

# **Power-Flex**

## **Power Assist Drive Attachment**

(PFX1214 / PFX1517 / PFX1820)

### **User Manual**



# **SOUL**

M O B I L I T Y



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## **IMPORTANT INFORMATION - READ THIS SECTION FIRST!**

Congratulations on the purchase of your new Power-Flex Attachment (PFX). The PFX combines compact powered mobility with a functional design to enhance your independence and freedom. Soul Mobility understands you have chosen the PFX to provide years of dependable operation and enhanced quality of life by providing an option for Hybrid Mobility, allowing you the user, to determine your daily mobility needs to enjoy an active and exciting lifestyle.

### **PROVIDER:**

- This manual **MUST** be given to the user of the Power-Flex Attachment (PFX).

### **USER:**

- This manual and the Set-up Guide should be reviewed completely **BEFORE** you (or anyone else operating the PFX) begins using it.
- Follow all instructions and make sure you understand them.
- If you don't understand something, ask your Authorized Soul Mobility Provider for assistance.
- Do not use the PFX if you still have any questions.
- Save this manual so you can check it for information if you have a question in the future.
- This manual only has information about the PFX.
- This manual is **NOT** a replacement for your wheelchair user manual.

**CAUTION:** Federal law restricts this device to sale by or on the order of a practitioner licensed by the law of the State in which the practitioner practices to use or order the use of the device.

### **PROVIDER AND USER:**

You will see "WARNINGS" throughout this manual. Warnings will look like this:



### **WARNING!**

- Warnings are hazards or unsafe ways to use the PFX that **MAY CAUSE SEVERE INJURY OR EVEN DEATH** to the user or another person.
- Failure to follow the instructions in this manual and those located on your PFX can lead to personal injury and/or damage to the PFX and your wheelchair including voiding the warranty.
- **READ ALL WARNINGS AND MAKE SURE YOU UNDERSTAND THEM!**
- **DO NOT** use the PFX until you are sure you understand how to avoid these hazards and unsafe ways to use it.
- When adding the PFX to your existing manual wheelchair you must continue to maneuver the complete unit as the manual chair is intended to be used. The PFX does not change the intended use of the Manual chair. It is intended to assist.

**NOTE:** If you ever lose or misplace your copy of this manual, contact us and we will be glad to send you a new one immediately.

## **IMPORTANT INFORMATION - READ THIS SECTION FIRST!**



### **WARNING!**

An Authorized Soul Mobility Provider or a qualified technician must perform the initial setup of this device and must perform all of the procedures in this manual.

- For correct performance, the manual wheelchair **MUST** be configured to fit the wheelchair user by their Rehab Technology Professional. The PFX must also be configured to work with the wheelchair it will be used on. **ALWAYS** use parts and/or accessories that have been recommended and approved by Soul Mobility. If you are unable to follow the PFX set-up guide as shown for correct configuration, please discontinue set-up and return the PFX.
- Use of a manual wheelchair with the PFX that is not configured for the user will create and unsafe condition and void all warranties
- Read and follow all instructions, warnings, and notes in this user manual and the provided set-up guide for your PFX unit before attempting to operate your PFX for the first time. Your safety depends upon you, as well as your provider, caretaker, or healthcare professional in using good judgment.

### **Purchaser's Agreement:**

By accepting delivery of this product, you promise that you will not change, alter, or modify this product or remove or render inoperable or unsafe any guards, covers, or other safety features of this product; fail, refuse, or neglect to install any retrofit kits from time to time provided by Soul Mobility to enhance or preserve the safe use of this product.

### **Shipping and Delivery:**

Before using your power chair, make sure your delivery is complete as some components may be individually packaged. If you do not receive a complete delivery, please contact your Authorized Soul Mobility Provider immediately. Where damage has occurred during transport, either to the packaging or content, please contact the delivery company responsible.

### **Disclaimer:**

Soul Mobility is not responsible for damage or injury due to improper or unsafe use of the PFX. Soul Mobility specifically disclaims responsibility for bodily injury and property damage that occurs during any use that does not comply with this manual or any federal, state, local laws or ordinances.

### **Future Updates and Modifications:**

This user manual is compiled from the latest specifications and product information available at the time of publication. We reserve the right to make changes as they become necessary. Any changes to our products may cause slight variations between the illustrations and explanations in this manual and the product you have purchased. The latest/current version of this manual is available on our website.

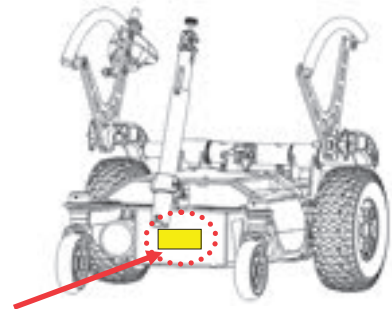
## Register Your Product

Soul Mobility takes pride in developing and producing quality products to provide you the user with the best mobility options available. We appreciate your trust in us and making Soul Mobility a partner in your life on wheels. We encourage you to register your product so you can receive warranty services and help us to provide you with any necessary product updates or information.

Warranty Registration: [www.soul-mobility.com/registration](http://www.soul-mobility.com/registration)

### Information Needed

1. PFX Serial Number: \_\_\_\_\_
2. Purchase Date: \_\_\_\_\_
3. Your Contact Information Address, Mail, Etc...



Unit Model Decal with  
Serial Number

**NOTE:** If you prefer not to register your product on our website you can also send us the registration card included with your PFX unit and user manual to the customer care department at the address below.

### Contact Information

Soul Mobility, Inc.	p: 855-768-5662
659 River Bluff Circle	e: <a href="mailto:contact@soul-mobility.com">contact@soul-mobility.com</a>
Oconomowoc, WI 53066	visit our website: <a href="http://www.soul-mobility.com">www.soul-mobility.com</a>

### Provider Information

Authorized Soul Mobility Providers know your product best. They can answer your mobility questions and help with any maintenance, adjustments and more. Keep track of your Soul Mobility Provider information here:

Provider Name: \_\_\_\_\_

Name(s) of People You Worked With: \_\_\_\_\_

Provider Address: \_\_\_\_\_

Telephone / Mobile Number: \_\_\_\_\_

Email Address: \_\_\_\_\_



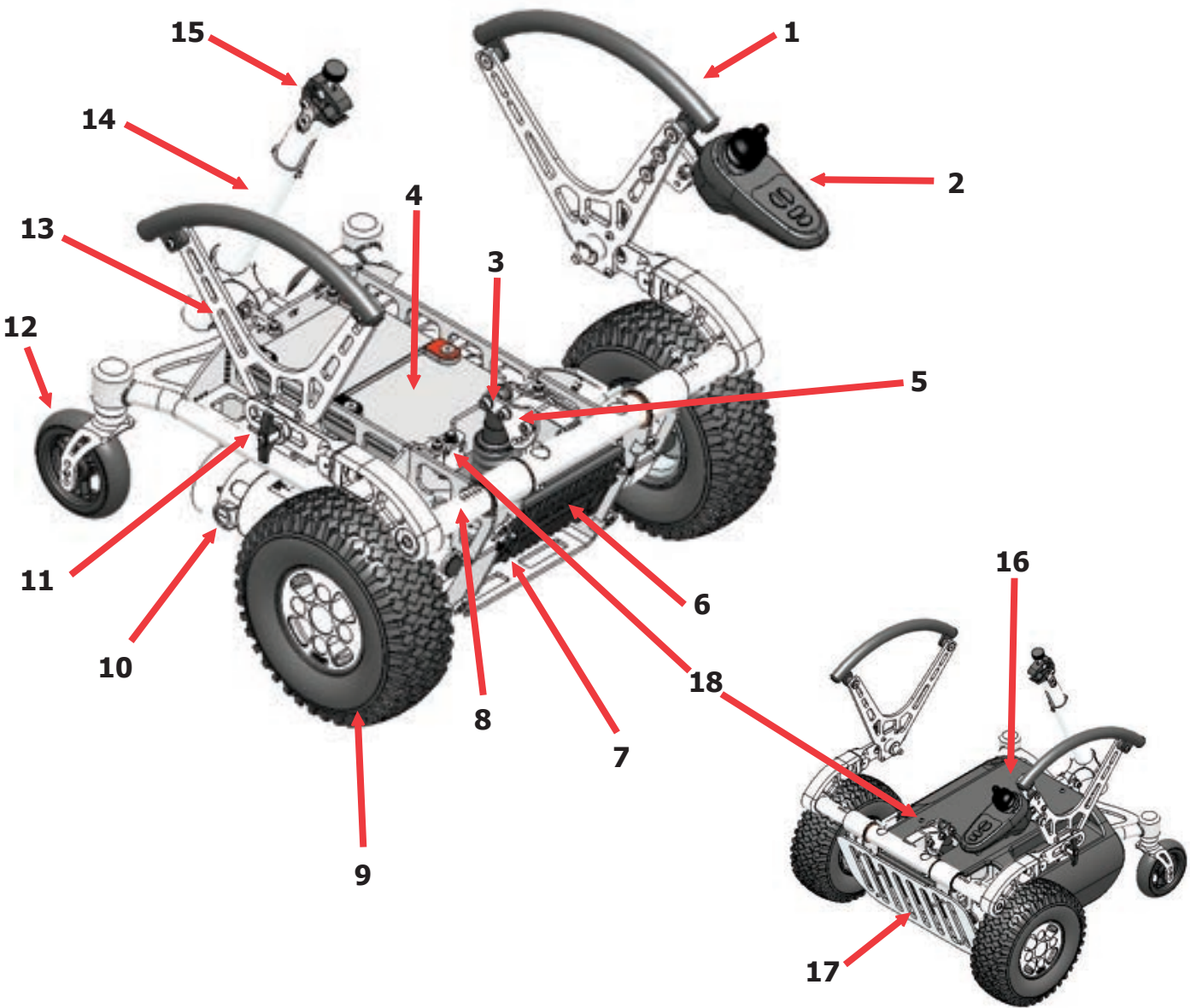
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**1. Introduction (Components)**

**The PFX and it's Components**

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## 1. Introduction

This manual only has information about the PFX attachment. This manual is NOT a replacement for your manual wheelchair user manual. The user manual for your wheelchair should ALWAYS be where you look for information about adjustments, maintenance, safety checks, troubleshooting, etc. for your wheelchair.

### Indication for Use:

The Power-Flex by Soul Mobility is intended to provide enhanced mobility to disabled persons who are capable of operating a powered and manual wheelchair, by providing powered mobility to manual wheelchairs.

### Compatibility Guidelines:

Physical properties of compatible Wheelchair Seat Frame:

The PFX can be used with a rigid manual wheelchair with the following characteristics:

- Rigid frame with a horizontal camber tube mounted level with wheelchair rear wheel axles.
- No obstructions under camber tube
- 22, 24", 25", 26" wheelchair rear wheels
- 2 - 4 degrees of wheel camber
- 12"-20" rear seat frame width



## WARNING!

### General Operating Conditions.

- Maximum weight of user not to exceed 275 lbs.
- Maximum curb height 2 inches
- Maximum safe incline is 7 degrees
- Minimum distance on fully charged batteries is 4 miles for the max occupant weight rating of 275lbs.
- Breaking distance is approximately 4 feet from full speed.

### DISCLAIMER:

- Minimum distance, safe inclines, and breaking distance can all be effected by occupant weight, terrain, weather, battery condition, as well as several other various factors.

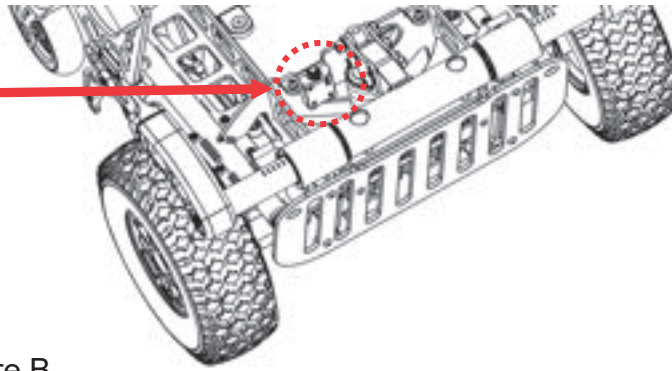
## 1. Introduction

### Main Circuit Breaker:

A 50-PFX main circuit breaker reset button is located on the power base. Check the 50-PFX breaker and reset if PFX stops operating. Refer to Figure A (Refer Section 6: Troubleshooting for more information)

Figure A

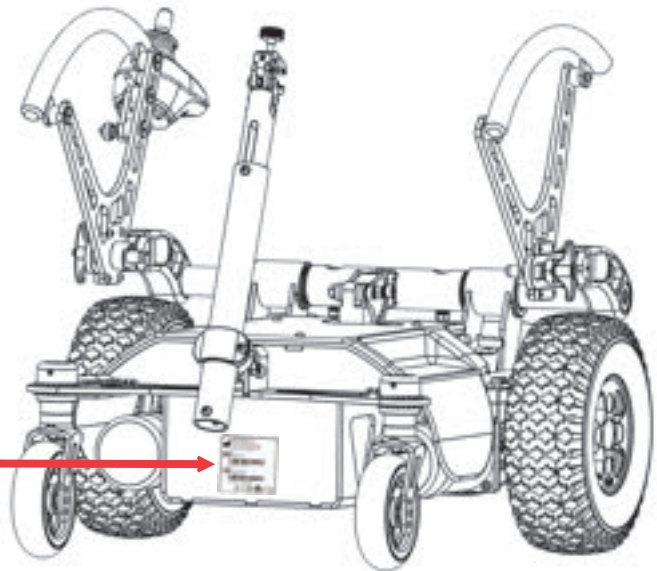
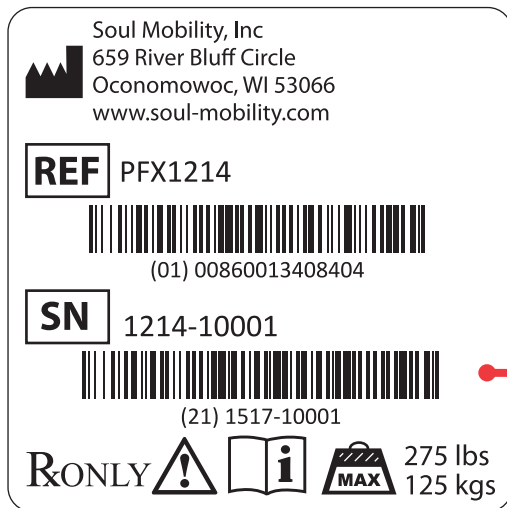
Location of Main Circuit Breaker



### Product Labels and Symbols:

Unit Model Decal: Refer to Figure B


Figure B





**REF** Model Name or  
Catalog Number

**SN** Serial Number

 Manufacturer

 Caution is necessary  
when operating

 Consult Instructions  
for Use

 Maximum Allowable  
User Weight



## 1. Introduction

### Product Labels and Symbols:

The symbols below are used on the PFX to identify product information and proper use. It is very important for you to read and understand them completely

### Manual Freewheel Levers / Locking Levers:

For your convenience, your PFX is equipped with a manual freewheel lever mounted on each motor. The locking levers allow you to disengage the drive motors and maneuver the chair manually.

