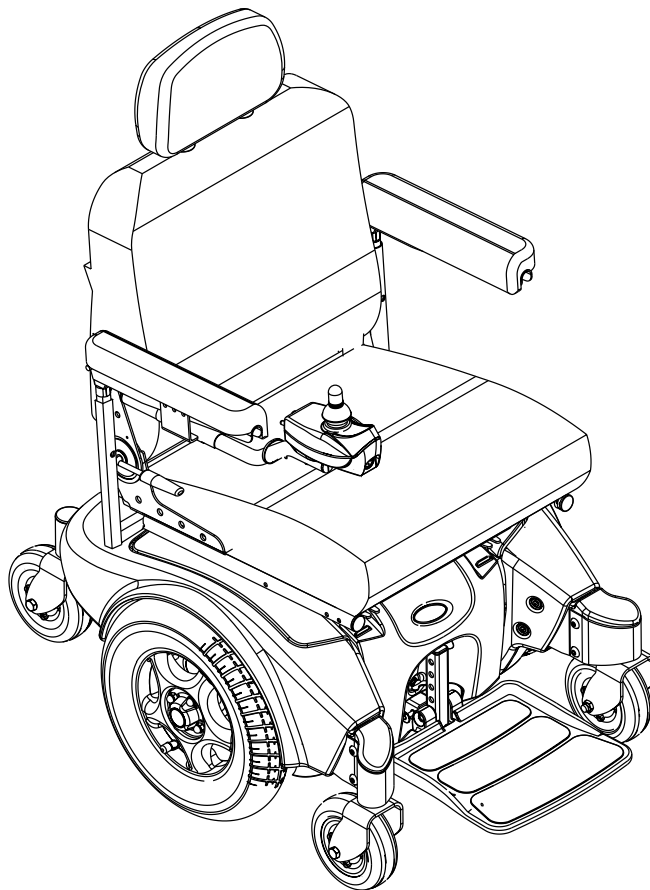


Pronto[®] M94[™] with SureStep[™]



DEALER: This manual **MUST** be given to the user of the wheelchair.

USER: **BEFORE** using this wheelchair, read this manual and save for future reference.

For more information regarding
Invacare products, parts, and services,
please visit www.invacare.com



Yes, you can.™

⚠ WARNING

A QUALIFIED TECHNICIAN MUST PERFORM THE INITIAL SET UP OF THIS WHEELCHAIR. ALSO, A QUALIFIED TECHNICIAN MUST PERFORM ALL PROCEDURES IN THE SERVICE MANUAL.

WHEELCHAIR USERS: DO NOT SERVICE OR OPERATE THIS EQUIPMENT WITHOUT FIRST READING AND UNDERSTANDING (1) THE OWNER'S OPERATOR AND MAINTENANCE MANUAL AND (2) THE SEATING SYSTEM'S MANUAL (IF APPLICABLE). IF YOU ARE UNABLE TO UNDERSTAND THE WARNINGS, CAUTIONS, AND INSTRUCTIONS, CONTACT INVACARE TECHNICAL SUPPORT BEFORE ATTEMPTING TO SERVICE OR OPERATE THIS EQUIPMENT - OTHERWISE INJURY OR DAMAGE MAY RESULT.

DEALERS AND QUALIFIED TECHNICIANS: DO NOT SERVICE OR OPERATE THIS EQUIPMENT WITHOUT FIRST READING AND UNDERSTANDING (1) THE OWNER'S OPERATOR AND MAINTENANCE MANUAL, (2) THE SERVICE MANUAL (IF APPLICABLE) AND (3) THE SEATING SYSTEM'S MANUAL (IF APPLICABLE). IF YOU ARE UNABLE TO UNDERSTAND THE WARNINGS, CUATIONS AND INSTRUCTIONS, CONTACT INVACARE TECHNICAL SUPPORT BEFORE ATTEMPTING TO SERVICE OR OPERATE THIS EQUIPMENT - OTHERWISE, INJURY OR DAMAGE MAY RESULT.

NOTE: Updated versions of this manual are available on www.invacare.com.

TABLE OF CONTENTS

REGISTER YOUR PRODUCT	6
SPECIAL NOTES	9
LABEL LOCATIONS	11
TYPICAL PRODUCT PARAMETERS	12
SECTION 1—GENERAL GUIDELINES	13
Controller Settings/Repair or Service	13
Operation Information	13
Accessories	14
Batteries	14
Charging Batteries	15
Grounding Instructions	15
Rain Test	16
Weight Training	16
Weight Limitation	16
SECTION 2—EMI INFORMATION	17
SECTION 3—SAFETY/HANDLING OF WHEELCHAIRS	19
Stability and Balance	19
Coping With Everyday Obstacles	19
A Note to Wheelchair Assistants	20
Lifting/Stairways	20
Transferring to and From Other Seats	22
Percentage of Weight Distribution	23
Reaching, Leaning and Bending - Forward	23
Reaching and Bending - Backward	24
SECTION 4—SAFETY INSPECTION/TROUBLESHOOTING	25
Safety Inspection Checklists	25
Inspect/Adjust Initially	25
Inspect/Adjust Weekly	26
Inspect/Adjust Monthly	26
Inspect/Adjust Periodically	26
Troubleshooting Guide	27
SECTION 5—WHEELCHAIR OPERATION	28
Operating the Wheelchair	28
Turning the Power On/Off	28
Using the Joystick to Drive the Chair	29

TABLE OF CONTENTS

SPJ-80 Joystick Switches and Indicators	30
On/Off Toggle Switch	30
Speed Control switch	30
Joystick.....	30
Battery Gauge Display	30
Charger/Programming Input.....	31
DPJ Joystick Switches and Indicators	31
Drive Select Toggle Switch.....	31
Selecting the drive mode 32	
Speed Control switch	32
Joystick.....	32
Mode (On/Off) Switch	32
Battery Gauge Display (BGD).....	32
MPJ Joystick Switches and Indicators.....	33
Drive Select Toggle Switch.....	33
selecting the drive mode 33	
Speed Control	34
Joystick.....	34
LCD Display.....	34
Emergency Stop/Reset Switch.....	35
Emergency Stop/Reset Input	35
Remote On/Off Switch.....	35
SECTION 6—ARMS	36
Installing/Removing Flip Back Armrests	36
Installing.....	36
Removing	37
Adjusting Flip Back Armrests.....	37
Positioning Flip Back Armrests for User Transfer	37
Positioning Flip Back Armrests for Use.....	37
Adjusting	38
Adjusting Van Seat Armrests	38
Angle	38
Height	38
SECTION 7—SEAT	39
Adjusting the Headrest	39
Adjusting the Back Angle	39
Van Seat Model.....	39
Adjustable Seat Back Angle (ASBA) Model.....	40

TABLE OF CONTENTS

Removing/Installing the Seat Assembly.....	41
Removing	41
Installing.....	41
Adjusting the Seat Height	42
Adjusting Seat Position on Seat Frame.....	43
ASBA Model	43
Van Seat Model.....	43
Adjusting Seat Position on Seat Base - Van Seat Only.....	44
Replacing the Seat Positioning Strap	45
ASBA Model	45
Van Seat Model.....	46
SECTION 8—FOOTBOARD ASSEMBLY	47
Removing/Installing the Footboard Assembly.....	47
Removing	47
Installing.....	47
Adjusting the Footboard Assembly	48
Angle	48
Depth	49
SECTION 9—FRONT RIGGINGS	50
Installing/Removing Front Riggings	50
Installing.....	50
Removing	51
Adjusting Footrest Height	51
Model PHWH93	51
Model PH904A and PHAL4A.....	51
Replacing Heel Loops	52
Raising/Lowering Elevating Front riggings.....	52
Adjusting/Replacing Telescoping Front Rigging Supports - Van Style Seats.....	53
Adjusting/Replacing Telescoping Front Rigging Supports - ASBA.....	55
SECTION 10—SHROUD/WHEELS	56
Replacing the Flat Free Tires on the Wheel Rim.....	56
Removing/Installing the Shrouds	56
Removing	56
Installing.....	57
Engaging/Disengaging Motor Release Lever	57
Replacing Front/Rear Caster Assemblies.....	58
Adjusting Forks	59

TABLE OF CONTENTS

SECTION 11—BATTERIES	60
Installing/Removing the Batteries.....	61
Installing.....	61
Removing	63
Connecting/Disconnecting the Battery Wiring Harness.....	63
Connecting	64
Disconnecting	65
Charging Batteries	65
Battery Charger Operation.....	66
On-Board Battery Charger.....	66
Independent Charger	68
SECTION 12—ELECTRONICS	69
Repositioning the Joystick.....	69
Adjustable Seat Back Angle (ASBA) Model.....	69
Van Seat Model.....	70
Disconnecting/Connecting the MK5 Joysticks.....	71
Disconnecting	71
Connecting	71
Programing the Control Module.....	72
LIMITED WARRANTY	75

REGISTER YOUR PRODUCT

The benefits of registering:

1. Safeguard your investment.
2. Ensure long term maintenance and servicing of your purchase.
3. Receive updates with product information, maintenance tips, and industry news.
4. Invacare can contact you or your provider, if servicing is needed on your product.
5. It will enable Invacare to improve product designs based on your input and needs.

Register ONLINE at www.invacare.com

- or -

Complete and mail the form on the next page

Any registration information you submit will be used by Invacare Corporation only, and protected as required by applicable laws and regulations.



PRODUCT REGISTRATION FORM

Register **ONLINE** at www.invacare.com - or -
Complete and mail this form

Name _____

Address _____

City _____ State/Province _____

Zip/Postal Code _____

Email _____ Phone No. _____

Fold
here

Invacare Model No. _____ Serial No. _____

Purchased From _____ Date of Purchase: _____

1. Method of purchase: (check all that apply)

Medicare Insurance Medicaid Other _____

2. This product was purchased for use by: (check one)

Self Parent Spouse Other

3. Product was purchased for use at:

Home Facility Other

4. I purchased an Invacare product because:

Price Features (list features) _____

5. Who referred you to Invacare products? (check all that apply)

Doctor Therapist Friend Relative Other _____

No referral Advertisement (circle one): TV, Radio, Magazine, Newspaper

6. What additional features, if any, would you like to see on this product?

Fold
here

7. Would you like information sent to you about Invacare products that may be available for a particular medical condition? Yes No

If yes, please list any condition(s) here and we will send you information by email and/or mail about any available Invacare products that may help treat, care for or manage such condition(s):

8. Would you like to receive updated information via email or regular mail about the Invacare home medical products sold by Invacare's dealers? Yes No

9. What would you like to see on the Invacare website?

10. Would you like to be part of future online surveys for Invacare products? Yes No

11. User's Year of birth: _____

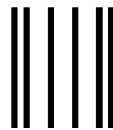
If at any time you wish not to receive future mailings from us, please contact us at Invacare Corporation, CRM Department, 39400 Taylor Parkway, Elyria, OH 44035, or fax to 877-619-7996 and we will remove you from our mailing list.

To find more information about our products, visit www.invacare.com.

Cut Along Line



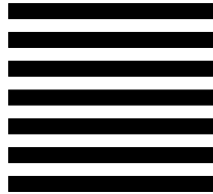
Fold
here



BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 196 ELYRIA OH

POSTAGE WILL BE PAID BY ADDRESSEE

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



INVACARE CORPORATION
CRM DEPARTMENT
39400 TAYLOR PARKWAY
ELYRIA OH 44035-9836



Fold
here

Invacare Product Registration Form

Please Seal with
Tape Before Mailing

Cut Along Line



SPECIAL NOTES

WARNING/CAUTION notices as used in this manual apply to hazards or unsafe practices which could result in personal injury or property damage.

NOTICE

THE INFORMATION CONTAINED IN THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE.

WHEELCHAIR USER

As a manufacturer of wheelchairs, Invacare endeavors to supply a wide variety of wheelchairs to meet many needs of the end user. However, final selection of the type of wheelchair to be used by an individual rests solely with the user and his/her healthcare professional capable of making such a selection.

WHEELCHAIR TIE-DOWN RESTRAINTS AND SEAT RESTRAINTS

Wheelchair users should **NOT** be transported in vehicles of any kind while in wheelchairs. As of this date, the Department of Transportation has not approved any tie-down systems for transportation of a user while in a wheelchair, in a moving vehicle of any type.

It is Invacare's position that users of wheelchairs should be transferred into appropriate seating in vehicles for transportation and use be made of the restraints made available by the auto industry. Invacare cannot and does not recommend any wheelchair transportation systems.

WARNING

Invacare products are specifically designed and manufactured for use in conjunction with Invacare accessories. Accessories designed by other manufacturers have not been tested by Invacare and are not recommended for use with Invacare products. The seat positioning strap is a positioning belt only. It is not designed for use as a safety device withstanding high stress loads such as auto or aircraft safety belts. If signs of wear appear, belt **MUST** be replaced immediately.

⚠ WARNING

The drive behavior initially experienced by the user may be different from other chairs previously used. This Power Wheelchair has Invacare's SureStep technology, a feature that provides the chair with optimum traction and stability when driving forward over transitions and thresholds of up to 2-inches. The following warnings apply specifically to the SureStep Feature.

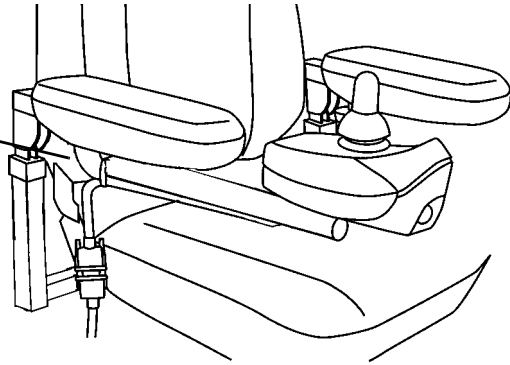
- Do not use on inclines greater than 9°.
- Do not use on inclines with wet, slippery, icy or oily surfaces. This may include certain painted or otherwise treated wood surfaces.
- Do not traverse down ramps at high speed. Doing so will reduce traction and increase stopping distance.
- The end user's weight can materially affect traction on sloped surfaces. Great care should be taken when traversing such slopes.

To determine and establish your particular safety limits, practice use of this product on various sloping surfaces in the presence of a qualified healthcare provider **BEFORE** attempting active use of this wheelchair. Other general warnings listed within this document also apply.

LABEL LOCATIONS

**WEIGHT CAPACITY
LIMITE DE POIDS
500 LBS. (227 kgs.)**
REFER TO OWNER'S MANUAL
SE RÉFÉRER AU MANUEL DE L'UTILISATEUR

P/N 1122136



WARNING
WIRING DIAGRAM for Dual 22NF Batteries
DO NOT REMOVE THIS LABEL

The POSITIVE (+) RED Battery Cable MUST connect to the POSITIVE (+) Battery Terminal(s)/ Post(s). The NEGATIVE (-) BLACK Battery Cable MUST connect to the NEGATIVE (-) Battery Terminal(s)/Post(s). DO NOT allow Battery Cable(s) to contact the opposite Battery Terminal(s)/Post(s). Install protective caps on POSITIVE (+) and NEGATIVE (-) battery terminals. Replace cable(s) immediately if cable(s) insulation becomes damaged. Failure to observe these warnings may result in an electrical short with serious personal injury and/or damage to the electrical system. See Owner's Manual.

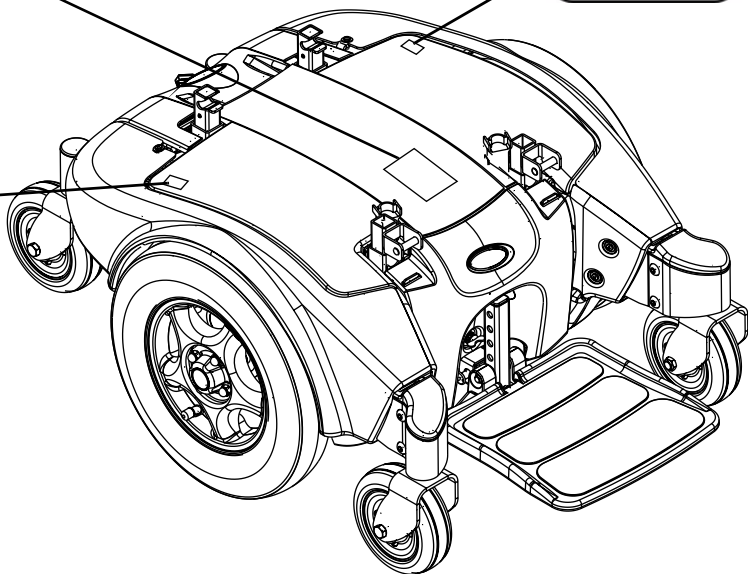
DO NOT remove fuse or mounting hardware from POSITIVE (+) RED battery cable mounting screw.

P/N 1118392

AVERTISSEMENT
SCHEMA POUR LE FILAGE des batteries doubles 22NF
NE PAS ENLEVER CETTE ÉTIQUETTE

Le câble ROUGE POSITIF (+) DOIT être connecté à la borne POSITIVE(+). Le câble NOIR NEGATIF (-) DOIT être connecté à la borne NEGATIVE (-). NE PAS laisser les câbles de batteries toucher les bornes opposées. Remplacer le câble immédiatement si l'isolation du câble est endommagée. Un court-circuit peut se produire et causer des blessures graves et/ou des dommages au système électrique si ces avertissements ne sont pas respectés. Se référer au MANUEL DE L'UTILISATEUR.

NE PAS enlever le fusible ou la quincaillerie de montage de la vis de montage du câble de batterie ROUGE POSITIF(+).



TYPICAL PRODUCT PARAMETERS

	18-INCH VAN SEAT	20-INCH VAN SEAT	22-INCH VAN SEAT	24-INCH VAN SEAT	ASBA SEAT
SEAT WIDTH RANGE:	18 inches	20 inches	22 inches	24 inches	18-24 inches
SEAT DEPTH:	16 -18 inches	18-20 inches	20-22 inches	20-22 inches	16-22 inches
BACK HEIGHT¹: SEMI RECLINE:	18 inches	18 inches	18 inches	18 inches	16-20 inches
BACK ANGLE RANGE: SEMI RECLINE:	35° to 115°	35° to 115°	35° to 115°	35° to 115°	Standard - 80° to 100°
UPHOLSTERY: WITH SEAT PAN:	Grey Vinyl				Black Nylon Back
SEAT-TO-FLOOR:	21-24 inches (Cushion Not Compressed)				19-22 inches (To Seat Pan)
OVERALL WIDTH (NO JOYSTICK):	27-29 inches				
OVERALL HEIGHT:	31 inches (Folded) 54 inches (Upright)				
OVERALL LENGTH:	35 inches (With Footboard Folded) 43 inches (With Footboard Extended)				
DRIVE WHEELS/TIRES:	14 x 3-inch (Flat Free)				
CASTER W/PRECISION SEALED BEARINGS:	6 x 2-inch Front/Rear				
FOOTRESTS/ LEGRESTS:	Flip Up, Depth and Height Adjustable, Footboard, Swingaway Front Rigging, Elevating Legrest				
WEIGHT²: W/O BATTERIES: W/BATTERIES:	216 lbs 290 lbs				
SHIPPING:	260 lbs (w/o Batteries), 310 lbs (w/Batteries)				
ARMRESTS:	Adjustable Angle, Height and Width, Desk and Full Length				
BATTERIES:	22NF - Quantity 2				
PERFORMANCE: SPEED: TURNING RADIUS: RANGE (VARIABLE) ³ : *WEIGHT LIMITATION:	0 to 4.5 MPH 19½ inches 10-15 miles 500 lbs				

NOTE: Based on 24-inch wide Van seat.

*NOTE: Refer to Percentage of Weight Distribution on page 23.

Footnotes:

1. Back height without headrest.
2. Includes seating systems and accessories.
3. Range varies with battery conditions, surface terrain and operator's weight.

SECTION I—GENERAL GUIDELINES

⚠ WARNING

SECTION I - GENERAL GUIDELINES contains important information for the safe operation and use of this product. **DO NOT** use this product or any available optional equipment without first completely reading and understanding these instructions and any additional instructional material such as **Owner's Manuals, Service Manuals or Instruction Sheets** supplied with this product or optional equipment. If you are unable to understand the **Warnings, Cautions or Instructions**, contact a healthcare professional, dealer or technical personnel before attempting to use this equipment - otherwise, injury or damage may occur.

CONTROLLER SETTINGS/REPAIR OR SERVICE

Set-up of the Electronic Control Unit is to be performed **ONLY** by a qualified technician. The final tuning adjustments of the controller may affect other activities of the wheelchair. Reprogramming the controller reduces the stability/control of the wheelchair. Other program settings could cause the wheelchair to tip over resulting in serious injury to the user and/or damage to the surrounding property. If any individual other than a qualified technician performs any work on these units, the warranty is void.

OPERATION INFORMATION

Ensure that driving surfaces, ramps, lifts, elevators, etc. are capable of supporting combined weight of user and wheelchair (for a 500 lbs user, the combined weight could be up to 800 lbs).

Performance adjustments should only be made by professionals of the healthcare field or persons fully conversant with this process and the driver's capabilities. Incorrect settings could cause injury to the driver, bystanders, damage to the chair and to surrounding property.

After the wheelchair has been set-up, check to make sure that the wheelchair performs to the specifications entered during the set-up procedure. If the wheelchair does **NOT** perform to specifications, turn the wheelchair **OFF** immediately and reenter set-up specifications. Repeat this procedure until the wheelchair performs to specifications.

ALWAYS shift your weight in the direction you are turning. **DO NOT** shift your weight in the opposite direction of the turn. Shifting your weight in the opposite direction of the turn may cause the inside drive wheel to lose traction and the wheelchair to tip over.

The arms on the M94 wheelchair are designed as armrests **ONLY**. The arms are not designed to support the full weight of the wheelchair user.

