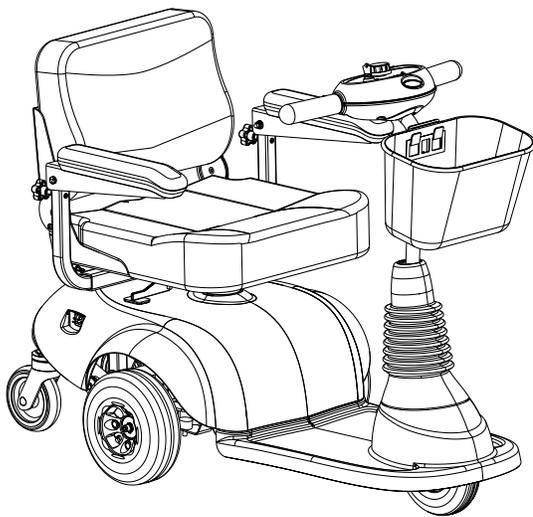


# ***HMV™ Highly Maneuverable Vehicle Zoom 300 and Zoom 400***



**DEALER:** Keep this manual. The procedures in this manual must be performed by a qualified technician.

For more information regarding  
Invacare products, parts, and services,  
please visit [www.invacare.com](http://www.invacare.com)



**Yes, you can:**

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**⚠ WARNING**

**THE PROCEDURES IN THIS SERVICE MANUAL MUST BE PERFORMED BY A QUALIFIED TECHNICIAN.**

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

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*NOTE: Updated versions of this manual are available on [www.invacare.com](http://www.invacare.com).*

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# SPECIAL NOTES

Signal words are used in this manual and apply to hazards or unsafe practices which could result in personal injury or property damage. Refer to the table below for definitions of the signal words.

SIGNAL WORD	MEANING
DANGER	Danger indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
WARNING	Warning indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION	Caution indicates a potentially hazardous situation which, if not avoided, may result in property damage.

## NOTICE

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

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

### TIE-DOWN RESTRAINTS AND SEAT RESTRAINTS

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

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

### SEAT POSITIONING STRAP

It is the obligation of the dealers, therapists and other healthcare professionals to determine if a seating restraint is required to ensure the safe operation of this equipment by the user. Serious injury can occur in the event of a fall from a powered scooter.

## WARNING

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

Invacare products are specifically designed and manufactured for use in conjunction with Invacare accessories. Accessories designed by other manufacturers have not been tested by Invacare and are not recommended for use with Invacare products.

# TYPICAL PRODUCT PARAMETERS

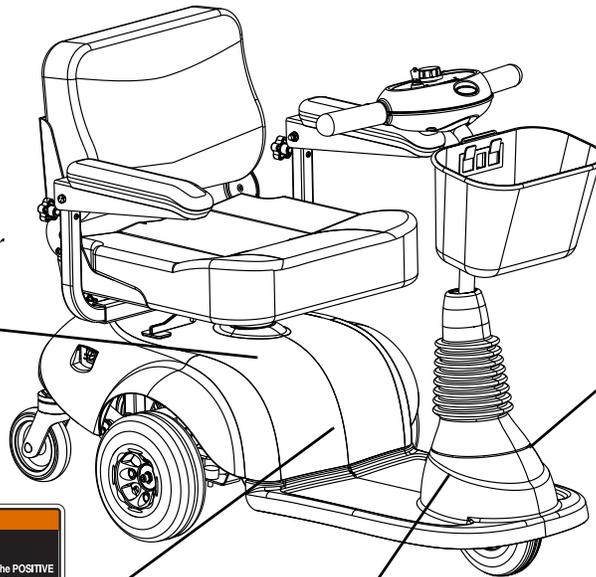
	ZOOM 300	ZOOM 400
<b>OVERALL DIMENSIONS*</b>		
BASE LENGTH:	44 in.	46 in.
BASE WIDTH:	22.5 in.	24 in.
STEP HEIGHT (Floor Pan to Ground):	3.5 in.	4.5 in.
SEAT HEIGHT (Floor Pan to Seat Cushion):	17-19 in.	17-19 in.
<b>SEAT DIMENSIONS</b>		
WIDTH:	16 in.      18 in.	18 in.      20 in.
DEPTH:	16, 17, 18 in.    16, 17, 18 in.	16, 17, 18 in.    18, 19, 20 in.
BACK HEIGHT:	15 in.      17 in.	17 in.      19 in.
<b>ARM DIMENSIONS</b>		
LENGTH:	13 in.	13 in.
HEIGHT BETWEEN SEAT AND ARMS:	7- 9 in.	7- 9 in.
WIDTH BETWEEN ARMS:	16 in. seat — 16-22 in. 18 in. seat — 18-24 in.	18 in. seat — 18-24 in. 20 in. seat — 20-26 in.
<b>SPEED RANGE:</b>	0 - 4.5 m.p.h. (Factory setting - 3.5 m.p.h.)	0 - 4.5 m.p.h. (Factory setting - 5.5 m.p.h.)
<b>MAXIMUM WEIGHT LIMITATION:</b>	300 lbs	400 lbs
<b>MAXIMUM INCLINE CAPABILITY:</b>	8° Grade	8° Grade
<b>WHEELS</b>		
FRONT WHEEL:	7 in. x 2 in.	8 in. x 2 in.
DRIVE WHEEL:	8 in. x 3 in.	10 in. x 3 in.
REAR CASTER:	1 in. x 5 in.	1 in. x 5 in.
<b>TURNING RADIUS:</b>	29 in.	32 in.
<b>WEIGHT OF PRODUCT</b>		
FRONT BASE SECTION (WITH BASKET):	N/A	53 lbs
REAR BASE SECTION (WITH SHROUDS):	N/A	48 lbs
ENTIRE BASE SECTION:	71 lbs	
SEAT (WITH ARMS):	31 lbs	38 lbs
BATTERIES (QUANTITY - 2):	18 lbs	46 lbs
<b>TOTAL WEIGHT OF PRODUCT</b> (Including Batteries):	120 lbs	185 lbs

\*NOTE: Zoom 300 parameters are based on an 18-inch wide seat. Zoom 400 parameters are based on a 20-inch wide seat.

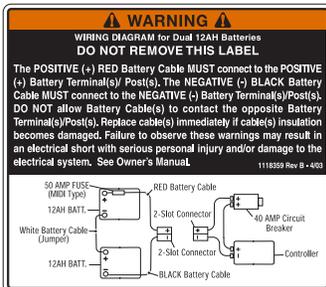
# LABEL LOCATIONS

## On Zoom 300

NOTE: Serial Number is located under the rear shroud.



**WEIGHT CAPACITY**  
**300 LBS. (136 kgs.)**  
 REFER TO OWNER'S MANUAL  
P/N 1111016

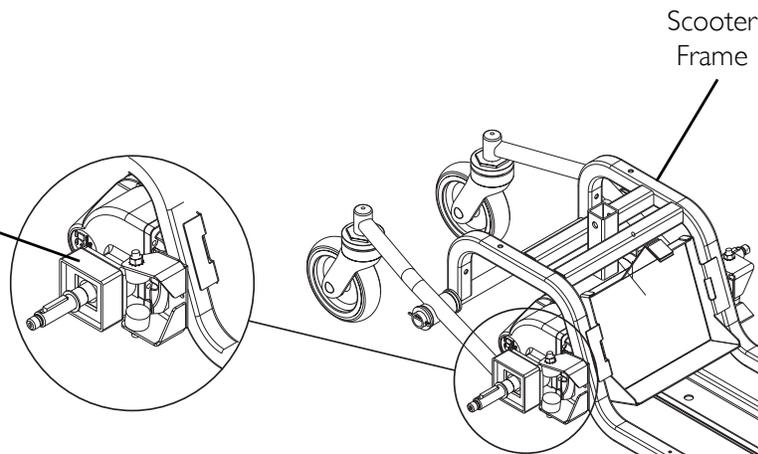


**WARNING**  
 DO NOT operate the scooter unless the tiller is in the locked position.  
 DO NOT lean against or pull forward on the tiller while mounting or dismounting the scooter. Otherwise, injury may occur.  
 DO NOT lift scooter up by the front or rear shroud. Otherwise injury or damage to the scooter may occur.  
1118373 Rev A

NOTE: Warning Label 1118359 is located under the rear shroud.



NOTE: Warning Label 1079203 is also located on the other swingarm.



# On Zoom 400

*NOTE: Serial Number is located under the rear shroud.*

**WEIGHT CAPACITY**  
**400 LBS. (182 kgs.)**  
 REFER TO OWNER'S MANUAL  
P/N 1111019

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

112526 Rev A - 054

*NOTE: Warning Label 1125362 is located under the rear shroud.*

**WARNING**

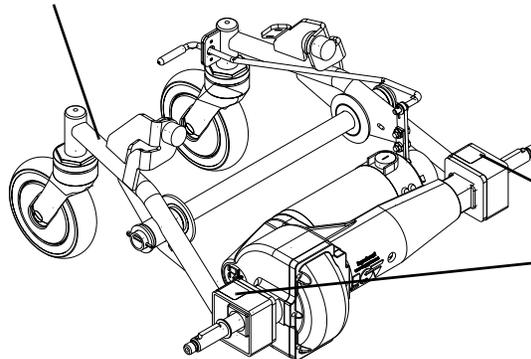
DO NOT operate the scooter unless the tiller is in the locked position.

DO NOT lean against or pull forward on the tiller while mounting or dismounting the scooter. Otherwise, injury may occur.

DO NOT lift scooter up by the front or rear shroud. Otherwise injury or damage to the scooter may occur.

1118373 Rev A

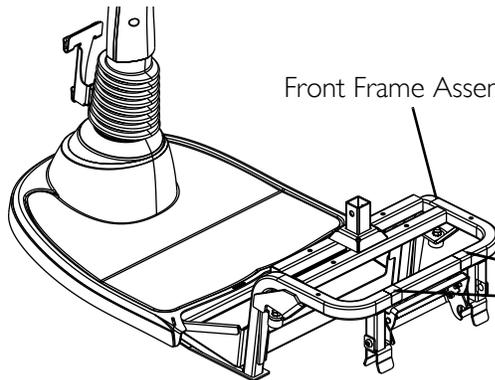
Rear Frame Assembly



**WARNING**

**Pinch Point.**  
1079203

Front Frame Assembly



**WARNING**

**Pinch Point.**  
1079203

# SECTION I—GENERAL GUIDELINES

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## **⚠ WARNING**

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

---

## **Repair or Service Information**

Set-up of the electronic control unit is to be performed only by qualified technicians. The final adjustments of the controller may affect other activities of the powered scooter. Damage to the equipment could occur under these circumstances.

DO NOT service or adjust your powered scooter while occupied, unless otherwise noted.

## **Operation Information**

Invacare products are specifically designed and manufactured for use in conjunction with Invacare accessories. Accessories designed by other manufacturers have not been tested by Invacare and are not recommended for use with Invacare products.

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

After the powered scooter has been set-up/adjusted, check to make sure that the powered scooter performs to the specifications entered during the set-up procedure. If the powered scooter does not perform to specifications, turn the powered scooter off immediately and reenter set-up specifications. Repeat this section until the powered scooter performs to specifications.

Before using the scooter, verify that the motor is plugged into the harness.

DO NOT connect any medical devices such as ventilators, life support machines, etc., to the battery. This could cause unexpected failure of the device and the powered scooter.

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

DO NOT attempt to lift the powered scooter by its tiller, seat or shrouds.

DO NOT stand on the frame of the powered scooter.

DO NOT stand on the shroud(s) of the powered scooter.

DO NOT adjust the seat position outside the specifications recommended by the manufacturer.

After making any tiller angle adjustment and before use, the tiller must be securely locked into position. Otherwise the user may fall from the scooter resulting in bodily harm and/or damage to the scooter. Gently push/pull the tiller to ensure that the tiller is securely engaged.

On Zoom 400 only - Before use, ensure that the frame lock lever is in the locked position securing the front and rear frame assemblies together. Otherwise injury and/or damage may occur.

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

DO NOT overtighten hardware attaching to the frame. This could cause damage to the frame tubing.

Avoid storage or use near external flame or combustible products.

## **Tire Pressure**

Ensure that the powered scooter has the proper tire pressure (P.S.I.). DO NOT overinflate the tires. Failure to follow these recommendations may cause the tire to explode and cause bodily harm. The recommended tire pressure is listed on the side wall of the tire.

## **Electrical**

### **Grounding Instructions**

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

## **Batteries**

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

Carefully read battery/battery charger information prior to installing or servicing the powered scooter.

## **Charging Batteries**

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

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

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

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

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

DO NOT sit in the wheelchair while charging the batteries.

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

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

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

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

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

## **Rain Test**

Invacare has tested its powered scooters in accordance with ISO 7176 "Rain Test." Passing this test means that the end user or his/her attendant should have sufficient time to remove his/her powered scooter from a rain storm and retain powered scooter operation.

DO NOT leave powered scooter in a rain storm of any kind.

DO NOT leave powered scooter in a damp area for any length of time.

## **Weight Limitation**

The weight limitation for the Zoom 300 is 300 lbs.

The weight limitation for the Zoom 400 is 400 lbs.

If so equipped, the front basket is rated for a maximum loading capacity of 10 lbs.

---

# SECTION 2—EMI INFORMATION

---

## **⚠ WARNING**

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

### **Electromagnetic Interference (EMI) From Radio Wave Sources**

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

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

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

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

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

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

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

---

**⚠ WARNING**

**Powered Wheelchair Electromagnetic Interference (EMI)**

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

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

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

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

**Important Information**

- 1) 20 volts per meter (V/m) is a generally achievable and useful immunity level against EMI (as of May 1994) (the higher the level, the greater the protection);
- 2) This device has been tested to a radiated immunity level of 20 volts per meter.

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

---

# SECTION 3—SAFETY INSPECTION

## Checklist

These adjustments should be made whenever you service this product, especially as a part of the initial set up. Follow these maintenance procedures:

---

### **⚠ WARNING**

**Before performing any maintenance, adjustment or service, turn power OFF and remove key from ignition.**

---

### **CAUTION**

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

---

- Ensure powered scooter drives straight (no excessive drag or pull to one side).
- Check frame for damage and corrosion.
- Ensure that the brake release lever is easy to engage/disengage.
- Ensure that tiller adjustment handle engages and disengages properly and securely.
- Ensure that the scooter stops completely when throttle is released (i.e., does not continue to roll as if the throttle is activated).
- Clean upholstery and armrests.
- Ensure adjustable height arms operate and lock securely.
- Ensure armrest pad sits flush against arm tube.
- Inspect the seat upholstery for rips and tears.
- Inspect seat swivel for release and engagement (seat locks into the determined swivel positions).
- Inspect the seat positioning strap for signs of wear. Replace if worn or damaged.
- Ensure that the buckle on the seat positioning strap latches. Replace if necessary.
- Verify that the hardware that attaches the seat positioning strap to the seat frame is secure and undamaged. Replace if necessary.
- Ensure that the seat mounting hardware is securely tightened.
- Inspect for excessive side movement or binding when the drive wheels are raised and/or turned.
- Inspect front wheel/fork assembly for proper tension by spinning the wheel. The front wheel should come to a gradual stop.
- Check brake for binding or interference with travel.
- Check the front fork for damage or corrosion.

- Tighten locknut if the front wheel wobbles noticeably or loosen locknut if the wheel binds to a stop.
- Ensure that the fork stem bearing set is tight.
- Ensure that wheel bearings are clean and free of moisture.
- Ensure that the bolts and fasteners on the caster assemblies are tight.
- Inspect caster assembly for proper tension by spinning the caster. The caster should come to a gradual stop.
- Inspect tires for flat spots and wear.
- Clean molded body shrouds.
- Lubricate the top of the seat post using a Teflon<sup>®</sup> lubricant.
- Ensure that the anti-roll safety feature is working properly. The scooter should not free-wheel downhill.

# SECTION 4—SEAT

## ⚠ WARNING

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

Before performing any maintenance, adjustment or service, turn power **OFF** and remove key from ignition.

## Removing/Installing the Seat

*NOTE: For this procedure, refer to FIGURE 4.1.*

### Removing

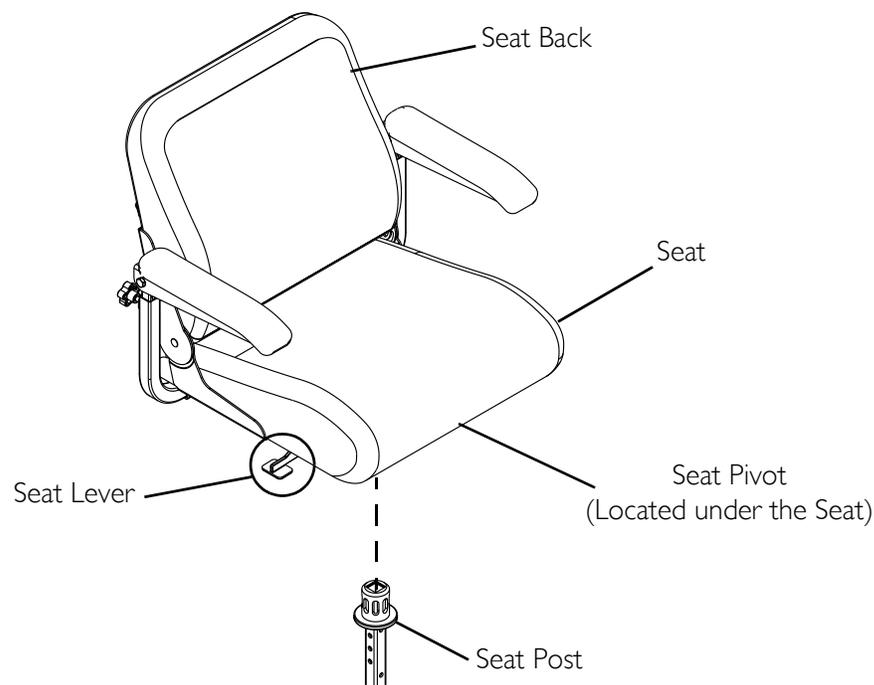
1. Fold down seat back.
2. Pulling up on the seat lever, lift the seat assembly off the seat post.

### Installing

1. Align the seat pivot with the seat post.
2. Pulling up on the seat lever, lower the seat assembly onto the seat post.

*NOTE: If necessary, slightly twist seat assembly back and forth to lock in place.*

3. Release seat lever and lift up on seat assembly to ensure the seat is secure.



**FIGURE 4.1** Removing/Installing the Seat

## Removing/Installing the Seat Post

### ⚠ WARNING

Ensure that the seat post mounting screw is properly engaged and locked. Otherwise, injury and/or damage may result.

*NOTE: For this procedure, refer to FIGURE 4.2.*

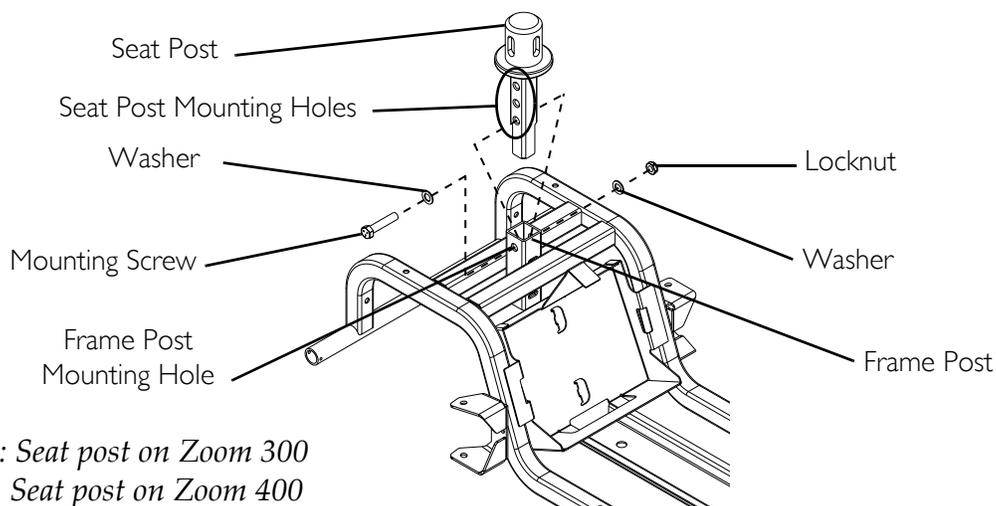
*NOTE: Take note of position and orientation of the seat post and seat post mounting screw before removing.*

### Removing

1. Remove the seat. Refer to Removing/Installing the Seat on page 19.
2. Remove the mounting screw, locknut, and two (2) washers securing the seat post to the frame post, refer to FIGURE 4.2.
3. Lift seat post up and remove from frame post.

### Installing

1. Insert the seat post into the frame post and align the frame post mounting hole with the desired seat post mounting hole, refer to FIGURE 4.2.
2. Using the mounting screw, locknut, and two (2) washers, secure the seat post to the frame post.
3. Install the seat. Refer to Removing/Installing the Seat on page 19.



*NOTE: Seat post on Zoom 300 shown. Seat post on Zoom 400 installs the same way.*

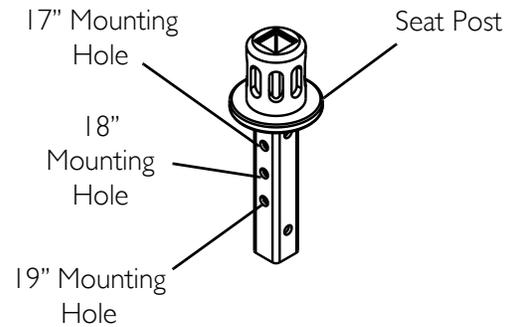
**FIGURE 4.2** Removing/Installing the Seat Post

## Adjusting Seat Height

*NOTE: For this procedure, refer to FIGURE 4.3.*

*NOTE: The seat post has three (3) height settings.*

1. Remove the seat. Refer to [Removing/Installing the Seat](#) on page 19.
2. Remove the mounting screw, locknut, and two (2) washers securing the seat post to the frame post.
3. Align one (1) of the three (3) seat post mounting holes with the frame post mounting hole to achieve desired seat height (FIGURE 4.3).
4. Using the mounting screw, locknut, and two (2) washers, secure the seat post to the frame post.
5. Install the seat. Refer to [Removing/Installing the Seat](#) on page 19.



**FIGURE 4.3** Adjusting Seat Height

## Removing/Installing the Seat Pivot

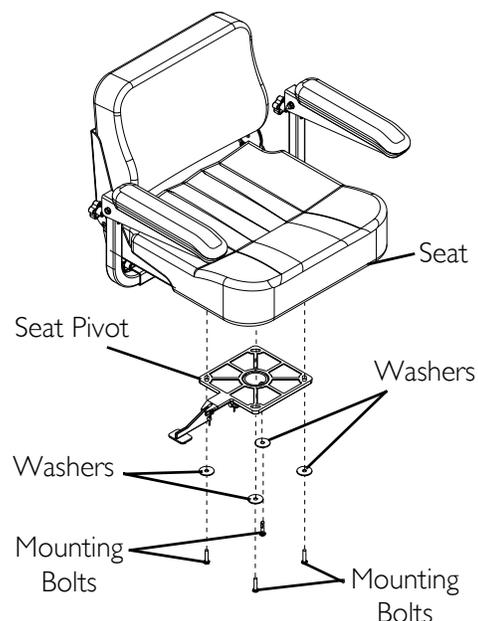
*NOTE: For this procedure, refer to FIGURE 4.4.*

### Removing

1. Remove the seat. Refer to [Removing/Installing the Seat](#) on page 19.
2. Remove the four (4) mounting bolts and washers that secure the seat pivot to the seat.

### Installing

1. Install the four (4) mounting bolts and washers to secure the seat pivot to the seat. Securely tighten.
2. Install the seat. Refer to [Removing/Installing the Seat](#) on page 19.



**FIGURE 4.4** Removing/Installing the Seat Pivot

## Adjusting Seat Depth

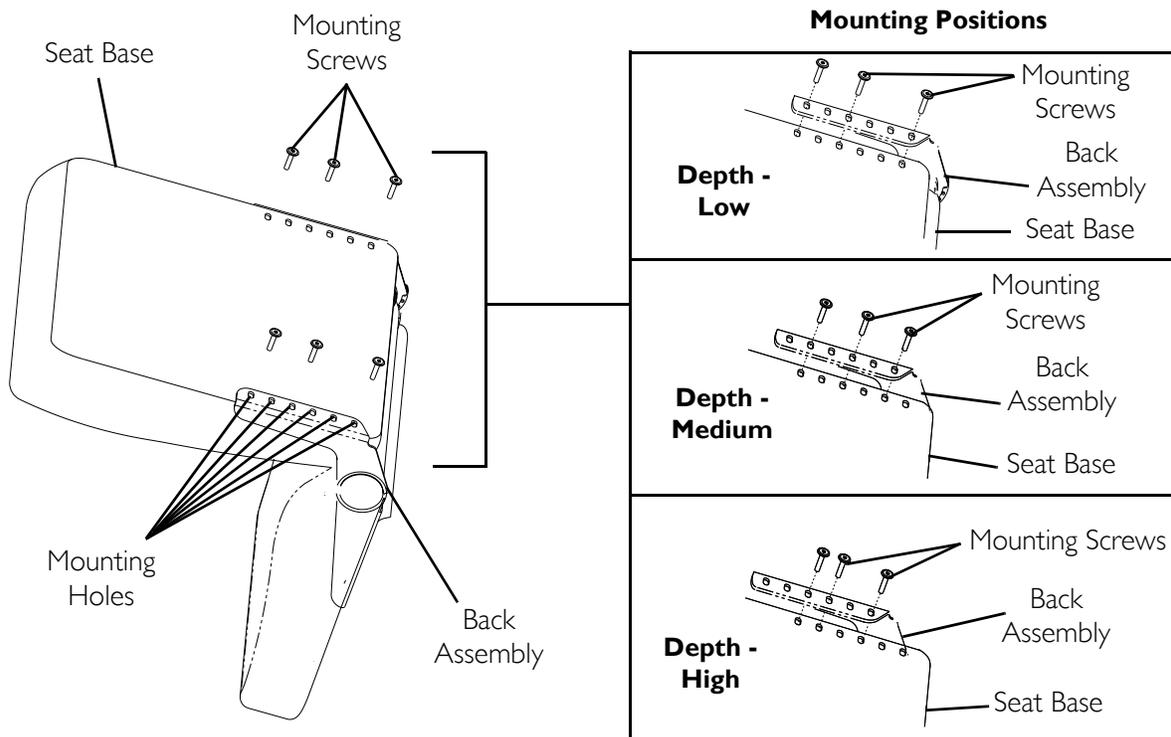
### ⚠ WARNING

**DO NOT** adjust the seat position outside the specifications recommended by the manufacturer. Otherwise, injury to user or damage to scooter may result.

*NOTE: For this procedure, refer to FIGURE 4.5.*

1. Remove the seat assembly from the scooter. Refer to Removing/Installing the Seat on page 19.
2. Remove the adjustable width arms. Refer to Removing/Installing/Adjusting Arms on page 25.
3. Remove the six (6) mounting screws located under the seat that secure the back assembly to the seat base.
4. Adjust back assembly to one (1) of three (3) mounting positions.
5. Reinstall the six (6) mounting screws securing the back assembly to the seat base. Securely tighten.
6. Reinstall the adjustable width arms. Refer to Removing/Installing/Adjusting Arms on page 25.
7. Reinstall the seat assembly onto the scooter. Refer to Removing/Installing the Seat on page 19.

*NOTE: Mounting positions are in reverse order. For example, Depth-Low is the highest position.*



**FIGURE 4.5** Adjusting Seat Depth

## 90° Seat Swivel Adjustment

### **⚠ WARNING**

Ensure that seat is locked into the forward position before and during operation of the scooter. Otherwise, injury to the user and/or damage to the scooter may result.

### **CAUTION**

**DO NOT** use the seat swivel option when accessories are installed (such as safety flag, crutch/cane holder, etc.) and the seat is mounted in lowest height adjustment position. Otherwise, damage to the scooter may occur.

*NOTE: For this procedure, refer to FIGURE 4.6.*

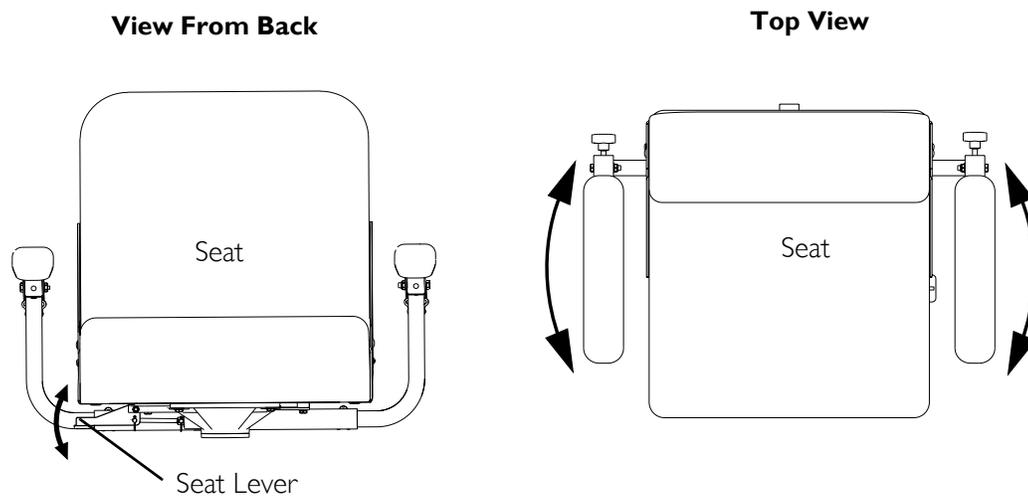
*NOTE: The seat lever is located just beneath the seat on the right side.*

8. Pull the seat lever up to rotate the seat.

*NOTE: The seat locks in position at 90° intervals. The seat is locked when an audible click is heard.*

9. Rotate the seat to the desired position.

10. Release seat lever to lock seat in desired position.



**FIGURE 4.6** 90° Seat Swivel Adjustment

## Removing/Installing the Seat Positioning Strap

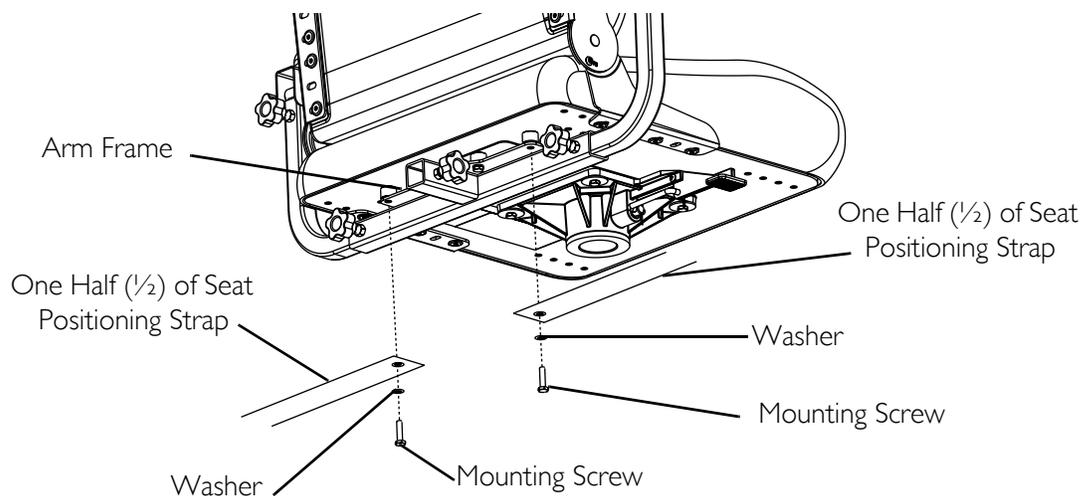
### ⚠ WARNING

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

**ALWAYS** wear your seat positioning strap.

*NOTE: For this procedure, refer to FIGURE 4.7.*

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



**FIGURE 4.7** Removing/Installing the Seat Positioning Strap

# SECTION 5—ARMS

## ⚠ WARNING

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

Before performing any maintenance, adjustment or service, turn power off and remove key from ignition.

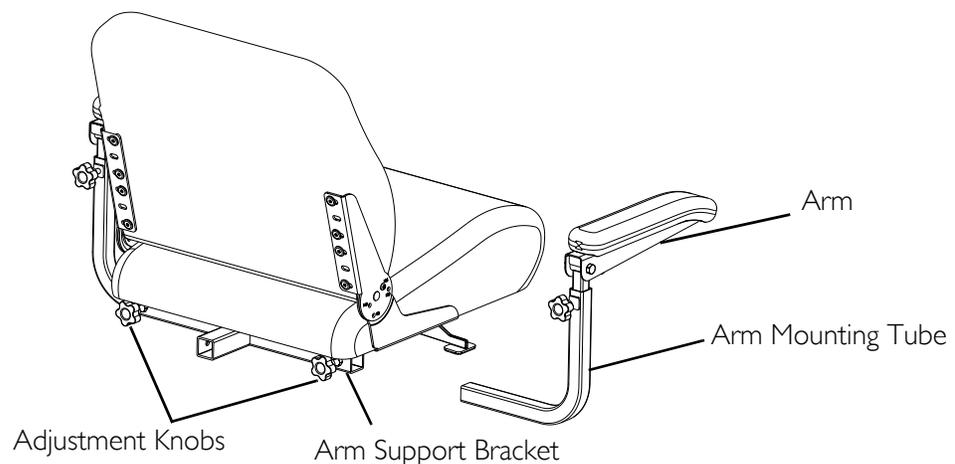
## Removing/Installing/Adjusting Arms

### Removing/Installing

*NOTE: For this procedure, refer to FIGURE 5.1.*

*NOTE: Reverse this procedure to install the arms.*

1. Loosen adjustment knob that secures the arm to the arm support bracket.
2. Remove the arm from the arm support bracket.
3. If necessary, repeat STEPS 1-2 to remove the remaining arm.



**FIGURE 5.1** Removing/Installing/Adjusting Arms

## Adjusting Arm Width

*NOTE: For this procedure, refer to FIGURE 5.1.*

*NOTE: The arm width can be adjusted between 18 inches and 22 inches.*

*NOTE: Changing the width of the arms may also affect the overall width of the powered scooter. Use caution when traveling through doorways.*

1. Loosen the adjustment knob on one (1) arm located beneath the seat frame on the arm support bracket. Refer to FIGURE 5.1.

---

### CAUTION

**The arm can be adjusted to a maximum distance of 4½ inches from the inside of the arm to the top of the mounting shaft. If the arm is adjusted beyond the maximum 4½ inches, the arm will fall out.**

---

2. Move arm in or out to the desired position.
3. Retighten adjustment knob securely.
4. Measure distance between back and inside of arm.

