DEALER: KEEP THIS MANUAL. THE PROCEDURES IN THIS MANUAL MUST BE PERFORMED BY A QUALIFIED TECHNICIAN ONLY.

NOTE: A RFI tag is shipped attached to each seating system and is intended to replace the existing RFI tag on the base frame. The existing RFI tag on the base frame MUST be removed. The new RFI tag attached to the seating system states the immunity level of this product is unknown, part number 1050172. If the RFI tag is missing, call Invacare at (800) 333-6900.
WARNING

THIS INVACARE SEATING SYSTEM HAS BEEN DESIGNED AND TESTED FOR USE ON A 2G STORM BASE REAR WHEEL DRIVE (RWD) AND FRONT WHEEL DRIVE (FWD) ONLY.

DO NOT INSTALL, OPERATE OR ADJUST THIS EQUIPMENT WITHOUT FIRST READING AND UNDERSTANDING THE WARNINGS, CAUTIONS, AND INSTRUCTIONS IN THIS MANUAL, THE OWNERS MANUAL PROVIDED WITH THE INVACARE SEATING SYSTEM AND THE OWNERS MANUAL PROVIDED WITH THE WHEELCHAIR. IF YOU ARE UNABLE TO UNDERSTAND THE WARNINGS, CAUTIONS AND INSTRUCTIONS, CONTACT INVACARE TECHNICAL SUPPORT BEFORE ATTEMPTING TO INSTALL, OPERATE OR ADJUST THIS EQUIPMENT - OTHERWISE INJURY OR DAMAGE MAY RESULT.

SAVE THESE INSTRUCTIONS.
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NOTE: The following procedures refer to Tilt Only, Recline Only and Tilt/Recline Seating Systems except where specified.

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This Procedure Includes the Following:

Operating 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. This powered wheelchair model as shipped, with no further modification, has an unknown immunity level.

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) The MCC MKIV controller for this application has an unknown immunity level.

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

- Changing Seat Width
- Changing Seat Depth
- Changing Back Height
- Adjusting Back Height
- Changing Back Width
- Changing Back Angle
- Changing Seat Angle

**WARNING**

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

ALWAYS turn wheelchair power OFF BEFORE adjusting, repairing or servicing the wheelchair; otherwise injury or damage can occur.

Pinch Points exist between seat and base frames. Use caution, otherwise injury may occur.

### CHANGING SEAT WIDTH (FIGURE 1)

**NOTE:** When changing the width of the seating system the following items need to be replaced: Seat pan, back and spreader bar.

1. Disassemble the seating system. Refer to DISASSEMBLING/ASSEMBLING SEATING SYSTEM in PROCEDURE 3 of this manual.

2. Perform one (1) of the following:
   - **TILT ONLY SYSTEMS** - Proceed to STEP 4.
   - **TILT/RECLINE AND RECLINE ONLY SYSTEMS** - Refer to the following chart and determine if the existing cross beam needs to be replaced:

<table>
<thead>
<tr>
<th>SEAT WIDTH</th>
<th>CROSS BEAM REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 or 17-inch</td>
<td>16, 17-inch</td>
</tr>
<tr>
<td>18 or 19-inch</td>
<td>18, 19-inch</td>
</tr>
<tr>
<td>20 or 21-inch</td>
<td>20, 21-inch</td>
</tr>
<tr>
<td>22-inch</td>
<td>22-inch</td>
</tr>
</tbody>
</table>

3. Perform one (1) of the following:
   - **NEW CROSS BEAM NOT REQUIRED** - Proceed to STEP 4.
   - **NEW CROSS BEAM REQUIRED** -

   **CAUTION**

   Seating Systems with Recline MUST be returned to Invacare if the cross beam has to be changed for the desired seat width. Otherwise damage to the recline function may occur.

4. Remove the four (4) hex bolts, coved washers, spacers and locknuts that secure the side frames to the center seat frame.

5. Refer to FIGURE 1 and determine the corresponding side frame mounting holes for desired seat width.

### SIDE FRAME MOUNTING HOLES

![FIGURE 1 - CHANGING SEAT WIDTH](image-url)
WARNING
Both side frames MUST be adjusted to the same mounting hole position to maintain an even weight distribution of user and seat frame over the base frame. If weight is not distributed evenly, injury to the assistant and/or user and damage to the wheelchair may occur.

6. Perform one (1) of the following:
   **TILT ONLY SYSTEMS** - Proceed to STEP 7.
   **TILT/RECLINE AND RECLINE ONLY SYSTEMS** -
   A. Loosen, but do not remove the two (2) socket bolts, washers and locknuts that secure the two (2) connector brackets to the cross beam.
   B. Slide the side frames in and/or out to the desired seat width. Make sure both side frames are at the same seat width.
   C. Tighten the two (2) socket bolts, washers and locknuts that secure the two (2) connector brackets to the cross beam securely.
   D. Proceed to STEP 8.

7. Slide the side frames in and/or out to the desired seat width. Make sure both side frames are at the same seat width.

8. Reinstall the four (4) hex bolts, coved washers, spacers and locknuts that secure the side frames to the center seat frame. Refer to FIGURE 1 for hardware orientation. Torque to 75-inch pounds.

9. Assemble the seating system. Refer to DISASSEMBLING/ASSEMBLING SEATING SYSTEM in PROCEDURE 3 of this manual.

---

CHANGING SEAT DEPTH (FIGURE 2)

**CAUTION**
Read and understand the ABOUT SEAT DEPTH section in this procedure of the manual BEFORE changing seat depth. Otherwise damage to the seating system may occur.

1. Refer to the chart in FIGURE 2 and determine the components that need to be changed to correspond to the new seat depth.

2. Perform one (1) of the following:
   A. **Replacing existing side frames** - Disassemble the seating system. Refer to DISASSEMBLING/ASSEMBLING SEATING SYSTEM in PROCEDURE 3 of this manual.
   B. **Not replacing existing side frames** - Proceed to STEP 3.

3. Remove existing seat pan. Refer to REMOVING/INSTALLING SEAT PAN in PROCEDURE 6 of this manual.

4. Adjust or replace existing leg support tubes. Refer to ADJUSTING/REPLACING LEG SUPPORT TUBE in PROCEDURE 8 of this manual.

5. Adjust the telescoping front rigging supports. Refer to ADJUSTING TELESCOPING FRONT RIGGING SUPPORTS in PROCEDURE 8 of this manual.

6. Perform one (1) of the following:
   A. **Not replacing existing side frames** - Proceed to STEP 7.
   B. **Replacing side frames** - Replace existing side frames. Refer to REMOVING/INSTALLING SIDE FRAMES in PROCEDURE 6 of this manual.

---

**SEAT DEPTH COMPONENTS**

<table>
<thead>
<tr>
<th><em>SEAT DEPTH</em></th>
<th><em>SIDE FRAME</em></th>
<th>CENTER SEAT FRAME</th>
<th><em>SEAT PAN</em></th>
<th><strong>LEG SUPPORT TUBE</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>16</td>
<td>Small</td>
<td>16</td>
<td>Short</td>
</tr>
<tr>
<td>17</td>
<td>16</td>
<td>Small</td>
<td>17</td>
<td>Short</td>
</tr>
<tr>
<td>***18</td>
<td>16</td>
<td>Small</td>
<td>18</td>
<td>Short</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>Small</td>
<td>18</td>
<td>Short</td>
</tr>
<tr>
<td>19</td>
<td>18</td>
<td>Small</td>
<td>19</td>
<td>Short</td>
</tr>
<tr>
<td>***20</td>
<td>18</td>
<td>Small</td>
<td>20</td>
<td>Long</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>Large</td>
<td>20</td>
<td>Long</td>
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<tr>
<td>21</td>
<td>20</td>
<td>Large</td>
<td>21</td>
<td>Long</td>
</tr>
<tr>
<td>***22</td>
<td>20</td>
<td>Large</td>
<td>22</td>
<td>Long</td>
</tr>
</tbody>
</table>

*NOTE: All measurements in inches.

**NOTE: Seating systems with mechanical legrests only.

***NOTE: 18, 20 and 22-inch seat depths are obtainable two (2) ways depending on the depth of the side frame and size of the center seat frame.

FIGURE 2 - CHANGING SEAT DEPTH
PROCEDURE 1

SEAT FRAME ADJUSTMENTS

C. **Replacing center seat frame** - Replace existing center seat frame. Refer to REMOVING/INSTALLING CENTER SEAT FRAME in PROCEDURE 6 of this manual.

7. Install new seat pan. Refer to REMOVING/INSTALLING SEAT PAN in PROCEDURE 6 of this manual.

8. If necessary, assemble the seating system. Refer to DISASSEMBLING/ASSEMBLING SEATING SYSTEM in PROCEDURE 3 of this manual.

**About Seat Depth**

Seat depths range from 16 to 22-inches in one (1) inch increments.

**NOTE:** Seat depths are a combination of side frames, center seat frames, seat pans, leg support tubes (if equipped) and telescoping front rigging supports.

**TILT/RECLINE AND RECLINE ONLY SYSTEMS.**

**CAUTION**

If the desired seat depth requires a change in the center frame, the seating system MUST be returned to Invacare. Otherwise damage to the recline function may occur.

**SIDE FRAMES.**

Side frames are available in four (4) depths:

- 16-inch
- 18-inch
- 20-inch
- 22-inch

**NOTE:** The seat depth of the wheelchair can be adjusted up to 2-inches from the original depth without changing the side frames. The two (2) additional seat depths per side frame are available by replacing the seat pan and adjusting (replacing) the leg support tubes (if equipped) and telescoping front rigging supports.

**EXAMPLE:**

<table>
<thead>
<tr>
<th>SIDE FRAME</th>
<th>AVAILABLE SEAT DEPTHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-inch</td>
<td>16, 17 or 18-inch</td>
</tr>
<tr>
<td>18-inch</td>
<td>18, 19 or 20-inch</td>
</tr>
<tr>
<td>20-inch</td>
<td>20, 21 or 22-inch</td>
</tr>
<tr>
<td>22-inch</td>
<td>22-inch</td>
</tr>
</tbody>
</table>

**NOTE:** For RWD models, seat depths of 20, 21, and 22-inches MUST be on a long base frame.

**CENTER SEAT FRAMES.**

There are two (2) center seat frame sizes:

- Small - used for 16 and 18-inch deep side frames
- Large - used for 20 and 22-inch deep side frames

**CAUTION**

Seating Systems with Recline MUST be returned to Invacare if the center frame has to be changed for the desired seat depth. Otherwise damage to the recline function may occur.

**LEG SUPPORT TUBES - SEATING SYSTEMS WITH MECHANICAL LEGRESTS.**

The leg support tubes are available in two (2) sizes:

- Short - adjusts from 16 to 19-inch seat depths
- Long - adjusts from 20 to 22-inch seat depths

**NOTE:** If changing from any seat depth between and including 16 and 19-inches to any seat depth between and including 20 and 22-inches (or vice versa), the leg support tube must be changed.

**CHANGING BACK HEIGHT**

**ABS Backs (FIGURE 3)**

1. Refer to the chart in FIGURE 3 and determine the components that need to be changed to correspond to the new back height.

2. Perform one (1) of the following:

   A. **Replacing back canes** - Disassemble the seating system. Refer to DISASSEMBLING/ASSEMBLING SEATING SYSTEM in PROCEDURE 2 of this manual.

   B. **Not replacing back canes** - Proceed to STEP 3.

3. Replace existing back pan. Refer to REMOVING/INSTALLING BACK PAN in PROCEDURE 4 of this manual.

4. **Replacing back canes** - Assemble the seating system. Refer to DISASSEMBLING/ASSEMBLING SEATING SYSTEM in PROCEDURE 2 of this manual.

<table>
<thead>
<tr>
<th>BACK HEIGHT</th>
<th>BACK CANE</th>
<th>BACK SLIDE/PLASTIC INSERT</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>20</td>
<td>11-1/4</td>
</tr>
<tr>
<td>21</td>
<td>20</td>
<td>11-1/4</td>
</tr>
<tr>
<td>22</td>
<td>22</td>
<td>13-1/4</td>
</tr>
<tr>
<td>23</td>
<td>22</td>
<td>13-1/4</td>
</tr>
<tr>
<td>24</td>
<td>24</td>
<td>15-1/4</td>
</tr>
<tr>
<td>25</td>
<td>24</td>
<td>15-1/4</td>
</tr>
<tr>
<td>26</td>
<td>26</td>
<td>17-1/4</td>
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<tr>
<td>27</td>
<td>26</td>
<td>17-1/4</td>
</tr>
<tr>
<td>28</td>
<td>28</td>
<td>19-1/4</td>
</tr>
</tbody>
</table>

**NOTE:** All measurements in inches.

**FIGURE 3 - CHANGING BACK HEIGHT - ABS BACKS**
**Profile Back (FIGURE 4)**

1. Remove existing back pan and install desired back pan. Refer to REMOVING/INSTALLING BACK PAN in PROCEDURE 4 of this manual.

---

**ADJUSTING BACK HEIGHT (FIGURE 5)**

*NOTE: The following procedure is for Tilt/Recline and Recline Only seating systems.*

1. Loosen, but do not remove the four (4) hex screws that secure the existing spreader bar to the back canes.
2. Holding the bottom of the back pan, lift UP until the back pan stops.

*NOTE: Make sure T-nuts stay in new/existing back canes.*
3. Make sure the measurements shown in FIGURE 5 are the same.
4. Torque the four (4) hex screws that secure the new/existing spreader bar to the new/existing back canes to 75-inch pounds.

---

**CHANGING BACK WIDTH**

*ABS Backs and Profile Backs*

*NOTE: When changing the width of the back, the width of the entire seating system needs to be changed. See CHANGING THE SEAT WIDTH in PROCEDURE 1 of this manual.*

---

**CHANGING BACK ANGLE (FIGURE 6)**

*NOTE: The following procedure is for Tilt Only seating systems.*

1. Refer to DETAIL “A” in FIGURE 6 to determine the corresponding connector bracket mounting holes for the desired back angle.
2. Remove the shoulder bolt, washer and locknut that secure the curved link to the slide block and connector bracket.
3. Remove the hex bolt, washer and locknut that secure the slide block to the connector bracket.

---

**WARNING**

Support the weight of the back BEFORE removing the hex bolt and shoulder bolt on the opposite side of the seat frame. Otherwise injury or damage may occur.

