

# Owner's Manual

*VELOCITY*  
*ULTRA*



➤ R-Series Positioning Seating System  
➤ P325 Velocity

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Welcome aboard your new rehab seat, and thank you for choosing our product. Please read this manual carefully, and follow all instructions before attempting to operate your rehab seat for the first time. If there is anything in this manual that you do not understand, or if you require additional assistance for setting up your rehab seat, please contact your local dealer.

This latest model is designed for specific practical user needs, combining solid, rugged construction, and modern high-tech electronics, to enhance safety and performance.

With a state-of-the-art, programmable electronic control system, your rehab seat can be programmed and adjusted within a given range of its performance characteristics, to suit your individual needs. The controller is set up at the factory to give the powerbase wheelchair nominal operating performance characteristics.

After becoming familiar with the basic operation of the rehab seat, you may wish to customize the settings to fit your own personal preferences. A wide range of customization options can be adjusted such as tilting, reclining and elevating, safety controls, better maneuverability of the joystick, and so on. Contact your local dealer for advice on additional equipment you may need.

Having your rehab seat checked regularly by your local dealer is the best way to ensure smooth operation, and safety.

This manual provides users practical tips and information on safety issues, operation, and maintenance. Please read it very carefully to ensure your maximum enjoyment and to fully benefit from your independence and mobility.

Whenever special advice or attention is needed, please do not hesitate to contact your local dealer, who has the tools and know-how to provide expert servicing for your rehab seat.

Your satisfaction and opinions are highly valued by both your local dealer and our company. Please be sure to fill out the enclosed guarantee form, and return it to your local dealer. The information is necessary for providing you with the best service, and to be sure all of your needs are met.

## Description

The R Series Positioning System for Powered Wheelchair is designed for use with power wheelchairs. The R Series Positioning System for Powered Wheelchair use the Merits Model P325 Power Wheelchair as the base unit for the tilting, reclining and elevating System. The Positioning System and base unit is to be sold together. Model P325 Powered Wheelchair is battery powered, center wheel motor driven and is controlled by the PG power wheelchair controller. The user interface is a joystick. P325 is powered by two 12 VDC 55ah batteries. The batteries are charged by 6A off-board charger connect with 3-pin Microphone Connector to charging socket on joystick. The approximate driving range on fully charged batteries is up to 42km(26mi) The chair frame is a rivet nut and welded steel construction and includes two center drive wheels with drive units (including motor, gear, brake), batteries and front and rear pivoting casters. Depending on users needs, the joystick motor control is mounted to the left or right armrest. When the user activates the joystick, the controller receives a signal to release the brakes. With the brakes released, the wheelchair is allowed to move in the direction the joystick is actuated. When the user releases the joystick, the chair slows to a stop and the brakes are automatically re-engaged. The solenoid electromechanical brakes allow the user stop by letting go of the joystick.

The intended function of the R Series Positioning System for Powered Wheelchair is to aid in the pressure relief of persons confined to a wheelchair, by providing a method of tilting the seat and reclining the seat back.

The R series Positioning System consists of tilt, recline, shear reduction and power elevating seat modules. The tilting, reclining and elevating systems are separate modules and are independent of each other. As such, they will be offered as either a complete tilt/recline system, or as a separate tilt system or reclining system depending upon the user' needs.

The tilting, reclining and elevating systems are actuated by 24V DC motorized linear actuator. The tilt system include one motorized linear actuator (Manufacturer: Moteck / Model: FD60-24-F3-355) causes the seat frame to shift forward. This enhances stability since the center of gravity is kept substantially in place while the user is tilting.

The recline system include one motorized linear actuator (Manufacturer: Moteck / Model: FD-24-A4-278)change the position of the backrest with respect to the seat pan. The shear reduction module works with recline function to reduce the shear movement between the user and the backrest. The reclining system also includes a movable leg rest feature.

There two basic models included in the R Series Positioning System. They are Model R162(tilt + reclining) and R163 (tilt + reclining + elevating).

The device can be operated on dry, level surfaces composed of concrete, blacktop, or asphalt under normal driving conditions.



