Owner's Manual

Regal Electric Operating Table Base

- *Smooth, Quiet Electrical Operation*
- *Full Height and Tilt Adjustment*
- *Convenient Foot Pedal Activation*
- *Stainless Steel Construction for Durability*

New Model Number: **18160-00-EAEKCK**
Former Model Number: **202371-00**

SSCI
Wheeling, IL 800 323 7366

Form No. 702707 Rev. A 02/04

Inquiries should be addressed to **Suburban Surgical Co., Inc.**
Wheeling, Illinois 60090, USA

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Chapter 1 - General Information

Introduction

Your Regal Operating Table Base features electric height adjustment and an electric tilt mechanism to give you greater positioning convenience. This table base makes a perfect companion to Suburban Surgical Company's Flat-Top and V-Style Operating Tables.

Electrically-operated pedals activate the powerful screw lifting mechanism to smoothly raise and lower the table. You can tilt and lock the table top at any angle from horizontal to approximately 45°. The mounting bracket/tilt mechanism is made of stainless steel for unsurpassed strength and durability.

The weighted stainless steel base provides superior stability, and the flat lower section serves as an handy foot rest. Adjustable floor levelers on all four corners help ensure that the table is level and steady at all times.

About this Manual

Every attempt has been made to insure that the information in this manual is correct and complete. Suburban Surgical Co., however, always welcomes our customer's suggestions for improvements to our products and associated publications.

Conventions Used in this Manual

Throughout this manual you will find text under the headings **Note** and ***CAUTION:***.

Notes

Under the **Note:** headings, you will be given additional information pertinent to the subject discussed in that paragraph or procedural step.

> **Example:**
>
> Lay the base down to reach the leveler legs under the unit. **Note:** The base is shipped with the leveler legs screwed fully into the base.

CAUTIONS

Under the ***CAUTION:*** headings, you will be alerted to potentially hazardous conditions which, if ignored or mishandled, could result in injury to yourself, or damage to the equipment.

> **Example:**
>
> ***CAUTION:*** **The base is heavy and we recommend that laying it down be done by at least two people.**

Care and Cleaning of Stainless Steel

Introduction

Stainless steel is steel alloyed with chromium to make it highly resistant to stain, rust and corrosion. **Note:** This does NOT mean that stainless steel will *never* rust or corrode. Science has not yet developed a steel which is completely stainless or corrosion PROOF.

The type of stainless steel and finish selected by Suburban Surgical Co. for the Regal Oprating Table Base is the best available for the intended use.

Cleaning and Cleansers

The basic rule of thumb is to use the mildest cleaning procedure that will do the job effectively. Always rinse thoroughly with clear water, and dry completely. Frequent cleaning will prolong the service life of stainless steel equipment and will help maintain a bright, pleasing appearance. **Note:** NEVER power-wash the table base.

Ordinary deposits of waste and fluids can usually be removed with soap and water. More stubborn deposits or tightly adhering debris may require harder scrubbing and possibly the use of commercial cleaning products acceptable for use on metal surfaces. When using any cleaning agent, rub in the direction of the polish lines or "grain" of the metal. For high luster finishes, clean soft cloths or pads should be used.
If especially rough cleaning is necessary, use "stainless steel" wool, nylon or plastic scrubbers. Test these scrubbers in an inconspicuous area first to be sure they do not mar or scratch the stainless steel finish.

Minor scale build-up and some hard water spotting may be removed by washing with vinegar, followed by a neutralizing rinse with clear water and a thorough drying with a soft cloth. For heavy deposits of scale, 5% oxalic acid (use warm), 5-15% sulfamic acid, or 5-10% phosphoric acid may be used. Always follow with a neutralizing rinse of clean water and a thorough drying.

Deodorizing Agents, Disinfectants and Sanitizers

The large selection of brands and combinations of chemicals available for deodorizing, disinfecting and sanitizing is staggering. Select one or more agents for use in your facility only after weighing all the benefits claimed by each product. Often this choice is made without adequate consideration of the effects these agents may produce on equipment or furnishings.

CAUTION: **Before selecting a chemical to employ in your facility, review label statements regarding use with metals (stainless steel). Always consult the chemical supplier if there are any doubts.**

Avoid prolonged use of chlorides (such as chlorine bleach), bromides, iodides and thiocyanates on stainless steel surfaces as these chemicals will cause pitting, corrosion and metal discoloration. Allowing salty solutions to evaporate and dry on stainless steel may also contribute to corrosive conditions.

In summary, select chemical deodorizers, disinfectants and/or sanitizers only after weighing all possible benefits and known adverse effects.

Effect on Warranty

***CAUTION:* The warranty for this product is void if the care and cleaning instructions provided in this manual are not followed.**

Safety

Crush Warning

The table base is raised, lowered and tilted by a powerful electric actuator. Use caution when raising, lowering or tilting the table to insure that feet or other body parts are not trapped under the table. Make sure that objects are not caught under the table as they can be damaged or cause damage to the table lifting/tilting mechanism.

Load Weight Limitations

The table and base are designed to carry weights up to 300-pounds (136 kg). Placing weights greater than 300-pounds on the table can damage the lifting/tilting mechanism or cause the table to lower suddenly.

Cleaning Requirements

Clean the table base exactly in accordance with the cleaning instructions provided in *Chapter 3* of this manual. *Failure to follow these instructions can void your warranty.*

Suburban Surgical Company Contact Information

The Suburban Surgical Co. Customer Service Department can be contacted via mail, telephone or fax. The department is available from 8:30am to 5:00pm, Central Time, Monday through Friday. Closed holidays.

Address: Suburban Surgical Co., Inc.
275 Twelfth Street
Wheeling, Illinois 60090

Telephone: Illinois - (847) 537-9320, ext. 3518
Toll Free - 1-800-323-7366

Fax: (847) 537-9061

Web: www.suburbansurgical.com

Warranty

Suburban Surgical Company, Inc. warrants the original purchaser that our products are of the highest standards in material and workmanship. Our stainless steel components are guaranteed to last a lifetime assuming they are used as intended, properly maintained and cared for. Mechanical, electrical, electronic, hydraulic, and any product's devices carry a one year warranty.

Items purchased by Suburban Surgical Company, Inc. from other manufacturers and incorporated into our equipment are covered by the respective manufacturer's warranties.

Warranties will not apply if it is determined by Suburban Surgical Company, Inc. that the equipment became defective due to an accident, misuse, abuse, improper maintenance or alteration. Warranty freight charges are covered for the first year only.

Parts Ordering Procedure

Order new equipment, accessories and/or replacement parts from your local dealer, or directly through the Suburban Surgical Co. Customer Service Department. You can order by mail, telephone or fax. Refer to *Suburban Surgical Co. Contact Information* on *Page 4* for address, telephone and fax numbers.

For more information on SSCI's fine line of products and accessories, talk to your SSCI sales representative. Find replacement part descriptions and numbers in *Chapter 4, Repairs and Replacements* in this manual.

When ordering, please provide the following:

- Your name
- Company name
- Company account number
- Your telephone number
- Shipping address
- Billing address (if different from shipping address)
- Names, part numbers and quantities of items being ordered
- Credit card number and expiration date, or other payment information
- Preferred method of shipment
- Information on whether the items are required on a normal or urgent basis

Notes:

Chapter 2 - Unpacking & Setup

Inspection

If the shipping container appears damaged in any way, contact the shipping company immediately. Save all damaged packing materials to assist in proving liability for damage.

Carefully inspect your Regal Operating Table Base while you unpack it. If any damage is noted, or if parts appear to be missing, call the Suburban Surgical Co. Customer Service Department. Refer to *Contact Information* on *Page 4*.

Unpacking

CAUTION: **Unpacking the table base is not difficult. However, the base is heavy and we recommend that unpacking and setup be done by at least two people. Follow the instructions carefully to prevent injury to yourself or damage to the table base.**

After removing the table base from the shipping carton, make sure the four leveler caps, P/N 853007, are present in the parts bag.

Setup Procedures

Tools Required

- 9/16-in. open-end wrench
- 7/8-in. open-end wrench
- Carpenter's level

Initial Setup

Set up and position the base before unpacking the operating table top. That way, after unpacking the operating table top, you will have a handy place to put it! After unpacking the operating table, you will have to remove the table-to-base mounting hardware which is screwed into the underside of the table frame.

1. After removing the table base from the shipping carton, place it where you plan to use it.

2. Place the foot controller in a convenient location near the base.

Leveling

Level the table base to ensure that fluids on the table top drain correctly to the drain hole. **Note:** Level the table base ONLY at the location where it will be used. Due to differing floor conditions, leveling procedures carried out at one place may be totally invalid at a different location. If the table base is ever moved to another location, the leveling procedure should be redone.

1. Plug in the electric power cord. The auxiliary outlet on the base is a very handy location. **Note:** If not already present, consider installing a floor-mounted electrical outlet under the table. This eliminates the power cord as a tripping hazard, and protects it from foot and wheeled traffic.

2. At the foot controller (Figure 1), press the down (**DN**) side of both pedals to make sure the base is fully lowered, and not tilted.

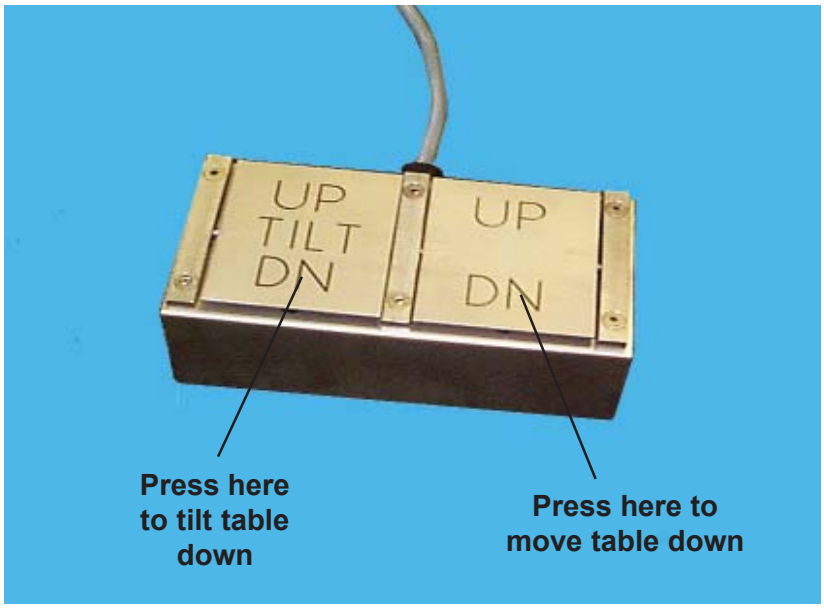

Figure 1. Foot Controller Down Pedals

3. Place a carpenter's level length-wise on the base bracket and check the level of the base, right-to-left (Figure 2).

4. Place the level cross-wise on the base bracket and check the level of the base front-to-rear (Figure 3).

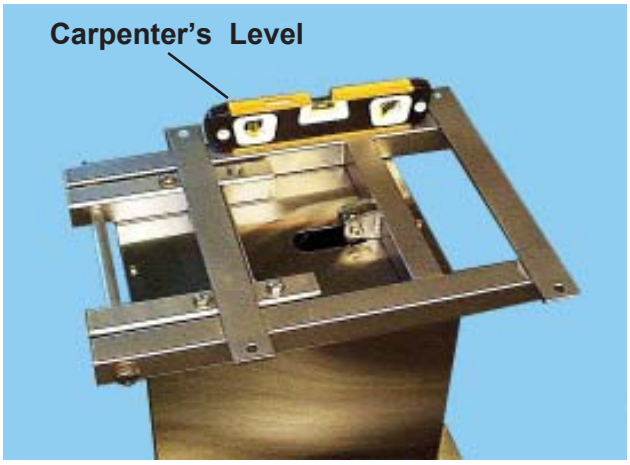

Figure 2. Level Length-wise on Base Bracket

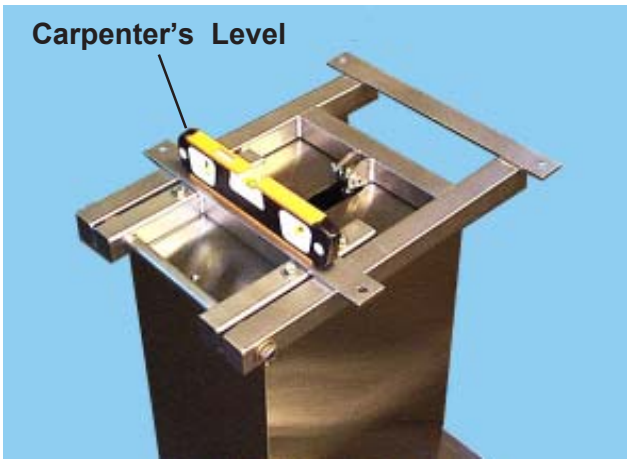

Figure 3. Level Cross-wise on Base Bracket

- If the checks in *Steps 3* and *4* indicated that the base is level or very close, place the four leveler caps on the legs and proceed to the next sub-section, *Mounting the Top*, on *Page 10*.

- If the base is substantially out of level, proceed to *Step 5* below.

CAUTION: **The base is heavy and we recommend that laying it down be done by at least two people.**

5. Lay the base down as shown in Figure 4 to reach the leveler legs under the unit. **Note:** The base is usually shipped with the leveler legs screwed fully into the base, so they will have to be backed out to provide adjustment room.

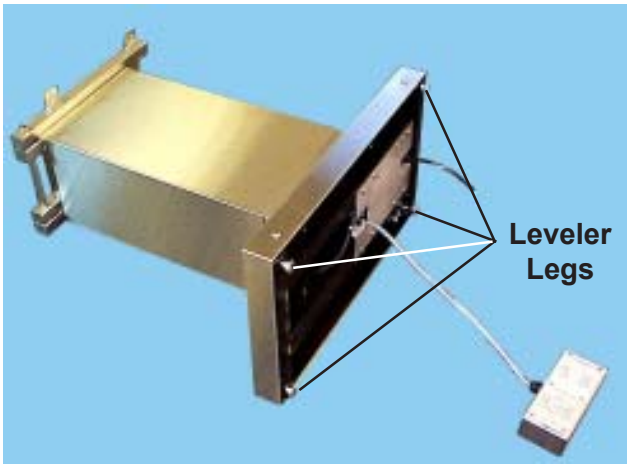

Figure 4. Base Laying Down

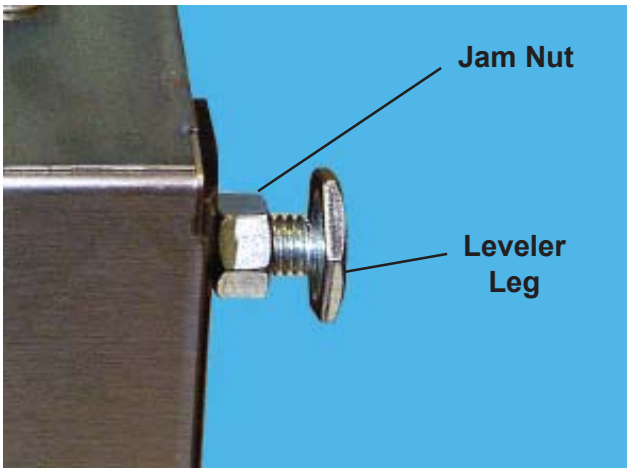

Figure 5. Leveler Leg and Jam Nut

6. With a 9/16-in. wrench, loosen all four jam nuts (Figure 5) and unscrew the four leveler legs out about 1/2-in.

7. Turn the base right-side-up.

8. Place a carpenter's level length-wise on the base bracket arms (Figure 2).

9. With a 7/8-in. wrench, turn the leveler legs (Figure 5) as necessary to level the base, right-to-left.

10. Place the level cross-wise on the base (Figure 4).

11. Turn the leveler legs as necessary to level the base, front-to-rear.

12. Re-check the level both ways and re-adjust the leveler legs until the base is in perfect level.

13. When the base is level (and all legs firmly touch the floor), hold each leveler leg steady with the wrench, and then tighten the jam nut firmly up against the bottom of the base.

14. Press the four leveler caps onto the leveler legs.

Mounting the Top

Mount the operating table top onto the base. Refer to the installation instructions supplied with the table top. Refer to Figure 6 for the locations of the table top mounting holes on the base bracket.

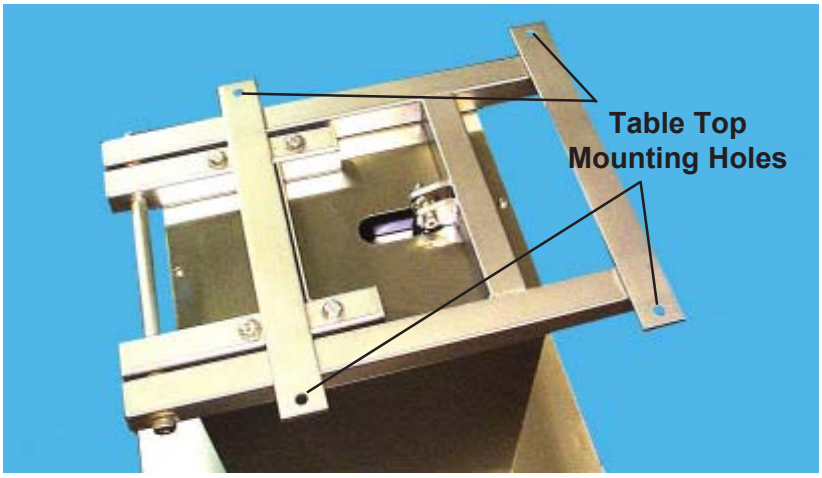

Figure 6. Base Bracket Holes for Mounting table Top

Disposition of the Shipping Carton

The shipping carton can be cut up and thrown away. It is large and bulky and takes up considerable space. If adequate space is available, however, it might be handy to retain the carton and pallet in case reshipment of the base to the manufacturer ever becomes necessary for repairs.