*NOTE: For proper balance, adjust both arms to the same distance away from the back.*

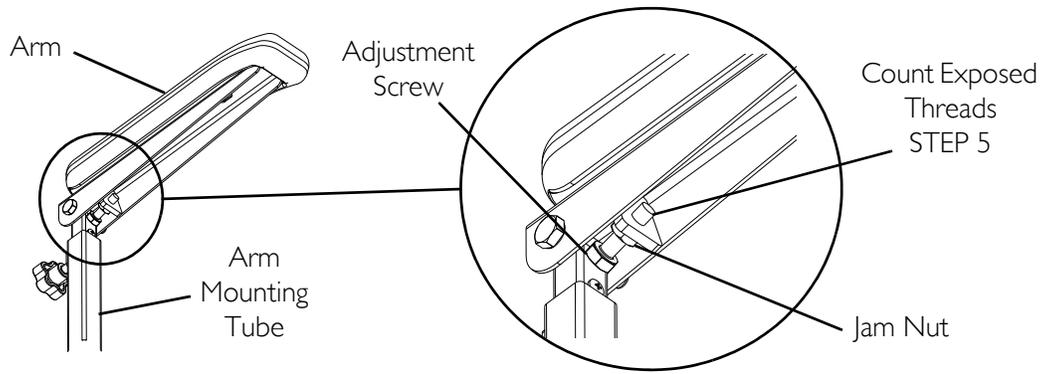
5. Repeat STEPS 1-4 for opposite arm, setting it at the distance determined in STEP 4.

## Adjusting Arm Angle

*NOTE: For this procedure, refer to FIGURE 5.2.*

*NOTE: Arm angle can be adjusted between 8° and 10°.*

1. Lift up the arm.
2. Loosen the jam nut.
3. Adjust the adjustment screw up or down to the desired arm angle.
4. Tighten the jam nut.
5. To position the opposite arm at the same angle, count the exposed threads after the jam nut has been tightened.
6. Set the opposite arm to position determined in STEP 5.



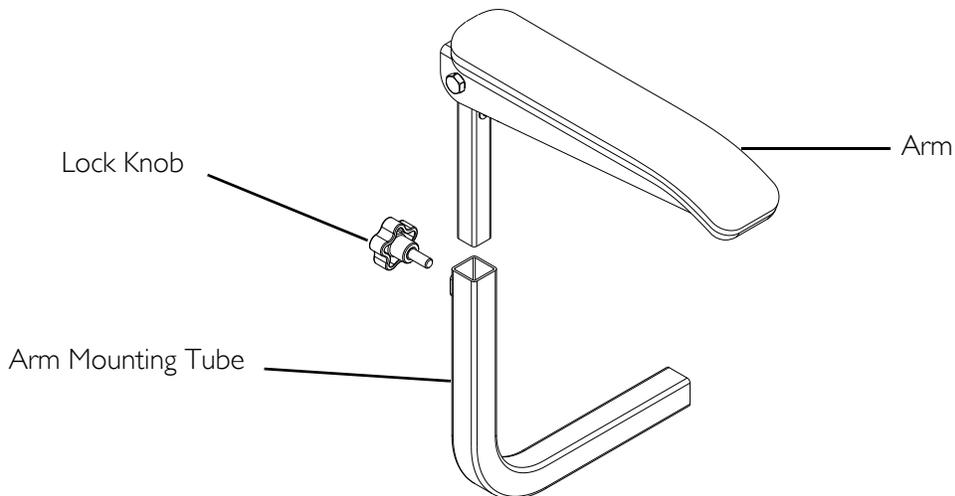
**FIGURE 5.2** Adjusting Arm Angle

### Adjusting Arm Height

*NOTE: For this procedure, refer to FIGURE 5.3.*

*NOTE: The arm height can be adjusted between 1 inch and 3 inches.*

1. Remove the lock knob that secures the arm to the arm mounting tube.
2. Adjust the arm to desired height.
3. Reinstall the lock knob that secures the arm to the arm mounting tube and tighten securely.
4. Repeat STEPS 1-3 for opposite arm, if necessary.

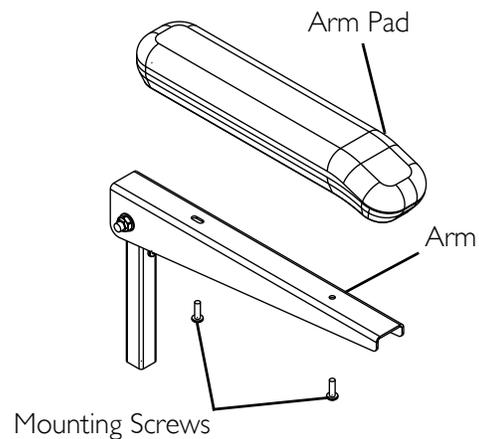


**FIGURE 5.3** Adjusting Arm Height

## Replacing Armrest Pads

*NOTE: For this procedure, refer to FIGURE 5.4.*

1. Remove the two (2) mounting screws that secure the armrest pad to arm.
2. Remove the old armrest pad.
3. Install new armrest pad and securely tighten with existing mounting screws.
4. If necessary, repeat STEPS 1-3 to replace the other armrest pad.



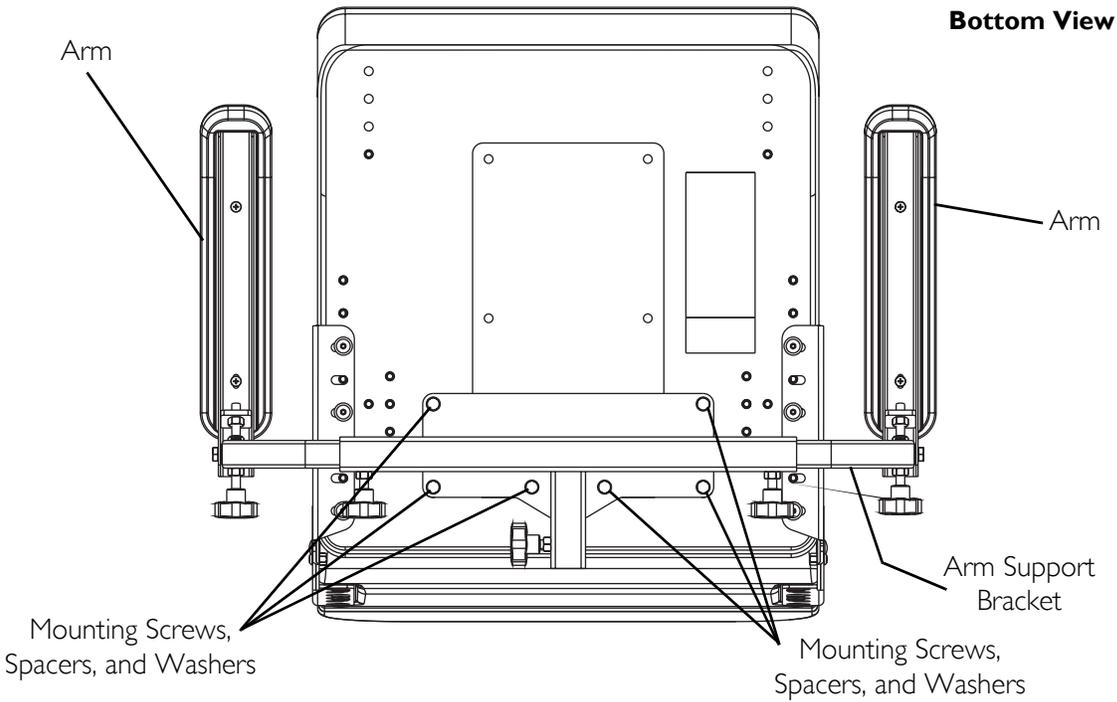
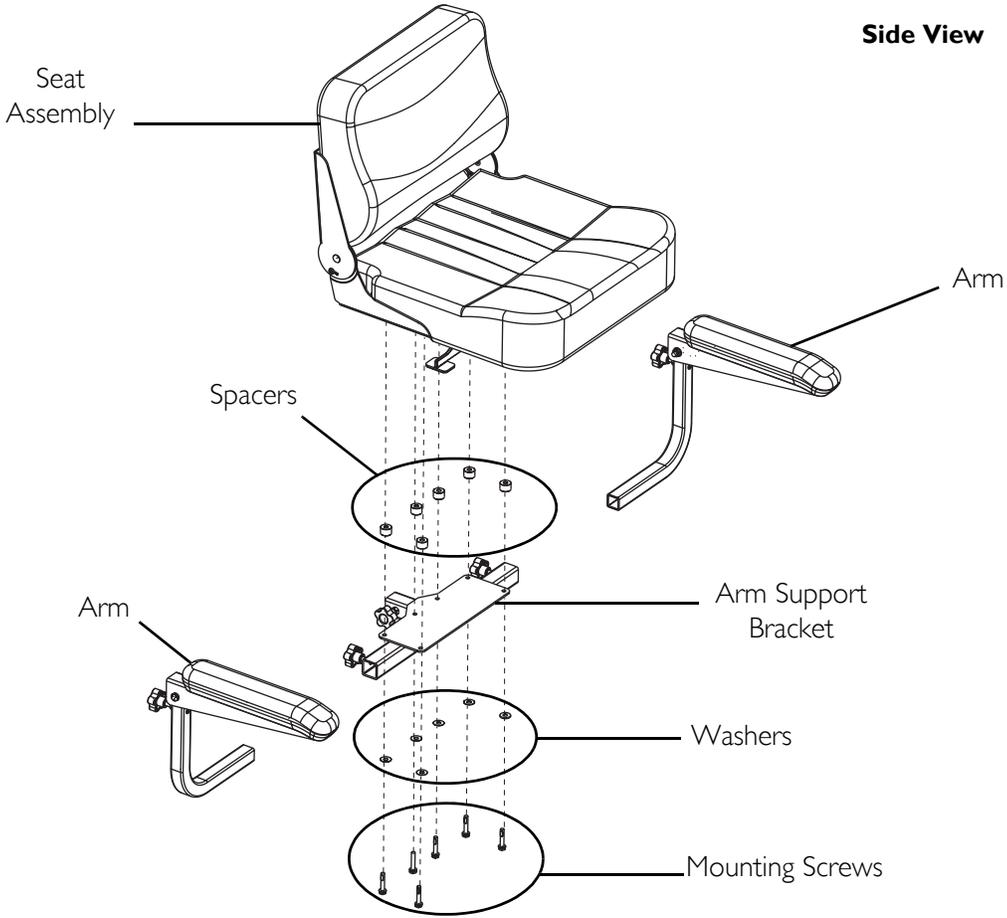
**FIGURE 5.4** Replacing Armrest Pads

## Removing/Installing Arm Support Bracket

*NOTE: For this procedure, refer to FIGURE 5.5.*

*NOTE: Reverse this procedure to install the arm support bracket.*

1. Remove the seat from the scooter. Refer to [Removing/Installing the Seat](#) on page 19.
2. Remove the arms from the seat assembly. Refer to [Removing/Installing/Adjusting Arms](#) on page 25.
3. Turn the seat over and remove the six (6) mounting screws, washers and spacers that secure the arm support bracket to the seat assembly.
4. Remove the arm support bracket.



**FIGURE 5.5** Removing/Installing Arm Support Bracket

# SECTION 6—SHROUDS

## ⚠ WARNING

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

Before performing any maintenance, adjustment or service, turn power **OFF** and remove key from ignition.

## Removing/Installing the Rear Shroud

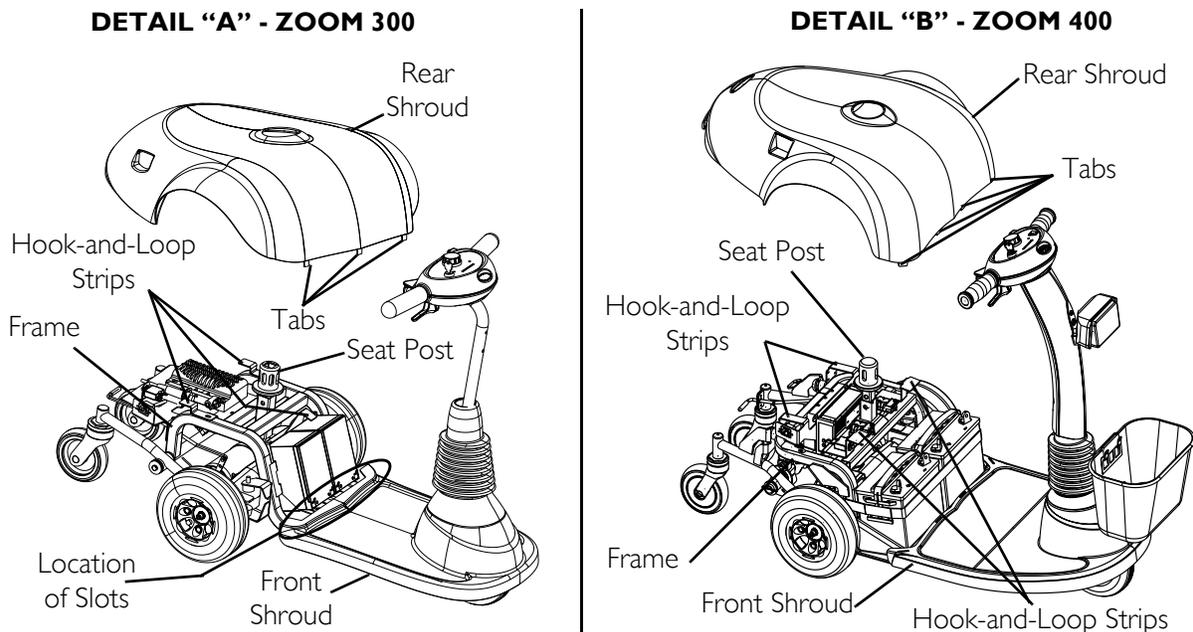
*NOTE: For this procedure, refer to FIGURE 6.1.*

### Removing

1. Remove the seat. Refer to [Removing/Installing the Seat](#) on page 19.
2. Disengage the hook-and-loop strips securing the rear shroud to the frame by pulling up on the shroud.
3. Lift the rear shroud off the seat post.

### Installing

1. Align the tabs on the rear shroud with the slots in the front shroud.
2. Place rear shroud on the frame and press down slightly to engage the hook-and-loop strips on the rear shroud (not shown) with those on the scooter frame.
3. Install the seat. Refer to [Removing/Installing the Seat](#) on page 19.



**FIGURE 6.1** Removing/Installing the Rear Shroud

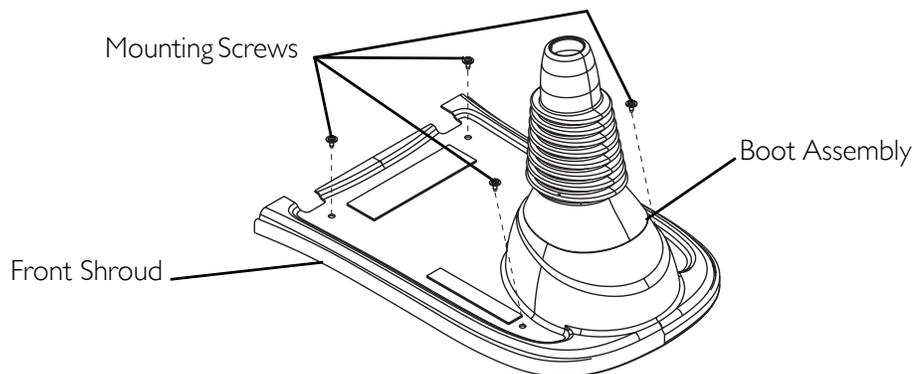
## Removing/Installing the Front Shroud

### Zoom 300

*NOTE: For this procedure, refer to FIGURE 6.2.*

*NOTE: Reverse this procedure to install the front shroud on the scooter frame.*

1. Remove the seat. Refer to Removing/Installing the Seat on page 19.
2. Remove the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.
3. Remove the batteries. Refer to Removing/Installing the Batteries on Zoom 300 on page 86.
4. Disconnect the tiller wiring harness from the rear wiring harness. Refer to FIGURE 8.13 on page page 56.
5. Disengage the boot from the front shroud. Refer to Removing/Installing the Boot Assembly on page 33.
6. Slide the boot up the tiller.
7. Remove the tiller. Refer to Removing/Installing the Tiller on page 40.
8. Remove the floormat on the front shroud by pulling up and away.
9. Remove the four (4) mounting screws that secure the front shroud to the scooter frame.
10. Once the tiller is removed, slide the boot off the tiller and front shroud off the scooter.



*NOTE: Floormat, Tiller and Fork Assemblies, and Scooter frame are not shown.*

**FIGURE 6.2** Removing/Installing the Front Shroud - Zoom 300

**Zoom 400**

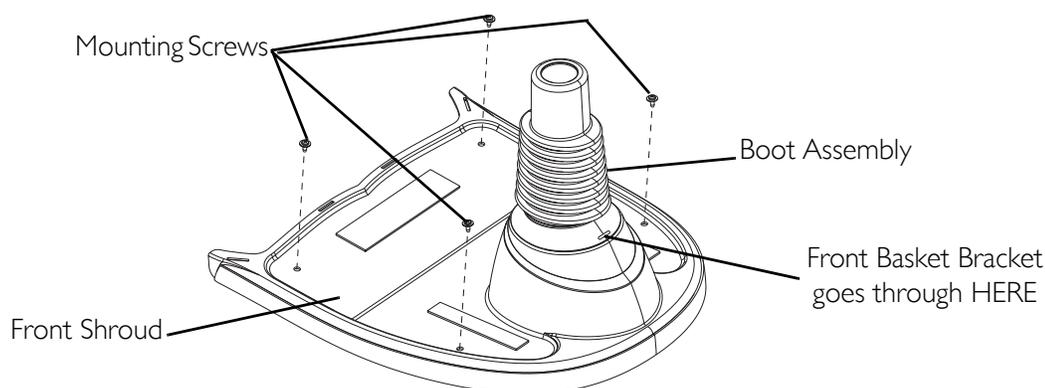
*NOTE: For this procedure, refer to FIGURE 6.3.*

*NOTE: Reverse this procedure to install the front shroud on the scooter frame.*

1. Remove the seat. Refer to Removing/Installing the Seat on page 19.
2. Remove the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.
3. Remove the batteries. Refer to Removing/Installing the Batteries on Zoom 400 on page 88.
4. Disconnect the tiller wiring harness from the rear wiring harness. Refer to FIGURE 8.14 on page 57.
5. Disengage the boot from the front shroud. Refer to Removing/Installing the Boot Assembly on page 33.
6. Remove the tiller. Refer to Removing/Installing the Tiller on page 40.
7. Remove the floormat on the front shroud by pulling up and away.
8. Remove the four (4) mounting screws that secure the front shroud to the scooter frame.
9. Once the tiller is removed, slide the boot off the tiller and front shroud off the scooter.

*NOTE: The boot will have to be slipped off the front basket bracket after disengaging the boot from the tabs.*

10.



*NOTE: Floormat, tiller and fork assemblies, and scooter frame are not shown.*

**FIGURE 6.3** Removing/Installing the Front Shroud - Zoom 400

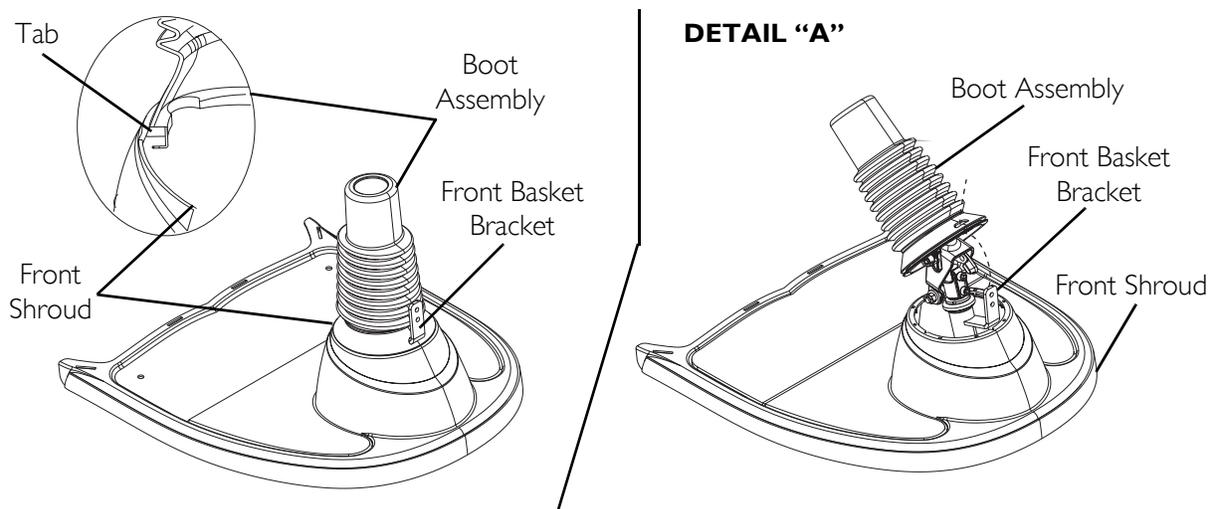
## Removing/Installing the Boot Assembly

*NOTE: For this procedure, refer to FIGURE 6.4.*

*NOTE: Reverse this procedure to install the boot assembly.*

1. Remove the front shroud. Refer to Removing/Installing the Front Shroud on page 31.
2. Remove the tiller. Refer to Removing/Installing the Tiller on page 40.
3. Remove the front shroud and boot assembly from the scooter.
4. Remove the boot assembly from the front shroud by disengaging the boot from the tabs on the front shroud.

*NOTE: On the Zoom 400, the boot will have to be slipped off the front basket bracket after disengaging the boot from the tabs. Refer to Detail "A" of FIGURE 6.4.*



*NOTE: The Zoom 400 is shown. The Zoom 300 is the same without the front basket bracket.*

**FIGURE 6.4** Removing/Installing the Boot Assembly

# SECTION 7—WHEELS AND CASTERS

---

## **⚠ WARNING**

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

**Before performing any maintenance, adjustment or service, turn power Off and remove key from ignition.**

---

## **Removing/Installing the Drive Wheels**

*NOTE: For this procedure, refer to FIGURE 7.1.*

### **Removing**

1. Turn power off and remove the key from the ignition.
2. Remove the seat. Refer to Removing/Installing the Seat on page 19.
3. Remove the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.
4. Place the scooter frame up on blocks so that the drive wheels are off the ground.
5. Remove the hex nut and washer that secure the drive wheel to the drive shaft. Discard hex nut.
6. Use a wheel puller, if necessary, to remove the existing drive wheel from the drive shaft.
7. Remove keystick from drive shaft. Set aside.
8. If necessary, repeat STEPS 1-6 to remove other drive wheel.

### **Installing**

1. Place keystick in cutout on drive shaft as shown in FIGURE 7.1.

*NOTE: The keystick in the drive shaft MUST lineup with the cutout in the wheel hub.*

2. Install the drive wheel onto the drive shaft.

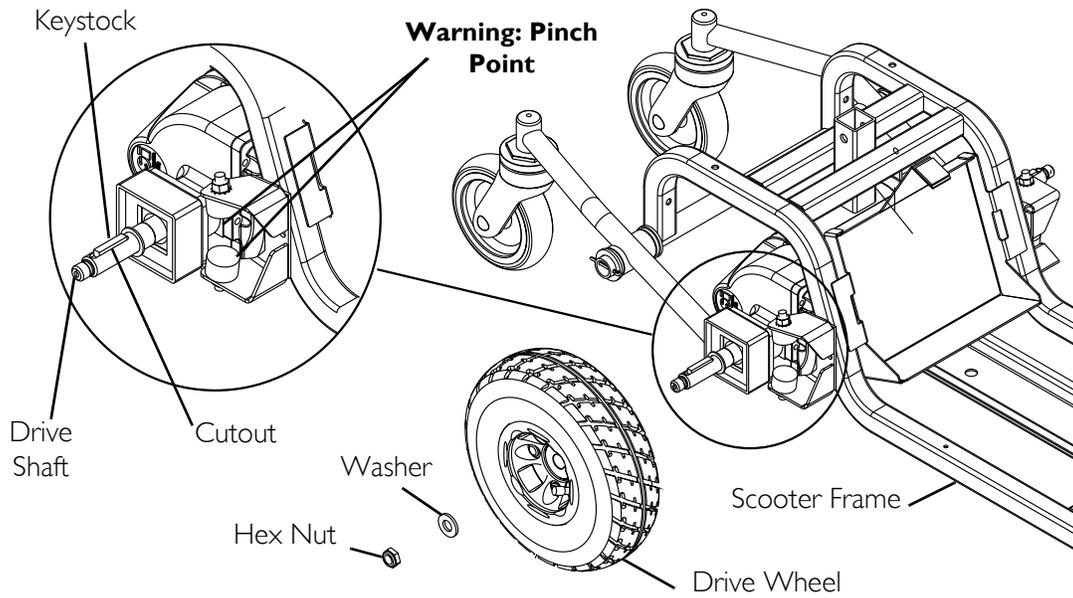
*NOTE: If necessary, use a rubber hammer to gently tap drive wheel completely into position on the drive shaft.*

3. Secure wheel to drive shaft using the washer and new hex nut. Securely tighten.

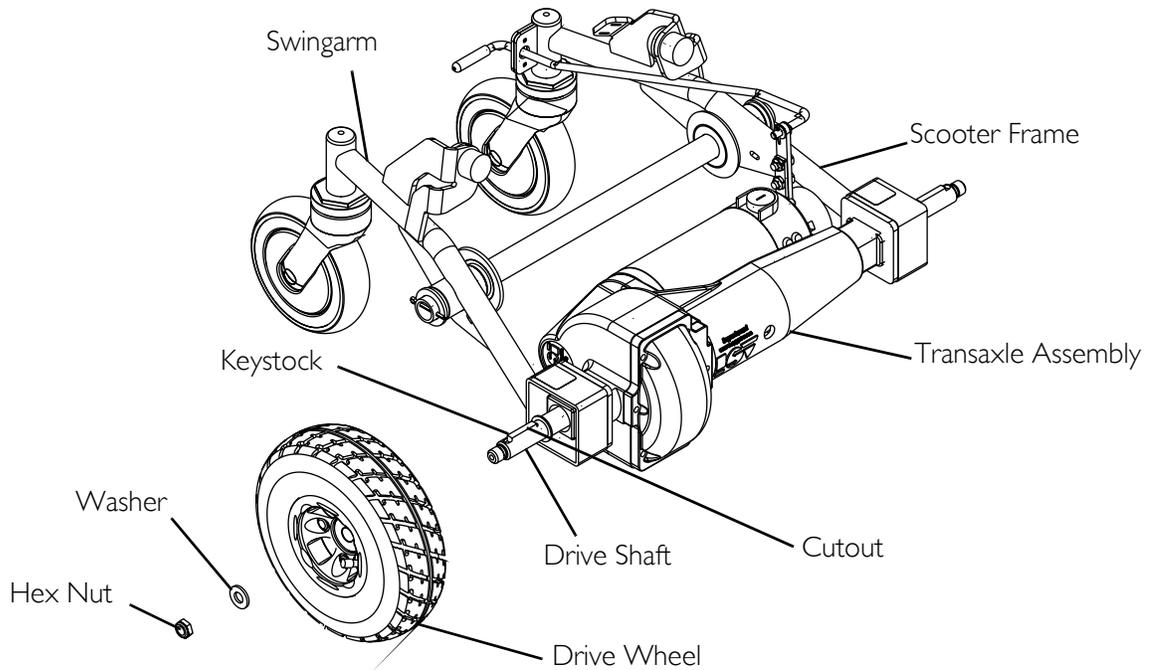
*NOTE: A new hex nut should be used when reinstalling the wheel.*

4. Repeat STEPS 1-3 to install the other drive wheel.
5. Install the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.
6. Install the seat. Refer to Removing/Installing the Seat on page 19.

**DETAIL “A” - ZOOM 300**



**DETAIL “B” - ZOOM 400**



**FIGURE 7.1** Removing/Installing the Drive Wheels

## Removing/Installing the Front Wheel

*NOTE: For this procedure, refer to FIGURE 7.2.*

*NOTE: Take note of position and orientation of wheel and mounting hardware before removing.*

### Removing

1. Turn power off and remove the key from the ignition.
2. Place the front of the powered scooter up on blocks so that the front wheel is off the ground.
3. Remove the mounting screw, locknut and two (2) spacers that secure the front wheel to the fork.
4. Remove front wheel from fork.

### Installing

---

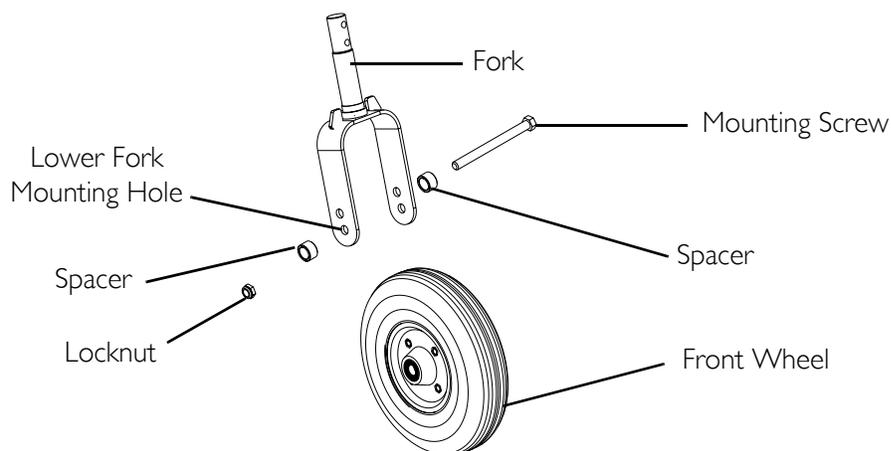
#### **⚠ WARNING**

**Front wheel *MUST* be mounted in the lower mounting holes for both the Zoom 300 and Zoom 400 - otherwise injury may result.**

---

*NOTE: Before installing the front wheel, check the fork for bending. If bent, replace the fork. Refer to [Removing/Installing the Fork](#) on page 37.*

1. Align front wheel with the lower fork mounting holes.
2. Secure the front wheel to the fork using the mounting screw, locknut and two (2) spacers.
3. Securely tighten the front wheel mounting hardware.



**FIGURE 7.2** Removing/Installing the Front Wheel

## Removing/Installing the Fork

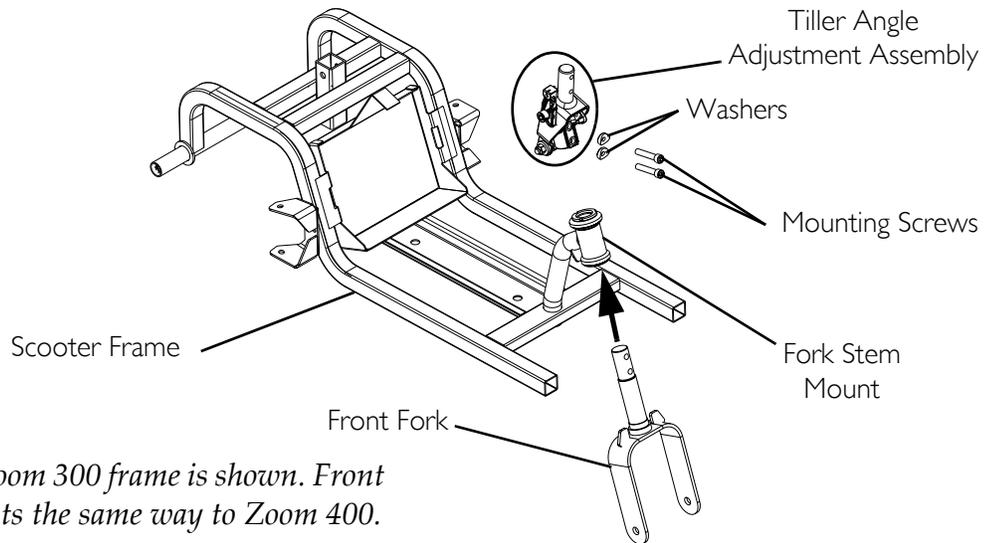
*NOTE: For this procedure, refer to FIGURE 7.3, FIGURE 12.2, and FIGURE 12.3.*

### Removing

1. Remove the seat. Refer to Removing/Installing the Seat on page 19.
2. Remove the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.
3. Disconnect the RED and BLACK battery connector from the wiring harness assembly. Refer to FIGURE 12.2 on page 87 for the Zoom 300 and FIGURE 12.3 on page 89 for the Zoom 400.
4. Remove the boot assembly. Refer to Removing/Installing the Boot Assembly on page 33.
5. Remove the tiller. Refer to Removing/Installing the Tiller on page 40.
6. Remove the two (2) mounting bolts that secure the tiller angle adjustment assembly to the front fork. Refer to FIGURE 7.3.
7. Slide front fork out of the fork stem mount on the scooter frame.

### Installing

1. Slide front fork into the fork stem mount.
2. Place the tiller angle adjustment assembly on the front fork.
3. Install the two (2) mounting bolts to secure tiller angle adjustment assembly to the front fork. Securely tighten (FIGURE 7.3).
4. Install the tiller assembly. Refer to Removing/Installing the Tiller on page 40.
5. Install the boot assembly. Refer to Removing/Installing the Boot Assembly on page 33.
6. Connect the RED and BLACK battery connector to the wiring harness assembly. Refer to FIGURE 12.2 on page 87 for the Zoom 300 and FIGURE 12.3 on page 89 for the Zoom 400.
7. Install the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.
8. Install the seat. Refer to Removing/Installing the Seat on page 19.



**FIGURE 7.3** Removing/Installing the Fork

## Removing/Installing the Caster Assemblies

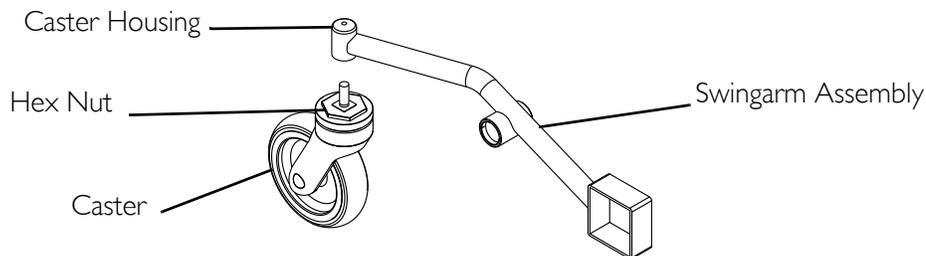
*NOTE: For this procedure, refer to FIGURE 7.4.*

### Removing

1. Use a wrench to turn the hex nut on the caster assembly counter-clockwise to loosen and remove the caster wheel.
2. If necessary, repeat STEPS 1 to remove the other caster.

### Installing

1. Insert the caster wheel into the caster housing and turn the hex nut clockwise to securely tighten the caster wheel in place.