This product has an immunity level of 30 v/m which should protect it from Electromagnetic Interference(EMI) from radio wave sources. The rapid development of electronics, especially in the area of communications, has saturated our environment with electromagnetic (radio) waves that are emitted by television, radio and communication signals. These EM waves are invisible and their strength increases as one approaches the source. All electrical conductors act as antennas to the EM signals and, to varying degrees, all power product are susceptible to electromagnetic interference (EMI). This interference could result in abnormal, unintentional movement and /or erratic control of the vehicle.

Powered product (in this text, both will be referred to as powered wheelchairs) may be susceptible to electromagnetic interference (EMI), which is interfering electromagnetic energy emitted from sources such as radio stations, TV stations, amateur radio (HAM) transmitters, two-way radios and cellular phones. The interference (from radio wave sources) can cause the powered product, to move by itself or move in unintended directions. It can also permanently damage the power product control system. The intensity of the EM energy can be measured in volts per meter(V/m). Each power product can resist EMI up to a certain intensity. This is called the "immunity level." The higher the immunity level, the greater the protection. At this time, current technology is capable of providing at least 30 V/m of immunity level which would provide useful protection against common sources of radiated EMI.

#### ■ Indications For Use

The Merits Model R series Positioning System for Powered Wheelchair is intended for people using a powered wheelchair and requiring positional change. Its intended function and use is to aid in the pressure relief to persons confined to a powered wheelchair, by way of tilt and reclining seat back.



**Cautions** Federal law restricts this device to sale by or on the order of a physician. For applicable countries.

### ! SAFETY WARNING

YOUR AUTHORIZED DEALER, PROVIDER, THERAPIST(S), AND/OR OTHER HEALTHCARE PROFESSIONALS ARE RESPONSIBLE FOR DETERMINING YOUR REQUIREMENT FOR A SEAT BELT FOR SAFE OPERATION OF YOUR MOBILITY DEVICE. REQUIRING A SEAT BELT TO SAFELY OPERATE YOUR MOBILITY PRODUCT, MAKE SURE IT IS FASTENED SECURELY IN ORDER TO REDUCE THE POSSIBILITY OF A FALL FROM THE MOBILITY PRODUCT.

*Familiarize yourself with your rehab seat*

## ■ Feature Diagram

In this section, we will acquaint you with the many features of your rehab seat and how they work. Upon receipt of your rehab seat, inspect it for any damage. Your rehab seat consists of the following components.

### ■ Tilt / Recline:



■ **Tilt and Recline/ Elevator (Weight Capacity: 300lbs/ 136kg)**



## ■ R-Series Positioning Seating System Specification



Model No.		Tilt(R161)	Tilt,Recline(R162)	Tilt,Elevate(R163)
Seat Dimension	Width	16"~22"	16"~22"	16"~22"
	Depth	16"~22"	16"~22"	16"~22"
	Height	21"	22"	21"
Seat Function	Tilt	Power	Power	Power
	Recline	Manual 90°~135°	Power	Manual 90°~135°
	Elevate	N/A	N/A	Power
Actuator		DC linear motor	DC linear motor	DC linear motor
Power		24V	24V	24V

Model No.		Tilt, Recline, Elevate(R164)	Recline(R165)
Seat Dimension	Width	16"~22"	16"~22"
	Depth	16"~22"	16"~22"
	Height	22"	22"
Seat Function	Tilt	Power	N/A
	Recline	Power	Power
	Elevate	Power	N/A
Actuator		DC linear motor	DC linear motor
Power		24V	24V

■ **Terminology**

**Joystick:** The device used to "move" the powerbase wheelchair and "adjust" rehab seat.

**Controller:** The device that allow joysticks to function. Not all joysticks have an integral controller.

**Armrests:** Where arms can rest during time spent on powerbase wheelchair.

**Footrest:** Where feet rest during time spent on the powerbase wheelchair.

■ **Rehab Seat adjustment**

■ **Headrest adjustment**

Adjust to the desired position, and tighten with the knob and the lever.(Fig A-1 to Fig A-4)



Fig A-1



Fig A-2



Fig A-3



Fig A-4

## ■ Armrest adjustment



Fig B1

- (1) Angle adjustment
  - (a) Flip-up the armrest for easy access. (Fig B1)
  - (b) With an Allen key, simply turn the bolt clockwise to increase the angle or counterclockwise to decrease it. (Fig B1)
  - (c) Hold hexagonal bolt with wrench and loosen the unit. (Fig B1)
  - (d) Choose the right angle and tighten the bolt.