Returning the Electric Base for Repairs

RMA Numbers

If your base should require return to Suburban Surgical Co. for repairs, discuss the problem with one of our Customer Service Representatives. Obtain an RMA number (Return Merchandise Authorization) from him before shipping the unit back.
Note: Merchandise returned without an RMA number will not be accepted.

Packing and Shipment

If you were able to keep the base shipping carton and pallet, repack the base into the carton, staple or tape the cover securely in place, and band the carton to the pallet.

If the shipping carton is not available, it is possible to ship the base back without a carton. The base must, however, be shipped on a pallet. Bases not shipped on pallets will not be accepted by Suburban Surgical Co. due to the greater likelihood of damage. In any case, such shipments would probably not be accepted by the shipping company.

Ship documentation with the base including:

- Destination
- RMA Number
- Your name, company and address
- Your telephone number
- A description of the reason for returning the base

Notes:

Chapter 3 - Operating & Cleaning

Introduction

Operating the Regal Electric Operating Table Base is very simple. The following instructions cover:

The only routine maintenance requirement of the Regal Electric Operating Table Base is regular cleaning. Refer to *Cleaning the Table Base* on *Page 16* for detailed instructions.

Operating the Table Base

Raising and Lowering the Table

A two-function foot controller controls the motions of the table. On the foot controller, a pedal marked **UP** and **DN** controls the up and down movement of the table (Figure 7).

- To raise the table, press the **UP** side of this foot controller pedal.
- To lower the table, press the **DN** side of this foot controller pedal.

Hold the pedal down until the table has reached the desired height, then release the pedal.

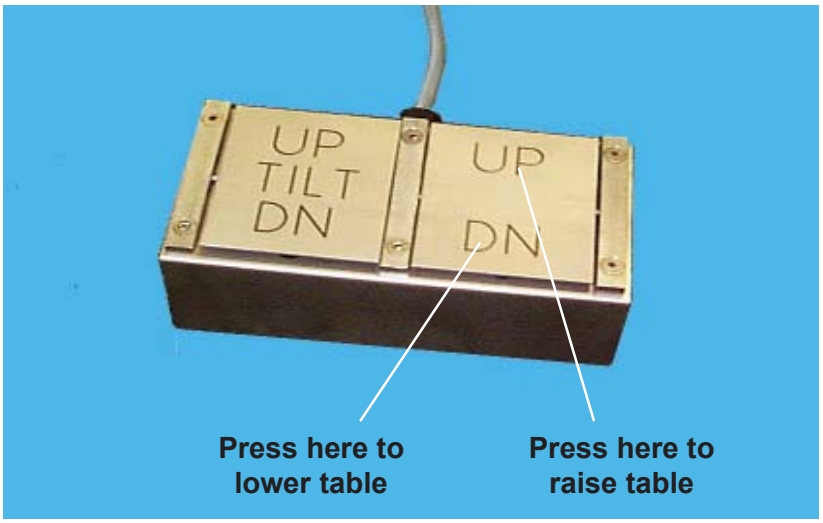

Figure 7. Foot Controller - Up and Down Pedals

Tilting the Table

A two-function foot controller controls the tilt of the table from horizontal to approximately 45°. On the foot controller, a pedal marked **UP, TILT** and **DN** controls the tilt angle of the table (Figure 8).

- To tilt the table up, press the **UP** side of the **TILT** pedal on the foot controller.
- To tilt the table down, press the **DN** side of the **TILT** pedal on the foot controller.

Hold the pedal down until the table has reached the desired angle, then release the pedal.

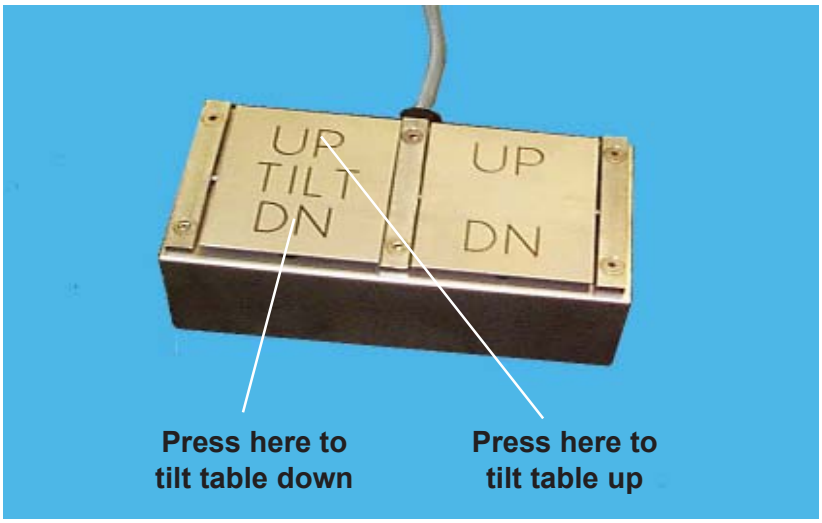

Figure 8. Foot Controller - Tilt Pedals

Adjusting the Table Level

If the table rocks and is not stable, you do not have to find a bunch of matchbooks to place under the legs! The legs under the base are adjustable! A rocking, unstable table (rhyme not intentional) can usually be corrected by adjusting one or more leveler legs under the base.

1. By rocking the table, try to determine which leg or legs must be adjusted to stabilize the table.

2. On each leg to be adjusted, use a 9/16-in. wrench to loosen the jam nut (Figure 9).

3. Turn the leveler leg (with attached cap) as necessary to provide a solid foundation for the table.

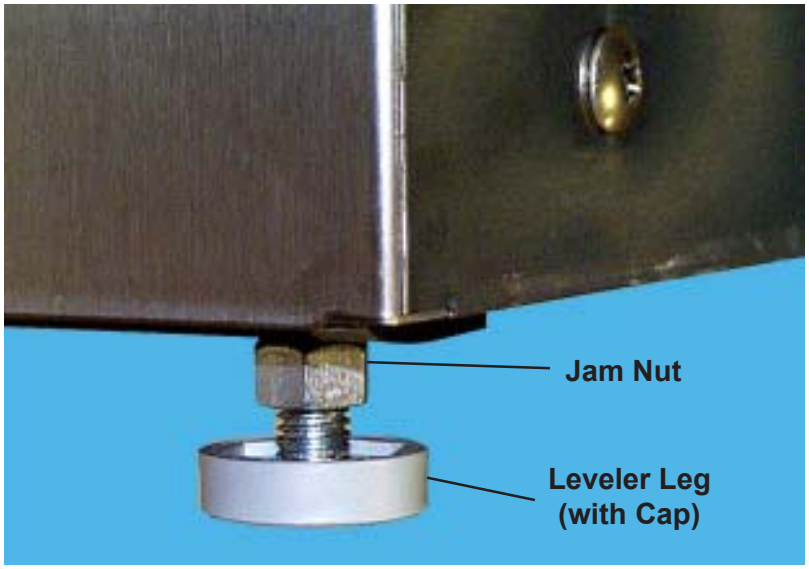

Figure 9. Leveler Leg With Jam Nut and Cap

4. Re-check the table and make sure it is OK. If not, re-adjust the legs until the table is rock-solid.

5. Tighten the jam nut up tightly against the bottom of the base.

Auxiliary Outlet

A 3-pronged, auxiliary electrical outlet is located on the side of the base for convenient use of any 115 VAC appliance or instrument (Figure 10). For heated table tops, this outlet is a handy place to plug your heat controller.

Figure 10. Auxiliary Outlet

Cleaning the Table Top and Base

Introduction

You will no doubt want to clean your operating table and base whenever it becomes dirty or saturated with waste fluids. Maintaining high standards of sanitation will be an important priority for your facility.

Whenever necessary, rinse the unit with clear water and dry thoroughly with clean, soft cloths.

Cleaning Procedures

Ordinary deposits of waste and fluids can usually be removed with soap and water. Stubborn deposits may require scrubbing with “stainless steel” wool, nylon or plastic scrubbers and/or the use of commercial cleaning products. Always scrub in the direction of the “grain” of the metal. Rinse with clear water and dry thoroughly with clean, soft cloths.

Minor scale build-up and some hard water spotting may be removed by washing with vinegar, followed by a neutralizing rinse of clear water and a thorough drying with clean, soft cloths.

For heavy deposits of scale, 5% oxalic acid (use warm), 5-15% sulfamic acid, or 5-10% phosphoric acid may be used. As always, rinse with clear water and dry thoroughly with clean soft cloths.,

Avoid prolonged use of chlorides (such as chlorine bleach), bromides, iodides and thiocyanates. Never allow salty solutions to dry on the stainless steel. **Note:** NEVER power-wash the operating table and base.

Chapter 4 - Repairs & Replacements

Replacement Parts

The replacement parts listed in the chart below are available for the Regal Electric Operating Table Base. For parts not listed, contact the Suburban Surgical Customer Service Department. Refer to *Contact Information* on *Page 4* and *Parts Ordering Procedure* on *Page 5*.

Part Name	SSCI Part Number	Replacement Instructions
Foot Controller, Complete	214038	*Page 18*
Electric Cord, Foot Controller	214084	*Page 22*
Push Button Switch, Foot Controller (4)	854141	*Page 29*
Electric Power Cord	213807	*Page 31*
Ball Drive Actuator Assembly (Tilt)	214096	*Page 33*
Motor	854552	*Page 40*
Motor Coupling	854196	*Page 41*
Brake	853695	*Page 43*
Capacitor, 30 MFD, Mallory (2)	853510	*Page 45*
Auxiliary Outlet	854636	*Page 46*
Auxliliary Outlet Cord	214100	*Page 46*
Retractile Cord	214098	*Page 48*

Replacement Parts Available for the Electric Operating Table Base

General

- Many of the threaded fasteners used on the base are secured with thread adhesive to insure structural integrity. Removing any screw or bolt may be difficult at first.
- If during dis-assembly, you remove any tape, cable ties, etc., remember to replace them when the installation is complete.
- During dis-assembly, retain all hardware items such as screws, nuts, lockwashers, etc. for re-assembly.
- If you have problems with any procedure, please feel free to call Suburban Surgical Co. Technical Support.

Procedures

Foot Controller (Complete)

P/N 214038

Tools Required

- Phillips screwdriver
- Small flat-blade screwdriver
- Pliers

Removal

1. Unplug the electric power cord.

2. Remove the table top from the base. Refer to the instructions supplied with your table top. **Note**: You can replace the foot controller without removing the table top, however, doing so makes the base a lot lighter and easier to handle.

CAUTION: **The base is heavy and we recommend that laying it down be done by at least two people.**

3. Lay the base down so that the access plates are to your right as shown in Figure 12. If the base is oriented differently, the wiring references in this manual will appear reversed and may cause confusion.
Note: Be careful not to damage the electric power and foot controller cords.

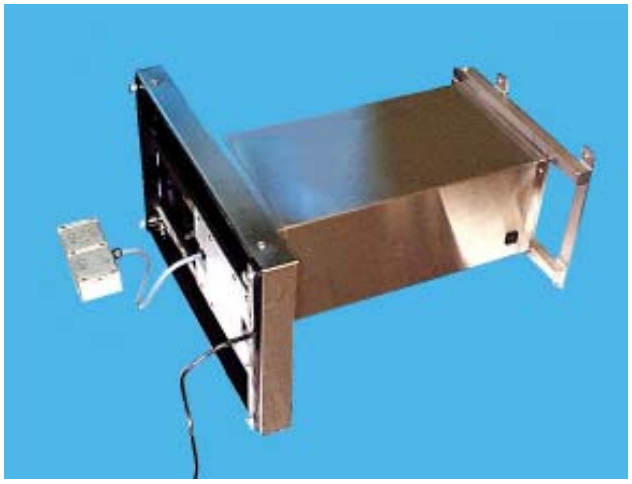

Figure 11. Lay the Base Down

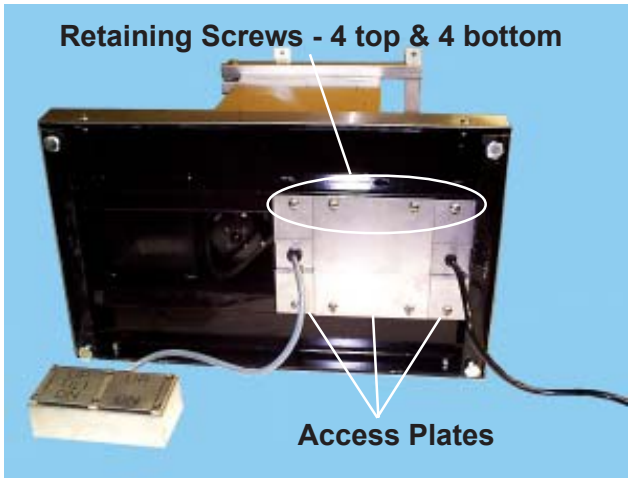

Figure 12. Access Plates Under the Base

CAUTION: **In the next step you will remove three access plates and expose electrical components in the base. Use caution around the electrical wiring and components to prevent injury to yourself and/or damage to the equipment.**

4. With a Phillips screwdriver, remove the eight retaining screws, and then lift off the three access plates (Figure 12). **Note:** The two smaller plates will still be held to the base by the electric power cord and the foot controller cord.

5. The foot controller cord contains one green/yellow wire, and six gray wires, numbered **1**, **2**, **3**, **4, 5** and **6**. (Figures 13 and 14). Note down where all seven wires terminate so that you can replace the wires from the new foot controller correctly.

6. With a small flat-blade screwdriver, disconnect the green/yellow wire from the terminal block (Figure 14).

7. Disconnect the **#1** wire from the terminal block.

8. Disconnect the **#6** wire from the terminal block.

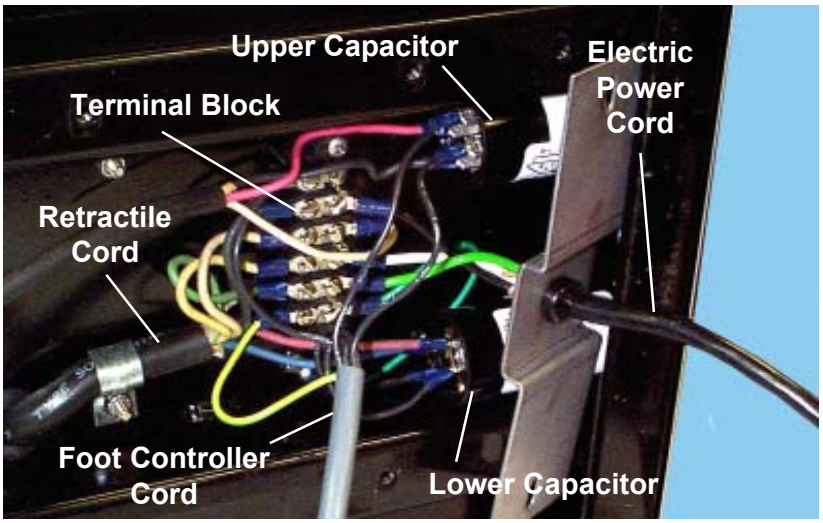

Figure 13. Foot Controller Wire Terminations

9. On the upper capacitor, with a small flat-blade screwdriver, pry the **#2** wire from the terminal next to the red wire.

