull and will cause a vacuum leak.



**3)** If there is a gap REDO the socket pull. If a only minor gap is detected it may be necessary to use the larger O-Ring (3mm) in the ZeroPuck™ Starter Kit.

**ZEROPUCK™ INSTALLATION:**

**1)** Remove the base O-Ring from the ZeroPuck™.



**2)** Apply a **VERY** light layer of Puck Lube to both sides of the O-RING. Re-apply the o-ring to the base of the post.



**DO NOT OVER LUBRICATE-** Excess lube can get sucked in to the intake of the Puck and clog the pump.

**3)** Insert the ZeroPuck™ into the void on the interior of the socket. Gently slide the threaded post through the hole in the socket wall and seat the Puck completely.



**4)** Thread the Lock nut onto the exposed threads on the ZeroPuck™ post. **HAND TIGHTEN ONLY!**



**CAUTION: NEVER USE TOOLS TO TIGHTEN THE LOCK NUT. THIS WILL CRACK THE HOUSING AND IS NOT A WARRANTY ITEM.**

**HAND TIGHTEN ONLY!**

**CAUTION:** Be careful not get puck lube on the blue intake filters. This will clog the system.

## ZEROPUCK™ REMOVAL:

- 1) Remove the Lock Nut on the outside of the socket.
- 2) Gently push the post back through the socket. Apply even pressure.
- 3) Clean the excess lubrication off the Puck with a clean rag with warm water. Do not get any lubricant or water on the blue intake filters.



## VALVE OPERATION

- 1) Ensure the black rubber washer is seated under the thumb screw post.
- 2) Turn the gold valve counter clockwise to open. This will allow air to enter the socket.
- 3) Turn the gold valve clockwise to close the valve. Compress the rubber washer lightly.



## VERIFY SEAL PLACEMENT:



Correct (air tight)



Incorrect (vacuum leak)

**NOTE:** With sealing liners and seal mechanisms: The internal seal of the liner or annular seal must be 1" above the ZeroPuck™ housing.

## DONNING INSTRUCTIONS FOR INTERNAL SEALING SYSTEMS

- 1) Charge the ZeroPuck™ and Smart Device every night to make sure you have a full charge through out the day.



1



1

- 2) Don a urethane or silicone Liner. The Liner should be a naked liner or Sealing liner that has sealing mechanism bonded to the liner. The seal of the liner but be at least 1" proximal to the ZeroPuck™ Housing.



2

- 3) Apply annular seal over the liner (AuraSeal™, Echo Seal™, etc.) Naked liner is required with these seals.



3

**NOTE:** Movable Seals such as Seal In X™ on fabric covered liners do not provide an adequate airtight seal for the ZeroPuck. We have experienced significant problems with vacuum leaking between the seal and the liner.

### DO NOT USE THESE LINER/SEALS WITH ZEROPUCK™

- 4) Apply hand sanitizer gel or spray alcohol to the seal and inner socket to allow for donning of the socket



4

- 5) Open the gold ZeroPuck™ Valve 1/2 turn counter clockwise.

- 6) Insert Limb into the prosthetic socket.



6

- 7) Close the gold valve.

- 8) You are now ready to begin using the ZeroPuck™ system.

## DONNING INSTRUCTIONS FOR DOUBLE WALL SOCKETS

1) Charge the ZeroPuck™

2) Don a urethane or silicone Liner. The Liner should be a naked liner or a fabric covered liner with the proximal 3-4 inches of the liner with exposed silicone or urethane. The proximal aspect of the liner acts as the sealing surface when using a sealing sleeve.



3) Apply an air wick or sheath to the liner below the seal. Vacuum will flow over the area where the fabric or sheath is.



4) Don the inner socket. Ensure the inner socket is rotated in the proper orientation to ensure the toe in / toe out of the outer socket and frame are in the correct alignment.



5) Roll up sealing sleeve. The sleeve should directly contact the proximal 3"-4" of exposed liner to create a vacuum tight seal.



6) Insert Limb/ inner socket into the outer frame of the prosthetic socket. Engage locking mechanism.



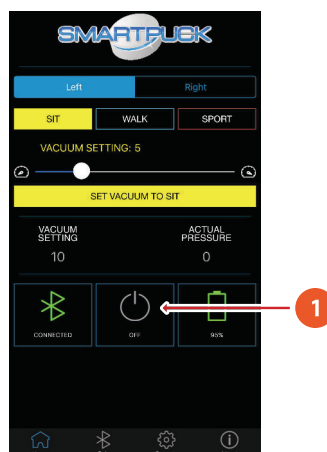
7) You are now ready to begin using the ZeroPuck™ system .