Fig B2-1

- (2) Height adjustment
  - (a) Loosen the knob. (Fig B2-1)



Fig B2-2

- (b) Loosen the knob then move the armrest up and down to desired position. (Fig B2-2)



Fig B3

- (3) Width adjustment  
When user adjusts the seat width, armrest width adjusted at the same time. (Fig B3)



## ■ Joystick Adjustment



Fig C1

Adjustment of the joystick position  
Swing back controller bracket. (Fig C1)

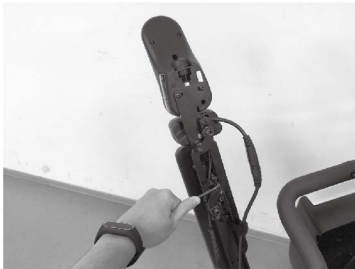


Fig C2

- (1) Use Allen key to loosen both screws, then move controller bracket forward and backward to desired position, retighten screws and lock armrest brace in receiver. (Fig C2)

## ■ Seat width adjustment



Fig D1

(1) Remove the cushion ass'y



Fig D2

(2) Remove seat cushion ass'y



Fig D3



Fig D3.1

(3) Loosen four screws then remove headrest. (Fig D3)

(4) Lift the back cover. (Fig D3.1)



Fig D4

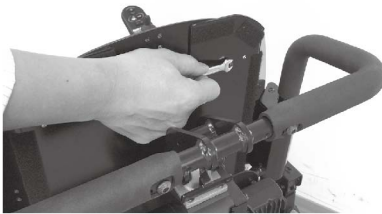


Fig D5

- (6) Use an Allen key and an open-end wrench to remove the back panel screws and remove the back plate (Fig D4, Fig D5).

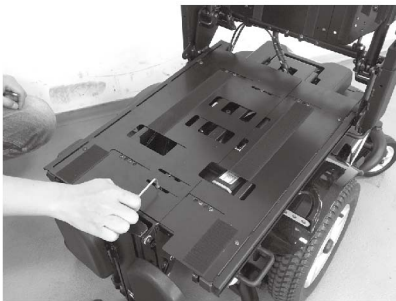


Fig D6

- (7) Use an Allen key to remove the seat-board screws.

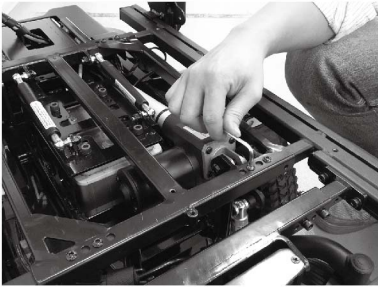


Fig D7

- (8) Use an Allen key to remove the screws of the adjust-side-tubes under the seat base ass'y(4 pieces at right and 4 at left), then move the side-adjustable-tubes(left and right) to the appropriate position, then lock the screws back in. (Fig D7)

- (9) Use an Allen key and an open-end wrench to remove the back panel screws and remove the back plate.(Fig D4, Fig D5)
- (10) Use an Allen key to remove the handlebar front screws and the handlebar rear screws from the actuator upper bracket tube. (Fig D8, Fig D9)



Fig D8



Fig D9

- (11) Use an Allen key and an open-end wrench to remove the screws and the nuts from the actuator lower bracket tube. (Fig D10) (For Recline)



Fig D10

(12) Adjust the footplate support plate for width adjustment. (Fig D11)

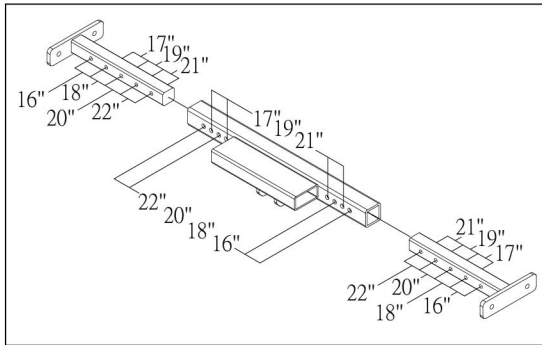


Fig D11

(13) The width between the right and left backrest tubes sets can be adjusted according to the move of the adjust-side-tubes.