10. On the upper capacitor, pry the **#4** wire from the terminal next to the black wire.

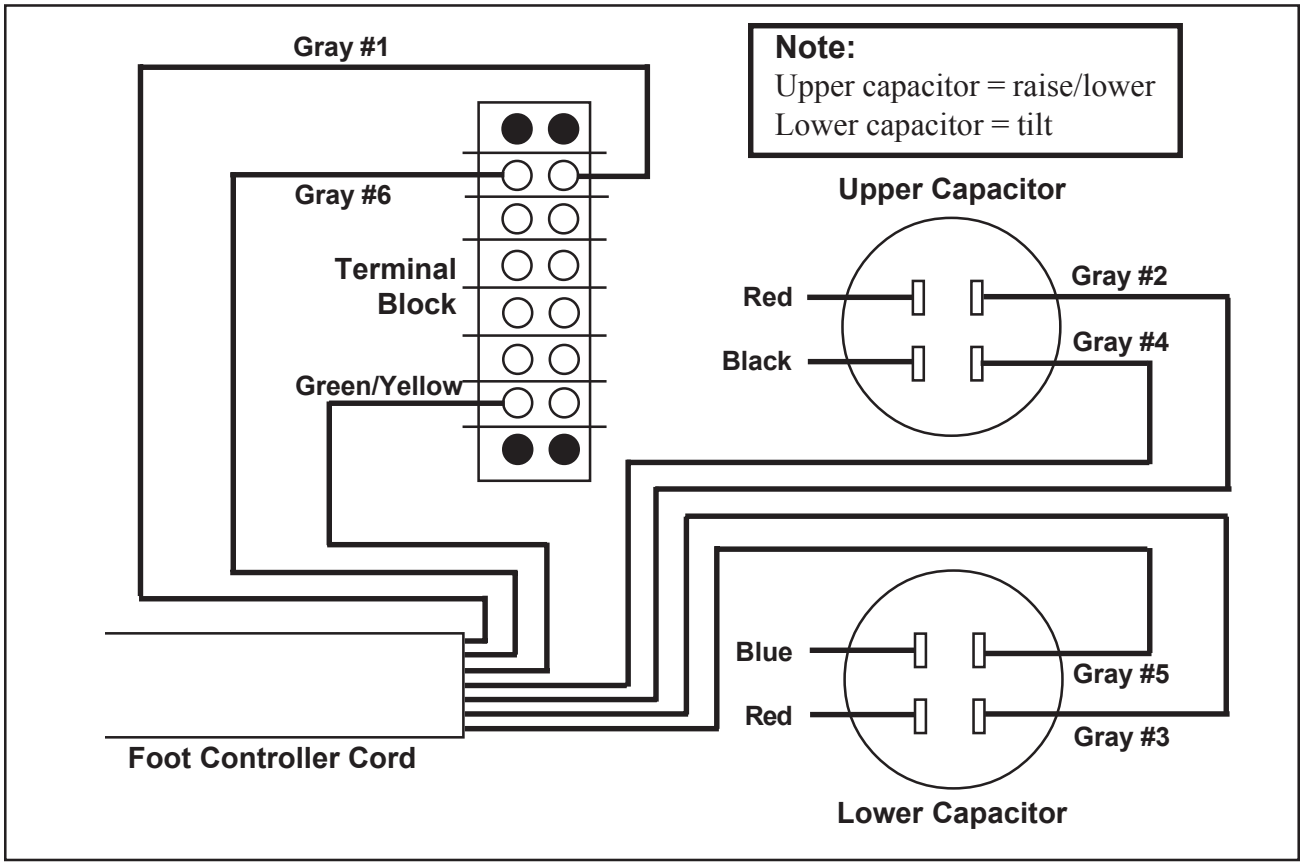

Figure 14. Foot Controller Wire Connections in Base

11. On the lower capacitor, pry the **#3** wire from the terminal next to the red wire.

12. On the lower capacitor, pry the **#5** wire from the terminal next to the blue wire.

Note: Do not disturb the other wires on the terminal block or the capacitors. They do not have to be removed to replace the foot controller.

13. The foot controller cord is held in the access plate by a black plastic strain relief fitting (Figures 15 and 16). A moveable segment in the fitting squeezes inward to apply pressure to the cord. With a pliers, squeeze this segment deeper into the strain relief and slip the relief out through the plate.

14. Pull the movable segment out of the fitting and remove the fitting from the foot controller cord.

15. Pull the foot controller cord out of the access plate.

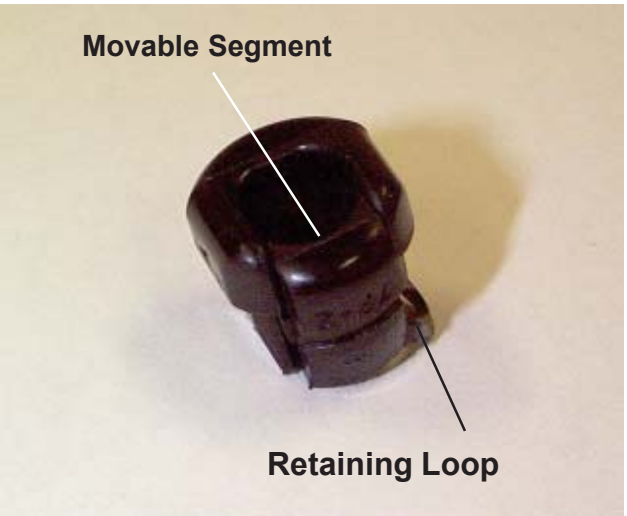

Figure 15. Strain Relief Fitting (shown removed from foot controller cord)

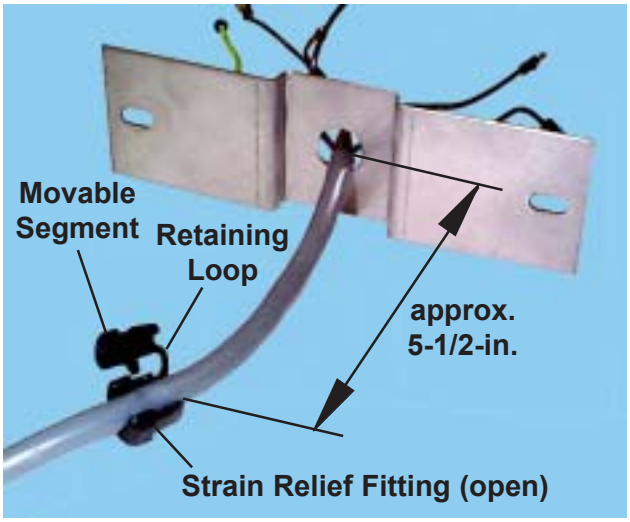

Figure 16. Strain Relief Fitting and Foot Controller Cord

Installation

1. Slide the new foot controller cord wires through the center hole in the access plate (Figure 16).
   Note: Orient the depressed center section of the plate as shown in the figure.

2. Place the strain relief fitting on the foot controller cord about 5-1/2-in. from the end of the controller cord. Orient the fitting so that the retaining loop (Figures 15 and 16) is toward the access plate.

3. Insert the moveable segment into the strain relief fitting.

4. With a pliers, squeeze the moving segment deeper into the fitting and slip the fitting and cord into the access plate hole.

5. On the lower capacitor, connect the **#5** wire to the terminal next to the blue wire.

6. On the lower capacitor, connect the **#3** wire to the terminal next to the red wire.

7. On the upper capacitor, connect the **#4** wire to the terminal next to the black wire.

8. On the upper capacitor, connect the **#2** wire to the terminal next to the red wire.

9. Connect the **#1** wire to the terminal block (Figure 14).

10. Connect the **#6** wire to the terminal block.

11. Connect the green/yellow wire to the terminal block.

12. Replace the three access plates and secure them with the eight retainer screws (Figure 12). **Note:** The plates should butt neatly against each other, and not overlap.

13. Stand the base upright.

14. Plug in the electric power cord.

15. Press the **UP** and **DN** sides of both pedals and make sure that the table responds correctly. If not, review your work and correct any errors.

16. When the base is operating correctly, mount the table top.

Electric Cord, Foot Controller
P/N 214084

Tools Required

- 7/8-in. open-end wrench
- 3/8-in. open-end wrench
- 3/8-in. socket wrench
- 3/8-in. socket for socket wrench
- 3-in. extension for socket wrench
- Phillips screwdriver
- Small flat-blade screwdriver
- Pliers
- 1/8-in. hex key (Allen wrench)

Removal of the Cord from the Base

Disconnect the foot controller cord from the base. Refer to *Foot Controller (Complete) - Removal, Steps 1* through *15*, starting on *Page 18*.

Removal of the Cord from the Foot Controller

1. With a 1/8-in. hex key, remove the four screws from the two end support bars on the foot controller (Figure 17). **Note:** DO NOT remove the screws from the center bar at this time.

2. Lift off the two end support bars.

3. Pull each pedal slightly outward so that its pivot clears the center support bar, and remove both pedals from the foot controller (Figure 18).

4. Lift the foot controller cover off the chassis and turn it over to access the interior components (Figure 19).

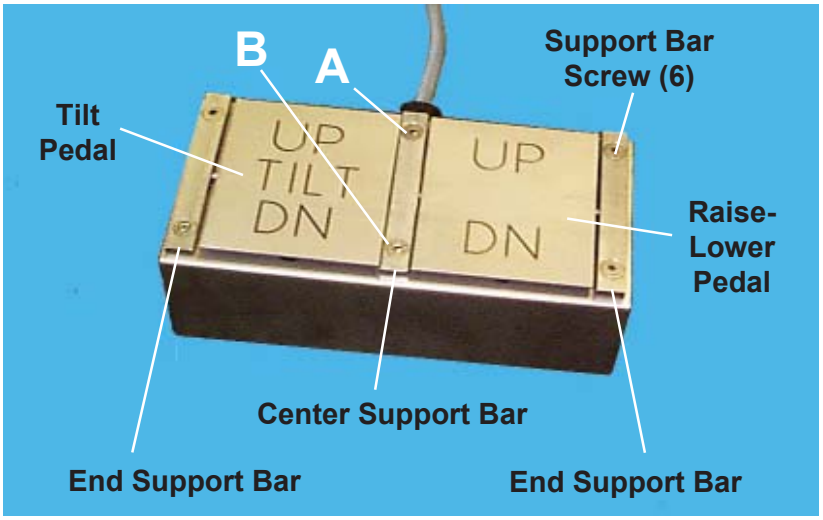

Figure 17. Center and End Support Bars

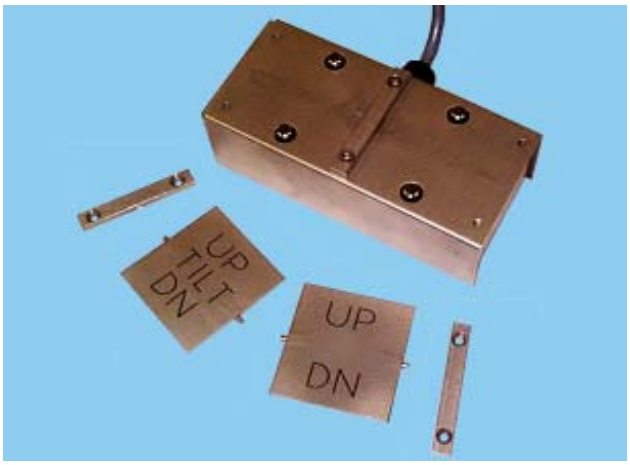

Figure 18. End Support Bars and Pedals Removed from Controller

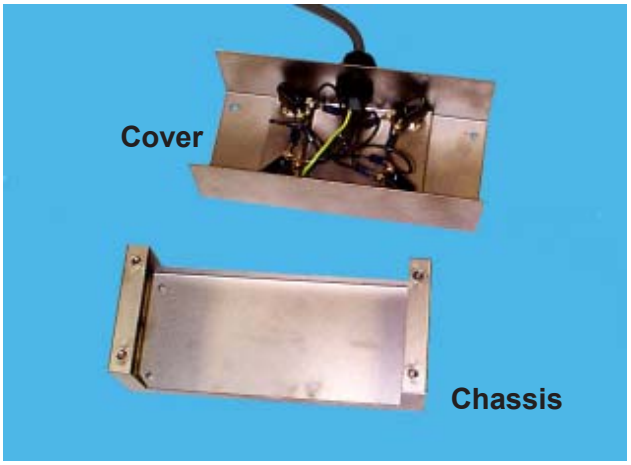

Figure 19. Foot Controller Cover and Chassis

5. With a 7/8-in. open-end wrench, loosen the cord retaining nut (Figure 20) and slide the nut several inches up the cord (just to get it out of the way!).

6. While holding the inside nut **A** (Figure 20) with a 3/8-in. wrench, use the 1/8-in. hex key to remove the corresponding screw on the center support bar (Figure 17).

7. While holding the inside nut **B**, (Figure 20) with a 3/8-in. socket wrench on a 3-in. extension, use the hex key to remove the corresponding screw on the center support bar (Figure 17).

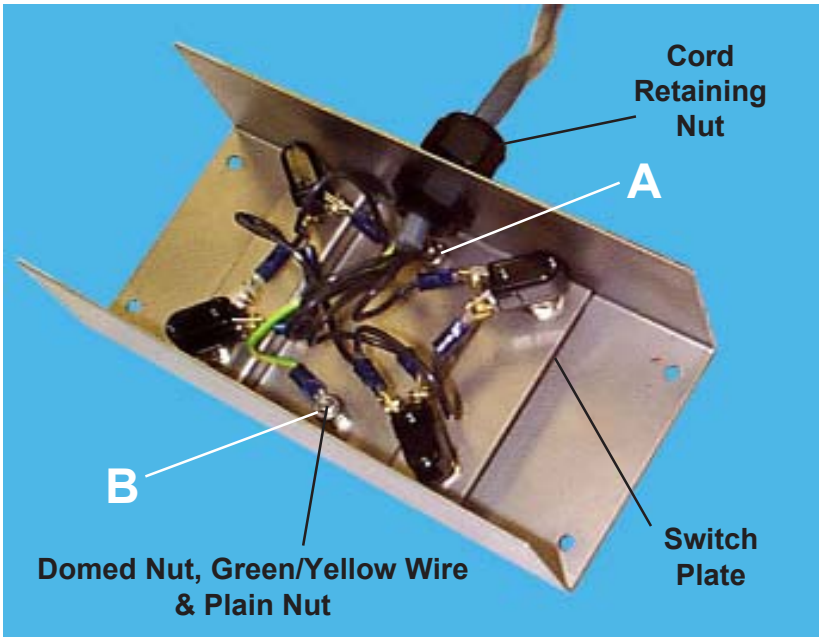

Figure 20. Inside the Cover

8. Remove the green/yellow wire from the screw at **B**.

9. With a felt tip marker or similar tool, make a mark on the switch plate and another mark on the cover (Figure 21). This will help you orient the switch plate correctly when you replace it. **Note:** The plate is symmetrical and, if not marked, would be easy to install backwards. You would end up having the table raise/lower buttons and the tilt buttons reversed.

10. Remove the plain nut under the green/yellow wire. The center support bar and the switch plate will come loose.

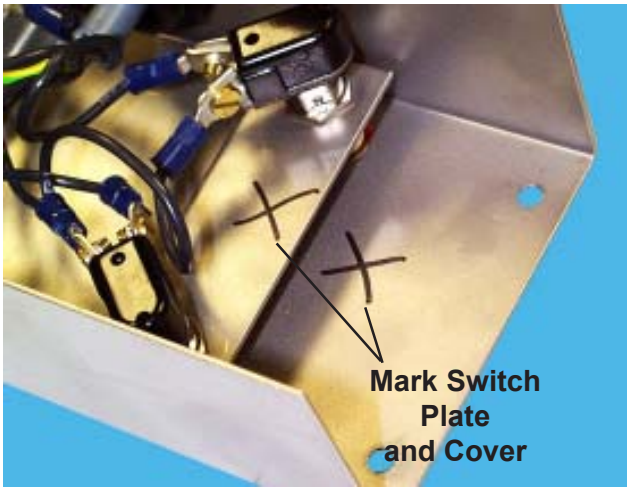

Figure 21. Marking the Switch Plate and Cover

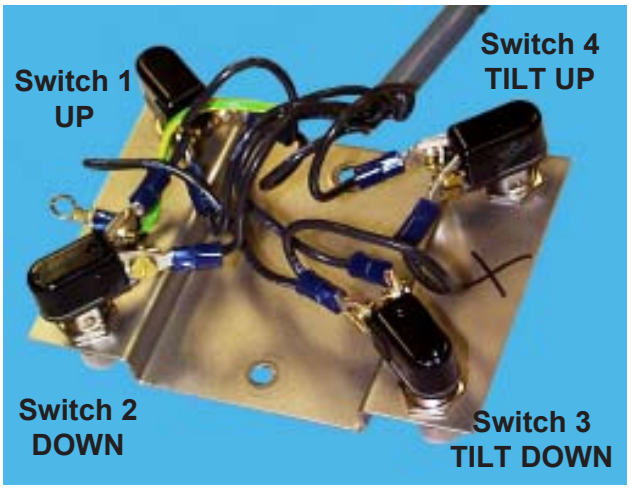

Figure 22. Switch Plate

11. Feed a few inches of the controller cord into the cover and pull the switch plate out far enough to make it easier to work on.

12. With a small flat-blade screwdriver, disconnect the **#1** wire from Switch **1** (Figure 24). **Note:** The connector on this wire also holds another gray wire that goes to Switch **2**. (Disregard the number on this wire.)

13. Disconnect this wire from Switch **2**.

14. Disconnect the **#4** wire from Switch **1**.

15. Disconnect the **#2** wire from Switch **2**.

16. Disconnect the **#3** wire from Switch **3**.

17. Disconnect the **#6** wire from Switch **4**. **Note:** The connector on this wire also holds another gray wire that goes to Switch **3**. (Disregard the number on this wire.)

18. Disconnect this wire from Switch **3**.

19. Disconnect the **#5** wire from Switch **4**.

20. Pull the foot controller cord away from the switch plate and out of the cover.

21. Remove the cord retaining nut from the controller cord.

Installation of the Cord Into the Base

Note: Refer to Figure 23 to identify the base end of the cord.

Install the foot controller cord into the base. Refer to *Foot Controller (Complete) - Installation, Steps 1* through *12*, starting on *Page 21*.