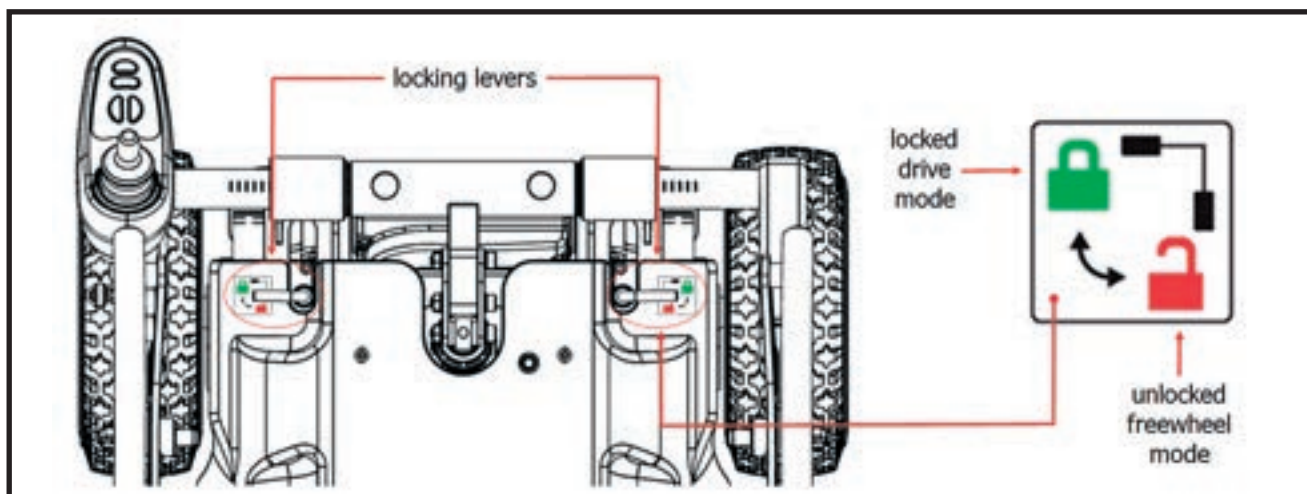
### WARNING!

- It is important to remember that when your PFX is in freewheel mode, the braking system is disengaged.
- Do not use the PFX while the drive motors are disengaged! Do not disengage the drive motors when the PFX is on an incline, as the unit could roll on its own! Only engage the freewheel mode when on a level surface.
- You must turn off the power before disengaging the drive motors; otherwise, you may get an error code on the controller. To clear this code, turn off the controller and place the PFX In drive mode. Then, turn on the controller. The error message should be cleared. If it is not, contact your Authorized Soul Mobility Provider.
- Avoid applying excessive force to the motor locking levers. Excessive force may result in damage to the freewheel levers, motors, and brakes
- Do not use your foot to operate the locking levers or stand on the locking levers.
- Do not use the locking levers as tie-down points to secure the PFX.

**To operate the locking levers:** Refer to Figure C

- 1) Turn both motor lock levers to the unlocked position for freewheel mode. (Drive motors disengaged, unit able to be manually pushed or roll freely)
- 2) Turn both motor lock levers to the locked position for powered drive mode (drive motors engaged, and unit unable to be pushed or roll freely)

**Figure C - Locking Levers**



## 1. Introduction

### **First Time Setup**

Refer to the included Set-up Guide for complete instructions for setting up your PFX with your manual wheelchair for the first time.



### **WARNING!**

- An Authorized Soul Mobility Provider or a qualified technician must perform the initial setup of this device and must perform all of the procedures in this manual.
- Read and follow all instructions, warnings, and notes in the set-up guide for your PFX before attempting to operate your PFX for the first time.
- The PFX contains an anti-tilt / manual tilt feature. Before using the PFX for the first time, ensure the rear manual tilt clamp is set up and adjusted correctly.



### **WARNING!**

- Do not operate the PFX without first adjusting the rear manual tilt feature to suit your wheelchair. Failure to comply will cause wheelchair to tilt and injury to operator.
- Do not adjust your manual wheelchair to suit the PFX. The PFX must be adjusted to connect properly to your wheelchair. Failure to comply may cause your wheelchair to tilt when disconnected from the PFX.



### **WARNING!**

### **ATTENDANTS AND CARE GIVERS -**

- PFX user and/or caregiver are responsible for making sure that it has been set up and adjusted by a trained service professional under the advice of a healthcare professional. It may require periodic safety and function checks or certain in-use adjustments that can be performed by the user, caregiver, or authorized Provider if desired. ALWAYS use parts and/ or accessories that have been recommended or approved by Soul Mobility when servicing this unit.
- Read all warnings and instructions in this user manual and make sure you understand them. Consult a healthcare professional if you have questions about how to safely assist a wheelchair user. They can help you with assistive techniques suited to your abilities and experience.



### **WARNING!**

### **FASTENERS & HARDWARE:**

All fasteners and hardware used on the PFX have very specific sizes and strengths. NEVER replace genuine PFX fasteners and/or hardware with other off-the-shelf hardware. ONLY USE fasteners and hardware provided by an Authorized Soul Mobility Provider. If you do not follow this warning, damage to the PFX and/or your wheelchair may occur and cause injury to yourself or others. Using fasteners and/or hardware not sourced from Soul Mobility will void your warranty.

## 1. Introduction

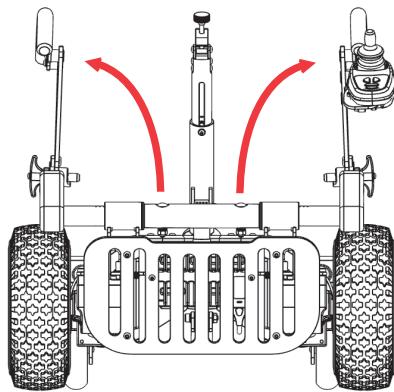
### Attaching your manual wheelchair frame to the PFX

The PFX is designed to allow users to quickly connect their manual wheelchair frame to the PFX attachment. The PFX has three connection points that do not require any tools to attach your manual wheelchair frame once properly set-up.

### Attachment Steps

- Power off the PFX, Ensure locking levers are in drive mode
- Rotate the handrim support assemblies to the vertical position. Refer to Figure D

Figure D



- Retract each axle pin by pulling the “T” handle out fully and rotating handle 90 degrees to a horizontal position. Refer to Figure E & Figure F

Figure E

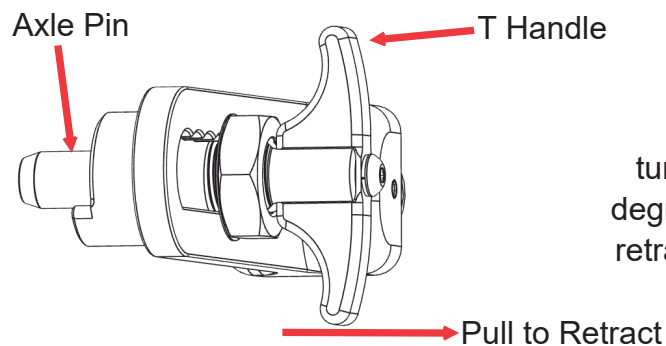
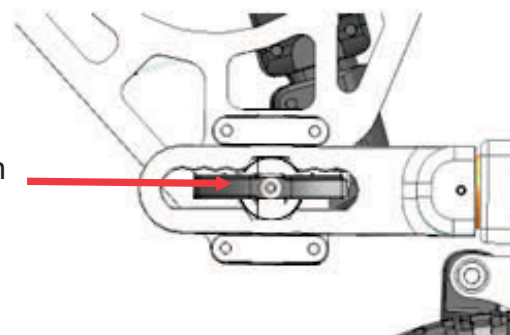


Figure F

turn handle 90  
degrees to hold in  
retracted position

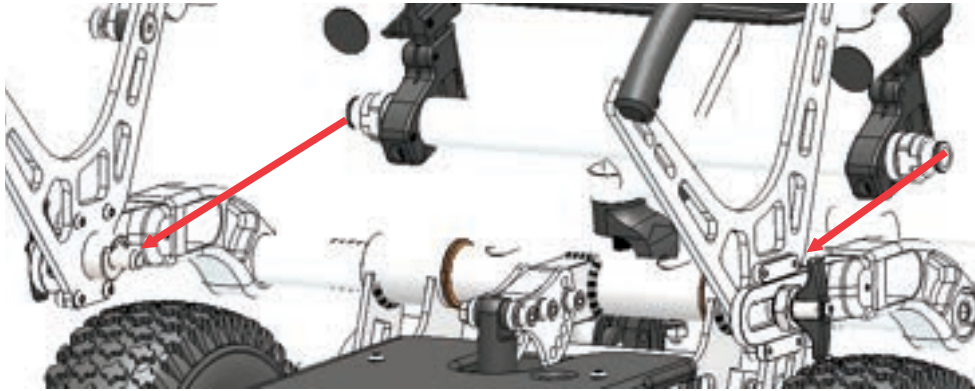


- Tilt the manual tilt assembly back out of the way and open the upper clamp
- With the manual wheelchair unoccupied, remove both rear wheels
  - **NOTE:** Keep the manual wheelchair wheel axles with the wheels

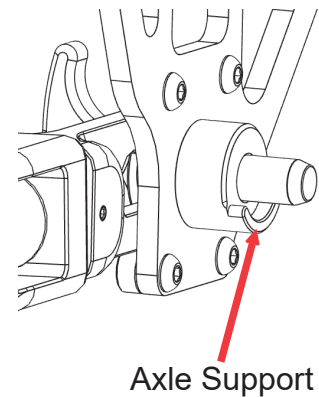
## 1. Introduction

- Align manual chair axle receivers with the PFX unit axle pins and rest the manual wheelchair frame on the axle supports. Refer to Figure G and Figure H

**Figure G**



**Figure H**

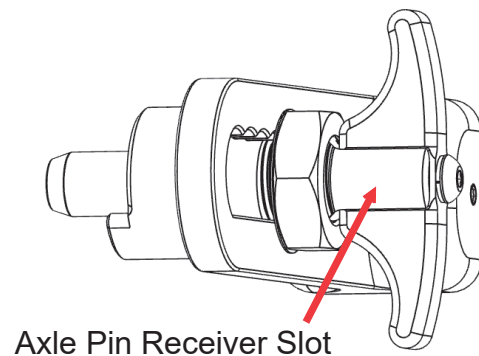


- Rotate the “T” handles 90 degrees to vertical to engage the axle pins into the wheelchair frame axle receivers, ensuring the “T” handle is fully seated in the Axle Pin Receiver Slot. Refer to Figure I and Figure J

**Figure I**

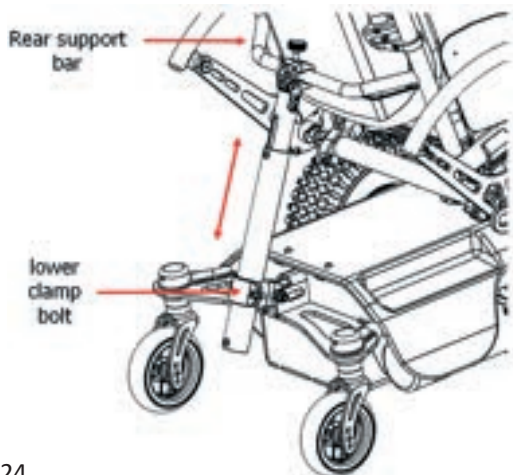


**Figure J**



- Attach the manual tilt assembly upper clamp to the rear support bar of the manual wheelchair frame and tighten the clamp until snug. Refer to Figure K

**Figure K**



## 1. Introduction

**NOTE:** To remove the frame from the PFX, conduct the above steps in reverse order ensuring to reattach the manual wheelchair wheels to the frame and fully install the wheel axles.



