

Advanced Control Base

REF 5803, 5803I, 5803J

Owner's Manual

This manual is supplied in the following versions:

- English (EN)
- Spanish (ES)
- French (FR)
- German (DE)
- Italian (IT)
- Portuguese (PTBR)
- Danish (DA)
- Japanese (JA)
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1 Important Notices



CAUTION: To ensure safe operation of the equipment, please **READ THESE INSTRUCTIONS COMPLETELY** and keep this manual readily available for future reference.













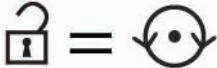
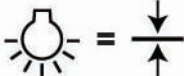
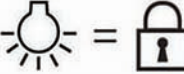
Carefully observe and comply with all warnings, cautions and instructions placed on the equipment or described in this manual.


NOTE: *This device is intended for use by trained personnel only. To schedule an in-service, please contact your domestic Mizuho OSI sales representative or call **1-800-777-4674** in the US or **+1-510-429-1500** internationally.*



NOTE: *The application techniques outlined in these instructions are the manufacturer’s suggested techniques. The final disposition of each patient’s care as related to the use of this equipment rests with the attending surgeon.*

In this manual, the following symbols are used:


Symbol	Meaning
	This symbol indicates an authorized representative in the European Community.
	This symbol indicates the Manufacturer of the device.
NOTE:	This symbol indicates a comment or instruction of importance.
	This symbol is to signify CAUTION. It is intended to alert the user to consult the documentation for safety-related information such as warnings and precautions that cannot, for a variety of reasons, be presented on the device itself.
	This WARNING symbol is intended to alert the user to important operation, maintenance, or safety instructions.
	This symbol indicates proper disposal instructions.
	This symbol indicates a product number.
	This symbol indicates a serial number.
	This symbol indicates that you need to read the owner’s manual for use.
	This symbol indicates that you need to refer to the operating instructions for use.
	This symbol indicates an external ground stud that is required for use when the AC power cable is not connected to a protective earth ground hospital grade AC outlet in your operating room or facility.


	<p>This symbol indicates this equipment is an applied part TYPE B in accordance with IEC 60601-1 and is generally suitable for applications involving external or internal contact with the patient, excluding the heart. The patient circuit is connected to protective earth and this equipment should be connected only to hospital grade AC outlets with a protective earth ground.</p>
	<p>This symbol represents a Fault Indicator.</p>
	<p>This symbol identifies the 180° Rotation Lock.</p>
	<p>This symbol identifies the Rotation Lock.</p>
	<p>This symbol indicates rotation in either of two directions.</p>
	<p>This symbol indicates rotation in one direction.</p>
	<p>This symbol identifies the Tilt Drive Status.</p>
	<p>This symbol identifies POWER OFF.</p>
	<p>This symbol identifies POWER ON.</p>
	<p>This symbol represents the Battery Status of the Advanced Control Base.</p>
	<p>This symbol represents a locked state.</p>
	<p>This symbol represents an unlocked state.</p>
	<p>This symbol informs the user that unlocking may cause movement.</p>
	<p>This symbol informs the user that the Tilt Drive is centered when the light is on.</p>
	<p>This symbol informs the user that the mechanism is locked when the light is on.</p>


 **WARNING:** Proper preoperative and intra-operative procedures must be followed to prevent venous stasis and pooling, pressure sore development, neuropathy, improper electro-surgical tissue grounding, hypertension and hypothermia.


 **WARNING:**  This symbol indicates an external ground stud that is required for use when the AC power cable is not connected to a protective earth ground hospital grade AC outlet in your operating room or facility. To protect the patient, hospital staff and the table from possible electrical hazards, an external ground wire connection is required between the external ground stud and protective earth ground when the table is in use under battery power or not connected to a protective earth ground.


 **WARNING:** Medical electrical equipment needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in this manual.


 **WARNING:** The weight capacity of the Advanced Control Base is table top specific. Use of the Modular Table System (Base with any of the five compatible table tops) with patients exceeding the table top specific weight capacity could result in damage to the table, possible injury to the patient or harm to the healthcare workers.

 **WARNING:** A Spinal Surgery Top or Radiolucent Imaging Top used on the Advanced Control Base must have gimbals. Earlier versions of these table tops do not have gimbals. Use of table tops without gimbals on the Advanced Control Base may result in damage to the table top and the Base.

 **WARNING:** Before and after each use, inspect the Advanced Control Base and its components for possible damage, excessive wear, or non-functioning parts. Carefully inspect all critical, inaccessible areas, joints, and all moving parts for possible damage or non-function. Damaged or defective parts should not be used or processed. Contact Mizuho OSI Service for repair or replacement (see Section 13).

 **WARNING:** The Advanced Control Base should not be operated in the presence of flammable anesthetics, volatile substances, or other explosive gases, liquids, or atmospheres.

 **CAUTION:** As outlined in the AORN Recommended Practices for Positioning a Patient in the Perioperative Setting, following the positioning of the patient, an assessment of the patient's alignment, tissue perfusion and skin integrity should be completed. All contact points of the patient with the table pads should be monitored during the procedure.

 **CAUTION:** No modification of the Advanced Control Base or its components is allowed. Any modification to the equipment may result in damage to the table, possible injury to the patient or harm to the healthcare workers.

NOTE: *If the integrity of the AC power source is in doubt, the equipment shall be operated from its internal electrical power source (battery).*

NOTE: *If high-frequency surgical equipment, cardiac defibrillators or cardiac defibrillator monitors are to be used with the Advanced Control Base, refer to the instructions for use provided by the manufacturer of those devices.*

1.1 Trademarks

O-arm® is a registered trademark of Medtronic, Inc.

1.1 Disposal of Electrical Components



In accordance with the European Union Waste Electrical and Electronic Equipment (WEEE) Directive, all electrical components, batteries and carbon composite components must be disposed of in accordance with local regulation or returned to Mizuho OSI for proper disposal. Please contact Mizuho OSI Service at **1-800-777-4674** inside the USA or **+1-510-429-1500** outside the USA for further information regarding this requirement.

2 Introduction

2.1 General Description

The Advanced Control Base is the primary component of the Modular Table System and is designed to be used with multiple interchangeable table tops. The Modular Table System provides the flexibility to position patients for a variety of surgical or radiographic imaging procedures. The Advanced Control Base provides the foundation on which a table top may be mounted, creating a surgical platform free of any obstructions when used with a fluoroscopic C-arm or the O-arm®. The Base is designed for use with the following procedure-specific table-tops currently offered: Spinal Surgery Top, Radiolucent Imaging Top, and Orthopedic Trauma Top. The Base may also be used with two discontinued tops, the Axis System and the Maximum Access™ Top.

The Advanced Control Base has three primary electrically powered functions. Electromechanical actuator motors perform these motions which are controlled by means of the Hand Pendant. The three functions are: Height (up/down), Lateral Roll (left/right), and Trendelenburg/reverse Trendelenburg. The Base may also be retracted for storage (refer to Section 4.7). The Base can be operated under AC power or internal batteries. The product life of the Advanced Control Base is ten (10) years when used and maintained as outlined in this manual.



Figure 1: Advanced Control Base

2.2 Intended Use

With a table top mounted on the Advanced Control Base, an electrically powered mobile operating table is created, designed for temporary (<24 hours) support and positioning of a patient in a prone, supine, or lateral position depending on the specific table top utilized. The Base with a table top is intended for use during surgical procedures, including radiographic imaging during such procedures. The Base with a table top mounted should not be used for patient transport.

The modular tops when mounted on the Advanced Control Base provide a platform designed to support and position adult and pediatric patients falling within the maximum weight limit allowed for each top as listed below:

- | | |
|--|------------------|
| • Spinal Surgery Top: | 500 lbs (227 kg) |
| • Radiolucent Imaging Top: | 500 lbs (227 kg) |
| • Orthopedic Trauma Top: | 500 lbs (227 kg) |
| • Axis System (<i>discontinued</i>): | 500 lbs (227 kg) |
| • Maximum Access™ Lateral Top (<i>discontinued</i>): | 350 lbs (159 kg) |

2.3 User Profile

The System is suitable for use by health care professionals, including but not limited to surgeons, radiologists, anesthesiologists, circulating nurses, surgical technicians, biomedical and radiology technicians.

2.4 Training Requirements

Before using the Modular Table System, the user must read the [REF](#) NW0646 Advanced Control Base Owner's Manual. Depending on the table top(s) used, the user must also read the corresponding Owner's Manual listed below:

- [REF](#) NW0677 Radiolucent Imaging Top Owner's Manual
- [REF](#) NW0678 Spinal Surgery Top Owner's Manual
- [REF](#) NW0648 Orthopedic Trauma Top Owner's Manual

It is required that personnel using this device and related accessories receive training by either Mizuho OSI or by someone qualified by the medical facility to provide this training.

2.5 Conditions of Use

The Advanced Control Base may be used several times throughout the day and night in medical facilities; e.g. hospitals, and outpatient surgery/imaging centers. The Advanced Control Base will be used in an operating room or other treatment room, and may be rolled between rooms. It shall not be used for patient transport.

2.6 Product Lifetime

The product's service lifetime is defined as 10 years. At the time of delivery, your product fulfills existing regulations and standards; however, despite proper use, routine inspection, prescribed service, maintenance and repairs, the product is subject to aging and wear. Therefore, Mizuho OSI cannot guarantee the product's safety after ten (10) years and recommends your product be taken out of service. For product warranty information, refer to Section 13 of this manual.

2.7 Specifications

The Advanced Control Base has the following specifications.

- The Base is compatible with all Modular Table System tops equipped with gimbals.
- When used with each of the procedure-specific, modular table tops, the Advanced Control Base provides the platform on which these table tops are designed to mount. The maximum patient load is table top specific (Refer to appropriate Owner's Manual).
- Height range of the Base is 34 to 48 inches (86.4 cm – 122 cm).
- Width of the Base is 32 inches (81.3 cm).
- Maximum length of the Base is 102 inches (259.1 cm), with a retracted length of 64 inches (162.6 cm) for storage.
- Lateral Roll (left/right) is 0-25 degrees (± 3 degrees), and the Trendelenburg/reverse Trendelenburg is 0-10 degrees (± 3 degrees),
- Input power requirement is 100V, 50/60Hz; 120V, 60Hz; or 220-230V, 50/60Hz as indicated on the table label.
- The table may also be operated under battery power. The expected working life of a fully charged battery is approximately eight (8) hours.
- The Base is IPX4 rated per IEC 60529.
- Operating environment – 68 degrees F (20 degrees C), relative humidity 50%, atmospheric pressure 75-105 kPa.
- Class 1 Equipment; Type B per IEC 60601-1.
- The Base is not suitable for use with flammable anesthetic gas mixtures.

2.8 Shipping and Storage

If required to be transported, the Advanced Control Base must be transported using the appropriate shipping crate. Unpacking instructions were included with the original shipping crate and should be included on the outside of the crate if the Advanced Control Base must be transported.

When not in use, the Advanced Control Base should be stored in a clean, dry environment.

The following conditions are required of the shipping and/or storage environment.

- Ambient temperature -4 °F (-20 °C) to 122 °F (50 °C)
- Relative humidity from 10% to 95%, non-condensing
- Atmospheric pressure from 75 to 105 kPa

When in storage, the table cover provided with each respective table top serves as a dust cover and should be used. Also, to ensure that the battery is always fully charged and ready for use, store the Base connected to the AC power which matches the ratings on the manufacturer's label located on the Head-End of the Base (Figure 8, Page 16).

NOTE: *The Power Switch must be toggled to the ON position for the battery to charge.*

2.9 Glossary of Terms

This glossary of terms assumes that the patient is oriented with his or her head at the Head-End of the table and his or her feet at the Foot-End of the table. The Hand Pendant functions are oriented for this position only.