(14) Reverse the above processes (Fig D11-Fig D1) then we can assemble the parts back.

Attention: the shift distance of the left adjust-side-tube and the right adjust-side-tube have to be the same. It cannot be offset to one side.

Attention: When assembling the seat-board back. Please place the same positions on both sides of holes. It cannot be offset to one side.

Attention: When assembling the actuator upper bracket tube, please place the same positions on both sides of holes. It cannot be offset to one side.

Attention: When assembling the actuator lower bracket tube, please place the same positions on both sides of holes. It cannot be offset to one side.

Attention: When assembling the back-board back, please place the same positions on both sides of holes. It cannot be offset to one side.

## ■ Seat depth adjustment



Fig D12

- (1) Use an Allen key to loosen the seat-board screw, and then remove the seat-board (Fig D6)
- (2) Use an Allen key to remove the screws and nuts of the backrest (left and right), and then move front-rear directions to the appropriate position, then fasten the screws back in. (Fig D12)

The seat depth adjust range is 16"(428mm), 17"(454mm), 18"(479mm), 19"(505mm), 20"(530mm), 21"(556mm), 22"(581mm),

- (3) Reverse the above processes then we can assemble the parts back.

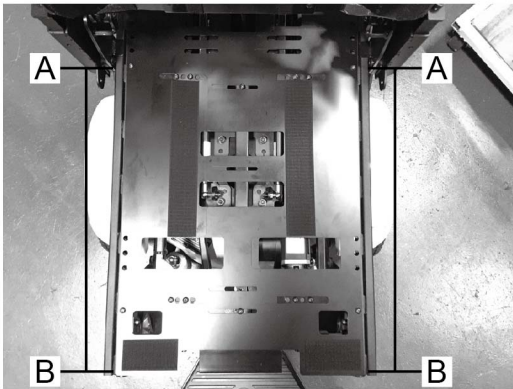


Fig D13

- (4) If you finished adjustment, you can measure the depth from A to B. (Fig D13)



## ■ Seat height adjustment



Fig E1

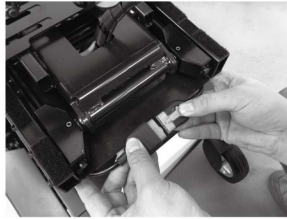


Fig E2



Fig E3



Fig E4



Fig E5



Fig E6



Fig E7

- (1) Remove the seat cover. (Fig E1)
- (2) If your power use VR2 controller, unplug the controller connectors. (Fig E2)
- (3) If your power wheelchair has actuator, unplug the actuator connectors. (Fig E3)
- (4) If your power wheelchair use R-net controller, unplug the controller connectors. (Fig E4)
- (5) If your wheelchair has lighting system, unplug the connectors. (Fig E5)
- (6) Loosen four screws then remove the seat. (Fig E6)
- (7) Loosen the screw and nut then adjust to desired position. (Fig E7)

## ■ Backrest Angle Adjustment:



Fig E8

(1) Remove the seat cushion. (Fig E8)



Fig E9

**! SAFETY WARNING**  
User must operate step2-5 at the one side, or user will be hurt.

(2) Use the tool to loosen the screw. (Fig E9)



Fig E10

(3) Use the tool to loosen two screws. (Fig E10)



Fig E11

(4) Remove the armrest ass'y. (Fig E11)



Fig E12

(5) For lock the backrest, use the tool to fasten two screws. Follow the above steps to remove the armrest at the another side. (Fig E12, E13, E14)