**CRITICAL:** The annular seal or Sealing liner seal **MUST BE AT LEAST 1" PROXIMAL** to the entire ZeroPuck™ Housing. Seals that intersect the housing will not be able to create a vacuum tight seal.



## REMOVING THE PROSTHESIS

**1) TURN OFF THE ZEROPUCK SP™ BEFORE REMOVING PROSTHESIS!**



## GETTING STARTED: APPLE™/GOOGLE™ SETUP

### WIFI CONNECTION ADVISED

- 1) CHARGE SYSTEM** Make sure the ZeroPuck™ and iDevice are fully charged prior to patient fitting. We recommend an overnight charge.
- 2) SETUP APPLE or ANDROID DEVICE** (Insure the operating system is current.)
- 3) SETUP APPLE ID OR GMAIL ACCOUNT** These account s allow you access to Apple APP Store or Google Play where you can download the SmartPuck™ application and future SmartPuck™ features.  
*See instructional video at [www.5280prosthetics.com](http://www.5280prosthetics.com).*

**NOTE: SMARTPUCK™ AND ZEROPUCK™ APPS ARE FREE TO THE USER!**

### 4) ENSURE WIFI IS ENABLED

*See instructional video at [www.5280prosthetics.com](http://www.5280prosthetics.com).*

### 5) DOWNLOAD SMARTPUCK™ V2 APP

Go to the App/Play Store on your device and down the SmartPuck™ App.

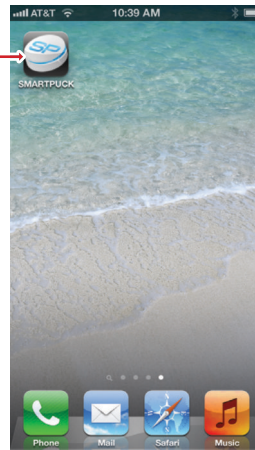
### 6) TURN ON BLUETOOTH (THIS SHOULD BE ON ALREADY)

*See instructional video at [www.5280prosthetics.com](http://www.5280prosthetics.com).*



## SYSTEM OPERATION & START UP PROCEDURE

1) Tap the SmartPuck™ icon once to open the application.

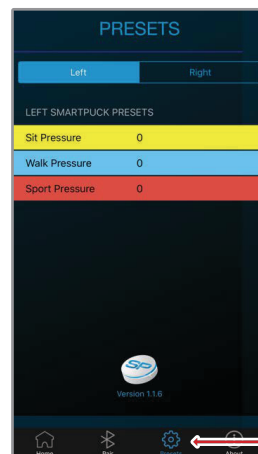


2) The SmartPuck™ App will open to the vacuum control screen. At this time the iPod is **NOT** connected to the Puck. The box in the lower left hand corner of the screen will read: **Disconnected**. The BLUETOOTH icon in the box is NOT illuminated.

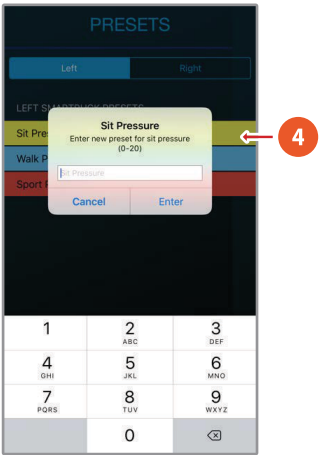
2



3) Set the SIT, WALK and SPORT MODE Presets. Begin by touching the PRESETS button on the menu at the bottom of the screen.



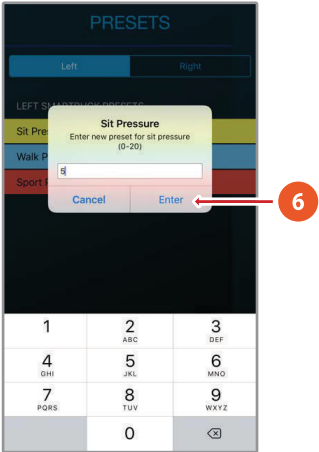
4) The settings page will appear. To get started touch the Yellow box to enter the Sit Pressure setting. The virtual key board will appear.