Term	Description
Head-End	Refers to the end of the Base where the Power Cord, ON/OFF Power Switch and Control Panel are located.
Foot-End	Refers to the end of the Base opposite the Head-End.
Column	Refers to each of the two main column structures of the Base used to support the table top.
Left Side of the Base	Refers to the left side of the Base (as you stand at the Head-End and look towards the Foot-End). The Hand Pendant button used to laterally roll (tilt) the table top to the left is labeled LEFT LATERAL ROLL .
Right Side of the Base	Refers to the right side of the Base (as you stand at the Head-End and look towards the Foot-End). The Hand Pendant button used to laterally roll (tilt) the table top to the right is labeled RIGHT LATERAL ROLL .
Raise the Column	Refers to raising the Height of the Base. The Hand Pendant button used to raise the Base is labeled HEIGHT UP .
Lower the Column	Refers to lowering the Height of the Base. The Hand Pendant button used to lower the Base is labeled HEIGHT DOWN .
Trendelenburg	Refers to lowering the height of the Head-End of the column relative to the Foot-End of the Column. The Hand Pendant button used to lower the Head-End below the Foot-End is labeled TREN .
Reverse Trendelenburg	Refers to lowering the height of the Foot-End of the column relative to the Head-End of the Column. The Hand Pendant button used to lower the Foot-End below the Head-End is labeled REV TREN .
Table Motion	Any one of the three motions: Height , Tilt, or Trendelenburg.
Hospital Grade AC outlet	Refers to specially designated outlets (receptacles) that include additional grounding reliability, assembly integrity, strength and durability. A hospital grade outlet in the United States may be indicated by a Green Colored Dot on the face of the outlet.
Caster Locks	Swivel wheels mounted at the bottom of the frame with rotational lock.
Hand Pendant	A wired hand-held device that can control specific motions of the table (e.g. Height, Tilt, or Trendelenburg).
Quiver	A Quiver is located at both the Head-End and Foot-End of the Base and provides a storage location for the T-Pins when not in use.
H-Frame Storage Bracket	The H-Frame Storage Brackets, located at each end of the Base, provide a storage location for H-Frames when not in use.
Slide Assembly	The Slide Assembly at the Head-End Column adjusts superiorly or inferiorly to accommodate for the length adjustments needed when using Trendelenburg and reverse Trendelenburg.
Traction Pulley Assembly	The Traction Pulley Assembly allows for weighted traction to be pulled by guiding the use of a traction rope.

Table Top	The patient support surface or frame on which patient support accessories are attached. The Advanced Control Base is designed for use with three (3) table tops: Spinal Surgery Top, Radiolucent Imaging Top, and Orthopedic Trauma Top.
Gimbal	Gimbals allow for the rotation of a table top when positioned in extreme lateral tilt. The Spinal Surgery Top and the Radiolucent Imaging Top must be equipped with gimbals in order to be used with the Advanced Control Base.
Prone (Patient) Position	A body position in which the patient lies face down on a table top
Supine (Patient) Position	A position in which the patient lies face-up on a table top.

3 Component Identification

3.1 Table Orientation

The Advanced Control Base is described as having a Head-End and a Foot-End. The Head-End of the Base provides the port to which the Hand Pendant is connected, and the end opposite to it is identified as the Foot-End (Figure 2). Each end also contains a Crossbar with mounting posts that allows for the attachment of a table top. With a table top installed, the patient should be positioned with his or her head oriented towards the Head-End of the Base.

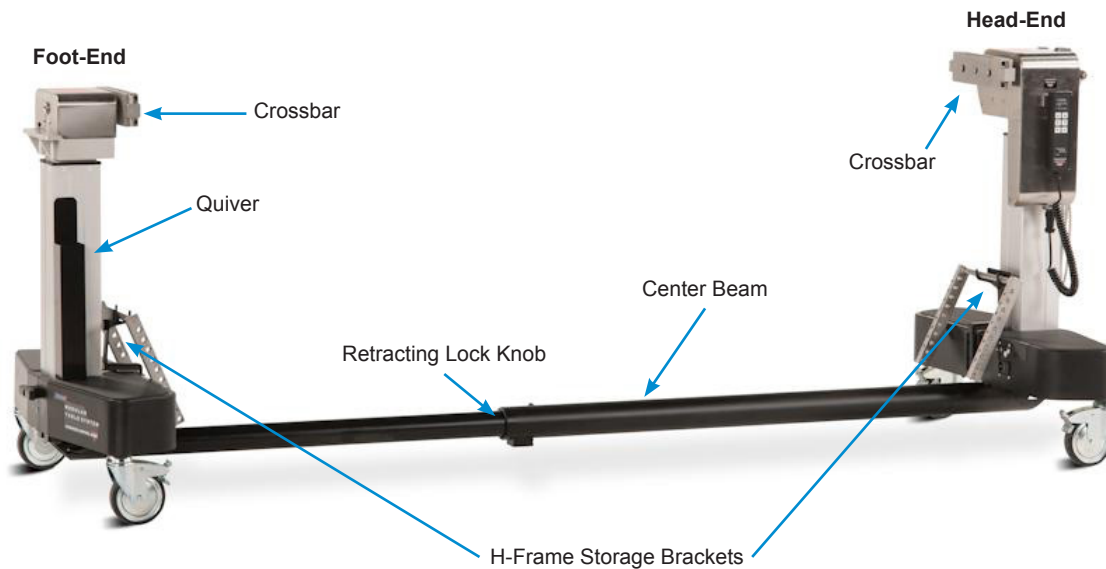


Figure 2: Advanced Control Base

NOTE: *The maximum weight capacity for this table system is specific to each table top as noted in the respective Owner's Manuals and on the safety labels found on the table tops themselves.*



WARNING: Use of the Advanced Control Base and a procedure-specific table top with a patient exceeding the maximum patient weight capacity noted could result in damage to the table, possible injury to the patient or harm to the healthcare workers.

3.2 Head-End Column of the Advanced Control Base

The Head-End Column of the Advanced Control Base contains several key controls necessary to operate the Base correctly as well as important indicator lights and product identification information. Features found on Head-End Column include the Cord Wrap, the Traction Pulley, a Quiver for T-Pin Storage and two locking casters (Figure 3).

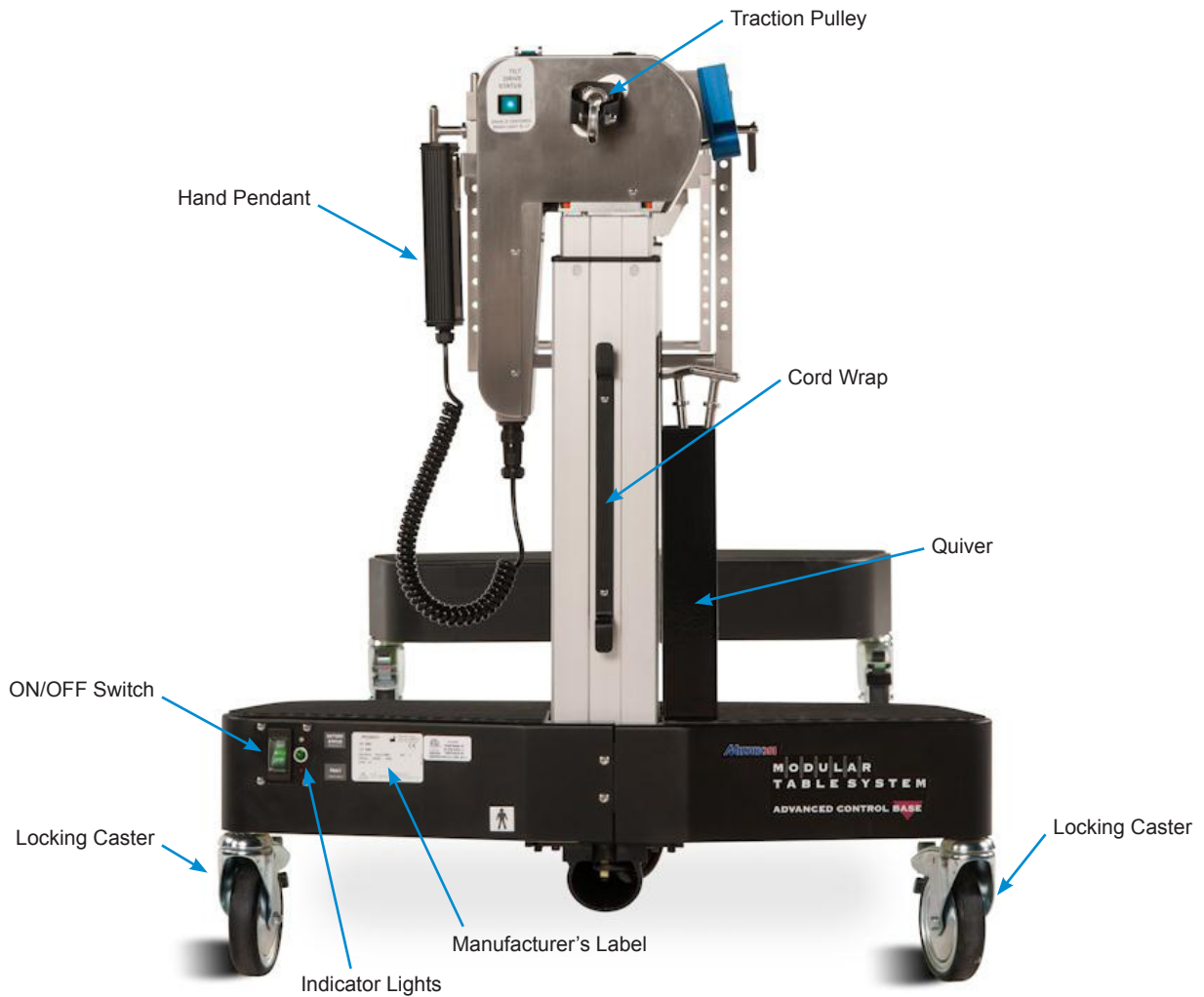


Figure 3: Head-End Column of the Advanced Control Base

3.2.1 Base of the Head-End Column

The outside base of the Head-End Column is equipped with the following four (4) indicator lights (Figure 4):

- ON/OFF Power Switch Light
- Power Light
- Battery Status Light
- Fault Light

Under normal operation, the ON/OFF Power Switch Light, the Power Light, and the Battery Status Light should be illuminated green, and the Fault Light should be dark.

NOTE: *If the Battery Status Light is illuminated red, the battery requires charging, and the table should only be used under AC Power.*

NOTE: *If the Fault Light is illuminated red, there is an electrical fault that must be addressed and resolved prior to using the Base.*



CAUTION: Failure to address and resolve the electrical fault prior to using the Base may result in damage to the table, possible injury to the patient or harm to the healthcare workers.