DO NOT shift your weight or sitting position toward the direction you are reaching as the wheelchair may tip over.

DO NOT store items under seat - interference with seat latch may result.

DO NOT engage or disengage the motor release levers until the power is in the OFF position.

DO NOT operate on roads, streets or highways.

DO NOT climb, go up or down ramps or traverse slopes greater than 9°.

DO NOT attempt to move up or down an incline with a water, ice or oil film.

DO NOT attempt to drive over curbs or obstacles. Doing so may cause your wheelchair to turn over and cause bodily harm or damage to the chair.

DO NOT use parts, accessories, or adapters other than those authorized by Invacare - otherwise the warranty is void.

DO NOT leave the power button in the ON position when entering or exiting your wheelchair.

DO NOT stand on the frame of the wheelchair.

DO NOT stand on the flip-up footboard, otherwise damage may occur. When getting in or out of the wheelchair, make sure that the flip-up footboard is in the upward position.

DO NOT stand on the front riggings, otherwise damage may occur. When getting in or out of the wheelchair, make sure that the footplates on the front riggings are in the upward position or moved out of the way.

ALWAYS wear your seat positioning strap.

The seat positioning strap is a positioning belt only. It is not designed for use as a safety device withstanding high stress loads such as auto or aircraft safety belts. If signs of wear appear, belt MUST be replaced immediately.

Before performing any maintenance, adjustment or service verify that On/Off switch on the joystick is in the OFF position.

Avoid storage or use near external flame or combustible products.

ACCESSORIES

EXTREME care should be exercised when using oxygen in close proximity to electric circuits and other combustible materials. Contact your oxygen supplier for instruction in the use of oxygen.

BATTERIES

The warranty and performance specifications contained in this manual are based on the use of deep cycle gel cell or sealed lead acid batteries. Invacare strongly recommends their use as the power source for this unit.

Carefully read battery/battery charger information prior to installing, servicing or operating your wheelchair.

CHARGING BATTERIES

NEVER attempt to recharge the batteries by attaching cables directly to the battery terminals.

DO NOT attempt to recharge the batteries and operate the wheelchair at the same time.

DO NOT operate wheelchair with extension cord attached to the AC cable.

DO NOT attempt to recharge the batteries when the wheelchair has been exposed to ANY type of moisture.

DO NOT attempt to recharge the batteries when the wheelchair is outside.

DO NOT sit in the wheelchair while charging the batteries.

DO NOT attempt to recharge batteries using BOTH the on-board battery charger AND an independent battery charger (plugged into the joystick charger port) at the SAME time. Doing so will reduce the life of the batteries.

READ and CAREFULLY follow the manufacturer's instructions for each charger (supplied or purchased). If charging instructions are not supplied, consult a qualified technician for proper procedures.

When using an extension cord, use only a three (3) wire extension cord having at least 16 AWG (American Wire Gauge) wire and the same or higher electrical rating as the device being connected. Use of improper extension cord could result in risk of fire and electric shock.

Ensure the pins of the extension cord plug are the same number, size, and shape as those on the charger.

DO NOT under any circumstances cut or remove the round grounding plug from the charger AC cable plug or the extension cord plug.

Three (3) prong to two (2) prong adapters should not be used. Use of three (3) prong adapters can result in improper grounding and present a shock hazard to the user.

GROUNDING INSTRUCTIONS

DO NOT, under any circumstances, cut or remove the round grounding prong from any plug used with or for Invacare products. Some devices are equipped with three-prong (grounding) plugs for protection against possible shock hazards and fire. Where a two-prong wall receptacle is encountered, it is the personal responsibility and obligation of the customer to contact a qualified electrician and have the two-prong receptacle replaced with a properly grounded three-prong wall receptacle in accordance with the National Electrical Code. If you must use an extension cord, use ONLY a three-wire extension cord having the same or higher electrical rating as the device being connected. In addition, Invacare has placed RED/ORANGE warning tags on some equipment. DO NOT remove these tags.

RAIN TEST

Invacare has tested its power wheelchairs in accordance with ISO 7176 “Rain Test.” This provides the end user or his/her assistant sufficient time to remove his/her power wheelchair from a rain storm and retain wheelchair operation.

DO NOT leave power wheelchair in a rain storm of any kind.

DO NOT use power wheelchair in a shower.

DO NOT store power wheelchair in a damp area for an extended period of time.

Direct exposure to excessive rain or dampness may cause the chair to malfunction electrically and mechanically, may cause the chair to prematurely rust or may damage the upholstery.

Check to ensure that the RED and BLACK battery terminal caps are secured in place, joystick boot is NOT torn or cracked where water can enter and that all electrical connections are secure at all times.

DO NOT use the wheelchair if the joystick boot is torn or cracked. If the joystick boot becomes torn or cracked, replace IMMEDIATELY.

WEIGHT TRAINING

Invacare DOES NOT recommend the use of its wheelchairs as a weight training apparatus. Invacare wheelchairs have NOT been designed or tested as a seat for any kind of weight training. If occupant uses said wheelchair as a weight training apparatus, Invacare shall NOT be liable for bodily injury and the warranty is void.

WEIGHT LIMITATION

The M94 with SureStep has a weight limitation of 500 lbs.

SECTION 2—EMI INFORMATION

⚠ WARNING

CAUTION: IT IS VERY IMPORTANT THAT YOU READ THIS INFORMATION REGARDING THE POSSIBLE EFFECTS OF ELECTROMAGNETIC INTERFERENCE ON YOUR POWERED WHEELCHAIR.

Electromagnetic Interference (EMI) From Radio Wave Sources

Powered wheelchairs and motorized scooters (in this text, both will be referred to as powered wheelchairs) may be susceptible to electromagnetic interference (EMI), which is interfering electromagnetic energy (EM) 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 wheelchair to release its brakes, move by itself, or move in unintended directions. It can also permanently damage the powered wheelchair's control system. The intensity of the interfering EM energy can be measured in volts per meter (V/m). Each powered wheelchair can resist EMI up to a certain intensity. This is called its "immunity level." The higher the immunity level, the greater the protection. At this time, current technology is capable of achieving at least a 20 V/m immunity level, which would provide useful protection from the more common sources of radiated EMI.

There are a number of sources of relatively intense electromagnetic fields in the everyday environment. Some of these sources are obvious and easy to avoid. Others are not apparent and exposure is unavoidable. However, we believe that by following the warnings listed below, your risk to EMI will be minimized.

The sources of radiated EMI can be broadly classified into three types:

- 1) Hand-held Portable transceivers (transmitters-receivers with the antenna mounted directly on the transmitting unit. Examples include: citizens band (CB) radios, "walkie talkie", security, fire and police transceivers, cellular telephones, and other personal communication devices).

NOTE: Some cellular telephones and similar devices transmit signals while they are ON, even when not being used.

- 2) Medium-range mobile transceivers, such as those used in police cars, fire trucks, ambulances and taxis. These usually have the antenna mounted on the outside of the vehicle; and
- 3) Long-range transmitters and transceivers, such as commercial broadcast transmitters (radio and TV broadcast antenna towers) and amateur (HAM) radios.

NOTE: Other types of hand-held devices, such as cordless phones, laptop computers, AM/FM radios, TV sets, CD players, cassette players, and small appliances, such as electric shavers and hair dryers, so far as we know, are not likely to cause EMI problems to your powered wheelchair.

⚠ WARNING

Powered Wheelchair Electromagnetic Interference (EMI)

Because EM energy rapidly becomes more intense as one moves closer to the transmitting antenna (source), the EM fields from hand-held radio wave sources (transceivers) are of special concern. It is possible to unintentionally bring high levels of EM energy very close to the powered wheelchair's control system while using these devices. This can affect powered wheelchair movement and braking. Therefore, the warnings listed below are recommended to prevent possible interference with the control system of the powered wheelchair.

Electromagnetic interference (EMI) from sources such as radio and TV stations, amateur radio (HAM) transmitters, two-way radios, and cellular phones can affect powered wheelchairs and motorized scooters.

FOLLOWING THE WARNINGS LISTED BELOW SHOULD REDUCE THE CHANCE OF UNINTENDED BRAKE RELEASE OR POWERED WHEELCHAIR MOVEMENT WHICH COULD RESULT IN SERIOUS INJURY.

- 1) Do not operate hand-held transceivers (transmitters receivers), such as citizens band (CB) radios, or turn ON personal communication devices, such as cellular phones, while the powered wheelchair is turned ON;
- 2) Be aware of nearby transmitters, such as radio or TV stations, and try to avoid coming close to them;
- 3) If unintended movement or brake release occurs, turn the powered wheelchair OFF as soon as it is safe;
- 4) Be aware that adding accessories or components, or modifying the powered wheelchair, may make it more susceptible to EMI (NOTE: There is no easy way to evaluate their effect on the overall immunity of the powered wheelchair); and
- 5) Report all incidents of unintended movement or brake release to the powered wheelchair manufacturer, and note whether there is a source of EMI nearby.

Important Information

- 1) 20 volts per meter (V/m) is a generally achievable and useful immunity level against EMI (as of May 1994) (the higher the level, the greater the protection);
- 2) While this product as shipped (with MK5™ electronics) has been tested and is immune to signal levels up to 20 V/m, the maximum immunity level of the product is unknown.

Modification of any kind to the electronics of this wheelchair as manufactured by Invacare may adversely affect the RFI immunity levels.

3)

SECTION 3—SAFETY/HANDLING OF WHEELCHAIRS

“Safety and Handling” of the wheelchair requires the close attention of the wheelchair user as well as the assistant. This manual points out the most common procedures and techniques involved in the safe operation and maintenance of the wheelchair. It is important to practice and master these safe techniques until you are comfortable in maneuvering around the frequently encountered architectural barriers.

Use this information only as a “basic” guide. The techniques that are discussed on the following pages have been used successfully by many.

Individual wheelchair users often develop skills to deal with daily living activities that may differ from those described in this manual. Invacare recognizes and encourages each individual to try what works best for him/her in overcoming architectural obstacles that they may encounter, however ALL WARNINGS and CAUTIONS given in this manual MUST be followed. Techniques in this manual are a starting point for the new wheelchair user and assistant with “safety” as the most important consideration for all.

STABILITY AND BALANCE

WARNING

Ensure that driving surfaces, ramps, lifts, elevators, etc. are capable of supporting combined weight of user and wheelchair (for a 500 lbs user, the combined weight could be up to 800 lbs).

ALWAYS wear your seat positioning strap.

To assure stability and proper operation of your wheelchair, you must at all times maintain proper balance. Your wheelchair has been designed to remain upright and stable during normal daily activities as long as you do not move beyond the center of gravity. DO NOT lean forward out of the wheelchair any further than the length of the armrests.

COPING WITH EVERYDAY OBSTACLES

Coping with the irritation of everyday obstacles can be alleviated somewhat by learning how to manage your wheelchair. Keep in mind your center of gravity to maintain stability and balance.

While the walking beam allows to traverse up to a 2-inch bump or threshold, stopping after the wheels cross the bump poses a problem. The chair cannot reverse over the bump at this point. Continue forward and then turn around.

While the M94 is designed for use primarily in and around the home, the provider should determine whether this chair is suitable for the actual environment the chair will be used in.

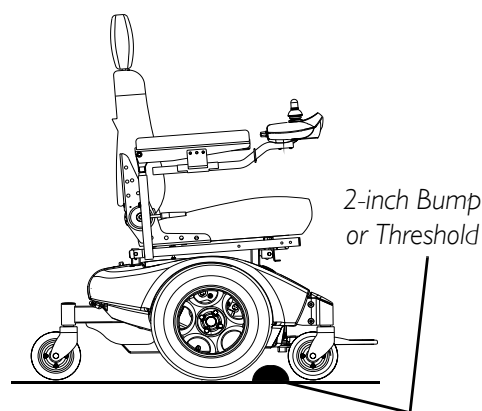


FIGURE 3.1 - COPING WITH EVERYDAY OBSTACLES

DO NOT go down ramp at full speed. Some seat/back positions will cause wheelchair to feel unstable.

△ CAUTION

Be aware of condition of ramp. Traction will be diminished/nonexistent on a slippery surface. Proceed with caution.

A NOTE TO WHEELCHAIR ASSISTANTS

When assistance to the wheelchair user is required, remember to use good body mechanics. Keep your back straight and bend your knees whenever tilting wheelchair or traversing curbs or other impediments.

Also, be aware of detachable parts such as arms or legrests. These must NEVER be used to move the wheelchair or as lifting supports, as they may be inadvertently released, resulting in possible injury to the user and/or assistant(s).

When learning a new assistance technique, have an experienced assistant help you before attempting it alone.

LIFTING/STAIRWAYS

△ WARNING

DO NOT attempt to move an occupied power wheelchair between floors using a stairway. Use an elevator to move an occupied power wheelchair between floors. If moving a power wheelchair between floors by means of a stairway, the occupant MUST be removed and transported independently of the power wheelchair.

Ensure that driving surfaces, ramps, lifts, elevators, etc. are capable of supporting combined weight of user and wheelchair (for a 500 lbs user, the combined weight could be up to 800 lbs).

⚠ WARNING (CONTINUED)

Extreme caution is advised when it is necessary to move an unoccupied power wheelchair up or down the stairs. Invacare recommends using two (2) assistants and making thorough preparations.

Use **ONLY** secure, nondetachable parts for hand-hold supports.

It is strongly recommended to lift the wheelchair only by the rear frame and the front forks - otherwise injury or damage may occur.

DO NOT attempt to lift the wheelchair by any removable (detachable) parts. Lifting by means of any removable (detachable) parts of a wheelchair may result in injury to the user or damage to the wheelchair.

Pinch point exists between head tube cap and walking beam.

The weight of the wheelchair with batteries and without the user is 290 lbs. Use proper lifting techniques (lift with your legs) to avoid injury.

Follow this procedure for moving the wheelchair between floors when an elevator is NOT available or lifting the wheelchair is necessary:

NOTE: When using a stairway to move the wheelchair, seat and any accessories, move all wheelchair components away from the stairway prior to reassembly.

1. Remove the occupant from the wheelchair.
2. Remove the seat. Refer to Removing/Installing the Seat Assembly on page 41.
3. Remove any accessories on the wheelchair.
4. Bend your knees and keep your back straight.
5. Ensure that the casters are oriented as shown in FIGURE 3.2.
6. Using the rear and front forks as hand hold supports, transfer the wheelchair base to desired location. Refer to FIGURE 3.2.

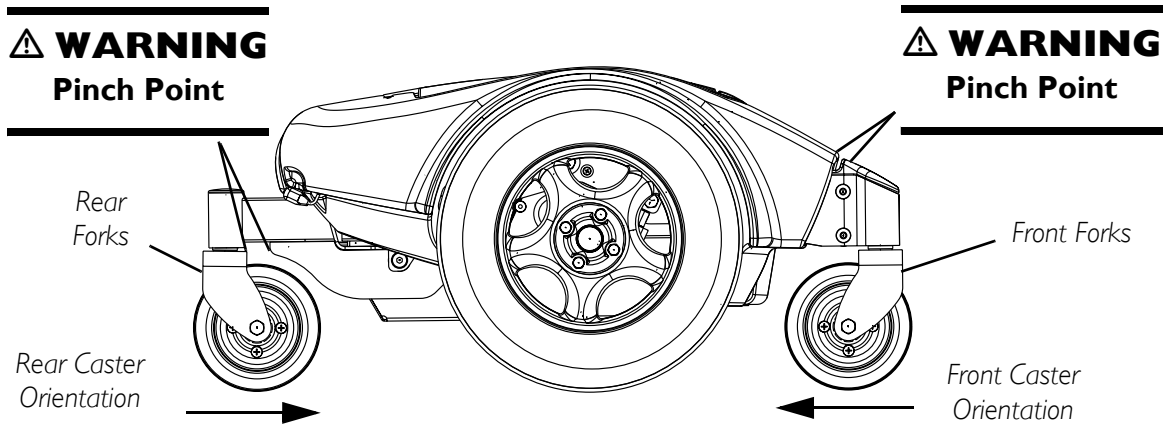


FIGURE 3.2 - LIFTING/STAIRWAYS - ORIENTATION OF CASTERS AND PINCH POINTS

7. Using non-removable (nondetachable) parts, transfer the seat and any accessories to desired location.
8. Reassemble the wheelchair.

⚠ WARNING: ESCALATORS

DO NOT use an escalator to move a wheelchair between floors. Serious bodily injury may occur.

Ensure that driving surface, ramps, lifts, elevators, etc. are capable of supporting combined weight of user and wheelchair (for a 500lbs user, the combined weight could be up to 800 lbs).

TRANSFERRING TO AND FROM OTHER SEATS

⚠ WARNING

ALWAYS turn the wheelchair power **OFF** and engage the **Motor Release Levers** to prevent the wheels from moving **BEFORE** attempting to transfer in or out of the wheelchair. Also, make sure every precaution is taken to reduce the gap distance by aligning both the front **AND** rear casters parallel with the object you are transferring onto.

⚠ CAUTION

When transferring, position yourself as far back as possible in the seat. This will prevent broken screws, damaged upholstery and the possibility of the wheelchair tipping forward.

NOTE: This activity may be performed independently provided you have adequate mobility and upper body strength.

NOTE: For this procedure, refer to FIGURE 3.3.

1. Position the wheelchair as close as possible along side the seat to which you are transferring, with the rear casters pointing away from it.



FIGURE 3.3 - TRANSFERRING TO AND FROM OTHER SEATS

2. After the wheelchair is positioned properly for transfer, verify that the Motor Release Levers are engaged. Refer to [Engaging/Disengaging Motor Release Lever](#) on page 57.
3. Flip back or remove arm on side of wheelchair you are transferring from.
4. Shift body weight into seat with transfer.

During independent transfer, little or no seat platform will be beneath you. Use a transfer board if at all possible.

PERCENTAGE OF WEIGHT DISTRIBUTION

⚠ WARNING

DO NOT attempt to reach objects if you have to move forward in the seat or pick them up from the floor by reaching down between your knees.

Many activities require the wheelchair user to reach, bend and transfer in and out of the wheelchair. These movements will cause a change to the normal balance, center of gravity, and weight distribution of the wheelchair. To determine and establish your particular safety limits, practice bending, reaching and transferring activities in several combinations in the presence of a qualified healthcare professional **BEFORE** attempting active use of the wheelchair.

Proper positioning is essential for your safety. When reaching, leaning, bending or bending forward, it is important to use the casters as a tool to maintain stability and balance.

REACHING, LEANING AND BENDING - FORWARD

NOTE: For this procedure, refer to FIGURE 3.4.

Position the front AND rear casters so that they are extended as far forward as possible and engage Motor Release Levers.

⚠ WARNING

DO NOT attempt to reach objects if you have to move forward in the seat or pick them up from the floor by reaching down between your knees.

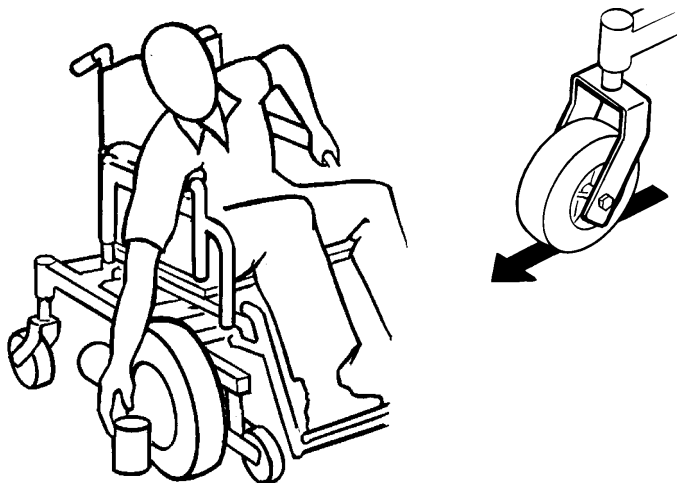


FIGURE 3.4 - REACHING, LEANING AND BENDING - FORWARD

REACHING AND BENDING - BACKWARD

⚠ WARNING

DO NOT lean over the top of the back upholstery. This will change your center of gravity and may cause you to tip over.

NOTE: For this procedure, refer to FIGURE 3.5.

Position wheelchair as close as possible to the desired object. Point the front AND rear casters rearward to create the longest possible wheelbase. Reach back only as far as your arm will extend without changing your sitting position.



FIGURE 3.5 - REACHING AND BENDING - BACKWARD

SECTION 4—SAFETY INSPECTION/ TROUBLESHOOTING

NOTE: Every six (6) months or as necessary take your wheelchair to a qualified dealer for a thorough inspection and servicing. Regular cleaning will reveal loose or worn parts and enhance the smooth operation of your wheelchair. To operate properly and safely, your wheelchair must be cared for just like any other vehicle. Routine maintenance will extend the life and efficiency of your wheelchair. SAFETY INSPECTION checklist.

SAFETY INSPECTION CHECKLISTS

Initial adjustments should be made to suit your personal body structure needs and preference. Thereafter follow these maintenance procedures:

INSPECT/ADJUST INITIALLY

- Wheelchair rolls straight (no excessive drag or pull to one side).
- Arms are secure but easy to release and adjustment levers engage properly (on ASBA only).
- Adjustable height arms operate and lock securely.
- Armrest pads sit flush against arm tubes.
- Seat is secured to wheelchair frame.
- Seat release latch is functional. Replace if necessary.
- Wheel mounting nuts are secure on drive wheels.
- No excessive side movement or binding when drive wheels are lifted and spun when disengaged (freewheeling).
- Wheel/fork assembly has proper tension when caster is spun. Caster should come to a gradual stop.

△ CAUTION

As with any vehicle, wheels and tires should be checked periodically for cracks and wear and should be replaced as necessary.

- Loosen/tighten caster locknut if wheel wobbles noticeably or binds to a stop.
- Ensure all caster/wheel/fork/headtube fasteners are secure.
- Inspect tires for flat spots and wear.
- Inspect and clean the stability lock gears.
- Clean upholstery and armrests.