## ■ Backrest Angle Adjustment:

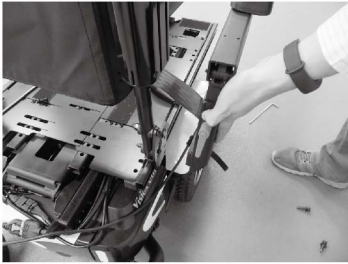


Fig E13

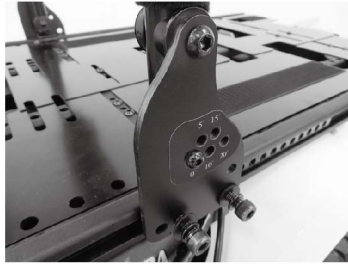


Fig E14



Fig E15

(6) Use the tool to loosen screw and nut. (Fig E15)



Fig E16

(7) Hold the backrest; use the tool to loosen screw and nut at the another side. (Fig E16)

(8) Please refer the photo to adjust the backrest angle in your desired position. (Fig E17)



Fig E17

## ■ Safety switch



Fig F1

### (1)Tilt

In order to prevent user from dangerous driving, there is a “safety switch” to control the angle of rehab seat.

When the seat tilts more than 15°, the drive function is disabled.

You must tilt seat less than 15°, and touch the “seat tilt” button again to change to drive mode. (Fig F1)



Fig F2

### (2)Recline

(a)When the backrest reclines more than 110° (from seat plate), the drive function is disable. (Fig F2)

(b)You must adjust backrest angle less than 110° (from seat plate), and touch the “seat mode”button again to change to drive mode.



Fig F3

### (3)Elevator

This mechanism has a device of terminal switch, when the seat is lifted to break away from the terminal switch, the speed will be lowered to 1/4 of the normal speed.



Fig F4

### (4) Power recline adjustment from 90°~150° .

## ■ Front Riggings

### ■ Footplate

The footplate is installed directly on the seating system to accommodate users who require a positioning system.



Fig G1



Fig G2



Fig G3



Fig G4

#### (1) Installing the footplate onto the rehab seat

Type I:

- (a) Insert the footplate into the mounting tube on the chair.(Fig G1)

- (b) Insert the pin and tighten the knob. (Fig G2)

Type II:

- (c) Follow the above steps to install the footplate. (Fig G3)

#### (2) Position adjustment

- (a) Loosen the screw and nut, then move the footplate bracket tube forward and backward to desired position, then lock again. (Fig G4)

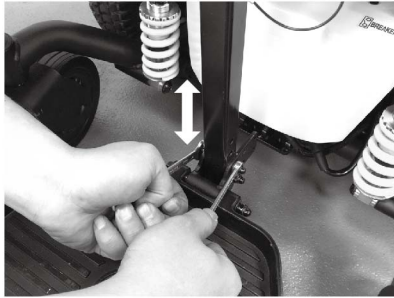


Fig G5

### (3) Height adjustment

- (a) Loosen the remove the screw and nut, then move footplate support tube up and down to desired position, then reinstall and tighten screw. (Fig G5)



Fig G6

### (4) Flip-up the footplate

- (a) Flip-up the footplate for easy access. (Fig G6)
- (b) With an Allen key, simply turn the bolt clockwise to increase the angle or counterclockwise to decrease it. (Fig G6)
- (c) Hold hexagonal bolt (RH) with wrench and loosen the unit (LH). (Fig G6)
- (d) Choose the right angle and tighten the bolt.

## ■ Elevating Leg Rests

Elevating Leg Rests (ELRs) offer an infinite range of adjustment for the leg angle.

- Installing the elevating legrest onto the rehab seat



Fig G7

- (1) Insert the top mounting pin of the elevating legrest from the side into the mounting tube on the chair. (Fig G7)
- (2) Swing the elevating legrest toward the center until it locks into position. (Fig G7)



- Adjustment Legrest



Fig H1

(1) Swing in/out legrest

- (a) Pull the plastic lever down to release the locking mechanism. (Fig H1)
- (b) Push the legrest outward (or inward). (Fig H1)
- (c) Push the legrest inward (or outward) until it locks into place. (Fig H1)