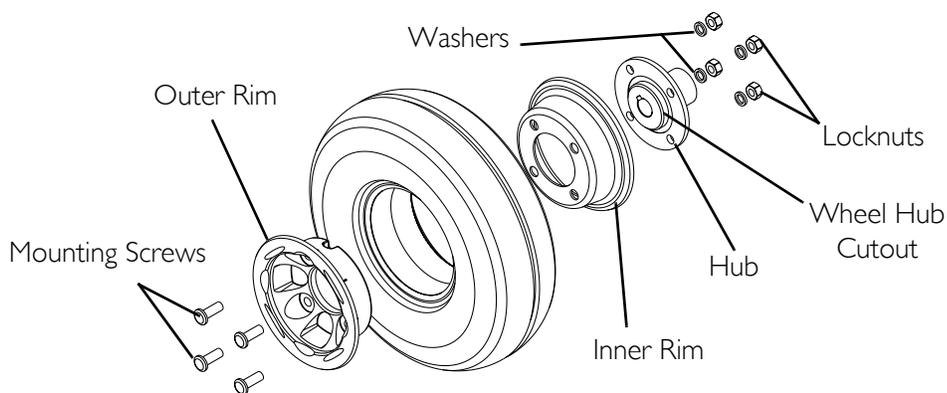
**FIGURE 7.4** Removing/Installing the Caster Assemblies

## Replacing Foam-Filled Tires Onto Wheel Rims

*NOTE: For this procedure, refer to FIGURE 7.5.*

*NOTE: During initial use of scooter, user may experience a flat spot on wheels. Flat spot will disappear with continual use of scooter.*

1. Remove the wheel from the drive shaft. Refer to Removing/Installing the Drive Wheels on page 34.
2. Perform one (1) of the following:
  - Replacing Existing Tire and Rim: Discard existing tire and hub. Proceed to STEP 3.
  - Replacing Existing Rim Only: Perform the following -
    - i. Remove the four (4) existing mounting screws, lock washers and nuts that secure the existing outer rim, inner rim and hub to the existing tire.
    - ii. Discard existing mounting hardware, rims and hub.
3. When installing the new two-piece hub into a new pneumatic tire, if necessary, place the inner tube into the tire.
4. Insert the outer rim and inner rim into the new/existing tire.
5. Insert the hub into the inner rim and align the four (4) mounting holes of the hub, inner rim and outer rim.
6. Using the four (4) mounting screws, lock washers and hex nuts, secure the outer rim to the inner rim and hub. Torque hex nuts to 160-200 in-lbs  $\pm$  20.
7. Install the drive wheel on the drive shaft. Refer to Removing/Installing the Drive Wheels on page 34.



**FIGURE 7.5** Replacing Foam-Filled Tires Onto Wheel Rims

## SECTION 8—TILLER

---

### **⚠ WARNING**

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

**Before performing any maintenance, adjustment or service, turn power OFF and remove key from ignition.**

---

## Removing/Installing the Tiller

### **Zoom 300**

*NOTE: For this procedure, refer to FIGURE 8.1, FIGURE 8.13, and FIGURE 12.2.*

*NOTE: Reverse this procedure to install the tiller.*

1. Turn power off and remove the key from the ignition.
2. Remove the seat. Refer to Removing/Installing the Seat on page 19.
3. Remove the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.
4. Disconnect the controller from the batteries by pulling the RED and BLACK controller connector from the RED and BLACK battery connector. Refer to FIGURE 12.2 on page 87.
5. Remove the basket. Refer to Removing/Installing the Front Basket on page 108.
6. Disengage the boot and slide it up the tiller to expose the tiller angle adjustment assembly.
7. Disconnect the tiller wiring harness from the rear wiring harness. Refer to FIGURE 8.13 on page 56.
8. Remove the upper tiller shroud. Refer to Removing/Installing the Upper Tiller Shroud on page 44.
9. Remove the mounting screw and “P” clip securing the tiller harness cable to the tiller (Detail “C” of FIGURE 8.1.).
10. Pull the tiller harness cable through the hole in the lower tiller shroud.
11. Remove the two (2) locknuts, mounting screws, tube clamps and cable bracket that secure the tiller to the tiller angle adjustment assembly (Detail “A” of FIGURE 8.1).
12. Disconnect the tiller angle adjustment cable from the actuator wedge by performing the following (Detail “D” of FIGURE 8.1.):
  - A. Lift up the actuator wedge until the tiller angle adjustment cable is slack.
  - B. Pull the tiller angle adjustment cable from the actuator wedge.
13. Remove the tiller.

**Zoom 400**

*NOTE: For this procedure, refer to FIGURE 8.1, FIGURE 8.14 and FIGURE 12.3.*

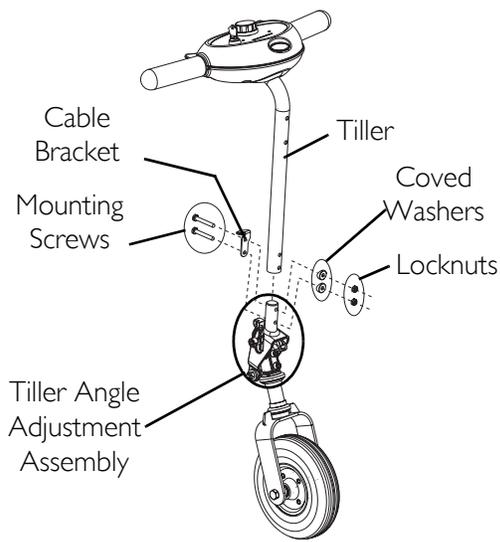
*NOTE: Reverse this procedure to install the tiller.*

1. Turn power off and remove the key from the ignition.
2. Remove the seat. Refer to Removing/Installing the Seat on page 19.
3. Remove the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.
4. Disconnect the two (2) BLACK battery connectors from the wiring harness connectors. Refer to FIGURE 12.3 on page 89.
5. Remove the rear tiller shroud. Refer to Removing/Installing the Rear Tiller Shroud on page 46.
6. Remove the headlight. Refer to Removing/Installing the Headlight on page 47.
7. Remove the headlight mounting bracket and front tiller shroud. Refer to Removing/Installing the Headlight Mounting Bracket/Front Tiller Shroud on page 48.
8. Disengage the boot and slide it up the tiller to expose the tiller angle adjustment assembly.

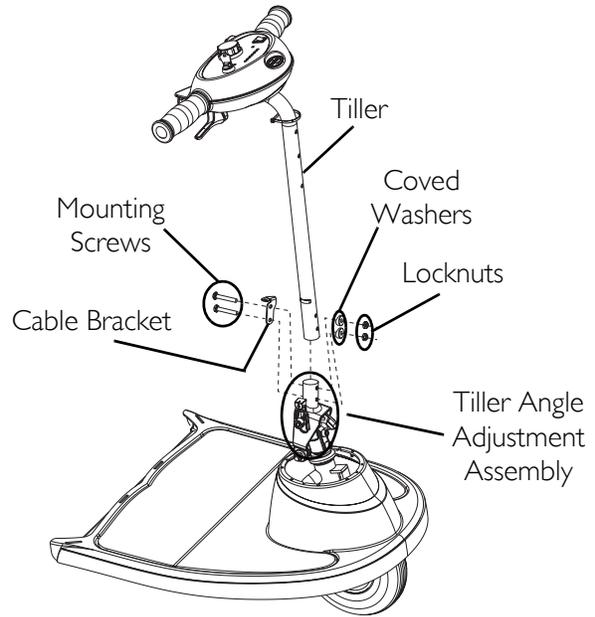
*NOTE: The boot will have to be slipped off the front basket bracket after disengaging the boot from the tabs.*

9. Disconnect the tiller wiring harness from the rear wiring harness. Refer to FIGURE 8.14 on page 57.
10. Cut the tie-wrap securing the tiller harness cable and tiller angle adjustment cable to the tiller.
11. Remove the upper tiller shroud. Refer to Removing/Installing the Upper Tiller Shroud on page 44.
12. Remove the mounting screw and "P" clip securing the tiller harness cable to the tiller (Detail "C", FIGURE 8.1.)
13. Pull the tiller harness cable through the hole in the lower tiller shroud.
14. Remove the two (2) locknuts, mounting screws, tube clamps and cable bracket that secure the tiller to the tiller angle adjustment assembly (Detail "B" of FIGURE 8.1).
15. Disconnect the tiller angle adjustment cable from the actuator wedge by performing the following (Detail "D" of FIGURE 8.1.):
  - A. Lift up the actuator wedge until the tiller angle adjustment cable is slack.
  - B. Pull the tiller angle adjustment cable weight from the actuator wedge.
16. Remove the tiller.

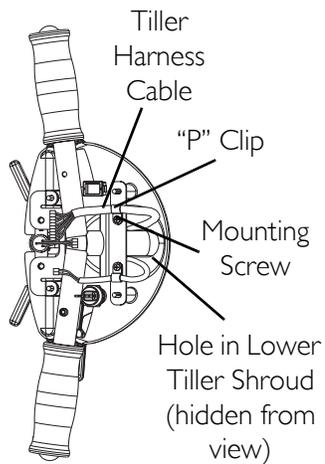
**DETAIL "A" - ZOOM 300**



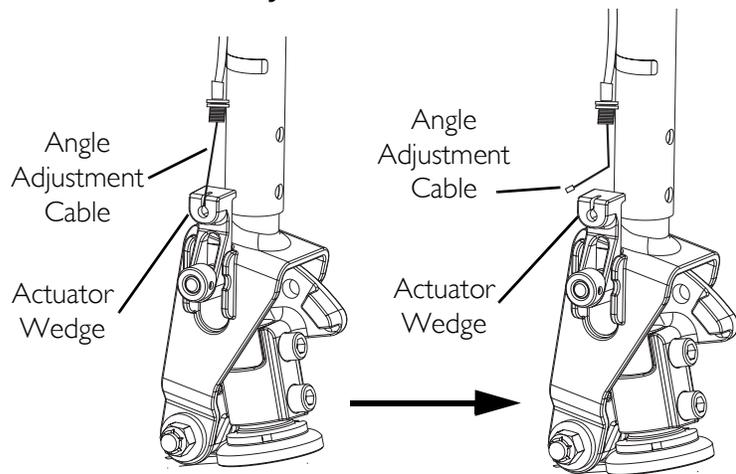
**DETAIL "B" - ZOOM 400**



**DETAIL "C" - INTERIOR CONTROL BOX**



**DETAIL "D" - TILLER ANGLE ADJUSTMENT ASSEMBLY**



**FIGURE 8.1** Removing/Installing the Tiller

## Adjusting the Tiller Angle

### ⚠ WARNING

Ensure that tiller is properly adjusted before driving the scooter.

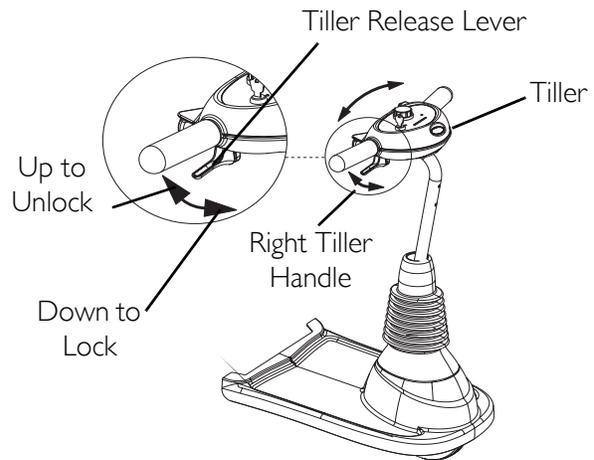
After making any tiller angle adjustments and before use, the tiller **MUST** be securely locked into position. Otherwise, a fall from the scooter could occur causing bodily injury and/or damage to the scooter. Gently, push/pull against tiller to ensure that the tiller is securely engaged into the adjustment plate.

*NOTE: For this procedure, refer to FIGURE 8.2.*

*NOTE: The powered scooter has an adjustable tiller. The tiller locks into a position that is most comfortable for you. The tiller also folds down for transportation and storage.*

1. Pull up on the tiller release lever located under the right tiller handle.
2. Push/pull the tiller to the desired angle and release the tiller release lever.
3. Gently, push/pull against tiller to ensure that the tiller is securely engaged into the locking mechanism.

*NOTE: The tiller is locked in position when an audible "click" is heard.*

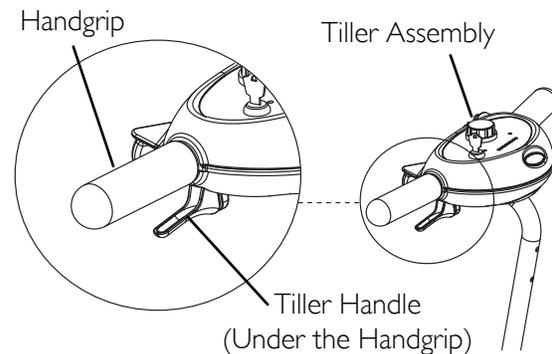


**FIGURE 8.2** Adjusting the Tiller Angle

## Replacing Handgrips

*NOTE: For this procedure, refer to FIGURE 8.3*

1. Cut the hangrip along the tiller handle.
2. Remove the cut handgrip from the tiller handle.
3. Spray the inside of the new handgrip with hairspray.
4. Slide the new handgrip onto the tiller handle.
5. Repeat STEPS 1 and 4 for the other handgrip.



**FIGURE 8.3** Replacing Handgrips

## Removing/Installing the Upper Tiller Shroud

*NOTE: For this procedure, refer to FIGURE 8.4.*

### Removing

1. Turn power off and remove the key from the ignition.
2. Remove the seat. Refer to [Removing/Installing the Seat](#) on page 19.
3. Remove the rear shroud. Refer to [Removing/Installing the Rear Shroud](#) on page 30.
4. Perform one (1) of the following:
  - On Zoom 300 - Disconnect the RED and BLACK controller connector from the RED and BLACK battery connector. Refer to FIGURE 12.2 on page 87.
  - On Zoom 400 - Disconnect the two (2) BLACK battery connectors from the wiring harness connectors. Refer to FIGURE 12.3 on page 87.
5. Remove the four (4) mounting screws that secure the upper tiller shroud to the lower tiller shroud.

---

### CAUTION

**Carefully rotate the upper tiller shroud backward to avoid damaging the internal wiring, otherwise scooter will not operate properly.**

---

6. Gently, rotate the upper tiller shroud backward exposing the internal wiring.
7. Remove the RTV sealant coating the connectors to the PC board.

---

### CAUTION

**Remove any RTV sealant coating the connector on the PC board before disconnecting the connector from the PC board. Otherwise, the PC board could be damaged.**

**DO NOT use a chemical solvent to remove any RTV sealant from connectors as it may cause damage to the PC Board.**

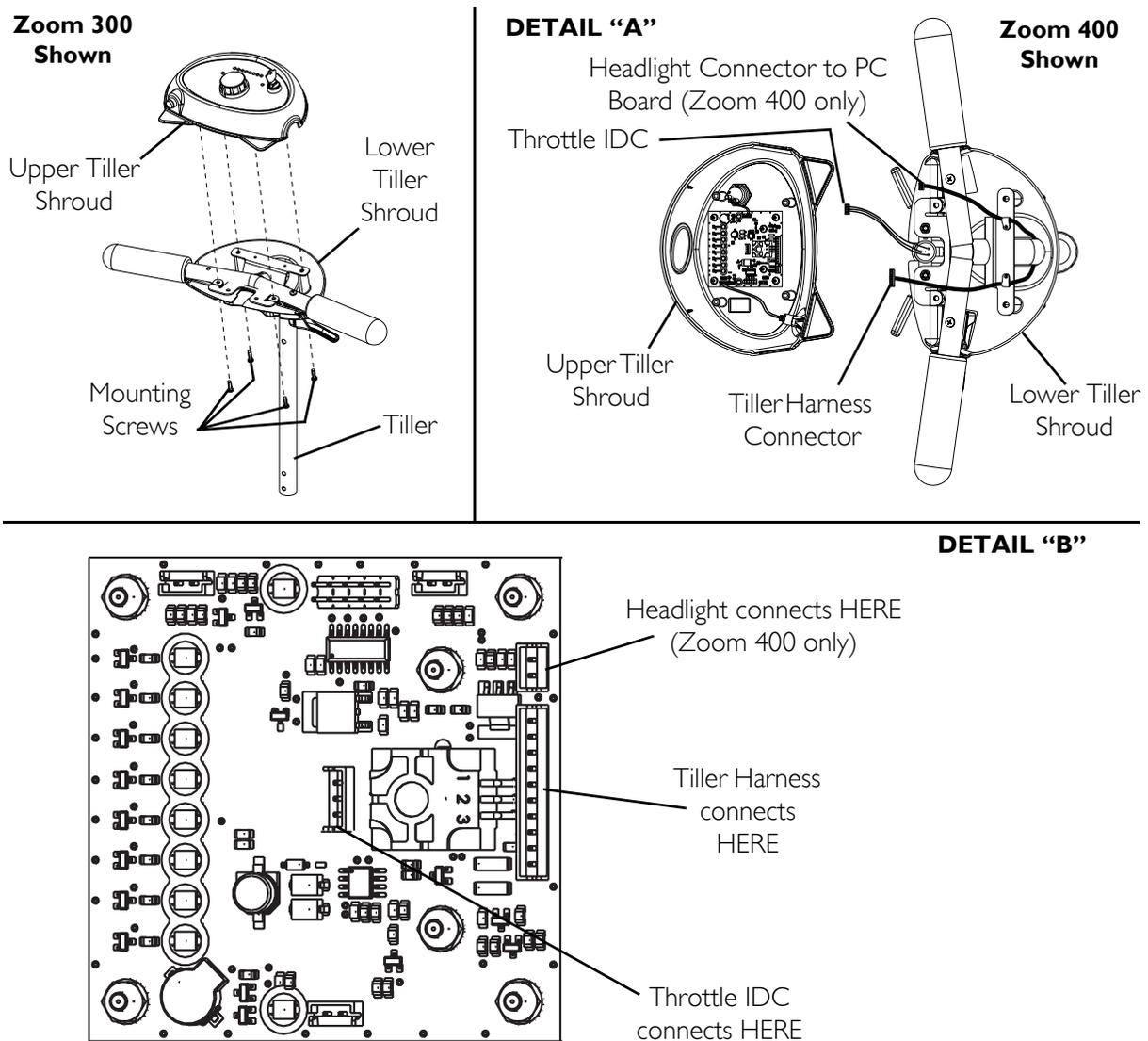
---

8. Disconnect the following from the PC board (Detail “A” of FIGURE 8.4):
  - A. Throttle IDC
  - B. Headlight connector (Zoom 400 only)
  - C. Tiller harness connector

### Installing

1. Connect the following to the PC board (Detail “B” of FIGURE 8.4):
  - A. Throttle IDC
  - B. Headlight connector (Zoom 400 only)
  - C. Tiller harness connector

2. Apply a thin coating of RTV sealant to the connectors.
3. Rotate the upper tiller shroud forward.
4. Secure the upper tiller shroud to the lower tiller shroud using the four (4) mounting screws.
5. Perform one (1) of the following:
  - On Zoom 300 - Connect the RED and BLACK controller connector to the RED and BLACK battery connector. Refer to FIGURE 12.2 on page 87.
  - On Zoom 400 - Connect the two (2) BLACK battery connectors to the wiring harness connectors. Refer to FIGURE 12.3 on page 87.
6. Install the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.
7. Install the seat. Refer to Removing/Installing the Seat on page 19.



**FIGURE 8.4** Removing/Installing the Upper Tiller Shroud

## Removing/Installing the Rear Tiller Shroud

*NOTE: This procedure is for the Zoom 400 only.*

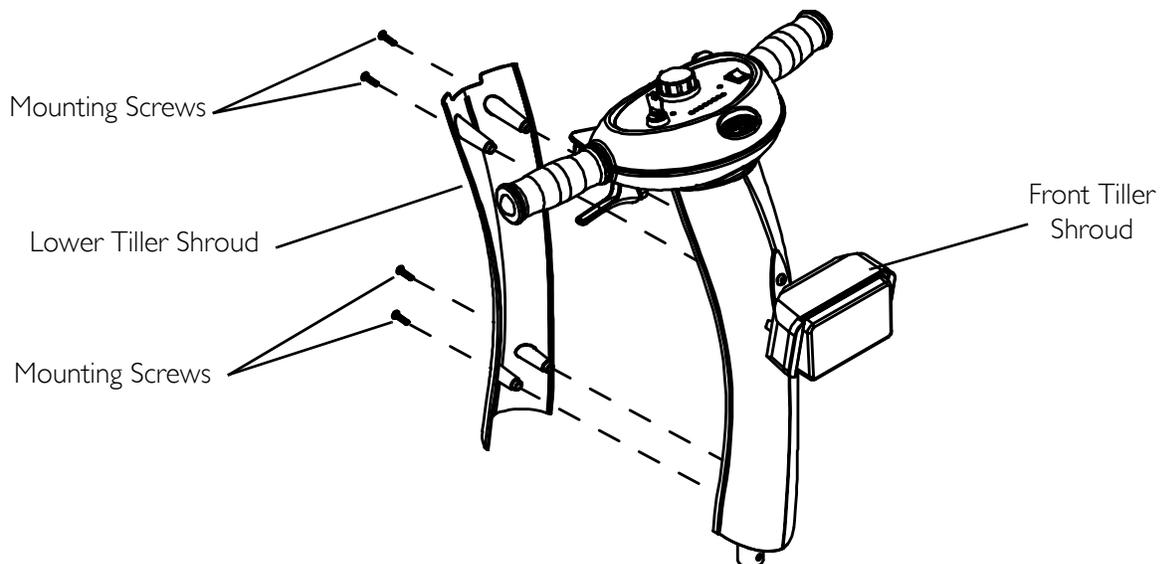
*NOTE: For this procedure, refer to FIGURE 8.5.*

### Removing

1. Remove the four (4) mounting screws that secure the rear tiller shroud to the front tiller shroud.

### Installing

1. Secure the rear tiller shroud to the front tiller shroud using the four (4) mounting screws. Securely tighten.



**FIGURE 8.5** Removing/Installing the Rear Tiller Shroud

## Removing/Installing the Headlight

*NOTE: This procedure is for the Zoom 400 only.*

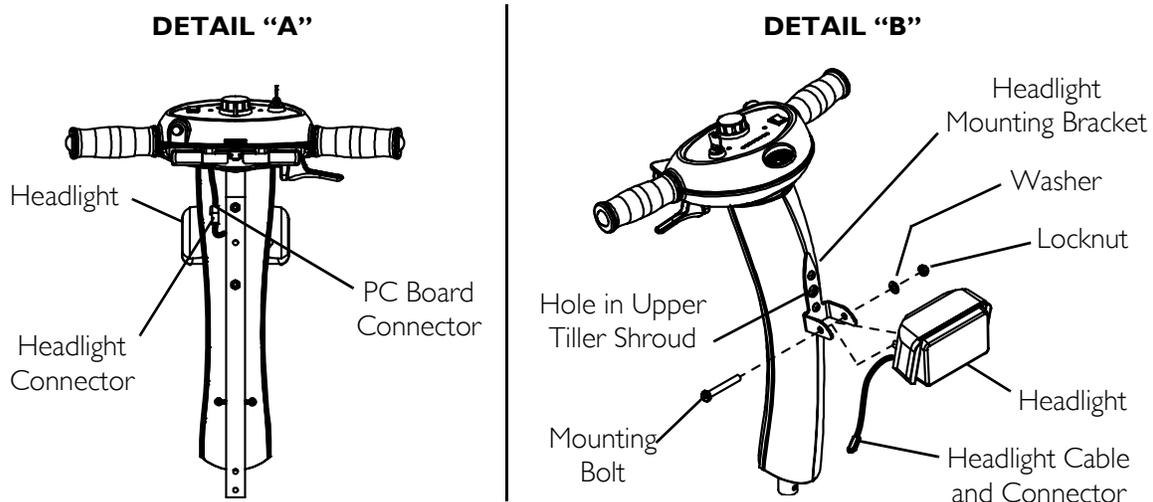
*NOTE: For this procedure, refer to FIGURE 8.6.*

### Removing

1. Remove the rear tiller shroud. Refer to [Removing/Installing the Rear Tiller Shroud](#) on page 46.
2. Disconnect the headlight connector from the PC board connector (Detail "A" of FIGURE 8.6).
3. Remove the locknut, washer and mounting bolt that secure the headlight to the headlight mounting bracket (Detail "B" of FIGURE 8.6).
4. Remove the headlight.

### Installing

1. Insert the headlight cable and connector through the hole in the upper tiller shroud (Detail "B" of FIGURE 8.6).
2. Install the headlight on the headlight mounting bracket using the locknut, washer and mounting bolt. Securely tighten.
3. Plug the headlight connector to the PC board connector (Detail "A" of FIGURE 8.6).
4. Install the rear tiller shroud. Refer to [Removing/Installing the Upper Tiller Shroud](#) on page 44.



**FIGURE 8.6** Removing/Installing the Headlight

## Removing/Installing the Headlight Mounting Bracket/ Front Tiller Shroud

*NOTE: This procedure is for the Zoom 400 only.*

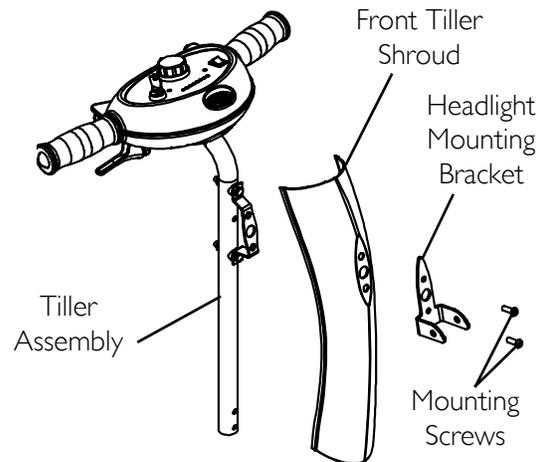
*NOTE: For this procedure, refer to FIGURE 8.7.*

### Removing

1. Remove the headlight. Refer to [Removing/Installing the Headlight](#) on page 47.
2. Remove the two (2) mounting screws that secure the headlight mounting bracket and the front tiller shroud to the tiller assembly.
3. Remove the headlight mounting bracket and the front tiller shroud.

### Installing

1. Position the headlight mounting bracket and the front tiller shroud onto the tiller assembly.
2. Secure the front tiller shroud and the headlight mounting bracket using the two (2) mounting screws.
3. Install the headlight. Refer to [Removing/Installing the Headlight](#) on page 47.
4. Install the rear shroud. Refer to [Removing/Installing the Rear Tiller Shroud](#) on page 46.



**FIGURE 8.7** Removing/Installing the Headlight Mounting Bracket/Front Tiller Shroud

## Replacing the Ignition Switch

NOTE: For this procedure, refer to FIGURE 8.8.

NOTE: RTV sealant is required for this procedure.

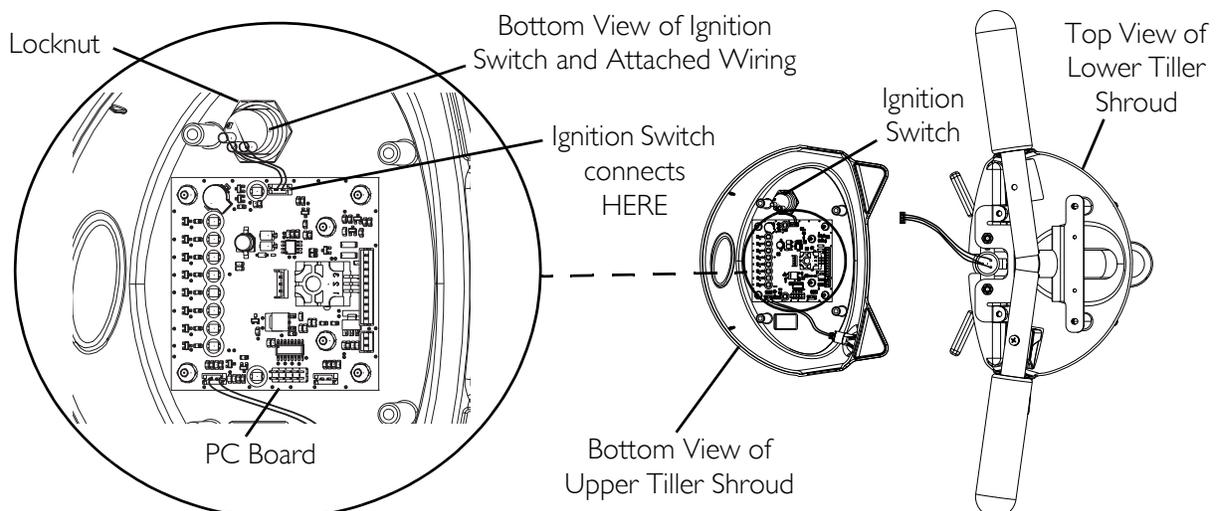
1. Remove the upper tiller shroud. Refer to [Removing/Installing the Upper Tiller Shroud](#) on page 44.
2. Pull up the PC board from its slotted housing in order to gain easier access to the components and to allow the weight of the upper tiller shroud to be supported by the lower tiller shroud
3. Remove the RTV sealant coating the ignition switch connector.

### CAUTION

Remove the RTV sealant coating the connector on the PC board before disconnecting the connector from the PC board. Otherwise, the PC board could be damaged.

**DO NOT** use a chemical solvent to remove any RTV sealant from connectors as it may cause damage to the PC Board.

4. Pull the ignition switch connector to disconnect the ignition switch from the PC board.
5. Loosen and remove the locknut that secures the ignition switch in place.
6. Push the ignition switch through the upper tiller shroud and discard.
7. Position the new ignition switch on the upper tiller shroud.
8. Secure the new ignition switch with the locknut. Securely tighten.
9. Insert the ignition switch connector into the PC board.
10. Apply a thin coating of RTV sealant to the ignition switch connector and PC board.
11. Push the PC board into its slotted housing.
12. Install the upper tiller shroud. Refer to [Removing/Installing the Upper Tiller Shroud](#) on page 44.



**FIGURE 8.8** Replacing the Ignition Switch

## Replacing the Horn

NOTE: For this procedure, refer to FIGURE 8.9.

NOTE: RTV sealant is required for this procedure.

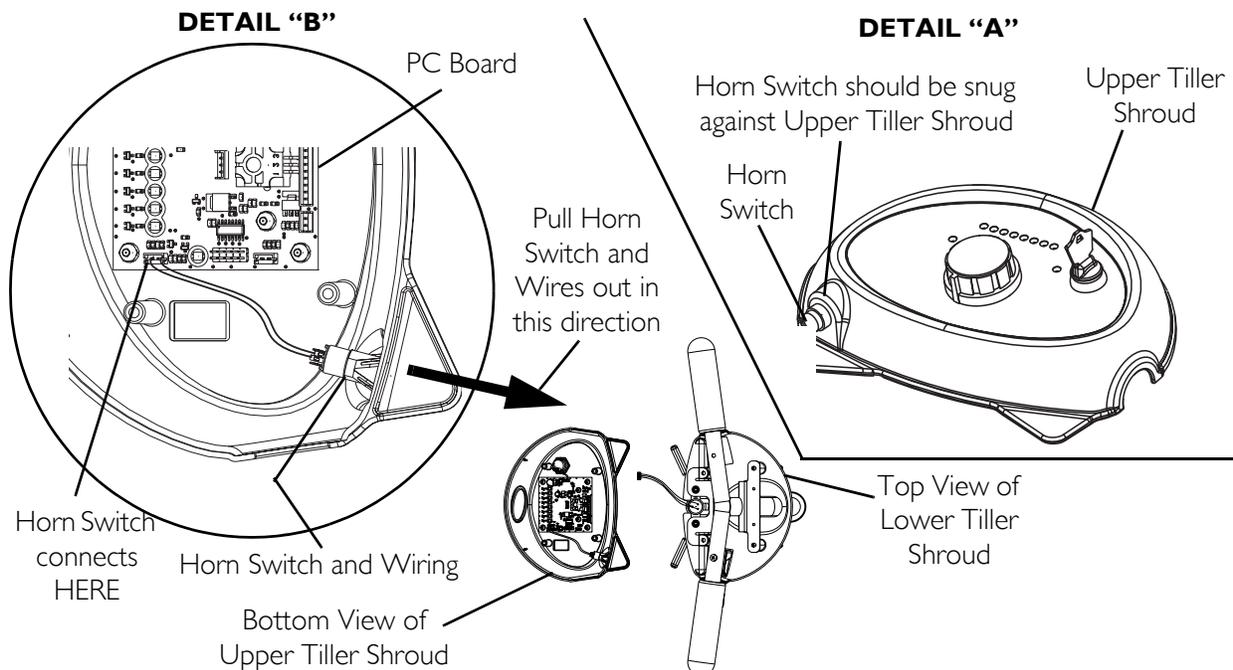
1. Remove the upper tiller shroud. Refer to Removing/Installing the Upper Tiller Shroud on page 44.
2. Remove the RTV sealant coating the horn connector.

### CAUTION

Remove any RTV sealant coating the connector on the PC board before disconnecting the connector from the PC board. Otherwise, the PC board could be damaged.

**DO NOT** use a chemical solvent to remove any RTV sealant from connectors as it may cause damage to the PC Board.

3. Pull the horn switch connector to disconnect the horn switch from the PC board.
4. Push the horn switch with the attaching wires through upper tiller shroud in the direction of the arrow shown in Detail "B" of FIGURE 8.9 and discard.
5. Install the new horn switch into the upper tiller shroud by inserting the wiring first then the horn.
6. Push the horn switch into place until the housing is snug against the upper tiller shroud. Refer to Detail "A" of FIGURE 8.9.
7. Insert the horn switch connector into the PC board. Refer to Detail "B" of FIGURE 8.9.
8. Apply a thin coating of RTV sealant to the horn switch connector and PC board.
9. Install the upper tiller shroud. Refer to Removing/Installing the Upper Tiller Shroud on page 44.



**FIGURE 8.9** Replacing the Horn

## Replacing the Headlight Switch

NOTE: This procedure is for the Zoom 400 only.

NOTE: For this procedure, refer to FIGURE 8.10.

NOTE: RTV sealant is required for this procedure.

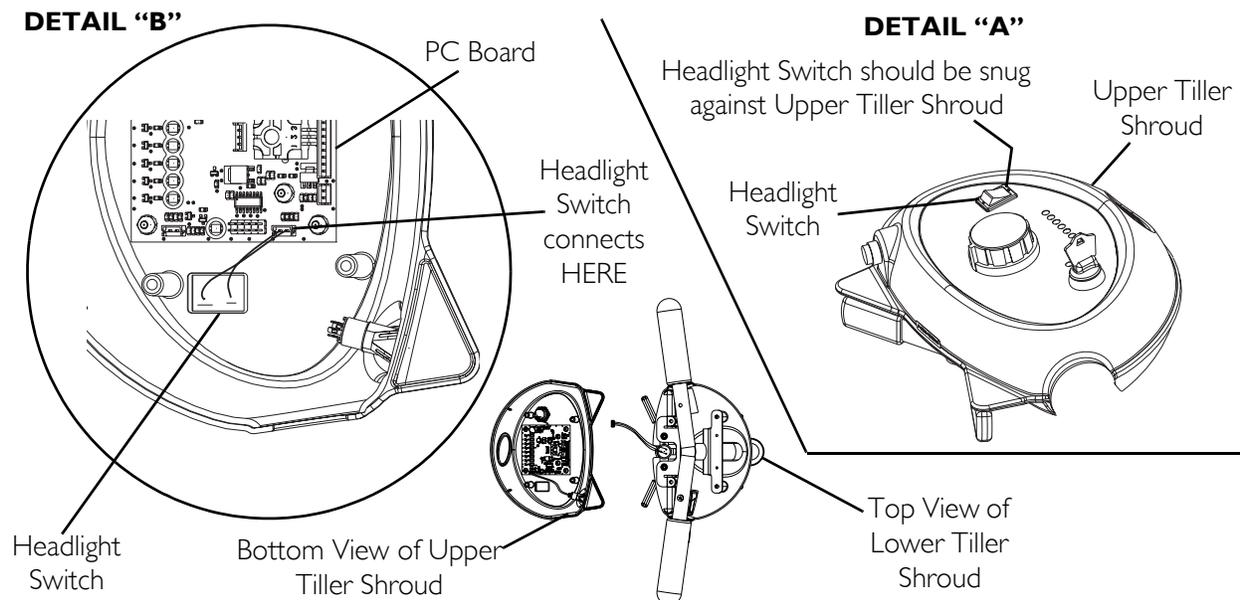
1. Remove the upper tiller shroud. Refer to Removing/Installing the Upper Tiller Shroud on page 44.
2. Remove the RTV sealant coating the headlight switch connector.