INSPECT/ADJUST WEEKLY

- Seat is secured to wheelchair frame.
- Seat and/or back upholstery have no rips and do not sag. Replace if necessary.
- Seat release latch is not worn and is functional. Replace if necessary.
- Inspect tires for flat spots and wear.
- Arm pivot points are not worn and/or loose. Replace if necessary.
- Inspect and clean the stability lock gears. Replace if worn.

INSPECT/ADJUST MONTHLY

- Wheel mounting nuts are secure on drive wheels.
- No excessive side movement or binding when drive wheels are lifted and spun when disengaged (free-wheeling).
- Wheel/fork assembly has proper tension when caster is spun. Caster should come to a gradual stop.

△ CAUTION

As with any vehicle, wheels and tires should be checked periodically for cracks and wear and should be replaced as necessary.

- Loosen/tighten caster locknut if wheel wobbles noticeably or binds to a stop.
- Ensure all caster/wheel/fork/headtube fasteners are secure.
- Inspect for any loose hardware on the wheelchair.

INSPECT/ADJUST PERIODICALLY

- Wheelchair rolls straight (no excessive drag or pull to one side).
- Arms are secure but easy to release and adjustment levers engage properly (on ASBA only).
- Adjustable height arms operate and lock securely.
- Arm pivot points are not worn and/or loose. Replace if necessary.
- Armrest pads sit flush against arm tubes.
- Seat and/or back upholstery have no rips and do not sag. Replace if necessary.
- Seat release latch is not worn. Replace if necessary.
- Inspect and clean the stability lock gears. Replace if worn.
- Clean upholstery and armrests.
- Inspect the seat positioning strap for wear. Replace if worn or damaged.
- Inspect charger AC power cord for damage. Replace if necessary.

TROUBLESHOOTING GUIDE

SYMPTOM	PROBABLE CAUSE	SOLUTIONS
Batteries draw excessive current when charging.	Battery failure. Electrical malfunction.	Have batteries checked for shorted cell. Replace if necessary. Contact Dealer/Invacare for service.
Battery indicator flashes the charge level is low - immediately after recharge.	Battery failure. Malfunctioning battery charger. Electrical malfunction	Check batteries for shorted cell. Replace if necessary. Contact Dealer/Invacare for service. Contact Dealer/Invacare for service.
Battery indicator flashes the charge level is low - too soon after being recharged.	Batteries not charged. Weak batteries	Have charger checked. Replace batteries if necessary. Contact Dealer/Invacare for service.
Motor “chatters” or runs irregular.	Electrical malfunction.	Contact Dealer/Invacare for service.
Only one (1) drive wheel turns.	Electrical malfunction. One (1) motor lock is disengaged.	Contact Dealer/Invacare for service. Engage motor lock.
Joystick erratic or does not respond as desired.	Damaged motor coupling. Electrical malfunction. Controller programmed improperly.	Contact Dealer/Invacare for service. Contact Dealer/Invacare for service. Reprogram controller (Refer to MK5 EX™ or MK5 NX™ electronics owner’s manual supplied with wheelchair).
Wheelchair does not respond to commands.	Poor battery terminal connection.	Have terminals cleaned.
Power indicator off - even after recharging.	Electrical malfunction.	Contact Dealer/Invacare for service.

NOTE: For additional troubleshooting information and explanation of error codes, refer to the Electronics Manual supplied with each wheelchair.

SECTION 5—WHEELCHAIR OPERATION

⚠ WARNING

After **ANY** adjustments, repair or service and **BEFORE** use, make sure that all attaching hardware is tightened securely - otherwise injury or damage may result.

Set-up/programming of the Electronic Control Unit is to be performed **ONLY** by a qualified technician. The fine tuning adjustments of the controller may affect other activities of the wheelchair. Damage to the equipment could occur under these circumstances. **IF UNQUALIFIED INDIVIDUALS PERFORM ANY WORK ON THESE UNITS, THE WARRANTY IS VOID.**

OPERATING THE WHEELCHAIR

NOTE: For this procedure, refer to FIGURE 5.1.

TURNING THE POWER ON/OFF

1. To turn the power ON, perform one (1) of the following steps:
 - A. **SPJ™ -80 JOYSTICKS** - Move the On/Off switch UP or DOWN. The switch automatically retracts back to center position.
 - B. **DPJ™ JOYSTICKS** - Move the On/Off switch UP to the MIDDLE or TOP position.
 - C. **MPJ™ JOYSTICKS** - Move the On/Off switch FORWARD to the ON position.

NOTE: After turning power on, all indicators will light briefly and the display gauge will indicate one of the following:

- A. *THE CURRENT BATTERY CHARGE* - Information gauge shows all LED's lit or partial LED's lit. Refer to table on previous page.
 - B. *OUT OF NEUTRAL AT POWER UP* - Information Gauge shows all LED's flashing slowly. This occurs when the power is turned on when the joystick is out of neutral. This feature prevents sudden and unexpected movements of the power chair.
2. Turning the power OFF can be achieved by performing one (1) of the following steps:
 - A. **SPJ-80 JOYSTICKS** - Move the On/Off switch UP or DOWN. The switch automatically retracts back to center position.
 - B. **DPJ JOYSTICKS** - Move the On/Off switch DOWN to the OFF position.
 - C. **MPJ JOYSTICKS** - Move the On/Off switch BACK to the OFF position.

USING THE JOYSTICK TO DRIVE THE CHAIR

The joystick is located at the front of the joystick housing and provides smooth control of speed and direction. It is equipped with 360 degrees of mobility for ease of operation. The joystick is spring-loaded, and automatically returns to the upright (neutral) position when released. Pushing the joystick in a given direction causes the chair to move in that direction.

The joystick has proportional drive control, meaning that the further it is pushed from the upright (neutral) position, the faster the wheelchair moves. The maximum speed, however, is limited by the setting of the speed-control knob.

To slow the wheelchair to a stop, simply release the joystick. The wheelchair has automatic speed and direction compensation to minimize corrections.

When first learning to drive, select a SLOW speed and try to drive the wheelchair AS SLOWLY as possible by pushing the joystick slightly forward. This exercise will help you learn to utilize the full potential of the proportional control and allow you to start and stop smoothly.

To drive the wheelchair, perform the following:

1. Adjust speed control switch to the appropriate setting.
2. Turn the power on. Refer to [Turning the Power On/Off](#) on page 28.
3. Maneuver the joystick in the following manner:

MOVEMENT	ACTION
FORWARD	Push forward on the joystick.
REVERSE	Pull back on the joystick.
Turn RIGHT	Move the joystick RIGHT.
Turn LEFT	Move the joystick LEFT.
STOP	Release the joystick and the wheelchair will quickly slow down.

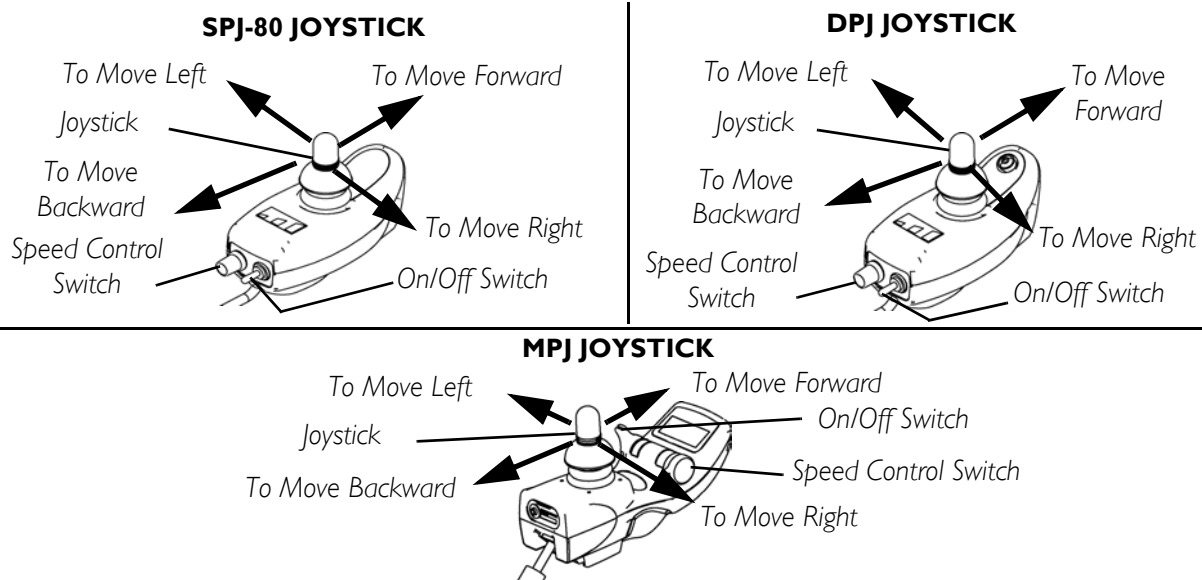


FIGURE 5.1 - OPERATING THE WHEELCHAIR

NOTE: For specific information about the joystick installed on the wheelchair, refer to one (1) of these procedures:

- SPJ-80 Joystick Switches and Indicators on page 30.
- DPJ Joystick Switches and Indicators on page 31.
- MPJ Joystick Switches and Indicators on page 33.

SPJ-80 JOYSTICK SWITCHES AND INDICATORS

NOTE: Refer to FIGURE 5.2 for the following information.

NOTE: The SPJ-80 joystick must be used with the MK5 NX™-80 (80 amp) controller.

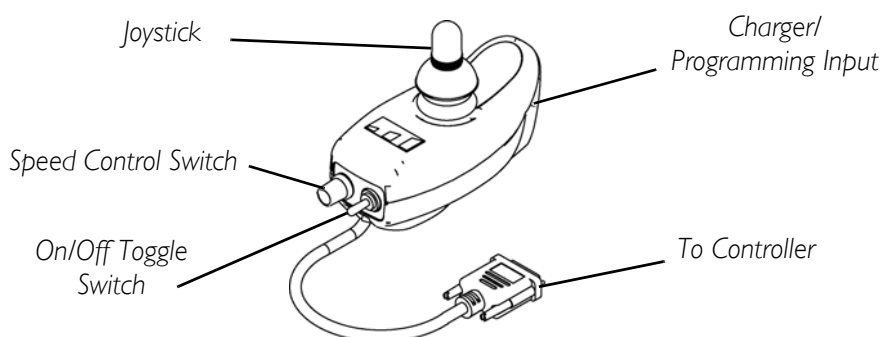


FIGURE 5.2 - SPJ-80 JOYSTICK SWITCHES AND INDICATORS

ON/OFF TOGGLE SWITCH

This toggle switch is located at the back of the joystick housing.

SPEED CONTROL SWITCH

The speed control switch is located on the back of the joystick housing. This rotary switch is used for controlling the speed and acceleration of the wheelchair.

1. Turn the switch **CLOCKWISE** to increase the speed of the wheelchair.
2. Turn the switch **COUNTERCLOCKWISE** to decrease the speed of the wheelchair.

JOYSTICK

The joystick provides proportional drive control of speed and direction.

BATTERY GAUGE DISPLAY

Located at the rear of the joystick housing, it provides information on the remaining charge in the batteries. At full charge, all six (6) segments of the bar graph are lit. The lower the battery charge the fewer number of segments light up. Once the the battery level reaches the point where only one segment is lit, the last **RED** bar will start to flash on and off to indicate that the user should charge the batteries as soon as possible.

The BGD also serves as a system diagnostic device when a fault is detected by the control module. A specific number of flashes of the last two RED bars (up to eight (8) flashes) start to flash on and off separated by a pause to indicate the type of fault detected. A chart of the diagnostic indications is given in DIAGNOSTIC CODE of the Electronics Manual, part number 1122140.

The joystick has proportional drive control, meaning that further the wheelchair is pushed from the upright (neutral) position, the faster it moves. Your top speed, however, is limited by the setting of the speed-control knob and programmed settings.

To slow the wheelchair to a stop, simply release the joystick. The wheelchair has automatic speed and direction compensation to minimize corrections.

CHARGER/PROGRAMMING INPUT

Located at the front of the joystick housing. This provides easy access for charging the wheelchair batteries. This port also serves as the Remote Programmer Communication connection.

DPJ JOYSTICK SWITCHES AND INDICATORS

NOTE: Refer to FIGURE 5.3 for the following information.

NOTE: The DPJ joystick must be used with the MK5 EX™ controller.

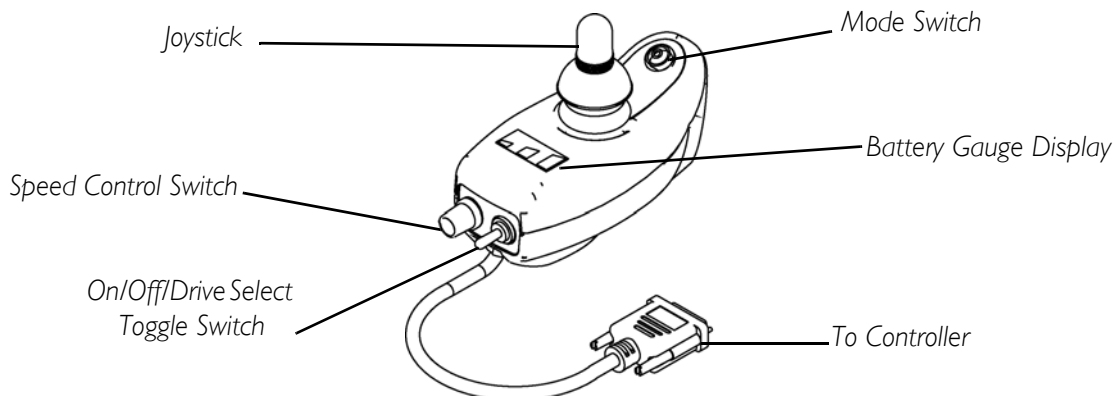


FIGURE 5.3 - DPJ JOYSTICK SWITCHES AND INDICATORS

DRIVE SELECT TOGGLE SWITCH

The three (3) position drive select toggle switch is located at the back of the joystick housing. This switch allows the operator to select the type of operation or performance which best suits a particular control need or situation. The DRIVE 1 program uses performance values which are independent of those used for the DRIVE 2 program. As an example, an operator may have a control need for spasticity in the morning and a very different need in the afternoon. DRIVE 1 can be programmed for higher speeds and quicker response while DRIVE 2 can be programmed for slower speeds and less responsiveness or vice versa.

SELECTING THE DRIVE MODE

1. To select DRIVE 1 mode, move the toggle UP.
2. To select DRIVE 2 mode, move the toggle to the MIDDLE position.

SPEED CONTROL SWITCH

The speed control switch is located at the back of the joystick housing.

1. Turn the switch clockwise to increase the maximum speed of the chair.

JOYSTICK

The joystick provides proportional drive control of speed and direction.

MODE (ON/OFF) SWITCH

The mode (on/off) switch is a push button switch located at the front of the joystick. When an optional actuator control [Single Actuator control, (SAC), Two Actuator Control (TAC), Tilt and Recline Control Module (TRCM)] is present, pushing the switch will change the controller mode to control the chairs actuators through the joystick. The mode switch LED indicator will be ON. Push the switch again to return to normal joystick driving. The mode switch LED indicator will be off.

BATTERY GAUGE DISPLAY (BGD)

Located at the rear of the joystick housing, the BGD provides information on the remaining charge in the batteries. At full charge, all six (6) segments of the bar graph are lit. As the battery discharges, the farthest right segment will go out until only the RED bar is lit. At this level, the last RED bar will start to flash on and off to indicate that the user should charge the batteries as soon as possible.

The BGD also serves as a system diagnostic device when a fault is detected by the control module. A specific number of flashes of the last two RED bars (up to eight (8) flashes) separated by a pause will indicate the type of fault detected. This information is useful to a qualified technician when making repairs or reprogramming the electronics.

MPJ JOYSTICK SWITCHES AND INDICATORS

NOTE: Refer to FIGURE 5.4 for the following information.

NOTE: The MPJ joystick must be used with the MK5 EX controller.

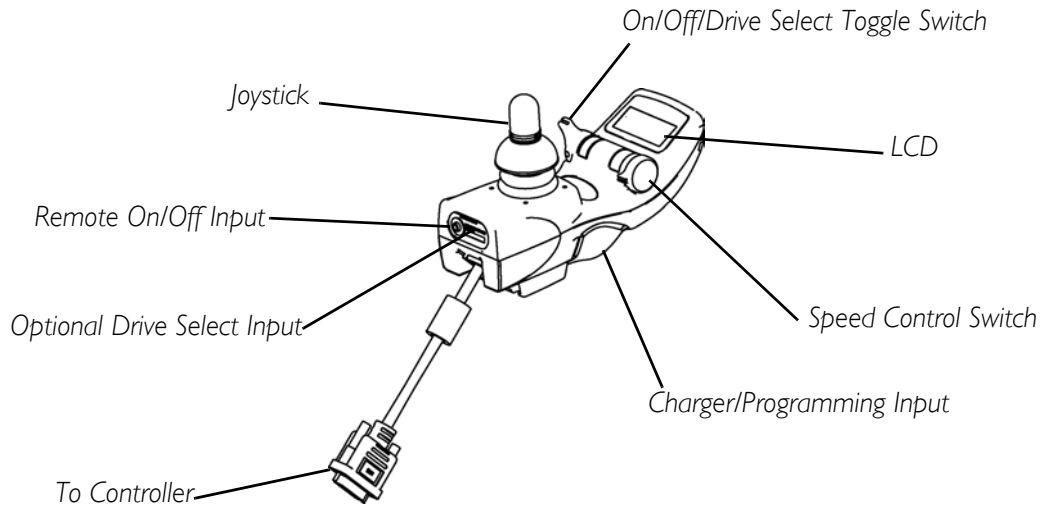


FIGURE 5.4 - MPJ JOYSTICK SWITCHES AND INDICATORS

DRIVE SELECT TOGGLE SWITCH

A three (3) position drive select toggle switch is located on the display module in the lower right corner. The drive select position is momentary.

This switch allows the operator to select the type of operation or performance which best suits a particular control need or situation. The DRIVE 1 program uses performance values which are independent of those used for the DRIVE 2 or 3 or 4 program. As an example, an operator may have a control need for spasticity in the morning and a very different need in the afternoon. DRIVE 1 can be programmed for higher speeds and quicker response while DRIVE 2 can be programmed for slower speeds and less responsiveness or vice versa. The other two drive programs could be indoor and outdoor versions of DRIVE 1 and DRIVE 2.

SELECTING THE DRIVE MODE

1. Move the toggle Up and release. DRIVE 1 will appear on LCD.
2. Move the toggle UP and release again. DRIVE 2 will appear on LCD.
3. Move the toggle UP and release again. DRIVE 3 will appear on LCD.
4. Move the toggle UP and release again. DRIVE 4 will appear on LCD.
5. Move the toggle UP and release one more time to select DRIVE 1.

SPEED CONTROL

The speed control switch is located on the side of the joystick housing.

1. Rotate the switch forward to increase the speed of the chair to the programmed max speed.

JOYSTICK

The joystick provides proportional drive control of speed and direction.

LCD DISPLAY

The LCD Display is located in front of the joystick and provides information on the status of the chair through a 2 line by 12 character length backlit display. The LCD display is readable in both bright sunlight and complete darkness.

During normal operation the active drive is displayed on the left half of the first line. The left half of the second line shows the Battery Discharge Indicator (BDI). It provides information on the remaining charge in the batteries. At full charge, solid blocks fill in all five segments between E (Empty) and F (Full). As the battery becomes discharged, the furthest right segments will progressively disappear a half bar at a time until no segments appear between E and F. At this level the word RECHARGE will appear on the second line to indicate that the user should charge the batteries as soon as possible.

The right half of the display is the Information Center. The Information Center displays current data on the chair. FIGURE 5.5 shows the factory default odometer display. The top line shows the unit of measured MI (miles). The second line is the value, 0000 (total miles driven).

The Information Center can display:

ITEM	DESCRIPTION
Speedometer	Current Chair Speed - MPH/KMH
Trip Odometer	Distance traveled since the chair was last powered ON
Odometer	Total Distance Traveled (Factory Default) - MI/KM
Trip Amp-Hour meter	Battery Capacity consumed since the chair was last powered ON - AH
Battery Volts	Current Battery Voltage - VOLT
Battery Current	Battery current being used - AMP
Load Test Results	Current battery condition based on a load test - BATT

If a fault is detected, the cause of the fault will be scrolled across the second line of the display.

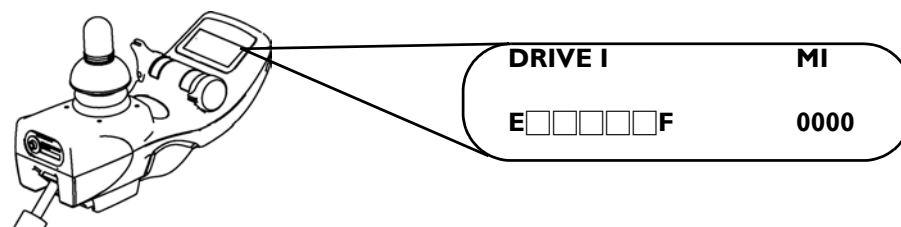


FIGURE 5.5 - MPJ JOYSTICK SWITCHES AND INDICATORS - LCD DISPLAY

EMERGENCY STOP/RESET SWITCH

The emergency stop/reset switch is used to stop the chair and to select the operating mode for the chair. The switch input is located on the control module next to the joystick input. An emergency stop/reset switch is needed whenever any of the following operating modes are programmed:

- Environmental Controls (E.C.U.) - including recliner controls
- 3 Speed Mode in Momentary
- Latched Modes
- Pneumatic Control
- Stand-by Mode
- RIM Control
- Remote Drive Selection Mode
- Information Center Display Selection (does not require Reset activation at power up)

If any of the above modes are selected, the control will require activation of the switch immediately after the power switch is turned on in order to enter the drive mode. The second line of the LCD will display - PRESS RESET.