4. With back supported, repeat STEPS 2-3 for the opposite side of the seat frame.
5. Line up the mounting holes in the slide block with the connector bracket mounting holes determined in STEP 1.
6. Reinstall the hex bolt, washer and locknut that secure the slide block to the connector bracket and loosely tighten. Refer to FIGURE 6 for hardware orientation.
7. Repeat STEP 6 for the opposite side of the seat frame.
8. Line up the mounting holes in the curved link, slide block and connector bracket.
9. Reinstall the shoulder bolt, washer and locknut that secure the curved link to the slide block and connector bracket and loosely tighten. Refer to FIGURE 6 for hardware orientation.
10. Repeat STEPS 8-9 for the opposite side of the seat frame.
11. Torque all locknuts to 13 foot pounds (156-inch pounds).
12. Adjust tilt and/or recline potentiometers. Refer to DRIVE LOCK-OUT in PROCEDURE 8 of this manual.
Figure 6 - Changing Back Angle

Changing Seat Angle

**NOTE:** Seat Angle of Tilt/Recline Seating Systems CANNOT be changed.

Tilt Only Seating Systems (Figure 7)

1. Determine the necessary seat angle - 0° or 5°.
2. Determine corresponding mounting holes on the front pivot for the desired seat angle determined in STEP 1.
3. Remove the shoulder bolts and locknuts that secure the two (2) seat link rods to the front pivot.
   A. Remove the hex bolt and locknut that secure the tilt stop to the front pivot.
   B. Reposition the tilt stop and cover to correspond to the seat angle. Refer to Figure 7.
   C. Reinstall the hex bolt and locknut that secure the tilt stop to the front pivot. Torque to 156-inch pounds.
   D. Repeat STEP 3 for opposite tilt stop and cover.
4. Reposition seat link rods to the position determined in STEP 2.
5. Secure the seat link rods to the front pivot with shoulder bolts and locknuts. Torque to 75-inch pounds. Refer to Figure 7 for the correct hardware orientation.
6. Adjust the tilt potentiometers. Refer to DRIVEW LOCK-OUT in PROCEDURE 8 of this manual.

Figure 7 - Changing Seat Angle - Tilt Only Seating Systems

NOTE: Illustrations depict RWD base frame ONLY. Service of the Tilt and/or Recline Seating system is performed in the same manner for FWD base frames.
Recline Only Systems (FIGURE 8)

1. Determine necessary seat angle - 5°, 10° or 15°.

2. Refer to FIGURE 1 to:
   A. Determine the correct orientation of the seat angle bracket for desired seat angle.
   B. Determine correct mounting holes on the front pivot for desired seat angle.
   C. Determine the corresponding mounting holes to secure the seat angle mounting bracket to the seat frame for desired seat angle.

3. Remove the shoulder bolt and locknut that secures the seat angle mounting bracket to the front pivot.

4. Remove the locking washer and washer that secures the seat angle mounting bracket to the seat frame.

5. Remove seat angle mounting bracket.

6. Repeat STEPS 3-5 for opposite seat angle mounting bracket.

7. Install five (5) washers on the pin.

8. Install seat angle mounting bracket onto pin in the orientation determined in STEP 1.

9. Install washer and retaining ring onto shoulder bolt to secure seat angle mounting bracket in place. Securely tighten. Refer to FIGURE 8 for correct hardware orientation.

10. Secure seat angle mounting bracket to front pivot with shoulder bolts and locknuts at the mounting holes determined in STEP 5. Torque to 75-inch pounds.

11. Adjust the recline potentiometers. Refer to ADJUSTING RECLINE POTENTIOMETER in PROCEDURE 8 of this manual.

NOTE: Illustrations depict RWD base frame ONLY. Service of the Tilt and/or Recline Seating system is performed in the same manner for FWD base frames.
This procedure includes the following:

Disassembling/Assembling Seating System

**WARNING**

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

ALWAYS turn wheelchair power OFF BEFORE adjusting, repairing or servicing the wheelchair; otherwise injury or damage can occur.

Pinch Points exist between seat and base frames. Use caution, otherwise injury may occur.

**NOTE:** Illustration depicts RWD base frame ONLY. Service of the Tilt and/or Recline Seating system is performed in the same manner for FWD base frames.

**DISASSEMBLING/ASSEMBLING SEATING SYSTEM (FIGURE 1)**

**NOTE:** FIGURE 1 shows referring procedures.

**If Changing Seat Depth**

**DISASSEMBLING.**

**CAUTION**

Perform this procedure ONLY after reading and understanding CHANGING SEAT DEPTH in PROCEDURE 1 of this manual. Otherwise damage to the seating system may occur.

1. Remove components in the following order:
   A. Legrests
   B. Joystick(s)

Refer to REMOVING/INSTALLING SPREADER BAR in PROCEDURE 4 of this manual.

Refer to REMOVING/INSTALLING BACK ASSEMBLY in PROCEDURE 4 of this manual.

Refer to REMOVING/INSTALLING Arm PIVOTS in PROCEDURE 6 of this manual.

Refer to REMOVING/INSTALLING/ADJUSTING LATERAL SUPPORTS in PROCEDURE 6 of this manual.

Refer to REMOVING/INSTALLING/ADJUSTING CHEST POSITIONING STRAP in PROCEDURE 6 of this manual.

Refer to MECHANICAL ELEVATING LEGRESTS in PROCEDURE 7 of the owner’s manual, part number 1090207 or REMOVING/INSTALLING LEGRESTS in the owner’s manual supplied with the base.

Refer to REMOVING/INSTALLING SHROUDS in PROCEDURE 3 of this manual.

Refer to RECLINING ARMRESTS in PROCEDURE 8 of the owner’s manual, part number 1090207 or REMOVING/INSTALLING ARMRESTS in the owner’s manual supplied with the base.

Refer to REMOVING/INSTALLING/ADJUSTING BACK/BACK SLIDE ASSEMBLY in PROCEDURE 4 of this manual.

Refer to REMOVING/INSTALLING JOYSTICK(S) in PROCEDURE 8 of this manual.

Refer to REMOVING/INSTALLING SEAT PAN in PROCEDURE 5 of this manual.

Refer to RECLINING ARMRESTS in PROCEDURE 8 of the owner’s manual, part number 1090207 or REMOVING/INSTALLING ARMRESTS in the owner’s manual supplied with the base.
If Changing Height of Back Canes

DISASSEMBLING.
1. Remove components in the following order:
   A. Joystick(s)
   B. Armrests
   C. Shrouds
   D. If equipped, Lateral Supports and Chest Positioning Strap.
   E. **Tilt/Recline and Recline Only seating systems** - Arm Pivots
   F. Back/Back Slide Assembly
   G. Spreader Bar

2. Finish changing back height. Refer to **CHANGING BACK HEIGHT** in PROCEDURE 1 of this manual.

ASSEMBLING.
1. Install components in the following order:
   A. Spreader Bar
   B. New Back/Back Slide Assembly
   C. **Tilt/Recline and Recline Only seating systems** - Arm Pivots
   D. If equipped, Lateral Supports and Chest Positioning Strap.
   E. Shrouds
   F. Armrests
   G. Joystick(s)
This procedure includes the following:
Removing/Installing Shrouds

WARNING
After installation, ANY adjustments, repair or service and BEFORE use, make sure all attaching hardware is tightened securely - otherwise injury or damage may result.
ALWAYS turn wheelchair power OFF BEFORE adjusting, repairing or servicing the wheelchair, otherwise injury or damage can occur.
Pinch Points exist between seat and base frames. Use caution, otherwise injury may occur.

INSTALLING/ REMOVING SHROUDS

Shroud Location Overview (FIGURE 1)

VSR Shroud
Refer to REMOVING/ INSTALLING VSR SHROUD in this procedure of the manual.

Back Shroud
Refer to REMOVING/ INSTALLING BACK SHROUD in this procedure of the manual.

Side Shroud
Refer to REMOVING/ INSTALLING SIDE SHROUD in this procedure of the manual.

Front Shroud
Refer to REMOVING/ INSTALLING FRONT SHROUD in this procedure of the manual.

Bottom Shroud
Refer to REMOVING/ INSTALLING BOTTOM SHROUD in this procedure of the manual.

FIGURE 1 - INSTALLING/ REMOVING SHROUDS - SHROUD LOCATION OVERVIEW
Removing/Installing Side Shrouds (FIGURE 3)

1. Remove the mounting screw and washer that secures the side shroud in place.
2. To install side shrouds, align side shroud with fastening strips and secure with mounting screw and washer. Securely tighten.

NOTE: Only the right side shroud is shown for clarity. The left side shroud removes installs in the same manner.

Removing/Installing the VSR Shroud (FIGURE 2)

1. To remove, cut the tie wraps that secure the VSR shroud in place.
2. Secure VSR shroud to VSR mounting tube in place with two (2) tie wraps as shown in FIGURE 2.

Removing/Installing the Back Shroud (FIGURE 4)

1. To remove, pull up on back shroud to disengage from fastening strips.
2. To install, align fastening strips on back shroud with fastening strips on frame. Position back shroud in place and firmly press down.

Removing/Installing the Front Shroud (FIGURE 5)

1. To remove, pull out on front shroud to disengage from fastening strips.
2. To install, align fastening strips on front shroud with fastening strips on frame and controller mounting bracket. Position front shroud in place and firmly press in to secure in place.
Removing/Installing the Bottom Shroud (FIGURE 6)

1. Perform one (1) of the following sections:
   A. **TILT ONLY SYSTEMS AND TILT/RECLINE SYSTEMS** - Tilt seat to maximum angle. Refer to OPERATING TILT/RECLINE SYSTEMS in PROCEDURE 3 or OPERATING TILT ONLY SYSTEMS in PROCEDURE 5 of the Owner’s Manual, part number 1090207.

   B. **RECLINE ONLY SYSTEMS**:
       1. Remove the two (2) shoulder bolts, washers and locknuts that secures the seat angle mounting brackets to the front pivot.

       **WARNING**

       To ensure safety, secure seat in tilted position before removing/installing the bottom shroud. Otherwise, injury may result.

       2. Tilt seat back and secure in tilted position.

       2. Remove the mounting screw, coved spacer, and locknut that secures the rear portion of the bottom shroud to the seat frame.

       3. Remove the two (2) mounting screws and washers that secure the front portion of the bottom shroud to the seat frame.

       4. To install bottom shroud, reverse STEPS 1-3.

**ALL SYSTEMS - STEPS 2-4**

**NOTE:** Illustrations depict RWD base frames ONLY. Service of the Tilt and/or Recline Seating system is performed in the same manner for FWD base frames.
This procedure includes the following:
- Removing/Installing Back Pan
- Removing/Installing Spreader Bar
- Removing/Installing Back Canes
- Removing/Installing Back/Back Slide Assembly
- Removing/Installing Back Assembly

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

ALWAYS turn wheelchair power OFF BEFORE adjusting, repairing or servicing the wheelchair, otherwise injury or damage can occur.

Pinch Points exist between seat and base frames. Use caution, otherwise injury may occur.

**REMOVING/INSTALLING BACK PAN (FIGURE 1)**

**Removing**

NOTE: If referred to this procedure from CHANGING THE BACK HEIGHT in PROCEDURE 1, perform one of the following:

A. **ABS Backs**:
   1. Replacing the Back Canes - perform STEPS 6 and 7.

B. **Profile backs** - perform steps 1-7.

1. Remove the headrest from the seating system. Refer to REMOVING/INSTALLING/ADJUSTING HEADREST in PROCEDURE 9 of the owner’s manual, 1090207.

2. Lift up on the fastening straps and remove the cushion from the existing back pan.

3. Perform one (1) of the following:
   - **TILT ONLY SYSTEMS** - Proceed to STEP 4.
   - **TILT/RECLINE AND RECLINE ONLY SYSTEMS**

4. Remove the two (2) mounting screws that secure the headrest mounting bracket to the existing back pan.

5. Remove headrest bracket form the existing back pan.

**NOTE:** For 17, 19, and 21-inch width backs, spacers are required for proper installation.

6. Remove the four (4) mounting screws and spacers (if applicable) that secure the existing back pan to the two (2) back slides.

7. Remove existing back pan from the two (2) back slides.

**Installing**

1. Line up the mounting holes in the new/existing back pan with the two (2) new/existing back slides.

**NOTE:** For 17, 19, and 21-inch width backs, spacers are required for proper installation.

2. Install the four (4) mounting screws and spacers (if applicable) that secure the new/existing back pan to the two (2) new/existing back slides. Tighten securely.

3. Position the headrest bracket on the new/existing back pan.

4. Install the two (2) mounting screws and locknuts that secure the headrest bracket to the new/existing back pan. Tighten securely.

5. Perform one (1) of the following:
   - **TILT ONLY SYSTEMS** - Proceed to STEP 6.
   - **TILT/RECLINE AND RECLINE ONLY SYSTEMS**

A. Reposition the mounting holes in the back actuator bracket with the mounting holes in the new back pan.

B. Reinstall the two (2) mounting screws and locknuts that secure the back actuator mounting bracket to the new back pan. Tighten securely.

C. Connect the back actuator to the seating system wiring harness.

D. Adjust back height. Refer to ADJUSTING BACK HEIGHT in PROCEDURE 1 of this manual.

6. Install the cushion onto the new back pan.

7. Install the headrest onto the seating system. Refer to REMOVING/INSTALLING/ADJUSTING HEADREST in PROCEDURE 9 of the owner’s manual, 1090207.
REMOVING/INSTALLING SPREADER BAR (FIGURE 2)

For Tilt and Recline Models, Recline Only Models, and Tilt Only Models that have Channeled Back Canes

REMOVING.

1. Note the position of the existing spreader bar.
2. For Tilt/Recline models and Recline Models, remove the hex bolt and locknut that secure the back actuator to the existing spreader bar.
3. Loosen, but do not remove the four (4) hex screws that secure the existing spreader bar to the back canes.
4. Lift up and remove the existing spreader bar from the slots on the back canes.
5. If installing a new spreader bar, remove the four (4) screws and T-Nuts from the existing spreader bar.

NOTE: For back widths of 17, 19, or 21-inches, spacers are required between back slide and back pan.

FIGURE 1 - REMOVING/INSTALLING BACK PAN

FIGURE 2 - REMOVING/INSTALLING SPREADER BAR - FOR TILT AND RECLINE MODELS, RECLINE ONLY MODELS, AND TILT ONLY MODELS THAT HAVE CHANNELED BACK CANES
**INSTALLING.(FIGURE 2)**

1. For new spreader bars, loosely install the four (4) T-Nuts and hex screws onto the new spreader bar.
2. Line up the T-nuts on the spreader bar with the slots in the back canes.
3. Slide the spreader bar to the position noted in STEP 1 of **REMOVING SPREADER BAR** in this procedure of the manual.
4. Perform one (1) of the following:
   - **TILT ONLY SYSTEMS** - Proceed to STEP 5.
   - **TILT/RECLINE AND RECLINE ONLY SYSTEMS** -
     A. Line up the mounting holes in the back actuator and spreader bar.
     B. Install hex bolt and locknut through back actuator and spreader bar. Tighten securely.
5. Make sure the measurements shown in **FIGURE 2** are the same.
6. Torque the four (4) hex screws that secure the spreader bar to the back canes to 75-inch pounds.

**For Tilt Only Models that have Round Back Canes (FIGURE 3)**

**REMOVING.**

1. Note the position of the existing spreader bar.
2. Remove the three (3) mounting screws that secure the two (2) half clamps and existing spreader bar to the back cane. Repeat for other side.
3. Remove the existing spreader bar and half clamps from the back canes.