### CAUTION

**Remove any RTV sealant coating the connector on the PC board before disconnecting the connector from the PC board. Otherwise, the PC board could be damaged.**

**DO NOT use a chemical solvent to remove any RTV sealant from connectors as it may cause damage to the PC Board.**

3. Pull the headlight switch connector to disconnect the headlight switch from the PC board.
4. Push the headlight switch with the attaching wires through upper tiller shroud. (Detail "B" of FIGURE 8.10).
5. Install the new headlight switch into the upper tiller shroud by inserting the wiring first then the headlight switch.
6. Push the headlight switch into place until the housing is snug against the upper tiller shroud. Refer to Detail "B" of FIGURE 8.10.
7. Insert the headlight switch connector into PC board. Refer to Detail "B" of FIGURE 8.10.
8. Apply a thin coating of RTV sealant the headlight switch connector and the PC board.
9. Install the upper tiller shroud. Refer to Removing/Installing the Upper Tiller Shroud on page 44.



**FIGURE 8.10** Replacing the Headlight Switch

## Replacing the PC Board

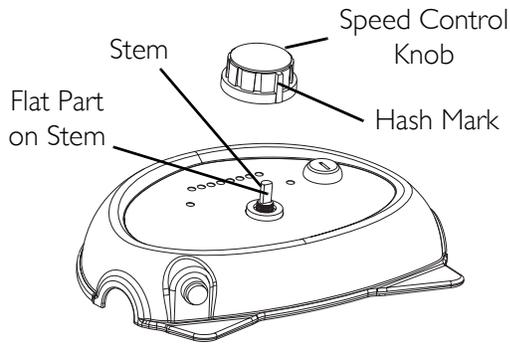
*NOTE: For this procedure, refer to FIGURE 8.11.*

1. Disconnect the RED and BLACK controller connector from the RED and BLACK battery connector. Refer to FIGURE 12.2 on page 87 for the Zoom 300 and FIGURE 12.3 on page 89 for the Zoom 400.
2. Loosen the set screw (not shown) that secures the speed control knob and remove the knob. Refer to Detail "A" of FIGURE 8.11.

*NOTE: The set screw for the speed control knob can be reached through the access hole in the back of the speed control knob.*

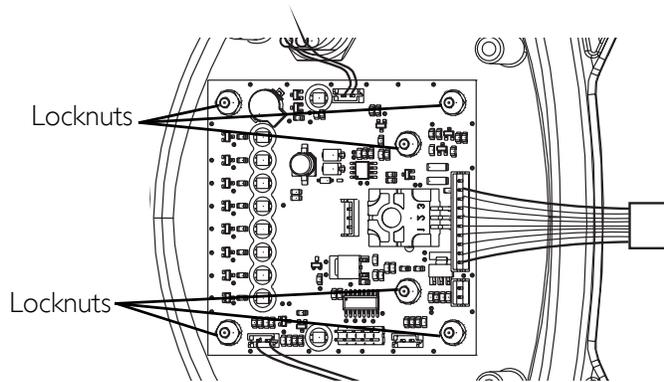
3. Remove the upper tiller shroud. Refer to Removing/Installing the Upper Tiller Shroud on page 44.
4. Disconnect the following from the PC board (Detail "B" of FIGURE 8.11):
  - A. Ignition switch
  - B. Horn
  - C. Throttle
  - D. Controller
  - E. Headlight (Zoom 400 Only)
  - F. Headlight Switch (Zoom 400 Only)
5. Remove the six (6) locknuts that secure the PC board to the upper tiller shroud. Refer to Detail "C" of FIGURE 8.11.
6. Note the orientation of the PC board for proper installation of the new one.
7. Remove the PC board from the upper tiller shroud and discard.
8. Install new PC board in the position noted in STEP 6.
9. Secure the new PC board to the upper tiller shroud with the existing six (6) mounting screws. Refer to Detail "C" of FIGURE 8.11.
10. Connect the following to the PC board (Detail "B" of FIGURE 8.11):
  - A. Ignition switch
  - B. Horn
  - C. Throttle
  - D. Controller
  - E. Headlight (Zoom 400 Only)
  - F. Headlight Switch (Zoom 400 Only)
11. Install the upper tiller shroud. Refer to Removing/Installing the Upper Tiller Shroud on page 44.
12. Align the flat side of the stem with the hash mark on the speed control knob. Refer to Detail "A" of FIGURE 8.11.
13. Tighten the set screw inside the speed control knob (not shown) to the stem.

**DETAIL "A"**

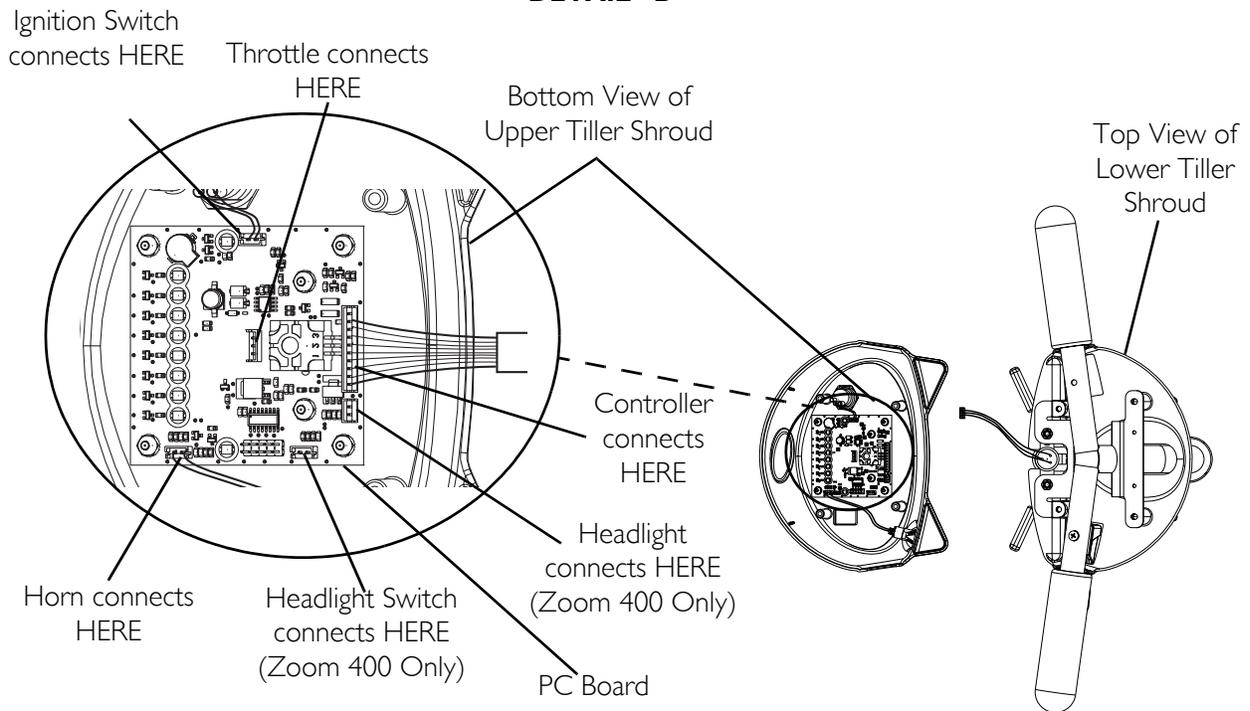


*NOTE: Only upper tiller shroud shown for clarity.*

**DETAIL "C"**



**DETAIL "B"**



**FIGURE 8.11** Replacing the PC Board

## Removing/Installing the Tiller Angle Adjustment Assembly

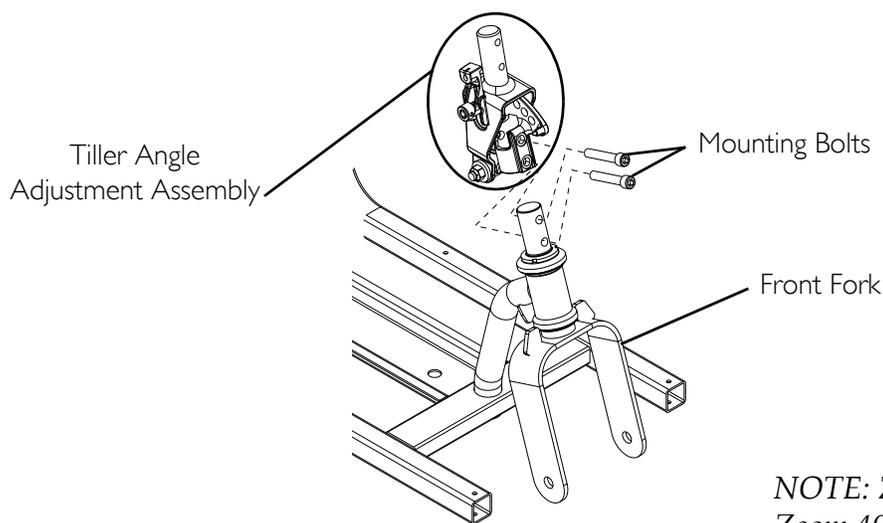
*NOTE: For this procedure, refer to FIGURE 8.12.*

### Removing

1. Remove the tiller. Refer to Removing/Installing the Tiller on page 40.
2. Remove the two (2) mounting bolts that secure the tiller angle adjustment assembly to the front fork. Refer to FIGURE 8.12.

### Installing

1. Install the two (2) mounting bolts to secure tiller angle adjustment assembly to the front fork. Securely tighten (FIGURE 8.12).
2. Install the tiller. Refer to Removing/Installing the Tiller on page 40.



**FIGURE 8.12** Removing/Installing the Tiller Angle Adjustment Assembly

## Replacing the Tiller Wiring Harness

*NOTE: For this procedure, refer to FIGURE 8.13 and FIGURE 8.14.*

1. Turn power off and remove the key from the ignition.
2. Remove the seat. Refer to Removing/Installing the Seat on page 19.
3. Remove the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.
4. Perform one (1) of the following to remove the batteries:
  - For Zoom 300 - Refer to Removing/Installing the Batteries on Zoom 300 on page 86.
  - For Zoom 400 - Refer to Removing/Installing the Batteries on Zoom 400 on page 88.
5. Remove the front shroud. Refer to Removing/Installing the Front Shroud on page 31.
6. Disconnect the tiller wiring harness connector from the rear wiring harness (FIGURE 8.13 for Zoom 300, FIGURE 8.14 for Zoom 400).
7. Mark the positions of the tie-wraps for replacing them later.
8. Cut the tie-wraps securing the tiller wiring harness to the frame.

*NOTE:*

- *For the Zoom 400 - Refer to FIGURE 8.14.*
- *For the Zoom 300 - Refer to FIGURE 8.13.*

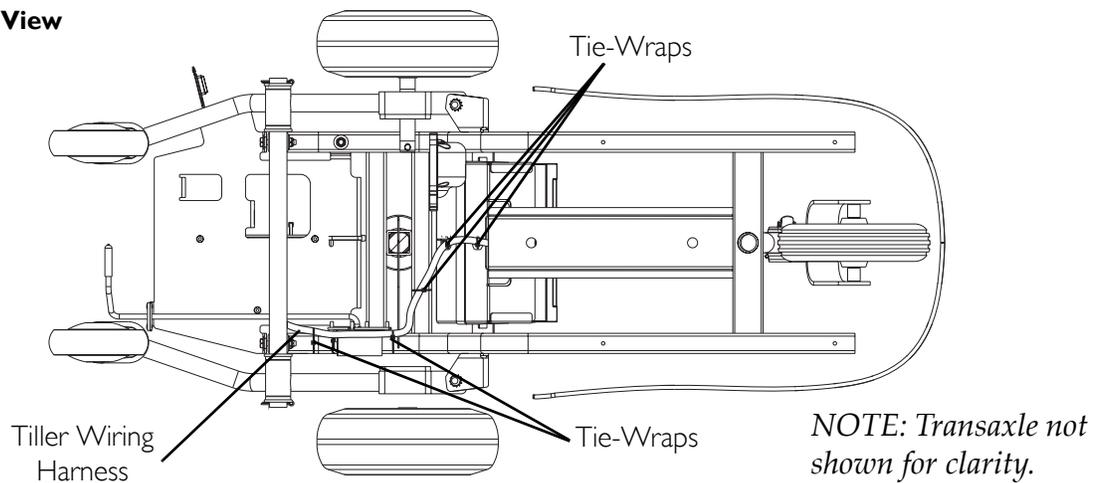
*NOTE: The scooter may have to be elevated on blocks to access all tie-wraps.*

9. Remove the tiller wiring harness from the scooter.
10. Secure the new tiller wiring harness to the frame with tie-wraps at the positions marked.

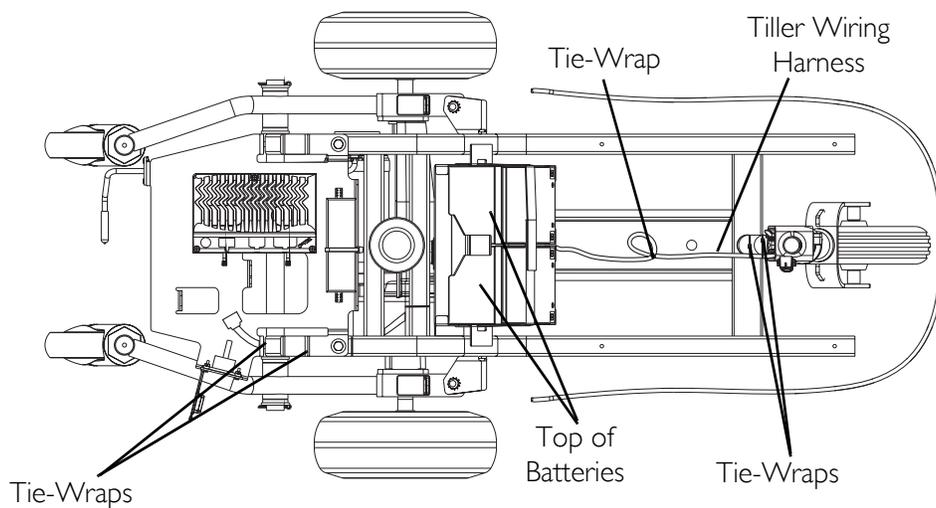
*NOTE: The scooter may have to be lifted to access all tie-wrap points.*

11. Connect the tiller wiring harness connector to the rear wiring harness connector (FIGURE 8.13 for Zoom 300, FIGURE 8.14 for Zoom 400).
12. Replace the front shroud. Refer to Removing/Installing the Front Shroud on page 31.
13. Perform one (1) of the following to install the batteries:
  - For Zoom 300 - Refer to Removing/Installing the Batteries on Zoom 300 on page 86.
  - For Zoom 400 - Refer to Removing/Installing the Batteries on Zoom 400 on page 88.
14. Replace the rear shroud. Refer to Removing/Installing the Front Shroud on page 31
15. Replace seat. Refer to Removing/Installing the Seat on page 19.

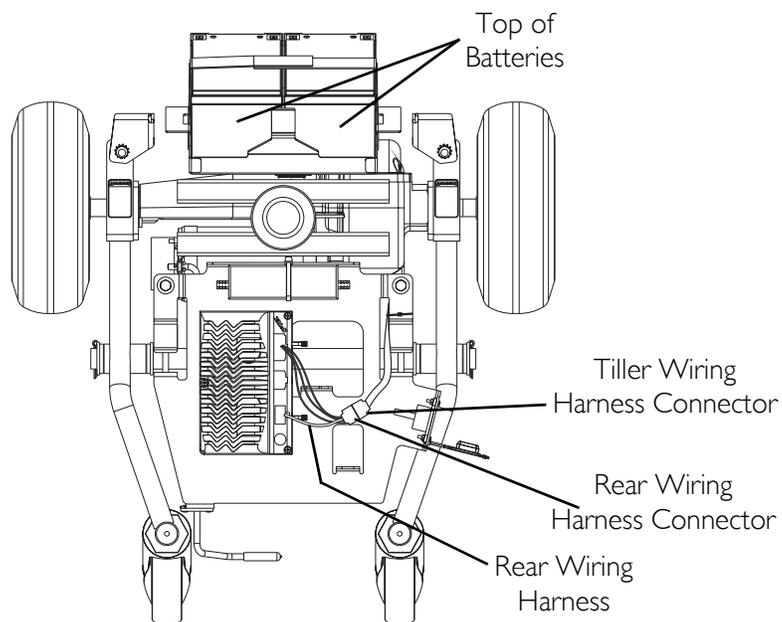
**Bottom View**



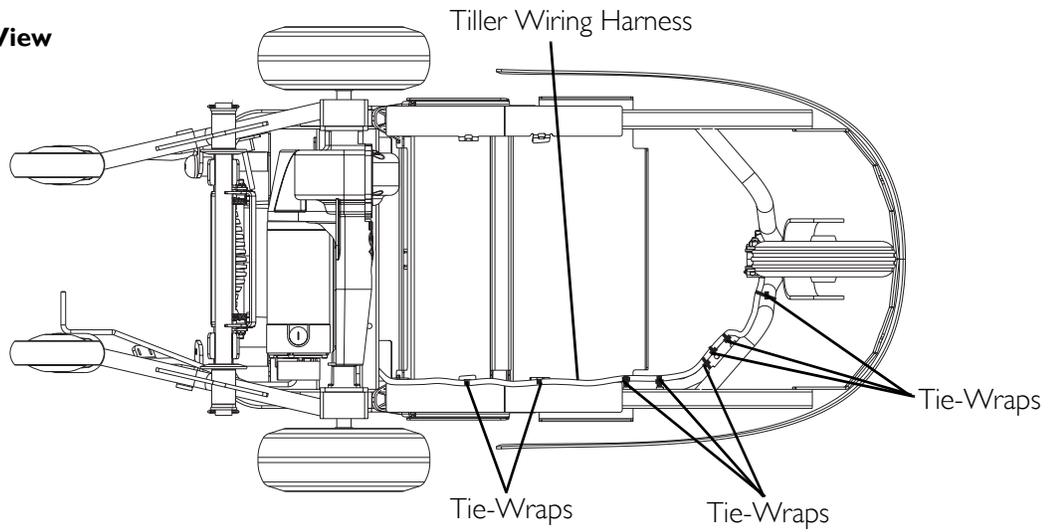
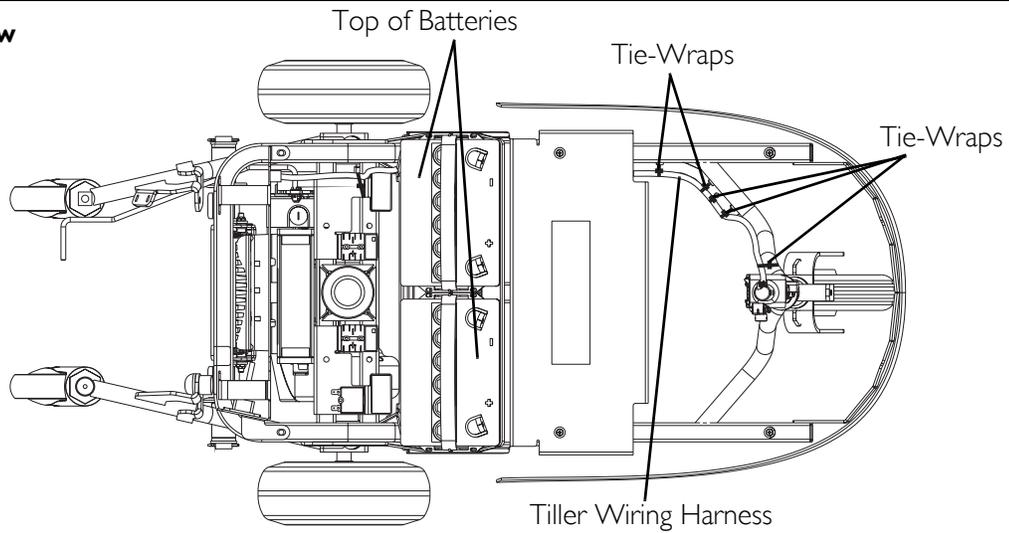
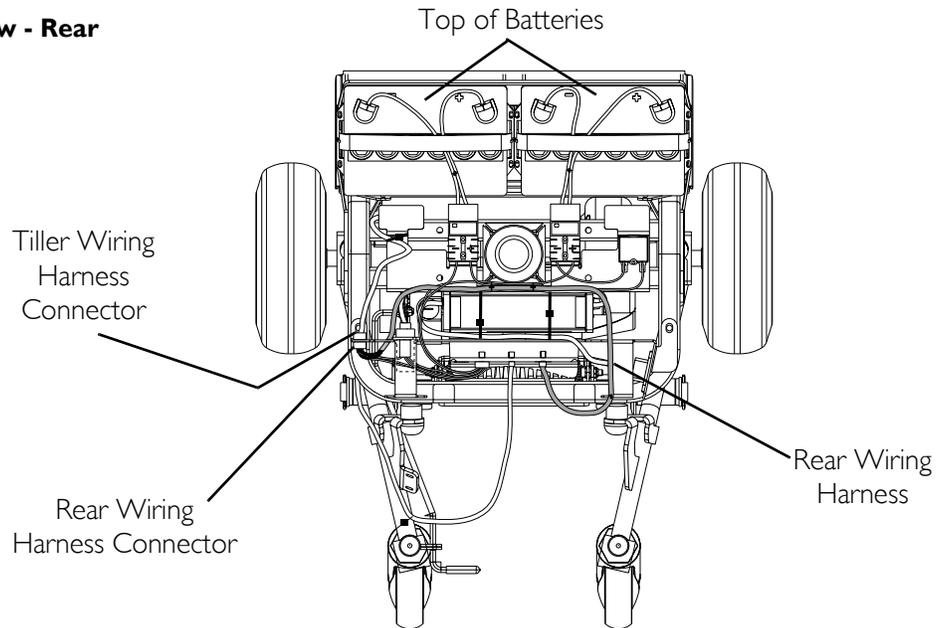
**Top View**



**Top View - Rear**



**FIGURE 8.13** Replacing the Tiller Wiring Harness - 300

**Bottom View****Top View****Top View - Rear****FIGURE 8.14** Replacing the Tiller Wiring Harness - Zoom 400

## Changing to Left-Handed Operation

For this procedure, refer to [Changing to Left-Handed Operation](#) on page 80.

## Replacing the Throttle Assembly

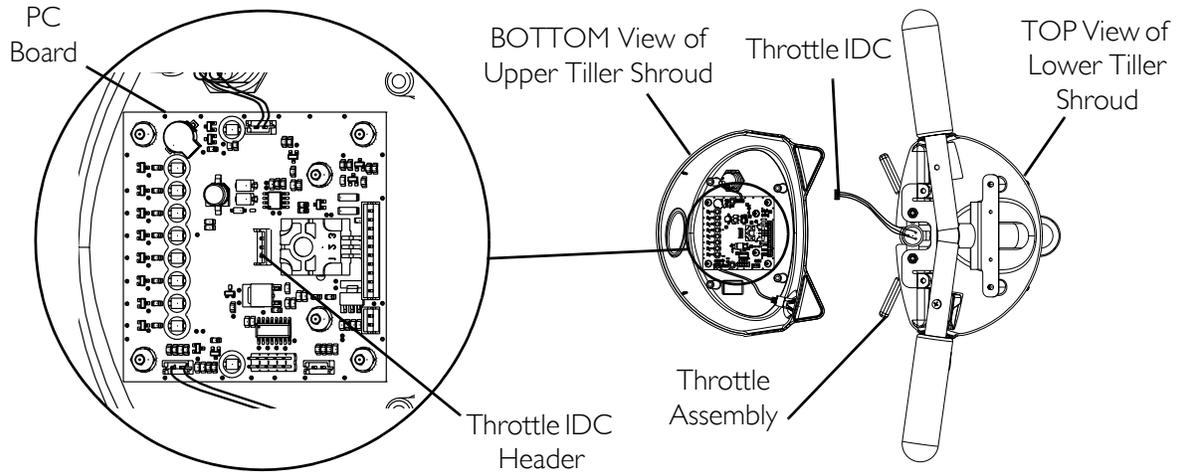
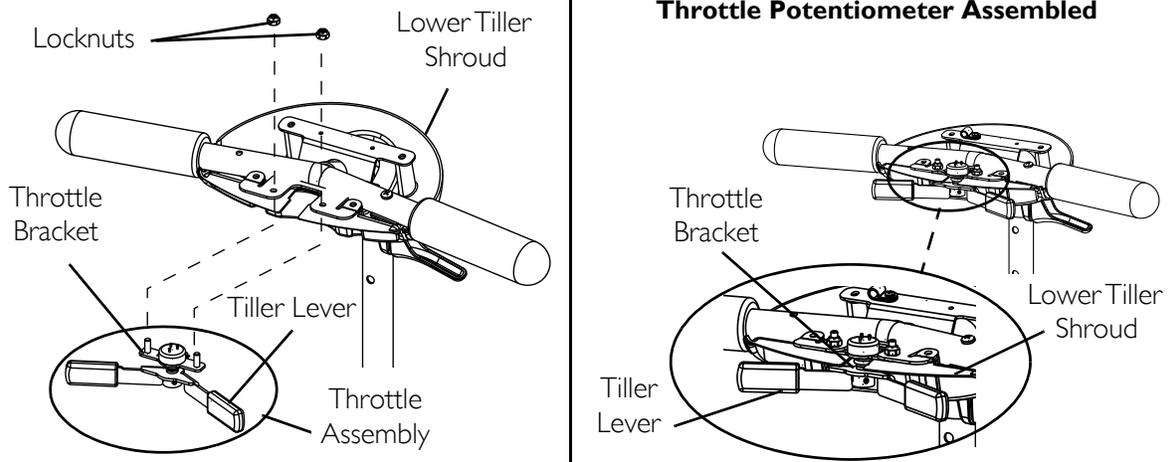
*NOTE: For this procedure, refer to FIGURE 8.15 and FIGURE 12.2 on page 87.*

1. Turn power OFF and remove the key from the ignition.
2. Perform one (1) of the following to remove the batteries:
  - For Zoom 300 - refer to [Removing/Installing the Batteries on Zoom 300](#) on page 86.
  - For Zoom 400 - refer to [Removing/Installing the Batteries on Zoom 400](#) on page 88.
3. Remove the upper tiller shroud. Refer to [Removing/Installing the Upper Tiller Shroud](#) on page 44.
4. Remove any RTV sealant from the throttle IDC connector on the PC board (Detail “A” of FIGURE 8.15).
5. Disconnect the throttle IDC from the header on the PC board (Detail “A” of FIGURE 8.15).
6. Remove the two (2) locknuts from the throttle mounting bracket and slide the existing throttle assembly out of the holes (Detail “B” of FIGURE 8.15).
7. Install the new throttle assembly into the mounting holes on the throttle mounting bracket (Detail “B” of FIGURE 8.15).
8. Replace the two (2) locknuts. Tighten to 25 inch-lbs  $\pm$  20% (Detail “B” of FIGURE 8.15).

*NOTE: Ensure that the lower tiller shroud fits in-between the throttle bracket and tiller lever. Refer to Detail “B” of FIGURE 8.15.*

9. Connect the throttle IDC into the throttle IDC header (Detail “A” of FIGURE 8.15).
10. Apply RTV sealant to the throttle IDC header.
11. Replace the upper tiller shroud. Refer to [Removing/Installing the Upper Tiller Shroud](#) on page 44.
12. Perform one (1) of the following to replace the batteries:
  - For Zoom 300 - Refer to [Removing/Installing the Batteries on Zoom 300](#) on page 86.
  - For Zoom 400 - Refer to [Removing/Installing the Batteries on Zoom 400](#) on page 88.
13. Reinstall the rear shroud. Refer to [Removing/Installing the Rear Shroud](#) on page 30.
14. Reinstall the seat. Refer to [Removing/Installing the Seat](#) on page 19.
15. Insert the key into the ignition and turn it to the ON position.

*NOTE: The Status LED light on the control panel should be solid GREEN. If the Status LED light is not solid, refer to [Error Codes](#) on page 102 or call Invacare Technical Service Department.*

**DETAIL “A” - DISCONNECT/CONNECT THE THROTTLE IDC****DETAIL “B” - REPLACING THE THROTTLE ASSEMBLY****FIGURE 8.15** Replacing the Throttle Assembly

## Calibrating Throttle Potentiometer

### Mechanical Method

*NOTE: For this procedure, refer to Detail “A” of FIGURE 8.15 and FIGURE 8.16.*

*NOTE: This procedure should be performed only when one (1) of the following occurs:*

- Scooter does not drive and the Status LED blinks six (6) or seven (7) times.
- After replacing the throttle assembly and the scooter does not drive (the Status LED blinks six [6] or seven [7] times).

1. Turn power off and remove the key from the ignition.
2. Disengage the brake release lever. Refer to Disengaging/Engaging the Brake Release Lever on page 66.

3. Put a block under the frame of the scooter to raise the drive wheels off the ground for testing purposes.
4. Remove the upper tiller shroud. Refer to Removing/Installing the Upper Tiller Shroud on page 44.
5. Using a 5/64" allen head tool, loosen the two (2) set screws slightly. Refer to FIGURE 8.16.

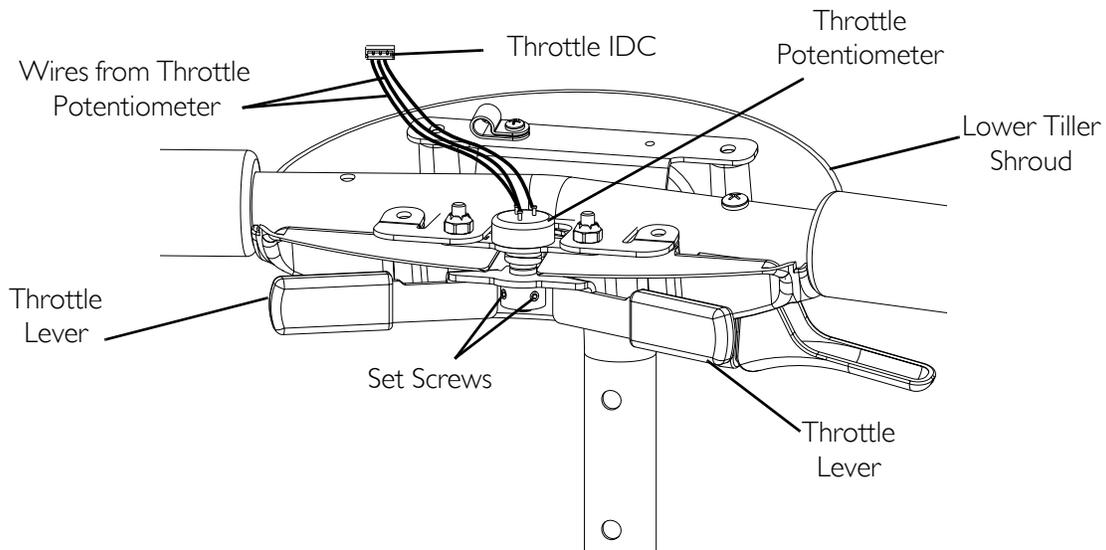
*NOTE: DO NOT remove the set screws.*

6. Turn the key to the ON position.
7. Locate the RED and WHITE wires from the throttle potentiometer.
8. Using a digital volt meter, take a DC voltage reading from the RED and WHITE wires. A reading of 2.3 VDC ( $\pm 0.2$ ) should be displayed. If the reading does not fall within this range, go to STEP 9.

*NOTE: A normal reading is around 2.3 VDC ( $\pm 0.2$ ), but if the Status LED continues to blink six (6) times, the throttle pot needs to be re-calibrated.*

9. To re-calibrate the throttle pot, perform the following:
  - A. Leave the digital multimeter hooked up to the red and white wires.
  - B. Using a small flat screwdriver, adjust the throttle potentiometer by turning the potentiometer clockwise or counter-clockwise until the multimeter reading is around 2.3 Volts ( $\pm 0.2$ ).
10. When the throttle potentiometer is re-calibrated and the reading falls within the recommended range, tighten the two (2) set screws.
11. Replace the upper tiller shroud. Refer to Removing/Installing the Upper Tiller Shroud on page 44.
12. Engage the brake release lever. Refer to Disengaging/Engaging the Brake Release Lever on page 66.
13. Turn the power to the scooter off then on again.
14. Look at the Status LED. A solid GREEN LED should be displayed and the scooter can be driven.
15. Test drive the scooter.

*NOTE: If the scooter does not drive, repeat this procedure. If the scooter still does not drive, call Invacare at the number listed on the back cover of this manual.*



**FIGURE 8.16** Calibrating Throttle Potentiometer

### Programming Method

*NOTE: For this procedure, refer to FIGURE 8.16.*

*NOTE: Before performing this procedure, review [Programming the Controller](#) on page 80*

*NOTE: This menu is used to calibrate the throttle potentiometer for neutral such that when the throttle is at rest (in neutral), the controller reads a voltage that translates to zero speed. The default voltage for zero speed is 2.3 VDC ( $\pm 0.2$ ).*

1. Plug in the programmer. Refer to [Plugging in the Programmer](#) on page 80.
2. From the Main menu, select the Speed Lever in Neutral menu option.
3. Loosen the two (2) set screws in the throttle assembly, refer to FIGURE 8.16.
4. Rotate the throttle shaft slowly until the buzzer sounds.