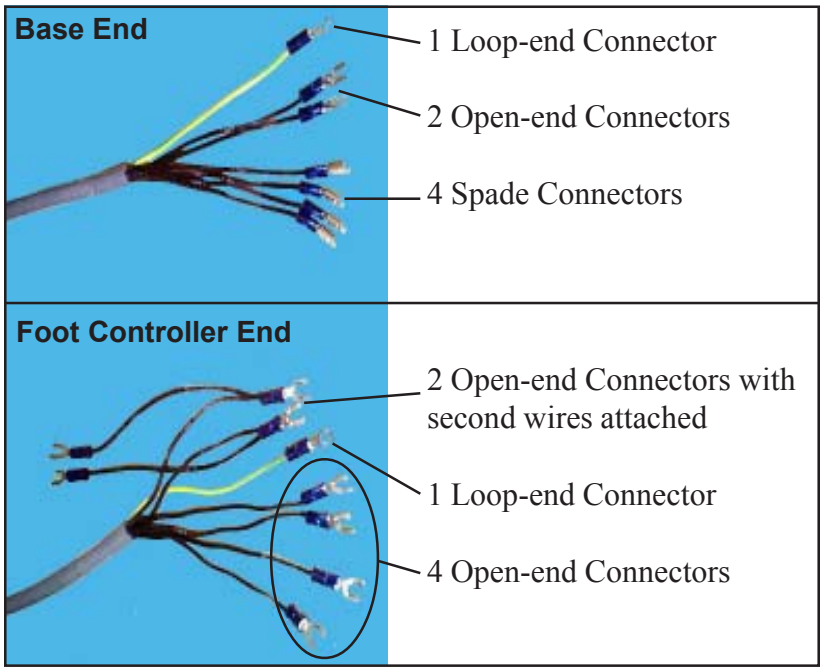

Figure 23. Identification of the Foot Controller Cable Ends

Installation of the Cord Into the Foot Controller

1. Pass the foot controller end of the cord through the cord retaining nut with the threads of the nut facing the end of the cord.

2. Pass the end of the cord through the hole in the foot controller cover for about 10 to 12-inches.

3. With a small flat-blade screwdriver, connect the **#4** wire to Switch **1** as shown in Figure 24.

4. Connect the **#1** wire to Switch **1**.

5. Connect the second wire from the **#1** wire to Switch **2**. (Remember to disregard the number on this wire.)

6. Connect the **#2** wire to Switch **2**.

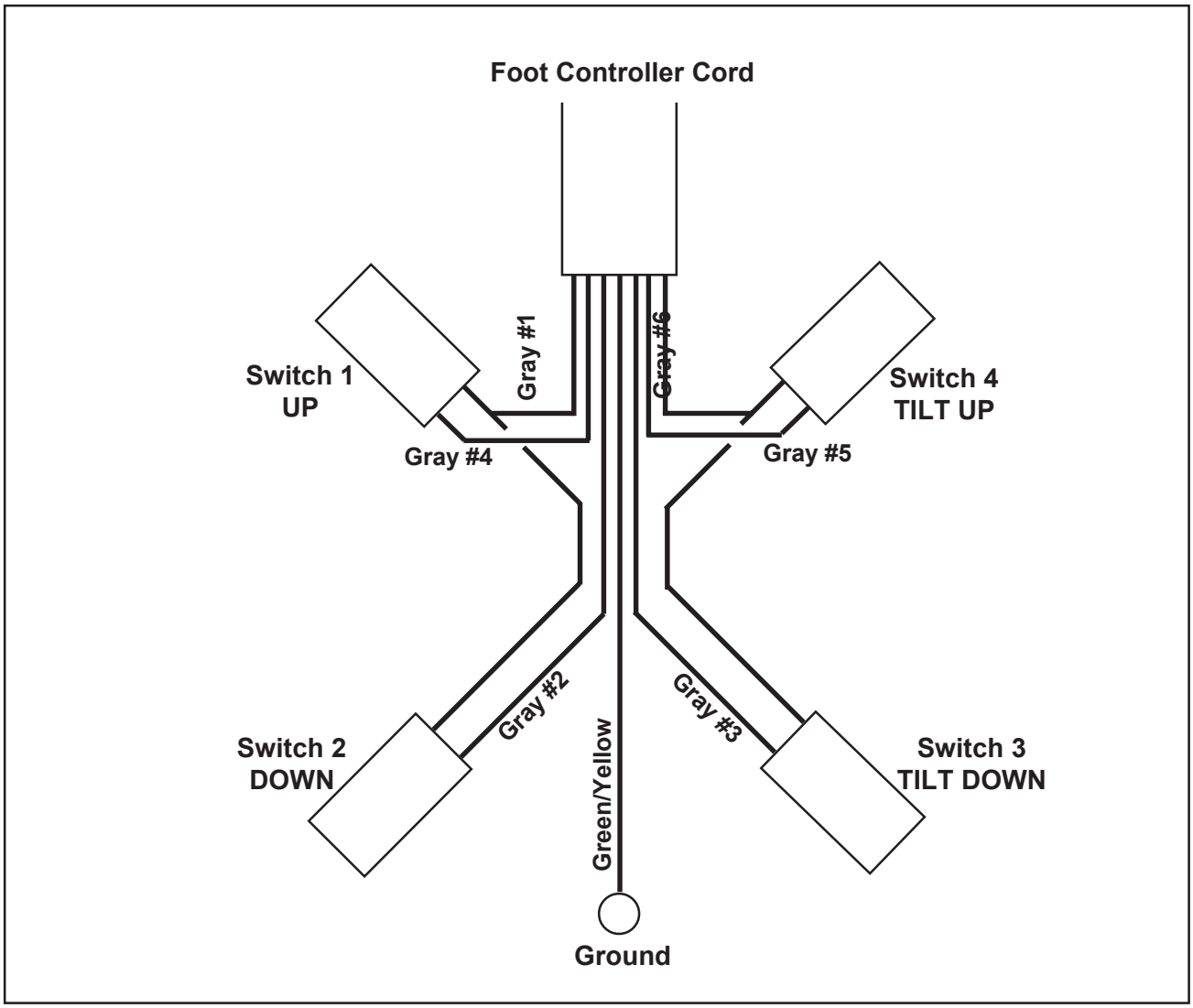

Figure 24. Foot Controller Wire Connections in Foot Controller

7. Connect the **#5** wire to Switch **4**.

8. Connect the **#6** wire to Switch **4**.

9. Connect the second wire from the **#6** wire to Switch **3**. (Remember to disregard the number on this wire.)

10. Connect the **#3** wire to Switch **3**.

11. Replace the switch plate into the cover and pull the cord out as far as possible. **Note:** Make sure that the marks you placed on the parts match up correctly.

12. Screw the cord retainer nut in place to secure the foot controller cord.

Note: The center support bar is held in place by a domed nut at **A** (Figure 20), and a plain nut and a domed nut at **B**. The green/yellow wire goes between the two nuts at **B**. The domed nuts go on with the flat side down, and the dome on top.

13. Hold the center support bar in place on the top of the cover, and the switch plate inside. Insert one of the screws through the parts at **A** and secure them together with one of the domed nuts.

14. Place the second screw through the support bar, through the cover and through the switch plate at **B**. Place the plain nut onto this screw and screw it down tightly.

15. Place the terminal on the green/yellow wire onto this screw.

16. Screw the second domed nut onto this screw and tighten it down with the 3/8-in. socket wrench.

17. Place the foot controller cover onto the chassis (Figure 19).

18. Slide the pivot pin on the **UP-DN** pedal into the slot on the center support bar.

19. Place one end support bar with its slot over the other pedal pivot pin, and secure the bar into place with the two screws.

20. Repeat *Steps 18* and *19* for the **UP-TILT-DN** pedal.

21. Stand the base upright.

22. Plug in the electric power cord.

23. Press the **UP** and **DN** sides of both pedals and make sure that the table responds correctly. If not, review your work and correct any errors.

24. When the base is operating correctly, mount the table top.

Push Button Switch, Foot Controller (4)
P/N 854141

Tools Required

- 7/8-in. open-end wrench
- 3/8-in. open-end wrench
- 3/8-in. socket wrench
- 3/8-in. socket for socket wrench
- 3-in. extension for socket wrench
- Pliers
- Small flat-blade screwdriver
- 1/8-in. hex key (Allen wrench)

Removal

1. Unplug the electric power cord.

2. Open the foot controller and remove the switch plate. Refer to *Electric Cord, Foot Controller - Removal of Cord from the Foot Controller, Steps 1* through *11*, starting on *Page 23*.

3. Refer to Figures 22 and 24, and locate the switch you want to replace. For example, if the **TILT DOWN** function is not working, you would replace Switch **3** (the lower-right switch in the figure).

4. Note the numbers of the wires connected to that switch, and to which terminals they attach, so that you can re-connect them properly.

5. With a flat-blade screwdriver, disconnect the wires from the terminals *on that switch only*.

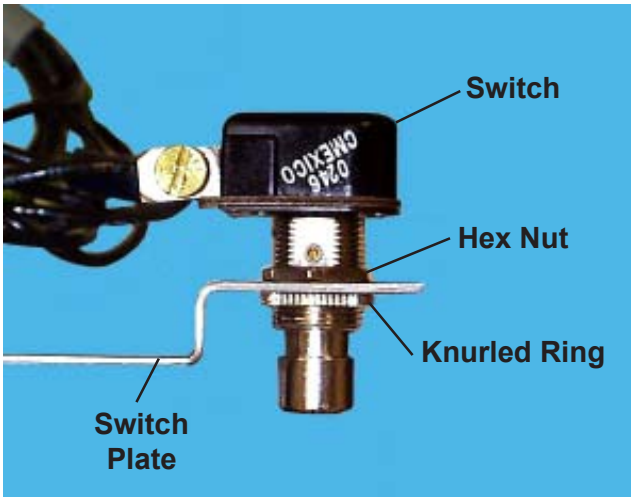

Figure 25. Push Button Switch

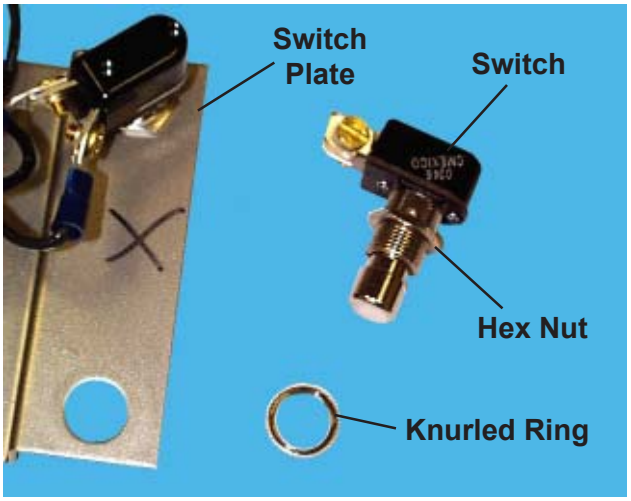

Figure 26. Push Button Switch Removed from Switch Plate

6. Unscrew the knurled ring under the switch plate (Figure 25). **Note:** If the ring is too tight to turn with your fingers, gently get it started with a pliers.

7. Lift the switch out of the switch plate (Figure 26).

Installation

1. On the new switch, position the hex nut about half-way up the threads (Figure 26). **Note:** If the hex nut is positioned too high on the switch threads, the push button may ride too low to be completely depressed by the pedal. Try to have as much of the push button exposed as the other buttons on the foot controller.

2. Place the switch into the switch plate oriented as shown in Figure 22.

3. Under the switch plate, thread the knurled ring onto the switch, and tighten it as far as possible. If necessary, tighten the ring with a pliers.

4. Connect the original wires to the switch. Refer to Figure 24.

5. Replace the switch plate into the cover and re-attach the cover to the foot controller chassis. Refer to *Electric Cord, Foot Controller - Installation of the Cord Into the Foot Controller, Steps 11* through *20*, starting on *Page 27*.

6. Stand the base upright.

7. Plug in the electric power cord.

8. Press on the pedal that corresponds to the switch you have just replaced and make sure that the table responds correctly. If not, review your work and correct any errors.

9. When the base is operating correctly, mount the table top.

Electric Power Cord
P/N 213807

Tools Required

- Phillips screwdriver
- Small flat-blade screwdriver
- Pliers

Removal

1. Lay the base down and remove the three access plates. Refer to *Foot Controller (Complete) - Removal, Steps 1* through *4*, starting on *Page 18*.

2. The power cord contains three wires: black, white and green. Note down where all three wires terminate so that you can replace the wires from the new power cord correctly.

3. With a small flat-blade screwdriver, remove these three wires from the terminal block (Figures 13 and 27).

4. The electric power cord is held in the access plate by a black plastic strain relief fitting (Figures 13, 15 and 16). A moveable segment in the fitting squeezes inward to apply pressure to the cord . With a pliers, squeeze this segment deeper into the strain relief and slip the relief out through the plate.

5. With the strain relief fitting removed from the access plate, pull the movable segment out of the fitting and remove the fitting from the power cord.

6. Pull the electric power cord out of the access plate.

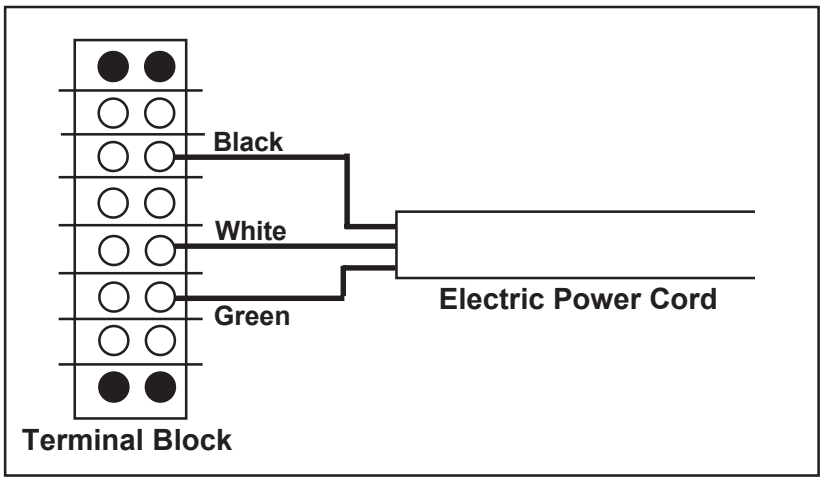

Figure 27. Electric Power Cord Wire Connections

Installation

1. Slide the new electric power cord wires through the hole in the access plate (Figure 13). **Note:** Orient the depressed center section of the plate as shown in the figure. **Note:** Figures 15 and 16 show the foot controller cord - the electric power cord is similar.

2. Place the strain relief fitting on the power cord about 1/2-in. from the end of the power cord. Orient the fitting so that the retaining loop (Figures 15 and 16) is toward the access plate.

3. Close the strain relief fitting onto the power cord.

4. With a pliers, squeeze the moving segment deeper into the fitting and slip the fitting and cord into the access plate hole.

5. Connect the three wires to the terminal block as shown in Figure 27.

6. Replace the three access plates and secure them with the eight retaining screws (Figure 12). **Note:** The plates should butt neatly against each other, and not overlap.

7. Stand the base upright.

8. Plug in the electric power cord.

9. Press the **UP** and **DN** sides of both pedals and make sure that the table responds correctly. If not, review your work and correct any errors.

10. When the base is operating correctly, mount the table top.

Ball Drive Actuator Assembly (Tilt) P/N 214096

Tools Required

- 1/2-in. box-end or open-end wrench
- 7/16-in. box-end or open-end wrench
- 3/16-in. hex key (Allen wrench)
- 3/8-in. socket wrench
- 9/16-in. socket for the socket wrench
- Phillips screwdriver
- Small flat-blade screwdriver

Removal

1. Unplug the electric power cord.

2. Remove the table top from the base. Refer to the instructions supplied with your table top.

3. With a 1/2-in. wrench, remove the four frame bolts/ washers that hold the top frame in place (Figure 28).

4. With a 1/2-in. wrench and a 3/16-in. hex key, remove the pivot bolt and nut that connect the top frame to the actuator rod end. **Note:** If the pivot bolt is hard to remove, plug in the power cord, raise or lower the table slightly to better align the pivot bolt holes, then unplug the power cord.