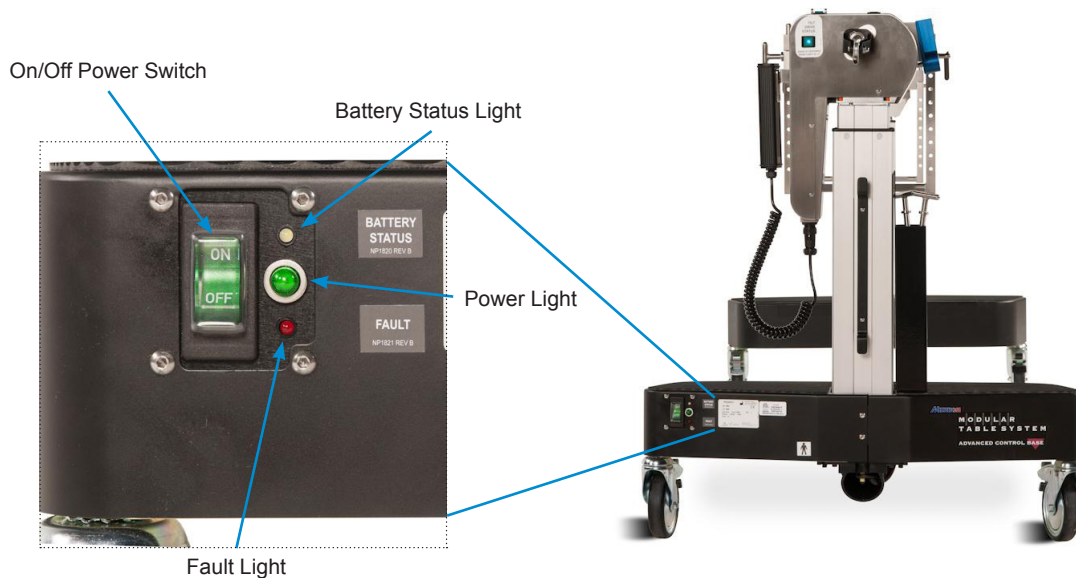


Figure 4: Head-End Column, Outside Base

The inside base of the Head-End Column is equipped with the following electrical features (Figure 5):

- Power Cord Receptacle
- Reset Button/Circuit Breaker
- External Ground Stud

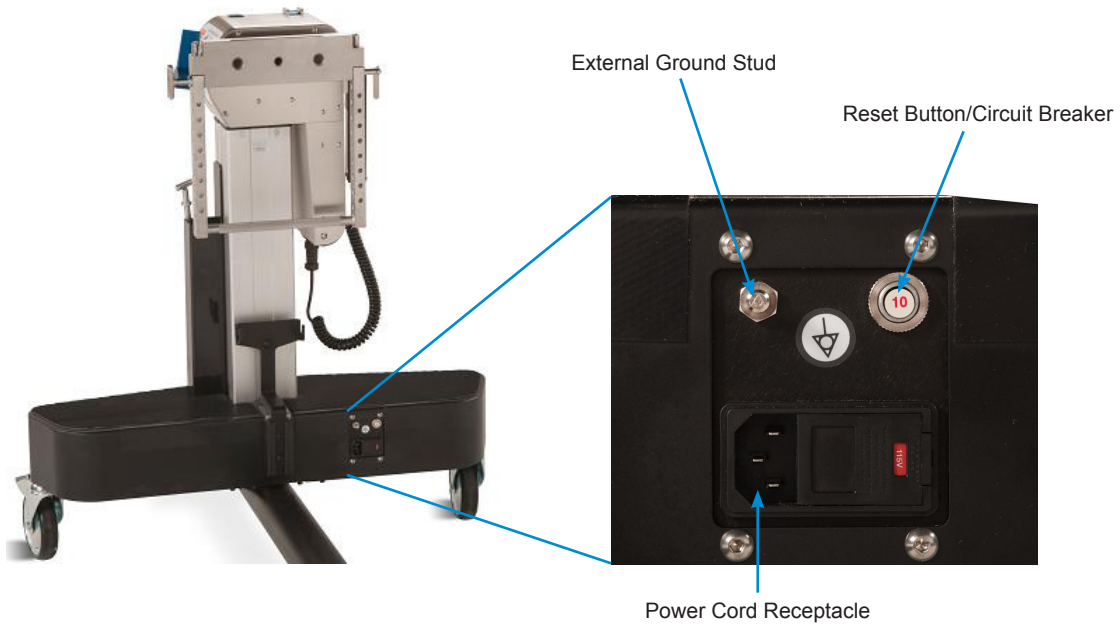


Figure 5: Head-End Column, Inside Base

3.2.2 Pivot Assembly

The Head-End Pivot Assembly is equipped with three indicator lights, which consist of the following (Figure 6):

- 180 Degree Rotation Lock indicator light
- Rotation Safety Lock indicator light
- Tilt Drive Status indicator light

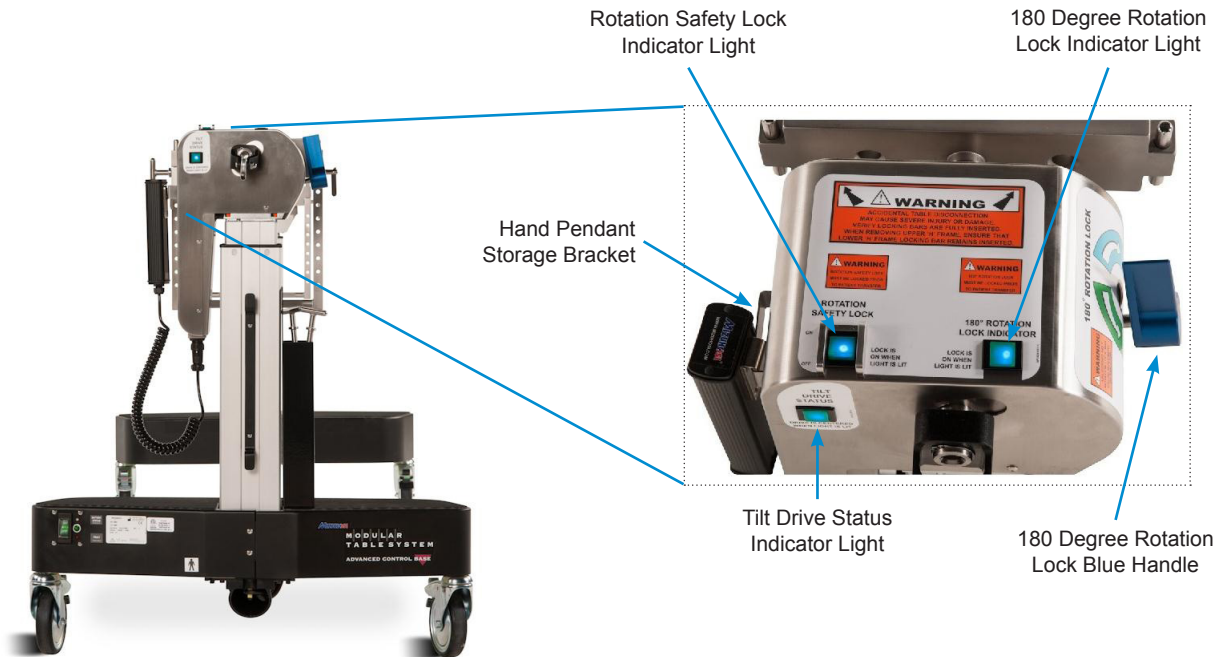


Figure 6: Pivot Assembly of the Head-End Column

The Head-End Pivot Assembly also features the 180 Degree Rotation Lock blue handle, the Traction Pulley, and the Hand Pendant Storage Bracket.

3.3 Foot-End Column of the Advanced Control Base

The Foot-End Column of the Advanced Control Base contains the Traction Arc Interlocking Switch and a second Quiver for T-Pin Storage as well as one steering caster and one locking caster (Figure 7).

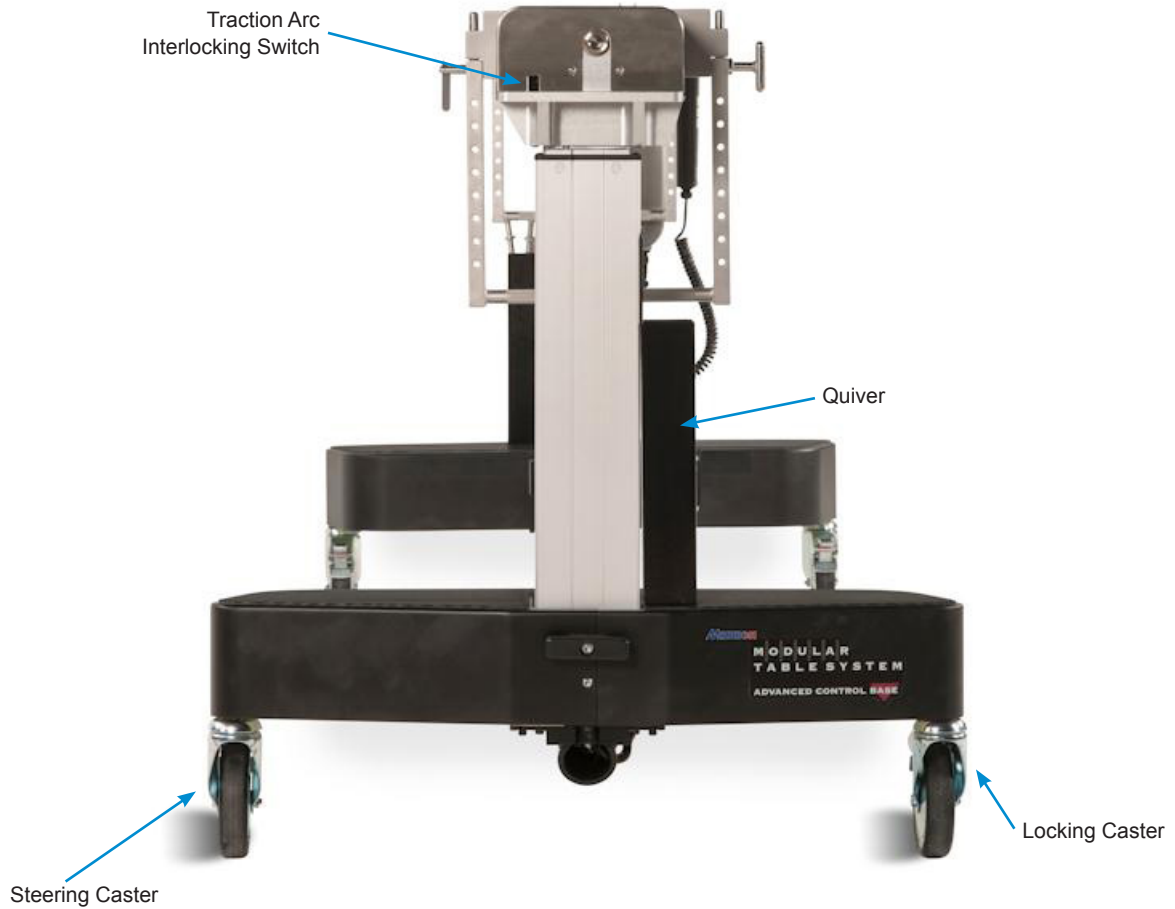


Figure 7: Foot-End Column of the Advanced Control Base

3.4 Model Number and Serial Number



Figure 8: Manufacturer's Label, Outside Base of Head-End Column

In addition to the **REF** product number and **SN** serial number, the following information is provided on the manufacturer's label:

Duty Cycle: 4% / 2.5 min. per 60 min.

Voltage: varies with product number:

REF 5803 (120V 60Hz)

REF 5803I (220-230V 50/60Hz)

REF 5803J (100V 50/60Hz)


4 Basic Operation

4.1 Control Operation

For use with AC power:

1. Plug the Power Cord into a properly grounded receptacle. Refer to the manufacturer's label at the Head-End of the Base for input voltage requirements (Figure 8, page 16).
2. Toggle the Power Switch to the ON position and observe the green light in the switch and on the indicator light located on the Base, indicating that power is applied to the table. This rocker switch is a combination ON/OFF Power Switch, circuit breaker and pilot light.
3. If the AC power cable is not connected to an outlet with a protective earth ground, then the external ground stud should be connected to a protective earth ground (Figure 5, page 13).



WARNING:  This symbol indicates an external ground stud that is required for use when the AC power cable is not connected to a protective earth ground hospital grade AC outlet in your operating room or facility or when the table is in use under battery power. Failure to ensure grounding may cause harm to the patient, healthcare workers or the table.

NOTE: *If the integrity of the AC power source is in doubt, the equipment shall be operated from its internal electrical power source (battery).*

For use with battery power:

1. Ensure that the battery has been properly charged as outlined in Section 9.5 Battery System. Toggle the Power Switch to the ON position. The battery status LED on the Hand Pendant and the battery status indicator light located on the Base should be green, indicating a charged battery. If the battery status LED on the Hand Pendant or the battery status indicator light located on the Base is red, the battery is not charged and the table should only be used with AC power.
2. To protect the patient, hospital staff and the table from possible electrical hazards, an external ground wire connection is required between the external ground stud and protective earth ground when the table is in use under battery power (Figure 5, page 13).