*NOTE: If the controller version is 2.46 or higher, the Status LED will also glow.*

5. Press ENTER to confirm the value when finished.

## SECTION 9—SWINGARMS

---

### **⚠ WARNING**

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

**Before performing any maintenance, adjustment or service, turn power OFF and remove key from ignition.**

---

## Removing/Installing the Swingarms

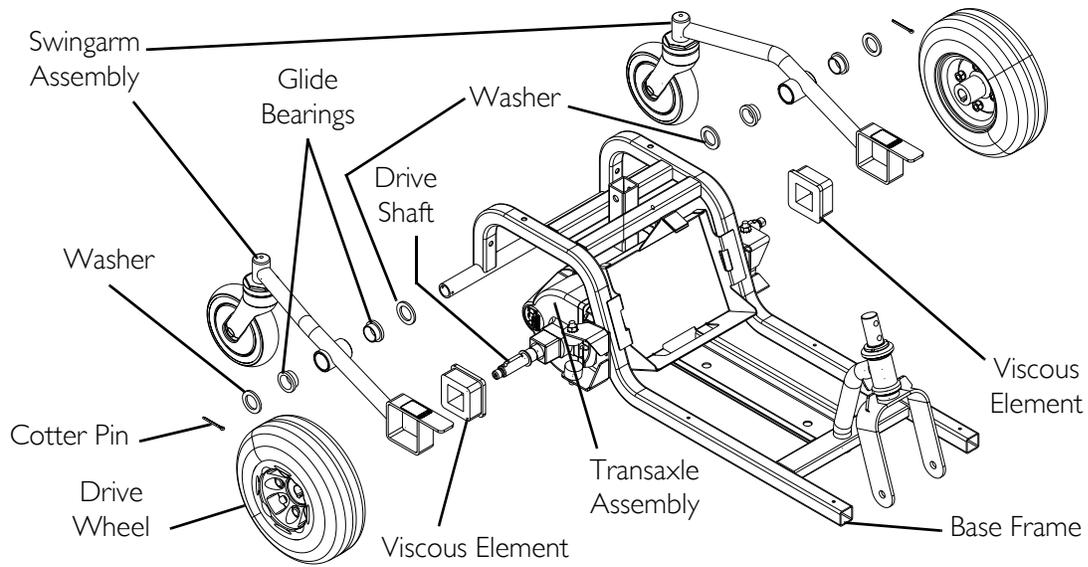
*NOTE: For this procedure, refer to FIGURE 9.1.*

### Removing

1. Turn power OFF and remove the key from the ignition.
2. Remove the seat. Refer to [Removing/Installing the Seat](#) on page 19.
3. Remove the rear shroud. Refer to [Removing/Installing the Rear Shroud](#) on page 30.
4. Remove the batteries. Refer to [Removing/Installing the Batteries on Zoom 300](#) on page 86 and [Removing/Installing the Batteries on Zoom 400](#) on page 88.
5. Remove the drive wheel. Refer to [Removing/Installing the Drive Wheels](#) on page 34.
6. Support the transaxle.
7. Remove the cotter pin on the swingarm.
8. Slide out the two (2) washers, two (2) glide bearings and swingarm assembly.
9. Remove the viscous element from the drive shaft.
10. If necessary, repeat STEPS 5-8 for the other swingarm assembly.

### Installing

1. Install the viscous element on the drive shaft.
2. Install the two (2) washers, two (2) bearing glides and swingarm assembly as shown in FIGURE 9.1.
3. Install the cotter pin on the swingarm.
4. Install the drive wheel. Refer to [Removing/Installing the Drive Wheels](#) on page 34.
5. If necessary, repeat STEPS 1-4 for the other swingarm assembly.
6. Install the batteries. Refer to [Removing/Installing the Batteries on Zoom 300](#) on page 86 and [Removing/Installing the Batteries on Zoom 400](#) on page 88.
7. Install the rear shroud. Refer to [Removing/Installing the Rear Shroud](#) on page 30.
8. Install the seat. Refer to [Removing/Installing the Seat](#) on page 19.



*NOTE: Swingarm on Zoom 300 shown. Swingarm on Zoom 400 removes/installs the same way.*

**FIGURE 9.1** Removing/Installing the Swingarms

# SECTION 10—TRANSAXLE

---

## **⚠ WARNING**

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

**Before performing any maintenance, adjustment or service, turn power off and remove key from ignition.**

---

## **Removing/Installing the Transaxle**

*NOTE: For this procedure, refer to FIGURE 10.1 and FIGURE 11.1.*

### **Removing**

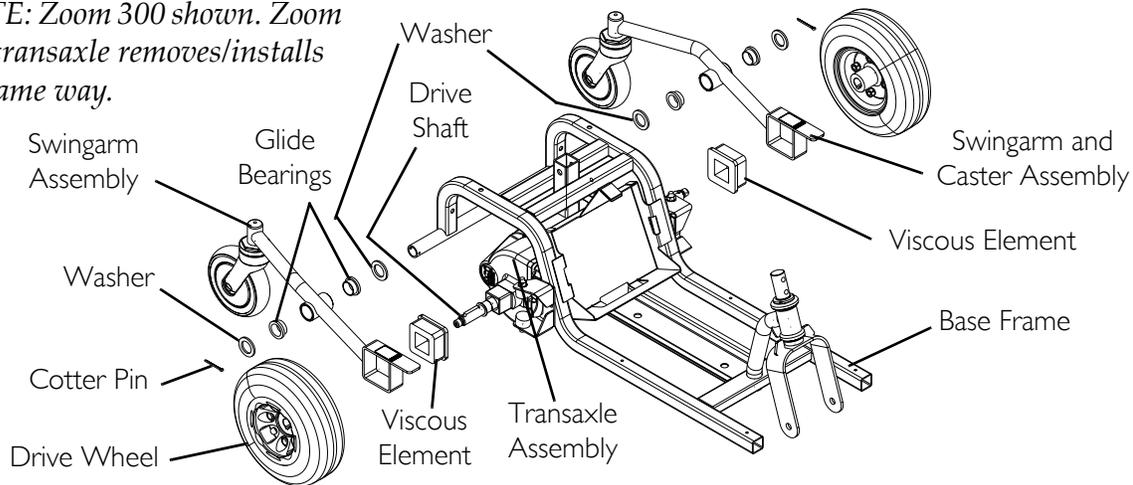
1. Turn power off and remove the key from the ignition.
2. Remove the seat. Refer to [Removing/Installing the Seat](#) on page 19.
3. Remove the rear shroud. Refer to [Removing/Installing the Rear Shroud](#) on page 30.
4. Disconnect the 4-way motor connector from the controller. Refer to FIGURE 11.1.
5. On Zoom 400 only - disassemble the scooter. Refer to [Disassembling/Assembling the Zoom 400](#) on page 105.
6. Remove the batteries. Refer to [Removing/Installing the Batteries on Zoom 300](#) on page 86 or [Removing/Installing the Batteries on Zoom 400](#) on page 88.
7. Remove both drive wheels. Refer to [Removing/Installing the Drive Wheels](#) on page 34.
8. Remove both swingarms and viscous elements from the frame. Refer to [Removing/Installing the Swingarms](#) on page 62.
9. Once the swingarm and viscous elements are removed, the transaxle will be free to be removed.

### **Installing**

1. Align the transaxle along the bottom of the frame.
2. Install the viscous element on drive shaft of the transaxle.
3. Install both swingarms and viscous elements. Refer to [Removing/Installing the Swingarms](#) on page 62.
4. Install both drive wheels. Refer to [Removing/Installing the Drive Wheels](#) on page 34.
5. Install the batteries.
6. Reconnect the 4-way motor connector to the controller. Refer to FIGURE 11.1.

7. On Zoom 400 only - Assemble the scooter. Refer to Disassembling/Assembling the Zoom 400 on page 105.
8. Install the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.
9. Install the seat. Refer to Removing/Installing the Seat on page 19.

*NOTE: Zoom 300 shown. Zoom 400 transaxle removes/installs the same way.*



**FIGURE 10.1** Removing/Installing the Transaxle

## Removing/Installing the Brake Release Lever

*NOTE: For this procedure, refer to FIGURE 10.2.*

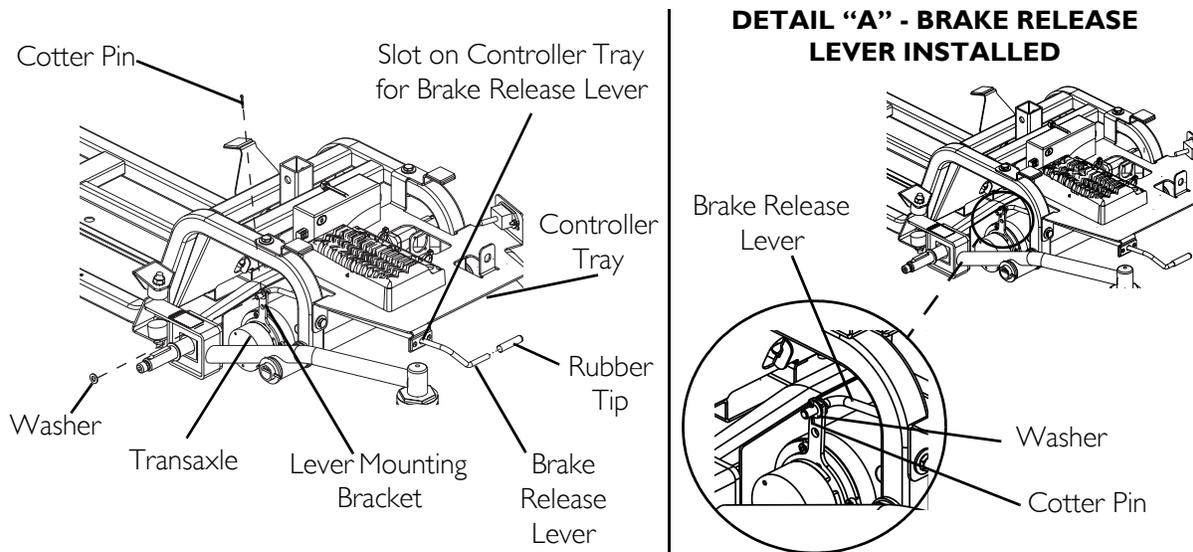
### Removing

1. Remove the seat. Refer to Removing/Installing the Seat on page 19.
2. Remove the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.
3. On Zoom 400 only - Disassemble the scooter. Refer to Disassembling/Assembling the Zoom 400 on page 105.
4. Remove the cotter pin and washer that attach the brake release lever to the lever mounting bracket on the transaxle.
5. Twist off the rubber tip from the end of the brake release lever.
6. Remove the brake release lever by sliding it out of the controller tray.

### Installing

1. Slide the brake release lever through the slot in the controller tray.
2. Slide the brake release lever into the slot on the lever mounting bracket on the transaxle.
3. Install the rubber tip onto the end of the brake release lever.
4. Install the washer and cotter pin to secure the brake release lever to the transaxle.

5. On Zoom 400 only - Assemble the scooter. Refer to Disassembling/Assembling the Zoom 400 on page 105.
6. Install the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.
7. Install the seat. Refer to Removing/Installing the Seat on page 19.



*NOTE: Zoom 300 shown. Zoom 400 brake release lever removes/installs the same way.*

**FIGURE 10.2** Removing/Installing the Brake Release Lever

## Disengaging/Engaging the Brake Release Lever

### **⚠ WARNING**

**Ensure that the brake-release lever is in the engaged position before driving. There should be an audible "click" when stopping and starting.**

*NOTE: For this procedure, refer to FIGURE 10.3.*

The brake release lever manually engages and disengages the brake. The brake release lever is located under the shroud near the left caster assembly.

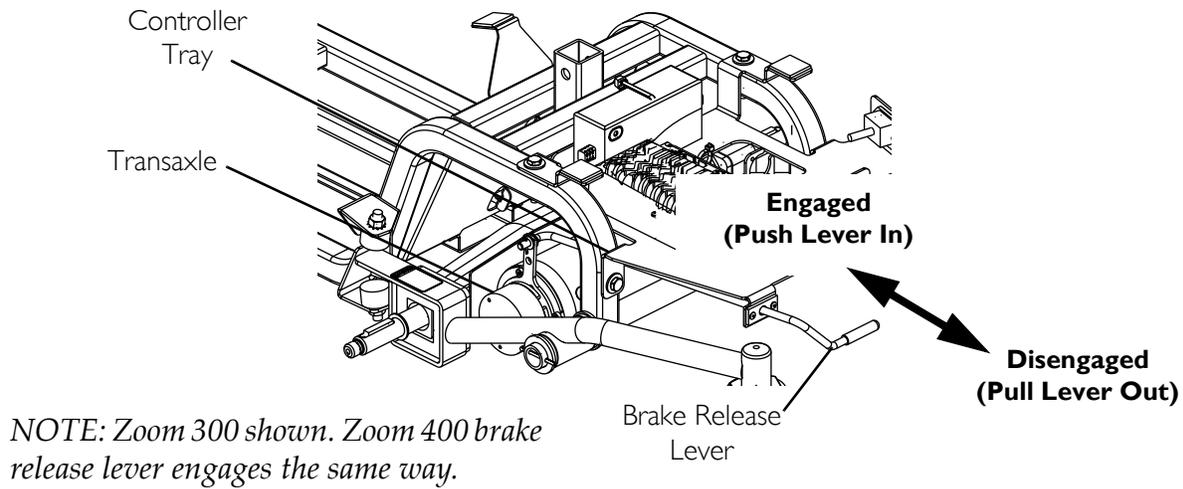
1. Perform one (1) of the following:

- To Disengage - Pull the brake release lever out in the direction shown in FIGURE 10.3.

*NOTE: When the brake release lever is disengaged (lever pulled out) and the key is removed, the powered scooter can be pushed. The powered scooter cannot be driven with the brake in the disengaged (lever pulled out) position.*

- To Engage - Push the brake release lever in, in the direction shown in FIGURE 10.3.

*NOTE: The brake MUST be engaged (lever pushed in) in normal driving conditions. Activation of the throttle control lever automatically releases the brake so that the powered scooter can drive. Releasing the throttle control lever automatically engages the brake so as to prevent the powered scooter from rolling on its own.*



**FIGURE 10.3** Disengaging/Engaging the Brake Release Lever

# SECTION 11—CONTROLLER

---

## **⚠ WARNING**

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

**Before performing any maintenance, adjustment or service, turn power OFF and remove key from ignition.**

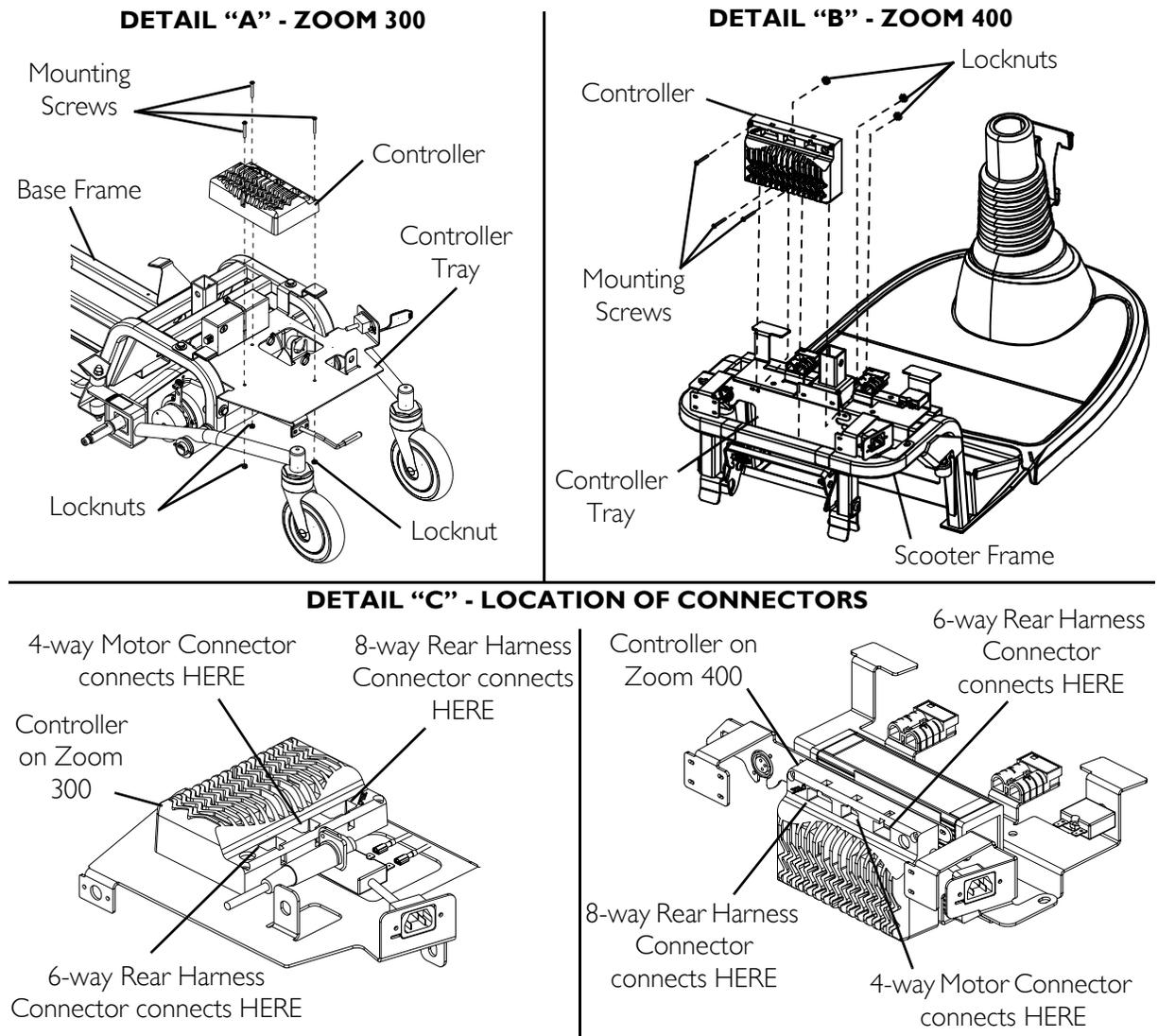
---

## Removing/Installing the Controller

*NOTE: For this procedure, refer to FIGURE 11.1.*

### Removing

1. Turn power off and remove the key from the ignition.
2. Remove the seat. Refer to Removing/Installing the Seat on page 19.
3. Remove the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.
4. Perform one (1) of the following:
  - On Zoom 300 - Disconnect the RED and BLACK controller connector from the RED and BLACK battery connector. Refer to FIGURE 12.2 on page 87.
  - On Zoom 400 - Disconnect the two (2) BLACK battery connectors from the wiring harness connectors. Refer to FIGURE 12.3 on page 89.
5. Remove the batteries. Refer to Removing/Installing the Batteries on Zoom 300 on page 86 and Removing/Installing the Batteries on Zoom 400 on page 88.
6. On Zoom 400 only:
  - A. Disassemble the scooter. Refer to Disassembling/Assembling the Zoom 400 on page 105.
  - B. Remove the battery charger. Refer to Replacing the Charger on page 92.
7. Disconnect the following from the controller (Detail "C" of FIGURE 11.1):
  - 6-way rear harness connector
  - 8-way rear harness connector
  - 4-way motor connector
8. Remove the three (3) mounting screws and locknuts that secure the controller on the controller tray.



**FIGURE 11.1** Removing/Installing the Controller

## Installing

1. Ensure that the power is off and the key is removed from the ignition.
2. Install the controller on the controller tray using three (3) mounting screws and locknuts. Securely tighten.
3. Connect the following to the controller (Detail "C" of FIGURE 11.1):
  - 6-way rear harness connector
  - 8-way rear harness connector
  - 4-way motor connector
4. On Zoom 400 only:
  - A. Install the battery charger. Refer to [Replacing the Charger](#) on page 92.
  - B. Assemble the scooter. Refer to [Disassembling/Assembling the Zoom 400](#) on page 105.

5. Install the batteries. Refer to Removing/Installing the Batteries on Zoom 300 on page 86 and Removing/Installing the Batteries on Zoom 400 on page 88.
6. Perform one (1) of the following:
  - On Zoom 300 - Connect the RED and BLACK controller connector to the RED and BLACK battery connector. Refer to FIGURE 12.2 on page 87.
  - On Zoom 400 - Connect the two (2) BLACK battery connectors to the wiring harness connectors. Refer to FIGURE 12.3 on page 89.
7. Install the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.
8. Install the seat. Refer to Removing/Installing the Seat on page 19.

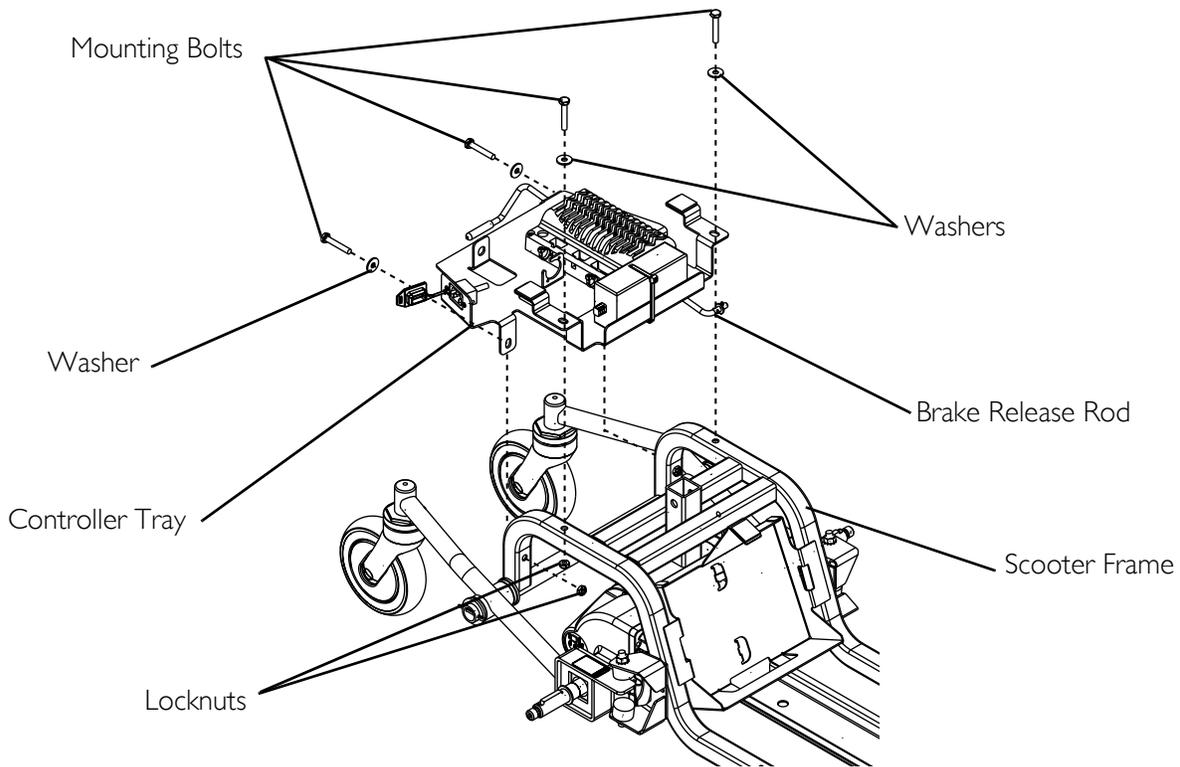
## Replacing the Controller Tray

### Zoom 300

*NOTE: For this procedure, refer to FIGURE 12.2, FIGURE 8.13, FIGURE 11.1, and FIGURE 11.2.*

1. Turn power OFF and remove the key from the ignition.
2. Remove the seat. Refer to Removing/Installing the Seat on page 19.
3. Remove the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.
4. Disconnect the RED and BLACK controller connector from the RED and BLACK battery connector. Refer to FIGURE 12.2 on page 87.
5. Remove the batteries. Refer to Removing/Installing the Batteries on Zoom 300 on page 86 and Removing/Installing the Batteries on Zoom 400 on page 88
6. Remove the charger. Refer to Replacing the Charger on page 92.
7. Remove the controller. Refer to Removing/Installing the Controller on page 68.
8. Remove the circuit breaker. Refer to Replacing/Resetting the Circuit Breaker on page 76.
9. Disconnect the tiller wiring harness from the rear wiring harness (Refer to FIGURE 8.13).
10. Remove the rear wiring harness. Refer to Removing/Installing Rear Wiring Harness on page 74.
11. Remove the brake release rod. Refer to Removing/Installing the Brake Release Lever on page 65.
12. Remove the four (4) mounting bolts, eight (8) washers and four (4) locknuts that secure the controller tray to the scooter frame.
13. Install the new controller tray on the scooter frame and secure with four (4) mounting bolts, eight (8) washers and four (4) locknuts. Securely tighten. Refer to FIGURE 11.2.

14. Install the brake release rod. Refer to Removing/Installing the Brake Release Lever on page 65.
15. Install the controller. Refer to Removing/Installing the Controller on page 68.
16. Install the charger. Refer to Replacing the Charger on page 92.
17. Install the circuit breaker. Refer to Replacing/Resetting the Circuit Breaker on page 76.
18. Install the rear wiring harness. Refer to Removing/Installing Rear Wiring Harness on page 74.
19. Connect the tiller wiring harness to the rear wiring harness (refer to FIGURE 8.13).
20. Install the batteries. Refer to Removing/Installing the Batteries on Zoom 300 on page 86 or Removing/Installing the Batteries on Zoom 400 on page 88.
21. Install the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.
22. Install the seat. Refer to Removing/Installing the Seat on page 19.

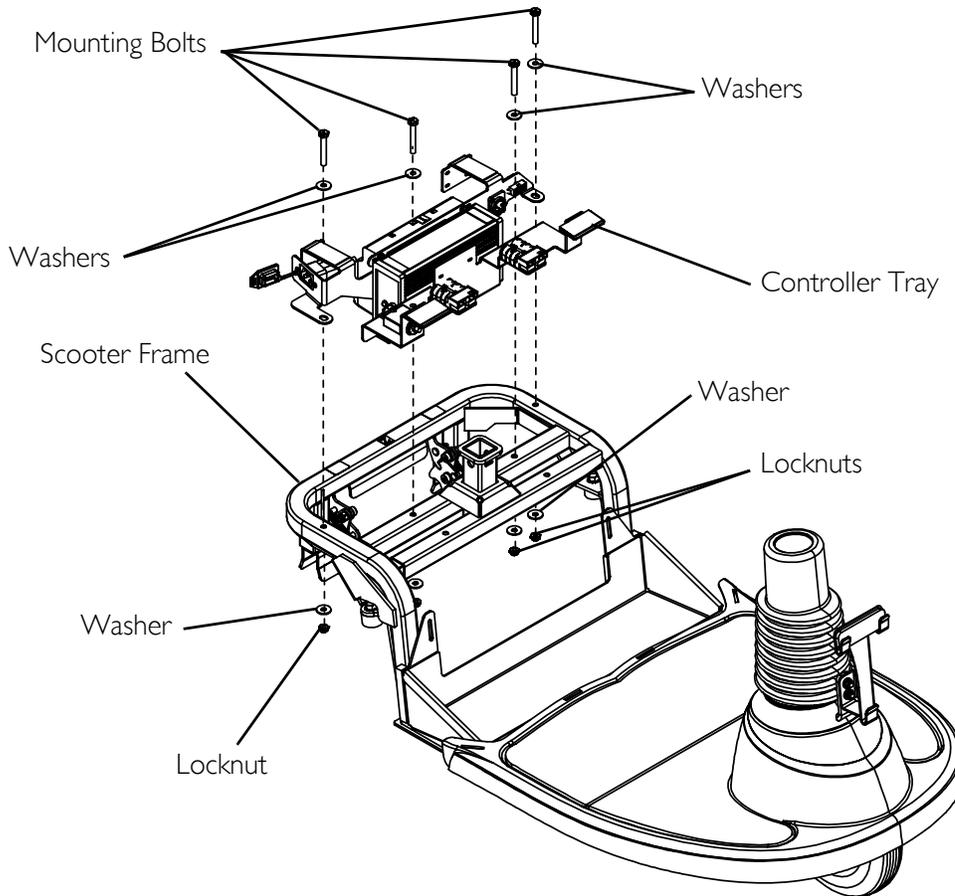


**FIGURE 11.2** Replacing the Controller Tray - Zoom 300

## Zoom 400

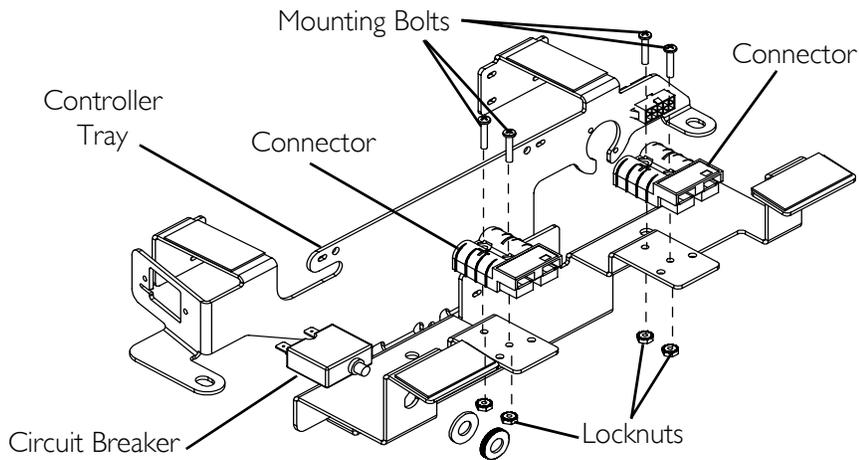
*NOTE: For this procedure, refer to FIGURE 8.14, FIGURE 11.1, FIGURE 11.3, and FIGURE 12.2.*

1. Turn power OFF and remove the key from the ignition.
2. Disassemble the scooter. Refer to Disassembling/Assembling the Zoom 400 on page 105.
3. Remove the charger. Refer to Replacing the Charger on page 92.
4. Remove the controller. Refer to Removing/Installing the Controller on page 68.
5. Disconnect the tiller wiring harness from the rear wiring harness. Refer to FIGURE 8.14.
6. Remove the rear wiring harness. Refer to Removing/Installing Rear Wiring Harness on page 74.
7. Remove the circuit breaker. Refer to Replacing/Resetting the Circuit Breaker on page 76.
8. Remove the four (4) mounting bolts, eight (8) washers and four (4) locknuts that secure the controller tray to the scooter frame.
9. Remove the two (2) screws that mount the left connector to the controller tray (Detail "A" of FIGURE 11.3).
10. Repeat STEP 9 for the right connector.
11. Remove the locknut that secures the circuitbreaker to the controller tray.
12. Install the left connector using the two (2) screws as shown in Detail "A" of FIGURE 11.3.
13. Repeat STEP 12 for the right connector.
14. Install the controller. Refer to Removing/Installing the Controller on page 68.
15. Install the charger. Refer to Replacing the Charger on page 92.
16. Install the circuit breaker. Refer to Replacing/Resetting the Circuit Breaker on page 76.
17. Install the controller tray on the scooter frame and secure with four (4) mounting bolts, eight (8) washers and four (4) locknuts. Securely tighten. Refer to FIGURE 11.3.
18. Install the rear wiring harness. Refer to Removing/Installing Rear Wiring Harness on page 74.
19. Connect the tiller wiring harness to the rear wiring harness. Refer to FIGURE 8.14.
20. Assemble the scooter. Refer to Disassembling/Assembling the Zoom 400 on page 105.



*NOTE: Wiring harness not shown.*

**DETAIL "A" - REMOVE/INSTALL WIRING HARNESS CONNECTORS**



*NOTE: Charger, Controller and Wiring harness shown removed.*

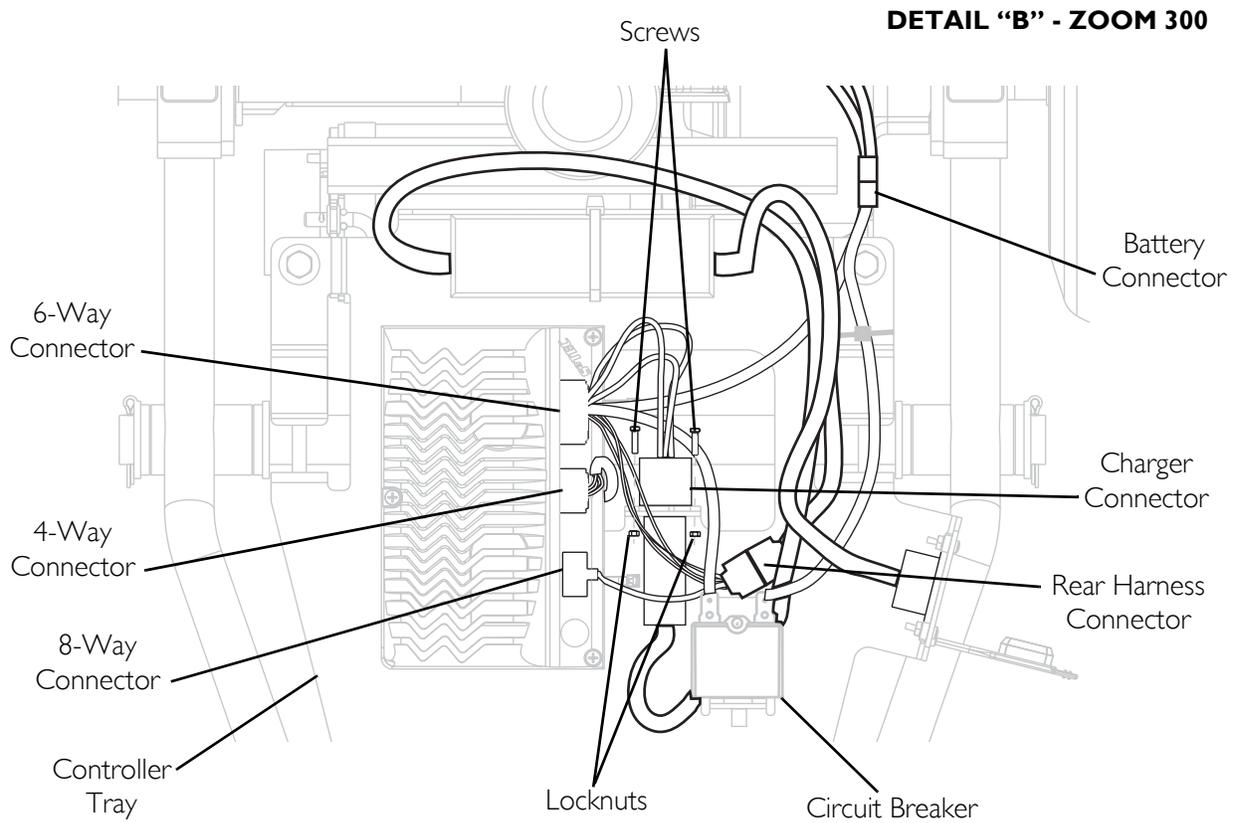
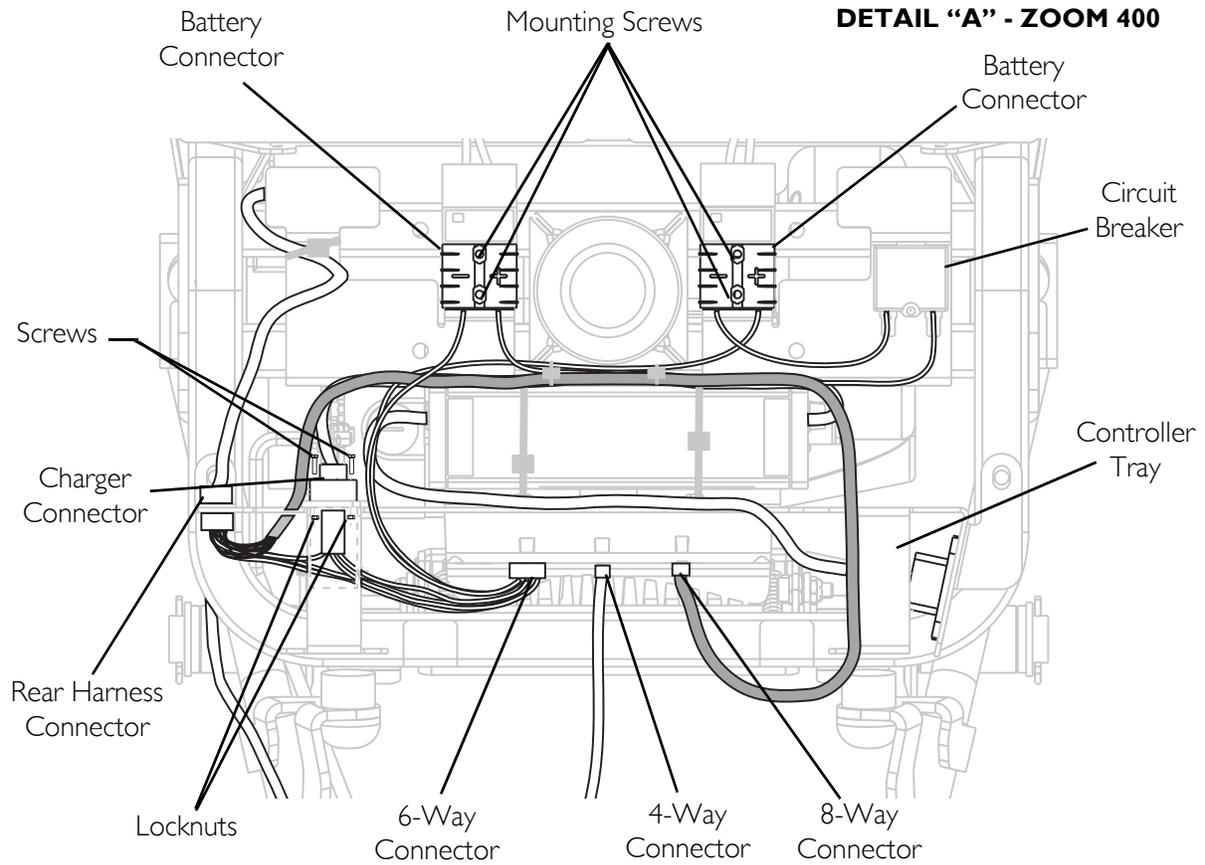
**FIGURE 11.3** Replacing the Controller Tray - Zoom 400

## Removing/Installing Rear Wiring Harness

*NOTE: For this procedure, refer to FIGURE 11.4.*

*NOTE: To install the rear wiring harness, reverse this procedure.*

1. Disconnect the following from the controller.
  - 6-way rear harness connector
  - 8-way rear harness connector
  - 4-way motor connector
2. Disconnect the batteries. Refer to Removing/Installing the Batteries on Zoom 300 on page 86 or refer to Removing/Installing the Batteries on Zoom 400 on page 88.
3. Disconnect the circuit breaker. Refer to Replacing/Resetting the Circuit Breaker on page 76.
4. On Zoom 400 only:
  - A. Remove the four (4) mounting screws securing the battery connectors to the frame.
  - B. Remove the rear harness connector from controller tray.
5. Remove the two (2) screws and locknuts securing the charger connector to the controller tray.
6. Lift the wiring harness from the controller tray.