5. Pivot the tilt portion of the top frame up to access the actuator bolt (Figure 29).

6. With a 9/16-in. socket, remove the actuator bolt.

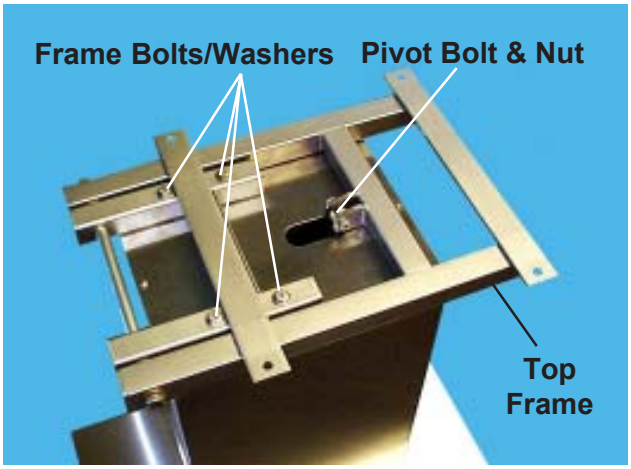

Figure 28. Removing the Top Frame

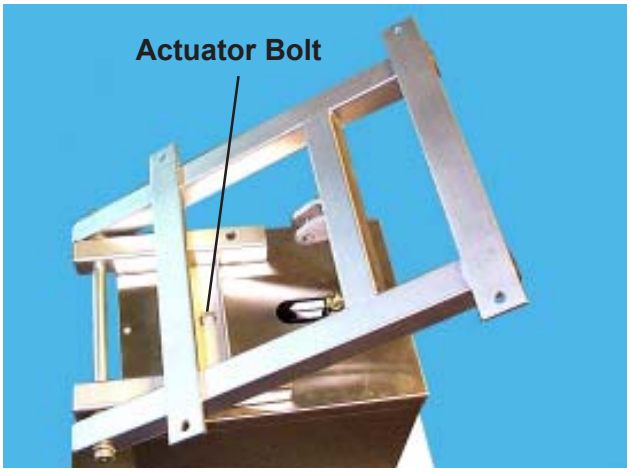

Figure 29. Actuator Bolt

7. Lift off the top frame.

8. With a Phillips screwdriver, remove the six screws that hold the cap to the outside cover (Figure 30).

9. Lift off the cap.

10. Lift off the top plate (Figure 31).

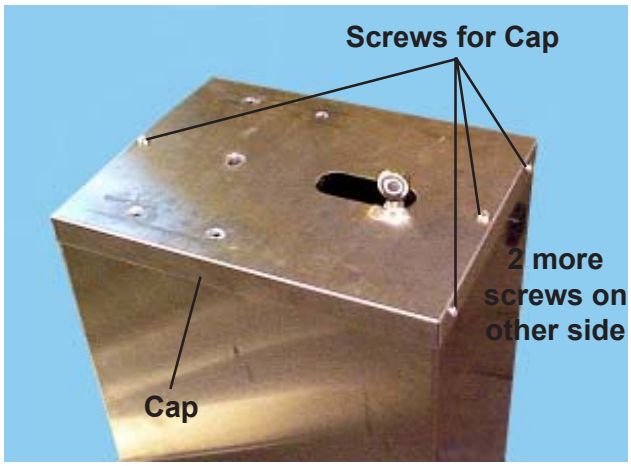

Figure 30. Removing the Cap

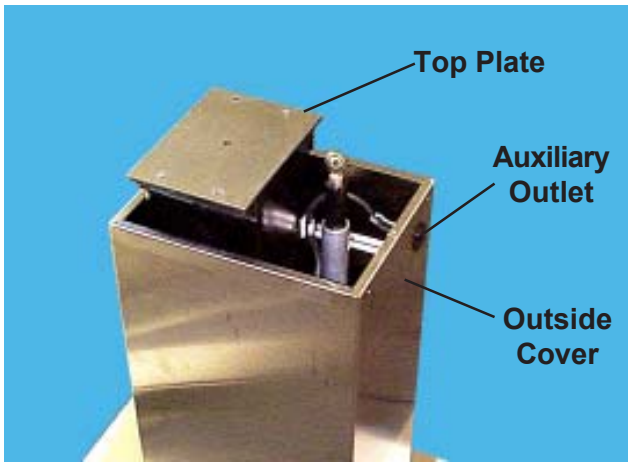

Figure 31. Base with Cap Removed

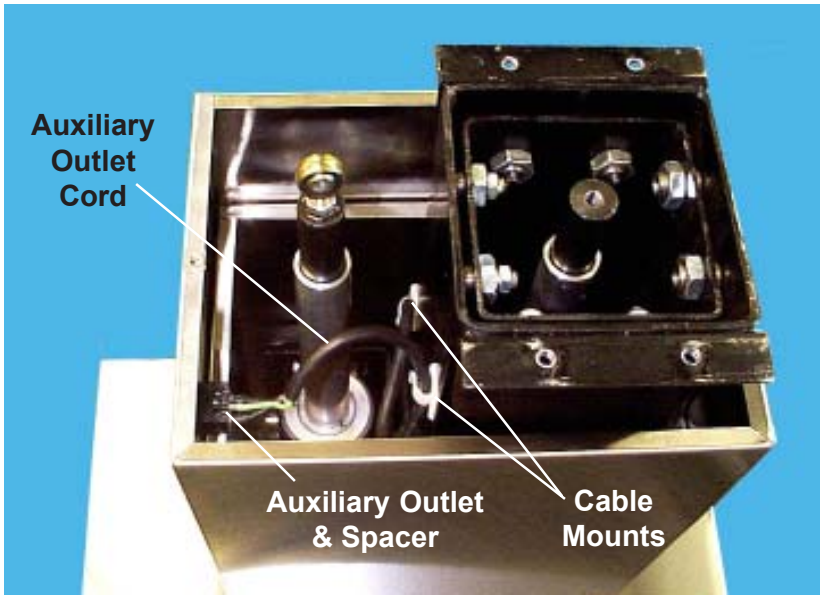

Figure 32. Auxiliary Outlet, Cable and Cable Mounts

Note: You must now remove the auxiliary outlet (Figure 32) from the base. Figures 33 and 34 show top and bottom views of the outlet removed from the unit, and show you the lock tabs that hold it to the outside cover. Note that there is one lock tab on top, and two on the bottom. The tabs can be squeezed inward to release the outlet.

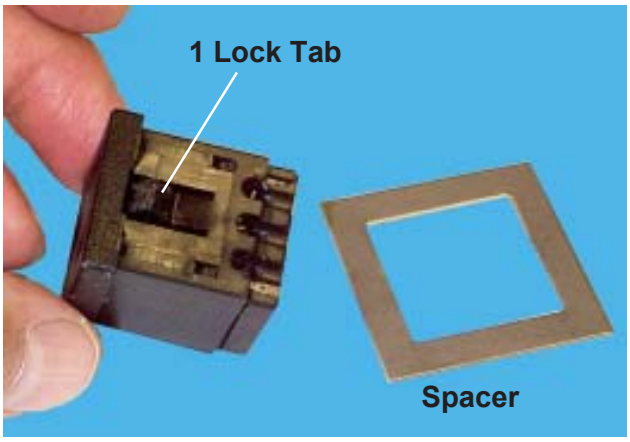

Figure 33. Auxiliary Outlet - Top

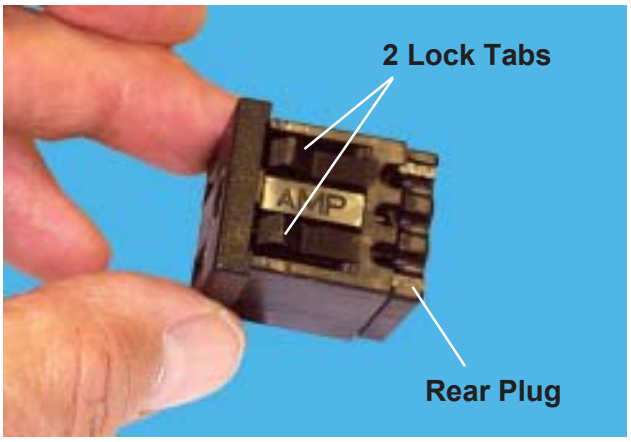

Figure 34. Auxiliary Outlet - Bottom

11. Squeeze all three lock tabs inward and pull the outlet out of the cover.

12. Pull the black, white and green wires out of the rear of the outlet. **Note:** DO NOT attempt to remove the rear plug from the outlet (Figure 34).

13. Remove the spacer from the cord (Figure 33).

14. Lift the outside cover up and off of the base cover assembly (Figure 35).

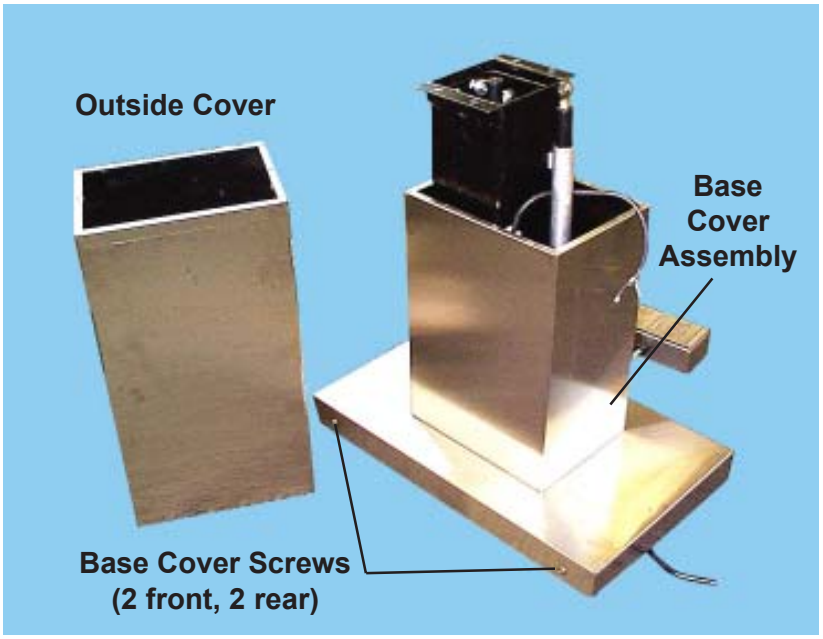

Figure 35. Outside Cover Removed from Base

CAUTION: **The base is heavy and we recommend that laying it down or placing it upright be done by at least two people.**

15. Lay the base down so that you can reach the base cover screws on one side (Figure 35). **Note:** Be careful not to damage the electric power cord or foot controller cord.

16. With a Phillips screwdriver and a 7/16-in. wrench, remove the two accessible base cover screws.

17. Turn the base over completely to reach the base cover screws on the opposite side.

18. Remove the two accessible base cover screws.

19. Stand the base upright.

20. Lift the base cover assembly up and off the base (Figure 36).

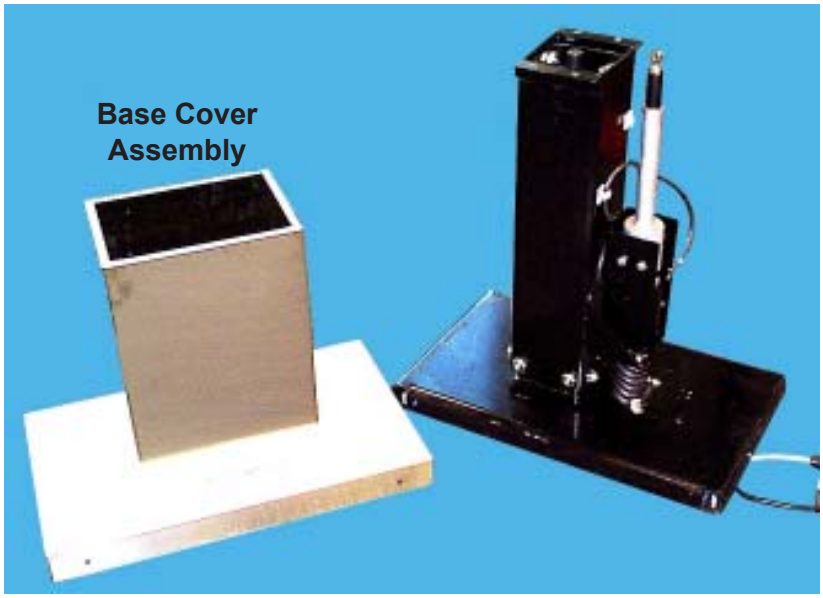

Figure 36. Base Cover Assembly Removed from Base

21. With a small flat-blade screwdriver, remove the actuator cord black, white and red wires from the terminal block on the main column (Figures 37 and 38).

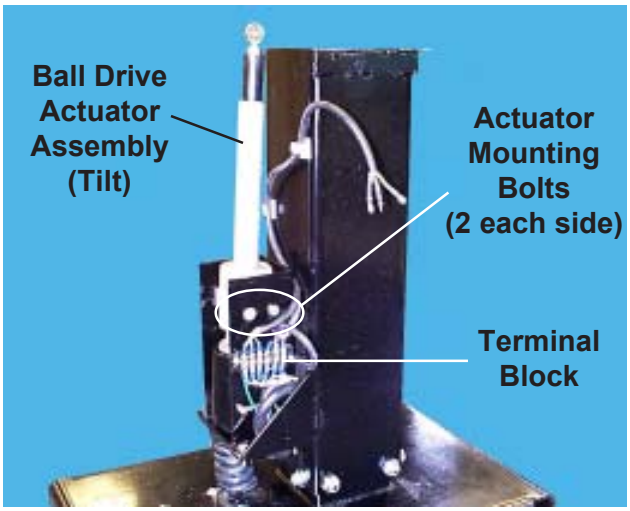

Figure 37. Main Column with Covers Removed

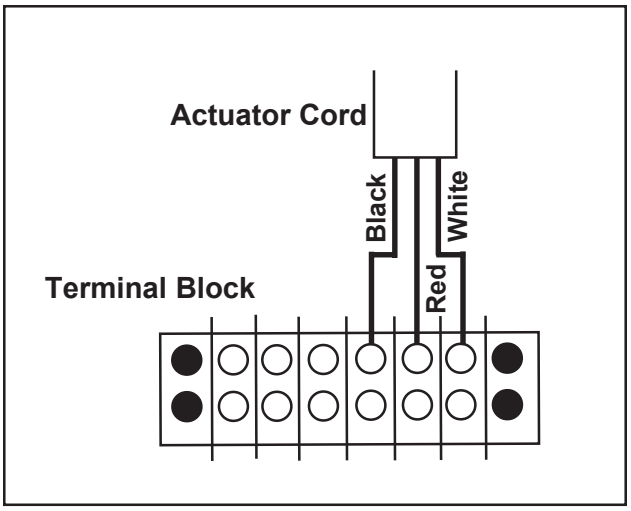

Figure 38. Actuator Cord Wire Connections

22. With a 1/2-in. wrench, remove the four actuator mounting bolts (Figure 37).

23. Lift the complete ball drive actuator assembly out of the mounting bracket (Figure 39).

24. Remove the pivot blocks and rubber washers from the two pivot studs on the actuator.

25. Pull the actuator cord through the grommet and out of the base.

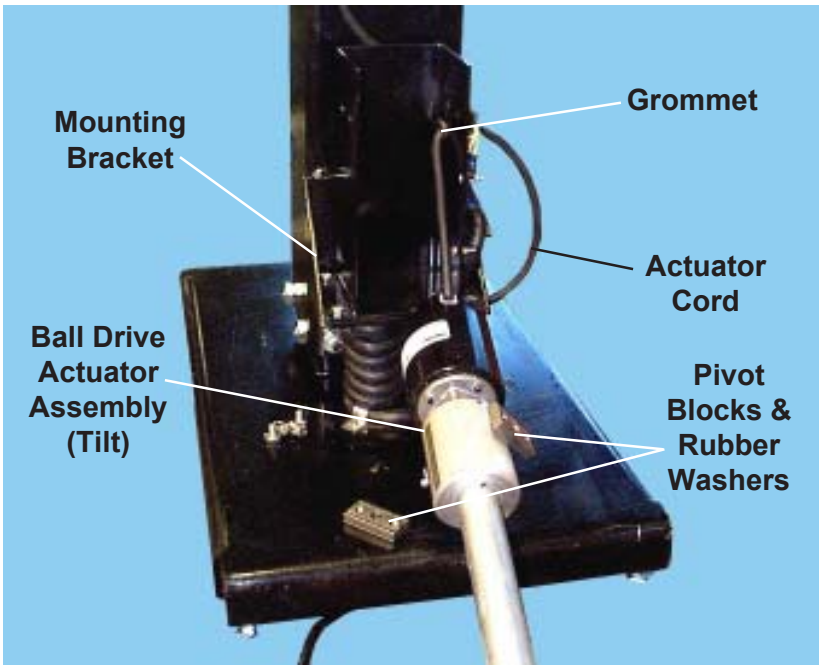

Figure 39. Removing Ball Drive Actuator (Tilt) from Base

Installation

1. Push the free end of the new actuator cord through the grommet (Figure 39).

2. Place the two rubber washers on the pivot studs.

3. Hold the two pivot blocks in place on the actuator and slide the assembly between the mounting brackets. Pull the actuator cord through the grommet at the same time.

4. Secure the actuator in place with the four actuator mounting bolts (Figure 37).

5. Connect the three wires from the actuator cord to the terminal block (Figures 37 and 38).

6. Coil the actuator cord neatly and store it between the mounting bracket and the main column.

7. Drop the base cover assembly in place on the base (Figure 36).

8. Secure the base cover assembly with the four base cover screws (Figure 35).

9. Drop the outside cover over the base cover assembly (Figure 35). **Note:** Make sure the opening for the auxiliary outlet is on the same side of the main column as the actuator (Figure 31).

10. Run the auxiliary outlet cable through the spacer, then through the outlet hole in the outside cover (Figure 32).

11. Connect the three wires in the auxiliary outlet cable to the rear of the auxiliary outlet (Figures 40 and 41). **Note:** The labels **BK**, **GN** and **WHT** are molded onto the rear of the outlet. Look at the wire colors and do not be misled by the 1-in. long black sleeves over the ends of the black and white wires.

12. Push the auxiliary outlet into its opening in the outside cover until it snaps into place. **Note:** Orient the outlet with the ground on the bottom as shown in Figure 41.