### **WARNING!**

- Use an Authorized Soul Mobility Provider to ensure proper fitment of your manual wheelchair frame per the Set-up Guide before attaching your manual wheelchair frame
- Ensure the axle pins are fully engaged and inserted into the manual wheelchair frame axle receivers. The “T” handle should be fully seated in the axle pin receiver slot. Refer to Figure H
  - **NOTE:** You may need to rotate the handrim support assembly to align PFX axle pins with any camber the manual wheelchair axle receivers may have.
- Confirm the motor locking levers are in the Drive Mode and the unit cannot freewheel
- Do not install the manual wheelchair frame to PFX when occupied
- Do not remove the manual wheelchair frame from the PFX when occupied
- Before driving, always ensure all three attachment points are firmly engaged and connected
  - Right and Left axle receiver pin fully engaged in manual wheelchair axle receiver
  - Manual Tilt upper clamp tightly secured to the rear of the manual wheelchair frame

### **Center of Balance**

The PFX when properly set-up is designed to maintain the user center of balance between their manual wheelchair set-up and when installed into the PFX attachment.



### **WARNING!**

- Use an Authorized Soul Mobility Provider to ensure proper ride height and center of balance are maintained for the users specific manual wheelchair and user weight per the Set-up Guide.
- Center of balance can also be affected by terrain, inclines, changes in body weight and/or posture, or when carrying items on your lap or the weight of a backpack.
- To reduce the risks of accidents from center of balance changes: Always have someone assist you until you are comfortable with your PFX center of balance and how to move safely.



## 1. Introduction

### Manual Tilt Operation and Anti-Tip

The PFX is equipped with a manual tilt mechanism that also works as an anti-tip mechanism while the PFX is being driven. It is important that this mechanism is properly set-up and adjusted to your manual wheelchair before operation. Refer to the PFX set-up guide for proper adjustment.

### WARNING!

#### Anti-Tip

When operating the PFX, the system is designed to pivot around the axle receivers similar to your manual wheelchair, allowing the front casters to raise off the ground to help navigate various terrains and obstacles. Refer to Section 3: Safety and Operating for more information.

- In the event your manual wheelchair frame tips beyond the center of balance in the PFX, the manual tilt assembly has a positive stop position that will keep the manual wheelchair frame from tipping backwards. Refer to Figure L1

### WARNING!

- Always make sure the manual tilt assembly upper clamp is properly attached to the manual wheelchair frame before operating the PFX.
- When driving the PFX, use extra care when you move in reverse.
- Move your PFX slowly and smoothly to limit the potential of tipping
- Do not hang extra weight or backpacks on the rear of your chair when installed onto the PFX as this increases the possibility of tipping

Figure L1





## 1. Introduction

### Manual Tilt Operation

The PFX has the capability to tilt rearward until it reaches a positive stop position where the user can then remain in a tilted position. Refer to Figure J.

To operate, push on the PFX handrim supports tilting the manual frame backward until the frame reaches the positive stop position. To return to a driving position, pivot the chair back by pulling on the PFX handrim supports.



### WARNING!

- Always tilt in a controlled manner keeping your hands on the PFX handrim supports at all times for additional support. Seek assistance when tilting if this is not possible.
- Never drive from a tilted position. Always ensure the power to the PFX is off when tilting.
- Never tilt when on an incline. Confirm you are on level and firm ground before tilting.
- Confirm the motor locking levers are in the Drive Mode and the unit cannot freewheel
- Confirm no obstacles are in your way (In front or behind the PFX) before tilting

### Pinch Points

During set-up, storage, and installation or removal of the manual wheelchair frame onto the PFX the user should be aware of potential pinch points due to moving, sliding or rotating components and operate these mechanisms with caution. Refer to Figure L2 for possible pinch points.



### WARNING!

- Moving, sliding, or rotating components can pinch and/or break the skin
- Use extra care when interacting with the areas identified in Figure L2 to ensure user safety and avoid pinching

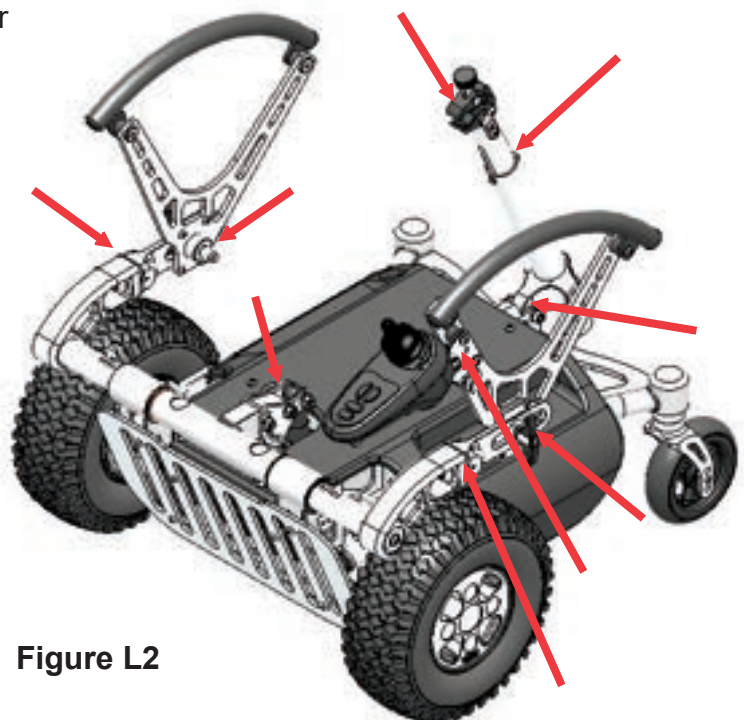


Figure L2

## 1. Introduction



### **WARNING!**

#### **PFX Weight Limits:**

Your wheelchair and PFX each have specific maximum weight limits. These limits have been tested for safety. DO NOT go over weight limits specified by Soul Mobility or your wheelchair manufacturer. If you do go over these weight limits, you may cause a fall, tip-over, loss of control, damage your PFX, damage your wheelchair and cause severe injury to you or others.

**PFX Maximum Weight Limit:** 275 lbs. (unless otherwise stated)

Note: This weight limit includes the weight of the user and items carried/stored on the PFX.

**Your Wheelchair Weight Limit:** Check your wheelchair user manual for a weight limit. This weight limit should be for the weight of the user and items carried/stored on the wheelchair.

**NOTE:** If your wheelchair has a weight limit of less than 275 lbs. make sure to stay under that specified weight limit. If your wheelchair weight limit is greater than the PFX weight limit, DO NOT exceed the PFX weight limit of 275 lbs.

#### **Service and Adjustments:**

Service and adjustment of the PFX should only be made by an Authorized Soul Mobility Provider. They are familiar with the product requirements and specifications. They also know the specifications for any needed replacement parts. At least once a year, have a complete inspection, safety check and service of your PFX by an Authorized Soul Mobility Provider. (Refer to Section 5: Care, Maintenance, and Safety Checks for more information)

#### **Safety and General Warnings:**



### **WARNING!**

Before riding be sure to be trained by a healthcare advisor on the safe use of the product. Never try a new maneuver without training or advice from a healthcare professional.



### **WARNING!**

The PFX is not designed to support any individual standing on the back of the unit. If you fail to heed this warning you will seriously damage the PFX and could cause harm to the intended user and will void all warranties.



### **WARNING!**

Keep hands, fingers, and any other body parts clear of moving parts to avoid injury. Be sure to avoid and check for loose clothing and/or personal items that may come in contact with moving parts as they could become entangled and cause serious injury or damage to the PFX.

## 1. Introduction



### **WARNING!**

Your PFX is designed to increase mobility. Please be aware that the final selection and purchasing decision regarding the type of power attachment to be used is the responsibility of the power chair user, who is capable of making such a decision, and his/her healthcare professional (i.e., medical



### **WARNING!**

The contents of this manual are based on the expectation that a mobility device expert has properly fitted the PFX to the user and has assisted the prescribing healthcare professional and/or the Authorized Soul Mobility Provider in the instruction process for the use of the products.



### **WARNING!**

Always use caution when transferring in or out of your manual wheelchair when attached or not attached to the PFX. Every precaution should be taken to reduce transfer distance. Be certain PFX's motor brakes are engaged and power is turned off to prevent wheels from moving.



### **WARNING!**

There are certain situations, including some medical conditions, where the user will need to practice operating the PFX in the presence of a trained attendant. A trained attendant can be defined as a family member or care professional specially trained in assisting a power chair user in various daily living activities.



### **WARNING!**

**KNOW YOUR DEVICE** - Be sure to get used to your PFX, it's controls and how it works to build up your skills and confidence. Take your time and learn about how the controls feel response time speed and maneuvering. Using too much force or moving too quickly could cause your chair to tip over or you lose control causing severe injuries to you or others. Recognizing that any obstacle that encounters the front casters of any wheelchair can cause an abrupt impact/stop. By adding the PFX to your wheelchair, it does not improve obstacle clearance. Always understand your chair setup and limitations.



### **WARNING!**

**INTENDED USE - DO NOT** use the PFX for any purpose other than what it is intended. This could create a safety hazard, cause damage to your wheelchair and cause severe injury to you or others. Using PFX for unintended purposes will void the warranty.

## 2: Electromagnetic Interference (EMI) Information and Warnings



### **WARNING!**

Make sure to follow all of these warnings to reduce the chance of unplanned brake release or wheelchair movement:

- Handheld transceivers (commonly known as walkie-talkies) can be dangerous near powered mobility devices like PFX. When your PFX is powered-up and turned on, DO NOT turn on or use a handheld transceiver. If a handheld transceiver is being used by someone near your PFX, be careful and stop or move away in a safe manner.
- Antennas that transmit radio waves (at radio stations or other types of radio communications) can cause interference. Avoid being near them.
- If something causes unplanned movement of your PFX, be careful and stop or move away in a safe manner. Turn off your PFX as soon as you safely can.

### **What is EMI?**



### **WARNING!**

EMI stands for: electromagnetic interference.

- Sources of EMI are radio waves that come from radio transmitters and transceivers. Transceivers are devices that send and receive radio waves – like a handheld two-way radio or walkie-talkie.
- There may be several sources of intense EMI found around you daily. Some sources are obvious and some less obvious. It may be difficult to avoid some sources of EMI.
- Powered mobility devices like PFX may be susceptible to EMI from radio stations, TV stations, amateur radio (ham) transmitters, two-way radios, radar systems or cellular phones and devices.
- EMI can also come from electrostatic discharge (ESD). ESD is commonly referred to as static electricity – when you touch something or someone that gives off a small shock of electricity. EMI also may come from “conducted” sources when it occurs where wires or cables connect a source and a receiver.

### **What Effect Can EMI Have?**



### **WARNING!**

EMI can cause your PFX to suddenly:

- Release the brakes
- Move by itself
- Move in a direction you do not want it to
- If this happens, it could result in severe injury to you or others.

EMI can damage the control system of your PFX. This could be a safety hazard, and lead to expensive repairs.

## 2: Electromagnetic Interference (EMI) Information and Warnings

### Sources of EMI

#### **WARNING!**

Sources of EMI fall into three general types:

- **Handheld Transceivers or Radios:** An antenna is attached to unit in most cases. Examples of handheld transceivers include:
  - Citizens Band (CB) radios
  - Walkie-Talkies
  - First Responder Radios (Police, Fire, Security, etc.)
  - Mobile Phones
  - Laptop Computers (with phone or fax)
  - Other Personal Communication Devices
  - Electronic Article Surveillance Systems (Commonly used in retail stores to prevent theft by attaching tags to merchandise and sounding an alarm if the item is removed from the store.)
  - RFID (Radio Frequency Identification) Readers or Emitters (Commonly used to scan various items such as price tags in retail stores, inventory codes in warehouses, ticket codes at events, etc.)
  - Wireless accessories such as wheelchair controllers that use RF (Radio Frequency) transmitters.

**NOTE:** These types of devices can still transmit signals while they are turned on, even if they are not actively being used.

- **Medium-Range Mobile Transceivers:** An antenna is usually attached outside of a vehicle containing the device. Examples of medium-range mobile transceivers include:
  - Two-Way Radios used in Emergency Vehicles (Police Cars, Fire Trucks, Ambulances)
  - Two-Way Radios used in Taxi Cabs, Delivery Vehicles, Municipal Vehicles (like Garbage Trucks or Maintenance Equipment), etc.
- **Long-Range Transceivers:** Examples of long-range transceivers include:
  - Commercial Radio Station Antennas
  - Television Broadcast Tower Antennas
  - Amateur Radio

## 2: Electromagnetic Interference (EMI) Information and Warnings

### **WARNING!**

- Medical devices that emit RF (Radio Frequency) signals may also be sources of EMI:
  - X-Ray machines
  - CT scanners (Computerized Tomography)
  - Diathermy machines
  - MRI machines (Magnetic Resonance Imaging)

**NOTE:** There is significant risk of EMI by emissions from MRI machines. Powered wheelchairs and scooters, including PFX, should be prohibited from entering any MRI environment.

**NOTE:** These devices do not usually cause EMI problems:

- Laptop computers (without phone or fax)
- Cordless phones
- Televisions
- AM/FM Radios
- CD or Cassette Tape players

### Distance from the Source

### **WARNING!**

Electromagnetic energy (EM) quickly becomes stronger the closer you get to its source. EMI from handheld devices can be a big problem because of this. A person using a handheld device can bring high levels of electromagnetic energy (EM) very close to your chair without you knowing it.