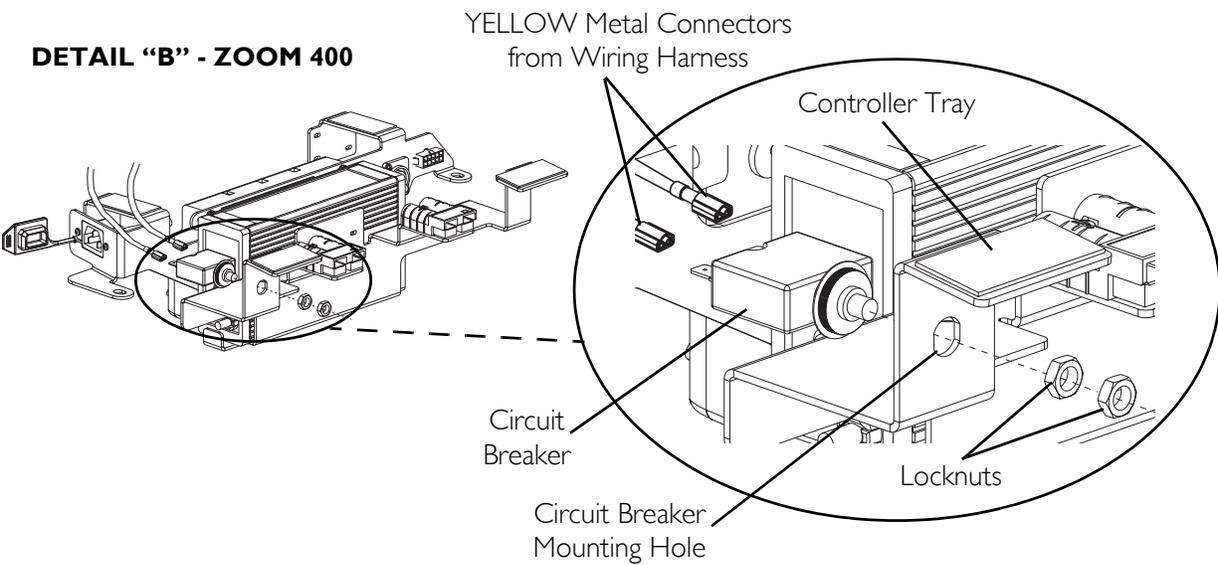
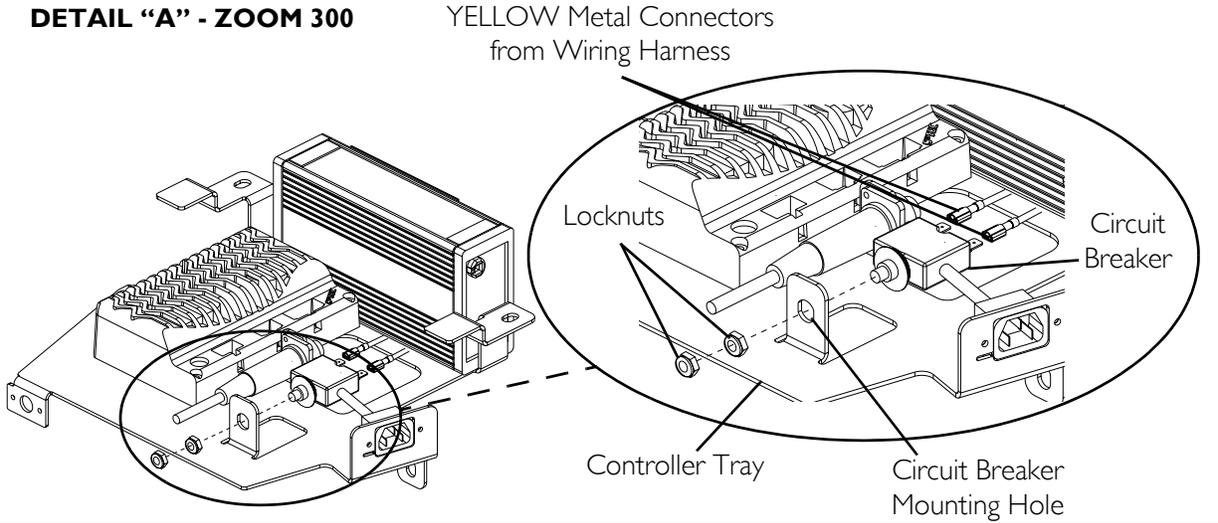
**FIGURE 11.4** Removing/Installing Rear Wiring Harness

## Replacing/Resetting the Circuit Breaker

### Replacing

*NOTE: For this procedure, refer to FIGURE 11.5, FIGURE 12.2, and FIGURE 12.3.*

1. Turn power OFF and remove the key from the ignition.
2. Remove the seat. Refer to Removing/Installing the Seat on page 19.
3. Remove the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.
4. Perform one (1) of the following:
  - On Zoom 300 - Disconnect the controller from the batteries by pulling the RED and BLACK controller connector from the RED and BLACK battery connector. Refer to FIGURE 12.2.
  - On Zoom 400 - Disconnect the controller from the batteries by pulling the two (2) BLACK battery connectors from the BLACK wiring harness connectors. Refer to FIGURE 12.3.
5. Remove the YELLOW metal connectors of the wiring harness from the circuit breaker.
6. Remove the two (2) locknuts that secure the circuit breaker to the controller tray.
7. Remove the circuit breaker.
8. Position the new circuit breaker so that it passes through the mounting hole on the controller tray.
9. Position the locknuts on the end of the circuit breaker and securely tighten.
10. Connect the YELLOW metal connectors from the wiring harness to the metal connectors of the circuit breaker.
11. Perform one (1) of the following:
  - On Zoom 300 - Connect the controller from the batteries by pulling the RED and BLACK controller connector from the RED and BLACK battery connector. Refer to FIGURE 12.2.
  - On Zoom 400 - Connect the controller from the batteries by pulling the two (2) BLACK battery connectors from the BLACK wiring harness connectors. Refer to FIGURE 12.3.
12. Install the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.
13. Install the seat. Refer to Removing/Installing the Seat on page 19.



**FIGURE 11.5** Replacing/Resetting the Circuit Breaker - Replacing

## Resetting Circuit Breaker

### ⚠ WARNING

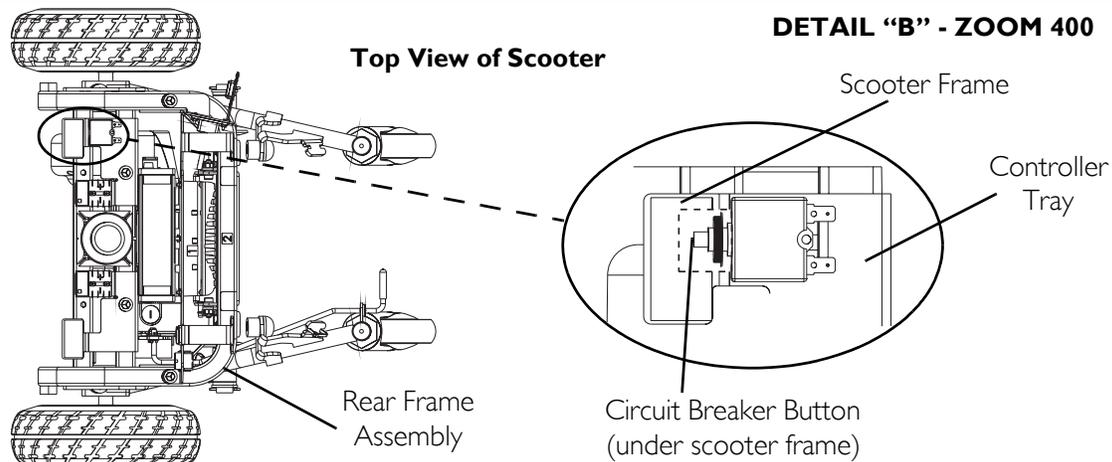
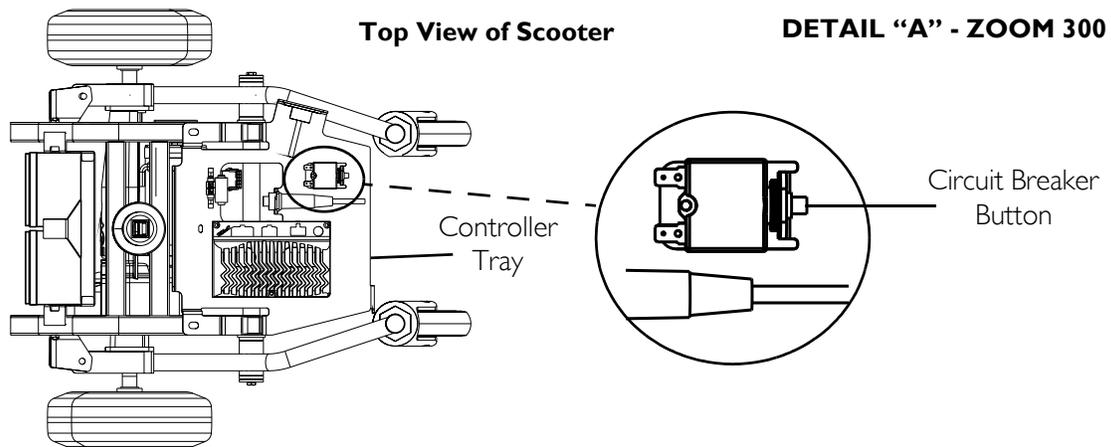
**NEVER** defeat or bypass the circuit breaker. **ONLY** replace with a circuit breaker with same rating.

If a circuit breaker repeatedly trips, **DO NOT** use the scooter. This may indicate that a short circuit condition exists. Investigate potential causes and correct before returning scooter to service.

*NOTE: For this procedure, refer to FIGURE 11.6.*

*NOTE: Key must be removed from ignition before resetting circuit breaker.*

1. Remove the seat. Refer to Removing/Installing the Seat on page 19.
2. Remove the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.
3. To reset, do one (1) of the following:
  - For Zoom 300 - Press circuit breaker button located at rear of the controller tray.
  - For Zoom 400 - Press circuit breaker button located at front of controller tray.
4. Reverse STEPS 1-2 to reassemble the powered scooter.



**FIGURE 11.6** Replacing/Resetting the Circuit Breaker - Resetting Circuit Breaker

## Replacing the Fuse

### ⚠ WARNING

**NEVER** defeat or bypass any fuse. **ONLY** replace with a fuse with same rating. If the fuse blows repeatedly, **DO NOT** use the scooter. This may indicate that a short circuit condition exists. Investigate potential causes and correct before returning scooter to service.

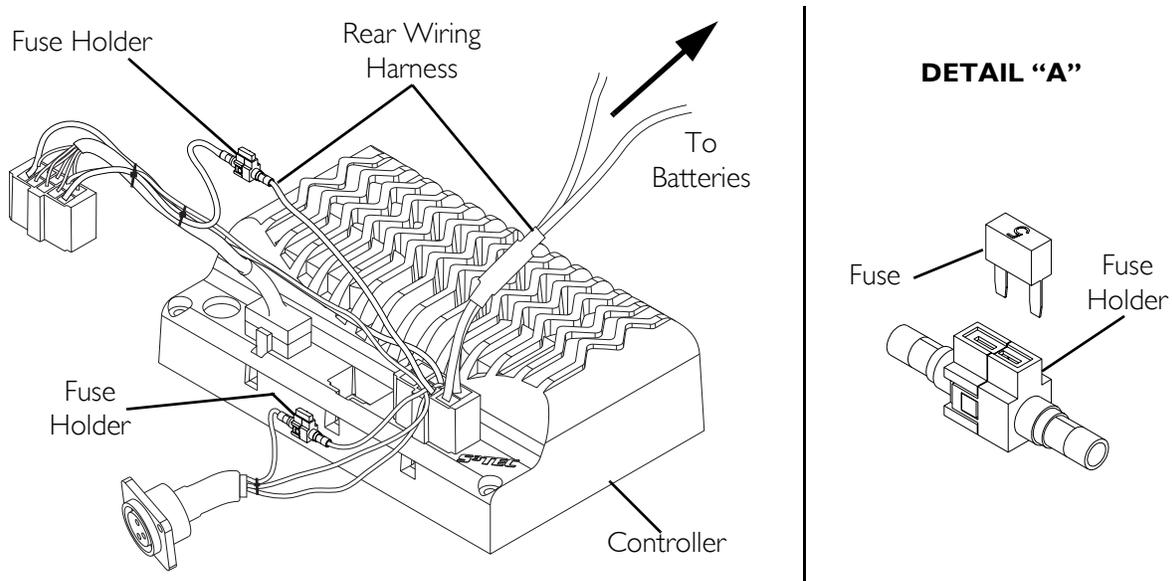
*NOTE: For this procedure, refer to FIGURE 11.7.*

1. Remove the seat. Refer to Removing/Installing the Seat on page 19.
2. Remove the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.

*NOTE: Two (2) fuse holders are located on the wiring harness.*

*NOTE: Replace existing blown fuse with a new fuse of the same rating.*

3. Pull fuse out and install new fuse (Detail "A" of FIGURE 11.7).
4. Reverse STEPS 1-4 to reassemble the powered scooter.



**FIGURE 11.7** Replacing the Fuse

## Changing to Left-Handed Operation

*NOTE: For this procedure, refer to FIGURE 11.8.*

*NOTE: The default factory is setting is OFF.*

*NOTE: For more information, refer to Programming the Controller on page 80.*

1. Plug in the programmer to the programmer port on the controller.
2. Press the MENU key to access the Options Menu.
3. From the Options Menu, select Pot Reverse menu.
4. Press the VARY key to change the current setting to ON.

*NOTE: The default factory is setting is OFF.*

5. Press the ENTER key to confirm the value when finished.
6. Unplug the programmer from the programmer port.

## Programming the Controller

### Plugging in the Programmer

---

#### **⚠ WARNING**

**Disengage the brake release lever before making any programming changes. The scooter will drive if the brake release lever is engaged.**

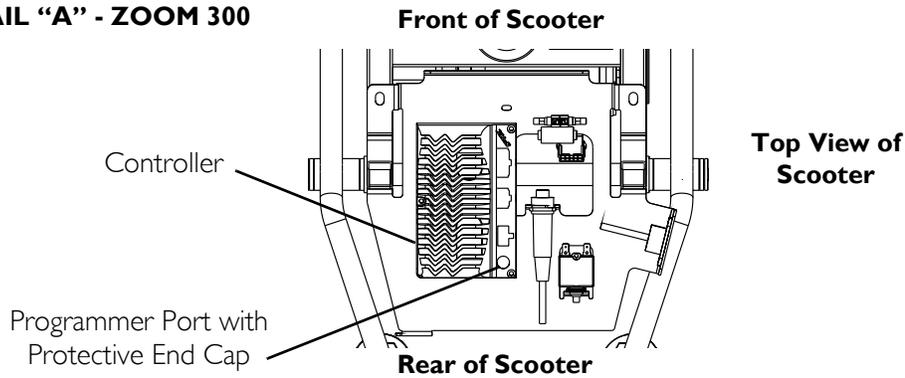
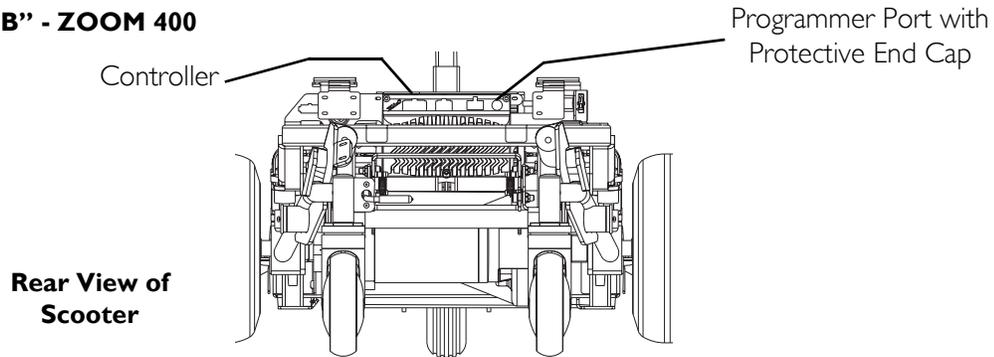
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*NOTE: For this procedure, refer to FIGURE 11.8.*

1. Turn power off and remove the key from the ignition.
2. Remove the seat. Refer to Removing/Installing the Seat on page 19.
3. Remove the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.
4. Insert the key in the ignition and turn power on.
5. Locate the programmer port on the controller and remove the black protective cap.
6. Plug in the DS100 programmer into the programmer port.

*NOTE: After a few seconds, if a fault is indicated on the display, refer to the back of the programming card (provided with the programmer) for details.*

7. Press the MENU key to scroll through all of the menus available with the programmer.

**DETAIL “A” - ZOOM 300****DETAIL “B” - ZOOM 400****FIGURE 11.8** Changing to Left-Handed Operation - Programming the Controller

## Main Menu

MAIN MENU OPTIONS	PROGRAMMABLE PARAMETERS
<b>SET UP MENU</b>	Customize scooter for the user's driving preferences or environment by adjusting features such as - Acceleration, Deceleration, Forward Speed, Reverse Speed, Reduce Speed, Buzzer Volume, Sleep Time.
<b>OPTION MENU</b>	Change two factory preset values - Potentiometer Reverse, Enable Sleep.
<b>SPEED LEVER IN NEUTRAL MENU</b>	Calibrate the throttle about neutral.
<b>CONTROLLER VERSION MENU</b>	Displays the version of Controller software.

## Set Up Menu

On the Set Up menu display, press the NEXT key to scroll through the options. To change the current setting of the options:

- A. Press the VARY key to change the current setting.
- B. Press the ENTER key to confirm the value when finished.

	OPTIONS	FACTORY DEFAULT SETTING	RANGE	DESCRIPTION
1	ACCELERATION	3	1	Slowest acceleration to maximum forward speed.
			10	Fastest acceleration to maximum forward speed.
2	DECELERATION	7	1	Slowest deceleration from maximum forward speed.
			10	Fastest deceleration from maximum forward speed.
3	FORWARD SPEED	10	1	Slowest forward speed.
			10	Fastest forward speed.
4	REVERSE SPEED	4	1	Slowest reverse speed.
			10	Fastest reverse speed.
5	REDUCE SPEED	5	1	Slowest limit of maximum forward speed and maximum reverse speed.
			10	Fastest limit of maximum forward speed and maximum reverse speed.
6	BUZZER VOLUME	10	1	Turns the horn/buzzer OFF.
			2-10	Turns the horn/buzzer ON, 10 being the highest volume setting.
7	SLEEP TIME	30	5	Fastest sleep time setting for the scooter (the scooter powers down after 5 minutes of inactivity).
			60	Slowest sleep time setting for the scooter (the scooter powers down after 60 minutes of inactivity).

## Options Menu

*NOTE: Options Menu settings are either ON or OFF.*

To change the current setting of the options:

- A. Press the VARY key to change the current setting.
- B. Press the ENTER key to confirm the value when finished.

	OPTIONS	FACTORY DEFAULT SETTING	RANGE	DESCRIPTION
1	POT REVERSE	OFF	ON	Polarity of the Throttle Potentiometer is reversed (Left Hand Drive)
			OFF	Normal polarity of the Throttle Potentiometer (Right Hand Drive)
2	ENABLE SLEEP	ON	ON	Sleep time is enabled.
			OFF	Sleep time is disabled.

### **Speed Lever in Neutral Menu**

This menu is used to calibrate the throttle potentiometer for neutral such that when the throttle is at rest (in neutral), the controller reads a voltage that translates to zero speed. The default voltage for zero speed is 2.3 VDC ( $\pm 0.2$ ).

1. Select the Speed Lever in Neutral menu option.
2. Loosen the two (2) set screws in the throttle assembly.
3. Rotate the throttle shaft slowly until the buzzer sounds.

*NOTE: If the controller version is 2.46 or higher, the Status LED will also glow.*

4. Press ENTER to confirm the value when finished.

### **Controller Version Menu**

This menu is used to display the current version of the Controller software.

# SECTION 12—BATTERIES AND CHARGER

## ⚠ WARNING

Before performing any maintenance adjustment or service, turn power **OFF** and remove key from ignition.

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

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

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

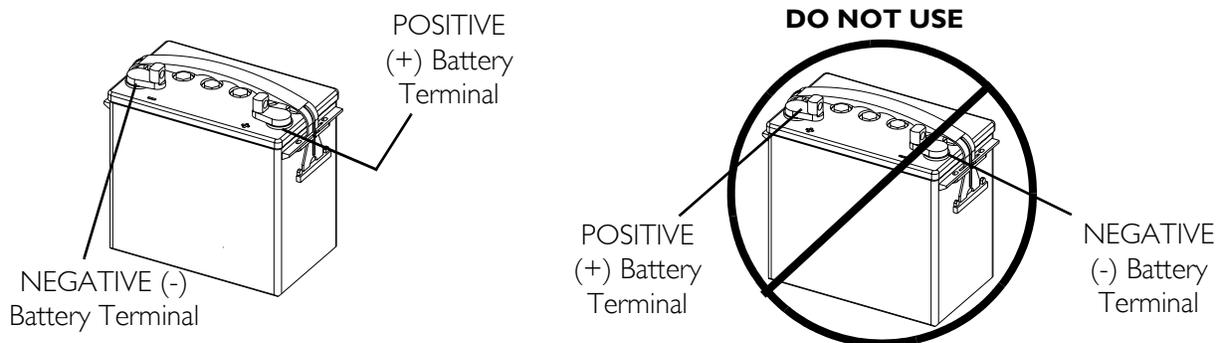
**DO NOT** tip the batteries. Keep the batteries in an upright position.

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

All battery terminals caps (two [2] on the **LEFT** battery and two [2] on the **RIGHT** battery) **MUST** be installed prior to use.

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

**On Zoom 400 only - Battery terminal configuration shown below **MUST** be used. Batteries that have the reversed terminal configuration **MUST NOT** be used - otherwise serious injury or damage may occur.**



**CAUTION**

When connecting the battery cables to the batteries, the battery cables **MUST** be connected to the battery terminals/posts as shown in **FIGURE 12.2** for Zoom 300 and **FIGURE 12.5** for Zoom 400 - otherwise damage to the battery may result.

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

*NOTE: If there is battery acid in the bottom of the battery tray or on the sides of the battery(ies), apply baking soda to these areas to neutralize the battery acid. Before reinstalling the existing or new battery(ies), clean the baking soda from the battery tray or battery(ies) being sure to avoid contact with skin and eyes. Determine source of contamination. Never install/reinstall a battery with a cracked or otherwise damaged case.*

**Recommended Battery Type****⚠ WARNING**

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

**CAUTION**

Failure to use the correct battery size and/or voltage may cause damage to the powered scooter and give unsatisfactory performance.

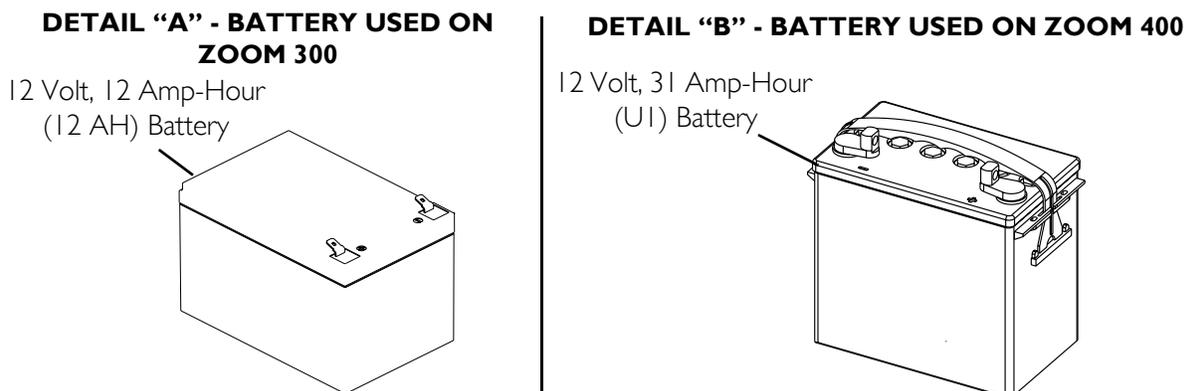
Zoom 300 powered scooter uses two (2) 12 volt, 12 Amp-hour (12AH) batteries.

Zoom 400 powered scooter uses two (2) 12 volt, 31 Amp-hour (U1) batteries.

*NOTE: Recommended battery type is spill proof and requires no maintenance except routine charging.*

*NOTE: Charge batteries daily. Do not allow batteries to completely discharge.*

*NOTE: Invacare recommends that both batteries be replaced if one (1) battery is defective.*



**FIGURE 12.1** Recommended Battery Type

## Removing/Installing the Batteries on Zoom 300

*NOTE: When removing or installing batteries, ensure that the battery harness connectors completely grip the terminals of the battery. Connection should be tight and secure. Pliers can be used to gently crimp the contact to strengthen the connection.*

### Removing

*NOTE: For this procedure, refer to FIGURE 12.2.*

1. Place the powered scooter in a well ventilated area.

---

### CAUTION

**Work should be performed in an area without risking damage to carpeting or floor covering.**

---

2. Turn power OFF and remove the key from the ignition.
3. Remove the seat. Refer to [Removing/Installing the Seat](#) on page 34.
4. Remove the rear shroud. Refer to [Removing/Installing the Rear Shroud](#) on page 44.
5. Pull the hook-and-loop fastening battery strap apart.
6. Disconnect the RED and BLACK battery connector from the wiring harness assembly (Detail "B" of FIGURE 12.2).
7. Disconnect the wiring harness from the batteries by holding the connectors and pulling them in the following order (Detail "B" of FIGURE 12.2):
  - A. NEGATIVE (-) BLACK battery cable from the NEGATIVE (-) battery terminal/post on the left battery.
  - B. POSITIVE (+) RED battery cable from POSITIVE (+) battery terminal/post on the right battery.
  - C. WHITE Battery Cable (Jumper) from the POSITIVE (+) battery terminal/post on the left battery and the NEGATIVE (-) battery terminal/post on the right battery.
8. Remove the existing batteries from battery tray by lifting the batteries out in the direction shown in Detail "A" of FIGURE 12.2.

### Installing

1. Place the powered scooter in a well ventilated area.

---

### CAUTION

**Work should be performed in an area without risking damage to carpeting or floor covering.**

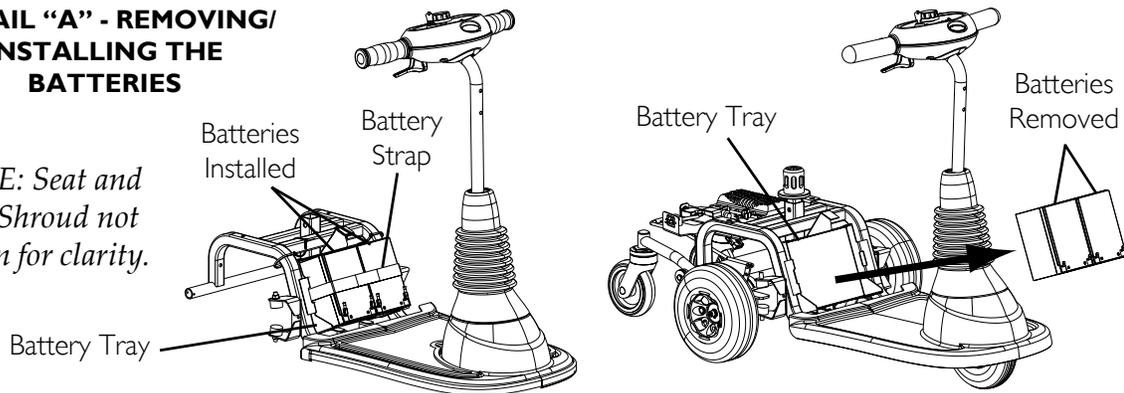
---

2. Turn power off and remove the key from the ignition.
3. Remove the seat. Refer to [Removing/Installing the Seat](#) on page 34.
4. Remove the rear shroud. Refer to [Removing/Installing the Rear Shroud](#) on page 44.

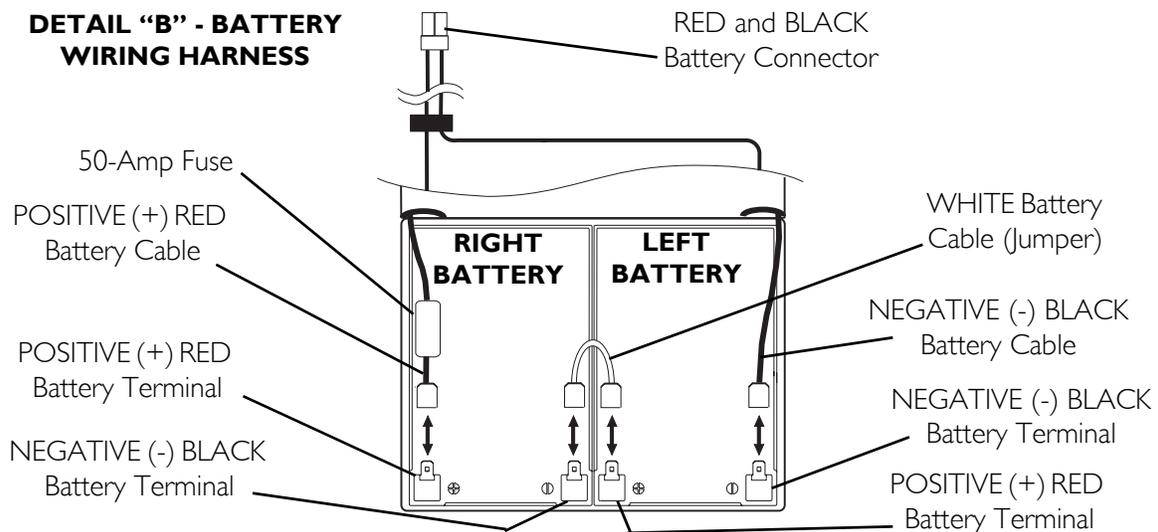
5. Install two (2) batteries into the battery tray.
  6. Connect the wiring harness to the new batteries in the following order (Detail “B” of FIGURE 12.2):
    - A. NEGATIVE (-) BLACK battery cable to the NEGATIVE (-) battery terminal/post on the LEFT battery.
    - B. POSITIVE (+) RED battery cable to POSITIVE (+) battery terminal/post on the right battery.
    - C. WHITE Battery Cable (Jumper) to the POSITIVE (+) battery terminal/post on the left battery and the NEGATIVE (-) battery terminal/post on the right battery.
  7. Connect the RED and BLACK battery connector to the wiring harness assembly. Tighten securely.
  8. Secure batteries in the battery tray using the hook-and-loop battery strap (Detail “A” of FIGURE 12.2).
  9. Reinstall the rear shroud. Refer to [Removing/Installing the Rear Shroud](#) on page 44.
  10. Reinstall the seat. Refer to [Removing/Installing the Seat](#) on page 34.
- NOTE: New batteries MUST be fully charged BEFORE using, otherwise the life of the batteries will be reduced.*
11. If necessary, charge the batteries. Refer to [Charging the Batteries](#) on page 97.