**Installing**

1. Install the spreader bar to the position noted in STEP 1 of **REMOVING SPREADER BAR** with the existing two half clamps and six (6) mounting screws.
2. Make sure the measurements shown in **FIGURE 2** are the same.
3. Torque the six (6) mounting screws that secure the half clamps and spreader bar to the back canes to 75-inch pounds.

**FIGURE 3 - REMOVING/INSTALLING SPREADER BAR - FOR TILT ONLY MODELS THAT HAVE ROUND BACK CANES**

**REMOVING/INSTALLING BACK CANES (FIGURE 4)**

**Removing**

1. Disassemble the seating system. Refer to **DISASSEMBLING/ASSEMBLING SEATING SYSTEM** in **PROCEDURE 2** of this manual.
2. Remove shoulder bolt, two (2) washers and locknut that secure the existing back cane to the curved link.
3. Remove the shoulder bolt and locknut that secure the existing back cane to the seat frame.
4. Remove the existing back cane from the wheelchair.
5. If necessary, repeat STEPS 2-4 for opposite back cane.

**Installing**

1. Position the new back cane on the seat frame as shown in **FIGURE 4**.
2. Install the shoulder bolt that secures that the new back cane to the seat frame.
3. Install the locknut onto the shoulder bolt and torque to 13-foot pounds (156-inch pounds).
4. Remove the two (2) button screws that secure the headrest mounting bracket to the existing back pan.
5. Line up the mounting holes in the new back cane and curved link.
6. Remove the headrest bracket form the existing back pan.
7. Perform one (1) of the following:
   A. **TILT ONLY SYSTEMS** - Install the two (2) shoulder screws that secure the two (2) existing back slides to the existing back canes from the BOTTOM mounting hole.
   B. **TILT/RECLINE AND RECLINE ONLY SYSTEMS** - Install the two (2) shoulder screws that secure the two (2) existing back slides to existing back canes from the TOP mounting hole.

7. NOTE: There are plastic sleeves positioned between the back slides and the back canes.

**Installing**

1. Install the new/existing plastic sleeves on the back canes.

8. Perform one (1) of the following:
   A. **TILT ONLY SYSTEMS** - Proceed to STEP 4.
   B. **TILT/RECLINE AND RECLINE ONLY SYSTEMS** - Proceed to STEP 8.
C. Connect the back actuator to the seating system wiring harness.

8. Install the cushion onto the new back pan.

9. Install the headrest onto the seating system. Refer to REMOVING/INSTALLING/ADJUSTING HEADREST in PROCEDURE 9 of the owner's manual, 1090207.

10. Tilt/Recline and Recline Only seating systems - Adjust back height. Refer to ADJUSTING BACK HEIGHT in PROCEDURE 2 of this manual.

### REMOVING/INSTALLING BACK ASSEMBLY (FIGURE 6)

**CAUTION**
Perform this procedure only if referred from DISASSEMBLING/ASSEMBLING SEATING SYSTEM - IF CHANGING SEAT DEPTH in PROCEDURE 2 of this manual. Otherwise damage to the seating system may occur.

#### Removing

1. Remove the two (2) shoulder bolts, washers and locknuts that secure the two (2) curved links to the two (2) slide blocks.
2. Remove the two (2) shoulder bolts and locknuts that secure the two (2) back canes to the seat frame.
3. Remove the back assembly from the seat frame.
4. Finish disassembling the seating system. Refer to DISASSEMBLING/ASSEMBLING SEATING SYSTEM - IF CHANGING SEAT DEPTH in PROCEDURE 3 of this manual.

#### Installing

1. Line up the mounting holes in the back assembly and the seat frame.
2. Loosely install the two (2) shoulder bolts and locknuts that secure the two (2) back canes to the seat frame.
3. Loosely install the two (2) shoulder bolts, washers and locknuts that secure the two (2) curved links to the two (2) slide blocks.
4. Torque the four (4) locknuts to 13 foot pounds (156-inch pounds).
5. Finish assembling the seating system. Refer to DISASSEMBLING/ASSEMBLING SEATING SYSTEM - IF CHANGING SEAT DEPTH in PROCEDURE 3 of this manual.
This procedure includes the following:
- Removing/Installing Seat Pan
- Removing/Installing Side Frames
- Removing/Installing Center Frame

**WARNING**

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

ALWAYS turn wheelchair power OFF BEFORE adjusting, repairing or servicing the wheelchair, otherwise injury or damage can occur.

Pinch Points exist between seat and base frames. Use caution, otherwise injury may occur.

**REMOVING/INSTALLING SEAT PAN (FIGURE 1)**

**Removing**

1. Remove the seat cushion from the seat pan.
2. Remove the armrests from the seating system. Refer to one (1) of the following:
   - A. RECLINING ARMRESTS in PROCEDURE 8 of the owner’s manual, part number 1090207.
   - B. REMOVING/INSTALLING ARMRESTS in the owner’s manual supplied with the base.
3. Remove the five (5) hex bolts, locknuts, coved washer and spacers that secure the seat pan to the seat frame.

**Installing**

1. Position the new/existing seat pan on the seat frame, aligning the mounting holes of the seat pan and the mounting holes of the seat frame.
2. Reinstall the five (5) hex bolts, locknuts, coved washer and spacers that secure the seat pan to the seat frame. Torque to 75-inch pounds. Refer to FIGURE 1 for hardware orientation.
3. Remove the protective strips from new seat pan and reinstall the seat cushion onto the seat pan.
4. Perform one (1) of the following:
   - A. If changing seat width or depth - Assemble the seating system, if necessary. Refer to DISASSEMBLING/ASSEMBLING SEATING SYSTEM - IF REPLACING SIDE FRAMES in PROCEDURE 3 of this manual.
   - B. Reinstall the armrests onto the seating system. Refer to one (1) of the following:

**FIGURE 1 - REMOVING/INSTALLING SEAT PAN**

**REMOVING/INSTALLING SIDE FRAMES (FIGURE 2)**

**CAUTION**

Seating Systems with Recline MUST be returned to Invacare if the side frames have to be replaced or changed for the desired seat depth. Otherwise damage to the recline function may occur.

**Removing**

1. If necessary, disassemble the seating system. Refer to DISASSEMBLING/ASSEMBLING SEATING SYSTEM - IF REPLACING SIDE FRAMES in PROCEDURE 2 of this manual.
2. Note the mounting holes of the existing side frame.
3. Remove the four (4) hex bolts, coved washers, spacers and locknuts that secure the side frames to the center seat frame.
4. Remove the existing side frame from the center seat frame.
5. Remove the three (3) hex screws and washers that secure the slide rod, slide block and connecting bracket to the existing side frame.
6. Remove the slide rod, slide block and connecting bracket from the existing side frame.
7. If necessary, repeat STEPS 2-6 for the opposite existing side frame.

Installing
1. Slide the new/existing side frame to the position determined in STEP 2 of REMOVING SIDE FRAMES in this procedure of the manual.
2. If necessary, repeat STEP 1 for the opposite new/existing side frame.

**WARNING**

Both side frames MUST be adjusted to the same mounting hole position to maintain an even weight distribution of the user and seat frame over the base frame. If weight is not distributed evenly, injury to the assistant and/or user and damage to the wheelchair may occur.

3. Make sure both side frames are at the same mounting hole position.
4. Reinstall the four (4) hex bolts, coved washers, spacers and locknuts that secure the side frames to the center seat frame. Refer to FIGURE 2 for hardware orientation. Torque to 75-inch pounds.
5. Position the existing slide rod, slide block and connecting bracket into the new/existing seat frame as shown in FIGURE 2.

6. Install the two (2) hex screws and washers that secure the slide rod, slide block and connecting bracket to the new/existing side frame. Torque to 13-foot pounds (156-inch pounds).
7. Perform one (1) of the following:
   A. Assemble the seating system. Refer to DISASSEMBLING/ASSEMBLING SEATING SYSTEM - REPLACING SIDE FRAMES in PROCEDURE 3 of this manual.
   B. Finish changing seat depth. Refer to CHANGING SEAT DEPTH in PROCEDURE 2 of this manual.

**FIGURE 2 - REMOVING/INSTALLING SIDE FRAMES**

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**REMOVING/INSTALLING CENTER SEAT FRAME (FIGURE 3)**

**NOTE:** The following procedure is for Tilt Only seating systems.

**WARNING**

Pinch Points exist between seat and base frames. Use caution, otherwise injury may occur.

**Removing**
1. Remove the side frames. Refer to REMOVING/INSTALLING SIDE FRAMES in this procedure of the manual.
2. Remove the two (2) shoulder bolts and locknuts that secure the existing center seat frame to the actuator frame. See DETAIL “A”.
3. Note the mounting position of the two (2) tilt links.

**WARNING**

Support the center seat frame BEFORE removing the shoulder bolt and locknuts that secure the tilt links to the front pivot. Otherwise, injury or damage may occur.

4. While supporting the center seat frame, remove the two (2) shoulder bolts and locknuts that secure the two (2) tilt links to the front pivot. See DETAIL “B”.
5. Remove the existing center seat frame from base frame.
6. Remove the retaining ring that secures the tilt link and washers to the existing center seat frame. See DETAIL “C”.
7. Remove the washers and tilt link from the existing center seat frame.
8. If installing a new center seat frame, remove four (4) washers and one (1) retaining ring from front pin on existing center seat frame and transfer onto new center seat frame. See DETAIL “D”.
9. Repeat STEPS 6-8 for the opposite tilt link.
Installing

1. Position the tilt link and washers on the new center seat frame. Refer to FIGURE 3 for hardware orientation.
2. Install the retaining ring that secures the tilt link and washers to the new center seat frame.
3. Repeat STEPS 1-2 for the opposite tilt link.
4. Line up the mounting holes on new center seat frame with the mounting holes on the actuator frame.

5. Secure the new center seat frame to the actuator frame with two (2) shoulder bolts and locknuts. Torque to 75-inch pounds. Refer to FIGURE 3 for correct hardware orientation.
6. Position the mounting hole in the tilt link with the mounting hole determined in STEP 3 of REMOVING CENTER SEAT FRAME in this procedure of the manual.
7. Secure the tilt links to the front pivot with the shoulder bolts and locknuts. Torque to 75-inch pounds. Refer to FIGURE 3 for correct hardware orientation.
8. Install the new/existing side frames. Refer to REMOVING/INSTALLING SIDE FRAMES in this procedure of the manual.

NOTE: Illustration depicts RWD base frame ONLY. Service of the Tilt and/or Recline Seating System is performed in the same manner.
This procedure includes the following:

Removing/Installing/Adjusting Lateral Supports
Removing/Installing Arm Pivots
Replacing Seat Positioning Strap
Removing/Installing/Adjusting Chest Positioning Strap

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

ALWAYS turn wheelchair power OFF BEFORE adjusting, repairing or servicing the wheelchair, otherwise injury or damage can occur.

Pinch Points exist between seat and base frames. Use caution, otherwise injury may occur.

REMOVING/INSTALLING/ADJUSTING LATERAL SUPPORTS (FIGURE 1)

Removing

1. Note the position of the existing lateral support on the back slide.
2. Loosen, but do not remove the two (2) socket screws that secure the existing lateral support to the back slide.
3. Slide the existing lateral support up and off of the back slide.
4. If necessary, repeat STEPS 1-3 for the opposite side of the seating system.

Installing

1. If necessary, loosely install the two (2) T-Nuts and hex screws onto the new lateral support.
2. Position the new/existing lateral support and line up the T-Nuts with the slots in the new existing back slide.
3. Slide new/existing lateral support to the position noted in STEP 1 of REMOVING LATERAL SUPPORTS in this procedure of the manual.
4. Tighten the two (2) socket screws that secure the new/existing lateral support to the back slide securely.
5. If necessary, repeat STEPS 1-4 for the opposite side of the seating system.

Adjusting

HEIGHT.

1. Loosen, but do not remove the two (2) socket screws that secure the existing lateral support to the back slide.
2. Slide the lateral support to the desired position.
3. Tighten the two (2) socket screws that secure the lateral support to the back slide securely.

DEPTH.

1. Remove the two (2) flat screws that secure the lateral support pad to the mounting bracket.
2. Reposition the lateral support pad to the other set of mounting holes.
3. Reinstall the two (2) flat screws and tighten securely.

WIDTH.

1. Note depth mounting position of the lateral support.
2. Remove the two (2) flat screws that secure the lateral support pad to the existing mounting bracket.
3. Remove the two (2) socket screws that secure the mounting bracket to the hinge.
4. Line up the mounting holes in the new mounting bracket with the hinge.
5. Install the (2) socket screws to secure the new mounting bracket to the hinge and tighten securely.
6. Line up the lateral support pad to the position noted in STEP 1.
7. Reinstall the two (2) flat screws and tighten securely.

FIGURE 1 - REMOVING/INSTALLING/ADJUSTING LATERAL SUPPORTS
REMOVING/INSTALLING ARM PIVOTS (FIGURE 2)

NOTE: The following procedure is for Tilt/Recline and Recline Only seating systems.

Removing

1. If necessary, remove the lateral supports from the seating system. Refer to REMOVING/INSTALLING/ADJUSTING LATERAL SUPPORTS in this procedure of the manual.
2. Note the position of the existing arm pivot.
3. Loosen, but do not remove the two (2) hex bolts that secure the existing arm pivot to the back slide.
4. Slide the existing arm pivot off of the back slide.
5. If necessary, repeat STEPS 2-4 for the opposite side of the seating system.

Installing

1. If necessary, loosely install the four (4) T-Nuts and hex bolts onto the new arm pivot.
2. Position the new/existing arm pivot and line up the T-Nuts with the slots in the new/existing back slides.
3. Slide the new/existing arm pivot to the position noted in STEP 2 of REMOVING ARM PIVOTS in this procedure of the manual.

NOTE: If a change in armrest height is desired, refer to RECLINING ARMRESTS in PROCEDURE 8 of the owner’s manual, part number 1090207.
4. Torque the two (2) hex bolts that secure the new/existing arm pivot to the back slide to 50-inch pounds.
5. If necessary, repeat STEPS 1-4 for the opposite side of the seating system.

REPLACING SEAT POSITIONING STRAP (FIGURE 3)

1. Remove the two (2) hex bolts, washers and locknuts that secure the two (2) halves of the seat positioning strap to the seat frame.
2. Remove the existing seat positioning strap from the seat frame.
3. Position the new seat positioning strap on the seat frame as shown in FIGURE 3.
4. Reinstall the hex bolt, washer and locknut. Tighten securely. Refer to FIGURE 3 for hardware orientation.

REMOVING/INSTALLING/ADJUSTING CHEST POSITIONING STRAP (FIGURE 4)

Removing

1. Note the position of the existing chest positioning strap.
2. Loosen, but do not remove the socket screw that secure the existing chest positioning strap to the back slide.
3. Slide the existing chest positioning strap off of the back slide.
4. Repeat STEPS 1-3 for the opposite chest strap.