### **WARNING!**

### Immunity Level

- Electromagnetic energy (EM) is measured in volts per meter (V/m). PFX can resist EMI up to a certain level or “immunity level”.
- A high immunity level means less risk of EMI. A 20 V/m immunity level will protect PFX users from most EMI.
- PFX mounted to a wheelchair frame and using its standard batteries, has been tested to have at least a 20 V/m immunity level.



## 2: Electromagnetic Interference (EMI) Information and Warnings



### **WARNING!**

Adding accessories or modifying a PFX/wheelchair set-up can change the risk for EMI. Work with your Authorized Soul Mobility Provider to make sure these changes do not change your risk of an EMI incident.

#### **Contact Soul Mobility about suspected EMI incidents**

If you have an unplanned brake release or wheelchair movement, be sure to contact Soul Mobility. Make sure to let us know whether there was a potential EMI source near your wheelchair at this time.

Contact:

Soul Mobility Customer Care @ 855-768-5662 or [contact@soul-mobility.com](mailto:contact@soul-mobility.com)

#### **EMC - Essential Performance:**

The PFX has been designed and tested to the requirements of ANSI/RESNA WC-2:2019 Section 21: Requirements and Test Methods of Electromagnetic Compatibility of Electrically Powered Wheelchairs and Scooters and Battery Chargers including IEC 60601-1-2.

EMC testing has established that the following Essential Performances are maintained:

- For all EMI source types tested – the power assist drive system may not move inadvertently more than 2 inches without user input to the joystick during or for a period of 2s after the test event.
- For sources typical of an outdoor environment – the power assist drive system may not inadvertently stop working such that the unit cannot be moved via the joystick.
- For sources typical of indoor use environments or medical environments – it is acceptable for the drive system to inadvertently stop working as long as the system fails in a safe manner (brakes on) and is operational once the power assist drive system is removed from the source environment or the source removed/turned off.

### 3. Safety and Operating (Environmental Factors)

#### SAFETY FIRST

When operating PFX during daily activities, operator may encounter situations which require practice to master. It is helpful to take ample time to successfully maneuver through doorways, elevators, wheelchair ramps, and over moderate unpaved terrain. The more the PFX is used, the more skill the operator will develop.

#### Environmental Factors:

Avoid exposing PFX to inclement weather conditions. If operator is caught in rain, snow, severe cold, or heat while operating PFX, calmly proceed to shelter at earliest opportunity. Once at adequate shelter, thoroughly dry and clean PFX before storing, charging, or operating again.



#### WARNING!

- Avoid extreme cold and/or wet conditions whenever possible.
- Water or excess moisture that is allowed to collect can cause PFX to rust or corrode.
- Never drive PFX into water or submerge the base.
- Parts and Electronics are not watertight and may rust or corrode from the inside.
- When PFX comes into contact with water or moisture, dry your device as soon as you can.
- If you do not follow these warnings, damage to PFX and/or your wheelchair may occur, you could lose control and cause severe injury to yourself or others.
- The PFX is not intended to ride on surfaces not intended for the wheelchair or the wheelchair user's skills.
- The PFX is intended to be used on all ADA compliant surfaces.
- When using the PFX approach all thresholds and obstacles (never greater than 2") with caution. Do not attempt to go over any obstacle you are unsure of.



#### WARNING!

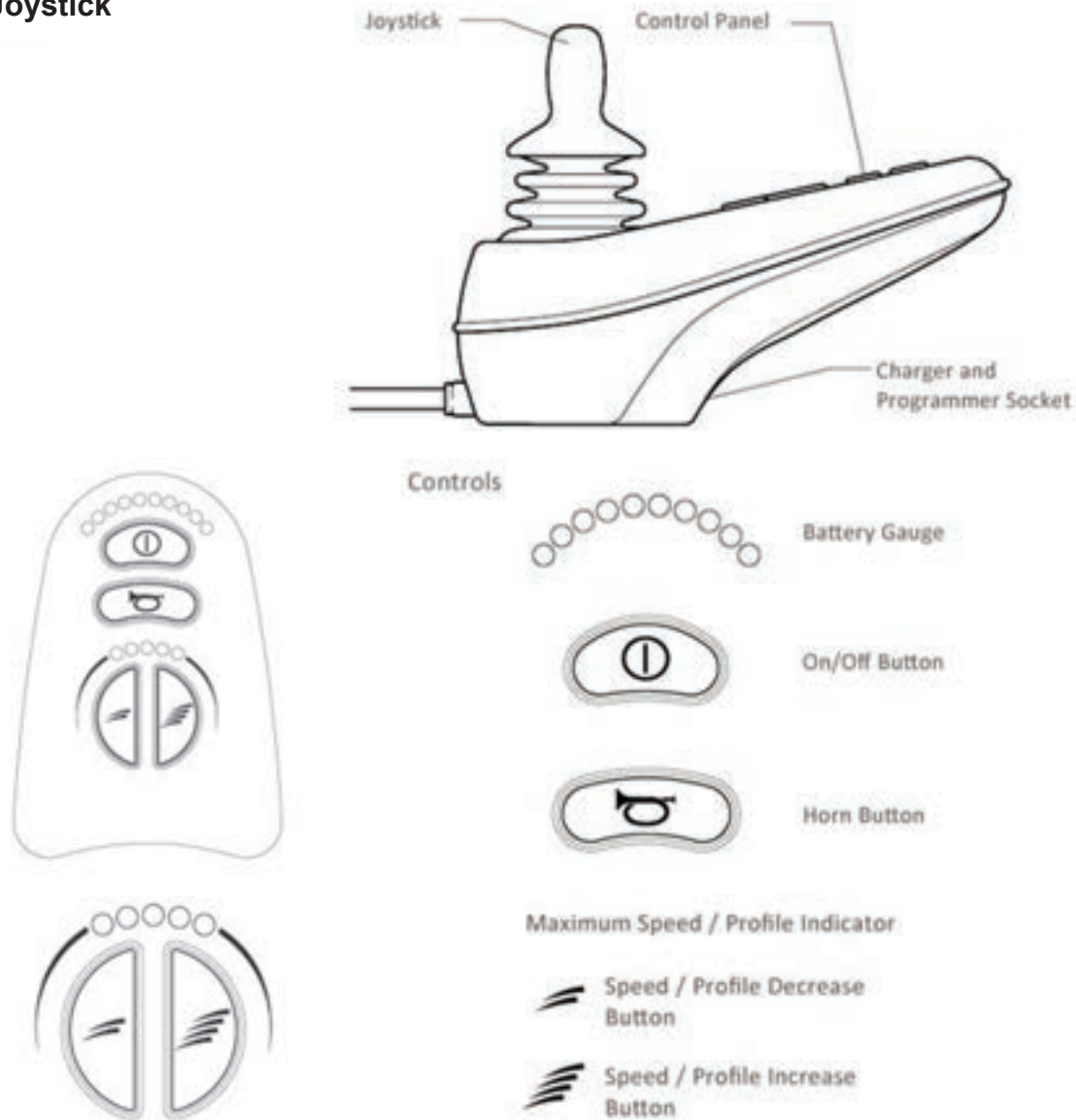
- Do not operate PFX on public streets or roadways. Failure to comply could cause injury to operator, damage to equipment or traffic citation from local law enforcement.
- The PFX is designed to provide optimum stability under normal operating conditions. Normal operating conditions are considered dry, solid, and level surfaces. When possible, avoid soft or uneven surfaces. A safe rule is...If you feel unsure about a driving surface, avoid it.

Soul Mobility recognizes there are times when PFX operators will encounter alternative surface types. Whenever possible, try to avoid traversing the following terrain and situations.

- Uneven terrain and/or soft surfaces.
- Tall grass that may become lodged into the PFX or its wheel motors.
- Loosely packed gravel and/or sand.
- Do not operate the PFX in fresh or salt water.
- Avoid using PFX at the edge of a stream, lake, or ocean.

### 3. Safety and Operating (Joystick & Controls)

Figure M - Joystick



- Avoid knocking your control system and especially the joystick. Be careful not to strike obstacles with the control system or joystick when you drive. Never drop the control system.
- When transporting your PFX, make sure that the control system is well protected. Avoid damage to cables.
- Your control system uses industrial-grade components throughout, ensuring reliable operation in a wide range of conditions. However, you will improve the reliability of the control system if you keep exposure to extreme conditions to a minimum.
- Do not expose your control system or its components to damp for prolonged periods. If the control system becomes contaminated with food or drink clean it off as soon as possible.
- Clean the control system and the joystick with a cloth dampened with diluted detergent. Be careful when cleaning the joystick. Never use abrasive or spirit-based cleaners.

### 3. Safety and Operating (Joystick & Controls)

#### On/Off Button

- The on/off button applies power to the control system electronics, which in turn supply power to the PFX motors. Do not use the on/off button to stop the PFX unless there is an emergency. (If you do, you may shorten the life of the PFX drive components).

#### Battery Gauge

- The battery gauge lets you know how much charge is left in your batteries. The best way for you to use the gauge is to learn how it behaves as you drive the PFX. Like the fuel gauge in a car, it is not completely accurate, but it will help you avoid running out of “fuel”.



#### **WARNING!**

Do not operate the control system if the battery is nearly discharged. Failure to comply with this condition may leave the user stranded in an unsafe position, such as in the middle of a road. Soul Mobility, Inc accepts no liability for losses of any kind arising from failure to comply with this condition.

#### Battery Gauge Functions

- The Battery Gauge LED shows you that the PFX is switched on. It also indicates the operating status of the PFX.
- When you switch on the control system, the Battery Gauge LED's shows an estimate of the remaining battery charge. The battery gauge gives you a more accurate reading about a minute after you start driving the PFX.
- Battery Gauge LED is steady: this indicates that all is well.

#### Reading the Battery Gauge LED's:

- Battery Gauge LED's show red, yellow and green, the batteries are charged.
- Battery Gauge LED's show just red and yellow, then you should charge the batteries as soon as you can.
- Battery Gauge LED's show just red, either steady or flashing slowly, then you should charge the batteries immediately.
- Battery Gauge LED's steps up: the wheelchair batteries are being charged. You will not be able to drive the PFX until the charger is disconnected and you have switched the control system off and on again.

### 3. Safety and Operating (Joystick & Controls)

#### Reading the Battery Gauge LED's (Continued):

- Battery Gauge LED's flashes rapidly (Even with the joystick released): The control system safety circuits have operated and the control system has been prevented from moving the PFX. This indicates a system trip, i.e. the control system has detected a problem somewhere in the PFX electrical system. Please follow this procedure:
  - Switch off the control system.
  - Make sure that all connectors on the PFX and the control system are mated securely.
  - Check the condition of the battery.
  - If you can't find the problem, try using the self-help guide to troubleshoot
  - Switch on the control system again and try to drive the PFX. If the safety circuits operate again, switch off and do not try to use the PFX. Contact your Authorized Soul Mobility Provider.

#### Self Help Guide

- If a system trip occurs, you can find out what has happened by counting the number of LED bars on the Battery Gauge that are flashing.
- Try to use this list before you contact Authorized Soul Mobility Provider. Go to the number in the list which matches the number of flashing LED bars and follow the instructions. If the problem persists, contact an Authorized Soul Mobility Provider.

#### Self Help Actions

- 1 LED Flash: The battery needs charging or there is a bad connection to the battery. Check the battery connections. If they are good, try charging the battery.
- 2 LED Flash: The left hand motor has a bad connection. Check the left motor connection
- 3 LED Flash: The left hand motor has a short circuit to a battery connection. Contact your Authorized Soul Mobility Provider.
- 4 LED Flash: The right hand motor has a bad connection. Check the right motor connection.
- 5 LED Flash: The right hand motor has a short circuit to a battery connection. Contact Authorized Soul Mobility Provider.
- 6 LED Flash: The PFX is being prevented from driving by an external signal. One possibility is the battery charger is connected.
- 7 LED Flash: A joystick fault is indicated. Make sure the joystick is in the center position before switching on the control system.
- 8 LED Flash: A possible control system fault is indicated. Ensure all connections are secure.
- 9 LED Flash: The parking brakes have a bad connection. Check the parking brake and motor connections. Make sure the control system connections are secure.
- 10 LED Flash: An excessive voltage has been applied to the control system. This is caused by a poor battery connection. Check the battery connections.

### 3. Safety and Operating (Joystick & Controls)

#### Horn Button

- The horn will sound while this button is depressed.

#### Maximum Speed/Profile Indicator

- This is a gauge which shows the maximum speed setting for the PFX or, if the control system is programmed for drive profile operation, the selected drive profile.
- The number of LEDs illuminated shows the maximum speed setting or if the control system is programmed for drive profile operation, the selected drive profile.
- There are five speed settings – step 1 is the lowest speed and step 5 is the highest speed. For example, if the setting is speed level 4, then the four left hand LEDs will be illuminated.
- If speed indicator LED's ripple up and down: This indicates the control system is locked, refer to the following section for details of how to unlock the control system.

#### Locking/Unlocking the PFX Power Module

The joystick control system can be locked to prevent unauthorized use. The locking method is via a sequence of key presses and joystick movements.

##### To lock the PFX:

- While the control system is switched on, depress and hold the on/off button.
- After 1 second the control system will beep. Now release the on/off button
- Deflect the joystick forwards until the control system beeps.
- Deflect the joystick in reverse until the control system beeps.
- Release the joystick, there will be a long beep.
- The PFX is now locked.