**DETAIL “A” - REMOVING/  
INSTALLING THE  
BATTERIES**

*NOTE: Seat and  
Rear Shroud not  
shown for clarity.*



**DETAIL “B” - BATTERY  
WIRING HARNESS**



**FIGURE 12.2** Removing/Installing the Batteries on Zoom 300

## Removing/Installing the Batteries on Zoom 400

*NOTE: For this procedure, refer to FIGURE 12.3.*

### Removing

1. Place the powered scooter in a well ventilated area.

---

### CAUTION

**Work should be performed in an area without risking damage to carpeting or floor covering.**

---

2. Turn power off and remove the key from the ignition.
3. Remove the seat. Refer to [Removing/Installing the Seat](#) on page 34.
4. Remove the rear shroud. Refer to [Removing/Installing the Rear Shroud](#) on page 44.
5. Disconnect the two (2) BLACK battery connectors from the wiring harness connectors (Detail "C" of FIGURE 12.3).
6. Pull the hook and loop fastening battery strap apart.
7. Perform one (1) of the following to remove the battery from the battery tray (Detail "D" of FIGURE 12.3):
  - Batteries with Built-in Lifting Strap - Use built in lifting strap to remove the battery from the battery tray (Detail "B" of FIGURE 12.3).
  - Batteries without Built-in Lifting Strap - Use a battery lifting strap to remove the battery from the battery tray (Detail "A" of FIGURE 12.3).
8. Disconnect the battery cable. Refer to [Connecting/Disconnecting the Battery Cables on the Zoom 400](#) on page 90.

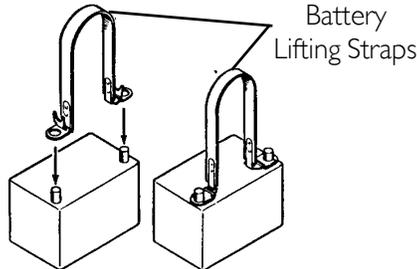
### Installing

1. Connect the battery cable. Refer to [Connecting/Disconnecting the Battery Cables on the Zoom 400](#) on page 90.
2. Place the powered scooter in a well ventilated area where work can be performed without risking damage to carpeting or floor covering.
3. Turn power OFF and remove the key from the ignition.
4. Remove the seat. Refer to [Removing/Installing the Seat](#) on page 34.
5. Remove the rear shroud. Refer to [Removing/Installing the Rear Shroud](#) on page 44.
6. Perform one (1) of the following to position the battery into the battery tray (Detail "D" of FIGURE 12.3):
  - Batteries with Built-in Lifting Strap - Use built in lifting strap to position battery onto the battery tray (Detail "B" of FIGURE 12.3).
  - Batteries without Built-in Lifting Strap - Use a battery lifting strap to position battery onto battery tray. When battery is in proper position, remove lifting strap (Detail "A" of FIGURE 12.3).
7. Connect the two (2) BLACK battery connectors to the wiring harness connectors (Detail "C" of FIGURE 12.3).

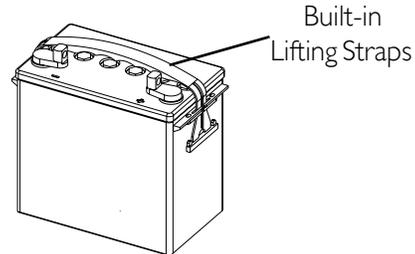
8. Secure batteries in the battery tray using the battery strap.
9. Reinstall the rear shroud. Refer to [Removing/Installing the Rear Shroud](#) on page 44.
10. Reinstall the seat. Refer to [Removing/Installing the Seat](#) on page 34.

*NOTE: New batteries MUST be fully charged BEFORE using, otherwise the life of the batteries will be reduced.*

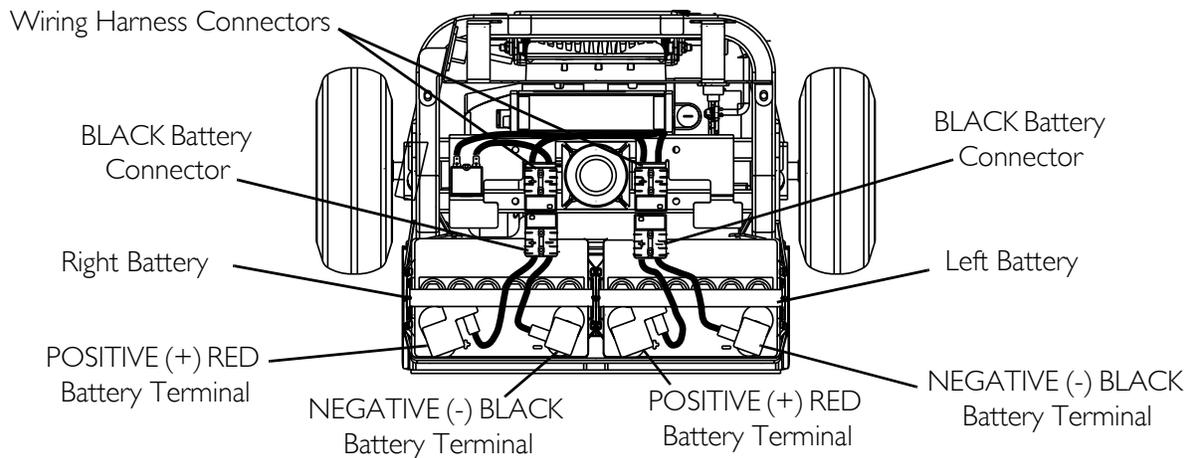
#### DETAIL "A" - BATTERY LIFTING STRAPS



#### DETAIL "B" - BUILT-IN LIFTING STRAPS



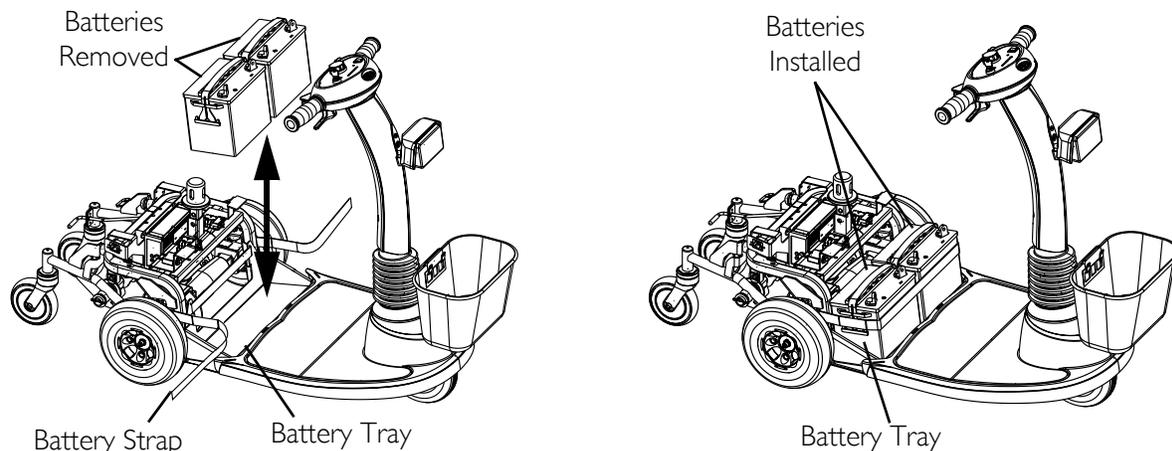
#### DETAIL "C" - BATTERY WIRING HARNESS



*NOTE: NEVER defeat or bypass any fuse. Only replace with a fuse of the same rating.*

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

#### DETAIL "D" - REMOVING/INSTALLING THE BATTERIES



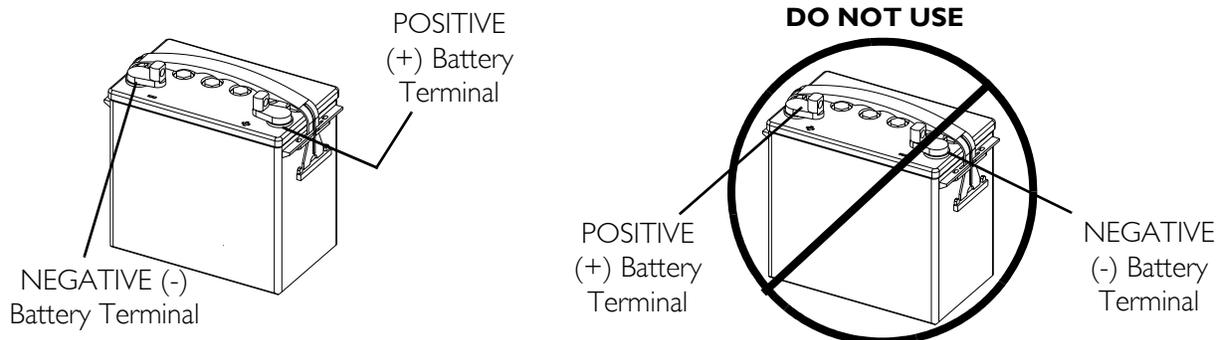
*NOTE: Seat and Rear Shroud not shown for clarity.*

**FIGURE 12.3** Removing/Installing the Batteries on Zoom 400

## Connecting/Disconnecting the Battery Cables on the Zoom 400

### ⚠ WARNING

**On Zoom 400 only - Battery terminal configuration shown below *MUST* be used. Batteries that have the reversed terminal configuration *MUST NOT* be used - otherwise serious injury or damage may occur.**



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

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

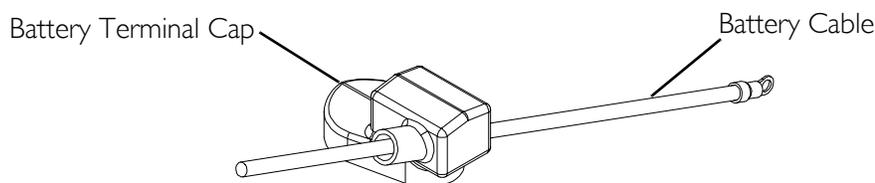
**Do not** remove fuse or mounting hardware from the **POSITIVE (+) RED** battery cable/mounting screw.

**NEVER** defeat or bypass any fuse. **ONLY** replace with a fuse of the same rating.

*NOTE: For this procedure, refer to FIGURE 12.4 and FIGURE 12.5.*

### Connecting

1. Install battery terminal cap(s) onto battery cable(s) as follows (FIGURE 12.4):
  - A. RED battery terminal cap onto RED battery cable.
  - B. GREY battery terminal cap onto BLACK battery cable.



*NOTE: Only battery cable and terminal cap shown. Both caps install in the same manner.*

**FIGURE 12.4** Connecting/Disconnecting the Battery Cables on the Zoom 400 - Installing Battery Terminal Caps

**⚠ WARNING**

**When connecting the battery cables to the batteries, the battery cables **MUST** be connected to the battery terminals/posts as shown in **FIGURE 12.5**, otherwise damage to the battery cable may result when installing battery terminal caps.**

2. Connect battery cable(s) to battery(ies) terminal(s)/post(s):
    - A. NEGATIVE (-) BLACK battery cable to NEGATIVE (-) battery terminal/post.
    - B. POSITIVE (+) RED battery cable to POSITIVE (+) battery terminal/post.
  3. Secure the battery cable(s)/ring terminal(s) to the battery terminal(s)/post(s), BLACK to NEGATIVE (-) and red to POSITIVE (+), with the provided 1/4-20 x 5/8-inch hex flange screw and hex flange locknut. Securely tighten.
  4. Verify all battery cable(s)/ring terminal(s) are correctly installed and securely tightened.
  5. Slide terminal cap(s) down battery cable(s) and onto battery clamps.
  6. Secure each terminal cap in place with a tie-wrap [use tie-wraps 11½ inches long]. Refer to Detail “A” of FIGURE 12.5.
  7. Remove the seat. Refer to Removing/Installing the Seat on page 34.
  8. Remove the rear shroud. Refer to Removing/Installing the Rear Shroud on page 44.
  9. Position the batteries on the scooter. Refer to Removing/Installing the Batteries on Zoom 400 on page 88.
- NOTE: New Battery(ies) MUST be fully charged before using, otherwise the life of the battery(ies) will be reduced.*
10. If necessary, charge the battery(ies). Refer to Charging the Batteries on page 97.
  11. Install the rear shroud. Refer to Removing/Installing the Rear Shroud on page 44.
  12. Install the seat. Refer to Removing/Installing the Seat on page 34.

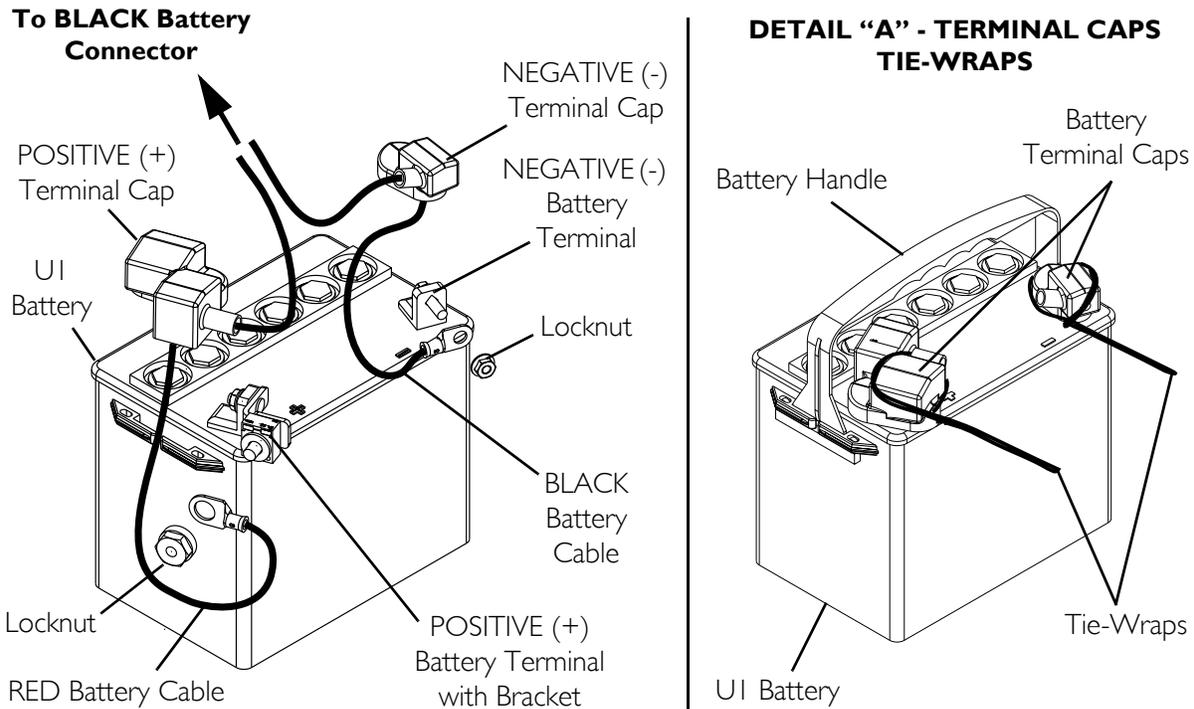
**Disconnecting****⚠ WARNING**

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

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

1. Remove the seat. Refer to Removing/Installing the Seat on page 34.
2. Remove the rear shroud. Refer to Removing/Installing the Rear Shroud on page 44.
3. Remove the batteries. Refer to Removing/Installing the Batteries on Zoom 400 on page 88.

4. Cut the tie-wrap that secure each the battery terminal cap in place.
5. Slide terminal cap(s) UP on the battery cable(s).
6. Disconnect battery cable(s) from battery(ies) terminal(s)/post(s):
  - A. POSITIVE (+) RED battery cable from the POSITIVE (+) battery terminal/post.
  - B. NEGATIVE (-) BLACK battery cable from NEGATIVE (-) battery terminal/post.



*NOTE: Only battery cable and terminal cap shown. Both caps install in the same manner.*

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

**FIGURE 12.5** Connecting/Disconnecting the Battery Cables on the Zoom 400

## Replacing the Charger

### Zoom 300

*NOTE: For this procedure, refer to FIGURE 12.6 and FIGURE 12.2.*

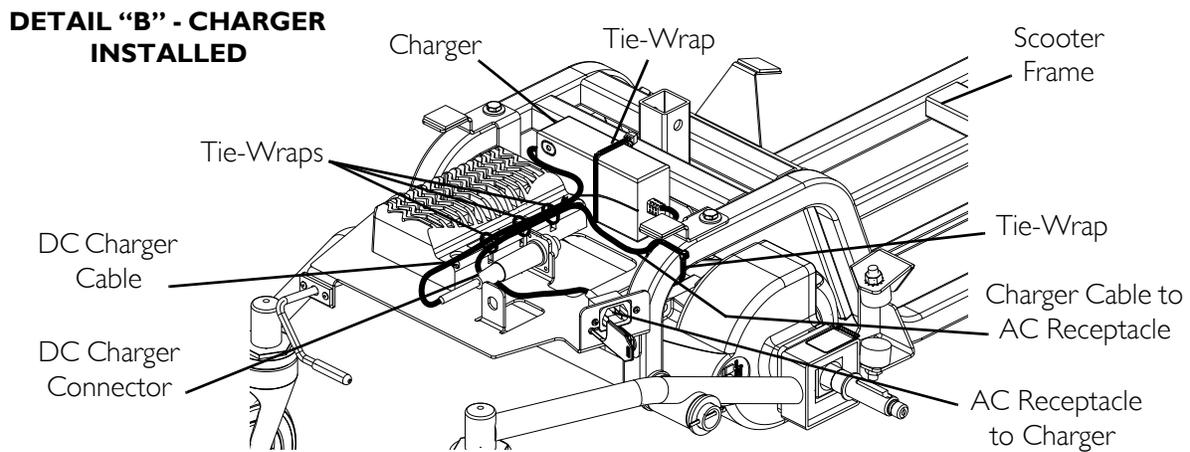
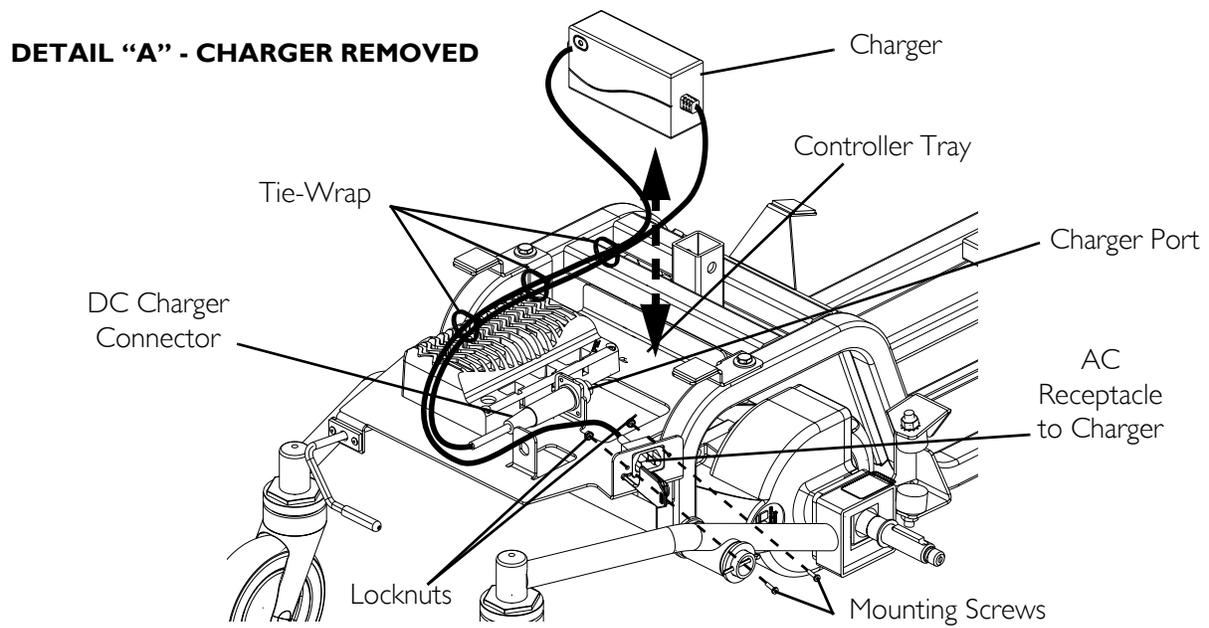
1. Place the powered scooter in a well ventilated area.

### **CAUTION**

**Work should be performed in an area without risking damage to carpeting or floor covering.**

2. Turn power off and remove the key from the ignition.
3. Remove the seat. Refer to [Removing/Installing the Seat](#) on page 19.

4. Remove the rear shroud. Refer to [Removing/Installing the Rear Shroud](#) on page 30.
5. Disconnect the controller from the batteries by pulling the RED and BLACK controller connector from the RED and BLACK battery connector. Refer to Detail "B" of FIGURE 12.2.
6. Remove the two (2) mounting screws and locknuts that mount the AC receptacle (to charger) to the controller tray. Refer to Detail "B" FIGURE 12.6.
7. Disconnect the DC charger connector from the charger port.
8. If the AC receptacle wire runs below the circuit breaker, remove the YELLOW metal connectors of the wiring harness from the circuit breaker (not shown).
9. Cut the tie-wraps securing charger to controller tray (Detail "A" of FIGURE 12.6).
10. Cut the tie-wrap securing the DC charger connector cable to scooter frame (Detail "A" of FIGURE 12.6).
11. Remove the existing charger.
12. Place the new charger on the controller tray and secure it to the controller tray using a tie-wrap as shown in Detail "A" of FIGURE 12.6.
13. Tie-wrap the charger cables in three places as shown in Detail "B" FIGURE 12.6.
14. If necessary, Connect the YELLOW metal connectors from the wiring harness to the metal connectors of the circuit breaker (not shown).
15. Secure the AC receptacle to charger to the controller tray using the two (2) mounting screws and locknuts.
16. Insert the DC charger connector into the charger port.
17. Tie-wrap the DC charger cable to the scooter frame as shown in Detail "B" of FIGURE 12.6.
18. Connect the RED and BLACK controller connector to the RED and BLACK battery connector. Refer to Detail "B" of FIGURE 12.2.
19. Install the rear shroud. Refer to [Removing/Installing the Rear Shroud](#) on page 30.
20. Install the seat. Refer to [Removing/Installing the Seat](#) on page 19.
21. Insert the key into the ignition and turn the power on to drive the scooter.



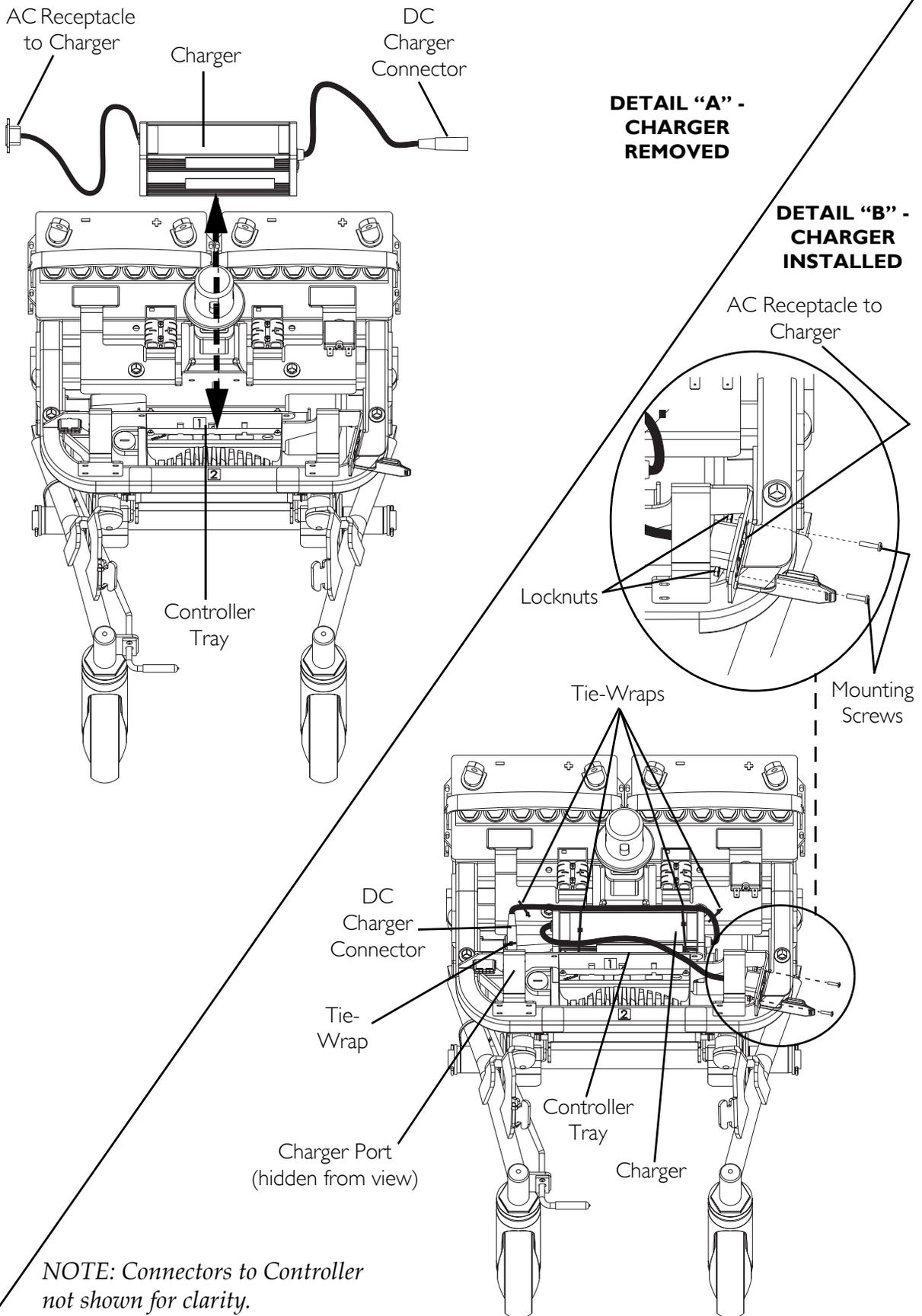
*NOTE: Connectors to Controller not shown for clarity.*

**FIGURE 12.6** Replacing the Charger - Zoom 300

**Zoom 400**

*NOTE: For this procedure, refer to FIGURE 12.7 and FIGURE 12.2.*

1. Place the powered scooter in a well ventilated area where work can be performed without risking damage to carpeting or floor covering.
2. Turn power off and remove the key from the ignition.
3. Remove the seat. Refer to Removing/Installing the Seat on page 19.
4. Remove the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.
5. Disconnect the two (2) BLACK battery connectors from the wiring harness connectors. Refer to Detail "C" of FIGURE 12.3.
6. Remove the two (2) mounting screws and locknuts that mount the AC receptacle (to charger) to the controller tray. Refer to Detail "B" FIGURE 12.7.
7. Disconnect the DC charger connector from the charger port.
8. Cut the tie-wraps securing the DC charger connector cable to scooter frame, refer to Detail "B" of FIGURE 12.7.
9. Cut the tie-wraps securing the charger to the controller tray, refer to Detail "B" of FIGURE 12.7.
10. Remove the existing charger.
11. Place the new charger on the controller tray and secure it to the controller tray using tie-wraps as shown in Detail "B" of FIGURE 12.7.
12. Tie-wrap the charger cables in three places as shown in Detail "B" FIGURE 12.7.
13. Secure the AC receptacle to charger to the controller tray using the two (2) mounting screws and locknuts.
14. Insert the DC charger connector into the charger port.
15. Tie-wrap the DC charger cable to the scooter frame as shown in Detail "B" of FIGURE 12.7.
16. Connect the two (2) BLACK battery connectors to the wiring harness connectors. Refer to Detail "C" of FIGURE 12.3.
17. Install the rear shroud. Refer to Removing/Installing the Rear Shroud on page 30.
18. Install the seat. Refer to Removing/Installing the Seat on page 19.
19. Insert the key into the ignition and turn the power on to drive the scooter.



**FIGURE 12.7** Replacing the Charger - Zoom 400

## Charging the Batteries

### **⚠ WARNING**

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

**DO NOT** attempt to recharge the batteries and operate the powered scooter at the same time.

If the circuit breaker trips repeatedly, **IMMEDIATELY** unplug charger and contact Invacare Technical Service Department.

### **CAUTION**

New batteries **MUST** be fully charged prior to initial use of the powered scooter.

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

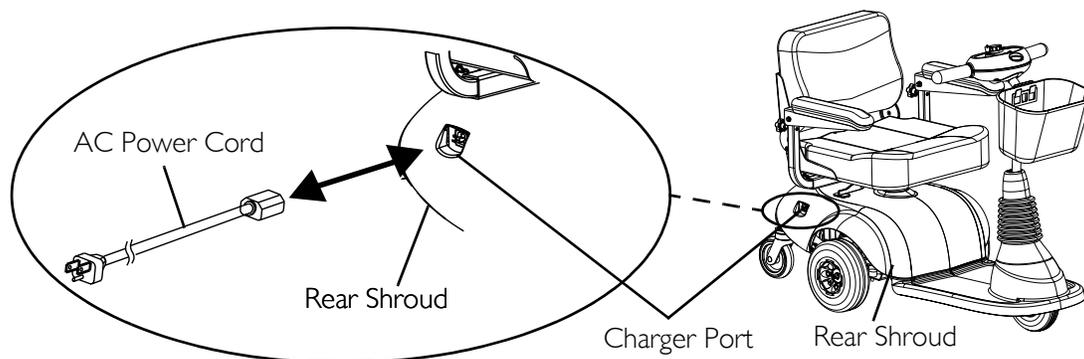
As a general rule, you should recharge your batteries nightly to assure the longest possible life and to minimize required charging time. Plan to recharge them when you do not anticipate using the powered scooter.

### **On-Board Battery Charger**

*NOTE: For this procedure, refer to FIGURE 12.8.*

*NOTE: The powered scooter is designed with an electrical lockout to prevent it from being driven while the charger is plugged into an outlet.*

1. Plug AC power cord into on-board battery charger port located on the rear bumper.
2. Plug AC power cord into 110-volt wall outlet.
3. Refer to Battery Charger Operation - Charger Indicator Light on Tiller on page 98.



*NOTE: Charger port on Zoom 300 shown.  
Charger port on Zoom 400 is similar.*

**FIGURE 12.8** Charging the Batteries

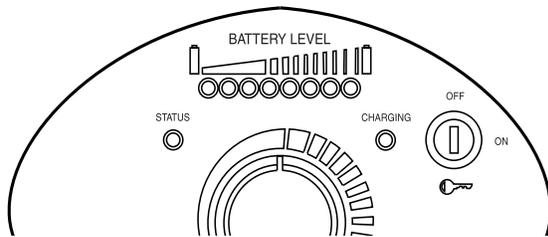
### Battery Charger Operation - Charger Indicator Light on Tiller

*NOTE: If the scooter is turned on while charging, the battery charge indicator will show the batteries at FULL charge. The charger must be unplugged and the powered scooter must be ON to show actual battery charge level.*

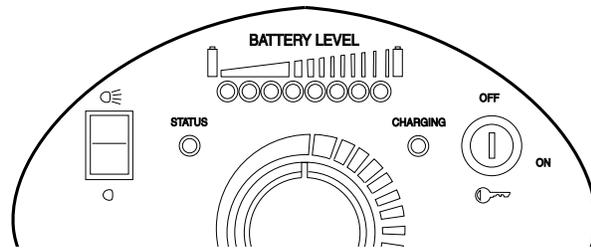
*NOTE: For this procedure, refer to FIGURE 12.9.*

1. The charging indicator will illuminate Solid RED indicating that the charger is ON.
2. If the charger is plugged in and the charger indicator is OFF, the charger is disconnected. Check that all connections are secure. If Charge LED indicator is still OFF, unplug AC power cord from the on-board battery charger and wall outlet. Contact dealer or a qualified technician.

**DETAIL "A" - ZOOM 300 CONTROL PANEL**



**DETAIL "B" - ZOOM 400 CONTROL PANEL**



<b>STATUS INDICATOR</b>	<b>STATUS</b>
Solid GREEN	Normal
Blinking GREEN	Refer to <u>Error Codes</u> on page 102.

<b>CHARGING INDICATOR</b>	<b>STATUS</b>
Solid RED	Charger Plugged In
LED Off	Not Charging

**FIGURE 12.9** Battery Charger Operation - Charger Indicator Light on Tiller

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# SECTION 13—MAINTENANCE AND TROUBLESHOOTING

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## **⚠ WARNING**

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

Before performing any maintenance, adjustment or service, turn power **OFF** and remove key from ignition.

**DO NOT** overtighten hardware attaching to the frame. This could cause damage to the frame.

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## Storing the Scooter

---

### **⚠ WARNING**

Use care in storage. **DO NOT** allow any metallic objects to contact the exposed terminals.

---

1. Before storing the scooter for prolonged periods of time, perform the following.
  - A. Charge the batteries. Refer to Charging the Batteries on page 97.
  - B. Remove the batteries. Refer to Removing/Installing the Batteries on Zoom 300 on page 86 or refer to Removing/Installing the Batteries on Zoom 400 on page 88.
2. Before use, recharge batteries. Refer to Charging the Batteries on page 97.

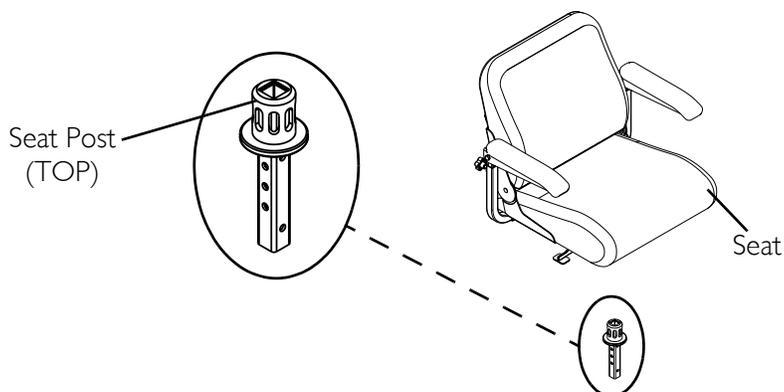
## Suggested Maintenance Procedures

1. Before using the powered scooter, make sure all nuts and bolts are tight. Check any parts for damage or wear and replace. Check all parts for proper adjustment.
2. Ensure that batteries are properly maintained and charged as required.
3. The wheels and tires should be checked periodically for cracks and wear, and should be replaced by a qualified technician if damaged.
4. Regularly check for loose nuts and/or bolts in the front and drive wheels. If loose, have them adjusted by a qualified technician.
5. Clean dirt, dust and grease from exposed components.
6. Periodically have the bearings of the front wheel checked to make sure they are clean and free from moisture.

## Lubrication Points

NOTE: For this procedure, refer to FIGURE 13.1.