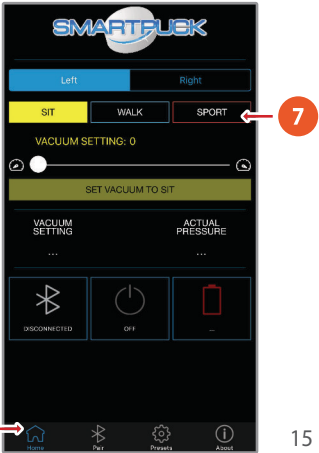
5) Enter the following values (just to get started)

**SIT -5      WALK -8      SPORT -12**

6) Touch Enter to set the desired value.

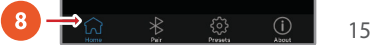


7) Ensure the highest vacuum setting (usually sport mode) at 12 in/hg or less initially. After you have determined the max vacuum level the mode setting can be changed.



Typically the max vacuum level for the ZeroPuck™ is between 19-24 in/hg (depending on altitude).

8) Touch the HOME icon to return to the control screen.



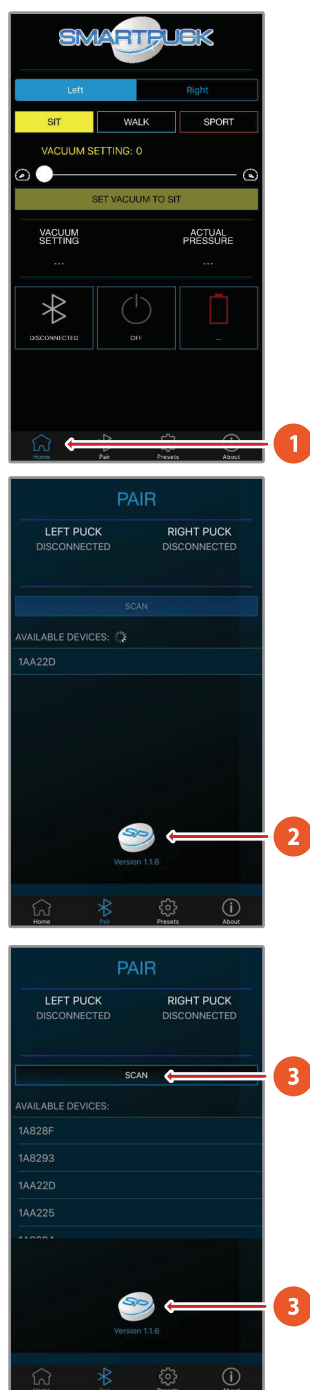
## CONNECTING BLUETOOTH

1) Touch the PAIR icon in the menu on the bottom of the screen.

**NOTE:** Pair the ZeroPuck to ONE device only. The SmartPuck will automatically pair with the closest device it has been paired to in the past.

2) The APP will automatically begin scanning for Pucks within range.

3) Touch the scan button to manually search for ZeroPucks within range.

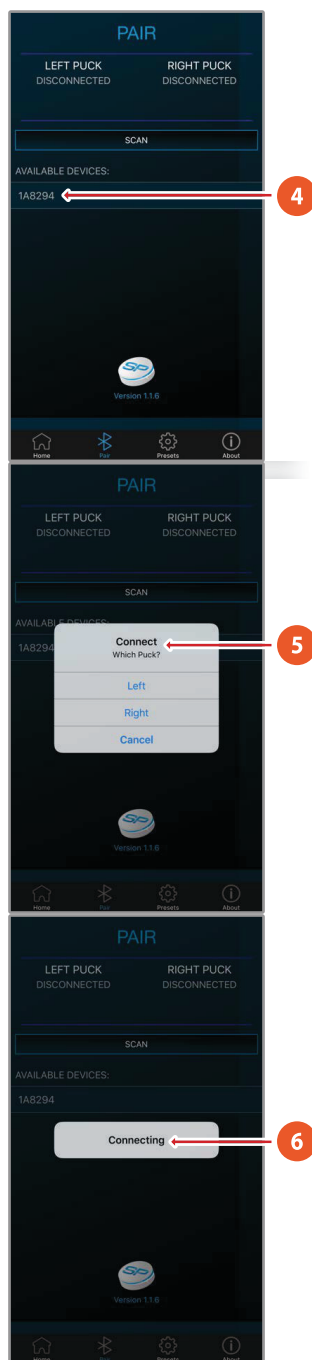


4) Select the desired ZeroPuck Radio Number by touching the 6 digit ID.

5) The SmartPuck APP will ask the user to specify what side to connect to. Select either right or left.