##### To unlock the PFX:

- Use the on/off button to switch the control system on. The maximum speed / profile indicator will be rippling up and down.
- Deflect the joystick forwards until the control system beeps.
- Deflect the joystick in reverse until the control system beeps.
- Release the joystick, there will be a long beep.
- The PFX is now unlocked.



### 3. Safety and Operating (Joystick & Controls)

#### Joystick Use

The primary function of the joystick is to control the speed and direction of the PFX. The further you push the joystick from the center position the faster the PFX will move. When you release the joystick the brakes are automatically applied.

#### Speed / Profile Decrease Button

The button decreases the maximum speed setting or, if the control system is programmed for drive profile operation, selects a lower drive profile

#### Speed / Profile Increase Button

The button increases the maximum speed setting or, if the control system is programmed for drive profile operation, selects a higher drive profile

#### Charger and Programmer Socket

- This socket should only be used for programming and charging the PFX power base.
- This socket should not be used as a power supply for any other electrical device. Connection of other electrical devices may damage the PFX control system or affect the E.M.C. performance of the PFX control system.



#### **WARNING!**

The control system's warranty will be voided if any device other than a PG Drives Technology Programmer, or the battery charger supplied with the PFX power base, is connected into this socket

### 3. Safety and Operating (Control System Warnings)

#### **WARNING!**

- Although the control system is designed to be extremely reliable and each unit is rigorously tested during manufacture, the possibility of a system malfunction always exists. Under some conditions of system malfunction the control system must, for safety reasons, stop the chair instantaneously.
- If there is any possibility of the user falling out of the manual wheelchair seating system and frame as a result of a sudden braking action, it is imperative that a restraining device such as a seat belt is supplied with the manual wheelchair seating system and frame that is connected to the PFX and that it is in use at all times when the PFX is in motion.
- Soul Mobility, Inc accepts no liability for losses of any kind arising from the unexpected stopping of the wheelchair, or from the improper use of the PFX control system.

#### **WARNING!**

Do not operate the control system if the PFX behaves erratically, or shows abnormal signs of heating, sparks or smoke. Turn the control system off at once and consult your Authorized Soul Mobility Provider. Soul Mobility, Inc accepts no liability for losses of any kind arising from failure to comply with this condition.

#### **WARNING!**

Electronic equipment can be affected by Electro Magnetic Interference (EMI). Such interference may be generated by radio stations, TV stations, other radio transmitters and cellular phones. If the PFX exhibits erratic behavior due to EMI, turn the control system off immediately and consult your Authorized Soul Mobility Provider. Soul Mobility, Inc accepts no liability for losses of any kind arising from failure to comply with this condition.

### 3. Safety and Operating (Use and Skill Development)

#### STEPS AND CURBS



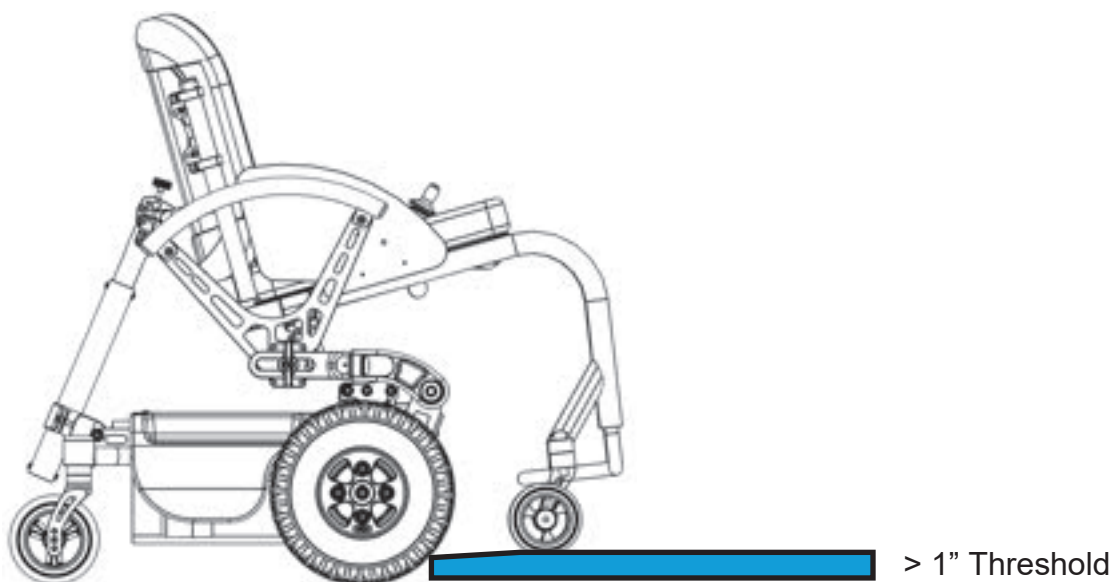
#### **WARNING!**

- DO NOT ATTEMPT to traverse a threshold greater than 2in (5.0cm) Failure to comply could cause PFX to tilt and injury to operator.
- Proceed with extreme caution when operating the PFX near raised surfaces, unprotected ledges, and drop-offs such as curbs, porches, and stairs. Always approach any obstacle straight toward the obstacle (perpendicular) to be conquered.
- Riding over curbs or obstacles can cause tipping and serious bodily harm. If you have any doubt that you can safely cross any curb or obstacle, ALWAYS ASK FOR HELP. Be aware of your riding skills and personal limitations.
- Do not impact a curb or obstacle greater than 1in (2.5cm) with the front manual wheelchair caster wheels. This could cause an abrupt stop, tipping, and serious bodily harm.

To traverse a curb or obstacle greater than 1in (2.5cm):

- Approach the curb slowly straight toward the obstacle and manually tilt the chair frame backwards raising the front casters off the ground and allowing the drive wheels to contact the obstacle first. Refer to Figure N
- Increase forward speed just before the drive wheels contact the obstacle and reduce forward speed after rear wheels clear the obstacle.

**Figure N**



- Do not operate PFX backward down any step, curb, or other obstacle. Failure to comply may cause PFX to tilt and injury to operator.

### 3. Safety and Operating (Use and Skill Development)

#### RAMPS

When maneuvering up a ramp, curb or incline be sure to lean forward to allow your center of balance to assist for maximum stability and safety. When maneuvering down a ramp, curb or incline slow your speed and sit back into the seat. NOTE: Do not drive down an incline in reverse.

#### STAIRS AND ESCALATORS

The PFX is not designed to travel up or down stairs or escalators. Always use an elevator.



#### **WARNING!**

- Do not place PFX in freewheel mode while on an incline or decline.
- Do not operate PFX backward down an incline.
- Do not operate PFX when tilted back onto the manual tilt assembly
- Do not operate PFX on hazardous inclines such as snow, ice, wet leaves, etc.
- Do not operate PFX on any slopes (regardless of surface type) of greater than 7°.

Failure to comply with any of the above warnings could cause injury to operator and damage to equipment.

### 3. Safety and Operating (Driving Techniques)

#### Starting to Drive:

- Operate the on/off switch. The Battery Gauge will blink then remain on after a second.
- Check that the maximum speed control is set to a level which suits you.
- Push the joystick to control the speed and direction of the PFX.

**NOTE:** If you push the joystick before or just after you switch the control system on, the Battery Gauge will ripple up and down and the PFX will not be allowed to move. You must release the joystick to resume normal operation. If you do not release the joystick within five seconds the PFX will not be able to move, even if you release the joystick and push it again. The Battery Gauge will then flash rapidly. You can reset this condition by switching the control system off and on again.

#### Driving Technique

- Make sure that the joystick is mounted securely and that the joystick position is correct.
- The hand or limb you use to operate the joystick should be supported, for example by the PFX handrim.
- Do not use the joystick as the sole support for your hand or limb as PFX movements and bumps could upset your control.
- The control system interprets your joystick movements and produces appropriate movements of your PFX. You will need very little concentration to control the PFX, which is especially useful if you are inexperienced.
- One popular technique is to simply point the joystick in the direction you want to go. The PFX will “home-in” on the direction you push the joystick.
- The further you push the joystick away from the rest position, the faster the PFX will go.
- Releasing the joystick will stop the PFX.
- The intelligent speed control system minimizes the effects of slopes and different types of terrain.

#### Joystick Knobs

The knob fitted to your joystick is suitable for most applications. If you would prefer another type, there is a range of alternatives available. Please contact your wheelchair distributor or manufacturer for advice. Do not replace the joystick knob with any unauthorized item - it may cause hazardous operation.



#### **WARNING!**

Do not replace the joystick knob with any unauthorized item. It may cause hazardous operation. Soul Mobility, Inc accepts no liability for losses of any kind arising from failure to comply with this condition.

### 3. Safety and Operating (Driving Techniques)



#### **WARNING!**

The PFX user must be capable of driving a power wheelchair safely. Soul Mobility, Inc accepts no liability for losses of any kind arising from failure to comply with this condition.



#### **WARNING!**

The product can come to a sudden, complete stop at any time during operation. If this happens, be sure to power off/on and check all connections. If it continues, DO NOT USE, and contact your Authorized Soul Mobility Provider.



#### **WARNING!**

In the event of the PFX moving in an unexpected way RELEASE THE JOYSTICK. This action will stop the PFX under any circumstances.

#### **Hazards:**

- Do not drive the wheelchair:
  - Beyond restrictions indicated in your PFX user manual and manual wheelchair manual, for example maximum inclines, curb height etc.
  - In places or on surfaces where a loss of wheel grip could be hazardous, for example on wet grassy slopes.
  - If you know that the control system or other crucial components require repair.



### 3. Safety and Operating (Miscellaneous)

#### TRANSPORTATION

Properly and securely stow PFX during transportation. Failure to comply could cause injury to persons or damage to equipment.

When transporting PFX equipped wheelchair, make certain the control system is well protected.



#### **WARNING!**

The PFX does not have a transit option. ALWAYS remove your wheelchair from the PFX base and reattach your manual wheelchair wheels and use original equipment manufacturer (OEM) vehicle restraints when transport is necessary. If you do not follow this warning, damage to the PFX and/or your wheelchair may occur and cause injury to yourself or others.



#### **WARNING!**

Do not sit in PFX equipped wheelchair while in a moving vehicle or airplane. Failure to comply could cause injury to the PFX operator.

#### **LIFTS:**

If utilizing a vehicle lift to transport the PFX with the wheelchair refer to the vehicle Lift manual for operation.

#### **AIRLINE TRAVEL**

It is recommended when traveling with your PFX that you disconnect the battery cables.

#### **Modifications and Accessories:**

Any modifications made to the PFX and/or use of parts and accessories not supplied by or approved by



#### **WARNING!**

Soul Mobility may cause a safety hazard. Modifications and/or use of unauthorized parts or accessories may change the integrity of the PFX and will void the warranty.

## 4. Batteries And Charging

Your PFX Power Attachment uses two 12-volt, AGM batteries. These batteries are sealed and maintenance free. Since they are sealed, there is no need to check the electrolyte (fluid) level. Though they are similar in appearance to automotive batteries, they are not interchangeable. Automotive batteries are unsafe for use in power chairs.



### **WARNING!**

Corrosive chemicals are contained in batteries. Use only AGM or Gell-Cell batteries to reduce the risk of leakage or explosive conditions.



### **WARNING!**

- Contact your Authorized Soul Mobility Provider if you have any questions regarding the batteries in your power attachment.
- Always use two batteries of the exact same type, chemistry, and amp hour (Ah) capacity. Refer to Table C - PFX Components Specifications in this manual and the battery charger manual for recommended type and capacities. Check with your Authorized Soul Mobility Provider when it becomes necessary to change out a battery and/or charger.
- Purchase the same kind of battery or charger that was originally supplied with your PFX. If you use another type, the battery gauge may be inaccurate.



### **WARNING!**

- Explosive gases may be generated while charging the batteries. Keep the PFX and battery charger away from source of ignition such as flames or sparks and provide adequate ventilation when charging the batteries.
- Inspect the battery charger, wiring, and connectors for damage before use. Contact your Authorized Soul Mobility Provider if damage is found.
- Do Not tamper, disassemble, or modify the battery in any way. Vibration, puncture, contact with metals, or tampering with the battery can cause it to fail.
- Do not submerge the battery in water.
- Do not attempt to open the battery charger case. If the battery charger does not appear to be working correctly, contact your Authorized Soul Mobility Provider.
- Be aware that the battery charger case may become hot during charging. Avoid skin contact and do not place on surfaces that may be affected by heat.
- If the battery charger is equipped with cooling slots, then do not attempt to insert objects through these slots.

## 4. Batteries And Charging



### WARNING!

- Removal of grounding prong can create electrical hazard. If necessary, properly install an approved 3-pronged adapter to an electrical outlet having 2-pronged plug access.
- Never use an extension cord to plug in your battery charger. Plug the charger directly into a properly wired standard electrical outlet.
- Do not allow children to play near the PFX while the batteries are charging. Soul Mobility recommends that you do not charge the batteries while the PFX is occupied.
- Read the battery charging instructions from this manual and in the manual supplied with the battery charger before charging the batteries.



### WARNING!

Only use the battery charger that has been supplied with your wheelchair. The use of incorrect chargers could damage the batteries, PFX control system or charger itself, or may result in parts overheating creating the potential for burns or even fire. Soul Mobility, Inc accepts no liability for losses of any kind if the charger is incompatible with the control system.