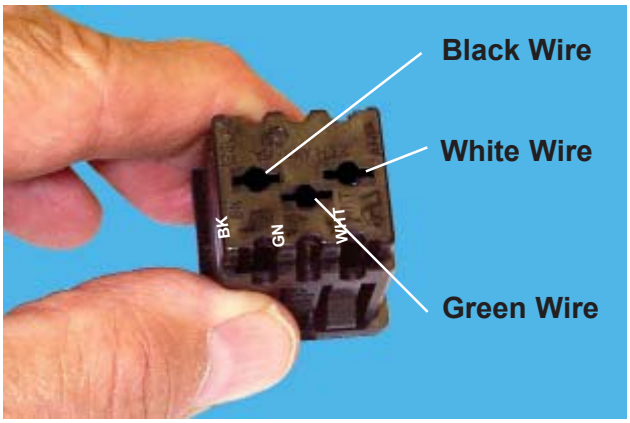

Figure 40. Auxiliary Outlet - Rear

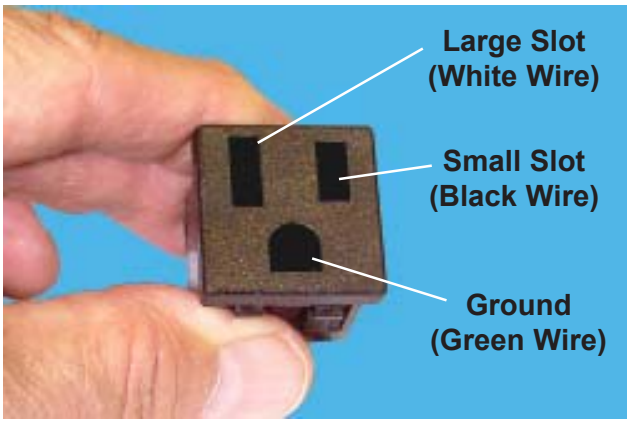

Figure 41. Auxiliary Outlet - Front

13. Force the spacer over the outlet until it snaps into place between the wall of the outside cover and the lock tabs on the outlet.

14. Place the top plate in position on top of the column (Figure 31). **Note:** The side of the plate with the square metal piece bonded to it is the bottom.

15. Place the cap in position on the top plate (Figure 30).

Note: The cap is held in place by six screws. The four screws with the fine threads fit into the *side* holes on the cap. The two pointed screws with the coarse, self-tapping threads go into flat speed-nuts on the *top* holes. Make sure the speed-nuts are in place on the top holes.

16. Lift the outside cover up so that its top edge fits into underside of the cap, and hold the cover in place.

17. Secure the cover and cap in place with the six screws described above.

18. Place the top frame on top of the cap (Figure 29).

19. Screw in the four frame bolts/washers (Figure 28) but do not tighten them fully.

20. Screw in the actuator bolt but do not tighten it fully.

21. Tighten the four frame bolts/washers and the actuator bolt.

22. Secure the actuator rod end to the top frame with the pivot bolt and nut.

23. Plug in the electric power cord.

24. Press the **TILT UP** and **TILT DN** pedals and make sure that the table responds correctly. If not, review your work and correct any errors.

25. When the base is operating correctly, mount the table top.

Motor
P/N 854552

Replacement of the motor requires the removal of the ball drive actuator (tilt) from the base.

Tools Required

- 3/8-in. box-end or open-end wrench
- 1/2-in. box-end or open-end wrench
- 7/16-in. box-end or open-end wrench
- 3/16-in. hex key (Allen wrench)
- 3/8-in. socket wrench
- 9/16-in. socket for the socket wrench
- Phillips screwdriver
- Small flat-blade screwdriver

Removal

1. Remove the ball drive actuator assembly (tilt). Refer to *Ball Drive Actuator Assembly (Tilt) - Removal, Steps 1* through *25*, starting on *Page 33*.

2. With a 3/8-in. wrench, remove the four motor mounting nuts/lockwashers (Figure 42).

3. Pull the motor away from the actuator.

4. Pull off the motor coupling (Figure 43).

Installation

1. Align the crossbar on the motor coupling with the slot on the end of the new motor shaft (Figure 43) and push the coupling onto the shaft . **Note:** The coupling is symmetrical - either side can be placed on the shaft.

2. Align the crossbar on the motor coupling with the slot in the gearbox brake (Figure 43) and mount the new motor to the gearbox. **Note:** Arrange the motor so that the attached power cord will have the shortest and easiest route to the grommet (Figure 39).

3. Secure the motor in place with the four mounting nuts/ lockwashers.

4. Mount the actuator, and finish re-assembling the base. Refer to *Ball Drive Actuator Assembly (Tilt) - Installation, Steps 1* through *25*, starting on *Page 38*.

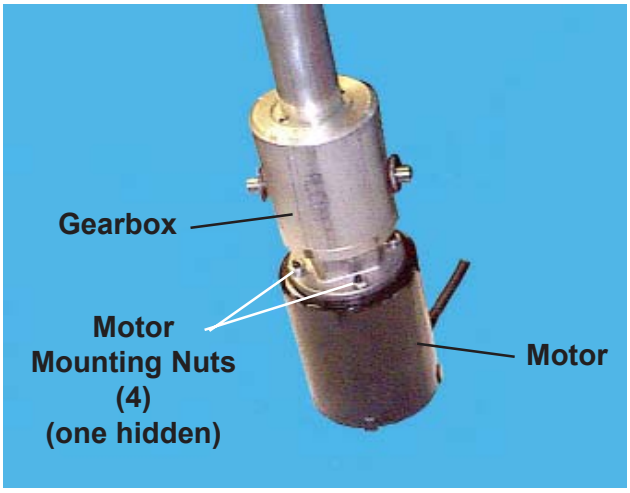

Figure 42. Actuator Motor

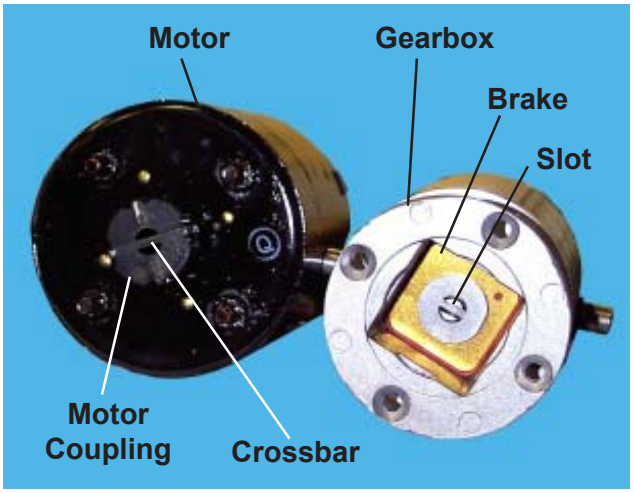

Figure 43. Motor and Gearbox

Motor Coupling
P/N 854196

Replacement of the motor coupling requires the removal of the ball drive actuator (tilt) from the base.

Tools Required

- 3/8-in. box-end or open-end wrench
- 1/2-in. box-end or open-end wrench
- 7/16-in. box-end or open-end wrench
- 3/16-in. hex key (Allen wrench)
- 3/8-in. socket wrench
- 9/16-in. socket for the socket wrench
- Phillips screwdriver
- Small flat-blade screwdriver

Removal

1. Remove the ball drive actuator assembly (tilt). Refer to *Ball Drive Actuator Assembly (Tilt) - Removal, Steps 1* through *25*, starting on *Page 33*.

2. With a 3/8-in. wrench, remove the four motor mounting nuts/lockwashers (Figure 42).

3. Pull the motor away from the actuator.

4. Pull the coupling off the motor shaft (Figure 44).

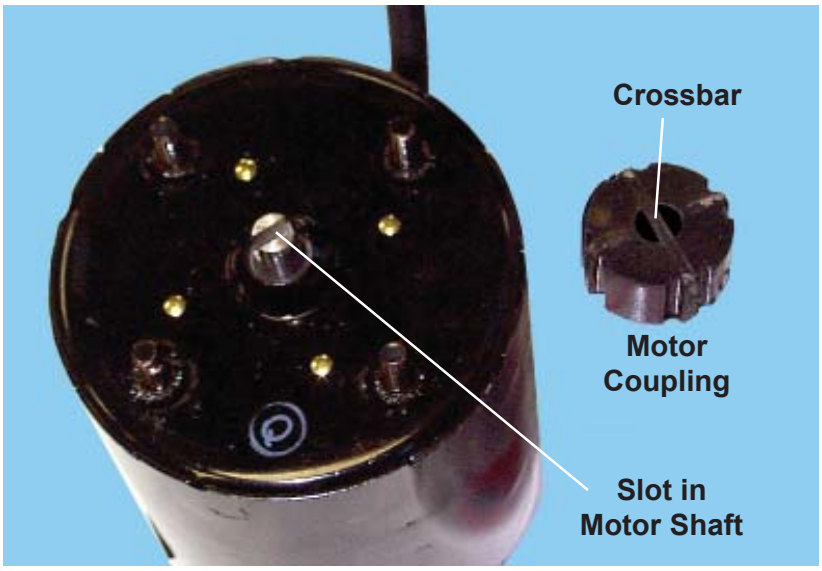

Figure 44. Motor Coupling to Motor Shaft Alignment

Installation

1. Align the crossbar on the motor coupling with the slot on the end of the motor shaft (Figure 43) and push the coupling onto the shaft. **Note:** The coupling is symmetrical - either side can be placed on the shaft.

2. Mount the motor on the gearbox and secure with the four nuts/lockwashers. **Note:** Make sure the crossbar on the coupling engages the slot in the gearbox shaft (Figure 43).

3. Install the actuator and finish re-assembling the base. Refer to *Ball Drive Actuator Assembly (Tilt) - Removal, Steps 1* through *25*, starting on *Page 38*.

Brake
P/N 853695

Replacement of the brake requires the removal of the ball drive actuator (tilt) from the base.

Tools and Supplies Required

- 3/8-in. box-end or open-end wrench
- 1/2-in. box-end or open-end wrench
- 7/16-in. box-end or open-end wrench
- 3/16-in. hex key (Allen wrench)
- 3/8-in. socket wrench
- 9/16-in. socket for the socket wrench
- Phillips screwdriver
- Small, flat-blade screwdriver
- Paper clip, 1-3/4-in. long
- Needle-nose pliers

Removal

1. Remove the ball drive actuator assembly (tilt). Refer to *Ball Drive Actuator Assembly (Tilt) - Removal, Steps 1* through *25*, starting on *Page 33*.

2. With a 3/8-in. wrench, remove the four motor mounting nuts/lockwashers (Figure 42).

3. Pull the motor away from the actuator.

4. Unbend the outer tine of a paper clip. (The 1-3/4-in. long clips work just fine!) With a needle-nose pliers, bend the end of the paper clip to form about a 1/8-in. hook (Figure 45).

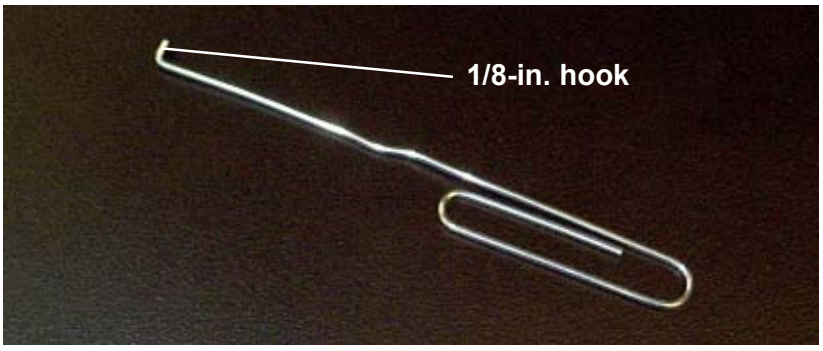

Figure 45. Paper Clip Tool for Removing Brake

5. Place the hook on your paper-clip tool into the small hole in the brake, or under one of the corners, and pull the brake out of the gearbox (Figure 46). Take the red rubber insulator out too.

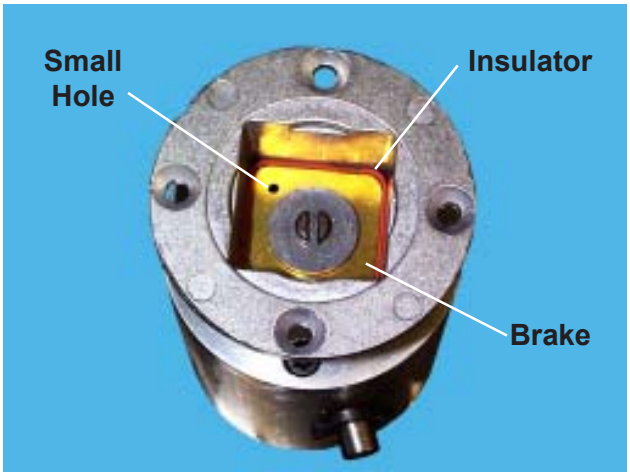

Figure 46. Brake in the Gearbox

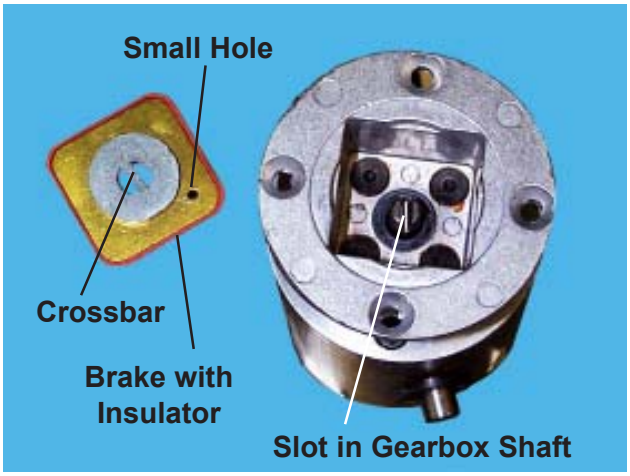

Figure 47. Brake and Gearbox

Installation

1. Place the brake into the brake insulator (Figure 47).

2. Rotate the gearbox shaft to align the slot in the end of the shaft with the crossbar on the brake.

3. Insert the brake into the gearbox and press it firmly into place. It must lay flat and not crooked or canted to one side.

4. Mount the motor on the greabox and secure it with the four nuts/lockwashers. **Note:** Make sure the crossbar on the coupling engages the slot in the gearbox shaft (Figure 43).

5. Install the actuator and re-assemble the base. Refer to *Ball Drive Actuator Assembly (Tilt) - Removal, Steps 1* through *25*, starting on *Page 38*.

Capacitor
P/N 853510

There are two capacitors in the electric base. They are identical and are replaced using the same procedure. The upper capacitor handles the raise/lower functions; the lower capacitor handles the tilt functions.

Tools Required

- Phillips screwdriver
- Small flat-blade screwdriver
- Double-faced foam tape, 1-in. wide x 2.5-in. long

Removal

1. Turn the base on its side and remove the three access plates. Refer to *Foot Controller (Complete) - Removal, Steps 1* through *4*, starting on *Page 18*. Refer to Figure 13 to identify the capacitors.

2. Carefully note the orientation of the capacitor you are replacing so that you can install the new component in exactly the same way.

3. Remove the capacitor from the base.

4. Note the colors and location of the four wires connected to the capacitor.

5. Remove the four wires on the capacitor. Refer to Figure 14 for wire colors and locations.

Installation

1. Connect the wires to the new capacitor. Refer to Figure 14 for wire colors and locations.

2. Using double-faced tape, mount the new capacitor into the base in the same location and orientation as the capacitor you removed.

3. Replace the access plates and turn the base upright. Refer to *Foot Controller (Complete) - Installation, Steps 12* through *16*, starting on *Page 22*.

Auxiliary Outlet
P/N 854636

Tools Required

- 1/2-in. box-end or open-end wrench
- 3/16-in. hex key (Allen wrench)
- 3/8-in. socket wrench
- 9/16-in. socket for the socket wrench
- Phillips screwdriver

Removal

Remove components from the base as necessary to access and remove the auxiliary outlet. Refer to *Ball Drive Actuator Assembly (Tilt) - Removal, Steps 1* through *12*, starting on *Page 33*.

Installation

Install the new auxiliary outlet and replace all components. Refer to *Ball Drive Actuator Assembly (Tilt), Installation, Steps 10* through *24*, starting on *Page 38*.

Auxiliary Outlet Cord
P/N 214100

Tools Required

- 1/2-in. box-end or open-end wrench
- 3/16-in. hex key (Allen wrench)
- 3/8-in. socket wrench
- 9/16-in. socket for the socket wrench
- Phillips screwdriver

Removal

1. Remove components from the base as necessary to access the auxiliary outlet and cable terminations. Refer to *Ball Drive Actuator Assembly (Tilt) - Removal, Steps 1* through *20*, starting on *Page 33*.

2. With a small flat-blade screwdriver, disconnect the three auxiliary power cord wires (black, white, green) from the terminal block (Figures 48 and 49).