The expected working life of a fully charged battery is approximately eight (8) hours at 4% duty cycle/2.5 minutes per 60 minutes. While in storage, it is recommended that the table be plugged in and the Power Switch toggled to the ON position so that the battery remains charged. If this is not possible, the battery must be charged for a minimum of three hours per week. This can be accomplished when using the table under AC power.

If during use, the Battery Status LED on the Hand Pendant or the battery status indicator light located on the Base illuminates red, the table should be connected to AC power and it can continue to be utilized while the battery is charging.

If an anti-static pathway is required, the Advanced Control Base should be used on an anti-static floor. The anti-static properties of the table depend upon the use of the recommended pad.

4.2 Casters

The Advanced Control Base is equipped with three (3) locking casters and one (1) steering caster. The steering caster is located on the right side of the Foot-End Column and allows the Base to roll along a straight path when pushed from the Head-End. The steering caster is identified with a green label marked "Steer" (Figure 9). The remaining three (3) locking casters are each identified with a red label marked "Brake" (Figure 9).



Figure 9: Steering and Locking Casters Located on the Foot-End

To lock the Base securely in place, each of the four caster locks must be engaged. To lock a caster lock, step on the lock tab until you hear an audible click, and ensure that the tab remains in the down locked position (Figure 11). To unlock the caster, push up on the lock tab until you hear an audible click and either the green or red label is visible (Figure 10).



Figure 10: Unlocked Caster Position



Figure 11: Locked Caster Position

4.3 Moving the Advanced Control Base

With all four casters in the unlocked position, the Base can be moved for relocation. It is recommended that the Advanced Control Base be moved by two people, with one positioned at the Head-End and one positioned at the Foot-End in order to ensure the Base travels in the desired direction.

4.4 Hand Pendant

The Hand Pendant is connected to the Base at the Head-End Column. To connect, align the pins of the cable connector with the port, insert and turn the locking collar to the right securing the pins in the port (Figure 12). If the Hand Pendant is disconnected or connected while the table is operational, the Power Switch must be toggled to OFF for ten (10) seconds and then toggled back to ON after re-attaching the Hand Pendant in order for the Hand Pendant to function. It is recommended to only connect or disconnect the Hand Pendant when the Power Switch is toggled to the OFF position.

NOTE: Only connect the Hand Pendant supplied with the Advanced Control Base to the Hand Pendant Port.



Figure 12: Connecting the Hand Pendant

Once connected, the Hand Pendant can be hung on the storage bracket located on the Head-End (Figure 13).



Figure 13: Hand Pendant Hung on the Storage Bracket on the Head-End

The Advanced Control Base functions are controlled by the Hand Pendant. To activate a function or motion, a button must be pressed and held until the function is completed or the desired position is achieved. The buttons are labeled on the Hand Pendant identifying what function or motion can be achieved (Figure 14, page 21).

NOTE: *It is recommended that a table top always be installed prior to activating any of the Base's function or motion capabilities.*



INDICATOR LIGHTS: The three lights correspond to the 180 Degree Rotation Lock, Rotation Safety Lock, and the Tilt Drive Status found on the Head-End of the Base. All three lights must be illuminated prior to transferring a patient to the table top.

HEIGHT: To raise or lower the Height of the Base, press and hold the appropriate **HEIGHT UP** or **HEIGHT DOWN** button until the desired height is achieved.

TRENDELENBURG/REVERSE TRENDELENBURG: To raise or lower the Foot-End of the Base relative to the Head-End, press and hold the appropriate **TREN** or **REV TREN** button until the desired position is achieved.

LATERAL ROLL: To roll (tilt) the Base, press and hold the appropriate **LEFT LATERAL ROLL** or **RIGHT LATERAL ROLL** button until the desired position is achieved.

FAULT: If the Indicator Light illuminates red, there is an electrical fault that must be addressed and resolved prior to using the Base.

BATTERY STATUS: The Indicator Light illuminates Green, **OK**, indicating the battery is charged and the table is ready to use. The Indicator Light illuminates Red, **CHARGE**, indicating the battery must be charged for a minimum of three (3) hours.

NOTE: *The Base may be used on line power if the battery is not fully charged.*

Figure 14: Hand Pendant Functions

The Lateral Roll (Tilt) function is inoperable when a Traction Arc is mounted on the Base causing the Traction Arc Interlocking Switch at the Foot-End to be engaged. The Traction Arc is used with the Orthopedic Trauma Top or the Pelvic Reconstruction Kit.

4.5 Indicator Lights



WARNING: Failure to ensure that all three blue indicator lights are illuminated prior to patient transfer may result in harm to the patient, healthcare workers or the device.

4.5.1 180 Degree Rotation Lock

The 180 Degree Rotation Lock locks the Head-End Crossbar. The indicator light illuminates blue when the 180 Degree Rotation Lock is engaged and in the locked position (Figure 15). If the 180 Degree Rotation Lock indicator is not illuminated blue, turn the blue handle clockwise until the light illuminates. To disengage the 180 Degree Rotation Lock, turn the blue handle counterclockwise, or in the direction of the unlock arrow, which will unlock only the Head-End Crossbar.

NOTE: If a 180 Degree patient rotation is to be performed, the blue handle should be rotated counterclockwise approximately one half rotation past the point that the 180 Degree Rotation Lock indicator light goes out. Turning the 180 Degree Rotation Lock to this point lessens the drag of the friction control, thereby allowing the table tops to rotate more freely during the rotations. If even less friction is desired, the blue handle may be turned further counterclockwise as necessary. If more friction is desired, turn the blue handle clockwise.

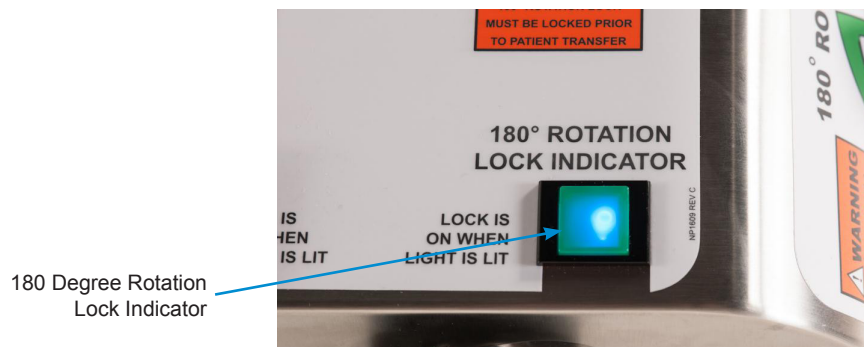


Figure 15: 180 Degree Rotation Lock Indicator Light



WARNING: When the 180 Degree Rotation Lock indicator light is not illuminated, the table top is UNLOCKED regardless of how much the blue handle has been turned clockwise or counterclockwise.

4.5.2 Rotation Safety Lock

The Rotation Safety Lock switch locks out the 180 degree rotation function by locking the Foot-End Crossbar. This feature is designed to prevent the unintended rotation of the table top. The indicator light illuminates blue when the Rotation Safety Lock is engaged and the switch is in the ON position (Figure 16). If the Rotation Safety Lock indicator is not illuminated blue, toggle the Rotation Safety Lock switch to the ON position. To unlock the Rotation Safety Lock, toggle the Rotation Safety Lock switch to the OFF position, which will unlock only the Foot-End Crossbar.



Figure 16: Rotation Safety Lock Indicator Light

Only when both the 180 Degree Rotation Lock and the Rotation Safety Lock are in the unlocked position will the Head-End and Foot-End Crossbars move freely, allowing for the attached table tops to be rotated.

NOTE: *These functions are specifically used for rotating a patient 180 degrees. When a rotation is not being performed, both the 180 Degree Rotation Lock and the Rotation Safety Lock should remain locked with the corresponding blue indicator lights on both the Head-End Column and Hand Pendant illuminated.*



WARNING: Failure to ensure that the 180 Degree Rotation Lock and the Rotation Safety Lock are locked with the corresponding blue indicator lights on both the Head-End Column and Hand Pendant illuminated may result in harm to the patient, healthcare workers or device.

When the 180 Degree Rotation Lock and the Rotation Safety Lock are both engaged and the corresponding indicator lights are illuminated, the table top can still be laterally rolled (tilted) by pressing the Left or Right Lateral Roll button on the Hand Pendant until the desired position is achieved.

4.5.3 Tilt Drive Status

The Tilt Drive Status indicator light illuminates blue when the powered lateral tilt drive mechanism is in the center position of the +/- 25 degree lateral roll (tilt) range, with the Head-End and Foot-End Crossbars level with the end of each respective column. If the Tilt Drive Status indicator is not illuminated, use the Hand Pendant to operate the Lateral Roll (Tilt) function in the appropriate direction to bring the table top level, resulting in the indicator light illuminating blue (Figure 17). The Head-End Crossbar should be horizontal when

the Tilt Drive Status indicator light is illuminated. If the Head-End Crossbar is not horizontal when the Tilt Drive Status indicator is illuminated, then the internal power tilt mechanism is out of synchronization with the Crossbar and will need to be reset. Refer to Section 7.2 for directions on how to complete the synchronization of the lateral tilt function.

NOTE: *During a patient rotation or if the Lateral Roll (Tilt) function is in use, the Tilt Drive Status indicator will not be illuminated, indicating the table top is not level.*

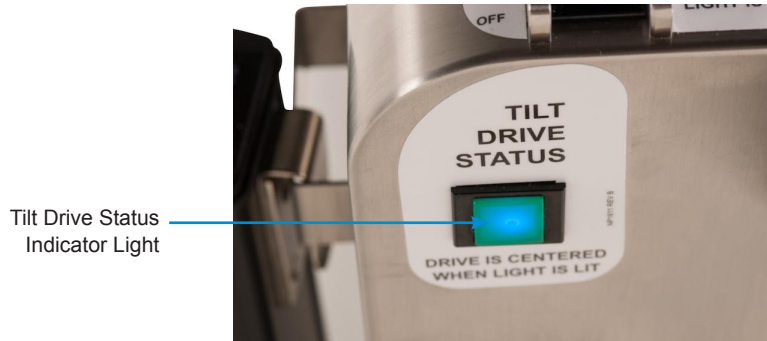


Figure 17: Tilt Drive Status Indicator Light

4.6 Traction Pulley Assembly

The Traction Pulley Assembly, located on the Head-End Column, provides a platform for a traction rope to be guided through the pivot shaft and over the pulley system in order to pull weighted traction (Figure 18).



Figure 18: Traction Pulley on Head-End Assembly

4.7 Retracting the Advanced Control Base for Storage

For purposes of storage, the Advanced Control Base Center Beam can be retracted, reducing the length of the Base from 102 inches (259.1 cm) to 64 inches (162.6 cm).

To retract the Base:

1. Lock the Head-End Casters.
2. Unlock the Foot-End Casters.
3. Loosen the Retracting Locking Knob on the Center Beam (Figure 19) by turning the Knob counterclockwise. The Locking Knob shall be locked whenever a table top is installed.

NOTE: *This Knob will become completely separated from the Base if turned many times.*

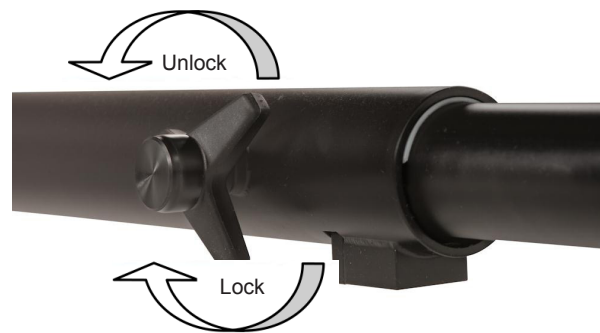


Figure 19: Retracting Locking Knob on Center Beam

4. Push the Foot-End of the Base toward the Head-End of the Base until the Base is retracted to its minimum length of 64 inches (Figure 20, page 26).
5. Tighten the Locking Knob to its locked position by turning the Knob clockwise.
6. Unlock the Head-End Casters and with the assistance of a second person, move the Base to storage.
7. When in storage, ensure the Power Cord is connected to power receptacle located on the Head-End. Plug the Power Cord into a properly grounded AC power source as indicated on the manufacturer's label located on the outside base of the Head-End.
8. Toggle the Power Switch to ON.