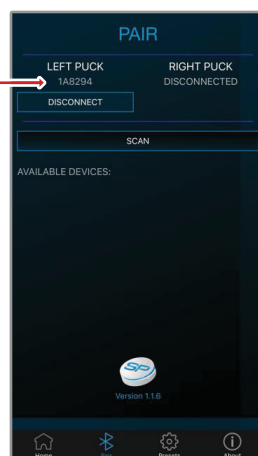
**NOTE:** The SmartPuck™ APP has the ability to control two pucks (independent of each other) at one time. Bilateral applications will require two separate linking procedures.

6) The APP will display a connecting message.



- 7) When the Device successfully connects to the ZeroPuck™, the Radio Number will be displayed under the Right or Left Puck Indicator on the PAIRING page.

7

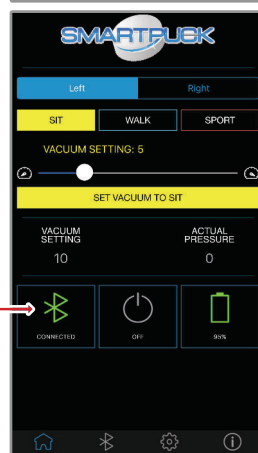


**NOTE:** Once you connect the ZeroPuck™ to the Right or Left side, the BLUETOOTH ID or Serial Number will no longer be visible when scanning for available devices.

That particular ZeroPuck™ is linked to the connected Device and is no longer able to connect to other devices. Do not pair the Puck with more than one device.

- 8) The Bluetooth icon will now be illuminated bright green and read "Connected" in the lower left box.

8



- 9) The correct side must be selected (Right or Left) in order to accurately show the connectivity & battery status.

9

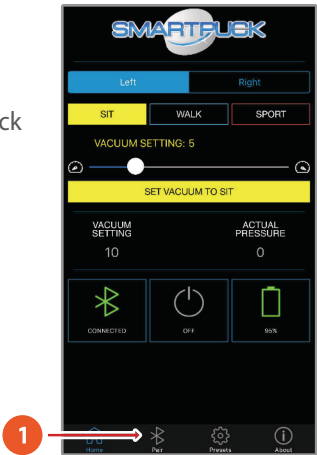


**NOTE:** The Battery Indicator is only active when the Puck is connected.

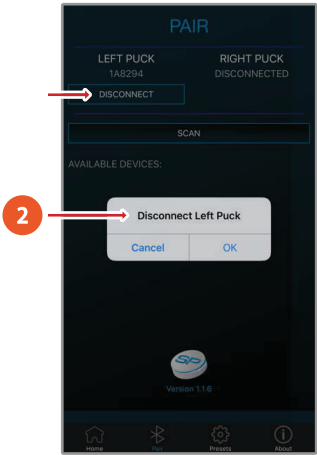
# DISCONNECTING BLUETOOTH

The ZeroPuck™ can easily be disconnected from smart device by touching the DISCONNECT button below the selected Puck

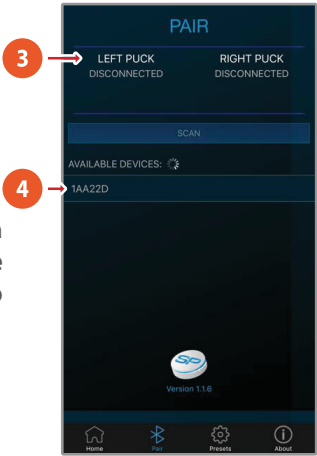
1) Touch the PAIR icon on the bottom menu of screen.



2) Disconnect the Right or Left SmartPuck.™ By touching the disconnect button under the appropriate puck.



3) A floating dialog will appear on the page prompting which side to disconnect.



4) **NOTE:** The six digit radio number is now be available to connect with a different device or to be linked to the opposite side. (it may be necessary to hit the "SCAN" button again to find

## ZEROPUCK SP™ Operating Instructions

The prosthesis should be applied at this stage and the seal /sealing sleeve properly secured such that no air can enter the top of the system.

The ZeroPuck™ should be connected to the smart device via BLUETOOTH.

The ZeroPuck™ will not allow air to enter the side of the socket.

**The ONLY place an air leak can occur is at the sleeve/socket linkage OR at the sleeve/Proximal liner linkage.**

### VACUUM PRESSURE SELECTION

Vacuum Pressure can be set by using the preset modes or by using the slider bar.

#### PRESET MODES

- 1) To use the vacuum presets simply touch the desired preset button (Sit, Walk, Sport)
- 2) Then touch the "SET VACUUM" Bar to confirm and enter the selection.

**NOTE: The SET button must always be hit to enter a vacuum level change.**

#### SLIDER BAR

- 1) To use the slider bar, simply touch and hold the button and slide your finger right or the left. Release the slide button when you are at the appropriate vacuum level.
- 2) Then touch the "SET VACUUM" button to confirm and enter the selection.