3. Remove the auxiliary power cord from the two cable mounts (Figure 48).

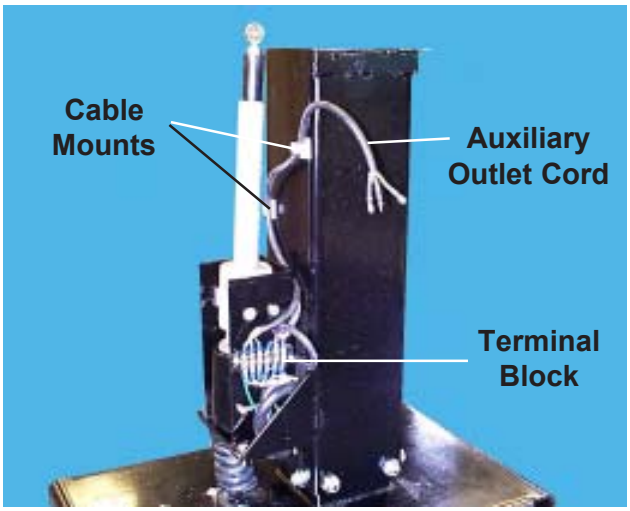

Figure 48. Main Column with Covers Removed

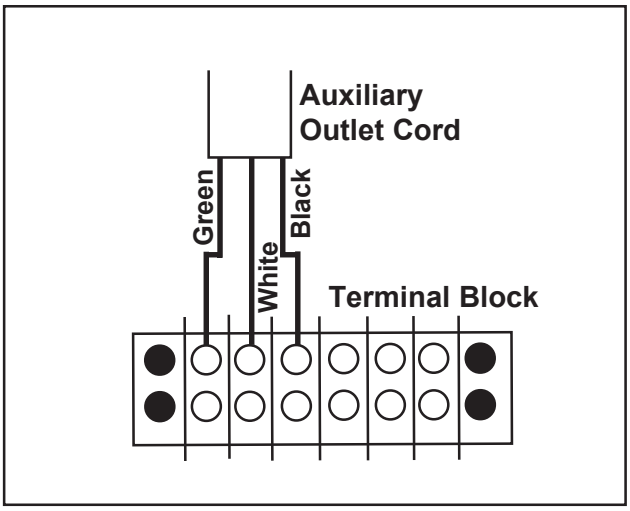

Figure 49. Auxiliary Outlet Cord Wire Connections

Installation

1. Connect the three auxiliary cord wires to the terminal block (Figures 48 and 49).

2. Place the auxiliary cord into the two cable mounts (Figure 48).

3. Replace the components onto the base. Refer to *Ball Drive Actuator Assembly (Tilt) - Installation, Steps 6* through *23*, starting on *Page 38*.

4. Plug an electric device into the auxiliary outlet and make sure it operates. If not, review your work and correct any errors.

5. When the outlet is operating correctly, mount the table top.

Retractile Cord
P/N 214098

Tools Required

- 1/2-in. box-end or open-end wrench
- Two 7/16-in. box-end or open-end wrenches
- 3/16-in. hex key (Allen wrench)
- 3/8-in. socket wrench
- 9/16-in. socket for the socket wrench
- Small flat-blade screwdriver
- Phillips screwdriver

Removal

1. Remove the top frame, cap and covers from the unit. Refer to *Ball Drive Actuator Assembly (Tilt) - Removal, Steps 1* through *20*, starting on *Page 33*.

2. With a small flat-blade screwdriver, remove the six retractile cord wires (black, white, green, red, blue and yellow) from the terminal block on the main column (Figures 48 and 50).

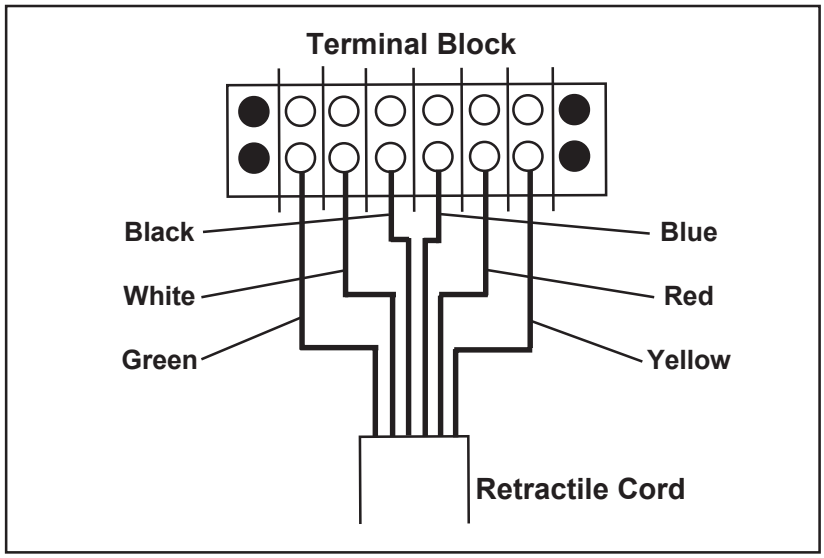

Figure 50. Rectractile Cord Wire Connections at Main Column

CAUTION: **The base is heavy and we recommend that laying it down be done by at least two people.**

3. Lay the base down so that the access plates are to your right as shown in Figure 12. If the base is oriented differently, the wiring references will be reversed and may cause confusion. **Note:** Be careful not to damage the electric power and foot controller cords.

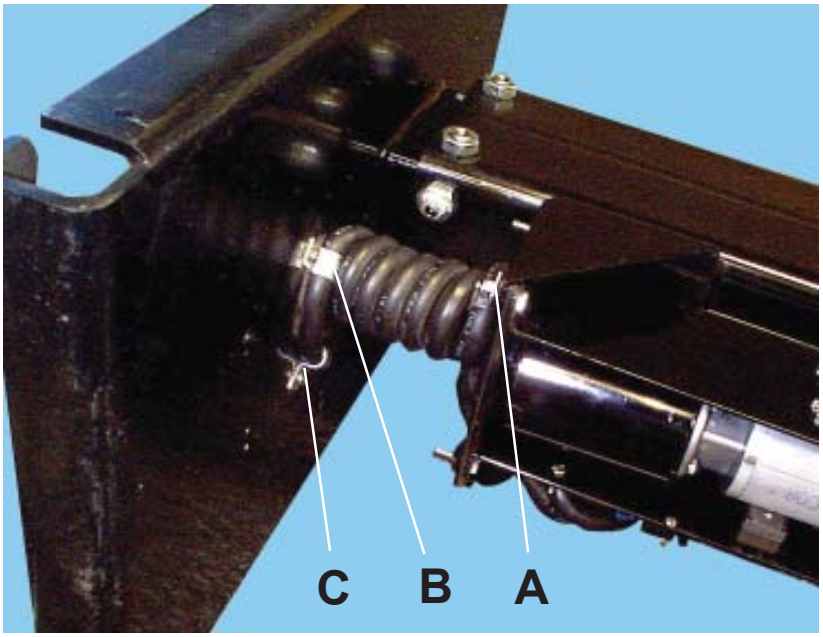

Figure 51. Retractile Cord Cable Clamps

4. With a Phillips screwdriver, remove the eight retaining screws, and then lift out the three access plates (Figure 12). The two smaller plates are held to the base by the electric power cord and the foot controller cord.

5. With two 7/16-in. wrenches, remove the screw and nut that holds the cable clamp to the actuator bracket at **A** (Figure 51).

6. With a Phillips screwdriver on top, and a 3/8-in. wrench underneath, remove the screw and nut that hold the cable clamp at **B**.

7. With a Phillips screwdriver on top, and a 3/8-in. wrench underneath, remove the screw and nut that hold the cable clamp at **C**. **Note:** Removing this clamp also frees another clamp under the base.

8. With a small flat-blade screwdriver, remove the six retractile cord wires from the terminal block and the lower capacitor in the bottom of the base (Figures 48 and 52).

9. Remove the retractile cord from the base.

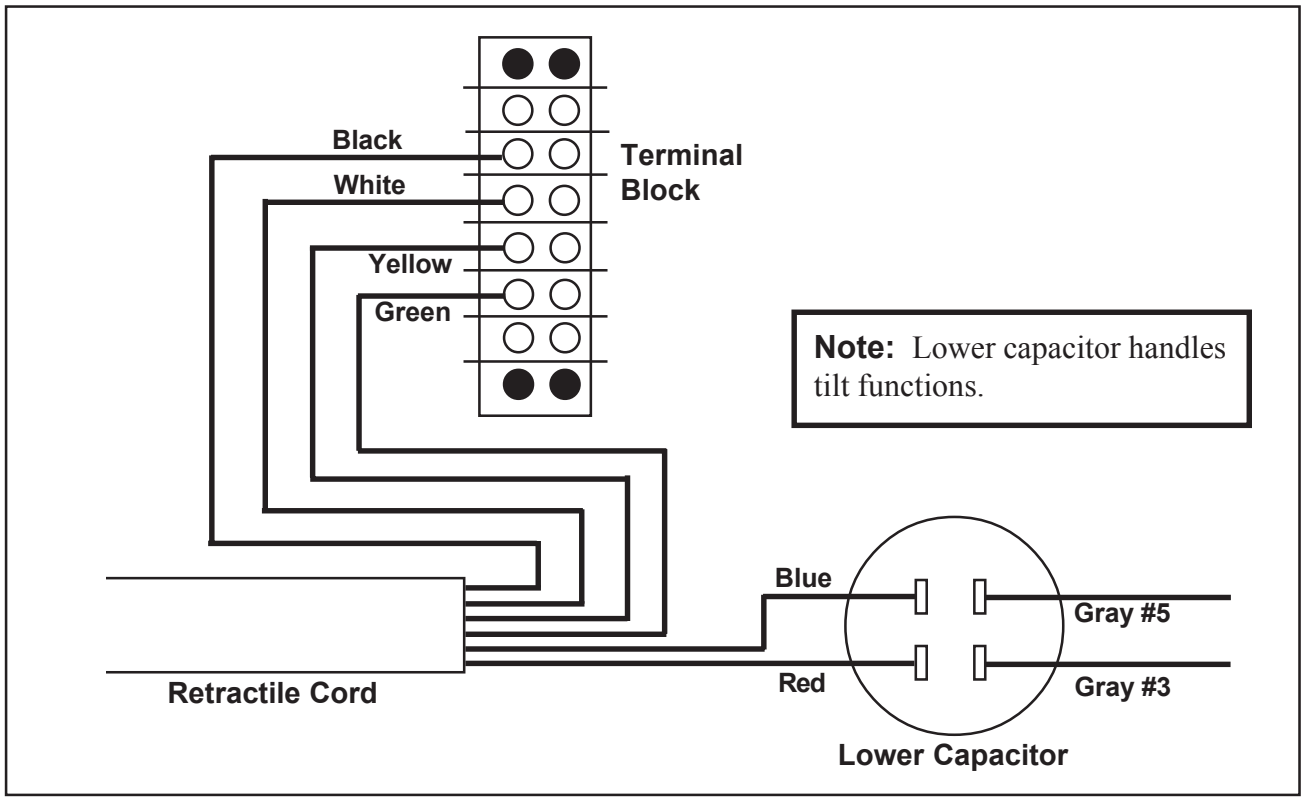

Figure 52. Retractile Cord Wire Connections in Base

Installation

1. Slip one end of the new retractile cable into the hole at **C** and down through the floor of the base (Figure 51). **Note:** The ends of the retractile cable are identical.

2. Connect the six wires from this end of the cable to the terminal block under the base (Figures 13 and 52).

3. Secure the cable in place with the two cable clamps (one on top and one on the bottom) at **C** (Figure 43).

4. Mount the cable clamp at **B**.

5. Mount the cable clamp at **A**.

6. Replace the three access plates and secure them with the eight retainer screws (Figure 12). **Note:** The plates should butt neatly against each other, and not overlap.

7. Stand the base upright.

8. Slip the free end of the retractile cable up through the hole in the actuator bracket near the terminal block (Figure 53).

9. Connect the six wires from this end of the cable to the terminal block on the main column (Figures 48 and 50).

10. Coil up the excess length of cord and store it between the actuator bracket and the terminal block.

11. Replace the covers, cap and top frame onto the base. Refer to *Ball Drive Actuator Assembly (Tilt) - Installation, Steps 7* through *25* starting on *Page 38*.

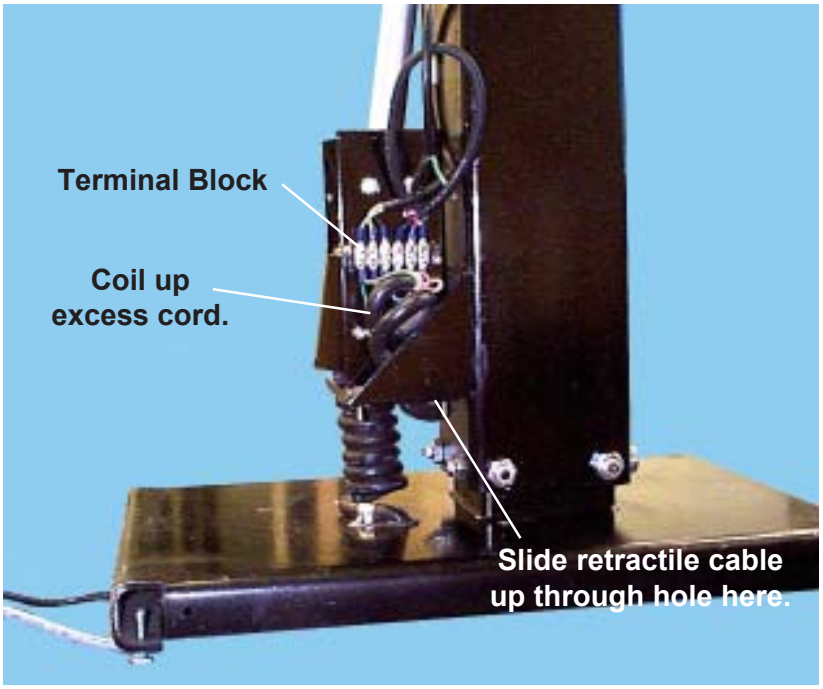

Figure 53. Installing Retractile Cord

Tightening the Main Column Bearings

After two or three years of regular use, the main column of the base may develope a slight wobble. This is caused by normal wear on the main column bearings. To tighten the main column bearings, follow the procedure below.

Tools Required

- 1/2-in. box-end or open-end wrench
- 9/16-in. box-end or open-end wrench
- Two 7/16-in. box-end or open-end wrenches
- 15/16-in. box-end or open-end wrench
- 3/16-in. hex key (Allen wrench)
- 3/8-in. socket wrench
- 9/16-in. socket for the socket wrench
- Small flat-blade screwdriver
- Phillips screwdriver

Procedure

1. Remove the top frame, cap and covers from the unit. Refer to *Ball Drive Actuator Assembly (Tilt) - Removal, Steps 1* through *20*, starting on *Page 33*.

2. Locate the upper main column bearings (Figure 54). There are eight upper main column bearings, however, only four have locknuts. You will be adjusting *only* the four bearings with the lock nuts.

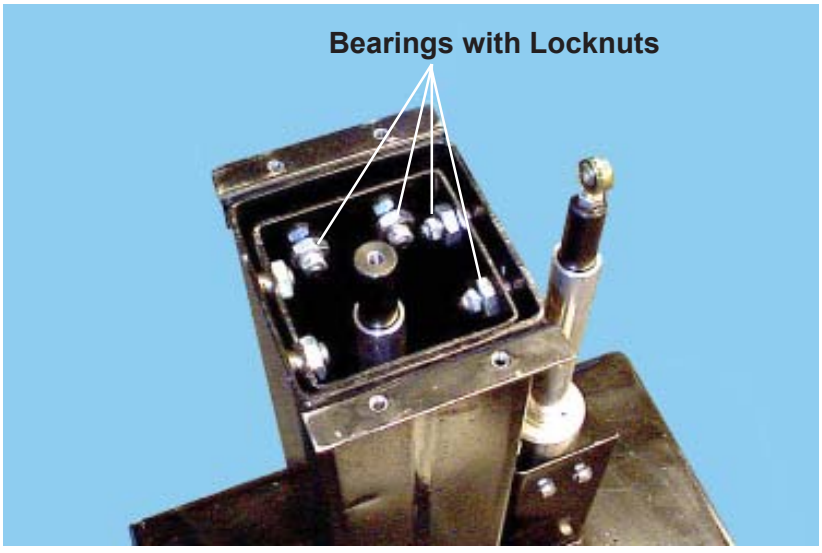

Figure 54. Upper Main Column Bearings

3. With a 9/16-in. wrench, loosen the locknut on one of the bearings. **Note:** The bearing nuts are secured with generous amounts of thread adhesive and may be a little hard to turn at first!

4. With a 15/16-in. wrench, tighten the large nut on that bearing. Take up any loose slack in the nut, but do not force the nut beyond that point.

5. When the large nut is tight, tighten down the locknut.

6. Repeat *Steps 3* through *5* on each of the other three upper main column bearings.

7. Locate the lower main column bearings (Figure 55). There are eight bearings located around the periphery of the column. As with the upper bearings, you will be adjusting *only* the four bearings with locknuts.