NOTE: *When the Advanced Control Base is not in use, it is recommended that the Base be plugged in and turned ON in order to maintain a battery charge.*



Figure 20: Advanced Control Base in its Fully Retracted Position

4.8 Table Top Storage on the Base

Storing a table top on the retracted Advanced Control Base is possible through the use of an optional accessory, **REF** 5890-81, Table Top Storage Bracket.

To store a table top on the Base:

1. With the assistance of two people, remove the table top by removing the T-Pins supporting the table top to the H-Frames. Place T-Pins in Quiver. It is not necessary to remove the H-Frames from the Crossbars. If they are removed, store both H-Frames on the Foot-End Storage Bracket.
2. Retract the Base (refer to Section 4.7).
3. Attach the Table Top Storage Bracket by placing it over the top of the Foot-End Crossbar of the Advanced Control Base and lowering it such that it rests on both the top and bottom surface of the Crossbar. Tighten the gold handle to secure the Bracket to the Crossbar (Figure 21, page 27).

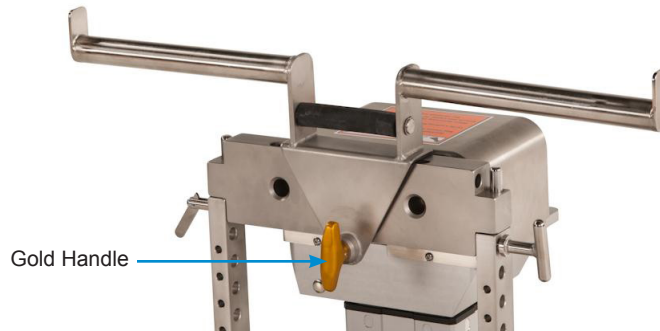


Figure 21: Table Top Storage Bracket Mounted on Foot-End Crossbar

4. Using the Hand Pendant, depress the Trendelenburg button to raise the Foot-End Column to its highest position.
5. Place one end of the table top in the Head-End H-Frame Storage Bracket.
6. Lean the table top such that it rests on the Table Top Storage Bracket installed on the Foot-End Crossbar (Figure 22).



Figure 22: Table Top Stored on Advanced Control Base with Use of Table Top Storage Bracket

7. Toggle the Power Switch to OFF. Unplug the Base from the power outlet and store the Cord on the Cord Wrap.

8. The Base and table top are now ready for storage.
9. Unlock the Head-End Casters and with the assistance of a second person, move the Base to storage.
10. When in storage, ensure the Power Cord is connected to power receptacle located on the Head-End. Plug the Power Cord into a properly grounded AC power source as indicated on the manufacturer's label located on the outside base of the Head-End.
11. Toggle the Power Switch to ON.

NOTE: *When the Advanced Control Base is not in use, it is recommended that the Base be plugged in and turned ON in order to maintain a battery charge.*

5 Inspection

5.1 Acceptance and Transfer

1. Upon receipt of your Advanced Control Base, remove it from the shipping crate. Remove any protective wrapping or packaging. Visually inspect all surfaces for freight damage. Check each caster for proper rolling operation.

NOTE: *Any freight damage must be reported to the freight carrier immediately upon delivery. It is the responsibility of the recipient to make freight damage claims.*

2. Read the model number, serial number and confirm the power requirements on the manufacturer's label located on the outside base of the Head-End Column (Figure 8, page 16).
3. Perform Function Check (refer to Section 7).

5.2 Pre-Procedure/Post-Procedure

Before and after each use of the Advanced Control Base, visually inspect all accessible areas, electrical cords and all movable parts for possible damage that may adversely affect the proper operation of the Base. Damaged or defective products should not be used or processed. Contact Mizuho OSI Service for repair or replacement (see Section 13).

5.3 Preventative Maintenance

A Preventative Maintenance (PM) check on this product is required at least once every year.

NOTE: *If the device is excessively or abusively used, the manual rotation locking mechanism and Foot-End locking mechanism should be regularly checked to ensure the 95 ft/lb torque is maintained.*

To obtain the PM checklist call Mizuho OSI Service (see Section 13). PM checks may only be performed by trained service personnel.

5.4 Product Lifetime

At the time of delivery, your product fulfills existing regulations and standards; however, despite proper use, routine inspection, prescribed service, maintenance and repairs, the product is subject to aging and wear. Therefore, Mizuho OSI cannot guarantee the product's safety after ten (10) years and recommends your product be taken out of service. For product warranty information, refer to Section 13 of this manual.

6 Installing a Table Top

NOTE: *This device is intended for use by trained personnel. Prior to installing a table top, ensure personnel have been trained. To schedule an in-service, please contact your domestic Mizuho OSI sales representative or call 1-800-777-4674 in the US or +1-510-429-1500 internationally.*

To prepare the Advanced Control Base for installation of a table top, complete the following steps:

1. Roll the Base to where it will be used, and orient the Head-End Column toward the anesthesiologist work station.
2. If the Base has been in its retracted configuration, unlock the Retracting Knob and pull the Head-End and Foot-End Columns in opposite directions until the unit is fully expanded. Lock the Retracting Knob.
3. Lock the four (4) Casters of the Base.
4. Plug the Power Cord of the Advanced Control Base into a properly grounded receptacle. Refer to the manufacturer's label at the Head-End of the Base for input voltage requirements (**Figure 8**, page 16). If the AC power cable is not connected to an outlet with a protective earth ground, then the external ground stud should be connected to a protective earth ground.
5. Connect the Hand Pendant to the port on the Head-End (Figure 12, page 19).
6. Toggle the Power Switch to the ON position.
7. Confirm the Rotation Safety Lock switch is illuminated (Figure 23).
8. Confirm the 180 Degree Rotation Lock indicator light is illuminated (Figure 23).
9. Confirm the Tilt Drive Status indicator light is illuminated (Figure 23).



Figure 23: Head-End Assembly with Indicator Lights Illuminated

NOTE: *This manual is intended to be used solely for the device identified and is not a substitute or replacement for the Owner's Manual for each modular table top. A thorough understanding of each table top and its coupling mechanism to the Base is required prior to use.*

NOTE: *The Spinal Surgery Top and the Radiolucent Imaging Top must have gimbals in order to be used with the **REF** 5803 / 5803I / 5803J Advanced Control Base. Gimbaled table tops allow for proper rotation of the top when in extreme lateral tilt and Trendelenburg/reverse Trendelenburg.*

NOTE: Only Mizuho OSI table tops and accessories have been tested and approved for use with the Advanced Control Base. Other manufacturers' products have not been tested for proper performance when used with the Base, and therefore are not endorsed for use by Mizuho OSI. Use of other manufacturer's products may void the warranty.

To install a table top that requires H-Frames (Spinal Surgery Top and Radiolucent Imaging Top) :

1. Remove the H-Frame from the H-Frame Storage Bracket located on the Head-End Column, and remove a T-Pin from the Quiver.
2. Install the H-Frame to the Head-End Crossbar by aligning the holes on the bottom of the H-Frame with the posts on the Crossbar (Figure 24), and secure it in place with a T-Pin (Figure 25).

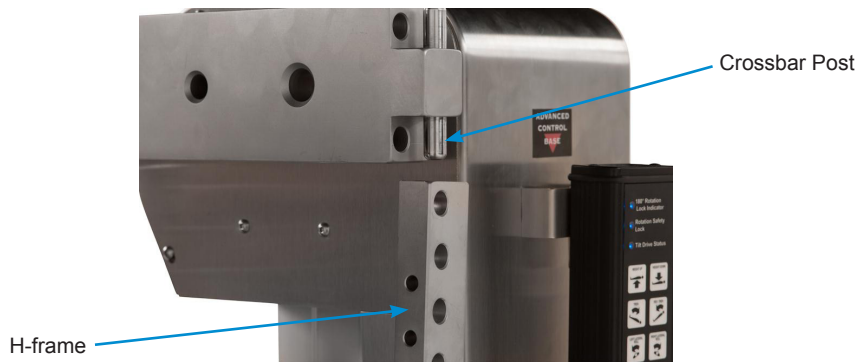


Figure 24: Attaching H-Frame to the Crossbar

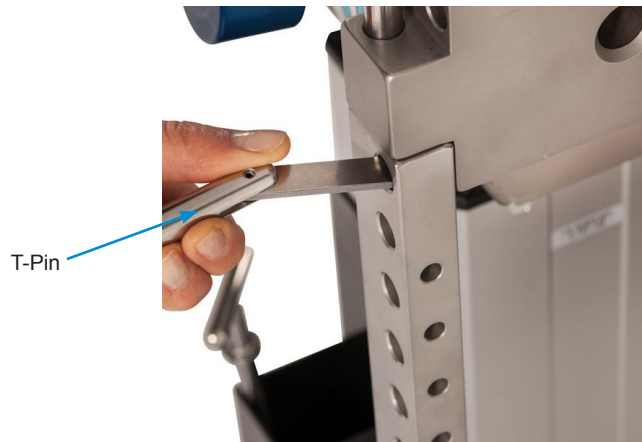


Figure 25: Inserting T-Pin to Secure H-Frame to Crossbar

3. Pass the T-Pin completely through the Crossbar such that the Drop Lock is visible and pivots freely on the opposite side (Figure 26, page 32).

NOTE: When the T-Pin is installed properly with the Drop Lock visible and pivoting freely, the T-Pin cannot be accidentally removed when pulled.

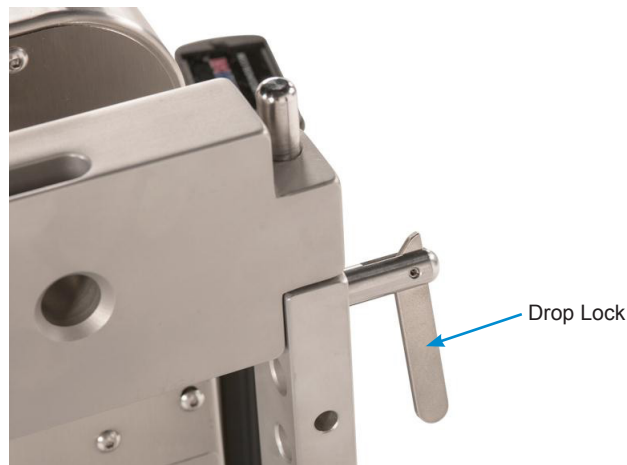


Figure 26: T-Pin Drop Lock Visible after Proper H-Frame Installation

4. Remove the H-Frame from the H-Frame Storage Bracket located on the Foot-End Column, and remove a T-Pin from the Quiver.
5. Install the H-Frame to the Foot-End Crossbar by aligning the holes on the bottom of the H-Frame with the posts on the Crossbar (Figure 24, page 31), and secure it in place with a T-Pin (Figure 25, page 31).
6. Pass the T-Pin completely through the Crossbar such that the Drop Lock is visible and pivots freely on the opposite side (Figure 26).

NOTE: *When the T-Pin is installed properly with the Drop Lock visible and pivoting freely, the T-Pin cannot be removed when pulled.*



WARNING: Failure to install the T-Pin properly with the Drop Lock visible and pivoting freely may result in harm to the patient, healthcare workers or the device.



WARNING: T-Pins extended through the Crossbars and table top supporting the patient should never be removed with the patient on the table top. Removing these T-Pins may result in harm to the patient, healthcare workers or the device.