FIGURE 2 - REMOVING/INSTALLING ARM PIVOTS

FIGURE 3 - REPLACING SEAT POSITIONING STRAP

FIGURE 4 - REMOVING/INSTALLING/ADJUSTING CHEST POSITIONING STRAP
Installing
1. If necessary, loosely install the t-nut and hex screw onto the new chest positioning strap.
2. Position the new/existing chest positioning strap and line up the T-Nuts with the slots in the new existing back slide.
3. Slide new/existing chest positioning strap to the position noted in STEP 1 of REMOVING CHEST POSITIONING STRAP in this procedure of the manual.
4. Tighten the two (2) socket screws that secure the new/existing chest positioning strap to the back slide securely.
5. Repeat STEPS 1-4 for the opposite chest strap

Adjusting
HEIGHT.
1. Loosen, but do not remove the two (2) socket screws that secure the chest positioning strap to the back slide.
2. Slide the chest positioning strap to the desired position.
3. Tighten the two (2) socket screws that secure the chest positioning strap to the back slide securely.

FIGURE 4 - REMOVING/INSTALLING/ADJUSTING CHEST POSITIONING STRAP
This procedure includes the following:

**Adjusting/Replacing Telescoping Front Rigging Support**

**Adjusting/Replacing Leg Support Tubes**

**WARNING**

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

ALWAYS turn wheelchair power OFF BEFORE adjusting, repairing or servicing the wheelchair; otherwise injury or damage can occur.

Pinch Points exist between seat and base frames. Use caution, otherwise injury may occur.

**ADJUSTING/REPLACING TELESCOPING FRONT RIGGING SUPPORTS (FIGURE 1)**

1. Remove the two (2) hex bolts, spacers and locknuts that secure the telescoping front rigging support to the seat frame.

2. Perform one (1) of the following:
   - Slide existing telescoping front rigging support to one (1) of three (3) depth positions.
   - Remove existing telescoping front rigging support and install new telescoping front rigging support.

3. Secure telescoping front rigging at desired depth with existing two (2) hex bolts, spacers, and locknuts. Torque mounting screws to 75-inch pounds.

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

**FIGURE 1 - ADJUSTING/REPLACING TELESCOPING FRONT RIGGING SUPPORTS**

**ADJUSTING/REPLACING LEG SUPPORT TUBES (FIGURE 2)**

**NOTE:** Only systems equipped with mechanical legrests require leg support tubes.

**Adjusting**

1. Refer to FIGURE 2 and determine the corresponding mounting hole on the adjustment slide for the desired seat depth.

2. Remove the socket bolt and locknut that secure the adjustment slide to the leg support tube.

3. Position the adjustment slide to the mounting hole determined in STEP 1.

4. Reinstall socket screw and locknut that secure the adjustment slide to leg support tube. Tighten securely.

5. Repeat STEPS 1-4 for the opposite leg support tube.

**Replacing**

1. Remove the locknut and spacer that secure the existing leg support tube to the connecting bracket.

2. Remove existing leg support from seating system.

3. Position the spacer and new leg support on the connecting bracket.

4. Install the locknut and tighten securely.

5. Adjust the leg support tube for the desired seat depth. Refer to ADJUSTING LEG SUPPORT TUBES in this procedure of the manual.
### FIGURE 2 - ADJUSTING/REPLACING LEG SUPPORT TUBES

<table>
<thead>
<tr>
<th>SEAT DEPTH</th>
<th>LEG SUPPORT TUBE</th>
<th>MOUNTING POSITION - ADJUSTMENT SLIDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-inches</td>
<td>Short</td>
<td>18-inches</td>
</tr>
<tr>
<td>17-inches</td>
<td>Short</td>
<td>19-inches, 16-inches</td>
</tr>
<tr>
<td>18-inches</td>
<td>Short</td>
<td>17-inches</td>
</tr>
<tr>
<td>19-inches</td>
<td>Short</td>
<td>22-inches</td>
</tr>
<tr>
<td>20-inches</td>
<td>Long</td>
<td>21-inches</td>
</tr>
<tr>
<td>21-inches</td>
<td>Long</td>
<td>20-inches</td>
</tr>
<tr>
<td>22-inches</td>
<td>Long</td>
<td>21-inches</td>
</tr>
</tbody>
</table>
This procedure includes the following:

Removing/Installing Joystick(s)
Drive Lock-Out
Adjusting Tilt and/or Recline Potentiometers

**WARNING**

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

ALWAYS turn wheelchair power OFF BEFORE adjusting, repairing or servicing the wheelchair; otherwise injury or damage can occur.

Pinch Points exist between seat and base frames. Use caution, otherwise injury may occur.

**REMOVING/INSTALLING JOYSTICK(S) (FIGURE 1)**

Removing
1. Turn the adjustment lock lever to release the joystick mounting tube.
2. Remove the joystick mounting tube from wheelchair.

Installing
1. Slide the joystick mounting tube through the bracket to the desired position.
2. Slide the adjustment lock w/lever over the end of the joystick mounting tube and secure the adjustment lock to the tube by turning the adjustment lock lever.

NOTE: It is not necessary to remove the mounting brackets.

---

**DRIVE LOCK-OUT**

Drive lock-out is a feature designed to prevent the wheelchair from being driven after the seating system has been tilted/reclined beyond 20°*. When the drive lock-out feature has been activated, the LED on the single function toggle switch will light.

*NOTE: 20° of tilt can be any combination of back angle, tilt and recline.

**Adjusting the Tilt/Recline Potentiometers**

**WARNING**

NEVER operate the wheelchair while in any tilted/reclined position over 20° RELATIVE TO THE VERTICAL POSITION. If the drive lock-out does not stop the wheelchair from operating in a tilt/recline position 20° RELATIVE TO THE VERTICAL POSITION, DO NOT operate the wheelchair. Adjust the potentiometers.

**ADJUSTING THE TILT POTENTIOMETER ON SEATING SYSTEMS WITH SINGLE FUNCTION TOGGLE SWITCH (FIGURE 2).**

NOTE: Single function toggle switch can only be used in conjunction with a tilt only seating system.

1. Loosen the set screw on the tilt potentiometer. Refer to DETAIL “A”.
2. Push the single function toggle switch in the DOWN direction and verify that the seat tilts back.
3. Push the single function toggle switch in the UP direction and verify that the seat raises to the upright position.
4. Tilt the seat back 20° from the vertical position. Verify angles by using magnetic protractor (available at any hardware store).

*NOTE: 20° from the vertical position is the angle at which drive-lock out should occur.
5. Disconnect the single function toggle switch connector from the actuator connector.
6. Push and HOLD the single function toggle switch in the UP direction.
7. Turn the tilt potentiometer CLOCKWISE until it stops.
8. Verify that the Drive Lock-out light on the single function toggle switch is NOT illuminated.
9. Push the single function toggle switch in the DOWN direction and verify that the drive lock-out light on the single function toggle switch is still NOT illuminated.

10. Holding the single function toggle switch in the DOWN direction, turn the tilt potentiometer COUNTER-CLOCKWISE until the Drive Lock-out light is illuminated.

11. Release the single function toggle switch.

12. Tighten the set screw on the tilt potentiometer.

13. Apply Glyptal to top of set screw to secure in place.


15. Tilt the seat up and down to confirm that the drive lock-out light illuminates on/off when the seat angle passes through the 20° lockout angle.

NOTE: If drive lock-out light does NOT react as described in STEP 15, repeat procedure. If drive lock-out light still does NOT react as described in STEP 15, DO NOT use unit. Contact Invacare Technical Support at the number listed on the back cover.

ADJUSTING THE TILT POTENTIOMETER ON SEATING SYSTEMS WITH TRCM (FIGURE 2).

1. Hook up remote programmer to the wheelchair TRCM controller.

2. Set remote programmer to the current status screen

NOTE: For STEPS 1-2, refer to PROCEDURE 9 in the MKIV controller Owner's Manual supplied with wheelchair.

3. Measure the back angle relative to the seat. Verify angles by using magnetic protractor. (available at any hardware store).

4. Loosen the set screw on the tilt potentiometer.

5. Turn potentiometer with small flat screwdriver until screen on remote programmer reads the angle noted in STEP 3.

NOTE: Seat angle is relative to the horizontal position.

NOTE: TILT UP LIMIT - Shows the status of the limit as programmed in the Performance Menu. If the limit has been reached the status will be TRUE. If the seat or back is not at a limit the status will be FALSE.

NOTE: TILT DOWN LIMIT - Shows the status of the limit as programmed in the Performance Menu. If the limit has been reached the status will be TRUE. If the seat or back is not at a limit the status will be FALSE.

6. While monitoring the current status screen on the remote programmer, tighten the set screw on the tilt potentiometer shaft.

7. Apply Glyptal to top of set screw to secure in place.

NOTE: Illustration depicts RWD base frame ONLY. Service of the Tilt and/or Recline Seating System is performed in the same manner for FWD models.
ADJUSTING THE RECLINE POTENTIOMETER ON SEATING SYSTEMS WITH TRCM (FIGURE 2).

1. Hook up remote programmer to the wheelchair TRCM controller.
2. Set remote programmer to the current status screen.

**NOTE:** For STEPS 1-2, refer to PROCEDURE 9 in the MKIV controller Owner’s Manual supplied with wheelchair.

3. Measure the back angle relative to the seat. Verify angles by using magnetic protractor. (available at any hardware store).
4. Remove the seat pan. Refer to REMOVING/INSTALLING THE SEAT PAN in PROCEDURE 6 of this manual.
5. Loosen the set screw on the recline potentiometer shaft.
6. Turn potentiometer until screen on remote programmer reads 90° recline angle in current status screen of TRCM.

**NOTE:** Back angle is relative to the seat frame.

**NOTE:** **TILT UP LIMIT** - Shows the status of the limit as programmed in the Performance Menu of TRCM. If the limit has been reached the status will be TRUE. If the seat or back is not at a limit the status will be FALSE.

**NOTE:** **TILT DOWN LIMIT** - Shows the status of the limit as programmed in the Performance Menu of TRCM. If the limit has been reached the status will be TRUE. If the seat or back is not at a limit the status will be FALSE.

7. While monitoring the current status screen on the remote programmer, tighten the set screw on the recline potentiometer shaft.
8. Apply Glyptal to top of set screw to secure in place.
(FIGURE 2)

1. Remove the back actuator shroud. Refer to REMOVING/INSTALLING SHROUDS in PROCEDURE 4 of this manual.

2. Disconnect the back actuator from the seating system wiring harness.

3. Remove the hex bolt and locknut that secure the existing back actuator to the spreader bar.

4. Remove the hex bolt, washers and locknut that secure the existing back actuator to the actuator mounting bracket.

5. Position the new back actuator on the back as shown in FIGURE 2.

6. Line up the mounting holes in the new back actuator and back actuator bracket.

14. Connect the new tilt actuator connector to the TRCM connector.

15. Reinstall the rear shroud. Refer to REMOVING/INSTALLING SHROUDS in PROCEDURE 4 of this manual.

---

This procedure includes the following:

Replacing Actuators

**WARNING**

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

ALWAYS turn wheelchair power OFF BEFORE adjusting, repairing or servicing the wheelchair; otherwise injury or damage can occur.

Pinch Points exist between seat and base frames. Use caution, otherwise injury may occur.

REPLACING ACTUATORS

Tilt Actuator (FIGURE 1)

1. Tilt the seat back until the front of the actuator is visible. Refer to OPERATING TILT ONLY SYSTEMS in PROCEDURE 3 of the owner's manual, 1090207.

2. Turn the wheelchair power OFF.

3. Remove the rear shroud. Refer to REMOVING/INSTALLING SHROUDS in PROCEDURE 3 of this manual.

5. Disconnect the existing tilt actuator connector from the TRCM connector.

6. Remove the shoulder bolt and locknut that secure the rear of the existing actuator to the actuator frame.

7. While holding the seat frame, remove the shoulder bolt and locknut that secure the existing actuator to the front pivot.

8. Remove the existing actuator from the actuator frame.

9. Position the new actuator on the actuator frame as shown in FIGURE 1.

10. Line up the mounting holes in the rear of the actuator and the actuator frame.

11. Install the shoulder bolt and locknut that secure the rear of the actuator to the actuator frame. Securely tighten. Refer to FIGURE 1 for correct hardware orientation.

12. Line up the mounting holes in the front of the actuator and the front pivot.

13. Install the shoulder bolt and locknut that secure the front of the actuator to the front pivot. Securely tighten. Refer to FIGURE 1 for correct hardware orientation.

16. Connect the new tilt actuator connector to the TRCM connector.

17. Reinstall the rear shroud. Refer to REMOVING/INSTALLING SHROUDS in PROCEDURE 4 of this manual.

---

**WARNING**

Hold the seat frame while removing the front actuator hardware, otherwise injury may occur.

1. Tilt the seat back until the front of the actuator is visible. Refer to OPERATING TILT ONLY SYSTEMS in PROCEDURE 3 of the owner's manual, 1090207.

2. Turn the wheelchair power OFF.

3. Remove the rear shroud. Refer to REMOVING/INSTALLING SHROUDS in PROCEDURE 3 of this manual.

5. Disconnect the existing tilt actuator connector from the TRCM connector.

6. Remove the shoulder bolt and locknut that secure the rear of the existing actuator to the actuator frame.

7. While holding the seat frame, remove the shoulder bolt and locknut that secure the existing actuator to the front pivot.

8. Remove the existing actuator from the actuator frame.

9. Position the new actuator on the actuator frame as shown in FIGURE 1.

10. Line up the mounting holes in the rear of the actuator and the actuator frame.

11. Install the shoulder bolt and locknut that secure the rear of the actuator to the actuator frame. Securely tighten. Refer to FIGURE 1 for correct hardware orientation.

12. Line up the mounting holes in the front of the actuator and the front pivot.

13. Install the shoulder bolt and locknut that secure the front of the actuator to the front pivot. Securely tighten. Refer to FIGURE 1 for correct hardware orientation.

---

**FIGURE 1 - REPLACING ACTUATORS - TILT ACTUATOR**

**Back Actuator (FIGURE 2)**

1. Remove the back actuator shroud. Refer to REMOVING/INSTALLING SHROUDS in PROCEDURE 4 of this manual.

2. Disconnect the back actuator from the seating system wiring harness.

3. Remove the hex bolt and locknut that secure the existing back actuator to the spreader bar.

4. Remove the hex bolt, washers and locknut that secure the existing back actuator to the actuator mounting bracket.

5. Position the new back actuator on the back as shown in FIGURE 2.

6. Line up the mounting holes in the new back actuator and back actuator bracket.
7. Install the hex bolt, washers and locknut that secure the new back actuator to the back actuator mounting bracket. Tighten securely. Refer to FIGURE 2 for hardware orientation.

8. Connect the back actuator to the seating system wiring harness.

9. Reinstall the back actuator shroud. Refer to REMOVING/INSTALLING SHROUDS in PROCEDURE 4 of this manual.

Recline Actuator

**CAUTION**

Seating Systems with Recline MUST be returned to Invacare if the recline actuator has to be replaced. Otherwise damage to the recline function may occur.