**NOTE: The SET button must always be hit to enter a vacuum level change.**





## CONFIRM CORRECT SIDE

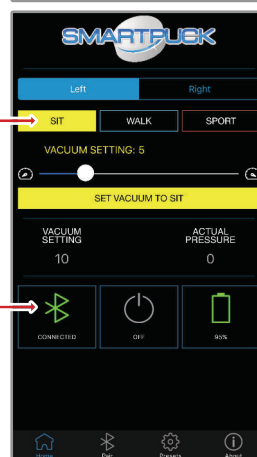
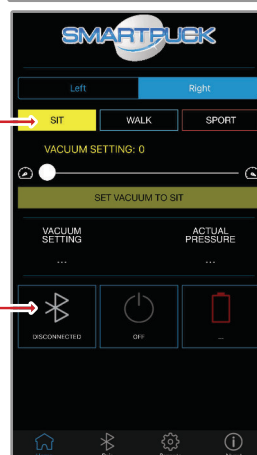
1) Select the desired RIGHT or LEFT setting. The selected button will be blue.

2) Verify the ZeroPuck™ is CONNECTED in the lower left hand corner of the screen.

3) If you toggle to RIGHT / LEFT button, the opposite side will read DISCONNECTED if there is not a puck connected to that side.

**NOTE:** The BLUETOOTH indicator is NOT illuminated because the RIGHT puck is not connected.

4) If you are connecting two ZeroPucks™ such as with a bilateral application, both the RIGHT and LEFT buttons will read CONNECTED.



## RUNNING THE VACUUM PUMP

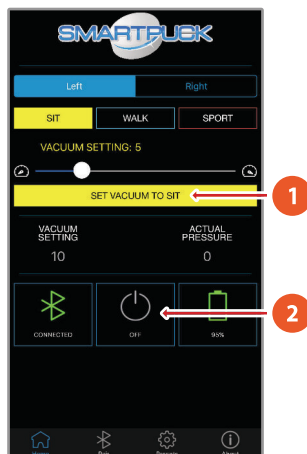
- 1) Set the vacuum setting to the desired Preset Mode OR move the slider to the starter setting to 8-10 in/hg.

This level of vacuum will evacuate the air out of the socket faster and help compress the liner to the sleeve and the sleeve to the socket.

Remember to hit the SET button.

- 2) To turn the SmartPuck™ ON or OFF simply touch the ON/ OFF button in the center box toward the bottom portion of the screen.

**NOTE: ALWAYS TURN OFF THE SMARTPUCK BEFORE REMOVING PROSTHESIS.**

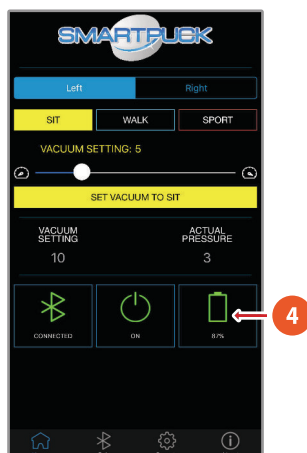


## INITIAL PUMP WIND UP

- 1) Once the ZeroPuck™ is switched to the ON position:
- 2) The pump will run constant for a about 20-30 seconds and then shift to short bursts as it finds pockets of air trapped in various places in the system.
- 3) Massage the upper and lower sleeve to the liner to help solidify the exterior seal while the pump runs.
- 4) After the initial air evacuation the pump should go silent. The actual pressure reading should display a constant number (The selected and actual should read the same). The pump may go into short bursts as the user walks with the system evacuating the last air pockets.
- 5) Vacuum level should remain constant after a very short period of time. If the pump runs constantly or keeps cycling: (1) There is a hole in the sleeve (2) The sleeve is not adhered to the socket / liner properly (3) The internal seal is not adhered to the liner / socket properly.

Typically the pump will run one to two times every hour for a 1-2 second burst. This indicates that there is a good proximal seal.

**The ONLY place the socket can leak is at the proximal seal. The distal aspect of the socket is completely sealed. The sleeve will NOT seal to skin.**



### **FINDING MAX VACUUM LEVEL** *(perform this step while prosthesis is applied)*

- 1) Find the Max Vacuum level at your altitude. Start the pump at 13 in/hg.
- 2) Use the slide bar to select a vacuum level of 13. Hit the SET VACUUM button to confirm the level setting. Leave the Pump in the ON position.
- 3) Gradually bump up the vacuum setting 1 in/hg at a time. Allow the pump to run and stop once it has reached the appropriate level.
- 4) When the max vacuum level has been exceeded the pump will continue to run.
- 5) Back the pump setting down 1-2 in/hg this will be the max vacuum setting. We recommend saving this number as the SPORT mode setting.