Figure 27: H-Frame Properly Installed on Foot-End Crossbar

7. The Head-End Column has a Slide Assembly that adjusts to accommodate Trendelenburg and reverse Trendelenburg. Fully retract the Slide Assembly to allow adequate space for a table top to be installed.
8. With an H-Frame properly secured to each of the Columns, a gimballed table top may now be mounted to the H-Frame (Figure 28).



Figure 28: Gimbal on One End of Spinal Surgery Top

9. Selection of the appropriate mounting hole position on the H-Frame is determined by the patient's size such that his or her center of gravity is at or below the center of rotation of the Crossbar. The specific procedure to be performed and the surgeon's preference should also be considered when choosing the appropriate mounting hole.

NOTE: Further information on the selection of the appropriate mounting hole is available within each of the table top Owner's Manuals.

NOTE: This manual is intended to be used solely for the Advanced Control Base and is not a substitute or replacement for the various table top Owner's Manuals.

10. With the assistance of two people, lift the table top into place, aligning it with the selected mounting holes in each H-Frame.
11. Secure the table top to the Foot-End H-Frame first with the use of a T-Pin. Pass the T-Pin completely through the H-Frame and the coupling device such that the Drop Lock is visible on the outside of the H-Frame and pivots freely (Figure 29).

NOTE: *When the T-Pin is installed properly through one side of the H-Frame, passing completely through the table top mounting tube, and then through the opposite side of the H-Frame, with the Drop Lock visible and pivoting freely, the T-Pin cannot be removed when pulled.*



WARNING: Failure to install the T-Pin properly through one side of the H-Frame, passing completely through the table top mounting tube, and then through the opposite side of the H-Frame with the Drop Lock visible and pivoting freely, may result in harm to the patient, healthcare workers or the device.



Figure 29: Attaching the Table Top to the H-Frame

12. To secure the table top to the Head-End H-Frame, confirm that the H-Frame and the Slide Assembly is pulled away from the Foot-End as appropriate to accommodate the length of the table top. Pass the T-Pin completely through the H-Frame and the coupling device such that the Drop Lock is visible on the outside of the H-Frame and pivots freely (Figure 29).

NOTE: *When the T-Pin is installed properly through one side of the H-Frame, passing completely through the table top mounting tube, and then through the opposite side of the H-Frame, with the Drop Lock visible and pivoting freely, the T-Pin cannot be removed when pulled.*



WARNING: Failure to install the T-Pin properly through one side of the H-Frame, passing completely through the table top mounting tube, and then through the opposite side of the H-Frame with the Drop Lock visible and pivoting freely at both the Head-End and Foot-End of the table may result in harm to the patient, healthcare workers or the table.

NOTE: *The Head-End and the Foot-End of the table top are usually mounted at the same hole in the respective H-Frames. An exception to this process may exist when extreme Trendelenburg is needed.*

13. The table top is now properly mounted to the Advanced Control Base (Figure 30, page 35).



Figure 30: Spinal Surgery Top Properly Installed on the Advanced Control Base

7 Function Check

NOTE: Perform all steps of the Function Check before every use of the Advanced Control Base.

For a complete definition of terms used in this procedure, please refer to the Glossary of Terms (refer to Section 2.9, page 8).

7.1 Table and Hand Pendant Functions

1. Toggle the Power Switch to the OFF position. Connect the Hand Pendant Cable Connector to the Hand Pendant Port located on the side of the Head-End Column.

NOTE: If the Hand Pendant is disconnected or connected while the table is operational, the Power Switch must be toggled to OFF for 10 seconds. It is recommended to only connect or disconnect the Hand Pendant when the Power Switch is toggled to the OFF position.

2. If the table is to be used under AC power, plug the Power Cord into a properly grounded receptacle. Refer to the manufacturer's label located on the outside base of the Head-End Base for input voltage requirements (**Figure 8**, page 16).
3. If the AC power cable is not connected to an outlet with a protective earth ground, then the external ground stud should be connected to a protective earth ground (**Figure 5**, page 13).
4. Toggle the Power Switch to the ON position and observe the green light in the switch and the indicator light, indicating that power is applied to the table.
5. If the Base is to be used under battery power, ensure that the battery has been properly charged as outlined in Section 9.5 Battery System. The battery status LED on the Hand Pendant should be green, indicating a charged battery. If the battery status LED on the Hand Pendant is red, the battery is not charged and the Base should only be used with AC power. To protect the patient, hospital staff and the table from possible electrical hazards, an external ground wire connection is required between the external ground stud and protective earth ground when the table is in use under battery power (**Figure 5**, page 13).
6. 180 Degree Rotation Locks Check:
 - a. Ensure the 180 Degree Rotation Lock is engaged by confirming the 180 Degree Rotation indicator light is illuminated blue. If the indicator light is not lit, turn the blue handle clockwise until the light illuminates blue.
 - b. Ensure the 180 Degree Rotation Safety Lock is engaged by confirming the switch is toggled to ON and the light in the switch illuminates blue.
 - c. Release the 180 Degree Rotation Lock by rotating the blue handle counterclockwise until the blue indicator light turns off.
 - d. Release the 180 Degree Rotation Safety Lock by toggling the switch to OFF and observing that the light in the switch is no longer illuminated blue.
 - e. Confirm the Head-End and Foot-End Crossbars are unlocked and rotate freely.

- f. Align the Crossbar with the top of the Head-End Column, and re-engage the Rotation Safety Lock by toggling the switch to ON. Re-engage the 180 Degree Rotation Lock by turning the blue handle clockwise. Observe that the corresponding indicator lights illuminate blue.
- g. Confirm the Head-End and Foot-End Crossbars are locked by confirming that both ends firmly resist rotation.

7. Hand Pendant check:

NOTE: Before testing the Base's functionality via the Hand Pendant, it is recommended that a table top be mounted on the Base. Refer to Section 6 of this manual or the Owner's Manual of the specific table top being used for instructions on how to mount the top.

NOTE: A thorough understanding of the use of the table top to be used and the Advanced Control Base is required prior to use and patient transfer. For complete instructions on preparing the specific table tops, refer to the respective Owner's Manuals, which provide detailed information regarding set-up, cleaning, and maintenance.



CAUTION: Attaching a table top to the Advanced Control Base without referring to the instructions provided in Section 6 of this manual or the respective table top Owner's Manual may result in damage to the table top and harm to the patient or healthcare workers.

- a. Press and hold the HEIGHT UP button. Observe that the Base rises through its entire range (Figure 31).
- b. Press and hold HEIGHT DOWN button. Observe that the Base lowers through its entire range (Figure 31).

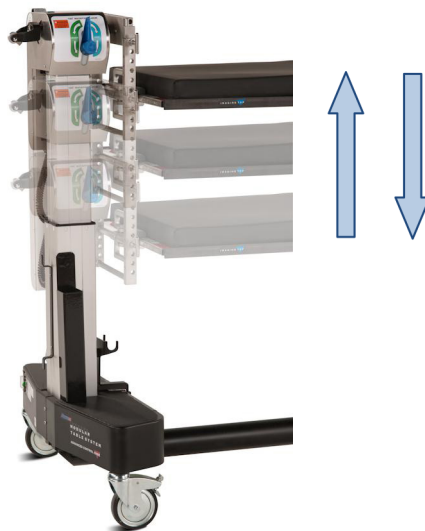


Figure 31: Base Height Up and Height Down through Full Range

- c. Press and hold REV. TREN button. Observe that the Head-End Column moves up its entire range and the Foot-End Column moves down its entire range.

- d. Press and hold TREN button. Observe that the Foot-End Column moves up its entire range and the Head-End Column moves down its entire range (Figure 32, page 38).



Figure 32: Advanced Control Base with Spinal Surgery Top in 10 Degree Trendelenburg

- e. Press and hold LEFT LATERAL ROLL button. Observe that the table top rolls (tilts) to the left through its entire range.

NOTE: Verify that the Rotation Safety Lock light illuminates blue when the LEFT LATERAL ROLL button is released.

- f. Press and hold RIGHT LATERAL ROLL button. Observe that the table top rolls (tilts) to the right through its entire range (Figure 33).

NOTE: Verify that the Rotation Safety Lock light illuminates blue when the RIGHT LATERAL ROLL button is released.



Figure 33: Advanced Control Base with Spinal Surgery Top in 25 Degree Right Lateral Roll

8. Battery operation check:

- a. Observe the BATTERY STATUS on the Hand Pendant. If the LED is illuminated green OK, then the table is ready to operate.

If the LED is illuminated red - CHARGE, the battery must be charged prior to using the Base. To charge the battery, ensure the Power Cord is plugged into a functioning receptacle and the Power Switch is toggled to the ON position. This switch and the power indicator light will illuminate green indicating that appropriate power is applied to the Base. The Base must remain plugged in and toggled ON for a minimum of three (3) hours to ensure sufficient charging of the battery to operate the table.

If the LED remains illuminated red - CHARGE after three (3) hours, continue to charge the battery for up to eighteen (18) hours.

If the LED does not illuminate green OK after eighteen (18) hours, refer to Section 9.5 Battery System for servicing instructions.

NOTE: *The table may be used with AC power even if the Battery Status LED is red, indicating the battery needs charging. If used during low battery, ensure the AC power is always plugged into the table. Failure to perform this required action may cause the device to malfunction.*

7.2 Synchronizing the Lateral Tilt Function

When properly synchronized, the Head-End Crossbar and the tilt drive mechanism operate such that the tilt drive is in the middle of its travel range when the Head-End Crossbar is level. At times, the Crossbar and the tilt drive may become unsynchronized following a manual rotation of the Crossbar. A manual rotation of the Crossbars may also result in the Head-End Crossbar and the Foot-End Crossbar becoming unsynchronized with each other, resulting in each being at a different tilt angle. Operating the Base without a table top installed may result in a lack of synchronization between the two Crossbars as well. Prior to use, the Crossbars must be synchronized to the tilt drive mechanism as well as to each other.

NOTE: *Never attempt to attach a table top to the Advanced Control Base if the Head-End and Foot-End Crossbars are not horizontal and level.*



WARNING: Attaching a table top to the Advanced Control Base if the Head-End and Foot-End Crossbars are not horizontal and level may result in damage to the table top or the tilt drive.



WARNING: Never attempt to synchronize the lateral tilt function with a patient on the table top. Attempting to do so may result in harm to the patient, healthcare workers or the table.

7.2.1 Evaluating Synchronization Status

1. Confirm that the 180 Degree Rotation Lock is engaged and the indicator lights on the Head-End Pivot Assembly and Hand Pendant are illuminated blue.
2. Confirm that the Rotation Safety Lock switch is toggled to ON and the indicator lights on the Head-End Pivot Assembly and Hand Pendant are illuminated blue.
3. If needed, use the Hand Pendant Lateral Roll (Tilt) buttons to rotate the Head-End Crossbar until it is level.
4. Confirm that the Tilt Drive Status indicator light illuminates on the Head-End Pivot Assembly and Hand Pendant indicating proper synchronization.
5. If the Head-End Crossbar does not level using the Hand Pendant Lateral Roll (Tilt) buttons and Tilt Drive Status indicator light does not illuminate, then the Head-End Crossbar and Tilt Drive are not synchronized.

7.2.2 Synchronizing the Lateral Tilt Function with Table Top Coupled to the Base

1. Confirm a table top is attached to H-frame and securely locked in place with T-pins (Section 6).
2. Confirm that there is no patient or load on the table top.



WARNING: Never attempt to synchronize the lateral tilt function with a patient on the table top. Attempting to do so may result in harm to the patient, healthcare workers or the table.

3. Rotate the 180 Degree Rotation Lock handle counter-clockwise until it is disengaged. The corresponding indicator light should not be illuminated.
4. Switch the Rotation Safety Lock to the OFF position. The switch should not be illuminated.



CAUTION: Switching the Rotation Safety Lock to the OFF position will allow the table top to swing freely. Ensure that no load is on the table as this may cause harm to the healthcare workers or the table.