**NOTE:** The charger may get quite warm to the touch when charging a deeply discharged battery

#### To charge the batteries using the off board charger:

- Position your PFX next to a standard electrical outlet
- Be certain the controller power is turned off and the PFX is in drive mode
- Ensure battery-type selection switch on the charger matches your battery type - AGM. Refer to Figure O

Figure O

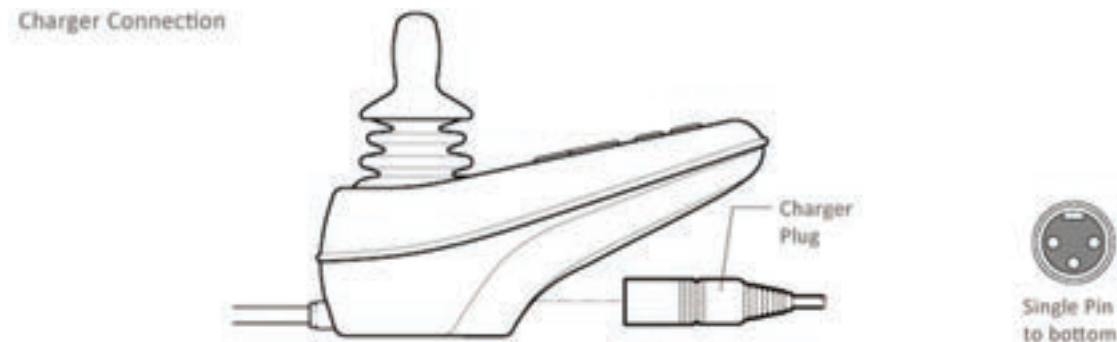


## 4. Batteries And Charging

- Plug the charger plug into the charging/programming socket on bottom side of the joystick. Ensure the single pin is at the bottom then push the charger plug into the joystick in a horizontal orientation. The molded guide of the joystick socket will help locate the plug. Ensure the plug is fully inserted. Refer to Figure P

**NOTE:** You will not be able to drive the PFX when the charger is connected

**Figure P**



- Plug the off-board charger into the electrical outlet
- When the batteries are fully charged, the Charging LED will be steady GREEN. unplug the offboard charger from the electrical outlet and then from the controller

The LED lights on the charger indicate different charger conditions at various times as well as potential fault modes. Refer to Figure Q

**NOTE:** Refer to the manual supplied with the charger for a complete explanation of these indicators and potential fault modes.

- Red LED ON: charger power on, Battery fast charging in progress
- Green LED FLASHING: Battery Float/Maintenance charging in progress
- Green LED ON - Steady: Battery charging is complete
- If the LED does not indicate that charging is complete within 24 hours, unplug the charger from the outlet and contact your Authorized Soul Mobility Provider.

**Figure Q**



## 4. Batteries And Charging



### **WARNING!**

- Do not exceed the maximum charging current of 12 Arms. Always use an off-board PFX charger fitted for the PFX control system provided by Soul Mobility. Failure to observe these conditions could result in poor contact resistance in the charger connector resulting in overheating of the charger plugs. This presents a potential burn hazard for the user. Soul Mobility, Inc accepts no liability for losses of any kind arising from failure to comply with this condition.
- Do not disconnect batteries or open-circuit the circuit breaker while charging is in progress. Failure to observe this condition could result in a burns hazard or fire hazard. Soul Mobility, Inc accepts

### **Battery Charge**

- The amount of charge in your batteries depends on a number of factors, including the way you use your PFX (terrain, slopes, and mileage daily), battery temperature, and their age. These factors will affect the distance you can travel in your PFX. All wheelchair batteries will gradually lose their capacity as they age.
- The most important factor that reduces the life of your batteries is the amount of charge you take from the batteries before you recharge them. Battery life is also reduced by the number of times you charge and discharge the batteries.
- To make your batteries last longer, do not allow them to become completely flat. Always recharge your batteries promptly after they are discharged. If your battery gauge reading seems to fall more quickly than usual, your batteries may be worn out.

Battery maintenance is an important part of maintaining your PFX power base. Keeping batteries fully charged extends battery life. Use the following guidelines to help keep your PFX batteries in optimal condition

### **Battery Break-in**

#### **To break in new batteries for maximum efficiency:**

- Fully recharge any new battery prior to its initial use. This brings the battery up to about 90% of its peak performance level.
- Operate your PFX throughout the house and yard. Move slowly at first, and do not travel too far until you become accustomed to the controls and break in the batteries.
- Give the batteries another full charge of at least 8 to 14 hours and operate your PFX again. The batteries will now perform at over 90% of their potential.
- After four or five charging cycles, the batteries will top off at 100% charge and last for an extended period

## 4. Batteries And Charging

### Daily Use

If you use your PFX on a daily basis, it is recommended you fully charge the batteries daily. This will ensure your PFX will be ready each morning to give you a full day's service.

### Batteries and Unit Storage

- If you do not use your PFX regularly (once a week or less), we recommend maintaining battery vitality by charging the batteries at least once per week for 24 hours
- When storing your PFX be sure to have the power off.
- If you are not using your PFX for an extended period, fully charge the batteries before storage.
- Disconnect the battery harnesses from both batteries and store in a warm, dry environment.
- Sensitive electronics are used in the construction of the PFX that can be damaged due to improper storage. Failure to store the unit properly will cause damage to the electronics.
- Care should be taken to keep the PFX covered from direct moisture. If the PFX does get wet, remove the battery cover and allow batteries and electronics to dry thoroughly before turning on power.
- Avoid temperature extremes, such as freezing and excessively hot conditions, and never attempt to charge a frozen battery. A cold or frozen battery should be warmed for several days prior to recharging.

**NOTE:** Keep your batteries fully charged and avoid deeply discharging your batteries. We recommend charging your batteries for at least 48 continuous hours once per month to improve battery performance and battery life.



### **WARNING!**

- Do not store where heavy objects could potentially fall on top of or against the PFX.
- Do not place heavy objects on top of the PFX.
- Do not place the PFX up on end or it's side for storage.

### Batteries and public transportation

AGM and Gel-Cell batteries are designed for application in power chairs and other mobility vehicles. These batteries are Federal Aviation Administration (FAA) approved, allowing safe transportation on aircraft, buses, and trains, as there is no danger of spillage or leakage. We suggest you contact the carrier's ticket counter in advance to determine that carrier's specific

## 4. Batteries And Charging

### Battery Replacement

A battery wiring diagram, Figure F, is included in this manual, as well as printed on a decal located on the underside of the battery cover. See the Specification table for correct battery specifications.



### WARNING!

- Battery post, terminals, and related accessories contain lead and lead compounds. Wear goggles and gloves when handling batteries and wash hands after handling.
- The batteries in your PFX should only be serviced/replaced by an Authorized Soul Mobility Provider
- Do not replace batteries when the seat is occupied.
- Batteries are heavy (see Specifications table). If unable to lift that much weight, be sure to get help. Use proper lifting techniques and avoid lifting beyond your capacity.
- Do not mix old and new batteries. Always replace both batteries at the same time.
- Keep tools and other metal objects away from the battery terminals. Contacting both Positive + (Red) and Negative - (Black) terminals simultaneously with a tool can cause electrical shock.
- For safety reasons, only sealed AGM non-spillable batteries that meet DOT CFR 173.159 (d) shall be installed in the PFX.

### TO REPLACE BATTERIES:

1. Turn off power to controller.
2. Make sure that the PFX is in drive mode.
3. Remove the battery cover
4. Remove battery power harness and breaker harness ring connectors from terminals
5. Remove both batteries from the PFX battery compartment
6. Place new batteries in the battery compartment as shown in the wiring diagram - Figure P
  - Rear battery terminals positioned towards the back of the PFX and the forward battery terminals positioned towards the front of the PFX.
7. Reconnect power harness and breaker harness ring connectors per the wiring diagram Power harness: Red + (positive) wire is connected to the rear Red + (positive) battery terminal and the Black - (negative) wire is connected to the front Black - (negative) battery terminal.
  - Breaker harness: Red + (positive) wire is connected to the front Red + (positive) battery terminal and the Black - (negative) wire is connected to the back Black - (negative) battery terminal.



### WARNING!

Make sure you tighten the battery terminal fasteners so that the connections are secure.

- Terminal M5 Hardware:
  - Recommended Torque: 44 in-lbs (5 N-m)
  - Maximum Allowable Torque: 53 in-lbs (6 N-m)



## 4. Batteries And Charging

### Corrective Maintenance

If the battery condition meter does not light up when you turn on the power:

- Check the joystick harness connections. Make sure they are tight.
- Check the circuit breaker. Reset it if necessary. Refer to the Troubleshooting section.
- Check the battery connections and wiring diagram to ensure they are correct.

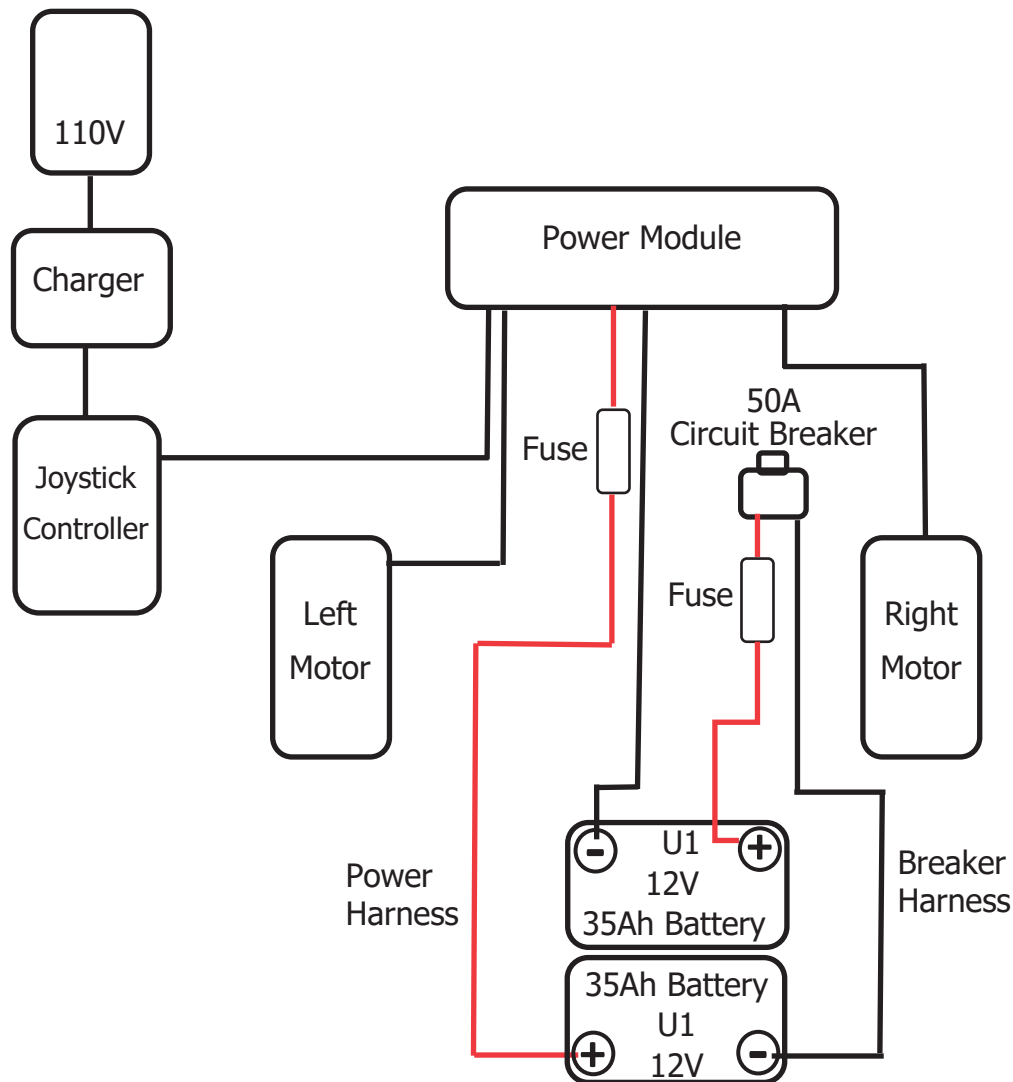
### Battery Recycling

Regulations regarding battery recycling and disposal vary by state and it is the responsibility of the user to understand local and state guidelines. You can call 1-800-CLEANUP or visit <https://search.earth911.com> to find a Household Hazardous Waste (HHW) near you.

### WARNING!

NEVER put lead-acid batteries in the trash or municipal recycling bins.

**Figure R - Wiring Diagram**



FUSE: Littlefuse P/N 0498125 - 125A / 32V

CIRCUIT BREAKER: Mechanical Products P/N: 1648-009-050-15 - 50A type III

BATTERY: U1 - 12V/35Ah Sealed Lead-Acid, Non-Spillable

## 5. Care, Maintenance, and Safety Checks

Your PFX, like any motorized device, requires routine maintenance checks. You can perform some of these checks, but others may require assistance from your Authorized Soul Mobility Provider.

**NOTE:** Do not service PFX when the seat is occupied.

### MAINTENANCE AND CLEANING

- Proper maintenance will improve the performance and extend the useful life of this device.
- Clean your PFX regularly with a slightly damp (NOT wet) cloth. Wipe off or blow away any dust or dirt on moving parts. This will help you find loose or worn parts and make your wheelchairs easier to use.
- If you discover loose, worn, bent or damaged parts repair or replace them before using unit.
- Have all major maintenance and repair work done by your Authorized Soul Mobility Provider.
- Inspect and maintain this unit as recommended in the safety checklist. Refer to Table A
- If you detect a problem, contact your Authorized Soul Mobility Provider before use for repair.
- Use only parts that meet Soul Mobility specifications.