EMERGENCY STOP/RESET INPUT

The input accepts a 1/8-inch diameter Phono connector. The emergency stop/reset switch must be an open contact for normal driving and a closed contact to activate the emergency stop/reset function.

PIN	DESIGNATION
TIP	Emergency Stop/Reset
RING	COMMON (B-)

REMOTE ON/OFF SWITCH

The remote on/off switch input allows the power switch to be operated by an ability switch (normally open momentary switch with mono plug). To use the remote on/off feature, the Drive Select/On/Off switch must be in the ON position. Each activation of the ability switch will alternately turn the joystick ON or OFF.

SECTION 6—ARMS

⚠ WARNING

After **ANY** adjustments, repair or service and **BEFORE** use, make sure that all attaching hardware is tightened securely - otherwise injury or damage may result.

Before performing any maintenance, adjustment or service verify that **ON/OFF** switch on the joystick is in the **OFF** position.

INSTALLING/REMOVING FLIP BACK ARMRESTS

⚠ WARNING

Make sure the flip back armrest release and height adjustment levers are in the locked position before using the wheelchair.

NOTE: Flip back armrest release lever must be in unlocked position when placing armrest into the arm sockets.

NOTE: For this procedure, refer to FIGURE 6.1.

INSTALLING

1. Slide the flip back armrest into the arm sockets on the wheelchair frame.
2. Install the quick release pin through the rear arm socket and flip back armrest.
3. Lock flip back armrest by pressing flip back armrest release lever into the LOCKED position (FIGURE 6.1).
4. Lift UP on flip back armrest to make sure the armrest is locked in place.
5. Repeat STEPS 1-4 for opposite flip back armrest.

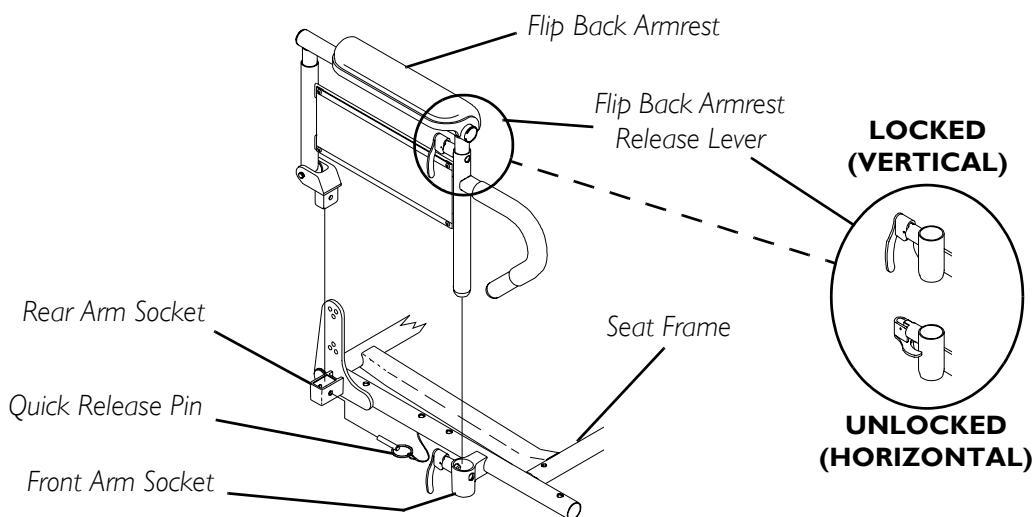


FIGURE 6.1 - INSTALLING/REMOVING FLIP BACK ARMRESTS

REMOVING

1. Unlock flip back armrest by pulling flip back armrest release lever into the UNLOCKED position (FIGURE 6.1).
2. Remove the quick release pin that secures the flip back armrest to the wheelchair frame.
3. Pull UP on the flip back armrest and remove the armrest from the arm sockets.
4. Repeat STEPS 1-3 for the opposite flip back armrest, if necessary.

ADJUSTING FLIP BACK ARMRESTS

NOTE: For this procedure, refer to FIGURE 6.2.

POSITIONING FLIP BACK ARMRESTS FOR USER TRANSFER

1. Unlock the flip back armrest by pulling the armrest release lever into the UP (HORIZONTAL) position.
2. Pull UP on the flip back armrest and remove the armrest from the front arm socket.
3. Flip the armrest back until it is out of the way.
4. Repeat STEPS 1-3 for opposite flip back armrest, if necessary.

POSITIONING FLIP BACK ARMRESTS FOR USE

1. Ensure that the flip back armrest release lever is in the UP (HORIZONTAL) position.
2. Install the flip back armrest into the front arm socket.
3. Lock flip back armrest by pressing flip back armrest release lever into the DOWN (VERTICAL) position.
4. Lift UP on flip back armrest to make sure the armrest is locked in place.
5. Repeat STEPS 1-4 for opposite flip back armrest, if necessary.

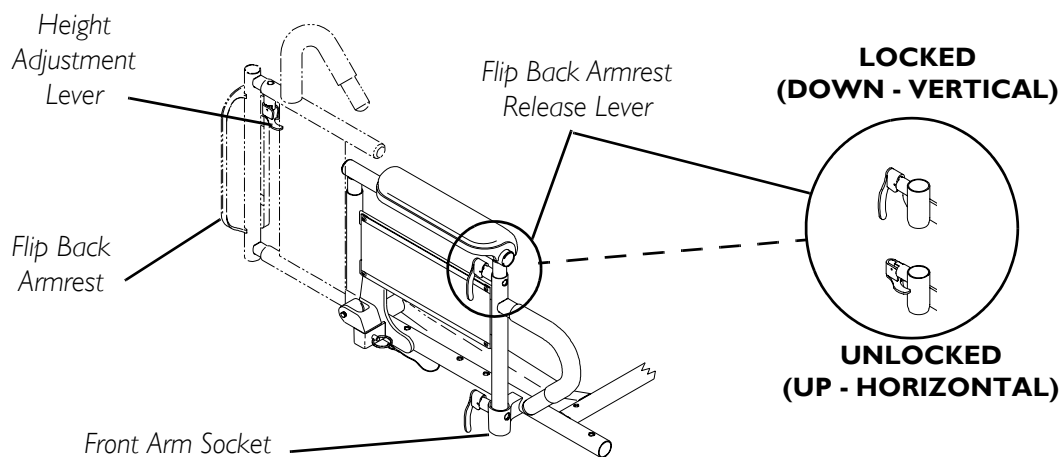


FIGURE 6.2 - ADJUSTING FLIP BACK ARMRESTS

ADJUSTING

1. Unlock top of flip back armrest by pulling height adjustment lever into the UP (HORIZONTAL) position.
2. Adjust top of the flip back armrest to the desired height.
3. Lock top of flip back armrest by pushing height adjustment lever into the DOWN (VERTICAL) position.
4. Lift UP on flip back armrest to make sure the armrest is locked in place.
5. Repeat STEPS 1-4 for opposite flip back armrest, if necessary.

ADJUSTING VAN SEAT ARMRESTS

ANGLE

NOTE: For this procedure, refer to Detail "A" of FIGURE 6.3.

1. Lift UP the armrest.
2. Loosen the jam nut.
3. Adjust the socket screw UP or DOWN to the desired arm angle position.
4. Tighten the jam nut.
5. To determine the same angle for the opposite armrest, count the exposed threads after the jam nut has been tightened.
6. Repeat STEPS 1-4 for opposite armrest, if necessary.

HEIGHT

NOTE: For this procedure, refer to Detail "B" of FIGURE 6.3.

1. Remove the socket screw that secures the armrest to the seat frame assembly.
2. Adjust the armrest to one (1) of four (4) positions.
3. Reinstall the socket screw that secures the armrest to the seat frame assembly and tighten securely.

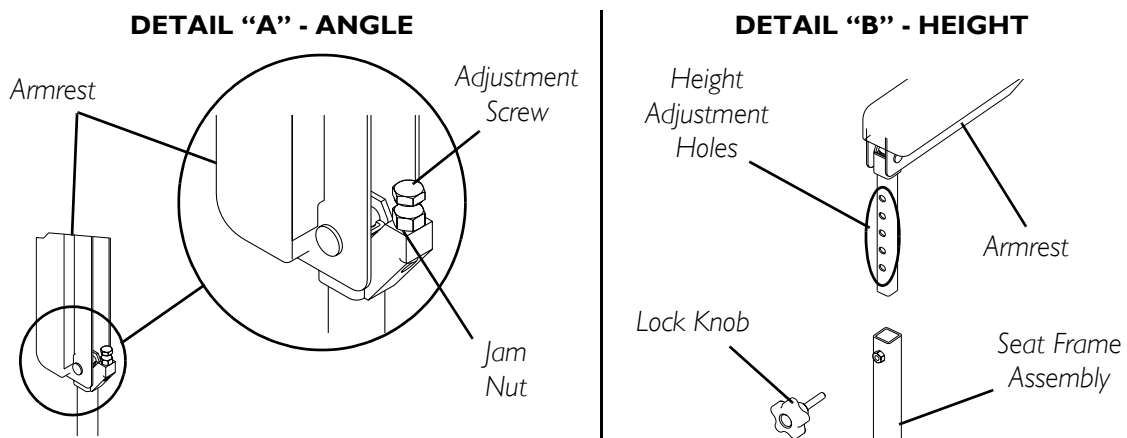


FIGURE 6.3 - ADJUSTING VAN SEAT ARMRESTS

SECTION 7—SEAT

⚠ WARNING

After **ANY** adjustments, repair or service and **BEFORE** use, make sure that all attaching hardware is tightened securely - otherwise injury or damage may result.

Before performing any maintenance, adjustment or service verify that **ON/OFF** switch on the joystick is in the **OFF** position.

ADJUSTING THE HEADREST

NOTE: For this procedure, refer to FIGURE 7.1.

1. To raise headrest, lift headrest UP to desired position.

NOTE: Headrest is locked in position when an audible "click" is heard.

2. To lower headrest, push release tab towards the inside of the chair. Lower headrest to desired position.

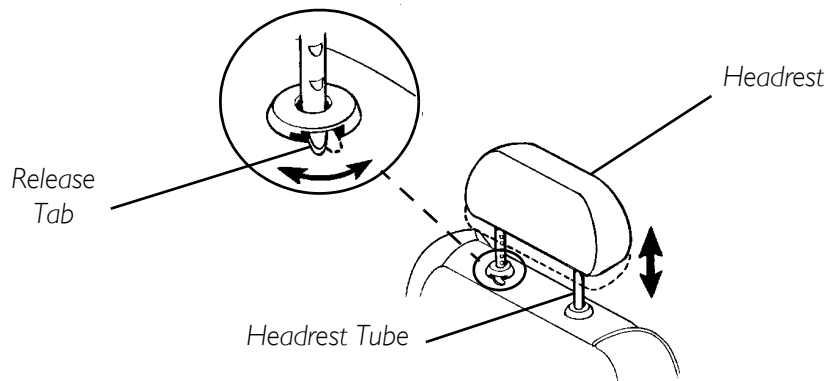


FIGURE 7.1 - ADJUSTING THE HEADREST

ADJUSTING THE BACK ANGLE

VAN SEAT MODEL

NOTE: For this procedure, refer to FIGURE 7.2.

1. Lift UP on the release handle and adjust seat to desired angle.
2. Let go of the release handle to lock the back in position.

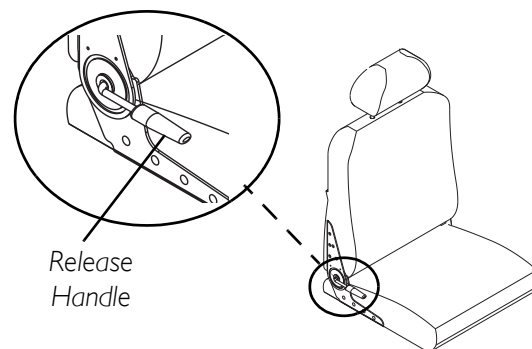


FIGURE 7.2 - ADJUSTING THE BACK ANGLE - VAN SEAT MODEL

ADJUSTABLE SEAT BACK ANGLE (ASBA) MODEL

NOTE: For this procedure, refer to FIGURE 7.3.

1. Remove armrests from the wheelchair. Refer to Installing/Removing Flip Back Armrests on page 36.
2. Remove the mounting screw and washer from the top mounting hole of back angle plate and back cane.

NOTE: To avoid losing the insert in each back cane, thread the mounting screw through the cane from the inside of wheelchair to hold the insert in place.

3. Remove the mounting screw and washer from the bottom mounting hole of the back angle plate and back cane.
4. Reposition the back canes into the correct mounting holes of the back angle plate to obtain a back angle between 80° and 100° in 5° increments.
5. Torque mounting screws to 75 inch-pounds.
6. Reinstall the armrests onto the wheelchair. Refer to Installing/Removing Flip Back Armrests on page 36.

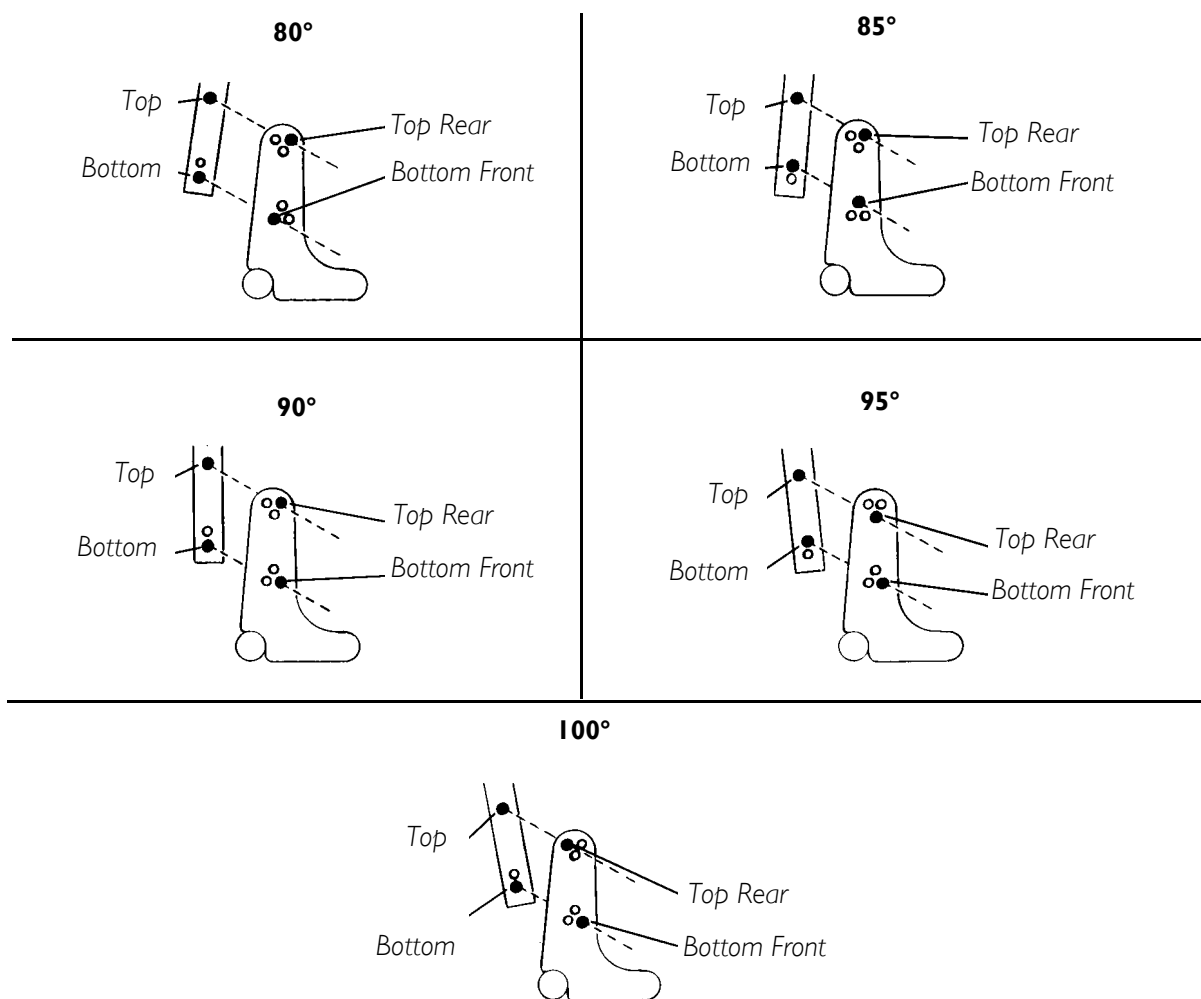


FIGURE 7.3 - ADJUSTING THE BACK ANGLE - ADJUSTABLE SEAT BACK ANGLE (ASBA) MODEL

REMOVING/INSTALLING THE SEAT ASSEMBLY

⚠ WARNING

DO NOT store items under seat - interference with seat latch may result.

NOTE: For this procedure, refer to FIGURE 7.4.

REMOVING

1. Disconnect the joystick. Refer to [Disconnecting/Connecting the MK5 Joysticks](#) on page 71.
2. Push DOWN on the latch bar underneath front of seat.
3. Tilt front edge of seat UP.
4. Slide the seat assembly forward to disengage seat from the pivot brackets located in the rear.

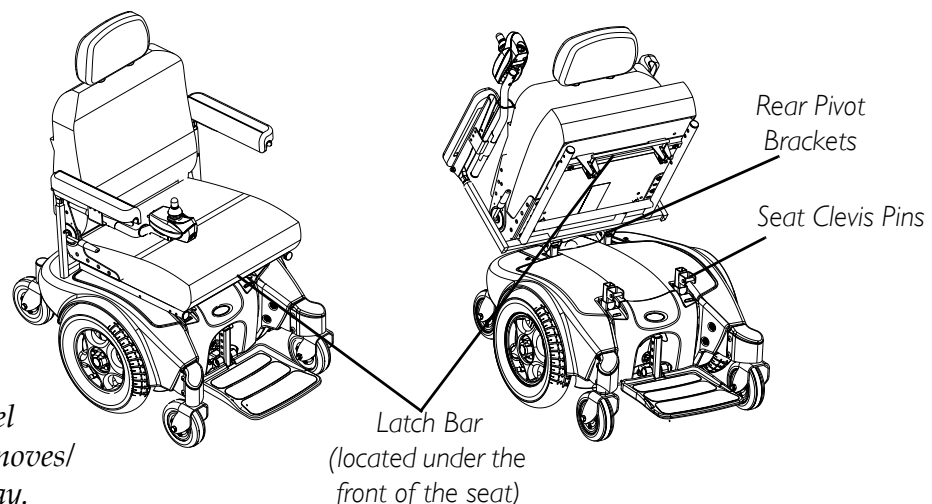
INSTALLING

1. Position the seat in the rear pivot brackets as shown in FIGURE 7.4.
2. Tilt front edge of seat DOWN.
3. When seat is lowered, engage seat brackets into seat clevis pins.

⚠ WARNING

When reinstalling the seat verify that the seat brackets are engaged with the seat clevis pins by pulling up on the latch bar.

4. Pull UP on latch bar to verify that brackets are engaged with seat clevis pins.
5. Connect the joystick. Refer to [Disconnecting/Connecting the MK5 Joysticks](#) on page 71.



NOTE: Van Seat model shown. ASBA seat removes/installs in the same way.

FIGURE 7.4 - REMOVING/INSTALLING THE SEAT ASSEMBLY

ADJUSTING THE SEAT HEIGHT

NOTE: For this procedure, refer to FIGURE 7.5.

NOTE: The seat can be adjusted to five (5) height positions in ½-inch increments.

1. Remove the seat. Refer to Removing/Installing the Seat Assembly on page 41.
2. Remove the mounting screw and locknut that secures the adjustable height tube to the support tube.
3. Adjust tube to desired mounting position. Refer to the following table for available mounting positions.

AVAILABLE MOUNTING HOLES FOR FRONT ADJUSTABLE HEIGHT TUBE					
CHAIR IS EQUIPPED WITH	A	B	C	D	E
VAN SEAT WITH FOOTBOARD					
REAR ADJUSTABLE HEIGHT TUBE					
Mounted in hole A	N/A**	✓	✓	✓	✓
Mounted in hole B	N/A*	N/A*	✓	✓	✓
Mounted in hole C	N/A*	N/A*	✓	✓	✓
Mounted in hole D	N/A*	N/A*	N/A*	✓	✓
Mounted in hole E	N/A*	N/A*	N/A*	N/A*	✓

*NOTE: This mounting hole combination would result in a forward seat dump. Forward seat dump is where the rear of the seat is higher than the front of the seat. The seat should never be adjusted to a position that results in a forward seat dump.

**NOTE: This mounting hole combination cannot be used because it would cause the front riggings of the wheelchair to interfere with other components of the chair.