5. The tilt drive mechanism will automatically return to the middle of its range. While this occurs, you will hear the tilt motor running, but the table top will only rotate a little (if at all).
6. When the tilt motor stops, observe the Tilt Drive Status light. If it is illuminated, then the drive is in the middle of its travel range.
7. Verify that the Head-End and Foot-End Crossbars are level.
8. Switch the Rotation Safety Lock to the ON position. The indicator light should illuminate.
9. Rotate the 180 Degree Rotation Lock handle clockwise until it is engaged and the corresponding indicator light illuminates.
10. The Tilt Drive is now synchronized to the Crossbars, and the Crossbars are synchronized to each other.

7.2.3 Synchronizing the Lateral Tilt Function Without a Table Top Coupled to the Base

1. If a table top is coupled to the Base, remove it before proceeding with this method of synchronization.
2. Rotate the 180 Degree Rotation Lock handle counter-clockwise until it is disengaged. The corresponding indicator light should not be illuminated.



CAUTION: Disengaging the 180 Degree Rotation Lock will allow the Head-End Crossbar to swing freely.

3. Switch the Rotation Safety Lock to the OFF position. The switch should not be illuminated.



CAUTION: Switching the Rotation Safety Lock to the OFF position will allow the Foot-End Crossbar to swing freely.

4. The Tilt Drive mechanism will automatically return to the middle of its range. While this occurs, you will hear the tilt motor running, and the Head-End Crossbar may rotate.
5. When the tilt motor stops, observe the Tilt Drive Status Light. If it is illuminated, then the tilt drive is in the middle of its travel range.
6. Manually level the Head-End Crossbar.
7. Manually level the Foot-End Crossbar.

8. Switch the Rotation Safety Lock to the ON position. The indicator light should illuminate.
9. Rotate the 180 Degree Rotation Lock handle clockwise until it is engaged and the corresponding indicator light illuminates.
10. The Tilt Drive is now synchronized to the Crossbars, and the Crossbars are synchronized to each other.

8 Cleaning, Storage, and Maintenance

8.1 Cleaning and Disinfecting

NOTE: Clean and disinfect the Advanced Control Base after each use.

8.1.1 Advanced Control Base Exterior

The exterior surface, including the casters, should be regularly wiped clean with a mild detergent solution and wiped dry with a soft lint-free cloth.

Care should be taken to avoid exposing the Base to excessive moisture. Flooding, fogging or steam cleaning is not recommended.



CAUTION: Never pour any liquid directly onto the Advanced Control Base. Never subject the Advanced Control Base to an equipment washing machine or spray with water.

Blood or other fluids, if allowed to remain on the Base for a long period of time, will require special cleaning to remove. A 5% acetic acid solution or white vinegar and water solution is especially good for this purpose.

NOTE: Use of iodophors will cause staining.

To remove staining or discoloration of plated or stainless steel surfaces, clean with a commercial cleaning compound labeled for stainless steel and then buff the surface by hand.

To disinfect exterior surfaces, including the casters, use a quaternary ammonium disinfectant compound according to manufacturer's directions for use. Wipe dry with a soft lint-free cloth.

NOTE: Failure to thoroughly dry the surface after cleaning and disinfecting may result in rust or damage to the surface.

8.2 Storage

When not in use, the Advanced Control Base should be stored in a clean, dry environment.

The following conditions are required of the shipping and or storage environment:

- Ambient temperature -4 °F (-20 °C) to 122 °F (50 °C)
- Relative humidity from 10% to 95%, non-condensing
- Atmospheric pressure from 75 to 105 kPa

When in storage, the table cover provided with each table top serves as a dust cover and should be used. To ensure that the battery is always fully charged and ready for use, store the table connected to AC power which matches the ratings on the manufacturer's label on the outside Base of the Head-End column. (**Figure 8**, Page 16). The Power Switch must be toggled to the ON position for the battery to charge.

8.3 Maintenance

8.3.1 Battery Maintenance

If the battery fails to hold a charge, it should be replaced. Replace only with an identical type and size battery. (refer to Section 11.1.6, page 56).

Replace both batteries at the same time if new batteries are required.

Batteries shall be replaced every five (5) years.

Whenever the battery cover is opened, check the battery for signs of corrosion. The battery terminals should be clean and free from corrosion, oil, grease, dirt, or other contaminants.

Battery ordering number: **REF** 5803-503 (Replacement Battery Kit)

NOTE: *Failure to use an approved Mizuho OSI battery voids the warranty and may cause harm to the Advanced Control Base.*

8.3.2 Preventative Maintenance

Cleaning the Advanced Control Base surfaces after each use will assure many years of trouble-free service. All components are lubricated for life at the factory and no other lubrication for the Base is required.

Preventative Maintenance:

Contact Mizuho OSI Service for a complete preventative maintenance checklist.

For detailed repair information or to order replacement parts, call or contact via the web the Mizuho OSI Service:

1-800-777-4674, Option 2 (calls within the USA)

Or

+1-510-429-1500, Option 2 (calls outside the USA)

+1-510-429-8500 (Fax, Domestic and International)

service@mizuhosi.com

www.mizuhosi.com

Mizuho OSI Service is available from 5 am to 5 pm Pacific Time Monday through Friday. Please leave a message at extension 2 after normal business hours.

9 Electrical System

9.1 Description

The electrical system provides control of all the table functions and is comprised of the following:

- Power Cord
- ON/OFF Circuit Breaker Power Switch
- Linear Actuators
- Battery System

Electric motor driven lead screw-type actuators	The Height, Lateral Roll and Trendelenburg functions are controlled by the Hand Pendant.
Input power requirement for the Advanced Control Base	5803J 100V, 50/60Hz; 5803 120V, 60Hz; or 5803I 220-230V, 50/60Hz as indicated on the manufacturer’s label (Figure 8, page 16).

9.2 Power Cord

The Base is equipped with a standard IEC Power Cord with the appropriate hospital grade connector. The Power Cord is connected to the table at the IEC power receptacle located on the beam side of the Head-End Column (Figure 5, page 13).

9.3 On/Off Circuit Breaker Power Switch

An ON/OFF Power Switch is located on the outside of the Head-End column (Figure 4, page 12). When the Power status light next to the Power Switch is illuminated green, it indicates that the Base is turned ON. This green light will be illuminated when the Base is operating under either AC power or battery power.

This switch also serves as a Circuit Breaker and may be used to stop all motion. In the event of an overload condition this switch will trip OFF. To reset the Base, toggle the Power Switch to the OFF position and then to the ON position.

NOTE: Determine the source of the overload prior to resetting this switch.

9.4 Linear Actuators

There are four linear actuators in the Base:

- Two of the actuators are 24V columns; one located at the Head-End Column and the other at the Foot-End Column.
- The other two actuators are small 24V actuators; one at the Head-End for Base Tilt (Tilt actuator) and one at the Foot-End for the Rotation Lock (Rotation Lock actuator) located under sheet metal covers.

The Hand Pendant controls the Head-End and Foot-End Columns and the Tilt actuator. The rocker switch controls the Rotation Lock actuator.

9.5 Battery System

The Advanced Control Base uses two (2) 12-volt batteries in series to provide 24-volts:

- When the Battery Status LED on the Hand Pendant and the Battery Status indicator located on the base of the Head-End Column are illuminated **green**, the batteries are charged and the Base may be used under battery power.
- When the Battery Status LED on the Hand Pendant or the Battery Status indicator located on the base of the Head-End is **red**, the batteries require charging.

To charge, plug the Power Cord into an appropriate hospital grade AC outlet and toggle the Power Switch to the ON position.

NOTE: *While in storage, the batteries should be charged for a minimum of three (3) hours. The batteries are only charged while the table is on AC power and the Power Switch is in the ON position.*

Normal battery operation is approximately 4% duty cycle\2.5 minutes per 60 minutes.

If recharge is required, charge a minimum of three (3) hours. A full charge should be available after eighteen (18) hours.

If the battery status light remains illuminated red after three (3) hours, do not attempt to operate the Base under battery power and contact Mizuho OSI Service (see Section 13). The Base should only continue to be used under AC power. If used on low battery, ensure the AC power is always plugged into the table. Failure to perform this required action may cause the device to malfunction.

10 Troubleshooting

10.1 Electrical System

In the event of a Base malfunction, confirm that the Power Cord is plugged into a live electrical outlet and the Power Switch is in the ON position and illuminated green.

10.2 Base



WARNING: Before removing any sheet metal covers, the Base must be turned off and unplugged. Dangerous high voltage may be present in the circuitry under the covers. Only trained technicians should perform this task.

Symptom	Action
Base will not turn on and none of the indicators are lit	<ol style="list-style-type: none"> 1. Verify the Power Cord is plugged into an appropriate AC receptacle and into the Power Cord receptacle. 2. Verify that the Power Switch is ON and illuminated green. 3. Verify that the Power Cord Receptacle is not damaged. 4. If the table still does not power on, contact Mizuho OSI Service (see Section 13).
Head-End or Foot-End Columns do not function	<ol style="list-style-type: none"> 1. Verify that the Power Cord is connected to the Base. 2. Verify that the Power Switch is ON and illuminated green. 3. Verify the Hand Pendant is connected to the Base and the backlight is illuminated. 4. Visually check that the Power Cord is firmly connected to the base of the table. 5. If the problem persists, contact Mizuho OSI Service (see Section 13).
Casters will not engage or disengage	<ul style="list-style-type: none"> • Visually inspect the mechanical brake at the very tip of the caster. Check if the brake engages or not. • Replace the casters if needed (refer to Section 11.1.18, page 76).
Battery Status and Fault Light indicators are both red	<ol style="list-style-type: none"> 1. Verify the Power Cord is plugged into an appropriate AC receptacle and into the Power Cord Receptacle. 2. Leave the Base plugged in for 18 hours and the Power Switch toggled to ON. <ul style="list-style-type: none"> • If both indicators are still red, replace the battery (refer to Section 11.1.6, page 56).

<p>Fault Light indicator is red</p>	<ol style="list-style-type: none"> 1. Toggle the Power Switch OFF and leave it off for 2 minutes. 2. Toggle the Power Switch ON, observe if the backlight on the Hand Pendant illuminates and the Fault Light is dark, indicating the issue is resolved. 3. If the Fault Light is still red, contact Mizuho OSI Service (see Section 13).
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10.3 Hand Pendant

Symptom	Action
<p>Height Up/Height Down and/or Trendelenburg/Reverse Trendelenburg buttons do not function</p>	<ol style="list-style-type: none"> 1. Verify that the Power Cord is connected to the Base. 2. Verify that the Power Switch is ON and illuminated green. 3. Verify that the Hand Pendant is connected to the Base and the backlight is illuminated. 4. Press and hold the Height Up/Height Down buttons on the Hand Pendant. The columns should rise, and then lower. 5. If the column is still not functional, contact Mizuho OSI Service (see Section 13).
<p>Lateral roll (tilt) left or right buttons do not function</p>	<ol style="list-style-type: none"> 1. Verify that the Power Cord is connected to the Base. 2. Verify that the Power Switch is ON and illuminated green. 3. Verify that the Hand Pendant is connected to the Base and the backlight is illuminated. 4. Verify the 180 Degree Rotation Lock indicator is illuminated. 5. Verify the Rotational Safety Lock Switch toggles ON (the indicator illuminates) and OFF (the indicator is dark). 6. Verify that the Traction Arc is not installed as this will disable the lateral roll (tilt) function. 7. If the problem persists, contact Mizuho OSI Service (see Section 13).

11 Removal, Replacement, and Adjustment of Components

11.1 Removal and Replacement of Components



WARNING: To prevent electrical shock, power OFF the Base and wait for 30 seconds to discharge before removing and replacing any component.



CAUTION: To prevent electrical shock, remove the Base Cover, Foot-End and disconnect the negative wire at the battery terminal before removing and replacing any component.