FIGURE 2 - REPLACING ACTUATORS - BACK ACTUATOR
NOTE: The vent tray CANNOT be used in conjunction with Gearless/Brushless motors.

**WARNINGS**

Maximum weight capacity for the vent tray is 40 lbs.

This ventilator tray was designed to hold a ventilator that is approximately 13-inches long, 14-1/2-inches wide, and 9-3/4-inches high. Ventilators larger than the above specifications may result in damage to the ventilator. After installation, ANY adjustments, repair or service and BEFORE use, make sure all attaching hardware is tightened securely - otherwise injury or damage may result.

**INSTALLING THE VENTILATOR TRAY ON ARROW WHEELCHAIR**

Repositioning the Wedge Plates on the Mounting Wedges (FIGURE 1)

NOTE: This section applies to installation of vent tray on Arrow FWD wheelchairs ONLY.

**WARNING**

ARROW FWD ONLY - When adding the vent tray, the wedge plates MUST be installed in the mounting position noted in the chart below, otherwise wheelchair will tip over resulting in serious injury.

1. Review the chart below and DETAIL "A" in FIGURE 1 to determine the correct mounting position of the wedge plate for the desired seat depth.

<table>
<thead>
<tr>
<th>DESIRED SEAT DEPTH</th>
<th>MOUNTING HOLE POSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WITHOUT VENT TRAY</td>
</tr>
<tr>
<td>16 to 18-inches</td>
<td>A</td>
</tr>
<tr>
<td>19 to 20-inches</td>
<td>B</td>
</tr>
<tr>
<td>21-inches</td>
<td>C</td>
</tr>
<tr>
<td>22-inches</td>
<td>D</td>
</tr>
</tbody>
</table>

2. Make sure the wheelchair is on a level surface.
3. Push the toggle switch forward towards the front of the wheelchair until a full tilt angle is achieved.

NOTE: Refer to the MKIV owner's manual, part number 1043576 for complete four-way toggle switch operating instructions.

4. Release the four-way toggle switch to a neutral position.
5. Remove the battery boxes. Refer to REMOVING/INSTALLING THE BATTERY BOXES in the Owner's Manual supplied with the wheelchair.
6. Remove the two (2) mounting screws and washers that secure the rear of the wedge plates to the mounting wedges. Save mounting screws and washers for reuse. Refer to DETAIL "A" in FIGURE 1.

**WARNING**

When removing the mounting screws that secure the front pivot to the wedge plate, the front and rear of the seating system must be supported, otherwise injury and/or damage may result.

7. Remove the four (4) mounting screws that secure the front pivot to the wedge plates. Save mounting screws for reuse. Refer to DETAIL "B" in FIGURE 1.
8. Slide the front pivot backward along the top of the wedge plates just enough to expose the front two (2) mounting screws that secure the wedge plates to the mounting wedges. Refer to DETAIL "B" in FIGURE 1.
9. Remove the two (2) soc head screws that secure the front of the wedge plates to the mounting wedges. Save mounting screws for reuse. Refer to DETAIL "A" in FIGURE 1.
10. Reposition the wedge plates to the mounting position determined in STEP 1.
11. Resecure the wedge plates to the mounting wedges with existing two (2) soc head screws. Torque both mounting screws to 160 in./lbs.

12. Resecure the front pivot to the wedge plates with existing four (4) mounting screws. Torque to 160 in./lbs.

13. Resecure the rear of the wedge plates to the mounting wedges with the existing two (2) mounting screws and washers. Torque to 160 in./lbs.

14. Reinstall the battery boxes. Refer to REMOVING/INSTALLING THE BATTERY BOXES in the Owner's Manual supplied with the wheelchair.

15. Pull the toggle switch backward towards the back of the wheelchair until a seat is in the horizontal DETAIL "A"

**FIGURE 1 - REPOSITIONING THE WEDGE PLATES ON THE MOUNTING WEDGES**

**Preparing the Arrow Base Frame for Installation of Vent Tray (FIGURE 2)**

**Arrow RWD**

1. Remove the end cap and extrusion cover strip. (NOT SHOWN)

**Arrow FWD**

1. Remove the rear shroud. Refer to REMOVING/INSTALLING THE REAR SHROUD in PROCEDURE 12 of the Owner's Manual, part number 1081227.

2. Remove the counterweight. Refer to REMOVING/INSTALLING THE COUNTERWEIGHT in PROCEDURE 12 of the Owner's Manual, part number 1081227.

3. Remove the two (2) mounting screws, washers and locknuts that secure the inhibitor switch to the left hand counter weight support. Refer to DETAIL "C".

4. Remove the mounting screw and washer that secures the left hand counter weight support to the rear of the base frame. Refer to DETAIL "D".

5. Remove the left hand counter weight support from the rear of the base frame.

6. Repeat STEPS 2-3 for right counter weight support.
6. Repeat STEPS 2-5 for other upper link bracket.
8. Reposition upper link brackets upward so that they are mounted directly underneath the spreader bar. Torque mounting screws to 75-in./lbs.

FOR TILT ONLY SEATING SYSTEMS EQUIPPED WITH ROUND BACK CANES (DETAIL "B").

CAUTION
MODELS EQUIPPED WITH SHORT BACK CANES - The upper link bracket MUST be secured to the back canes in the lower mounting position. Otherwise, during the recline operation, interference may occur between the upper link assembly and the spreader bar resulting in possible damage to the system. (DETAIL "B")

1. To determine type of back canes measure the distance from the top of the back cane to the upper mounting hole. See DETAIL "B". For long and medium length back canes, mount upper link bracket in the upper mounting position. For short length back canes, mount upper link bracket in the lower mounting position.
2. Secure upper link bracket to back cane with coved spacers, washers and two (2) 1/4-20 x 3/4-inch mounting screws in the position determined in STEP 1. Securely tighten as shown in DETAIL "B" of FIGURE 3.
3. Repeat STEP 1 for other back cane.

Installing Back Frame Hardware (FIGURE 3)
FOR TILT ONLY, RECLINE ONLY, AND TILT AND RECLINE SEATING SYSTEMS EQUIPPED WITH CHANNELED BACK CANES (DETAIL "A").

NOTE: Note the position of the spreader bar before removal for proper reinstallation.

1. Remove the spreader bar. Refer to REMOVING/INSTALLING THE SPREADER BAR in PROCEDURE 4 of the Service Manual, part number 1090208.
2. Loosely install two (2) T-nuts to one (1) upper link bracket with two (2) 1/4-20 x 1/2-inch mounting screws and washers.
3. Align the T-nuts, noted in STEP 2, with the channels in the back frame.
4. Insert the T-nuts into the channel and slide upper link bracket down below the mounting position for the spreader bar.
5. Loosely tighten the mounting screws of the upper link bracket.
FIGURE 3 - INSTALLING BACK FRAME HARDWARE

DETAIL "A"
- Channeled Back Cane
- Channel of Back Frame
- T-nut
- Washer
- Upper Link Bracket
- 1/4-20 x 1/2-inch Mounting Screws

DETAIL "B"
- Round Back Cane
- Upper Mounting Holes for Spreader Bar (Use with long back canes)
- Lower Mounting Holes for Spreader Bar (Use with short back canes)
- Coved Spacer
- Upper Link Bracket
- Washer
- 1/4-20 x 3/4-inch Mounting Screws

MEASURE THIS DISTANCE TO DETERMINE TYPE OF BACK CANES
- Short Back Canes 7-5/8-inches
- Medium Back Canes 9-5/8-inches
- Long Back Canes 11-5/8-inches

FIGURE 3 - INSTALLING BACK FRAME HARDWARE
Installing ventilator support and Lower Link Assemblies (FIGURE 4)

1. **RWD MODELS ONLY** - Insert a T-nut into the rear of the base frame.

2. Perform one (1) of the following:
   
   A. **RWD MODELS** - Align top mounting hole on right hand ventilator support with T-nut in base frame.
   
   B. **FWD MODELS** - Align the pin on the inside of the right ventilator support with the rearmost mounting hole on the base frame. See DETAIL "E".

3. Secure the right hand ventilator support to the rear of the right hand side of the base frame with the following mounting hardware as shown in FIGURE 3.
   
   A. **RWD MODELS** - one 5/16-18 x 3/4-inch mounting screw and washer. Torque mounting screw to 156-in/lbs.
   
   B. **FWD MODELS** - one 5/16-18 x 1-3/4-inch mounting screw. Torque mounting screw to 156-in/lbs.

4. Secure two (2) lower link assemblies to the ventilator support with two 1/4 x 1-inch mounting screws, washers and locknuts. Securely tighten.

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

6. **ARROW FWD ONLY** - Secure inhibitor switch to left hand ventilator support as shown. Refer to DETAIL "F" in FIGURE 4.

---

**WARNING**

The inhibitor switch MUST be secured in place before operation of wheelchair. If inhibitor switch does NOT stop the wheelchair from operating when ventilator battery tray is removed, DO NOT operate the wheelchair. Contact Invacare Technical Support at the number listed on the back page - otherwise injury or damage may occur.

---

**FIGURE 4 - INSTALLING THE VENTILATOR SUPPORT AND LOWER LINK ASSEMBLY**
Installing the Upper Link Assemblies and Ventilator/Battery Support Assembly (FIGURE 5)

1. Secure the upper link assembly to the upper link bracket with 1/4 x 1-inch mounting screw, washer, and locknut. Securely tighten.

2. Repeat STEP 1 for opposite side of wheelchair.

3. Secure the upper link assembly to mounting hole "A" of the ventilator support assembly with 1/4 x 1-3/4-inch mounting screw, spacer, washer and locknut. Securely tighten.

4. Secure the lower link assemblies to mounting holes "A" and "B" of the ventilator support as shown with 1/4 x 1-3/4-inch mounting screw, spacer, washer and locknut. Securely tighten.

5. Repeat STEPS 3-4 for other side of ventilator/battery support.

FIGURE 5 - INSTALLING UPPER LINK ASSEMBLIES AND VENTILATOR/BATTERY SUPPORT ASSEMBLY
Installing the Ventilator Tray (FIGURE 6)

**CAUTION**
When securing the ventilator tray to the ventilator tray support assembly, the ventilator tray MUST be mounted as shown in FIGURE 6, otherwise, damage to the ventilator tray may result.

1. Position the ventilator tray on the ventilator tray support assembly as shown in FIGURE 6.
2. Secure the front of ventilator tray to the ventilator support with two (2) 1/4-20 x 1-1/2-inch mounting screws, 3/4-inch diameter spacers, washers, and locknuts as shown in FIGURE 4. Torque to 75 in/lbs.
3. Secure the rear of ventilator tray to the ventilator support with two (2) 1/4-20 x 1-1/2-inch mounting screws, 11/16-inch diameter spacers, and locknuts as shown in FIGURE 5. Torque to 75 in/lbs.

![FIGURE 6 - INSTALLING THE VENTILATOR TRAY](image)

Installing Battery Tray Assembly

ARROW RWD WHEELCHAIRS (FIGURE 7).

1. If chair is equipped with group 22NF batteries, secure the rubber bumper to the battery tray support with 8-32 x 5/8-inch mounting screw and locknut. Securely tighten. Refer to DETAIL "G".
2. Install battery tray support into U-brackets as shown.
3. Secure battery tray support in place by installing detent pins into U-brackets.

![FIGURE 7 - INSTALLING BATTERY TRAY ASSEMBLY - ARROW RWD WHEELCHAIRS](image)

DETAIL "G" (REAR VIEW OF BATTERY TRAY ASSEMBLY)
ARROW FWD WHEELCHAIRS (FIGURE 8).

NOTE: The battery tray support is equipped with an inhibitor switch. This switch acts as a safety device and will NOT allow the wheelchair to operate if battery tray support is removed.

WARNING

Battery tray support MUST be installed into the ventilator supports in the orientation shown, otherwise anti-rotation pin CANNOT be installed.

The anti-rotation pin MUST be installed to keep the battery tray support from rotating back and forth and causing a bad connection of the inhibitor switch resulting in sudden loss of power to the wheelchair.

CAUTION

If the anti-rotation pin is NOT installed to keep the battery tray support from rotating back and forth, the ventilator battery box and the wheelchair battery box(es) may come in contact with each other resulting in possible injury or damage.

1. Install battery tray support into ventilator supports as shown in FIGURE 8.

2. Install anti-rotation pin through locking tab of battery tray support and into ventilator support as shown in FIGURE 8.

Install Rear Shrouds - Arrow FWD Only (FIGURE 11)

1. Secure the right hand shroud to the right hand ventilator support with two (2) 1/4-20 x 1/2-inch mounting screw and washers. Securely Tighten.

2. Repeat STEP 1 for left hand shroud.

FIGURE 8 - INSTALLING BATTERY TRAY ASSEMBLY - ARROW FWD WHEELCHAIRS

FIGURE 11 - INSTALL REAR SHROUDS - ARROW FWD ONLY
This procedure includes the following:
- Removing/Installing Battery Wiring Harness
- Replacing the Tilt and Recline Control Module (TRCM)
- Replacing the Wheelchair Controller

**WARNING**
After installation, ANY adjustments, repair or service and BEFORE use, make sure all attaching hardware is tightened securely - otherwise injury or damage may result. ALWAYS turn wheelchair power OFF BEFORE adjusting, repairing or servicing the wheelchair; otherwise injury or damage can occur.

Pinch Points exist between seat and base frames. Use caution, otherwise injury may occur.

**REMOVING/INSTALLING BATTERY WIRING HARNESS (FIGURE 1)**

**Removing**
1. Remove the battery box(es). Refer to REMOVING/INSTALLING THE BATTERIES in PROCEDURE X of this manual.
2. Remove the front and rear shrouds. Refer to REMOVING/INSTALLING THE SHROUDS in PROCEDURE 4 of this manual.
3. Remove the legrests. Refer to MECHANICAL ELLEVATING LEGRESTS in PROCEDURE 7 of the owner’s manual, part number 1090207 or INSTALLING/REMOVING LEGRESTS in the owner’s manual supplied with the base.
4. **FOR GROUP 24 BATTERIES ONLY** - Remove the two (2) mounting bolts and locknuts that secure the battery connector w/ bracket to the battery box sub-frame.
5. Disconnect the battery wiring harness (BLUE) connector from the controller (BLUE) connector. (Not Shown)
6. Disconnect the two (2) PTO connectors from the dual lock fastening strips located on the front of the base frame.
7. Separate the two (2) PTO connectors by pulling apart.
8. Cut the tie wrap that secure the charger port cable to the base frame.
9. Remove the two (2) mounting screws that secure the charger port to the mounting bracket.
10. Remove the battery wiring harness.