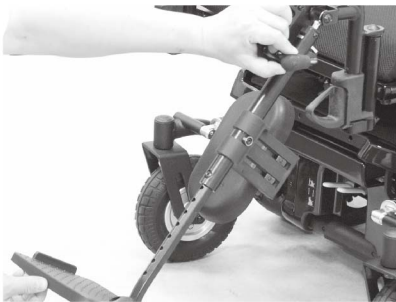


Fig H2

(2) Elevating legrest

- (a) Pull up the legrest directly to the desired position. (Fig H2)
- (b) Pushing the release bar causes the legrest to return to the original position. (Fig H2)



Fig H3

(3) Position adjustment

- (a) Loosen the screw with Allen key. (Fig H3)
- (b) Adjust the hanger tube forward and backward to desired position. (Fig H3)
- (c) Tighten the screw. (Fig H3)

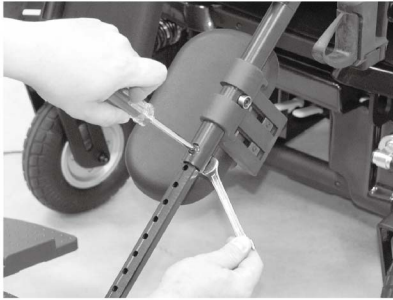


Fig H4

#### (4) Height adjustment

- (a) Loosen the screw with screwdriver and wrench then take off the screw and nut (Fig H4)
- (b) Adjust the height of footplate to desired position then install the screw. (Fig H4)
- (c) Tighten the screw. (Fig H4)

#### ■ Leg-pad position adjustment



Fig I1

- (1) Loosen the screws with Allen key. (Fig I1)
- (2) Adjust the leg-pad to desired position. (Fig I1)
- (3) Tighten the screws. (Fig I1)

#### ■ High-Pivot Power Elevating Leg Rests

The high-pivot power elevating leg rests utilize a high pivot point to more closely mimic the motion of the knee during leg rest elevation. They can be adjusted either as a pair or individually. They are available with all power bases that support upgraded electronics. The high-pivot power elevating leg rests operate through the power chair controller or toggle switch.



Fig J1



Fig J2



Fig J3

(1) Installing the high-pivot power elevating legrests onto the rehab seat.

(a) Insert the top mounting pin of the elevating legrest from the side into the mounting tube on the chair.

(Fig J1)

(b) Swing the elevating legrest toward the center until it locks into position.

(Fig J1)

(c) Plug the actuator connectors. (Fig J2)

(2) Adjustment power elevating leg rests

(a) Swing in/out power elevating leg rests.

- Pull the plastic lever down to release the locking mechanism. (Fig J3)
- Push the power elevating leg rests outward (or inward). (Fig J3)
- Push the power elevating leg rests inward (or outward) until it locks into place. (Fig J3)

(3) Position adjustment

(a) Loosen the screw with Allen key. (Fig H3)

(b) Adjust the hanger tube forward and backward to desired position. (Fig H3)

(c) Tighten the screw. (Fig H3)



Fig J4

(4) Height adjustment

- (a) Loosen the screw with screwdriver and wrench then take off the screw and nut (Fig J4)
- (b) Adjust the height of footplate to desired position then install the screw. (Fig J4)
- (c) Tighten the screw. (Fig J4)

## ■ Power Articulating Footplate

The power articulating footplate maintains the correct knee-to-heel measurements when the user's legs are being elevated.



Fig K1

(1) Installing the power articulating footplate onto the rehab seat.

- (a) Insert the power articulating footplate into the mounting tube on the chair. (Fig K1)

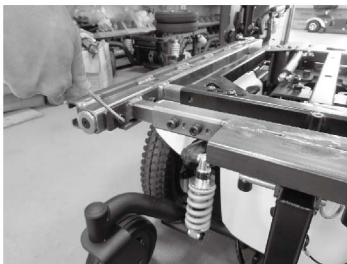


Fig K2

- (b) Use the tool to fasten the screw. (Fig K2)

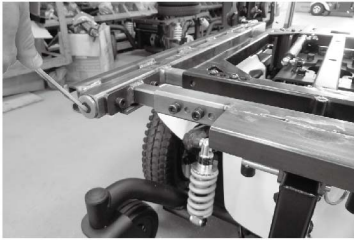


Fig K3

(c) Use the tool to fasten the screw. (Fig K3)