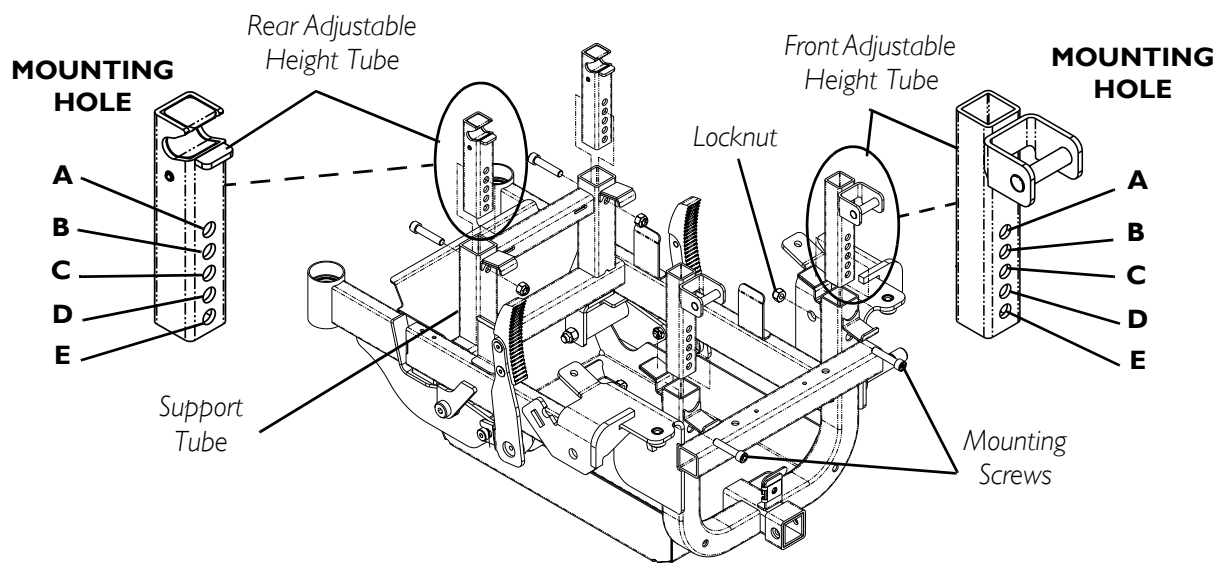


FIGURE 7.5 - ADJUSTING THE SEAT HEIGHT

4. Reinstall mounting screw and locknut (FIGURE 7.5). Securely tighten.
5. Repeat STEPS 2-4 for the three (3) remaining adjustable height tubes.

⚠ WARNING

When reinstalling the seat verify that the seat brackets are engaged with the seat clevis pins by pulling UP on the latch bar.

6. Reinstall the seat. Refer to Removing/Installing the Seat Assembly on page 41.

ADJUSTING SEAT POSITION ON SEAT FRAME

ASBA MODEL

⚠ WARNING

DO NOT attempt to adjust the seat position of the ASBA seat on the seat frame. This procedure MUST be performed by a qualified technician.

VAN SEAT MODEL

NOTE: For this procedure, refer to FIGURE 7.6 and FIGURE 7.7.

1. Remove the seat. Refer to Removing/Installing the Seat Assembly on page 41.
2. Remove the four (4) mounting screws and washers securing the seat assembly to the seat frame (FIGURE 7.6).
3. Separate the seat assembly from the seat frame.

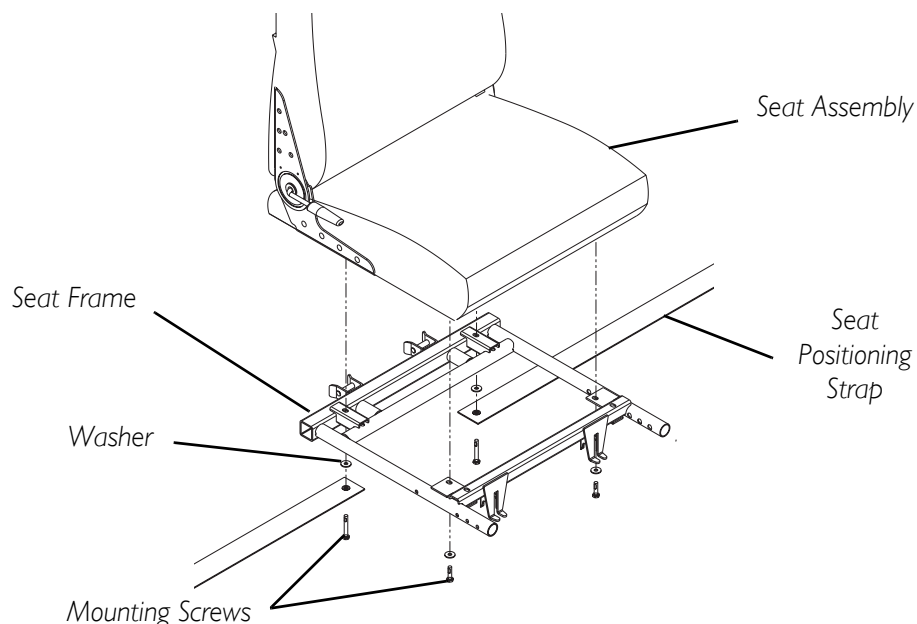
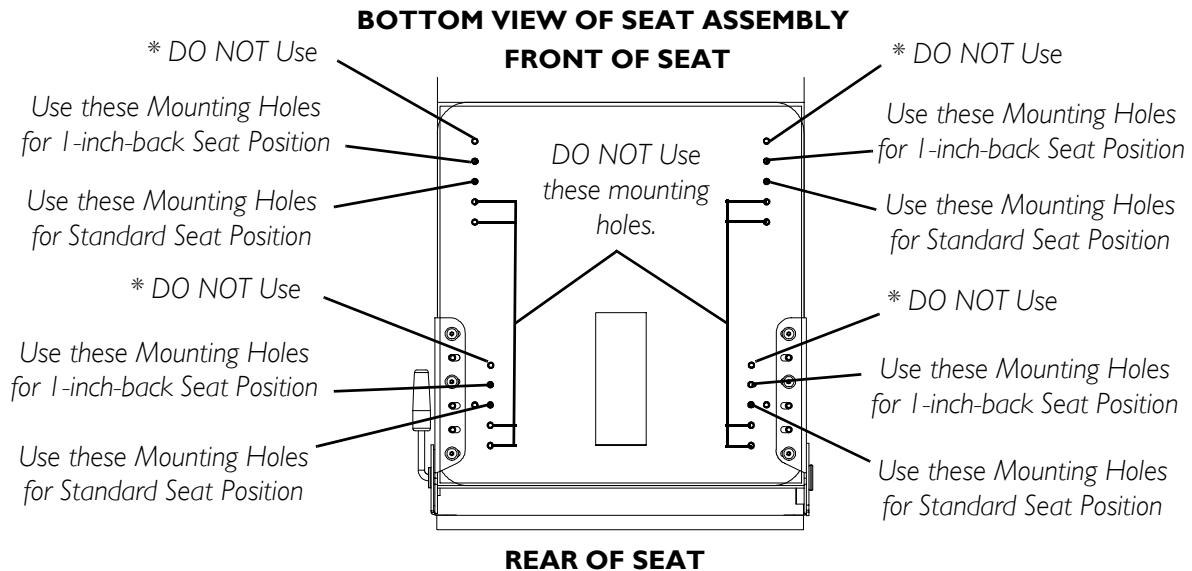


FIGURE 7.6 - ADJUSTING SEAT POSITION ON SEAT FRAME

4. Refer to FIGURE 7.7 to determine the correct mounting holes to achieve the desired seat position.
5. Align the seat assembly mounting holes determined in STEP 4 with the seat frame mounting holes determined in STEP 4.
6. Using the four (4) mounting screws and washers, secure the seat assembly to the seat frame. Securely tighten.
7. Reinstall the seat. Refer to Removing/Installing the Seat Assembly on page 41.



**NOTE: Only the 22-inch wide seats have these mounting holes. DO NOT use these mounting holes.*

FIGURE 7.7 - ADJUSTING SEAT POSITION ON SEAT FRAME

ADJUSTING SEAT POSITION ON SEAT BASE - VAN SEAT ONLY

NOTE: For this procedure, refer to FIGURE 7.8.

1. Remove the seat. Refer to Removing/Installing the Seat Assembly on page 41.
2. Remove the seat assembly from the seat frame. Refer to Adjusting Seat Position on Seat Frame on page 43.
3. Remove the six (6) mounting screws located under the seat that secure the seat assembly in place.

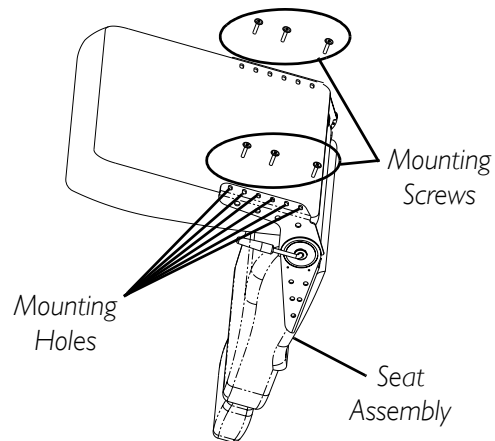


FIGURE 7.8 - ADJUSTING SEAT POSITION ON SEAT BASE - VAN SEAT ONLY

4. Adjust seat assembly to desired position and reinstall the six (6) mounting screws. Securely tighten.
5. Reinstall the seat assembly onto the seat frame. Refer to Adjusting Seat Position on Seat Frame on page 43.
6. Reinstall the seat. Refer to Removing/Installing the Seat Assembly on page 41.

REPLACING THE SEAT POSITIONING STRAP

ASBA MODEL

NOTE: For this procedure, refer to FIGURE 7.9.

1. Remove the seat cushion from the seat pan.
2. Move the flip back armrests out of the way. Refer to Adjusting Flip Back Armrests on page 37.
3. Remove the two (2) mounting screws, quick release pin tabs, spacers, and locknuts that secure the seat pan and seat positioning straps to the seat frame.
4. Remove the two (2) halves of the seat positioning strap from the rear seat frame.
5. Reposition the two (2) new seat positioning strap halves underneath seat rails.
6. Reinstall the two (2) mounting screws, quick release pin tabs, spacers, and locknuts that secure the seat pan and seat positioning straps to the seat frame and torque to 75 inch-pounds.
7. Reinstall the seat cushion onto the seat pan.

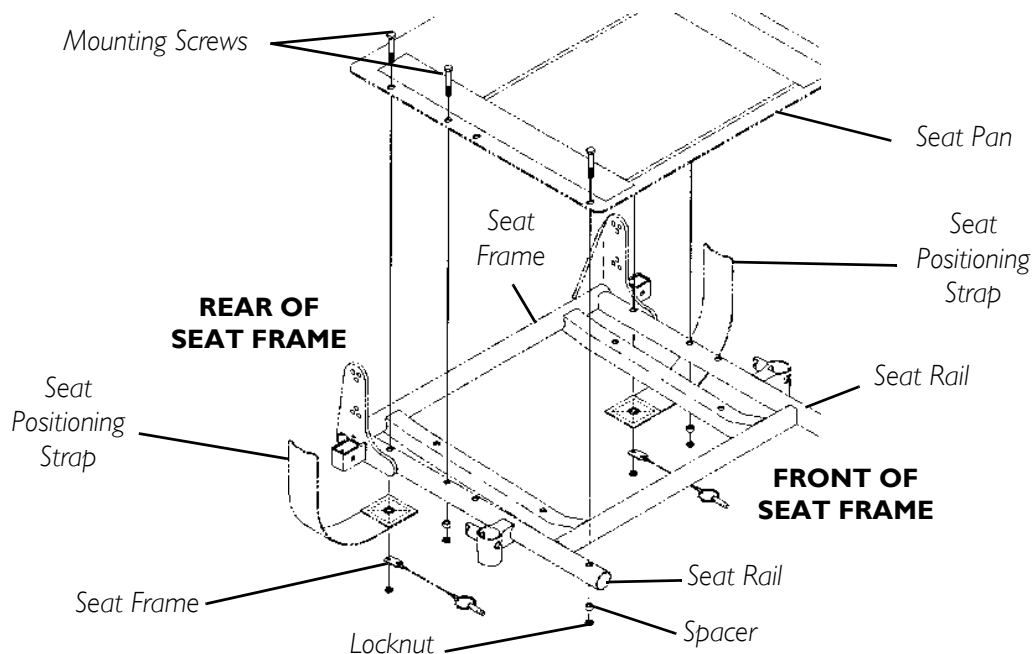


FIGURE 7.9 - REPLACING THE SEAT POSITIONING STRAP - ASBA MODEL

VAN SEAT MODEL

NOTE: For this procedure, refer to FIGURE 7.10.

1. Remove the two (2) mounting screws and washers that secure the seat positioning straps to the seat frame.
2. Remove the two (2) halves of the seat positioning strap from the rear seat frame.
3. Reposition the two (2) NEW seat positioning strap halves underneath seat rails.
4. Reinstall the two (2) mounting screws and washers that secure the seat positioning straps to the seat frame. Securely tighten.

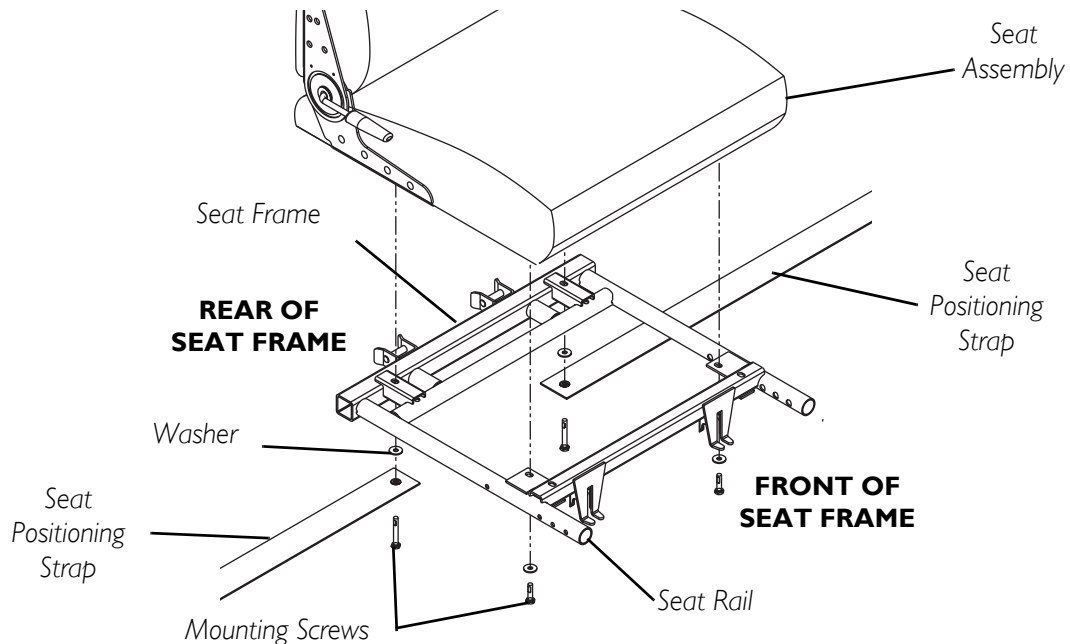


FIGURE 7.10 - REPLACING THE SEAT POSITIONING STRAP - VAN SEAT MODEL

SECTION 8—FOOTBOARD ASSEMBLY

⚠ WARNING

After **ANY** adjustments, repair or service and **BEFORE** use, make sure that all attaching hardware is tightened securely - otherwise injury or damage may result.

Before performing any maintenance, adjustment or service verify that **ON/OFF** switch on the joystick is in the **OFF** position.

DO NOT stand on the flip-up footboard. When getting in or out of the wheelchair, make sure that the flip-up footboard is in the upward position.

LIMITED CLEARANCE BETWEEN FOOTBOARD AND CASTER - The user's feet **MUST** remain on the footboard while operating the chair. If the user's feet are allowed to rest off the side of the footboard they may come in contact with the caster possibly resulting in injury.

REMOVING/INSTALLING THE FOOTBOARD ASSEMBLY

NOTE: For this procedure, refer to FIGURE 8.1.

REMOVING

1. Remove the quick release pin that secures the footboard assembly to the wheelchair frame by depressing the button while sliding the pin out.
2. Remove the footboard assembly from the wheelchair frame.

INSTALLING

⚠ WARNING

Make sure the detent balls are engaged with the outer edge of the tube - otherwise, injury and/or damage may result.

1. Position the footboard assembly onto the wheelchair frame so that the mounting hole in the wheelchair frame aligns with the desired mounting hole in the footboard assembly.
2. Install the quick release pin by depressing the button while sliding the pin in. Make sure the detent balls are engaged with the outer edge of the tube (Detail "A" of FIGURE 8.3).

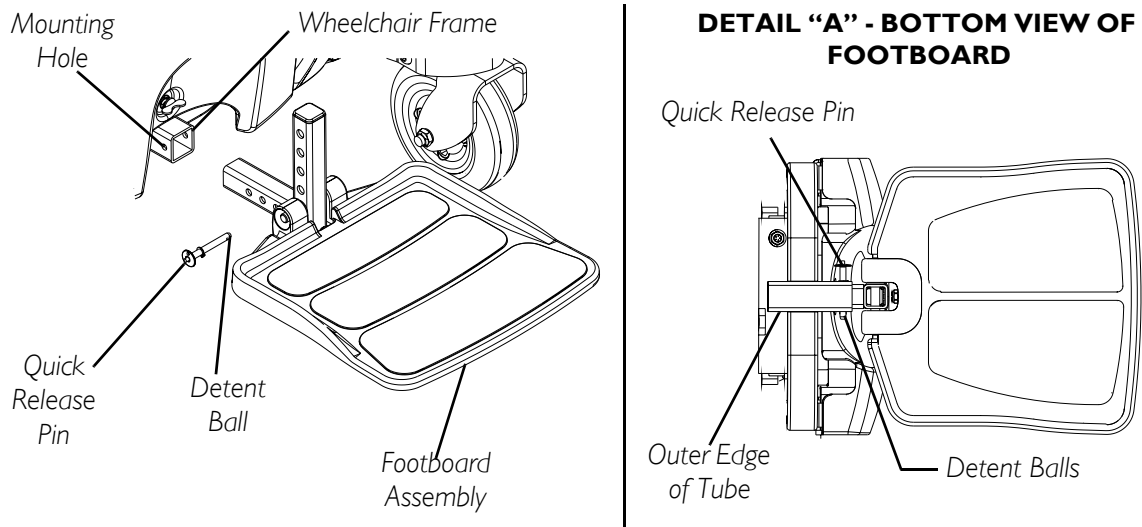


FIGURE 8.1 - REMOVING/INSTALLING THE FOOTBOARD ASSEMBLY

ADJUSTING THE FOOTBOARD ASSEMBLY

ANGLE

NOTE: For this procedure, refer to FIGURE 8.2.

1. Loosen the jam nut and set screw located underneath on the backside of the footplate.
2. Adjust the set screw in or out to obtain the desired footboard assembly angle.
3. Thread the jam nut and washer inward until it is flush with the footboard bracket.
4. Securely tighten the jam nut and washer to secure the mounting screw in place.

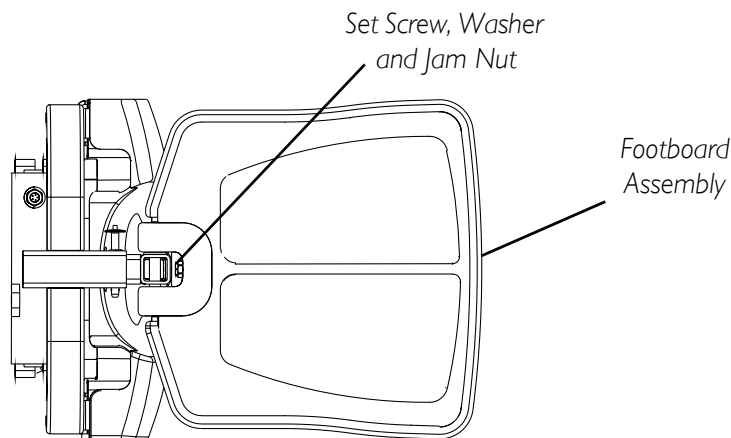


FIGURE 8.2 - ADJUSTING THE FOOTBOARD ASSEMBLY - ANGLE

DEPTH

NOTE: For this procedure, refer to FIGURE 8.3.

1. Remove the quick release pin that secures the footboard assembly to the wheelchair frame.

⚠ WARNING

Make sure the detent balls are engaged with the outer edge of the tube - otherwise, injury and/or damage may result.

2. Adjust footboard to one (1) of three (3) mounting positions.
3. Install the quick release pin. Make sure the detent balls are engaged with the outer edge of the tube (Detail "A" of FIGURE 8.3).

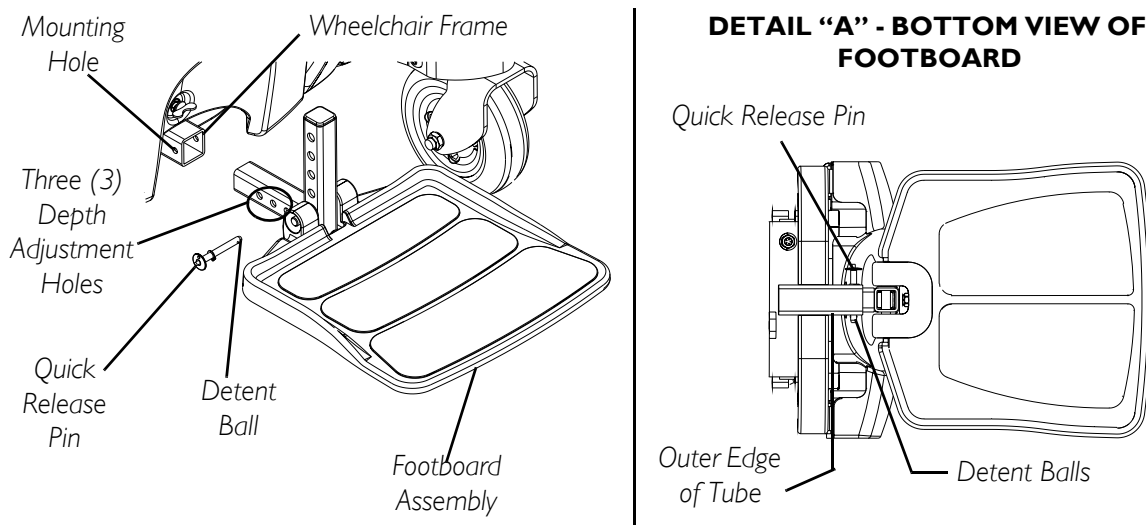


FIGURE 8.3 - ADJUSTING THE FOOTBOARD ASSEMBLY - DEPTH

SECTION 9—FRONT RIGGINGS

⚠ WARNING

After **ANY** adjustments, repair or service and **BEFORE** use, make sure that all attaching hardware is tightened securely - otherwise injury or damage may result.