**Installing**
1. Secure the charger port of the new battery wiring harness to the mounting bracket with two (2) mounting screws. Securely tighten.
2. Perform one (1) of the following:
   A. **TILT/RECLINE AND RECLINE ONLY MODELS** - Connect the PTO connector of the NEW battery wiring harness to the PTO connector of the TRCM.
   B. **TILT ONLY** - Connect the PTO connector of the NEW battery wiring harness to the PTO connector of the Single Function Toggle Switch.
3. Secure the two (2) PTO connectors to the fastening strips located on the front of the base frame.
4. Connect the battery wiring harness (Blue) connector from the controller (Blue) connector. (Not Shown)
5. **FOR GROUP 24 BATTERIES ONLY** - Install the two (2) mounting bolts and locknuts that secure the battery connector w/ bracket to the battery box sub-frame. Torque to 120-inch pounds.
6. Install the legrests. Refer to MECHANICAL ELLEVATING LEGRESTS in PROCEDURE 7 of the owner’s manual, part number 1090207 or INSTALLING/REMOVING LEGRESTS in the owner’s manual supplied with the base.
7. Install the front and rear shrouds. Refer to REMOVING/INSTALLING THE SHROUDS in PROCEDURE 4 of this manual.
8. Install the battery box(es). Refer to REMOVING/INSTALLING THE BATTERIES in PROCEDURE X of this manual.
9. Cut the tie wrap that secure the charger port cable to the base frame.
10. Remove the two (2) mounting screws that secure the charger port to the mounting bracket.
11. Remove the battery wiring harness.
PROCEDURE 11

REPLACING THE TILT AND RECLINE CONTROL MODULE (TRCM) (FIGURES 2 AND 3)

1. Remove the battery box(es). Refer to REMOVING/INSTALLING THE BATTERIES in PROCEDURE 9 of the Service Manual, part number 1081229.

2. Remove the front and rear shrouds. Refer to REMOVING/INSTALLING THE SHROUDS in PROCEDURE 4 of this manual.

3. Remove the legrests. Refer to MECHANICAL EL-EVATING LEGRESTS in PROCEDURE 7 of the owner's manual, part number 1090207 or INSTALLING/REMOVING LEGRESTS in the Owner's Manual supplied with the base.

4. Perform each of the following: (FIGURE 2)
   A. Unthread and disengage the joystick controller cable from the wheelchair controller.
   B. Disconnect the 4-way switch cable connector from the TRCM cable connector.
   C. Disconnect the two (2) PTO connectors from the dual lock fastening strips located on the front of the base frame.
   D. Separate the two PTO connectors by pulling apart.
   E. Disconnect the following connectors from their respective TRCM connectors. (FIGURE 2 - DETAIL “A”)
      - VSR Actuator Connector
      - Recline Actuator Connector
      - Tilt Actuator Connector
      - Recline Potentiometer Connector
      - Tilt Potentiometer Connector
      - Power Leg Connectors

5. Remove the two (2) mounting screws and locknuts that secure the TRCM controller to the TRCM mounting plate. (FIGURE 3)

NOTE: Before removing the existing TRCM, note the orientation for proper installation of the NEW TRCM.

6. Remove existing TRCM from wheelchair. (FIGURE 3)

7. Position new/existing TRCM in the orientation noted above. (FIGURE 3)

8. Secure new/existing TRCM in position with two (2) mounting screws and locknuts. Torque mounting screws to 156-in/lbs. (FIGURE 3)

9. Reconnect TRCM and reassemble wheelchair by reversing STEPS 1-4. (FIGURE 2 and DETAIL “A”)
Figure 2 - Replacing the Tilt and Recline Control Module (TRCM)

**DETAIL "A" - TOP VIEW OF TILT AND RECLINE CONTROL MODULE (TRCM)**

*NOTE: For illustration purposes, some cable lengths are not shown to true size.*

![Diagram of TRCM](image_url)

- **Rear of TRCM Controller**
  - To Tilt Actuator
  - To Recline Actuator
  - To Battery Wiring Harness
  - To VSR Actuator
  - To Tilt Potentiometer
  - To Recline Potentiometer
  - To Battery
  - TRCM Cable Connector
  - Mounting Screw
  - 4-way Switch Cable Connector
  - PTO Connectors
  - TRCM Cable Connector
  - Joystick Controller Cable
  - *Wheelchair Controller

*NOTE: The two types of wheelchair controllers are the MKIV controller and the gearless/brushless controller.*

**FIGURE 2 - REPLACING THE TILT AND RECLINE CONTROL MODULE**
REPLACING THE WHEELCHAIR CONTROLLER (FIGURE 4)

1. Remove the TRCM controller. Refer to REPLACING THE TILT AND RECLINE CONTROL MODULE (TRCM) in this procedure of the manual.

2. Remove the three (3) mounting screws that secure the wheelchair controller to the TRCM mounting bracket.

   NOTE: Before removing the existing wheelchair controller, note the orientation for proper installation of the NEW wheelchair controller.

3. Remove the wheelchair controller from the TRCM mounting bracket.

4. Secure the NEW wheelchair controller in the orientation noted above with three (3) mounting screws. Securely Tighten.

5. Reinstall the TRCM controller. Refer to REPLACING THE TILT AND RECLINE CONTROL MODULE (TRCM) in this procedure of the manual.

   NOTE: The two types of wheelchair controllers are the MKIV controller and the gearless/brushless controller.

FIGURE 4 - REPLACING THE WHEELCHAIR CONTROLLER

*NOTE: It is not required to remove the wheelchair controller and/or TRCM mounting plate to replace the TRCM.

FIGURE 3 - REPLACING THE TILT AND RECLINE CONTROL MODULE

*NOTE: The two types of wheelchair controllers are the MKIV controller and the gearless/brushless controller.
Connecting Electronics
(FIGURE 5)

**WARNING**
Wiring MUST be routed and secured properly to ensure that wiring does NOT become entangled and damaged during normal operation of seating system.

NOTE: Terminology definition - Tilt and Recline Control Module is referred to as TRCM in this instruction sheet.

1. Identify each TRCM cable lead. Refer to FIGURE 10.
2. Once TRCM cable leads are identified, refer to the CABLE CONNECTION AND TIE-WRAP INSTALLATION INSTRUCTIONS chart on the following pages.
3. Route the cables, install tie wraps, and make the following connections according to the following instructions and the CABLE CONNECTION AND TIE-WRAP INSTALLATION INSTRUCTIONS:
   - VSR Actuator Connector*
   - Recline Actuator Connector*
   - Tilt Actuator Connector
   - Recline Potentiometer Connector
   - Tilt Potentiometer Connector
*NOTE: Tilt Only seating systems do not have these connections.

4. Connect the four way switch connector to the TRCM connector.
5. RWD ONLY - Install the power take-off lead connection onto the dual lock fastening strips located on the front of the base frame.
6. Plug joystick cable into MKIV controller.
7. Install new tie-wraps and secure joystick cable and 4-way switch cable to wheelchair frame.
8. Install the battery boxes. Refer to INSTALLING/REMOVING GROUP 24 BATTERY BOXES in PROCEDURE 9 of this manual.
10. The tilt and recline potentiometers must be calibrated, refer to TILT AND RECLINE POTENTIOMETER CALIBRATION in PROCEDURE 12 of this manual.
11. Perform the steps outlined in the INSPECTION CHECKLIST in this procedure.

**NOTE:** Refer to the chart on the following pages for cable connections and tie-wrap locations.

---

**FIGURE 5 - IDENTIFICATION OF TRCM CABLE LEADS**
Cable Connection and Tie-Wrap Installation Instructions for TRCM (Tilt and Recline Control Module) cable Leads

NOTE: This section applies to Tilt and Recline Seating Systems, Tilt Only Seating Systems (equipped with optional TRCM) and Recline Only Seating Systems

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>REFER TO DETAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>This TRCM cable lead plugs into the battery wiring harness and is secured to the front of base frame with dual lock fastener and a tie-wrap.</td>
<td>“A”</td>
</tr>
<tr>
<td>2</td>
<td>This TRCM cable lead is for the tilt and recline potentiometers and is tie-wrapped to the L.H. clevis bracket of the base frame. NOTE: This cable splits into two leads: one (1) for the tilt potentiometer and one (1) for the recline potentiometer. The cable is secured to the base frame before the split.</td>
<td>“B”</td>
</tr>
<tr>
<td>3</td>
<td>This TRCM cable lead is for the VSR actuator, the tilt actuator, and the recline actuator and is routed along side and tie-wrapped to the R.H. clevis bracket of the base frame. NOTE: This cable splits into three leads: one for VSR actuator and one for recline actuator. The cable is secured to the base frame before the split. The actual connection of the TRCM cable lead and the tilt actuator cable lead is bundled with excess cable of VSR lead and recline lead and is tie-wrapped together with the two (2) leads for the power legs and resides on the right side of of the base frame behind the side shroud. NOTE: FOR TILT ONLY SEATING SYSTEMS - the TRCM leads for the VSR and Recline actuators are NOT used and are tie wrapped together. NOTE: FOR RECLINE ONLY SEATING SYSTEMS - the TRCM lead for the Tilt actuators is NOT used and is tie wrapped to the cables for VSR and recline actuators</td>
<td>“C”</td>
</tr>
<tr>
<td>4</td>
<td>This TRCM lead is as follows: one connector plugs directly into the wheelchair controller. The excess cable is bundled together and tie-wrapped in place and the programmer port is left to hang in front.</td>
<td>“A”</td>
</tr>
<tr>
<td>5</td>
<td>This TRCM cable lead connects to the four way switch connector. Excess cable is then bundled and tie-wrapped along side of the connection described above.</td>
<td>“A”</td>
</tr>
<tr>
<td>6</td>
<td>The connecting cable for the recline potentiometer is secured to the underside of the shroud on the left hand side of the chair with adhesive back loop.</td>
<td>“D”</td>
</tr>
<tr>
<td>7</td>
<td>This cable is routed down the right hand side of the wheelchair and is secured to the seat frame with a tie-wrap.</td>
<td>“E”</td>
</tr>
<tr>
<td>8</td>
<td>This cable is for the recline actuator and is routed and secured to the underside of the recliner shroud.</td>
<td>“F”</td>
</tr>
<tr>
<td>9</td>
<td>This cable is for the tilt actuator and is secured to itself in the back and secured to the front pivot.</td>
<td>“G”</td>
</tr>
</tbody>
</table>
**NOTE:** These items are for reference only to provide an additional view to support other details.

**DETAIL "B" - TOP VIEW OF BASE FRAME WITH PARTIAL SEATING SYSTEM**

- Tie-Wrap for Tilt and Recline Potentiometer cable
- Clevis Bracket of Base Frame (See Detail "A" for additional view)

**NOTE:** Right and Left are determined by sitting in the wheelchair.

**FIGURE 6 - CABLE CONNECTION AND TIE-WRAP INSTALLATION INSTRUCTIONS FOR TRCM (TILT AND RECLINE CONTROL MODULE) CABLE LEADS**
PROCEDURE 11

RWD WHEELCHAIRS

DETAIL “D”

Detail “E” - View is of Back Right Corner of Seat Frame

Detail “F”

Detail “G”

Front of Tilt Actuator

Rear of Tilt Actuator

**FIGURE 7 - CABLE CONNECTION AND TIE-WRAP INSTALLATION INSTRUCTIONS FOR TRCM (TILT AND RECLINE CONTROL MODULE) CABLE LEADS**
This procedure includes the following:
Removing/Installing Battery Wiring Harness
Replacing the Tilt and Recline Control Module (TRCM)
Replacing the Wheelchair Controller

REMOVING/INSTALLING BATTERY WIRING HARNESS (FIGURE 1)

Removing Battery Wiring Harness

1. Make sure the wheelchair is on a level surface.
2. Pull single function toggle switch back towards rear of the wheelchair until seat reaches the maximum tilt angle of 45°.
3. Remove the mechanical legrests. Refer to MECHANICAL ELEVATING LEGRESTS in PROCEDURE 7 of the owner’s manual, part number 1090207 or INSTALLING/REMOVING LEGRESTS in the owner’s manual supplied with the base.
4. Remove the front and rear shrouds. Refer to REMOVING/INSTALLING THE SHROUDS in PROCEDURE 3 of this manual.
5. Remove the counterweight. Refer to REMOVING/INSTALLING THE COUNTERWEIGHT in PROCEDURE 12 of the Owner’s Manual, part number 1081227.
6. Remove the battery boxes. Refer to INSTALLING/REMOVING GROUP 24 BATTERY BOXES in PROCEDURE 9 of the Owner’s Manual, part number 1081227.
7. Remove the two (2) mounting screws that secure the battery charger port to the mounting bracket and remove the battery charger port (DETAIL “A”).
8. Remove the two (2) mounting screws and locknuts that secure the wiring harness w/bracket to the battery box sub-frame (DETAIL “B”).
9. Cut tie-wrap A, which secures the following group of connectors to the base frame crossmember (DETAIL “C”):
   A. Power take-off connector of the TRCM.
   B. Power take-off connector of sensor cable assembly.
   C. Power take-off connector of battery wiring harness.
10. Disconnect the power take-off connector of the battery wiring harness from the power take-off connector of the sensor cable assembly and power take-off connector of TRCM (DETAIL “C”).
11. Cut tie-wrap B, which secures the battery charger cable and the RIGHT motor cable to the battery box sub-frame (DETAIL “D”).
12. Disconnect the battery harness/charger cable (BLUE) from the controller connector (BLUE) (DETAIL “E”).
13. Remove the battery wiring harness.