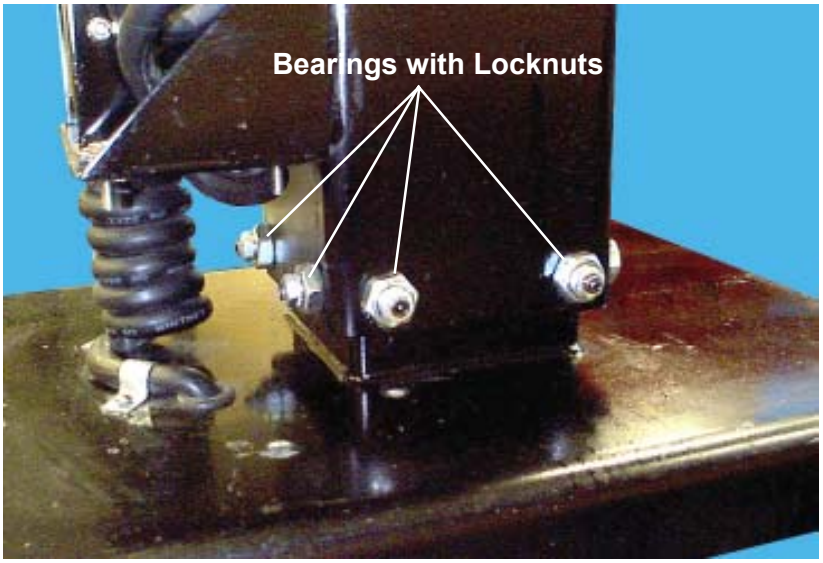

Figure 55. Lower Main Column Bearings

8. Repeat *Steps 3* through *5* on each lower bearing nut.

9. Replace the covers, cap and top frame onto the base. Refer to *Ball Drive Actuator Assembly (Tilt) - Installation, Steps 7* through *25* starting on *Page 38*.

Notes:

Chapter 5 - Troubleshooting

General

The following procedures will help you fix most of the problems that you might encounter with the Regal Electric Operating Table Base. If necessary, please feel free to call our Customer Service Department at (847) 537-9320, ext. 3518 (in Illinois) or
1-800-323-7366. Our experienced Technical Support personnel will be glad to help you.

For more information on contacting Suburban Surgical Co., refer to *Contact Information* on *Page 4*.

Part numbers for available replacement parts are shown in the table on *Page 17*. To order replacement parts, refer to *Parts Ordering Procedure* on *Page 5*.

Possible problems are listed below along with their page references:

Page numbers shown in the *Remedial Action* sections direct you to step-by-step directions on replacing specific parts. Refer to *Chapter 4, Repairs and Replacements.*

If your electric base must be returned to Suburban Surgical Co. for repairs, refer to *Returning the Electric Base for Repairs* on *Page 11* for directions.

CAUTION: **When working with electric wiring and connections, make sure the electric power cord is unplugged unless told to plug it in by the instructions.**

PROBLEM 1: The table will not operate at all.

Remedial Action

CAUTION: **When working with electrical wiring and connections, make sure the electric power cord is unplugged unless told to plug it in by the instructions.**

First: Make sure the electric power cord is plugged in.

Second: Make sure that you have electrical power to the table. Check the fuses or circuit breakers in the office electrical panel. If you have blown a fuse or tripped a circuit breaker, it may mean that you are trying to lift too heavy a load on the table. The load limit on the base is 300 lbs. (136 kg).

Third: Make sure that you have power to the outlet you are using. Try plugging another device into the outlet and see if the device works.

Fourth: Check to see if there is any obstruction to the foot controller pedals. Clear any blockages you find and try operating the table again.

Fifth: Check the electric power cord for damage. To order a new electric power cord, contact the Suburban Surgical Co. Customer Service Dept. and order P/N 213807. To replace the electric power cord, refer to *Page 31*.

Sixth: Check the foot controller cord for damage. To order a new foot controller cord, contact the Suburban Surgical Co. Customer Service Dept. and order P/N 214084. To replace the foot controller cord, refer to *Page 22*

Seventh: You may have a loose wire connection where the electric power cord mounts to the base. Refer to *Page 18* and perform *Steps 1* through *4*. Check the wiring diagram in Figure 27 and make sure that the three wire connections are secure.

PROBLEM 2: The table will not raise or lower, but it tilts up and down OK.

Remedial Action

CAUTION: **When working with electrical wiring and connections, make sure the electric power cord is unplugged unless told to plug it in by the instructions.**

First: Check to see if there is any obstruction to the foot controller **UP-DN** pedal. Clear any blockage you find and try operating the table again.

Second: Check the foot controller cord for damage. To order a new foot controller cord, contact the Suburban Surgical Co. Customer Service Dept. and order P/N 214084. To replace the foot controller cord, refer to *Page 22*.

Third: You may have a loose wire connection where the foot controller cord mounts to the base. Refer to *Page 18* and perform *Steps 1* through *4*. Check the wiring diagram in Figure 14 and make sure that the wire connections are secure. Before you replace the access plates, proceed to the next remedial action.

Fourth: You may have a loose wire connection where the raise/lower actuator cord connects to the terminal block and upper capacitor in the base. Check Figures 56 and 57 below and make sure that the wire connections are secure.

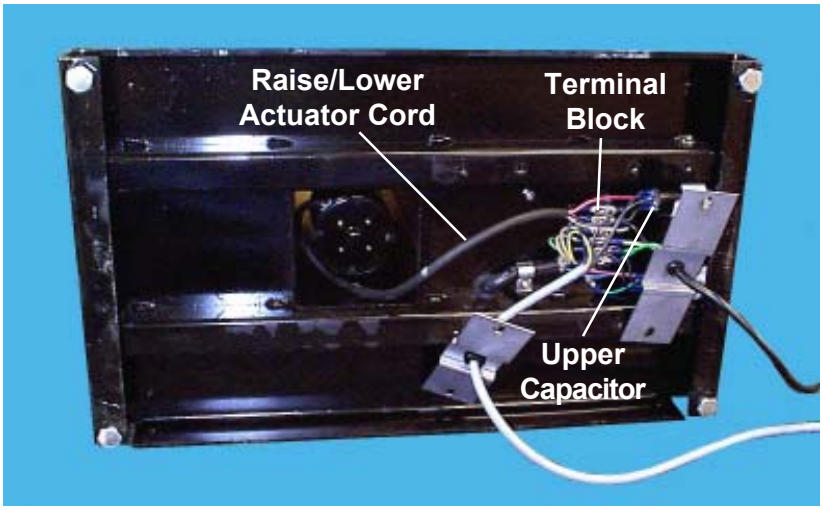

Figure 56. Raise/Lower Actuator Cord and Terminal Block

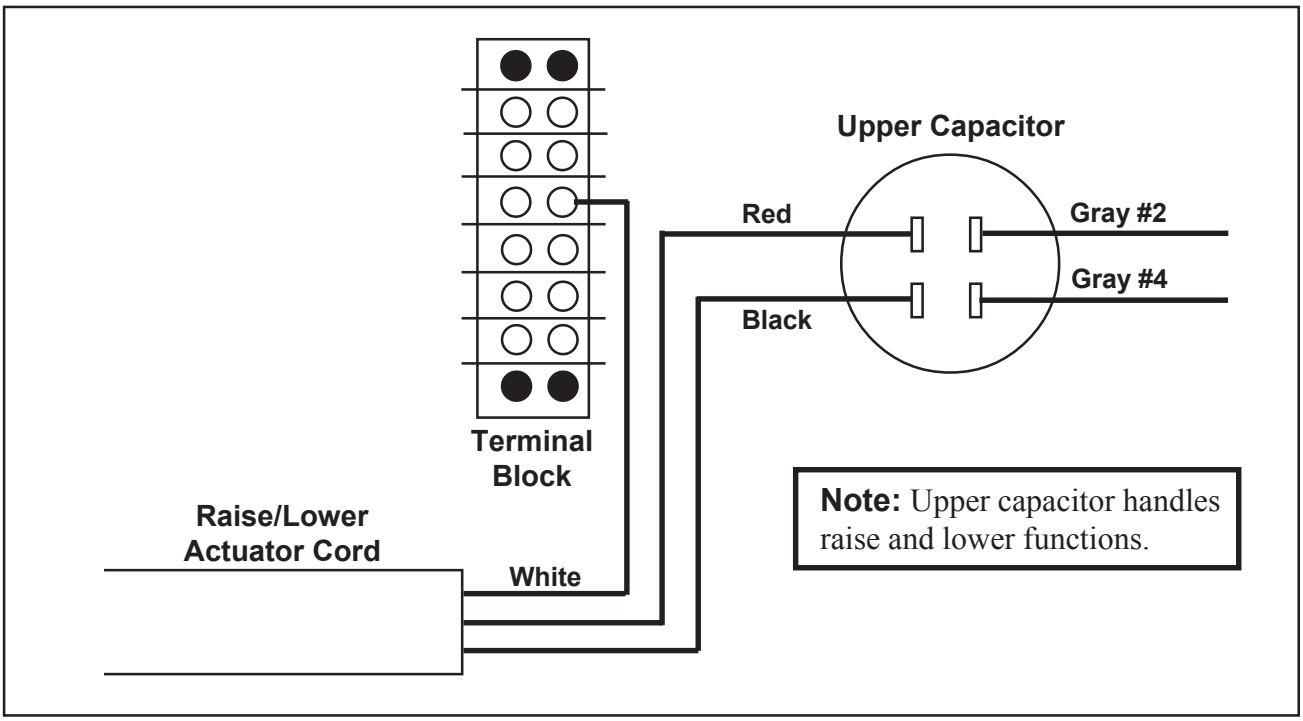

Figure 57. Raise/Lower Actuator Wire Connections in Base

Fifth: You may have a loose wire connection where the foot controller cord mounts to the foot controller. Refer to *Page 23* and perform *Steps 1* through *4*. Check the wiring diagram in Figure 24 and make sure that the wire connections are secure.

Sixth: Was there a puff of smoke or an unusual odor when you lost power? These events can signal the breakdown of the upper capacitor. To order a new capacitor, contact the Suburban Surgical Co. Customer Service Dept. and order P/N 853510. To replace the capacitor, refer to *Page 45*.

Seventh: The foot controller may be malfunctioning. To order a new foot controller, contact the Suburban Surgical Co. Customer Service Dept. and order P/N 214038. To replace a foot controller, refer to *Page 18.*

Eighth: If none of the above actions fix the problem, you probably have a malfunctioning up-down actuator. Return the base to Suburban Surgical for repair.

PROBLEM 3: The table will not tilt up or down, but it raises and lowers OK.

Remedial Action

CAUTION: **When working with electrical wiring and connections, make sure the electric power cord is unplugged unless told to plug it in by the instructions.**

First: Check to see if there is any obstruction to the foot controller **UP-TILT-DN** pedal. Clear any blockage you find and try operating the table again.

Second: Check the foot controller cord for damage. To order a new foot controller cord, contact the Suburban Surgical Co. Customer Service Dept. and order P/N 214084. To replace the foot controller cord, refer to *Page 22*.

Third: You may have a loose wire connection where the foot controller cord mounts to the base. Refer to *Page 18* and perform *Steps 1* through *4*. Check the wiring diagram in Figure 14 and make sure that the wire connections are secure. Before you replace the access plates, proceed to the next remedial action.

Fourth: You may have a loose wire connection where the retractile cord connects to the terminal block on the main column. Refer to *Page 33* and perform *Steps 1* through *20*. Check Figures 37 and 50 and make sure that the wire connections are secure.

Fifth: You may have a loose wire connection where the retractile cord connects to the terminal block and lower capacitor in the base. Check Figures 13 and 52 and make sure the connections are secure.

Sixth: You may have a loose wire connection where the foot controller cord mounts to the foot controller. Refer to *Page 23* and perform *Steps 1* through *4*. Check the wiring diagram in Figure 24 and make sure that the wire connections are secure.

Seventh: Was there a puff of smoke or an unusual odor when you lost power? These events can signal the breakdown of the lower capacitor. To order a new capacitor, contact the Suburban Surgical Co. Customer Service Dept. and order P/N 853510. To replace the capacitor, refer to *Page 45*.

Eighth: The foot controller may be malfunctioning. To order a new foot controller, contact the Suburban Surgical Co. Customer Service Dept. and order P/N 214038. To replace a foot controller, refer to *Page 18.*

Ninth: If none of the above actions fix the problem, you probably have a malfunctioning ball drive actuator assembly (tilt). To order a new ball drive actuator assembly (tilt), contact the Suburban Surgical Co. Customer Service Dept. and order P/N 214096. To replace the this actuator, refer to *Page 33*.

PROBLEM 4: One of the functions (UP, DOWN, TILT UP, or TILT DOWN) doesn't work but the others are OK.

Remedial Action

CAUTION: **When working with electrical wiring and connections, make sure the electric power cord is unplugged unless told to plug it in by the instructions.**

First: Make sure that both foot controller pedals are free from obstructions.

Second: Examine the foot controller electric cord for damage. To order a new foot controller electric cord, contact the Suburban Surgical Customer Service Department and order P/N 214084. To replace a foot controller cord, refer to *Page 22*.

Third: You may have a loose push button switch in the foot controller. Unplug the electrical power cord and open the foot controller - refer to *Page 23, Steps 1* through *4*.

Make sure that all electrical connections in the foot controller are secure. Refer to Figure 24, and locate the push button for the function that is not working. Make sure it is securely seated in the switch plate. If the push button is loose, remove the switch plate from the foot controller (*Page 24, Steps 5* through *11*) and properly position and secure the switch (*Page 30, Steps 1* through *9*).

Fourth: You may have a loose connection where the foot controller cord connects to the base. Refer to *Page 23, Steps 1* through *4* to access the foot controller connections. Refer to Figures 13 and 14 and make sure all foot controller wires are secure.

Fifth: If the above remedial actions do not fix the problem, you probably have a bad push button switch. To order a new push button switch, contact the Suburban Surgical Customer Service Department and order P/N 854141. To replace the switch, refer to *Page 29.*

PROBLEM 5: The table lowers by itself.

Remedial Action

First: Make sure you are not trying to lift loads heavier than the table's maximum lift weight of 300 lbs (136 kg). Trying to lift heavier loads may be placing extra strain on the motor and lifting mechanism that they were not designed to handle.

Second: The motor coupling or the brake may be worn out. Remove the motor (*Page 40*) and check the motor coupling and brake. Examine both and if either is damaged or badly worn, replace it.

To order a new motor coupling, contact the Suburban Surgical Co. Customer Service Dept. and order P/N 854196. To replace a motor coupling, refer to *Page 41*.

To order a new brake, contact the Suburban Surgical Co. Customer Service Dept. and order P/N 853695. To replace a brake, refer to *Page 43*.

Third: There is something wrong with the raise/lower actuator. Return the base to Suburban Surgical for repair.

PROBLEM 6: The table lowers slightly after the foot pedal is released.

Remedial Action

First: Make sure you are not trying to lift loads heavier than the table's maximum lift weight of 300 lbs (136 kg). Trying to lift heavier loads may be placing extra strain on the motor and lifting mechanism that they were not designed to handle.

Second: The brake may be worn out. Remove the motor (*Page 40*) and check the brake. If it is damaged or badly worn, replace it. To order a new brake, contact the Suburban Surgical Co. Customer Service Dept. and order P/N 853695. To replace a brake, refer to *Page 43*.

PROBLEM 7: The table has an erratic motion when raising or lowering.

Remedial Action

First: Make sure you are not trying to lift loads heavier than the table's maximum lift weight of 300 lbs. (136 kg). Trying to lift heavier loads may be placing extra strain on the motor and lifting mechanism that they were not designed to handle.

Second: If the table has been in use for a long time, the ball bearings in the shaft nut on the raise/lower actuator may be worn. Return the base to Suburban Surgical to be rebuilt.

Third: If the table wobbles slightly and has been in regular use for two to three years or more, the main column bearings may be loose. To tighten the main column bearings, refer to *Page 52*.

PROBLEM 8: There is no power at the auxiliary outlet.

Remedial Action

CAUTION: **When working with electrical wiring and connections, make sure the electric power cord is unplugged unless told to plug it in by the instructions.**

First: Make sure that the table raises, lowers and tilts. If not, there is no electrical power to the base. Refer to *Problem 1* on *Page 56*.

Second: If all other features operate, the problem is probably with the auxiliary outlet or the electric cord to the outlet. Remove the components from the base to access and outlet and cord. Refer to *Page 33, Steps 1* through *12*. Check the outlet and the cord for obvious signs of damage.

Make sure that the three wire connections at the rear of the auxiliary outlet (Figure 40) are secure. Make sure that the three wire connections on the terminal strip (Figure 49) are secure. Tighten any loose connections found and try the outlet again.

To order a new auxiliary outlet, contact the Suburban Surgical Co. Customer Service Dept. and order P/N 854636. To replace the auxiliary outlet, refer to *Page 46*.

To order a new auxiliary outlet cord, contact the Suburban Surgical Co. Customer Service Dept. and order P/N 214100. To replace the auxiliary outlet cord, refer to *Page 46*.

Notes:

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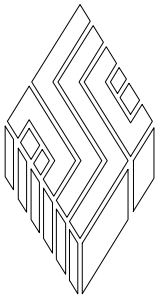
For more information on SSCI's fine line of products and accessories, talk to your SSCI sales representative.



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Suburban Surgical Company, Inc.
275 Twelfth Street **Wheeling, IL 60090**
Phone: (847) 537-9320 **Fax: (847) 537-9061**
Toll Free: 1-800-323-7366 **Web: www.suburbansurgical.com**

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