DO NOT stand on the front riggings, otherwise damage may occur. When getting in or out of the wheelchair, make sure that the footplates on the front riggings are in the upward position or moved out of the way.

Before performing any maintenance, adjustment or service verify that On/Off switch on the joystick is in the **OFF** position.

INSTALLING/REMOVING FRONT RIGGINGS

⚠ CAUTION

If front riggings are used, then the seat **MUST** be adjusted to the highest mounting position - otherwise damage may occur.

NOTE: For this procedure, refer to FIGURE 9.1.

INSTALLING

1. If necessary, remove the footboard.
Refer to Removing/Installing the Footboard Assembly on page 47.
2. Turn front rigging to the side (open footplate is perpendicular to wheelchair) and position mounting holes in the front rigging hinge plates with hinge pins on the wheelchair frame.
3. Install the front rigging hinge plates onto the hinge pins on the wheelchair frame.
4. Push the front rigging towards the inside of the wheelchair until it locks into place.

NOTE: The footplate will be on the inside of the wheelchair when locked in place.

5. Repeat STEPS 1-4 for opposite side of wheelchair.

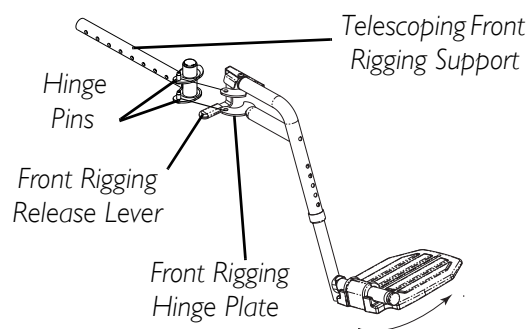


FIGURE 9.1 - INSTALLING/REMOVING FRONT RIGGINGS

REMOVING

1. Push the front rigging release lever INWARD and rotate the footrest OUT.
2. Lift up on front rigging and remove from the wheelchair.
3. Repeat STEPS 1-2 for opposite side of wheelchair.

ADJUSTING FOOTREST HEIGHT

MODEL PHWH93

NOTE: For this procedure, refer to FIGURE 9.2.

1. Remove any accessories from the footrest(s).
2. Remove the footrest from the wheelchair. Refer to [Installing/Removing Front Riggings](#) on page 50.

NOTE: Lay footrest on a flat surface to simplify section.

3. Remove the hex bolt, covered washers and locknut that secure the lower footrest to the footrest support.
4. Reposition the lower footrest to the desired height.
5. Reinstall hex bolt, covered washers and locknut that secure lower footrest to footrest support. Tighten securely.
6. Repeat STEPS 1-5 for the opposite side of the wheelchair footrest, if necessary.
7. Reinstall the footrest(s) onto the wheelchair. Refer to [Installing/Removing Front Riggings](#) on page 50.
8. Reinstall any accessories onto the footrest(s).

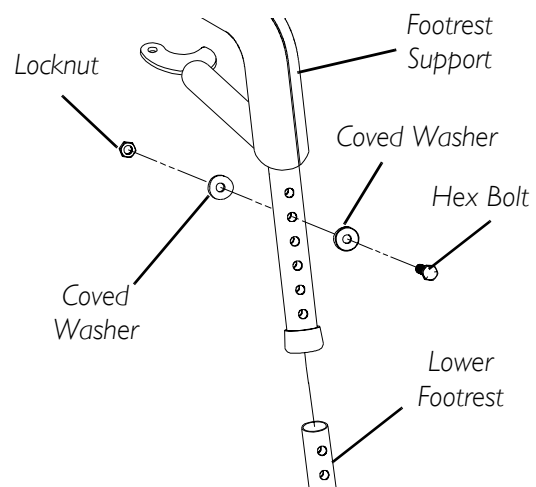


FIGURE 9.2 - ADJUSTING FOOTREST HEIGHT - MODEL PHWH93

MODEL PH904A AND PHAL4A

NOTE: PH904A style front rigging shown. PHAL4A front rigging adjust the same way.

NOTE: For this procedure, refer to FIGURE 9.3.

1. Loosen, but do not remove the lug bolt and locknut that secure the lower footrest to the footrest support.
2. Reposition the lower footrest to the desired height.

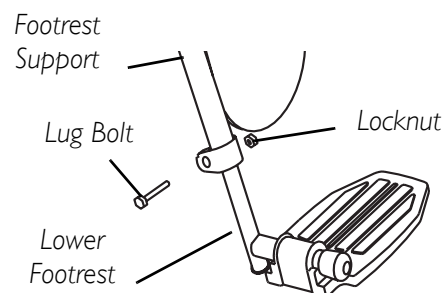


FIGURE 9.3 - ADJUSTING FOOTREST HEIGHT - MODEL PH904A AND PHAL4A

3. Securely tighten the lug bolt and locknut that secure the lower footrest to the footrest support.
4. Repeat STEPS 1-3 for the opposite side of the wheelchair footrest, if necessary.

REPLACING HEEL LOOPS

NOTE: For this procedure, refer to FIGURE 9.4.

1. Note the position of hex bolt, covered washers and locknut for reinstallation.
2. Remove the hex bolt, covered washers and locknut that secure the lower footrest to the footrest support.
3. Remove the lower footrest.
4. Remove the phillips bolt, spacer and locknut that secure the existing heel loop to the lower footrest.
5. Slide the existing heel loop off the lower footrest.
6. Replace heel loop.
7. Reverse STEPS 1-6 to reassemble.

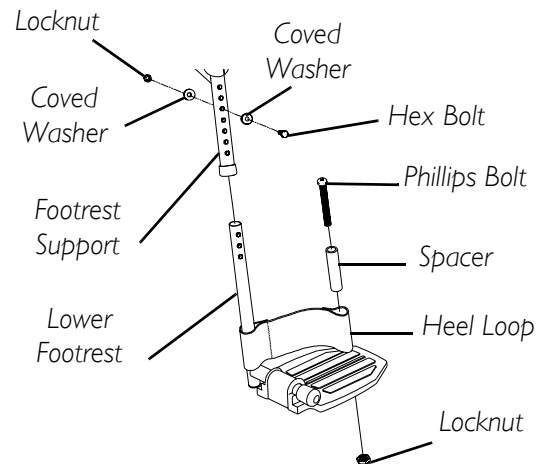


FIGURE 9.4 - REPLACING HEEL LOOPS

NOTE: When securing heel loop to lower footrest, tighten the phillips screw and locknut until the spacer is secure.

RAISING/LOWERING ELEVATING FRONT RIGGINGS

NOTE: For this procedure, refer to FIGURE 9.5.

1. Perform one (1) of the following:
 - A. **RAISING** - Pull back on the release lever and raise front rigging to the desired height.
 - B. **LOWERING** - Support front rigging with one (1) hand away from the release lever. Push release lever downward with other hand.

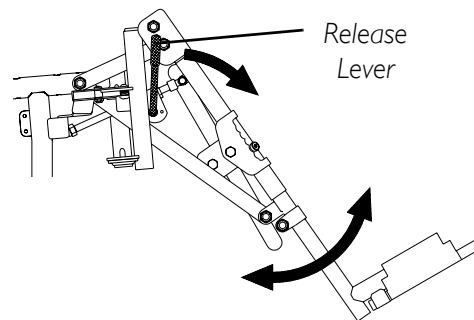


FIGURE 9.5 - RAISING/LOWERING ELEVATING FRONT RIGGINGS

ADJUSTING/REPLACING TELESCOPING FRONT RIGGING SUPPORTS - VAN STYLE SEATS

NOTE: When adjusting the telescoping front rigging support depth, ensure the footplate does not interfere with the caster wheel rotation.

NOTE: Telescoping front rigging supports may be extended up to 2-inches from the wheelchair frame in 1-inch increments. This adjustment does not affect seat depth.

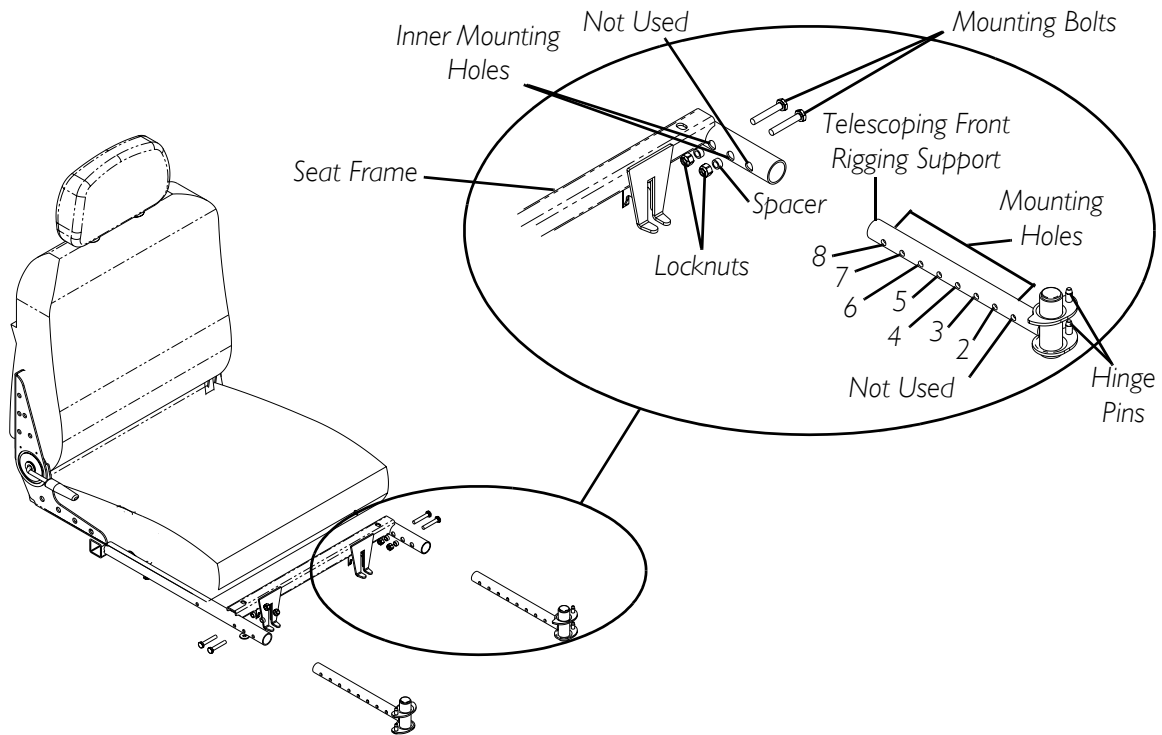
NOTE: When installing the front riggings support tubes, ensure that the hinge pins are on the outside of the chair facing away from the seat frame.

NOTE: For this procedure, refer to FIGURE 9.6.

1. Remove the seat. Refer to Removing/Installing the Seat Assembly on page 41.
2. Remove the two (2) socket bolts and locknuts that secure telescoping front rigging support to the seat frame.
3. Perform one of the following:
 - A. ADJUSTING -**
 - a. Align the appropriate mounting hole of the telescoping front rigging support with the front mounting hole in the seat frame tubes to achieve the desired depth as shown in FIGURE 9.6.
 - B. REPLACING -**
 - a. Remove the existing telescoping front rigging support from the wheelchair frame.
 - b. Insert the new telescoping front rigging support into the seat frame.
 - c. Align the appropriate mounting hole of the telescoping front rigging support with the front mounting hole in the seat frame tubes to achieve the desired depth as shown in FIGURE 9.6.

NOTE: The footplate will be on the inside of the wheelchair when locked in place.

4. Using the two (2) socket bolts and locknuts, secure the telescoping front rigging support to the seat frame as shown in FIGURE 9.6.
5. If necessary, repeat STEPS 2-4 on remaining telescoping front rigging support.
6. Reinstall the seat. Refer to Removing/Installing the Seat Assembly on page 41.



STANDARD POSITION		1-INCH OUT		2-INCHES OUT	
18 & 20-Inch Wide	22 & 24-Inch Wide	18 & 20-Inch Wide	22 & 24-Inch Wide	18 & 20-Inch Wide	22 & 24-Inch Wide
Holes 2 and 3	Holes 4 and 5	Holes 3 and 4	Holes 5 and 6	Holes 4 and 5	Holes 6 and 7

FIGURE 9.6 - ADJUSTING/REPLACING TELESCOPING FRONT RIGGING SUPPORTS - VAN STYLE SEATS

ADJUSTING/REPLACING TELESCOPING FRONT RIGGING SUPPORTS - ASBA

NOTE: For this procedure, refer to FIGURE 9.7.

1. Remove the two (2) mounting screws, spacers and locknuts that secure the telescoping front rigging support to the seat frame.
2. Perform one (1) of the following:
 - A. Slide existing telescoping front rigging support to one (1) of three (3) depth positions.
 - B. Remove existing telescoping front rigging.
3. Secure telescoping front rigging at desired depth with existing two (2) mounting screws, spacers, and locknuts. Securely tighten.

NOTE: The two (2) telescoping front rigging supports can be positioned at different depths depending on the need of the user.

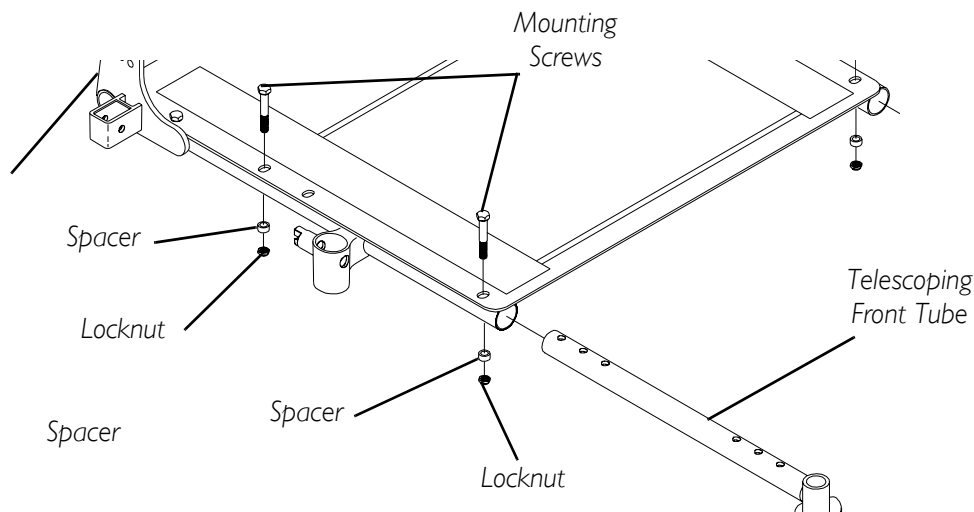


FIGURE 9.7 - ADJUSTING/REPLACING TELESCOPING FRONT RIGGING SUPPORTS - ASBA

SECTION 10—SHROUD/WHEELS

⚠ WARNING

After **ANY** adjustments, repair or service and **BEFORE** use, make sure that all attaching hardware is tightened securely - otherwise injury or damage may result.

Before performing any maintenance, adjustment or service verify that **ON/OFF** switch on the joystick is in the **OFF** position.

REPLACING THE FLAT FREE TIRES ON THE WHEEL RIM

⚠ WARNING

DO NOT attempt to replace flat free tires. This procedure **MUST** be performed by a qualified technician.

NOTE: During initial use of the wheelchair, the user may experience flat spots on the wheels. Flat spots will vanish with continued use of the wheelchair.

REMOVING/INSTALLING THE SHROUDS

NOTE: For this procedure, refer to FIGURE 10.1.

REMOVING

1. Remove the seat. Refer to [Removing/Installing the Seat Assembly](#) on page 41.
2. Perform one of the following:
 - A. **TOP SHROUD** - Lift UP on rear edge of top shroud to release the four (4) hook and loop strips that secure the top shroud to the base frame as shown in Detail “A” of FIGURE 10.1.
 - B. **FRONT SHROUD** - Turn release knob $\frac{1}{4}$ -turn to the unlocked position and lift UP to remove front shroud from base frame hooks as shown in Detail “B” in FIGURE 10.1.

INSTALLING

1. Perform one of the following:
 - A. **TOP SHROUD** - Position top shroud on to the base frame and gently press down on top shroud to secure the four (4) hook and loop strips that secure the top shroud to the base frame as shown in Detail "A" of FIGURE 10.1.
 - B. **FRONT SHROUD** - Position front shroud onto the two (2) base frame hooks. Turn release knob $\frac{1}{4}$ -turn to the locked position as shown in Detail "B" of FIGURE 10.1.
2. Install the seat assembly. Refer to Removing/Installing the Seat Assembly on page 41.

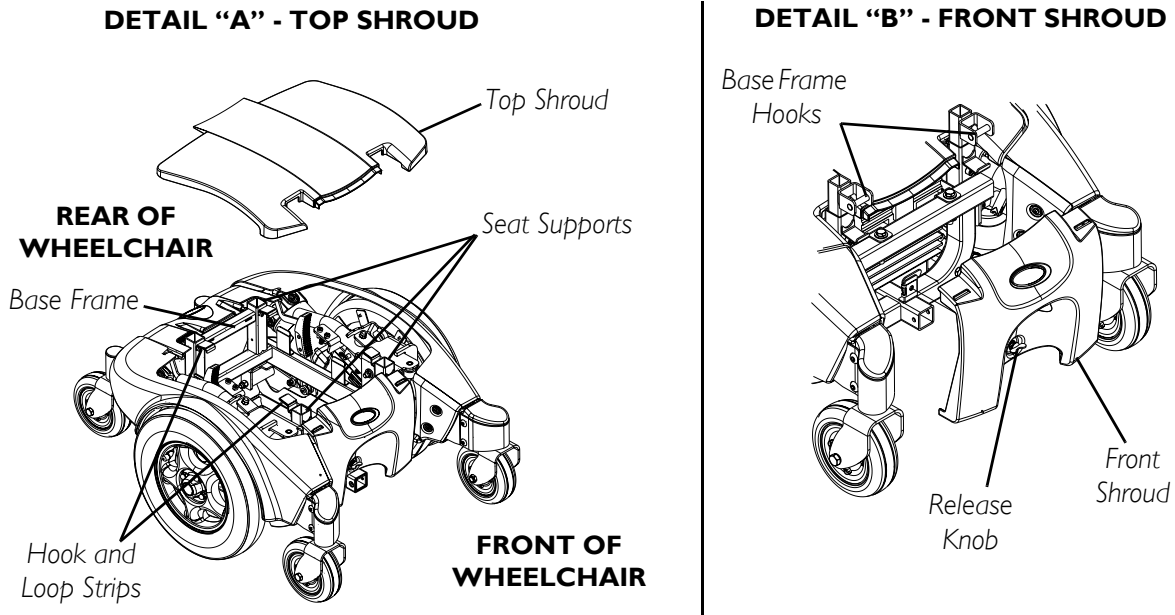


FIGURE 10.1 - REMOVING/INSTALLING THE SHROUDS

ENGAGING/DISENGAGING MOTOR RELEASE LEVER

⚠ WARNING

DO NOT engage or disengage the motor release lever until the On/Off switch on the joystick is in the **OFF** position.

⚠ CAUTION

Ensure both motor release levers are fully engaged **BEFORE** driving the wheelchair

NOTE: The motor lock disengagement/engagement allows freewheeling OR joystick controlled operation. Freewheeling allows an attendant to maneuver the wheelchair WITHOUT power.

NOTE: For this procedure, refer to FIGURE 10.2.

1. Locate the motor release handles on the motors protruding through the shrouds by the rear springs.
2. Perform one (1) of the following:
 - A. To **DISENGAGE** the motor release levers -

NOTE: This allows the chair to freewheel for pushing if necessary

- a. Slide the motor lock lever towards the outside of the wheelchair (free wheel position) as shown in Detail "A" of FIGURE 10.2.

- B. To **ENGAGE** the motor release levers -

NOTE: This allows the motors to drive the wheels.

- a. Slide the motor lock handles towards the center of the wheelchair (drive position) as shown in Detail "A" of FIGURE 10.2.

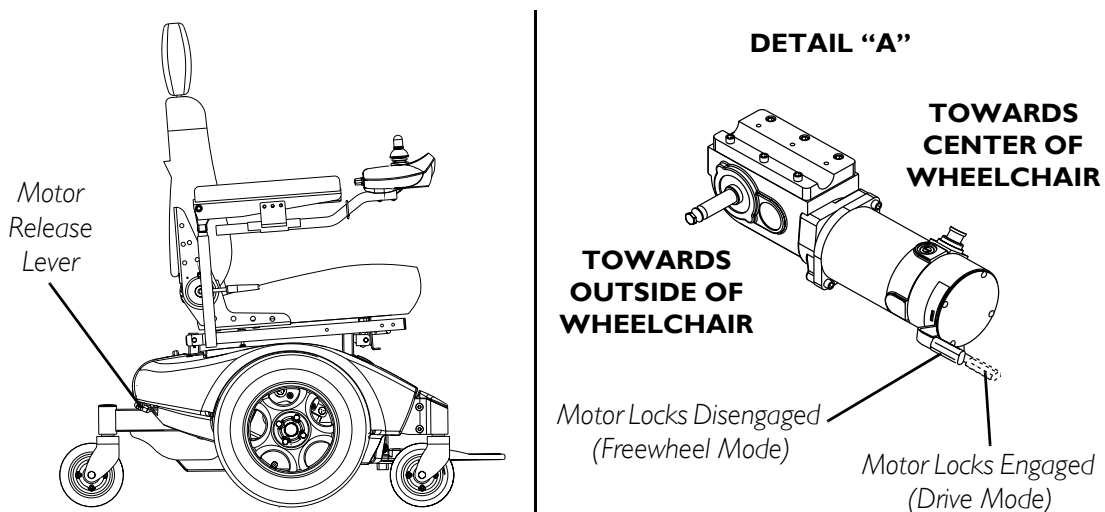


FIGURE 10.2 - ENGAGING/DISENGAGING MOTOR RELEASE LEVER

REPLACING FRONT/REAR CASTER ASSEMBLIES

NOTE: For this procedure, refer to FIGURE 10.3.