Installing Battery Wiring Harness

1. Connect the battery harness/charger cable (BLUE) to the controller connector (BLUE) (DETAIL “E”).
2. Connect the power take-off connector of the battery wiring harness to the power take-off connector of the sensor cable assembly and the power take-off connector of the TRCM (DETAIL “C”).
3. Secure the following power take-off connector assembly to the base frame crossmember with a NEW tie wrap (DETAIL “C”).
   A. Power take-off connector of the TRCM.
   B. Power take-off connector of the sensor cable.
   C. Power take-off connector of the battery wiring harness.
4. Install the two (2) mounting screws and locknuts that secure the wiring harness w/bracket to the battery box sub-frame. Use Loctite 242 and torque mounting screws to 160-inch pounds (DETAIL “B”).
5. Secure the battery charger cable and the RIGHT motor cable to the battery box sub-frame with a NEW tie wrap (DETAIL “D”).
6. Reinstall the mounting screw that secures the battery charger port to the mounting bracket (DETAIL “A”). Securely Tighten.
7. Reinstall the battery boxes. Refer to INSTALLING/REMOVING GROUP 24 BATTERY BOXES in PROCEDURE 9 of the Owner’s Manual, part number 1081227.
8. Reinstall the counterweight. Refer to REMOVING/INSTALLING THE COUNTERWEIGHT in PROCEDURE 12 of the Owner’s Manual, part number 1081227.
9. Install the front and rear shrouds. Refer to REMOVING/INSTALLING THE SHROUDS in PROCEDURE 3 of this manual.
10. Install the legrests. Refer to MECHANICAL ELEVATING LEGRESTS in PROCEDURE 7 of the owner’s manual, part number 1090207 or INSTALLING/REMOVING LEGRESTS in the owner’s manual supplied with the base.
11. Push single function toggle switch forward towards front of the wheelchair until seat reaches the minimum tilt angle of 0°.
FIGURE 1 - REMOVING/INSTALLING BATTERY WIRING HARNESS
REPLACING THE TILT AND RECLINE CONTROL MODULE (TRCM) (FIGURE 2)

1. Make sure the wheelchair is on a level surface.
2. Pull single function toggle switch back toward rear of the wheelchair until seat reaches the maximum tilt angle of 45°.
3. Remove the legrests. Refer to MECHANICAL EL-EVATING LEGRESTS in PROCEDURE 7 of the owner’s manual, part number 1090207 or INSTALLING/REMOVING LEGRESTS in the owner’s manual supplied with the base.
4. Remove the front and rear shrouds. Refer to REMOVING/INSTALLING THE SHROUDS in PROCEDURE 3 of this manual.
5. Remove the counterweight. Refer to REMOVING/INSTALLING THE COUNTERWEIGHT in PROCEDURE 12 of the Owner’s Manual, part number 1081227.
6. Remove the battery boxes. Refer to INSTALLING/REMOVING GROUP 24 BATTERY BOXES in PROCEDURE 9 of the Owner’s Manual, part number 1081227.
7. Perform each of the following:
   A. Unthread and disengage the joystick controller cable from the wheelchair controller.
   B. Disconnect the 4-way switch cable connector from the TRCM cable connector.
   C. Separate the power take-off lead of the TRCM from the power take-off leads of the battery wiring harness and sensor cable.
   D. Disconnect the following connectors from their respective TRCM connectors. (FIGURE 2 - DETAIL “A”)
      - VSR Actuator Connector*
      - Recline Actuator Connector*
      - Tilt Actuator Connector
      - Recline Potentiometer Connector
      - Tilt Potentiometer Connector
      - Power Leg Connectors
*NOTE: Tilt Only seating systems do not have these connections.
E. Unplug MKIV programmer cable from MKIV controller.
F. Disconnect MKIV programmer cable from TRCM port bracket
G. Unplug TRCM programmer extension cable from TRCM.
TOP VIEW OF TILT AND RECLINE CONTROL MODULE (TRCM)

(STEP 7D) TRCM Connectors
To VSR Actuator
To Tilt Actuator
To Recline Actuator
To Recline Potentiometer
To Tilt Potentiometer
To power take of leads of Battery Wiring Harness and Sensor Cable (STEP 7C)

Crossmember of Base Frame
Power Take-off Lead of the Battery Wiring Harness

To MKIV Controller or Gearless/Brushless Controller (STEP 7E)

Programmer Port for MKIV Controller or Gearless/Brushless Controller (STEP 7F)

Programmer Extension Cable plugs in here (STEP 7G)

4-way Switch Connector (STEP 7B)

NOTE: For illustration purposes, some cable lengths are not shown to true size.

FIGURE 2 - REPLACING THE TILT AND RECLINE CONTROL MODULE (TRCM)
Removing the Seating System from the Base Frame (FIGURE 3)

1. Remove the two (2) mounting screws and washers that secure the rear of the wedge plates to the mounting wedges. Save mounting screws and washers for reuse. Refer to DETAIL "A" in FIGURE 3.

2. Remove the four (4) mounting screws that secure the front pivot to the two (2) wedge plates. Save mounting screws for reuse. Refer to DETAIL "B" in FIGURE 3.

3. Slide the front pivot backward along the top of the two (2) wedge plates just enough to expose the front two (2) mounting screws that secure the wedge plates to the mounting wedges. Refer to DETAIL "B" in FIGURE 3.

NOTE: Note the mounting position of the wedge plates on the mounting wedges before removing for proper reinstallation. See DETAIL "A".

4. Remove the two (2) soc head screws that secure the front of the wedge plates to the mounting wedges. Save the two (2) mounting screws for reuse. Refer to DETAIL "A" in FIGURE 3.

5. Resecure the front pivot to wedge plates with existing four (4) mounting screws. Loosely tighten.

WARNING
When removing the four (4) mounting screws that secure the front pivot to the two (2) wedge plates, the front and rear of the seating system must be supported, otherwise injury and/or damage may result.

NOTE: When removing the four (4) mounting screws that secure the front pivot to the two (2) wedge plates, the front and rear of the seating system must be supported, otherwise injury and/or damage may result.

6. WARNING
There MUST be at least two (2) assistants when removing the 2GTR seating system from the base frame. The weight of the seating system without the user is between 100 and 110 lbs. Use proper lifting techniques (lift with your legs) to avoid injury.

NOTE: Invacare strongly recommends that two (2) assistant remove the seating system from the base frame.

7. Bend your knees and keep your back straight.

8. Using non-removable (non-detachable) parts of the seating system, lift the seating system off of the base frame and transfer to the ground/floor.

FIGURE 3 - REMOVING THE SEATING SYSTEM FROM THE BASE FRAME
Installing the Tilt and Recline Control Module (TRCM) - Arrow FWD (FIGURE 4)

1. Remove the two (2) mounting screws and lock-nuts that secure the wiring harness to the battery box sub-frame (DETAIL "A").

2. Remove the four (4) mounting screws and washers that secure the battery box sub-frame to the base frame (DETAIL "A").

3. Cut the tie-wraps that secure cable for the inhibitor switch to the battery box sub-frame.

4. Remove the battery box sub-frame from the base frame.

NOTE: Before removing the existing TRCM, note the orientation of the TRCM on the TRCM mounting plate for proper installation of NEW TRCM.

5. Remove the two (2) 5/16-18 x 3/4-inch mounting screws, washers, and locknuts that secure the EXISTING TRCM to the TRCM mounting plate.

6. Install NEW TRCM onto TRCM mounting plate in the orientation noted above with existing mounting screws, washers, and locknuts. Torque to 160 in./lbs. (DETAIL "B")

Preparation for Cable Connection (FIGURE 5)

1. Place a support block on the ground/floor inside the base frame. The support block should be positioned up toward the front end of the base frame.

NOTE: The width and depth of the support block can vary as long as the bottom surface of the controller is supported. The height of the support block should be approximately 6-inches in height so that the battery box sub-frame sits evenly.

2. Position the battery box sub-frame and TRCM assembly so that the TRCM rests on the support block and the rear of the battery box sub-frame rests on the rear of the base frame as shown in FIGURE 5.
NOTE: The battery box sub-frame and TRCM assembly should be positioned approximately 6-8-inches away from the base frame crossmember. This distance allows a work area while connecting the TRCM cables.

3. If desired, the rear of the battery box sub-frame can be secured to the sides of the base frame.

**Cable Connections (FIGURES 6 AND 7)**

NOTE: Only part of the TRCM cable connections can be made at this time. Once the seating system is installed the remaining cable connections can be made.

NOTE: Once all cable connections are made, all wire routings MUST be contained in the area between the front of the battery box and the crossmember of the base frame.

1. Secure the battery wiring harness to the battery box sub-frame with the two (2) existing mounting screws and locknuts. Torque to 160 in./lbs.

2. Plug the other end of the programmer extension cable into the TRCM programming port.

3. Secure the programmer port for the MKIV controller to the TRCM port bracket in the same manner as the programmer extension cable. Refer to FIGURE 11 for illustration of programmer port.

4. The second cable that extends from the programmer port plugs into the MKIV controller. Refer to FIGURE 11 for illustration.

NOTE: The plug for the MKIV controller is a five (5) pin plug and should be inserted into the five (5) pin receptacle on the MKIV controller. There are markings to indicate correct receptacle on the surface of the controller.

5. Plug the power take-off lead of the TRCM into the other two (2) power take-off leads. (One power take-off lead for the battery wiring harness and one power take-off lead for the inhibitor switch. (FIGURE 11)

NOTE: The power take-off lead of the TRCM is to be routed to the left side of the chair to accommodate the connection for inhibitor switch.

6. Make sure the following cable leads are easily accessible for making the proper connection later in the installation process:
   - VSR Actuator Connector*
   - Recline Actuator Connector*
   - Tilt Actuator Connector
   - Recline Potentiometer Connector
   - Tilt Potentiometer Connector
   - Power Leg Connectors

*NOTE: If applicable. Tilt Only seating systems do not have these connections.
**PROCEDURE 12**

**FWD WHEELCHAIRS**

**FRONT VIEW OF TILT AND RECLINE CONTROL MODULE (TRCM)**

- **Connects to two (2) other PTO's** (Battery wiring harness and inhibitor switch)
- **Connects To 4-way Switch**
- **To Tilt Potentiometer**
- **To Recline Potentiometer**
- **To VSR Actuator (if applicable)**
- **To Recline Actuator (if applicable)**
- **To Tilt Actuator**
- **To Power Legs**

NOTE: For illustration purposes, some cable lengths are not shown to true size.

**FIGURE 7 - CABLE CONNECTIONS**

**Re-installing the Battery Box Sub-Frame (FIGURE 8)**

1. Remove the support block.
2. Secure the battery box sub-frame to the base frame with the existing four (4) mounting screws and washers. Torque to 160 in./lbs.

**FIGURE 8 - RE-INSTALLING THE BATTERY BOX SUB-FRAME**
Reinstalling the Seating System on the Base Frame (FIGURE 9)

**WARNING**
There MUST be at least two (2) assistants when lifting the 2GTR seating system for installation onto the base frame. The weight of the seating system without the user is between 100 and 110 lbs. Use proper lifting techniques (lift with your legs) to avoid injury.

NOTE: Invacare strongly recommends that two (2) assistant remove the seating system from the base frame.

1. Bend your knees and keep your back straight.

NOTE: When installing the seating system position the wedge plates on the mounting wedges in the position noted from REMOVING THE SEATING SYSTEM in this instruction sheet.

2. Using non-removable (non-detachable) parts of the seating system, lift the seating system off of the ground/floor and position on the base frame.

**WARNING**
When removing the mounting screws that secure the front pivot to the wedge plate, the front and rear of the seating system must be supported, otherwise injury and/or damage may result.

3. Remove the four (4) mounting screws that secure the front pivot to the wedge plates. Save mounting screws for reuse. Refer to DETAIL "B" in FIGURE 9. DETAIL "A"

4. Slide the front pivot backward along the top of the wedge plates just enough to expose the front two (2) mounting holes that secure the wedge plates to the mounting wedges. Refer to DETAIL "B" in FIGURE 9.

5. Install the two (2) soc head screws that secure the front of the wedge plates to the mounting wedges. Save mounting screws for reuse. Refer to DETAIL "A" in FIGURE 9.

6. Install the two (2) mounting screws and washers that secure the rear of the wedge plates to the mounting wedges. Save mounting screws and washers for reuse. Refer to DETAIL "A" in FIGURE 9.

7. Slide the front pivot forward along the top of the wedge plates and align mounting holes of front pivot with mounting holes of wedge plates.

8. Resecure the front pivot to wedge plates with existing four (4) mounting screws. Loosely tighten.

**FIGURE 9 - REPOSITIONING THE WEDGE PLATES ON THE MOUNTING WEDGES**
Connecting Electronics (FIGURE 10)

**WARNING**

Wiring MUST be routed and secured properly to ensure that wiring does NOT become entangled and damaged during normal operation of seating system.

1. Identify each TRCM cable lead. Refer to FIGURE 10.
2. Once TRCM cable leads are identified, refer to the CABLE CONNECTION AND TIE-WRAP INSTALLATION INSTRUCTIONS chart on the following pages.
3. Route the cables, install tie wraps, and make the following connections according to the following instructions and the CABLE CONNECTION AND TIE-WRAP INSTALLATION INSTRUCTIONS:
   - VSR Actuator Connector*
   - Recline Actuator Connector*
   - Tilt Actuator Connector
   - Recline Potentiometer Connector
   - Tilt Potentiometer Connector

*NOTE: If applicable, Tilt Only seating systems do not have these connections.

4. Connect the four way switch connector to the TRCM connector.
5. Plug joystick cable into MKIV controller.
6. Install new tie-wraps and secure joystick cable and 4-way switch cable to wheelchair frame.
7. Install the battery boxes. Refer to INSTALLING/REMOVING GROUP 24 BATTERY BOXES in PROCEDURE 9 of this manual.
8. Install the counterweight. Refer to REMOVING/INSTALLING THE COUNTERWEIGHT in PROCEDURE 12 of the Owner’s Manual, part number 1081227.
9. The tilt and recline potentiometers must be calibrated, refer to TILT AND RECLINE POTENTIOMETER CALIBRATION in PROCEDURE 12 of this manual.
10. Perform the steps outlined in the INSPECTION CHECKLIST in this procedure.

**NOTE:** Refer to the chart on the following pages for cable connections and tie-wrap locations.

---

**TOP VIEW OF TILT AND RECLINE CONTROL MODULE (TRCM)**

To VSR Actuator

To Recline Actuator

To Tilt Actuator

To Power Legs

To Wheelchair Controller

Programmer Port for MKIV Controller or Gearless/Brushless Controller

To 4-way Switch

To Battery Wiring Harness

**FIGURE 10 - IDENTIFICATION OF TRCM CABLE LEADS**
**Cable Connection and Tie-Wrap Installation Instructions for TRCM (Tilt and Recline Control Module) Cable Leads (FIGURES 11 AND 12)**

*NOTE: This section applies to Tilt and Recline Seating Systems, Tilt Only Seating Systems (equipped with optional TRCM) and Recline Only Seating Systems*

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>This TRCM cable lead plugs into the battery wiring harness and magnetic inhibitor switch and is secured to the front of base frame with a tie-wrap.</td>
</tr>
<tr>
<td>2</td>
<td>This TRCM cable lead is for the tilt and recline potentiometers and is tie-wrapped to the L.H. clevis bracket of the base frame. <strong>NOTE: This cable splits into two leads: one (1) for the tilt potentiometer and one (1) for the recline potentiometer. The cable is secured to the base frame before the split.</strong></td>
</tr>
<tr>
<td>3</td>
<td>This TRCM cable lead is for the VSR actuator, the tilt actuator, and the recline actuator and is routed along side and tie-wrapped to the R.H. clevis bracket of the base frame. <strong>NOTE: This cable splits into three leads: one for VSR actuator and one for recline actuator. The cable is secured to the base frame before the split. The actual connection of the TRCM cable lead and the tilt actuator cable lead is bundled with excess cable of VSR lead and recline lead and is tie-wrapped together with the two (2) leads for the power legs and resides on the right side of the base frame behind the side shroud.</strong></td>
</tr>
<tr>
<td></td>
<td><strong>NOTE: FOR TILT ONLY SEATING SYSTEMS - the TRCM leads for the VSR and Recline actuators are NOT used and are tie wrapped together.</strong></td>
</tr>
<tr>
<td></td>
<td><strong>NOTE: FOR RECLINE ONLY SEATING SYSTEMS - the TRCM lead for the Tilt actuators is NOT used and is tie wrapped to the cables for VSR and recline actuators</strong></td>
</tr>
<tr>
<td>4</td>
<td>This TRCM lead is as follows: Left hand connector plugs directly into the wheelchair controller. Right Hand connector is secured to the TRCM bracket.</td>
</tr>
<tr>
<td>5</td>
<td>Programmer extension cable plugs into TRCM and TRCM bracket.</td>
</tr>
<tr>
<td>6</td>
<td>This TRCM cable lead connects to the four way switch connector. Excess cable is then bundled and tie-wrapped and resides between front crossmember and battery box sub-frame.</td>
</tr>
<tr>
<td>7</td>
<td>The connecting cable for the recline potentiometer is secured to the underside of the shroud on the left hand side of the chair with adhesive back loop.</td>
</tr>
<tr>
<td>8</td>
<td>This cable is routed down the right hand side of the wheelchair and is secured to the seat frame with a tie-wrap.</td>
</tr>
<tr>
<td>9</td>
<td>This cable is for the recline actuator and is routed and secured to the underside of the recliner shroud.</td>
</tr>
<tr>
<td>10</td>
<td>This cable is for the tilt actuator and is secured to itself in the back and secured to the front pivot.</td>
</tr>
</tbody>
</table>
PROCEDURE 12
FWD WHEELCHAIRS

DETAIL “A”

Base Frame Crossmember
Power Take-off Connector Of The Sensor Cable
Tie Wrap A

DETAIL "B" - TOP VIEW OF BASE FRAME WITH PARTIAL SEATING SYSTEM

Tie-Wrap for Tilt and Recline Potentiometer cable
TRCM Cable Lead for Tilt and Recline Potentiometers
Clevis Bracket of Base Frame

DETAIL “C” - VIEW OF RIGHT SIDE OF WHEELCHAIR

Tilt Actuator Cable
TRCM cable for Tilt Actuator Cable
Power Leg Connectors

NOTE: Right and Left are determined by sitting in the wheelchair.