Fig K4

(d) Plug the actuator connector. (Fig K4)



Fig K5

(f) Follow the step (a)- (c) to install the another type footplate. (Fig K5)

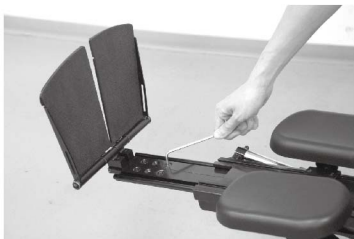


Fig L1

## (2) Height adjustment

(a) Loosen and remove the screws, then move footplate support set up and down to desired position, then reinstall and tighten screws.(Fig L1)

### (3) Flip-up the footplate

- (a) Flip-up the footplate for easy access. (Fig G5)
- (b) With an Allen key, simply turn the bolt clockwise to increase the angle or counterclockwise to decrease it. (Fig G5)
- (c) Hold hexagonal bolt(RH) with wrench and loosen the unit(LH). (Fig G5)
- (d) Choose the right angle and tighten the bolt.



Fig M1

### (4) Leg-pad Height adjustment

- (a) Loosen the screws with screwdriver. (Fig M1)
- (b) Adjust the leg-pad to desired position. (Fig M1)
- (c) Tighten the screws. (Fig M1)



Fig N1

### (5) Leg-pad Position adjustment.

- (a) Loosen and remove the screw with Allen key. (Fig N1)
- (b) Adjust the Leg-pad support set forward or backward to desired position. (Fig N1)
- (c) Reinstall and tighten the screw. (Fig N1)



## ► Warranty ◀

### Limited Warranty

Corporation warrants to the original purchaser of this rehab seat that it is free of defect in material and workmanship and that, when operated within the guidelines and restrictions of this manual, will remain so free of defect in material and workmanship for a period of 18 months from the original date of purchase.

Excluded from this warranty is failure due to negligence, abuse, accident, operation outside of rated limits, commercial or institutional use, damage / wear to upholstery or tires and improper maintenance or storage.

This rehab seat must not be modified in any way without the express written consent of Corporation. Any such unauthorized modification could cause unreliable and / or unsafe operation and will void this warranty.

Where a failure occurs within the 18 months warranty period that is not excluded above, the failed components will be replaced with similar new or reconditioned components at sole option. Corporation will not be responsible for labor and / or shipping charges.

The foregoing warranty is exclusive and in lieu of all other warranties expressed or implied including, but not limited to, the implied warranty of merchantability and fitness for a particular purpose. Corporation will not be liable for any consequential or incidental damages whatsoever.

## ► Warranty Registration ◀

### WARRANTY REGISTRATION

MODEL NO. \_\_\_\_\_

SERIAL NO. \_\_\_\_\_

DATE PURCHASED \_\_\_\_\_

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

DEALER NAME \_\_\_\_\_

STAMP

RETURN ADDRESS

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



Figure 1



Figure 2

## TROUBLESHOOTING TIPS

**If your rehab seat is not operating properly, please take the following steps prior to calling Technical Support.**

### Load-test Batteries—See Figure 1

1. Attach Battery Load-tester to battery.  
Observe polarity: Red is Positive—Black is Negative
2. Hold load switch on for 10 seconds. A good reading is 11.2 Volts DC, or in the Green.

Note: A Voltmeter cannot load-test batteries.

### Test Voltage—See Figure 2

Utilizing a Voltmeter, place meter leads in charging port. The voltage reading should be 25 Volts DC, plus or minus 2 volts.

Note: Batteries are connected in series.

**If the above tests are successful, proceed with the following test.**

1. For power chairs, place gearbox levers in Freewheel.
2. Turn on controller and run in all four quadrants.
3. If troubleshooting a scooter, elevate rear wheels and run in Forward and Reverse.

**If any of the above tests fail, contact your local dealer.**

# Owner's Manual

We wish you a safe and comfortable riding experience!











**Merits Health Products, Inc.**  
**[www.meritsusa.com](http://www.meritsusa.com)**

4245 Evans Ave, Fort Myers, FL 33901  
1-239-772-0579 | 1-800-963-7487  
Fax: 1-239-574-2661