NOTE: Front and rear caster assemblies are replaced in the same manner.

NOTE: When replacing the front/rear caster assemblies, it is necessary to brace the caster assemblies to prevent the wheel from spinning.

1. Remove the mounting screw, two (2) washers, and locknut that secures the caster to the fork.

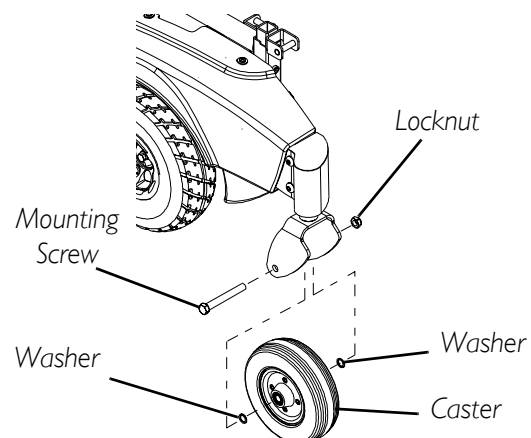


FIGURE 10.3 - REPLACING FRONT/REAR CASTER ASSEMBLIES

2. Remove the caster and discard.
3. Secure new caster to fork with existing mounting screw, two (2) washers and locknut (FIGURE 10.3). Securely tighten.

ADJUSTING FORKS

NOTE: For this procedure, refer to FIGURE 10.4.

1. Remove the dust cover.
2. To properly tighten caster journal system and guard against flutter, perform the following check:
 - A. Tip back the wheelchair.
 - B. Pivot both forks and casters to top of their arc simultaneously.
 - C. Let casters drop to bottom of arc (wheels should swing once to one-side, then immediately rest in a straight downward position).
 - D. Adjust locknuts according to freedom of caster swing.
3. Test wheelchair for maneuverability.
4. Readjust locknuts if necessary, and repeat STEPS 1-3 until correct.
5. Snap dust cover into the caster headtube ensuring that the tabs are under the plastic side shrouds.

NOTE: Components exploded for clarity. There is no need to remove the fork from the base frame.

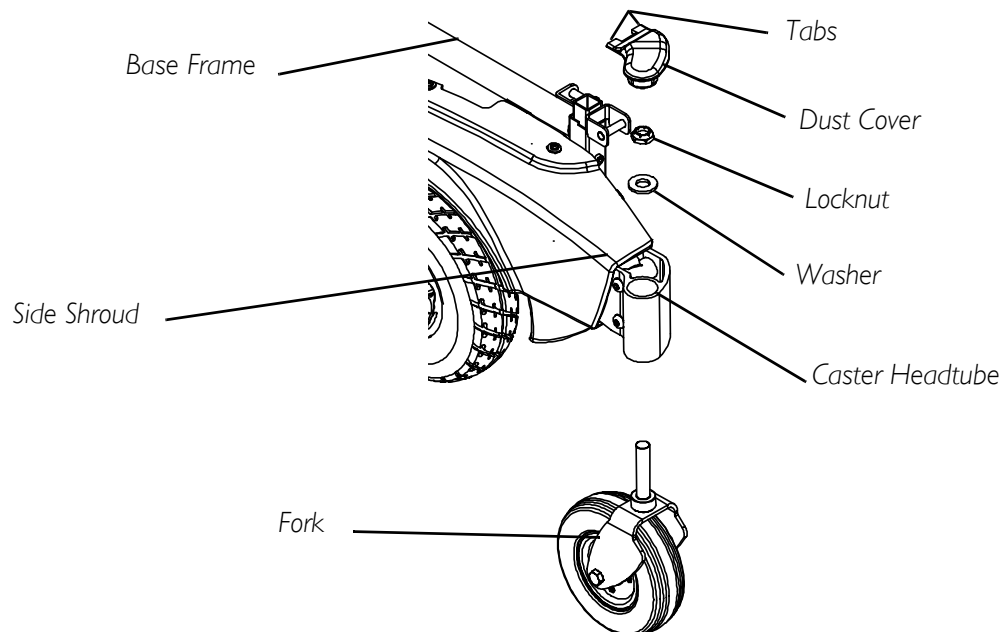


FIGURE 10.4 - ADJUSTING FORKS

SECTION 11—BATTERIES

⚠ WARNING

Make sure power to the wheelchair is **OFF** before performing this section.

NEVER allow any of your tools and/or battery cable(s) to contact **BOTH** battery terminal(s)/post(s) at the same time. An electrical short may occur and serious personal injury or damage may occur.

The use of rubber gloves and chemical goggles and face shield is recommended when working with batteries.

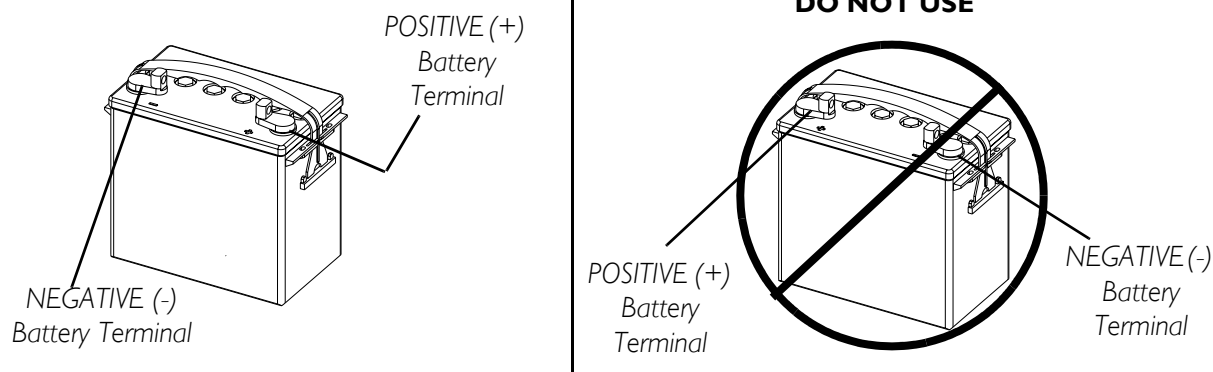
Always use a battery lifting strap when lifting a battery. It is the most convenient method and assures that the battery acid will not spill. It also helps to prolong the life of the battery.

DO NOT tip the batteries. Keep the batteries in an upright position.

Invacare strongly recommends that battery installation and battery replacement always be done by a qualified technician.

After **ANY** adjustments, repair or service and **BEFORE** use, make sure all attaching hardware is tightened securely - otherwise injury or damage may result.

Battery terminal configuration shown below **MUST** be used. Batteries that have the reversed terminal configuration **MUST NOT** be used - otherwise serious injury or damage may occur.



⚠ CAUTION

When connecting the battery cables to the battery(ies), the battery cable(s) **MUST** be connected to the battery terminal(s)/post(s) as shown in **FIGURE 11.3** otherwise damage to the battery may result.

For proper battery connection, batteries **MUST** use post style terminals with mounting holes through the terminal.

NOTE: If there is battery acid in the battery well or on the sides of the batteries, apply baking soda to these areas to neutralize the battery acid. Before reinstalling the new or existing battery(ies), clean the baking soda from the battery box(es) or battery(ies).

INSTALLING/REMOVING THE BATTERIES

NOTE: For this procedure, refer to FIGURE 11.1 and FIGURE 11.2.

NOTE: Have the following tools available:

TOOL	QTY	COMMENTS
Battery Lifting Strap	1	Supplied
1/2-inch (6 pt) Box Wrench	1	Not Supplied
7/16-inch (6pt) Box Wrench	1	Not Supplied
3/8-inch (6pt) Box Wrench	1	Not Supplied
Diagonal Cutters	1	Not Supplied

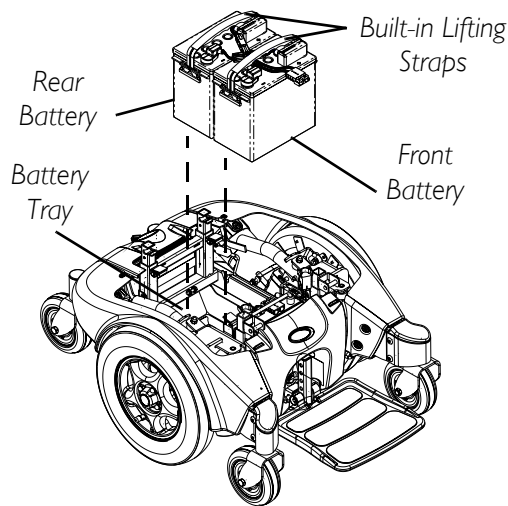
INSTALLING

1. Place the wheelchair in a well ventilated area where work can be performed without risking damage to carpeting or floor covering.
2. Verify the joystick On/Off switch is in the OFF position and disconnect joystick. Refer to Disconnecting/Connecting the MK5 Joysticks on page 71.
3. Remove the seat. Refer to Removing/Installing the Seat Assembly on page 41.
4. Remove the top shroud. Refer to Removing/Installing the Shrouds on page 56.
5. Move aside the motor leads and controller cable to allow unobstructed access to the front of the battery tray.

NOTE: Perform this section on one (1) battery at a time starting with the rear battery. Repeat STEP 6 to position the remaining battery into the battery tray.

6. Perform one (1) of the following to position the battery into the battery tray:
 - A. BATTERIES WITH BUILT IN LIFTING STRAP - Use built in lifting strap to position battery into the battery tray (Detail "A" of FIGURE 11.1).
 - B. BATTERIES WITHOUT BUILT IN LIFTING STRAP - Use the battery lifting strap to position battery into the battery tray. When battery is in proper position, remove lifting strap (Detail "B" of FIGURE 11.1).
7. Using the battery retaining strap, secure the two (2) batteries into the battery tray.
8. If necessary, connect the wiring harness to the two (2) batteries. Refer to Connecting/Disconnecting the Battery Wiring Harness on page 63.

DETAIL “A” - BATTERIES WITH BUILT-IN LIFTING STRAPS



DETAIL “B” - BATTERIES WITHOUT BUILT-IN LIFTING STRAPS

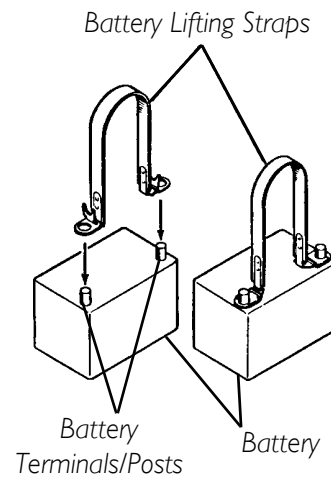
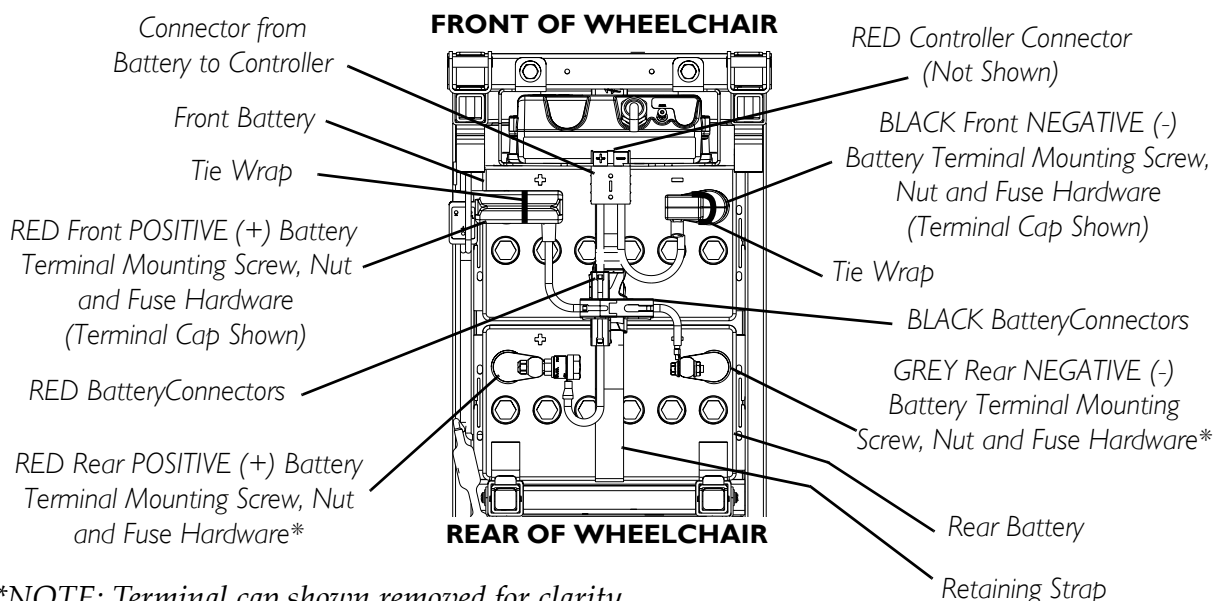


FIGURE 11.1 - BATTERIES WITH/WITHOUT LIFTING STRAPS

9. Connect the front battery to the controller (RED connector). Refer to FIGURE 11.2.
10. Connect the rear battery to the front battery (RED and BLACK connectors). Refer to FIGURE 11.2.
11. Reinstall the top shroud. Refer to Removing/Installing the Shrouds on page 56.
12. Reinstall the seat. Refer to Removing/Installing the Seat Assembly on page 41.
13. Connect the joystick. Refer to Disconnecting/Connecting the MK5 Joysticks on page 71.

NOTE: New battery(ies) MUST be fully charged BEFORE using, otherwise the life of the battery(ies) will be reduced.

14. If necessary, charge the battery(ies). Refer to Charging Batteries on page 65.



**NOTE: Terminal cap shown removed for clarity.*

FIGURE 11.2 - INSTALLING/REMOVING THE BATTERIES

REMOVING

1. Place the wheelchair in a well ventilated area where work can be performed without risking damage to carpeting or floor covering.
2. Verify the joystick ON/OFF switch is in the OFF position and disconnect joystick. Refer to Disconnecting/Connecting the MK5 Joysticks on page 71.
3. Remove the seat. Refer to Removing/Installing the Seat Assembly on page 41.
4. Remove the top shroud. Refer to Removing/Installing the Shrouds on page 56.
5. Disconnect the front battery from controller (RED connector). Refer to FIGURE 11.2.
6. Move aside the motor leads and controller cable to allow unobstructed access to the front of the battery tray.
7. Disconnect the rear battery from the front battery (RED and BLACK connectors). Refer to FIGURE 11.2.
8. If necessary, disconnect the wiring harness from batteries. Refer to Connecting/Disconnecting the Battery Wiring Harness on page 63.
9. Unfasten the retaining strap that secures the two (2) batteries in the battery tray.

NOTE: Perform this section on one (1) battery at a time starting with the FRONT battery. Repeat STEP 10 to remove remaining battery from battery tray.

10. Perform one (1) of the following to remove the battery from the battery tray:
 - A. BATTERIES WITH BUILT-IN LIFTING STRAP- Use built in lifting strap to remove the battery from the battery tray (Detail "A" of FIGURE 11.1).
 - B. BATTERIES WITHOUT BUILT-IN LIFTING STRAP- Use the battery lifting strap to remove the battery from the battery tray (Detail "B" of FIGURE 11.1).

CONNECTING/DISCONNECTING THE BATTERY WIRING HARNESS

NOTE: Perform this section on one (1) battery at a time starting with the front battery.

NOTE: The front battery has three (3) connectors - two (2) to the rear battery wiring harness (RED and BLACK) and one (1) to the controller cable (RED), and the rear battery has two (2) connectors (RED and BLACK) to the front battery wiring harness.

NOTE: Both the front and rear wiring harnesses are shipped with the POSITIVE (+) RED battery cable and mounting screw connected. Use the exposed, threaded portion of the mounting screw to secure the POSITIVE (+) RED cable to the POSITIVE (+) terminal.

⚠ WARNING

DO NOT remove fuse or mounting hardware from **POSITIVE (+) RED** battery cable/mounting screw.

All battery terminal covers (two [2] on the front battery and two [2] on the rear battery) MUST be installed prior to use.

CONNECTING

NOTE: For this procedure, refer to FIGURE 11.3.

1. Peel back battery terminal covers to expose battery clamp on each battery cable as follows:
 - A. RED battery clamp cover from RED battery cable.
 - B. BLACK battery clamp cover from BLACK battery cable on front battery **OR** GREY battery clamp cover from BLACK battery cable on rear battery.
2. Using the mounting screws and nuts, secure the battery cables to the battery terminals as shown in FIGURE 11.3 in the following order:
 - A. NEGATIVE (-) BLACK battery cable to NEGATIVE (-) battery terminal/post.
 - B. POSITIVE (+) RED battery cable to POSITIVE (+) battery terminal/post.
3. Verify wiring harness is correctly installed and securely tightened.
4. Verify proper battery orientation.
5. Reposition battery terminal covers over battery post(s).
6. Using new tie-wraps, secure the terminal covers to the battery terminals as shown in FIGURE 11.3.
7. Repeat STEPS 1-6 to install and connect the rear battery to the rear battery harness.

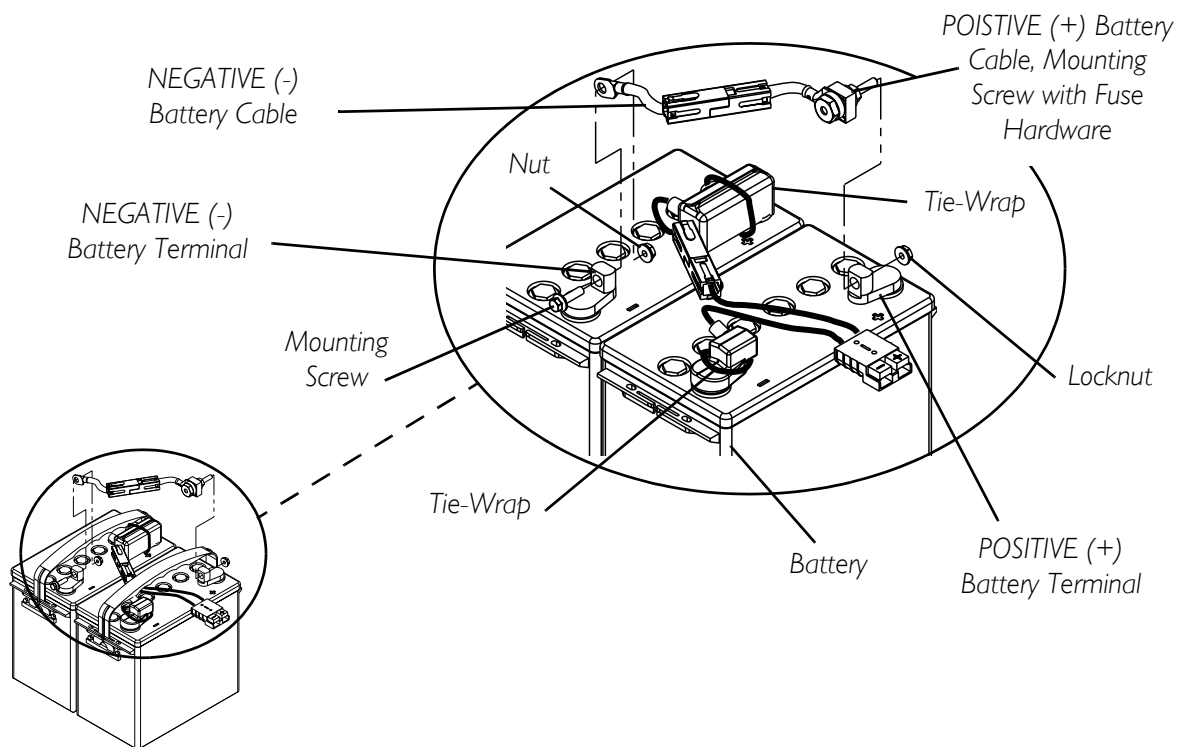


FIGURE 11.3 - CONNECTING/DISCONNECTING THE BATTERY WIRING HARNESS

DISCONNECTING

NOTE: For this procedure, refer to FIGURE 11.3.

1. Remove the existing tie-wraps that secure the battery terminal covers to the battery terminals.
2. Peel back battery terminal covers to expose battery clamp on each battery cable as follows:
 - A. RED battery clamp cover from RED battery cable.
 - B. BLACK battery clamp cover from BLACK battery cable on front battery **OR** GREY battery clamp cover from BLACK battery cable on rear battery.
3. Remove the mounting screws and nuts that secure the battery cables to the battery terminals as shown in FIGURE 11.3 in the following order:
 - A. POSITIVE (+) RED battery cable from POSITIVE (+) battery terminal/post.
 - B. NEGATIVE (-) BLACK battery cable from NEGATIVE (-) battery terminal/post.
4. Set wiring harness aside.
5. Repeat STEPS 1-4 to disconnect the rear battery from the rear battery harness.

CHARGING BATTERIES

⚠ WARNING

Never attempt to recharge the batteries by attaching cables directly to the battery terminals.

DO NOT attempt to recharge the batteries and operate the wheelchair at the same time.

DO NOT attempt to recharge the batteries when the wheelchair has been exposed to ANY type of moisture.

DO NOT attempt to recharge the batteries when the wheelchair is outside.

DO NOT sit in the wheelchair while charging the batteries.

DO NOT attempt to recharge the batteries using BOTH the on-board battery charger AND an independent battery charger (plugged into the joystick charger port) at the SAME time. Doing so will reduce the life of the batteries.