DETAIL “D”

TRCM Bracket
TRCM Programmer Extension Cable

FIGURE 11 - CABLE CONNECTION AND TIE-WRAP INSTALLATION INSTRUCTIONS FOR TRCM (TILT AND RECLINE CONTROL MODULE) CABLE LEADS

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FIGURE 12 - CABLE CONNECTION AND TIE-WRAP INSTALLATION INSTRUCTIONS FOR TRCM (TILT AND RECLINE CONTROL MODULE) CABLE LEADS
REMOVING/INSTALLING MKIV CONTROLLER (FIGURE 13)

Removing

1. Make sure the wheelchair is on a level surface.
2. Pull single function toggle switch back towards rear of the wheelchair until seat reaches the maximum tilt angle of 45°.
3. Remove the legrests. Refer to MECHANICAL ELEVATING LEGRESTS in PROCEDURE 7 of the owner’s manual, part number 1090207 or INSTALLING/REMOVING LEGRESTS in the owner’s manual supplied with the base.
4. Remove the front and rear shrouds. Refer to REMOVING/INSTALLING THE SHROUDs in PROCEDURE 3 of this manual.
5. Remove the counterweight. Refer to REMOVING/INSTALLING THE COUNTERWEIGHT in PROCEDURE 12 of the Owner’s Manual, part number 1081227.
6. Remove the battery boxes. Refer to INSTALLING/REMOVING GROUP 24 BATTERY BOXES in PROCEDURE 9 of this manual.
7. Perform the following:
   A. Unthread and disengage the joystick controller cable from the wheelchair controller (DETAIL “A”).
   B. Unplug MKIV programmer cable from MKIV controller (DETAIL “A”).
   C. Disconnect controller connectors from right and left motor connectors (DETAIL “A”).
   D. Disconnect wiring harness connector (blue) from MKIV connector (blue) (DETAIL “A”).
   E. Remove the mounting screw, washer, and spacer that secure the top of the MKIV controller to the base frame. Save mounting hardware for reuse (DETAIL “B”).
   F. Remove the mounting screw, washer, that secure the shroud mounting bracket and bottom of the MKIV controller to the base frame. Save mounting hardware and shroud mounting bracket for reuse (DETAIL “B”).
   G. Remove MKIV controller from base frame.

Installing

1. Perform the following:
   A. Secure the shroud mounting bracket and bottom of the MKIV controller to the base frame with existing mounting screw, and washer. Refer to DETAIL “B” for hardware orientation.
   B. Secure the top of the MKIV controller to the base frame with the EXISTING mounting screw, washer, and spacer (DETAIL “B”).
   C. Connect wiring harness connector (blue) to MKIV connector (blue) (DETAIL “A”).
   D. Connect controller connectors to right and left motor connectors (DETAIL “A”).
   E. Plug MKIV programmer cable into MKIV controller (DETAIL “A”).
   F. Engage and thread the joystick controller cable into the MKIV controller (DETAIL “A”).
2. Install the battery boxes. Refer to INSTALLING/REMOVING GROUP 24 BATTERY BOXES in PROCEDURE 9 of this manual.
3. Install the counterweight. Refer to REMOVING/INSTALLING THE COUNTERWEIGHT in PROCEDURE 12 of the Owner’s Manual, part number 1081227.
4. Install the front and rear shrouds. Refer to REMOVING/INSTALLING THE SHROUDs in PROCEDURE 3 of this manual.
5. Install the legrests. Refer to MECHANICAL ELEVATING LEGRESTS in PROCEDURE 7 of the owner’s manual, part number 1090207 or INSTALLING/REMOVING LEGRESTS in the owner’s manual supplied with the base.
6. Push single function toggle switch forward towards front of the wheelchair until seat reaches the minimum tilt angle of 0°.
FIGURE 13 - REMOVING/INSTALLING MKIV CONTROLLER

DETAIL “A”

- Joystick Controller Cable
- MKIV Programmer Cable
- Wiring Harness Connector (BLUE)
- Controller Connectors for Right and Left Motors

DETAIL “B”

- Locknut
- Spacer
- MKIV Controller
- Washer
- Mounting Screw
- Shroud Mounting Bracket
- Washer
- Mounting Screw
This procedure includes the following:

Potentiometer Calibration
Inspection Checklist

POTENTIOMETER CALIBRATION

2GTR Systems

This screen allows you to calibrate the tilt and recline position feedback sensors (potentiometers). The potentiometers are adjusted at the factory, so this calibration should only be necessary if a potentiometer or TRCM Controller is damaged and must be replaced.

If the potentiometer is being replaced, the shaft must first be rotated fully clockwise (looking at the end of the shaft) and then rotate the shaft counterclockwise no more than 1/8 turn. Tighten the set screw. The TRCM may now be calibrated using the Remote Programmer.

After selecting CALIBRATIONS from the main menu the calibrations menu will be displayed.

Select the menu item that corresponds to the potentiometer to be adjusted. The up angle adjustment screen will then be displayed.

TILT ANGLE POTENTIOMETER CALIBRATION - Position the seat back in the fully upright position. Using a protractor or angle pitch calculator, measure the actual angle of the seat with respect to the floor. This measurement should range from 0 - 10 degrees. Adjust the tilt up angle setting on the programmer to the measured angle. Then press the SELECT key on the programmer to proceed to the tilt down adjustment screen.

TILT UP ANGLE
5
PRESS SELECT TO CONTINUE

TILT DOWN ANGLE
50
PRESS SAVE TO SET ANGLES

RECLINE ANGLE POTENTIOMETER CALIBRATION - Position the seat back in the fully upright position. Using a protractor or angle pitch calculator, measure the actual angle of the back with respect to the seat pan. This measurement will range from 85 - 95 degrees. Adjust the recline up angle setting on the programmer to the measured angle. Then press the SELECT key on the programmer to proceed to the recline down adjustment screen.

RECL UP ANGLE
90
PRESS SELECT TO CONTINUE

If the wheelchair is equipped with a vent tray, the head rest must be removed before reclining the seat. Recline the seat back until there is a 1/4-inch gap between the VSR shroud and the rear shroud. Using a protractor or angle pitch calculator, measure the actual angle of the back with respect to the seat pan. This measurement will range from 165 - 175 degrees. Adjust the recline down angle setting on the programmer to the measured angle. Then press the SAVE key on the programmer to store both the up and down angle adjustments in the user memory.

RECL DOWN ANGLE
170
PRESS SAVE TO SET ANGLES

After calibrating the potentiometers check the actual tilt and recline angle readings on the CURRENT STATUS screen to verify the calibration was successful. If an error occurred during the calibration procedure an E06 or E07 warning message will scroll across the bottom of the programmer screen and the calibration values in user memory will be restored. Try the calibration procedure again. If the warning message does not go away contact Invacare Technical Service for assistance.
2GT Systems

This screen allows you to calibrate the tilt position feedback sensor (potentiometer). The potentiometer is adjusted at the factory, so this calibration should only be necessary if a potentiometer or TRCM Controller is damaged and must be replaced.

If the potentiometer is being replaced, the shaft must first be rotated fully clockwise (looking at the end of the shaft) and then rotate the shaft counterclockwise no more than 1/8 turn. Tighten the set screw. The TRCM may now be calibrated using the Remote Programmer.

After selecting CALIBRATIONS from the main menu the calibrations menu will be displayed.

мышь TILT ANGLE RECLINE ANGLE

Select TILT ANGLE. The tilt up angle adjustment screen will then be displayed.

TILT ANGLE POTentiOMETER CALIBRATION - Position the seat back in the fully upright position. Using a protractor or angle pitch calculator, measure the actual angle of the seat with respect to the floor. This measurement should will range from 0 - 10 degrees. Adjust the tilt up angle setting on the programmer to the measured angle. Then press the SELECT key on the programmer to proceed to the tilt down adjustment screen.

мышь TILT UP ANGLE

1

PRESS SELECT TO CONTINUE

Tilt the seat until the measured angle is approximately 50 degrees and adjust the tilt down angle setting on the programmer to the measured angle. The range is 45 – 55 degrees. Then press the SAVE key on the programmer to store both the up and down angle adjustments in the user memory.

мышь TILT DOWN ANGLE

5

PRESS SAVE TO SET ANGLES

RECLiNE ANGLE CALIBRATION – Select RECLiNE ANGLE from the calibration menu. A screen indicating the controller sensed no recline actuator will be displayed. A fixed angle between 85 and 115 must be selected.

мышь NO RECL ACTUATOR

90

SELECT FIXED RECLiNE ANGLE

Then press the SAVE key on the programmer to store the fixed recline angle to user memory.

After calibrating the potentiometers check the actual tilt and recline angle readings on the CURRENT STATUS screen to verify the calibration was successful. If an error occurred during the calibration procedure an E06 or E07 warning message will scroll across the bottom of the programmer screen and the calibrations values in user memory will be restored. Try the calibration procedure again. If the warning message does not go away contact Invacare Technical Service for assistance.

2GR Systems

This screen allows you to calibrate the recline position feedback sensor (potentiometer). The potentiometer is adjusted at the factory, so this calibration should only be necessary if a potentiometer or TRCM Controller is damaged and must be replaced.

If the potentiometer is being replaced, the shaft must first be rotated fully clockwise (looking at the end of the shaft) and then rotate the shaft counterclockwise no more than 1/8 turn. Tighten the set screw. The controller may now be calibrated using the Remote Programmer.

After selecting CALIBRATIONS from the main menu the calibrations menu will be displayed.

мышь TILT ANGLE

мышь RECLiNE ANGLE

Select RECLiNE ANGLE. The recline up angle adjustment screen will then be displayed.
RECLINE ANGLE POTENTIOMETER CALIBRATION
- Position the seat back in the fully upright position. Using a protractor or angle pitch calculator, measure the actual angle of the back with respect to the seat pan. This measurement will range from 85 - 95 degrees. Adjust the recline up angle setting on the programmer to the measured angle. Then press the SELECT key on the programmer to proceed to the recline down adjustment screen.

RECL UP ANGLE
90
PRESS SELECT
TO CONTINUE

If the wheelchair is equipped with a vent tray, the head rest must be removed before reclining the seat. Recline the seat back until there is a 1/4-inch gap between the VSR shroud and the rear shroud. Using a protractor or angle pitch calculator, measure the actual angle of the back with respect to the seat pan. This measurement will range from 165 - 175 degrees. Adjust the recline down angle setting on the programmer to the measured angle. Then press the SAVE key on the programmer to store both the up and down angle adjustments in the user memory.

RECL DOWN ANGLE
170
PRESS SAVE
TO SET ANGLES

TILT ANGLE CALIBRATION – Select TILT ANGLE from the calibration menu. A screen indicating the controller sensed no tilt actuator will be displayed. A fixed angle between 0 and 15 must be selected.

NO TILT ACTUATOR
5
SELECT FIXED
TILT ANGLE

Then press the SAVE key on the programmer to store the fixed tilt angle to user memory.

After calibrating the potentiometers check the actual tilt and recline angle readings on the CURRENT STATUS screen to verify the calibration was successful. If an error occurred during the calibration procedure an E06 or E07 warning message will scroll across the bottom of the programmer screen and the calibrations in user memory will be restored. Try the calibration procedure again. If the warning message does not go away contact Invacare Technical Service for assistance.
INSPECTION CHECKLIST

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

Functional Inspection

WARNING
NEVER operate the wheelchair while in any tilt/back angle combination over 20° RELATIVE TO THE VERTICAL POSITION. If the drive lock-out does not stop the wheelchair from operating in a tilt/back angle combination 20° RELATIVE TO THE VERTICAL POSITION, DO NOT operate the wheelchair. Have the wheelchair serviced by a dealer or qualified technician.

Wiring MUST be routed and secured properly to ensure that wiring does NOT become entangled and damaged during normal operation of seating system.

1. ___ Drive lockout - Make sure drive lockout engages when the wheelchair is in any tilt/recline/back angle combination over 20° RELATIVE TO THE VERTICAL POSITION.
2. ___ Cycle system up and down to verify wiring harnesses do not obstruct the path of the system.
3. ___ Tilt function - Ensure when system is fully tilted no interference with the base frame occurs.
4. ___ With an unoccupied wheelchair, test all system functions to verify proper operation.
5. ___ Verify charger function.
6. ___ Verify front casters will not collide with legrests when fully swiveled.
7. ___ Verify easy removal of arms and legrests.
8. ___ Install all shrouds. Refer to REMOVING/INSTALLING SHROUDS in PROCEDURE 4 of this manual.
9. ___ To adjust the 2G Tilt and/or Recline Seating System, refer to Service Manual, part number 1090208.
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.

Invacare warrants this product to be free from defects in materials and workmanship for a period of one (1) year from date of purchase. If within such warranty period any such 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 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.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS WARRANTIES. IMPLIED WARRANTIES, IF ANY, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL NOT EXTEND BEYOND THE DURATION OF THE EXPRESS WARRANTY PROVIDED HEREBIN AND THE REMEDY FOR VIOLATIONS OF ANY IMPLIED WARRANTY SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT PURSUANT TO THE TERMS CONTAINED HEREBIN. 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.