1. Every six (6) months, lubricate the top of the seat post using a Teflon lubricant.



**FIGURE 13.1** Lubrication Points

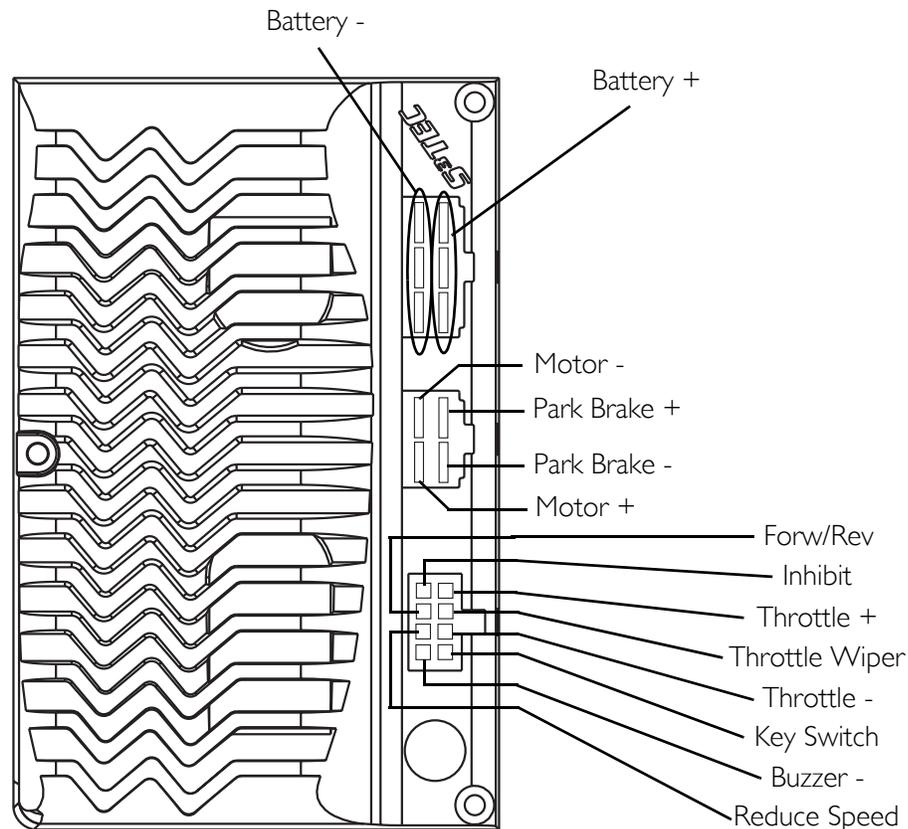
## Electrical

SYMPTOM	PROBABLE CAUSE	SOLUTIONS
Batteries draw excessive current when charging.	Battery failure. Electrical malfunction.	Check batteries. Replace if necessary. Contact Invacare for service.
Battery indicator flashes the charge level is low - immediately after recharge.	Battery failure. Malfunctioning battery charger. Electrical malfunction	Check batteries. Replace if necessary. Contact Invacare for Service. Contact Invacare for Service.
Battery indicator flashes the charge level is low - too soon after being recharged.	Batteries not charged. Weak batteries	Check charger. Replace if necessary. Replace batteries if necessary. Contact Invacare for Service.
Motor “chatters” or runs irregular.	Electrical malfunction.	Contact Invacare for Service.
Powered scooter does not respond to commands.	Poor battery terminal connection.	Clean terminals.
Power indicator off - even after recharging.	Electrical malfunction.	Contact Invacare for Service.

## Controller

NOTE: For this procedure, refer to FIGURE 13.2.

SYMPTOM	PROBABLE CAUSE	SOLUTIONS						
Status light is OFF.	<p>Programmer is plugged in.</p> <p>Battery supply voltage may not be present on the controller terminals.</p> <p>Key may be off or the wiring and fuses may not be intact.</p> <p>Status LED may not be fitted correctly.</p>	<p>Unplug programmer.</p> <p>Connect a voltmeter between Battery + and Battery -, negative probe on Battery -. <b>The voltmeter should measure between 23 and 27 volts.</b></p> <ul style="list-style-type: none"> <li>• If the voltage is negative, check for correct battery wiring polarity.</li> <li>• If the voltage is 0V, check the circuit breaker and for open circuit wiring.</li> </ul> <p>Connect a voltmeter between the Key Switch terminal and Battery -. <b>The voltmeter should read at least 20 volts.</b></p> <ul style="list-style-type: none"> <li>• If the voltage is 0V, use the voltmeter to check the wiring from Battery + to the key switch itself and back to the Key Switch terminal.</li> </ul>						
Status light is permanently ON, but the scooter does not move.	<p>Park brake solenoid or relay may not be working.</p> <p>Voltage on the Throttle terminals may be incorrect when Throttle is in neutral.</p> <p>Voltage on the Motor terminals may be incorrect.</p> <p>Inhibit status may be incorrect.</p>	<p>Move the throttle to the full-speed position and listen carefully for the operation of the park-brake solenoid or the relay in the controller.</p> <ul style="list-style-type: none"> <li>• If you can hear the solenoid or the relay, the problem is not with the throttle or inhibit circuitry.</li> <li>• If you can hear the solenoid but the motor does not turn, look for an open circuit in the motor wiring.</li> </ul> <p>Connect a voltmeter between Battery - and the following Throttle pins:</p> <table> <tr> <td><b>Battery - » Throttle -</b></td> <td><b>0.5±0.1 V</b></td> </tr> <tr> <td><b>Battery - » Throttle Wiper</b></td> <td><b>2.5±0.1 V</b></td> </tr> <tr> <td><b>Battery - » Throttle +</b></td> <td><b>4.5±0.1 V</b></td> </tr> </table> <p><b>When the Throttle is moved in the forward and reverse directions, the voltage on Throttle Wiper should increase and decrease by 2V.</b></p> <ul style="list-style-type: none"> <li>• If the throttle voltages are incorrect, an incorrect throttle potentiometer is being used and/or it is not correctly calibrated.</li> <li>• If the voltage swing does not occur, check the potentiometer and wiring for open circuits.</li> </ul> <p>Connect a voltmeter between Park Brake + and Park Brake -. <b>The voltmeter should measure 0V when the throttle is in neutral. The voltmeter should measure 24V when the throttle is out of neutral.</b></p> <ul style="list-style-type: none"> <li>• If the voltages are incorrect, check the park brake and park brake wiring.</li> </ul> <p>Connect a voltmeter between Inhibit and Battery -. <b>The voltmeter should measure 5V.</b></p> <ul style="list-style-type: none"> <li>• If the voltage is 0V, check that an inhibit switch is not engaged (e.g., from the battery charger). When 0V is applied to this terminal, driving will be inhibited.</li> </ul>	<b>Battery - » Throttle -</b>	<b>0.5±0.1 V</b>	<b>Battery - » Throttle Wiper</b>	<b>2.5±0.1 V</b>	<b>Battery - » Throttle +</b>	<b>4.5±0.1 V</b>
<b>Battery - » Throttle -</b>	<b>0.5±0.1 V</b>							
<b>Battery - » Throttle Wiper</b>	<b>2.5±0.1 V</b>							
<b>Battery - » Throttle +</b>	<b>4.5±0.1 V</b>							
Status light is FLASHING.		Check Error Codes chart on page 102.						

**FIGURE 13.2** Controller

## Error Codes

NUMBER OF FLASHES	FAULT	IMPACT ON SCOOTER	NOTES
1	Battery needs recharging.	Will Drive	Battery charge is running low. Recharge the batteries as soon as possible.
2	Battery voltage too low.	Drive Inhibited	Battery charge is empty. Recharge the batteries. If the scooter is left off for a few minutes, battery charge may recover sufficiently to allow driving for a short period of time.
3	Battery voltage too high.	Drive Inhibited	Battery charge is too high. Scooter will charge batteries when traveling down slopes or decelerating. Excessive charging in this manner may cause this fault. Turn the scooter power off and then back on again.
4	Current limit time-out.	Drive Inhibited	The scooter has drawn too much current for too long, possibly because the motor has been over-worked, jammed or stalled. Turn the scooter power off, leave for a few minutes and then turn back on again.

NUMBER OF FLASHES	FAULT	IMPACT ON SCOOTER	NOTES
5	Brake fault.	Drive Inhibited	Check that the park brake release lever is in the engaged position. The park brake coil or wiring is faulty. Check the park brake and wiring.
6	Out of Neutral at power up.	Drive Inhibited	Throttle is not in neutral position when turning the key switch on. Return the throttle to neutral, turn power off and back on again. Throttle may need to be re-calibrated.
7	Speed Pot error.	Drive Inhibited	The throttle or its wiring is faulty. Check wiring.
8	Motor volts error.	Drive Inhibited	The motor or its wiring is faulty. Check wiring.
9	Other internal errors.	Drive Inhibited	Call Invacare Technical Services Department.

# SECTION 14—TRANSPORTING

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## **⚠ WARNING**

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

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## **Disassembling/Assembling the Zoom 300**

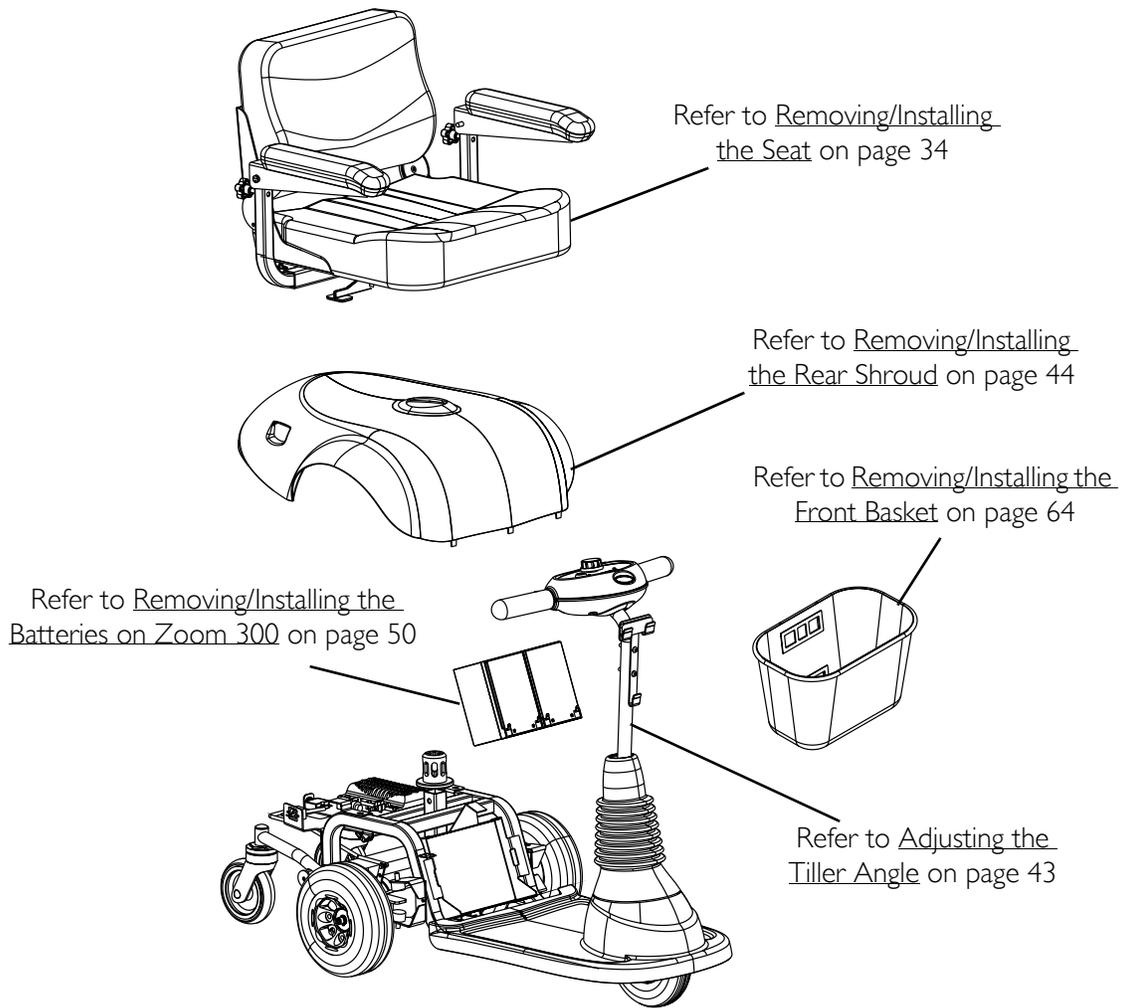
*NOTE: For this procedure, refer to FIGURE 14.1.*

### **Disassembling**

1. If installed on scooter, remove the front basket. Refer to Removing/Installing the Front Basket on page 64.
2. Remove the seat. Refer to Removing/Installing the Seat on page 34.
3. Remove the rear shroud. Refer to Removing/Installing the Rear Shroud on page 44.
4. Remove the batteries. Refer to Removing/Installing the Batteries on Zoom 300 on page 50.
5. Fold tiller down to lowest locked position. Refer to Adjusting the Tiller Angle on page 43.

### **Assembling**

1. Unfold tiller. Refer to Adjusting the Tiller Angle on page 43.
2. Install the batteries. Refer to Removing/Installing the Batteries on Zoom 300 on page 50.
3. Install the rear shroud. Refer to Removing/Installing the Rear Shroud on page 44.
4. Install the seat. Refer to Removing/Installing the Seat on page 34.
5. If desired, install the front basket. Refer to Removing/Installing the Front Basket on page 64.



**FIGURE 14.1** Disassembling/Assembling the Zoom 300

## Disassembling/Assembling the Zoom 400

*NOTE: For this procedure, refer to FIGURE 14.2.*

### Disassembling

1. If installed on scooter, remove the front basket. Refer to Removing/Installing the Front Basket on page 64.
2. Remove the seat. Refer to Removing/Installing the Seat on page 34.
3. Remove the rear shroud. Refer to Removing/Installing the Rear Shroud on page 44.
4. Remove the batteries. Refer to Removing/Installing the Batteries on Zoom 400 on page 53.
5. Disconnect the 4-housing motor [located under marker label # 1] connector from the controller (Detail "B" of FIGURE 14.2).

6. Perform the following to separate the front frame assembly from the rear frame assembly:
  - A. Use the one hand to firmly hold the tiller handle.
  - B. Using the other hand, firmly hold the YELLOW frame lock lever [located under marker label # 2] and pull UP to the Unlocked position as shown in Detail “C” of FIGURE 14.2.

*NOTE: The frame lock lever remains in the unlocked position when the front frame assembly is separated from the rear frame assembly.*

- C. Lift the front frame assembly so that the mounting brackets disengage from the rear frame assembly as shown in Detail “C” of FIGURE 14.2.
  - D. Separate the front frame assembly from the rear frame assembly.
7. Fold tiller down to lowest locked position. Refer to [Adjusting the Tiller Angle](#) on page 43.

### **Assembling**

1. Unfold tiller. Refer to [Adjusting the Tiller Angle](#) on page 43.
2. Ensure that the tiller is in the highest locked position.
3. Perform the following to connect the front frame assembly to the rear frame assembly (Detail “C” of FIGURE 14.2):
  - A. Use the one hand to firmly hold the tiller handle.
  - B. Using the other hand, firmly hold the front frame assembly and align with the REAR frame assembly.

*NOTE: The frame lock lever remains in the unlocked position when the front frame assembly is separated from the rear frame assembly.*

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### **⚠ WARNING**

**When reassembling scooter, ensure the frame lock lever is in the LOCKED position securing the FRONT and REAR frame assemblies together. Otherwise, injury and/ or damage may result.**

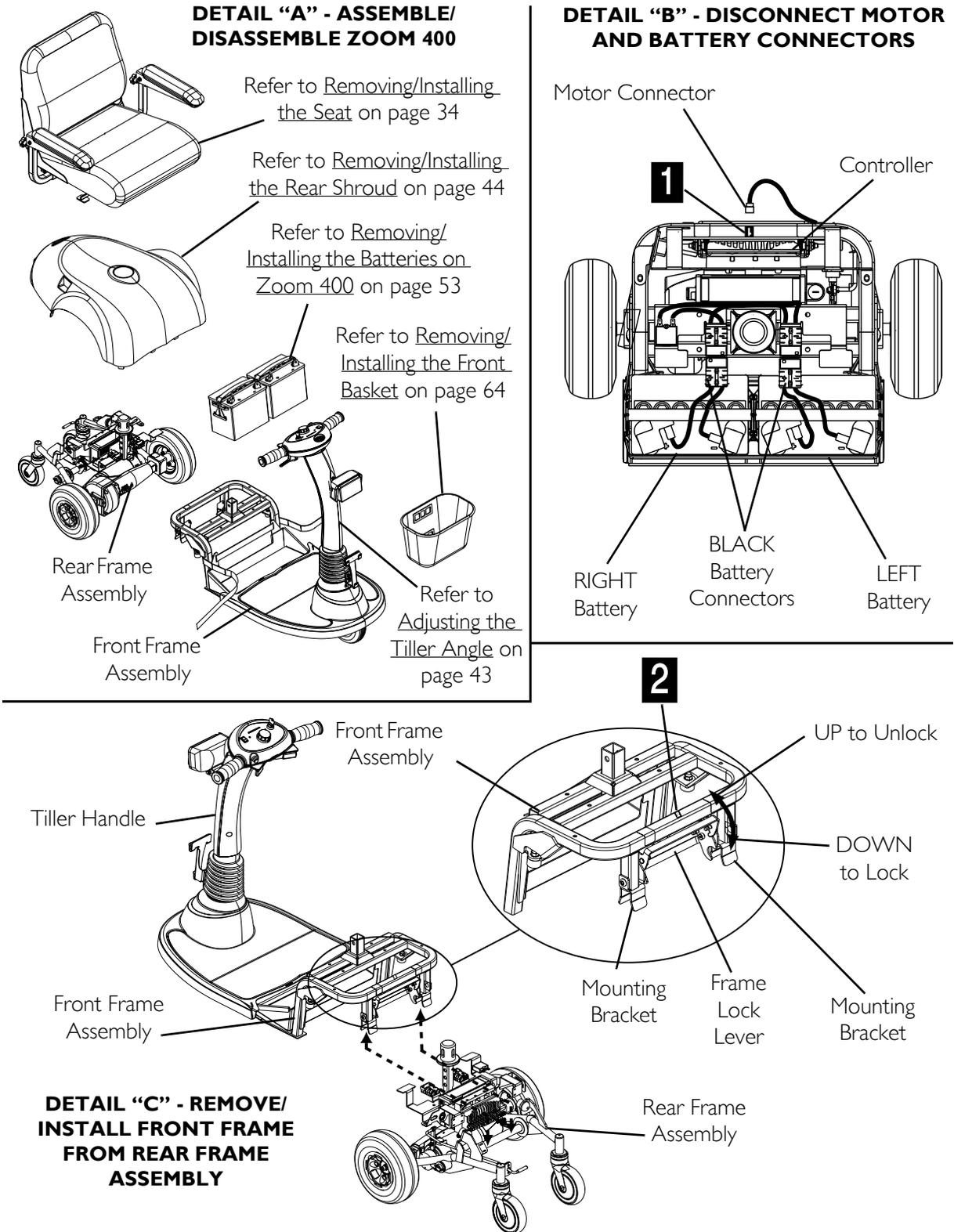
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- C. Lower the front frame assembly so that the mounting brackets engage with the rear frame assembly.

*NOTE: The mounting brackets are engaged when an audible “click” is heard. The YELLOW frame lock lever automatically locks in place.*

4. Connect the 4-housing motor connector [located under marker label # 1] to the controller (Detail “B” of FIGURE 14.2).
5. Install the batteries. Refer to [Removing/Installing the Batteries on Zoom 400](#) on page 53.
6. Install the rear shroud. Refer to [Removing/Installing the Rear Shroud](#) on page 44.

7. Install the seat. Refer to Removing/Installing the Seat on page 34.
8. If desired, install the front basket. Refer to Removing/Installing the Front Basket on page 64.



**FIGURE 14.2** Disassembling/Assembling the Zoom 400

# SECTION 15—SCOOTER ACCESSORIES

## ⚠ WARNING

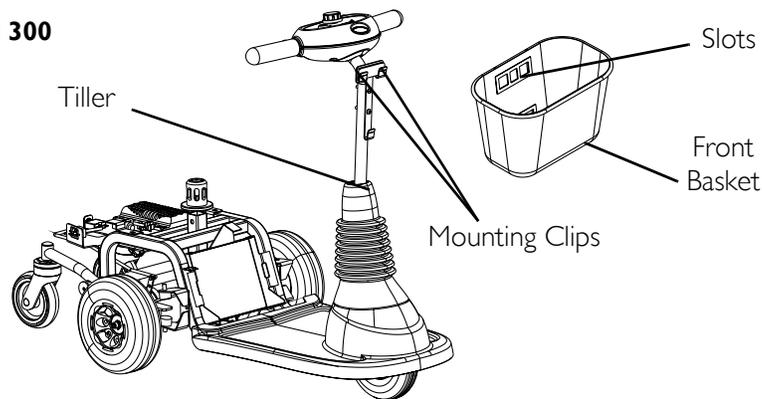
After ANY adjustments, repair or service and BEFORE use, make sure that all attaching hardware is tightened securely - otherwise injury or damage may result. Before performing any maintenance, adjustment or service, turn power OFF and remove key from ignition.

## Removing/Installing the Front Basket

NOTE: For this procedure, refer to FIGURE 15.1.

1. To remove: Lift up on the basket and remove it from the mounting clips.
2. To install:
  - A. Align the slots of the basket with the mounting clips on the tiller.
  - B. Push down on the basket to secure it in place.

### DETAIL "A" - ZOOM 300



### DETAIL "B" - ZOOM 400

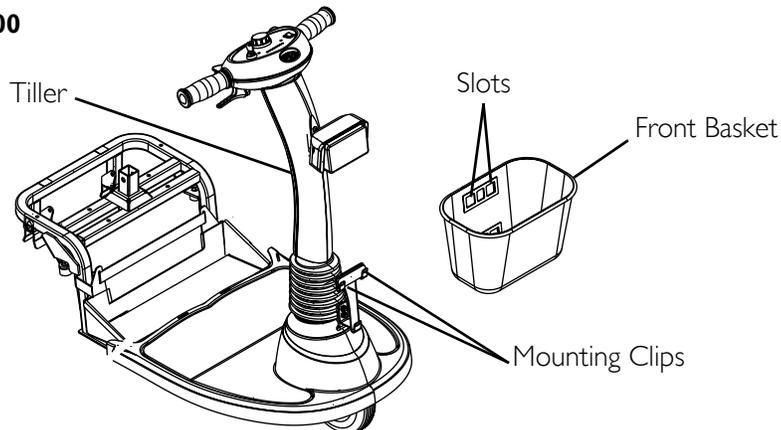


FIGURE 15.1 Removing/Installing the Front Basket

## Removing/Installing the Front Basket Mounting Bracket

*NOTE: For this procedure, refer to FIGURE 15.2.*

### Removing

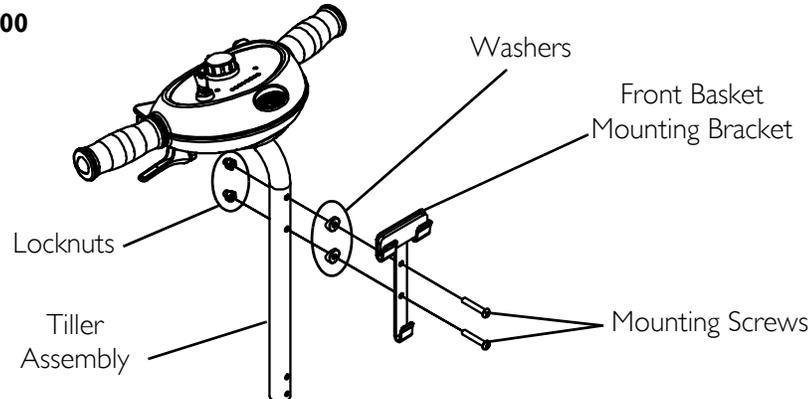
1. Remove the front basket. Refer to Removing/Installing the Front Basket on page 108.
2. Perform one (1) of the following:
  - On Zoom 300 - Remove the two (2) mounting screws, locknuts and washers that secure the front basket mounting bracket to the tiller.
  - On Zoom 400 - Remove the two (2) mounting screws, locknuts and washers that secure the front basket mounting bracket to the mounting tab in the scooter frame.

### Installing

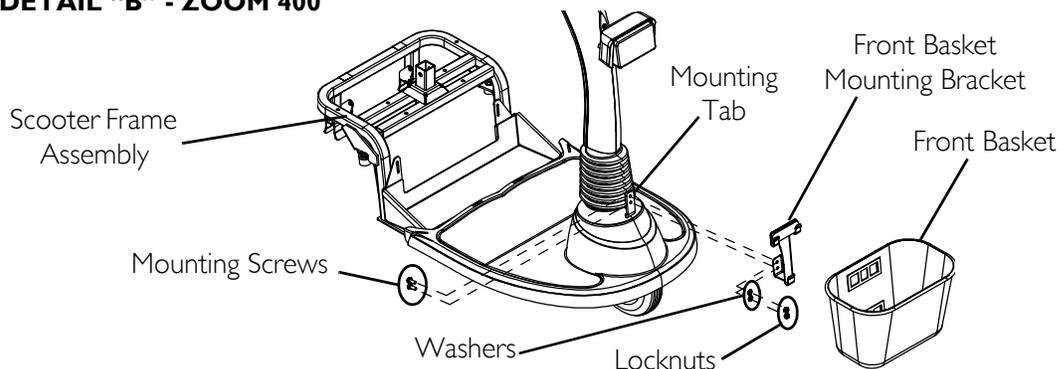
1. Perform one (1) of the following:
  - On Zoom 300 - Install the front basket mounting bracket to the tiller using the two (2) mounting screws, locknuts and washers.
  - On Zoom 400 - Install the front basket mounting bracket to the mounting tab in the scooter frame using the two (2) mounting screws, locknuts and washers.
2. Install the front basket. Refer to Removing/Installing the Front Basket on page 108.

#### DETAIL "A" - ZOOM 300

*NOTE: Front basket not shown.*



#### DETAIL "B" - ZOOM 400



**FIGURE 15.2** Removing/Installing the Front Basket Mounting Bracket

## Installing/Removing the Crutch/Cane Holder

### **⚠ WARNING**

The installation of the crutch/cane holder onto the back of the scooter seat significantly increases the length of the scooter. When turning the scooter or swiveling the scooter seat, it is important to take note of this increased length - otherwise, injury and/or damage to the surrounding property may result.

*NOTE: For this procedure, refer to FIGURE 15.3.*

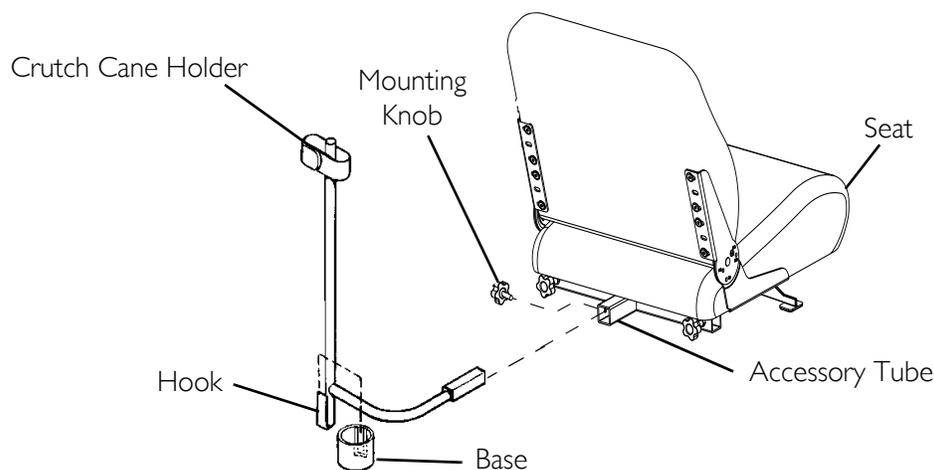
*NOTE: The Crutch/Cane Holder, Safety Flag and Oxygen Holder all install into the accessory tube; ONLY one (1) of these may be installed at a time.*

### **Installing**

1. Install the crutch/cane holder into the accessory tube located on the back of the seat.
2. Install the mounting knob to secure the crutch/cane holder in place. Securely tighten.
3. Align the slot on the base with the hook on the crutch/cane holder and slide base down into position.

### **Removing**

1. Remove the crutch/cane holder from the accessory tube.
2. Remove the mounting knob that secures the crutch/cane holder in place.
3. Remove the crutch/cane holder from the accessory tube.



**FIGURE 15.3** Installing/Removing the Crutch/Cane Holder

## Installing/Removing the Safety Flag

### **⚠ WARNING**

The installation of the safety flag onto the back of the scooter seat significantly increases the length of the scooter. When turning the scooter or swiveling the scooter seat, it is important to take note of this increased length - otherwise, injury and/or damage to the surrounding property may result.

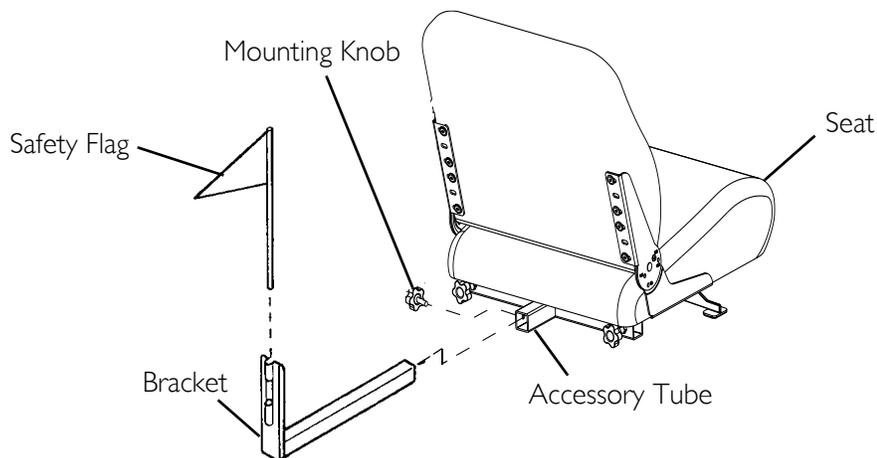
*NOTE: For this procedure, refer to FIGURE 15.4.*

### **Installing**

1. Install the bracket into the accessory tube located on the back of the seat.
2. Install mounting knob to secure the bracket in place. Securely tighten.
3. Install safety flag into bracket.

### **Removing**

1. Remove the safety flag from the bracket.
2. Remove the mounting knob that secures the bracket in place.
3. Remove the bracket from the accessory tube located on the back of the seat.



**FIGURE 15.4** Installing/Removing the Safety Flag

## Installing/Removing/Using the Walker Holder

### ⚠ INSTALLATION WARNINGS

After **ANY** adjustments, repair or service and **BEFORE** use, make sure that all attaching hardware is tightened securely.

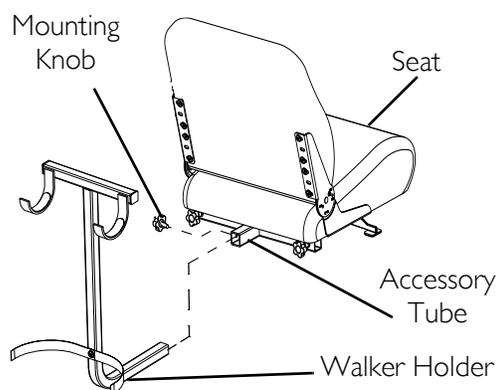
The installation of the walker holder onto the back of the scooter seat significantly increases the length of the scooter. When turning the scooter or swiveling the scooter seat, it is important to take note of this increased length - otherwise, injury and/or damage to the surrounding property may result.

### Installing/Removing the Walker Holder

*NOTE: For this procedure, refer to FIGURE 15.5.*

*NOTE: Reverse this procedure to remove the walker holder.*

1. If necessary, loosen but do not remove the mounting knob.
2. Install the walker holder into the accessory tube.
3. Thread the mounting knob into the welded nut on the accessory tube. Securely tighten.



**FIGURE 15.5** Installing/Removing the Walker Holder

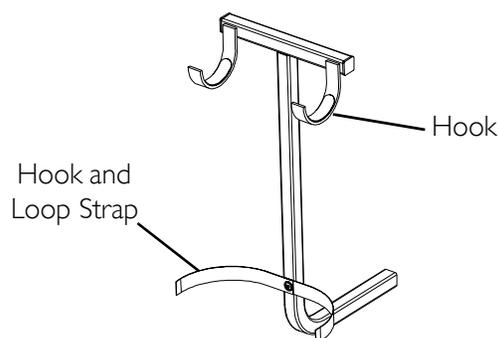
### Using the Walker Holder

*NOTE: For this procedure, refer to FIGURE 15.6.*

1. Fold walker. Refer to walker instructions.

*NOTE: Walker MUST be folded before using walker holder.*

2. Hang folded walker on walker holder hooks.
3. Secure walker with hook and loop straps.



**FIGURE 15.6** Using the Walker Holder

## Installing/Removing the Rear Mounted Basket

### ⚠ WARNING

The rear mounted basket is rated for a maximum capacity of ten (10) lbs.

After **ANY** adjustments, repair or service and **BEFORE** use, make sure that all attaching hardware is tightened securely.

The installation of the basket and basket bracket onto the back of the scooter seat increases the length of the scooter. When turning the scooter or swiveling the scooter seat, it is important to take note of this increased length - otherwise, injury and/or damage to surrounding property may occur.

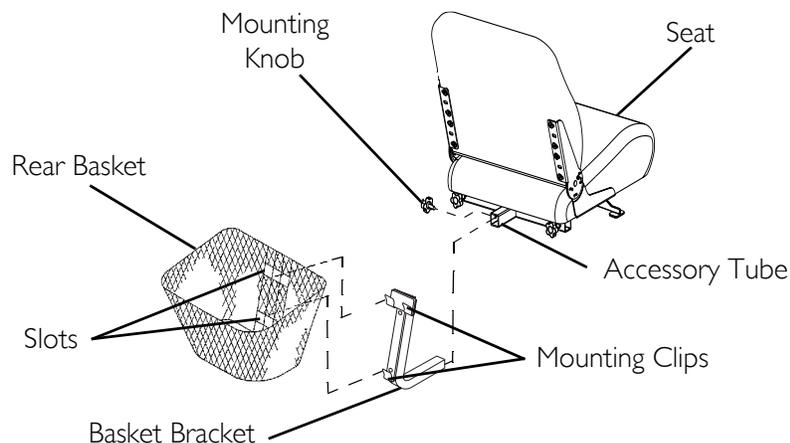
*NOTE: For this procedure, refer to FIGURE 15.7.*

### Installing

1. If necessary, loosen but do not remove the mounting knob.
2. Install the basket bracket into the accessory tube.
3. Thread the mounting knob into the welded nut on the accessory tube. Securely tighten.
4. Align the mounting clips on the bracket with the slots on the basket and slide the basket **DOWN** securely into position.

### Removing

1. Remove the basket from the bracket.
2. Loosen the mounting knob.
3. Remove the basket bracket from the accessory tube.
4. Tighten the mounting knob.



**FIGURE 15.7** Installing/Removing the Rear Mounted Basket

# NOTES

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# 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 eighteen (18) months on electrical and transaxle and three (3) years on frame 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 bottom of the back cover. Provide dealer's name address, date of purchase, indicate nature of the defect and, if the product is serialized, indicate the serial number. Do not return products to our factory without our prior consent.

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

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



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