READ and CAREFULLY follow the manufactures instructions for each charger (supplied or purchased). If charging instructions are not supplied, consult a qualified technician for proper procedures prior to use.

⚠ CAUTION

New batteries MUST be fully charged prior to initial use of the wheelchair.

Always fully charge new batteries before initial use or battery life will be reduced.

As a general rule, you should recharge your batteries as frequently as possible to assure the longest possible life and to minimize required charging time. Plan to recharge them when you do not anticipate using the wheelchair.

Some basic concepts which will help you understand this automatic process are:

The amount of electrical current drawn within a given time to charge a battery is called “charge rate”. If, due to usage, the charge stored in the battery is low, the charge rate is high. As a charge builds up, the charge rate is reduced, and the battery charger rate decreases to a “trickle charge”.

NOTE: If the batteries need to be charged more often or take longer to charge than normal, they may need to be replaced. Contact a qualified technician.

NOTE: The batteries can be charged using the on-board battery charger OR by plugging an independent battery charger into the port located on the front of the MK5 SPJ-80/DPJ/MPJ joysticks.

BATTERY CHARGER OPERATION

⚠ WARNING

READ and CAREFULLY follow the manufacturer’s instructions for each charger (supplied or purchased). If charging instructions are not supplied, consult a qualified technician for proper procedures prior to use.

If the circuit breaker trips repeatedly, IMMEDIATELY unplug charger and contact dealer or a qualified technician.

Three (3) prong to two (2) prong adapters should not be used. Use of three (3) prong adapters can result in improper grounding and present a shock hazard to the user.

ON-BOARD BATTERY CHARGER

⚠ WARNING

Use of improper extension cord could result in risk of fire and electric shock.

When using an extension cord, use only a three (3) wire extension cord having at least 16 AWG (American Wire Gauge) wire and the same or higher electrical rating as the device being connected.

Ensure the pins of the extension cord plug are the same number, size, and shape as those on the charger.

DO NOT under any circumstances cut or remove the round grounding plug from the charger AC cable plug or the extension cord plug.

NOTE: For this procedure, refer to FIGURE 11.4.

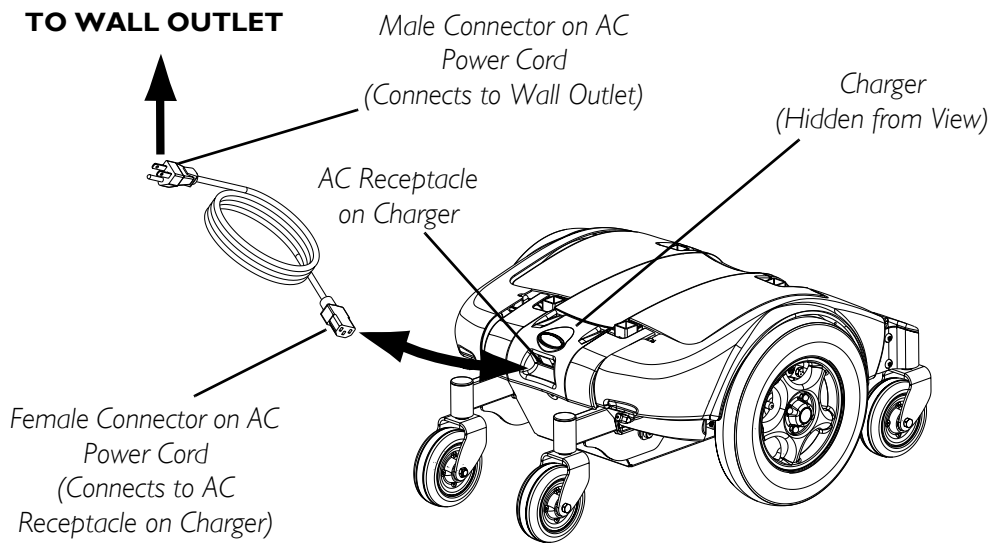
NOTE: Charge indicator light is only visible with rear shroud removed.

1. Plug the female connector of the AC power cord (supplied) to the AC receptacle on the charger and plug in the male connector on the AC power cord into the wall outlet.
2. The On/Off LED indicator illuminates solid RED indicating that the charger is ON.

3. If the On/Off LED indicator is "Blinking" RED, this is abnormal. Unplug AC power cord from the on-board battery charger and wall outlet. Contact Invacare at the number listed on the back page of this manual.
4. When the On/Off LED indicator light is OFF, charger is OFF.
5. When the Charge LED indicator light is YELLOW, the batteries are charging.
6. When the Charge LED indicator light is solid GREEN, the batteries are fully charged (as their condition will allow). At this point, the charger automatically stops charging.
7. When charging is complete, unplug the male connector of the AC power cord from the wall outlet and then unplug the female connector of the AC power cord from the AC receptacle on the charger.

⚠ WARNING

DO NOT operate wheelchair with AC power cord attached to the wheelchair.



NOTE: Wheelchair shown without seat for clarity.

CHARGING INDICATOR	STATUS
YELLOW	Charging (Under 80%)
"Blinking" YELLOW	Partially Charges (Over 80%)
Solid GREEN	Fully Charges
LED "Off"	Charger Disconnected
Solid RED or "Blinking" RED	Under Voltage
	Over Voltage
	Over Temperature

NOTE: Charge indicator light is only visible with rear shroud removed.

FIGURE 11.4 - ON-BOARD BATTERY CHARGER

INDEPENDENT CHARGER

NOTE: The charger port located on the Front of the joystick requires the use of an independent charger. The independent charger is NOT supplied with the wheelchair.

NOTE: For this procedure, refer to FIGURE 11.5.

⚠ WARNING

READ and CAREFULLY follow the individual instructions for each charger (supplied or purchased). If charging instructions are not supplied, consult a qualified technician for proper procedures.

⚠ CAUTION

DO NOT use an independent charger with an output rating of over 8A (amps). Otherwise, damage may occur.

Required Items: Battery Charger*, Power Cord**

*NOTE: Item not supplied.

**NOTE: AC power cord (3-prong plug, 15 ampere current rating; industrial type).

Wheelchair with MK5 SPJ-80/DPJ/MPJ joystick:

1. Attach the battery charger connector to the charger port on the front of the joystick.
2. Plug the charger's AC power cord or extension into the grounded 110-volt wall outlet.
3. Unplug the AC power cord or extension once charging is complete.

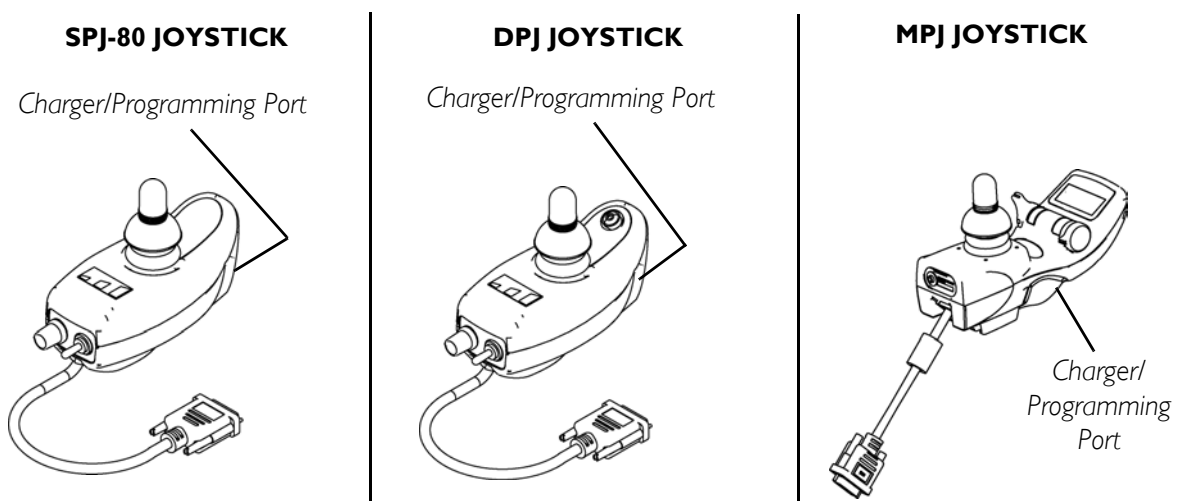


FIGURE 11.5 - INDEPENDENT CHARGER

SECTION 12—ELECTRONICS

⚠ WARNING

After ANY adjustments, repair or service and BEFORE use, make sure that all attaching hardware is tightened securely - otherwise injury or damage may result.

Before performing any maintenance, adjustment or service verify that On/Off switch on the joystick is in the OFF position.

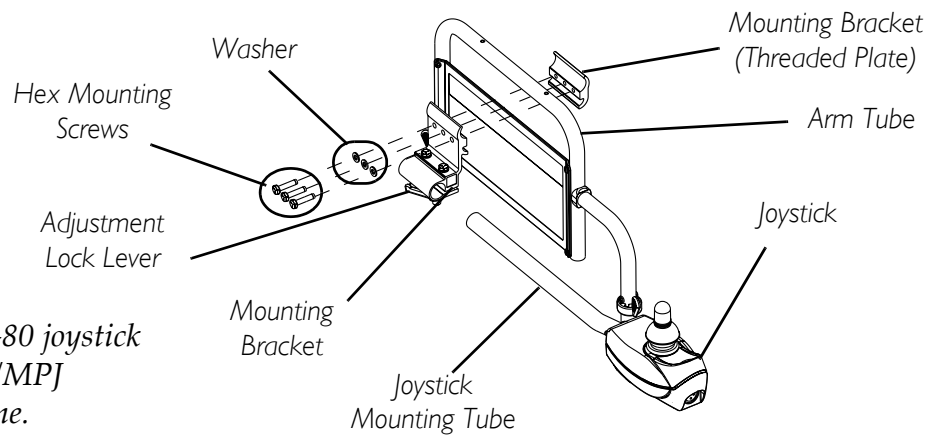
REPOSITIONING THE JOYSTICK

ADJUSTABLE SEAT BACK ANGLE (ASBA) MODEL

NOTE: For this procedure, refer to FIGURE 12.1.

1. Turn the lever on the adjustment lock to release the adjustment lock from joystick mounting tube.
2. Remove the joystick from the wheelchair.
3. Remove the three (3) hex screws that secure joystick mounting bracket, the threaded hole half clamp and the opened hole half clamp to the arm tube.
4. Reposition the threaded hole half clamp and opened hole half clamp on the opposite arm tube. Make sure threaded hole half clamp is on the inside of arm tube.
5. While holding the two (2) half clamps, install the front hex screw into the two (2) half clamps. Securely tighten.
6. Line up mounting holes of the joystick mounting bracket with the mounting holes in the two (2) half clamps.
7. Secure the joystick mounting bracket to the two (2) half clamps with the remaining two (2) hex screws.
8. Slide tube through the bracket to the desired position.
9. Slide adjustment lock over end of tube and secure adjustment lock to tube by turning lever on adjustment lock.

NOTE: If adjustment lock does not fit over tube, rotate 180°.



NOTE: MK5 SPJ-80 joystick shown, MK5 DPJ/MPJ repositions the same.

FIGURE 12.1 - REPOSITIONING THE JOYSTICK - ADJUSTABLE SEAT BACK ANGLE (ASBA) MODEL

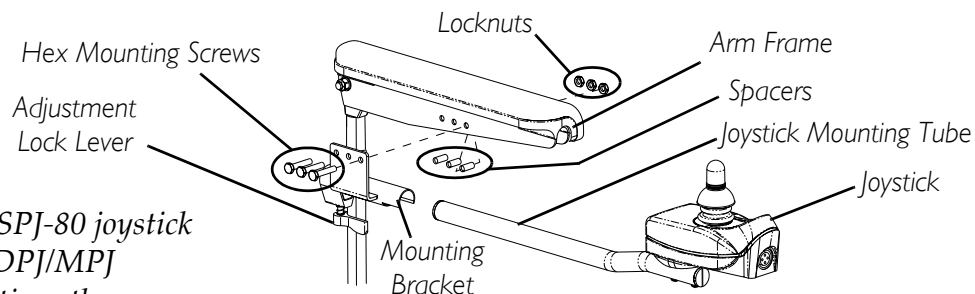
VAN SEAT MODEL

NOTE: Take note of position and orientation of mounting hardware for reinstalling the joystick assembly.

1. Turn the adjustment lock lever to release the joystick mounting tube from the mounting bracket.
2. Remove the joystick from the wheelchair.
3. Remove the three (3) hex mounting screws, spacers and locknuts that secure the mounting bracket to the three (3) mounting holes on the arm frame.

NOTE: The mounting bracket is mounted to the inside of the arm frame.

4. Reposition the mounting bracket on the opposite arm frame.
5. Using the three (3) hex mounting screws, spacers and locknuts secure the mounting bracket to the three (3) mounting holes of the arm frame.
6. If necessary, perform the following to reposition the adjustment lock:
 - A. Slide the adjustment lock from the mounting bracket.
 - B. Rotate adjustment lock 180° and slide adjustment lock over the opposite end of the mounting bracket.
7. Slide joystick mounting tube through the mounting bracket to the desired position and secure adjustment lock to tube by turning lever on adjustment lock.



NOTE: MK5 SPJ-80 joystick shown, MK5 DPJ/MPJ joystick repositions the same.

FIGURE 12.2 - REPOSITIONING THE JOYSTICK - VAN SEAT MODEL

DISCONNECTING/CONNECTING THE MK5 JOYSTICKS

NOTE: For this procedure, refer to FIGURE 12.3.

DISCONNECTING

1. Loosen the thumb screws on the joystick connector.
2. Disconnect the joystick connector from the controller connector.

CONNECTING

1. Align the joystick connector with the controller connector.
2. Secure the joystick connector to the controller connector using the thumb screws on the controller connector.

⚠ WARNING

The excess joystick cable must be coiled, and tie-wrapped to the rear of the seat frame to ensure that cable does **NOT** become entangled or damaged during normal operation of seating system - otherwise injury or damage may result.

3. If necessary, coil and tie wrap excess joystick cable to rear of seat frame.

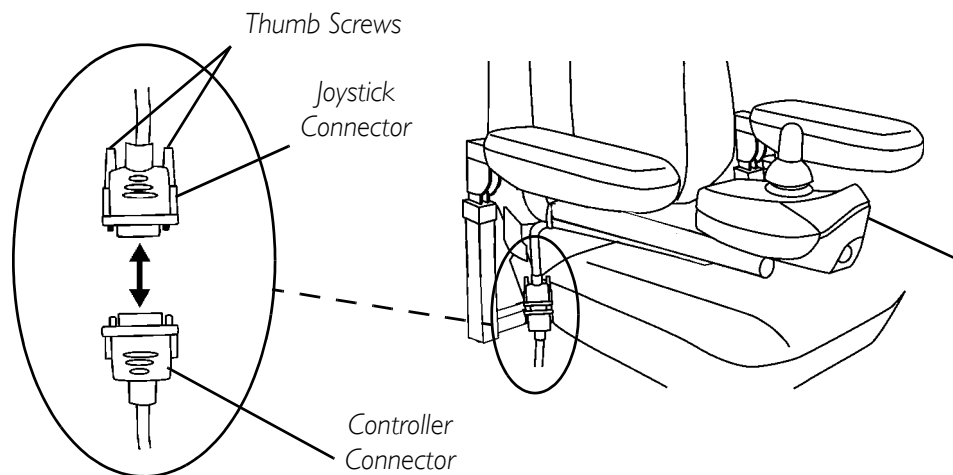


FIGURE 12.3 - DISCONNECTING/CONNECTING THE MK5 JOYSTICKS

PROGRAMING THE CONTROL MODULE

⚠ WARNING

DO NOT attempt to program the control module. This section **MUST** be performed by a qualified technician.

NOTE: Connect programmer to multi-function charger port located on front of joystick as shown in FIGURE 12.4.

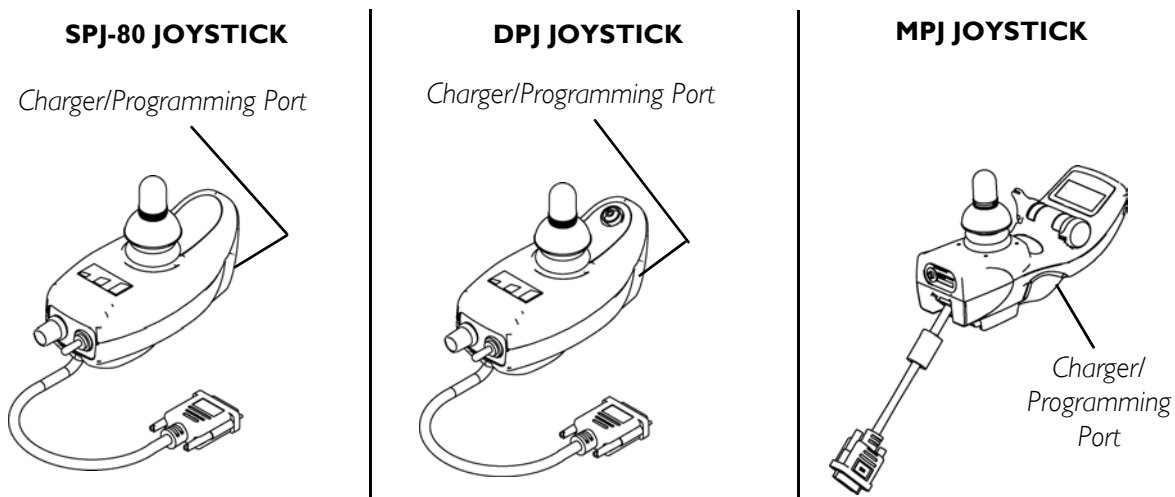


FIGURE 12.4 - PROGRAMING THE CONTROL MODULE

NOTES

NOTES

LIMITED WARRANTY

PLEASE NOTE: THE WARRANTY BELOW HAS BEEN DRAFTED TO COMPLY WITH FEDERAL LAW APPLICABLE TO PRODUCTS MANUFACTURED AFTER JULY 4, 1975.

This warranty is extended only to the original purchaser/user of our products.

This warranty gives you specific legal rights and you may also have other legal rights which vary from state to state.

With regards to the original purchaser/user only, Invacare warrants the front and rear frames to be free from defects in materials and workmanship for a period of five (5) years from date of purchase; seat frame for a period of five (5) years from the date of purchase; motors and gearboxes for a period of one and a half (1½) years from the date of purchase; electronics and all remaining components for one (1) year from the date of purchase except upholstered materials, padded materials and tires/wheels. If within such warranty period any product shall be proven to be defective, such product shall be repaired or replaced, at Invacare's option. This warranty does not include any labor or shipping charges incurred in replacement part installation or repair of any such product. Invacare's sole obligation and your exclusive remedy under this warranty shall be limited to such repair and/or replacement.

For warranty service, please contact the dealer from whom you purchased your Invacare product. In the event you do not receive satisfactory warranty service, please write directly to Invacare at the address on the bottom of the back cover. Provide dealer's name address, date of purchase, indicate nature of the defect and, if the product is serialized, indicate the serial number. Do not return products to our factory without our prior consent.

LIMITATIONS AND EXCLUSIONS: THE FOREGOING WARRANTY SHALL NOT APPLY TO SERIAL NUMBERED PRODUCTS IF THE SERIAL NUMBER HAS BEEN REMOVED OR DEFACED, PRODUCTS SUBJECT TO NEGLIGENCE, ACCIDENT, IMPROPER OPERATION, MAINTENANCE OR STORAGE, COMMERCIAL OR INSTITUTIONAL USE, PRODUCTS MODIFIED WITHOUT INVACARE'S EXPRESS WRITTEN CONSENT INCLUDING, BUT NOT LIMITED TO, MODIFICATION THROUGH THE USE OF UNAUTHORIZED PARTS OR ATTACHMENTS; PRODUCTS DAMAGED BY REASON OF REPAIRS MADE TO ANY COMPONENT WITHOUT THE SPECIFIC CONSENT OF INVACARE, OR TO A PRODUCT DAMAGED BY CIRCUMSTANCES BEYOND INVACARE'S CONTROL, AND SUCH EVALUATION WILL BE SOLELY DETERMINED BY INVACARE. THE WARRANTY SHALL NOT APPLY TO PROBLEMS ARISING FROM NORMAL WEAR OR FAILURE TO ADHERE TO THESE INSTRUCTIONS. A CHANGE IN OPERATING NOISE, PARTICULARLY RELATIVE TO MOTORS AND GEARBOXES DOES NOT CONSTITUTE A FAILURE. ALL SUCH DEVICES WILL EXHIBIT A CHANGE IN OPERATING NOISE DUE TO AGING.

THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTIES WHATSOEVER, WHETHER EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND THE SOLE REMEDY FOR VIOLATIONS OF ANY WARRANTY WHATSOEVER, SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT PURSUANT TO THE TERMS CONTAINED HEREIN, THE APPLICATION OF ANY IMPLIED WARRANTY WHATSOEVER SHALL NOT EXTEND BEYOND THE DURATION OF THE EXPRESS WARRANTY PROVIDED HEREIN. INVACARE SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES WHATSOEVER.

THIS WARRANTY SHALL BE EXTENDED TO COMPLY WITH STATE/PROVINCIAL LAWS AND REQUIREMENTS.



Yes, you can.™

Invacare Corporation www.invacare.com

USA
One Invacare Way
Elyria, Ohio USA
44036-2125
800-333-6900

Canada
570 Matheson Blvd E Unit 8
Mississauga Ontario
L4Z 4G4 Canada
800-668-5324

Invacare and Pronto are registered trademarks of Invacare Corporation. Yes, you can., M94, SureStep, MK5, EX, NX, SPJ, DPJ and MPJ are trademarks of Invacare Corporation
© 2005 Invacare Corporation

Part No. 1122145

Rev D - 03/05