**Typically max vacuum is:**

**SEA LEVEL 20-24 in/HG**

**ALTITUDE 17-20 in/HG**

### **SHUT DOWN PROCEDURE**

To turn off the ZeroPuck™ touch the ON / OFF toggle switch in the upper right hand corner. OR Use the magnet to turn off the system.

**NOTE: It is NOT necessary to disconnect the BLUETOOTH when turning off the App. We recommend leaving the BLUETOOTH linked all of the time.**

**ALWAYS TURN THE ZEROPUCK™ OFF BEFORE THE PROSTHESIS IS REMOVED**

### **AUTOMATIC PUMP SHUT - OFF**

The ZeroPuck™ has an **automatic pump shut off**. If the pump runs constantly for 2 minutes, the system recognizes the leak and turns the system off.

### **OPERATING PROTOCOL**

There are two ways to use the ZeroPuck™ system.

**ACTIVE:** Set the vacuum level and leave the SmartPuck™ App in the ON position. This method will maintain the specified vacuum level all day long. The system will drop 1-2 in/hg and then restart the pump to reach the selected vacuum level. The primary factor with this method is the residual limb will be under constant STEADY vacuum (no fluctuation in pressure). With this method most patients choose a Medium level of vacuum, typically 8-12 in/HG.

**SLEEPER:** Set the vacuum level to the desired amount of vacuum. After the selected vacuum level has been reached TURN OFF the SmartPuck™ App (on/off toggle center bottom box of screen). The vacuum level will bleed down naturally over the course of the day, however, the system is very efficient and the vacuum level should hold for long periods of time. The user simply turns on the vacuum pump when more vacuum is needed. This protocol extends battery life and can be more discreet for the user.

## BLUETOOTH CONNECTIVITY INSIGHT

The ZeroPuck™ utilizes low power BLUETOOTH 4.0 to communicate with most smart Devices.

Do not disconnect the BLUETOOTH from the ZeroPuck™. We recommend leaving it connected all the time.

The ZeroPuck™ will auto connect to the Smart Device when it is in range (provided the device has been CONNECTED to the Puck).

**Re open the APP & Allow 20 to 30 seconds** for the BLUETOOTH to re-connect.

It may be necessary to RE-CONNECT the puck BLUETOOTH to the Smart Device if either the Smart Device or Puck battery goes dead.

If the puck does not Auto Connect:

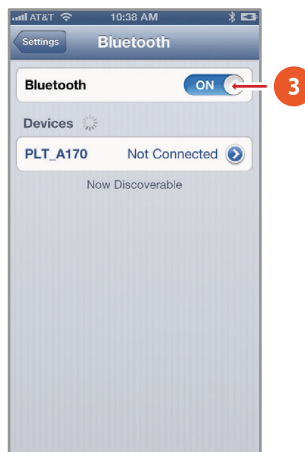
Cycle the App by returning to the home screen and re-open the SmartPuck™ App.

The ZeroPuck™ (when in the on position) will continue to function and hold the selected vacuum level regardless if the Smart Device is connected or not.

When fitting Bilateral ZeroPuck™ systems we recommend recording both Radio numbers such that when connecting the Pucks the right and left Pucks can be identified when linking to the APP.

## BLUETOOTH

- 1) To activate BLUETOOTH on your device: Touch the settings button on the home screen.
- 2) Touch the BLUETOOTH button.
- 3) Turn BLUETOOTH on.



## WIFI (Use WIFI to download the APP)

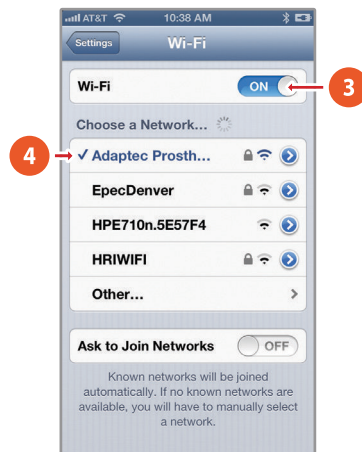
1) To activate WIFI on your device: Touch the settings button on the home screen.



2) Touch the WIFI button.



3) Turn WIFI on.



4) Select the network you would like to join.