**NOTE:** At least once a year, have a complete inspection, safety check and service of your PFX by an Authorized Soul Mobility Provider.



### WARNING!

#### SAFETY CHECK :

- Each time you are going to use your PFX, make sure to do a safety check first. Be sure your wheelchair moves easily and everything works smoothly.
- Use the Safety Checklist (Table A) for items to check daily or each time you use your PFX
- Use the Safety Checklist (Table A) and Troubleshooting Guide (Table B) to help fix any problems with the PFX.
- Review your wheelchair user manual to find and fix any wheelchair-related problems.
- Your Authorized Soul Mobility Provider can also help you find and correct many issues

**NOTE:** If you discover a problem, contact your Authorized Soul Mobility Provider for assistance.

## 5. Care, Maintenance, and Safety Checks

### IMPORTANT SAFETY CHECKLIST:



### **WARNING!**

ALWAYS follow this checklist to keep your PFX in safe working condition. DO NOT use your PFX if it is not in safe working order. Contact your Authorized Soul Mobility Provider if you encounter a problem. Make sure you also follow safety checklists in your wheelchair user manual.

**Table A**

Safety Checklist	Daily	Weekly	Monthly
Ensure motor locking levers are in drive mode before using the PFX	X		
Inspect your PFX to check for worn, loose or cracked parts.	X		
If PFX Performs Abnormally or Erratically, STOP and DO NOT OPERATE	X		
Inspect all electrical connections. Make sure they are tight and secure	X		
Inspect the joystick controller cable. Make sure it is not frayed, cut, or has any exposed wires.	X		
Inspect the joystick and rubber boot for damage and proper function. Ensure the joystick returns to the neutral position when released.	X		
Check battery charge. See Section 4: Batteries and Charging	X		
Ensure wheels and casters are free of debris.	X		
Ensure axle pins are fully engaged into camber tube.	X		
Ensure the manual tilt upper clPFX is secured to your wheelchair and tight	X		
Ensure the manual tilt assembly operates freely and is securely attached	X		
Ensure your wheelchair camber tube is connected securely to your wheelchair	X		
Ensure the manual wheelchair front casters have 2" of clearance to your drive wheels	X		

## 5. Care, Maintenance, and Safety Checks

Table A

Safety Checklist	Daily	Weekly	Monthly
Check the motor brakes and function. See “Below - To Check Brakes”		X	
Ensure drive wheels and rear casters are secure. Tighten or replace if necessary		X	
Inspect the manual tilt upper clPFX: ensure tight and not damaged: Replace if necessary.		X	
Check “IMPORTANT HARDWARE” (Figure G-K), Ensure they are secure		X	
Check Drive wheel and Caster tires for wear and flat spots. Replace if necessary.			X
Check the battery for any wear or damage			X
Ensure all other adjustment hardware are secure.			X
Inspect for any loose hardware on the wheelchair and PFX. Tighten or replace if necessary			X
Ensure PFX rolls straight (no excessive drag or pull to one side).			X
Inspect battery charger AC power cord for damage. Replace if necessary.			X
Inspect electrical components for signs of corrosion. Replace if corroded or damaged.			X

### To check the brakes:

**NOTE:** This test should be carried out on a level surface with at least 3 feet (1 meter) of clearance around your power chair.

- Turn on the controller and turn down the speed level of your power chair.
- Check the battery gauge and make sure that it remains on.
- Slowly push the joystick forward until you hear the electric brakes click. Immediately release the joystick. You must be able to hear each electrical brake operating within a few seconds of joystick movement. Repeat this test three times, pushing the joystick backward, then left, and then right.

## 5. Care, Maintenance, and Safety Checks

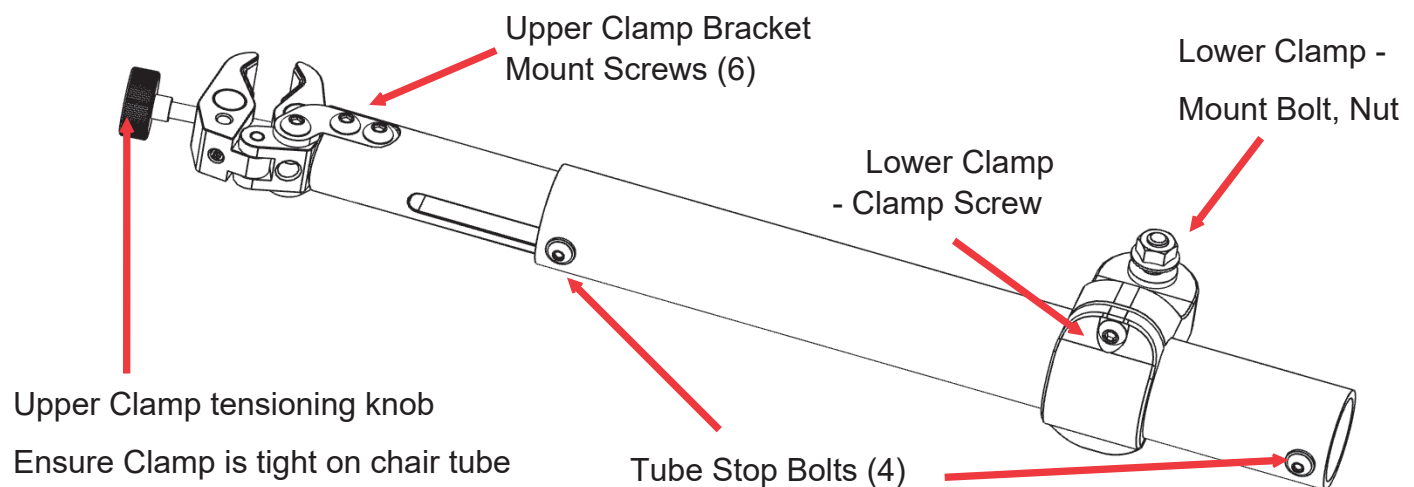
### IMPORTANT HARDWARE:

**NOTE:** Check weekly and ensure tight.

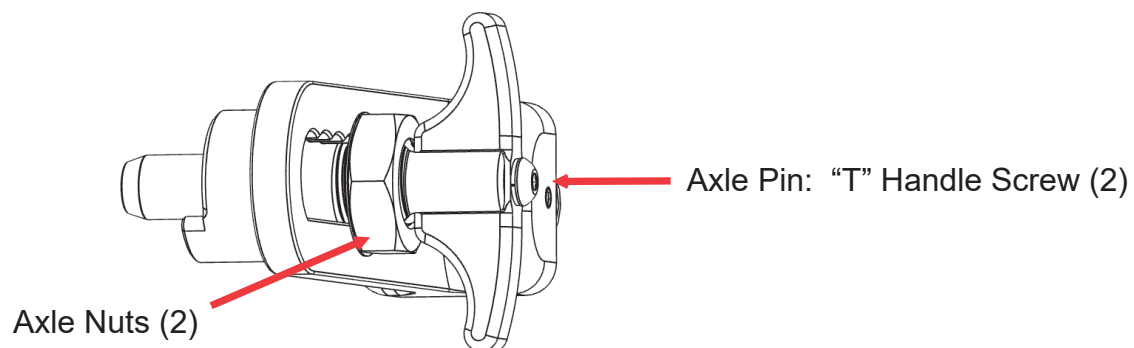
### **WARNING!**

Failure to check IMPORTANT HARDWARE could create a safety hazard, cause damage to your PFX and manual wheelchair and cause severe injury to you or others.

**Figure S - Manual Tilt Assembly**



**Figure T - Axle Pins (Right and Left)**



## 5. Care, Maintenance, and Safety Checks

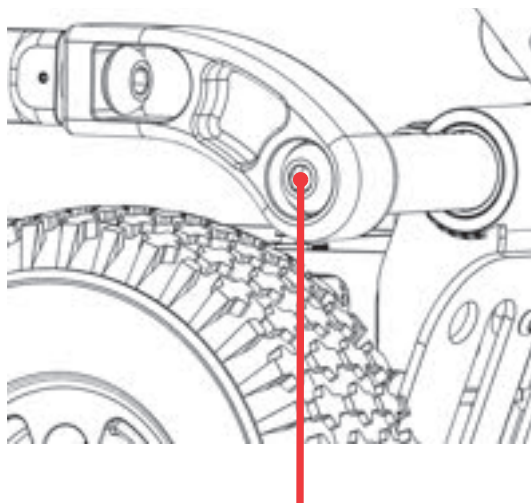
### IMPORTANT HARDWARE:

**NOTE:** Check weekly and ensure tight.

### **WARNING!**

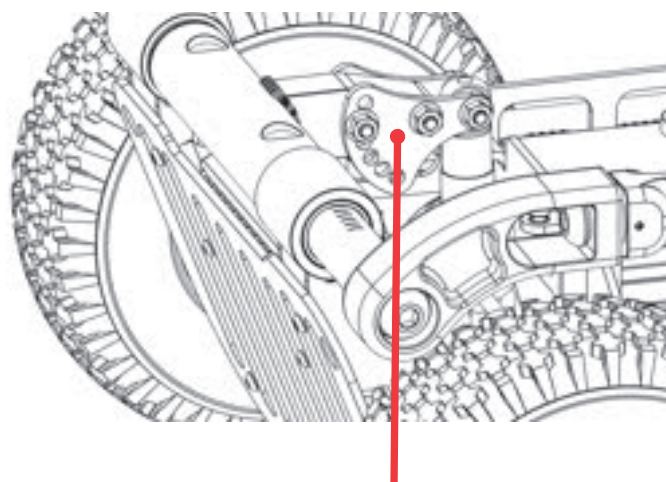
Failure to check IMPORTANT HARDWARE could create a safety hazard, cause damage to your wheelchair and cause severe injury to you or others.

**Figure U - Swing Arm (left & right side)**



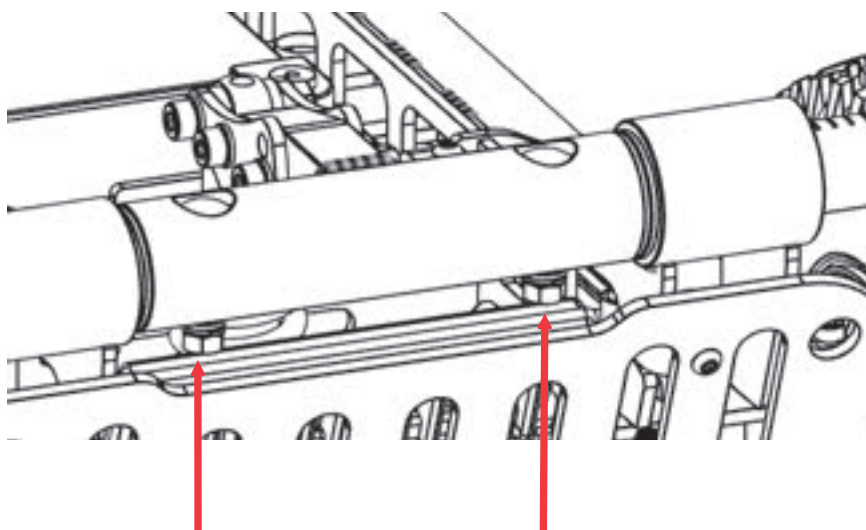
Swingarm Bolts (2)

**Figure V - Ride Height**



Ride Height Plate Bolts (3)

**Figure W - Width Adjustment Axle Shafts**



Width Adjustment Nuts (2)

## 5. Care, Maintenance, and Safety Checks

Your PFX is like most electrical equipment and is susceptible to damage from the elements. Avoid damp areas of any kind.



### **WARNING!**

- Even though the PFX has passed the necessary testing requirements for ingress of liquids, you should keep electrical connections away from sources of dampness, including direct exposure to water or bodily fluids and incontinence. Check electrical components frequently for signs of corrosion and replace as necessary.
- Direct or prolonged exposure to water or dampness could cause the PFX to malfunction electronically and mechanically. Water can cause electrical components to corrode and the chair's frame to rust. Your PFX should be examined periodically for signs of corrosion caused by water exposure, bodily fluid exposure, or incontinence. Damaged components should be replaced or treated immediately.
- NEVER hose off your PFX or place it in direct contact with water. Your PFX has painted surfaces, and a smooth plastic battery cover that allows it to be easily wiped clean with a damp cloth.

#### **Should your PFX come in contact with water:**

1. Dry your PFX as thoroughly as possible with a towel.
2. Allow your PFX to sit in a warm, dry place for 12 hours to allow unseen water to evaporate.
3. Check the joystick operation and the brakes before using your PFX again.
4. If any inconsistencies are found, take your PFX to an Authorized Soul Mobility Provider. A PFX that is frequently exposed to sources of water, such as incontinence, should be inspected often for corrosion and electronic components may need to be replaced frequently.

#### **Temperature**

1. Some of the parts of your PFX are susceptible to extreme changes in temperature. Always keep your power chair between the temperatures of 18°F (-8°C) and 122°F (50°C).
2. In extremely cold temperatures the batteries may freeze. The specific temperature at which they freeze depends on a number of factors, such as battery charge, usage, and composition of the batteries (e.g., AGM or Gel-Cell).



## 5. Care, Maintenance, and Safety Checks

### Storage

Your PFX should be stored in a dry place, free from temperature extremes. Always keep your PFX between the temperatures of 18°F (-8°C) and 122°F (50°C). When storing, disconnect the batteries from the power attachment. See “Batteries and Unit Storage.”