## CHARGING

The ZeroPuck™ is equipped with an internal LiPO battery which will provide power to the ZeroPuck™ as long as it is charged. Before attempting to use the ZeroPuck™ first make sure the battery is fully charged.

In order to ensure proper ZeroPuck™ operation, it should be charged every night by using the included charger.



**NOTE: NEVER CHARGE THE ZEROPUCK WHEN WEARING THE PROSTHESIS.**

- 1) To charge the ZeroPuck™ locate the red charger alignment dots on both the Puck charge port and on the charge plug.

**NOTE: THE CHARGE PLUG KEYS INTO THE PUCK ONLY ONE WAY. THE RED DOTS MUST BE ALIGNED!**

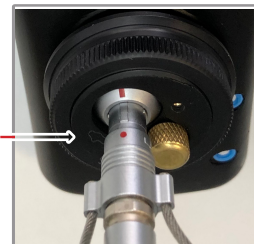
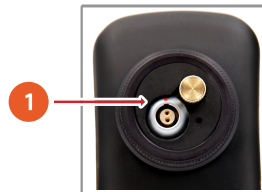
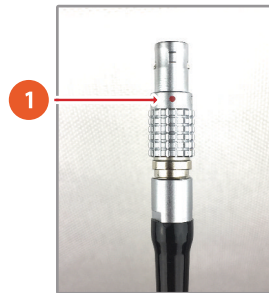
- 2) FULLY insert the charger into the Puck Housing into the charge base. The charger will lock and lock into place. The RED DOTS on the charger and Puck will almost touch (2mm apart).

- 3) Once the ZeroPuck™ has reached a full charge, the LED indicator on the ZeroPuck™ charger will illuminate a solid green non flashing pattern.

**CHARGE LIGHT STATUS:**

**SOLID AMBER = CHARGING**

**SOLID GREEN = COMPLETE CHARGE (5-6 hours)**



## DISCONNECTING THE CHARGER

**1)** Pull back the knurled collar on the silver adaptor on the end of the charge cord.



**2)** If the unit has a lanyard loop on the silver charger plug, simply pull the lanyard back (away from the puck) to disengage the charger.



**NOTE:** DO NOT PULL ON THE CORD TO REMOVE THE CHARGER. NEVER TWIST OR USE TOOLS TO REMOVE CHARGER. THIS WILL VOID THE WARRANTY.

**NOTE:** If the charger does not indicate a light or is blinking, the charger may be damaged. Discontinue use and contact medical provider.

## BATTERY LIFE

**ZEROPUCK OD™ (On Demand):** 2-3 weeks

**ZEROPUCK SP™ (Smart):** 2-3 Days (Bluetooth)

## HALL SWITCH OPERATION

(Magnetic ON/ OFF Switch)

### LOCATION

1) The Hall switch position is marked on the bottom of the ZeroPuck with a sticker. The switch is located towards the bottom of the Puck.



### OPERATION

1) Slide the magnet over the bottom of the Puck in the location described above in one single fluid motion. This motion will turn the pump ON.

2) Repeat the same procedure to turn the Puck OFF.



**The Puck will vibrate 1X = SmartPuck™ is ON.**  
**The Puck will Vibrate 2X = SmartPuck is OFF.**

### VACUUM LEVEL

The ZeroPuck will default to the last vacuum setting that was entered into the Puck. The ZeroPuck will remember and maintain the last vacuum setting that was entered into the system.

See your Mobile APP under the ABOUT TAB for a detailed Video on how to use this function.

### MESSAGES

The ZeroPuck™ will communicate with the user through messages sent to the Smart Device.

- Battery low indicator
- Connection lost indicator





## Operating Instructions

**1)** Hold the magnet over the bottom of the Puck in the location of the hall switch. This motion will turn the pump ON and maintain the pump in the on position.

**2)** Continue to hold the magnet over the hall switch until the desired amount of vacuum has been reached. A pitch change can be heard when the pump.

**3)** Remove the magnet from the vicinity of the hall switch to turn the vacuum pump off.

**4)** The ZeroPuck OD™ features a negative pressure reservoir that helps to extend the life of the vacuum in the socket for extended periods.



**NOTE:** The ZeroPuck OD™ is an On-Demand Vacuum system. The vacuum active pump is activated and regulated by the user.

## Maintenance / Cleaning Instructions

- If pump function decreases the pump should be sent back to 5280 Prosthetics for evaluation and repair. Pump repairs and debris removal are NOT a warranty item.
- There is no sterilization required for any components of the ZeroPuck™ System.



**CAUTION:** The ZeroPuck™ Must NEVER be submerged in water or any other liquid for any length of time.

## Liner Configurations / Recommendations

Almost Any naked liner or naked top liner can be used with the ZeroPuck.™

- Any silicone or urethane liner with an available sealing surface of 3" or more. (Used with a sealing sleeve configurations)
- The Otto Bock™ 6Y520, Evolution, ESP, OWW Duo

We **DO NOT** recommend thermo elastomer gel liners or any gel liner for vacuum systems. SEAL IN X™ LINERS ARE NOT RECOMMENDED DUE TO VACUUM LEAK PROBLEMS BETWEEN THE SEAL AND LINER

**USE ANY TYPE OF INTERNAL MECHANICAL SEAL LINER SUCH AS SEAL-IN™, OR AURA SLEEVES™,**

## Sleeve Recommendations

The general rule for sleeve selection is to choose sleeves that are well fitting and sticky. Sleeves can be used with sub-ischial and double wall sockets.

We recommend the following sleeves: Thermoply, Otto Bock Pro Flex™, Alps

# Characteristics

<b>Pressure Range</b>	20 in HG maximum (dependent on altitude)
<b>Accuracy</b>	+/- 1 in HG
<b>Precision</b>	1 in HG

# Environmental

<b>Ingress Protection Rating</b>	IP52
<b>Operating Temperature</b>	-40 – 85 degrees C

# Electrical Specifications

## ZeroPuck™

<b>Operating Voltage</b>	3.7VDC Typ.	
<b>Operating Current</b>	20mA minimum	300mA maximum

## Battery

<b>Battery Technology</b>	Rechargeable Lithium Polymer Battery	
<b>Battery Capacity</b>	1000mAh	
<b>Battery Model</b>		
<b>Time Between Charges</b>	24 hours max	

## PowerStick™

<b>Input Voltage</b>	100VAC minimum	240VAC maximum
<b>Input Frequency</b>	47Hz minimum	63Hz maximum
<b>Input Current</b>	0.6A maximum	

## Warranty Terms

5280 Prosthetics, LLC warrants all of its products and services, to the original purchaser, to be free from defects in materials and workmanship. This warranty applies, subject to normal wear and tear, when the products are used as intended, without modifications, and following all of 5280 Prosthetics, LLC instructions and requirements.

The duration of our Limited Warranties is 12 months effective from the date of receipt. 5280 Prosthetics, LLC's sole obligation under this Limited Warranty shall be to repair, replace, or refund the cost of the item to the original purchaser, at 5280 Prosthetics's sole discretion.

This limited warranty does not cover : Clogged or obstructed electric pumps/plumbing, damage due to accidents, pump failure due to inadequate filtration/pump maintenance, neglect, misuse, operation beyond capacity, use of internal mechanical seals, parts damaged by improper installation/removal, any alteration or repair by other than, in 5280 Prosthetics, LLC judgment, materially or adversely affects the product. Damage to the Puck from trying to pound or pry the Puck out of the socket (scratches, dents, evidence of tool use completely void the warranty of the device.

Use of this product is not a guarantee against injury. This Limited Warranty excludes liability for any personal injury, property damage, or special, incidental, or consequential damages arising out of, related, or incident to use the product, even if 5280 Prosthetics, LLC has been advised of the possibility of such potential loss or damage, unless state law otherwise precludes this exclusion.

## Return Policy

Please inspect all orders immediately upon receipt. In the event items were ordered or shipped in error, you must notify 5280 Prosthetics, LLC for a return authorization number. 5280 Prosthetics, LLC must be contacted within five (5) business days of the receipt of the items.

No returns will be accepted without prior authorization. Due to the computerized nature of the SmartPuck™ product and agreements with Apple Inc™ the SmartPuck™ can not be returned if the packaging has been opened. Please call 800-460-0288 to obtain a Return Authorization number.

When returning a product for credit or replacement, please provide either the original or a copy of the invoice or packing slip.

Credit or replacement of goods is subject to inspection and evaluation. 5280 Prosthetics, LLC will not issue a credit or replace any products returned to 5280 Prosthetics, LLC that are not in new or salable condition. The determination about whether returned products are new or salable will be made at 5280 Prosthetics, LLC sole discretion. Altered products are not returnable.

## 5280 PROSTHETICS, LLC

1501 WEST CAMPUS DRIVE, SUITE J | LITTLETON, CO 80120

1(800) 460-0288 | [www.5280Prosthetics.com](http://www.5280Prosthetics.com) | [www.Smartpuck.net](http://www.Smartpuck.net)

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