### WARNING!

- If you fail to store the unit properly, the frame can rust and the electronics can be damaged. Any corroded electronic connection should be replaced.
- Batteries that are regularly and deeply discharged, infrequently charged, stored in extreme temperatures, or stored without a full charge may be permanently damaged, causing unreliable performance and limited service life. It is recommended that you charge the batteries periodically throughout periods of prolonged storage to ensure proper performance.

### Drive Wheels

Clean tires only with a damp cloth

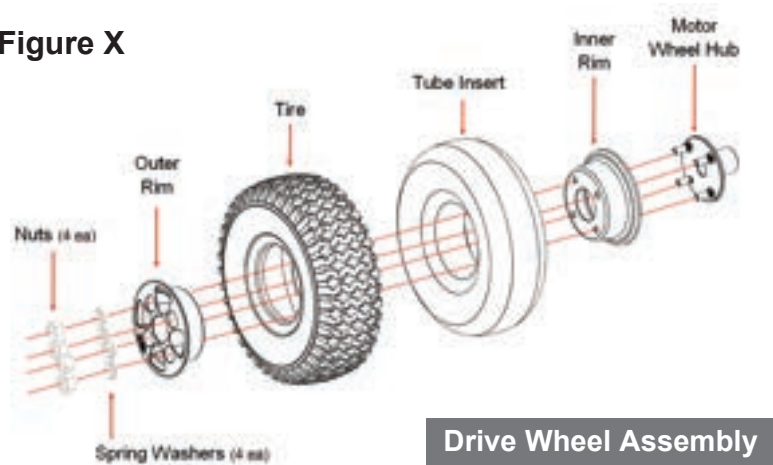
### WARNING!

- The wheel rims are split rims and will come apart if the hub nuts are loosened or removed. Do not loosen or remove any of the four nuts securing two halves of rims together. Failure to comply may result in injury or death. Refer to Figure X
- Do not use solvents on tires. Solvents can cause the tire material to break down or become soft

### Drive Wheels Replacement

Your PFX is equipped with a solid tire and you must replace the entire wheel assembly. Replacement wheel assemblies are readily available through your Authorized Soul Mobility Provider.

Figure X



## 5. Care, Maintenance, and Safety Checks



### WARNING!

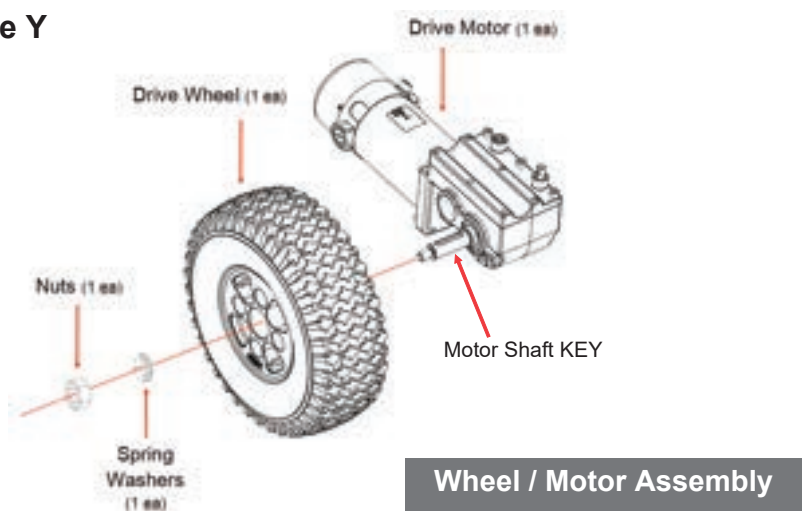
- The wheels on your PFX should only be serviced or replaced by an Authorized Soul Mobility Provider or a qualified technician.
- Be sure that the controller's power is turned off and the PFX is not in freewheel mode before performing this procedure.
- Do not service the PFX when the seat is occupied.
- When changing a tire, remove only the center motor shaft hub nut, then remove the wheel. NO further disassembly is required. Refer to Figure W

### Drive Wheel Replacement Process

- Turn off the power to the controller.
- Place PFX on blocks so drive wheels are off the ground
- Remove the single motor shaft hub nut and washer
- Rotate the wheel until the KEY is at the top position
- Pull the wheel carefully off the motor shaft
- Slide the new wheel back onto the hub.
- Reinstall the single motor shaft hub nut and washer and tighten.
- Remove the power chair from the blocks.

**NOTE:** Be careful the motor shaft KEY remains in place in the groove on the motor shaft as this KEY locates the wheel hub allows the drive wheels to rotate with the motor shaft. Refer to Figure Y

Figure Y



### Disposal of Your Power Chair

Your PFX must be disposed of according to applicable local and national statutory regulations. Contact your local waste disposal agency or Soul Mobility Provider for information on proper disposal of PFX packaging, metal frame components, plastic components, electronics, batteries, and other materials.

## 6. Troubleshooting

### MAIN CIRCUIT BREAKER

A 50A main Circuit Breaker reset button is located on the power base. Check the 50A circuit breaker and reset if PFX stops operating.

When operating the PFX, battery voltages are reduced and battery current must increase to satisfy the motors demand. This effect can cause a heavy current draw that may also trip the main circuit breaker.

If the main circuit breaker has tripped, some causes might be:

- Driving up a long, steep hill
- Being stuck in sand, mud, or other soft terrain conditions
- Driving over a curb
- Run down (old) batteries
- Wet batteries or Electronics
- PFX or components become too hot

### RESETTING MAIN CIRCUIT BREAKER

If the main circuit breaker trips as a result of low batteries or because of a temporary overload, it is acceptable to reset the circuit breaker as follows:

- Wait at least ten minutes for the PFX electronics to return to normal operating temperature
- Power-off PFX.
- Press main circuit breaker to reset.
- Power-on PFX.



### **WARNING!**

If the main circuit breaker continues to trip, there is probably an underlying electrical fault that needs attention. Do not continue to reset the main circuit breaker without correcting the underlying electrical issue. Contact an Authorized Soul Mobility Provider.

### Power Harness / Breaker Harness - Fuse

Both the wire harnesses have a 125A in-line fuse on the Red + (positive) wire to further protect your PFX electrical system. The fuses are located behind the front grill with the power module.

If a fuse is blown, disconnect the battery, open the fuse protective housing, and disconnect the fuse. Replace the fuse with the same style and capacity as noted on the wiring diagram.

## 6. Troubleshooting

**Table B - Troubleshooting**

Potential Fault / Situation	Possible Solution
PFX will not power on/start	Verify motor lock levers are in Drive Mode (Locked) Verify circuit breaker is engaged. Reset if necessary Verify Power is ON Check battery connections Check battery charge level - Ensure charged
PFX operates slowly or sluggish	Check battery charge level - Ensure charged Check your speed setting for desired mode Check drive and caster wheels for any obstructions Ensure nothing is stuck beneath the unit
PFX only turns in a circle	Verify BOTH motor lock levers are in Drive Mode (Locked), See Figure A Check motor connections Check joystick to ensure it isn't stuck and returns to the center position freely.
Battery Indicator is Low	Charge the Battery, See Batteries and Charging
Joystick battery indicator is flashing	Refer to Section 3 for Self Help Actions Charge the battery, See Batteries and Charging Check Motor, Joystick, Power connections Ensure joystick is in center position before powering on
Speed Profile LED's ripple up and down	The joystick is locked, See Section 3 to unlock The joystick was engaged when turning the PFX on. Turn the PFX off and on again without joystick engaged
Fault or Situation of any type continues	Contact an Authorized Soul Mobility Provider

## 6. Troubleshooting

**Table C: PFX Component Specifications**

Item	Specification
Length (Without manual wheelchair)	26 inches
Width (Without manual wheelchair)	24 inches
Tires	Solid - Polyurethane filled, rubber tread
Tire Diameter	10"
Maximum Allowable User Weight	275lbs (User and items stored/carried)
Ground Clearance	2.1 inches
Maximum Speed	4.9 mph
Batteries	(2) U1 Sealed Lead Acid - Non Spillable. 12V, 35ah
Battery Weight	23 lbs.
Battery Range (Min)	3.9 miles (Maneuvering - Figure 8)
Battery Range (Typical)	11.5 miles (Continuous Driving )
Maximum Slope	7 degrees
Maximum Curb Clearance	2 inches
Average Stopping Distance from Maximum Speed	4 feet
Weight (Without Batteries)	73 lbs.
Weight (With Batteries)	119 lbs.
Freewheel Mode Equipped	Yes
Electronic Speed Control Equipped	Yes
Brake Type	Electromechanical Park Brake
Charge Type	Off - Board
Drivetrain (Drive Motor)	(2) 24V - DC Brushed Gear Motors

## 7. Limited Lifetime Warranty

### Warranty Details

The Soul Mobility, Inc. Warranty applies only to the original purchaser of the PFX and may require Proof of Purchase. Registering your PFX can make it easier to check your warranty and product information ([www.soul-mobility.com/registration](http://www.soul-mobility.com/registration)). Warranty does not apply if PFX has been subject to abuse or not maintained per instructions in this user manual.

Any defective parts will be replaced or repaired at our option, free of charge, through an Authorized Soul Mobility Provider upon examination and found to be defective in material and/or workmanship.

- The PFX frame is warranted for FIVE years from the date of purchase to be free of any manufacturer defects or defective parts.
- The PFX Controller and charger are warranted for ONE year from the date of purchase.
- All other general components are warranted for ONE year from the date of purchase.
- Wear items such as casters and tires as well as batteries are not warranted.

Other exclusions of the original warranty may include any modifications made to the base without written consent by Soul Mobility and/or exceeding the PFX weight limit.

**NOTE:** Your warranty may be Void if the Unit Model Decal has been removed and you cannot provide proof of purchase or the unit serial number.

### SERVICE RECORDS

PFX purchase date: \_\_\_\_\_

PFX Serial Number: \_\_\_\_\_

Note reminders of when you had your recommended, yearly complete inspection, safety check and service of your PFX made by an Authorized Soul Mobility Provider.

Service Dates / Service Completed (Yearly Inspection, Safety Check, Service) along with Who Performed Them:


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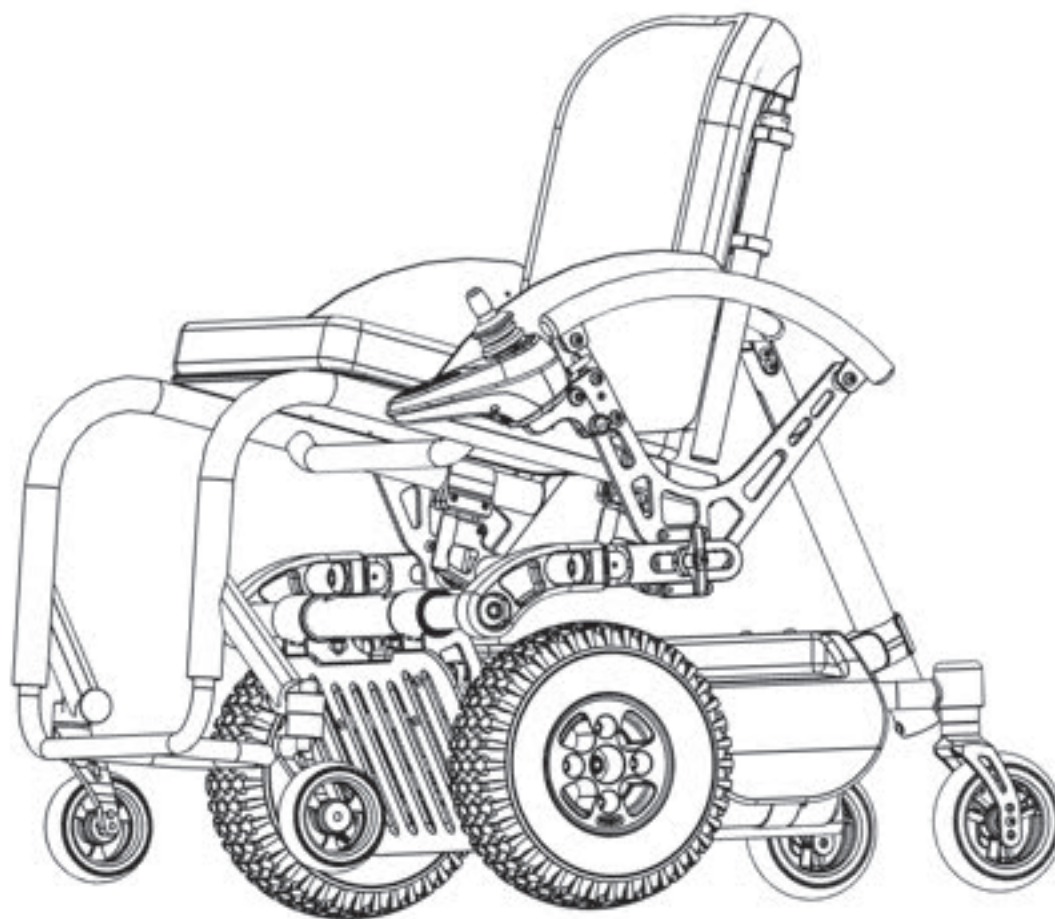




# **Power-Flex**

## **Power Assist Drive Attachment**

(PFX1214 / PFX1517 / PFX1820)



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**SOUL**  
M O B I L I T Y

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