11.1.1 Base Cover, Foot-End



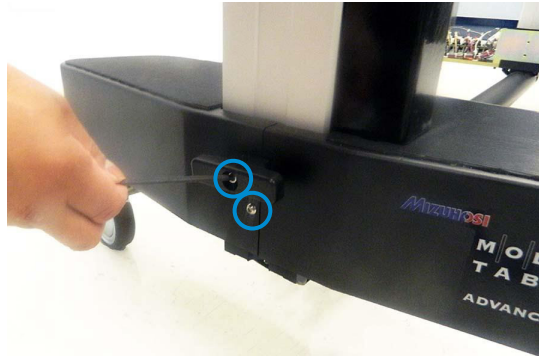
CAUTION: Electrical shock hazard exists with access covers removed; use caution when working in exposed areas.

1. Remove any table top and H-frame(s).
2. Power OFF the Base and wait for 30 seconds to discharge.
3. Remove the side and top screws holding the H-Frame holder bracket to remove the bracket.



Remove these screws (circled in blue) to remove the H-Frame bracket

4. Remove the screws on the other side of the Foot-End base.



Remove all screws on both sides of Foot-End base

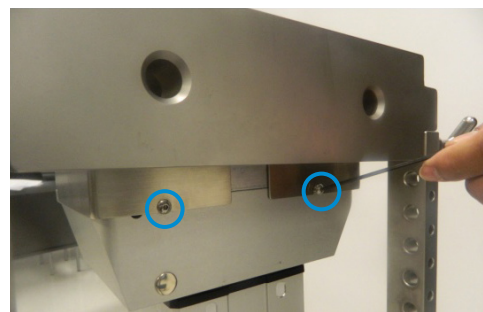
5. Complete the task for which the cover was removed. Ensure the gaskets between the covers are in contact with the covers when replaced, and they are without damage. The gaskets are designed to stop fluid ingress into the base section.
6. Replace and reassemble in reverse order.

11.1.2 Foot-End Cover



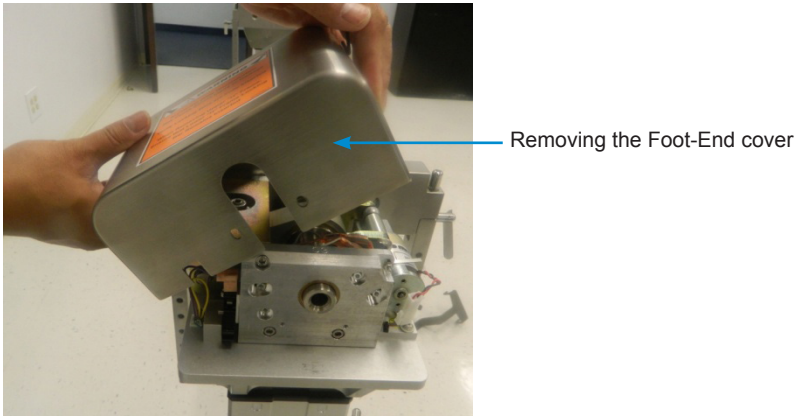
CAUTION: Electrical shock hazard exists with access covers removed; use caution when working in exposed areas.

1. Remove any tabletop and H-frame(s).
2. Power OFF the table and wait for 30 seconds to discharge.
3. Remove the Base Cover, Foot -End to disconnect the negative wire at the battery terminal (refer to Section 11.1.1, page 48).
4. Remove screws from the Foot-End cover.



Foot-End cover screws (circled in blue)

- Carefully remove the Foot-End cover.



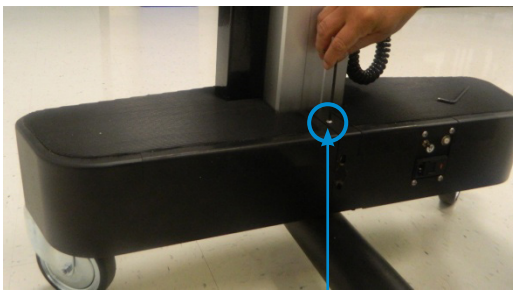
- Complete the task for which the cover was removed.
- Replace and reassemble in reverse order.

11.1.3 Base Cover, Head-End

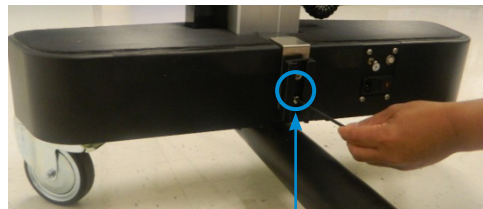


CAUTION: Electrical shock hazard exists with access covers removed; use caution when working in exposed areas.

- Remove any tabletop and H-frame(s).
- Power OFF the Base and wait for 30 seconds to discharge.
- Remove the Base Cover, Foot-End and disconnect the negative wire at the battery terminal (refer to Section 11.1.1, page 48).
- Remove the side and top screws holding the H-Frame holder bracket to remove the bracket.

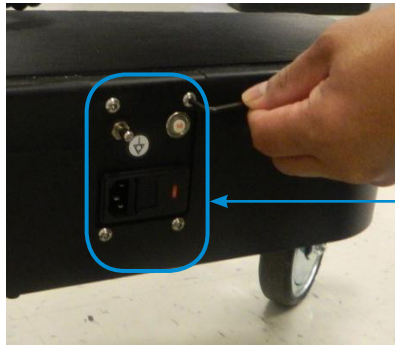


Top screw



Slide screws

5. Remove the screws around the Power Input Plate and the Circuit Breaker Plate.

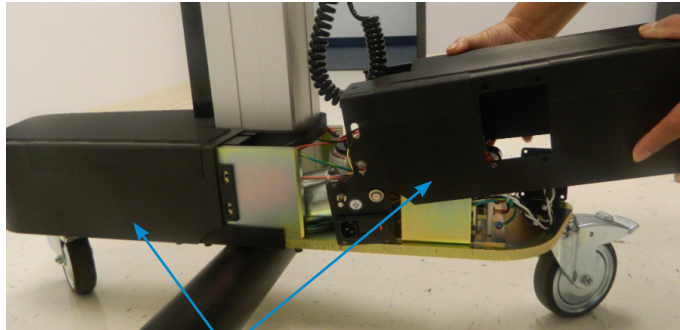


Screws around the Power Input Plate

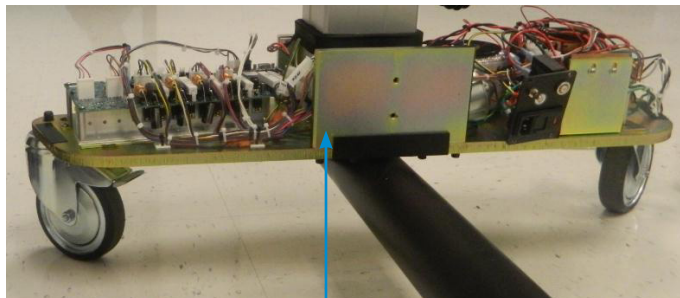


Screws around the Circuit Breaker Plate

6. Remove the covers on both sides.



Covers on both sides



Head-End base with the covers removed

7. Complete the task for which the cover was removed. Ensure the gaskets between the covers are in contact with the covers when replaced, and they are without damage. The gaskets are designed to stop fluid ingress in the base section.
8. Replace and reassemble in reverse order.

11.1.4 Head-End Cover

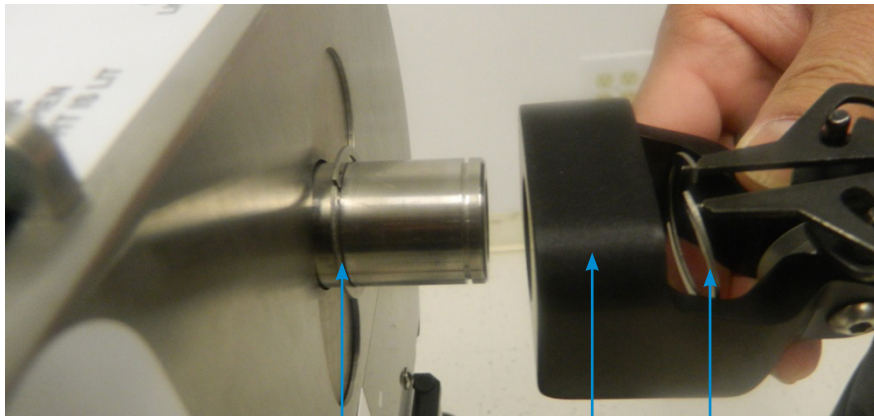


CAUTION: Electrical shock hazard exists with access covers removed; use caution when working in exposed areas.

1. Remove any tabletop and H-frame(s).
2. Power OFF the table and wait for 30 seconds to discharge.
3. Remove the Base Cover, Foot-End and disconnect the negative wires at the battery terminals (refer to Section 11.1.1, page 48).

NOTE: Hand Pendant backlights will go dark upon turning the Base off.

4. Disconnect the Hand Pendant (refer to Section 4.4, page 19).
5. Remove the first external retaining ring, the Traction Pulley Assembly, and then the second retaining ring.



Second external ring

First external ring

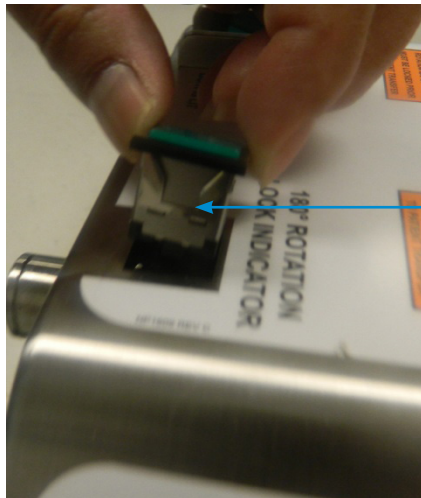
Traction Pulley Assembly

6. Remove the 180 Degree Rotation Lock Handle by rotating it counterclockwise until it is free.



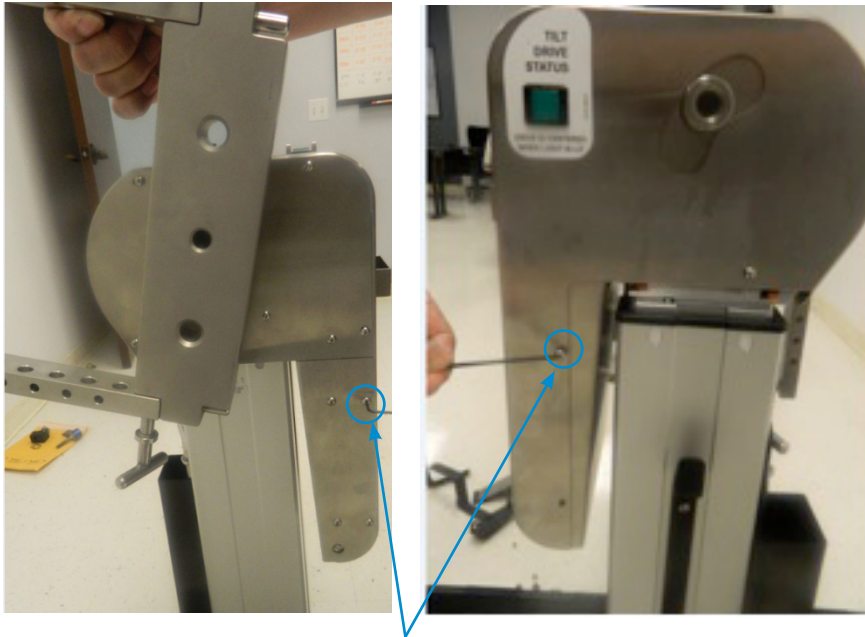
Rotate the 180 Degree Rotation Lock Handle

7. Using a small screwdriver or your fingers, pry out the 180 Degree Rotation Lock Indicator light to prevent damage to it.



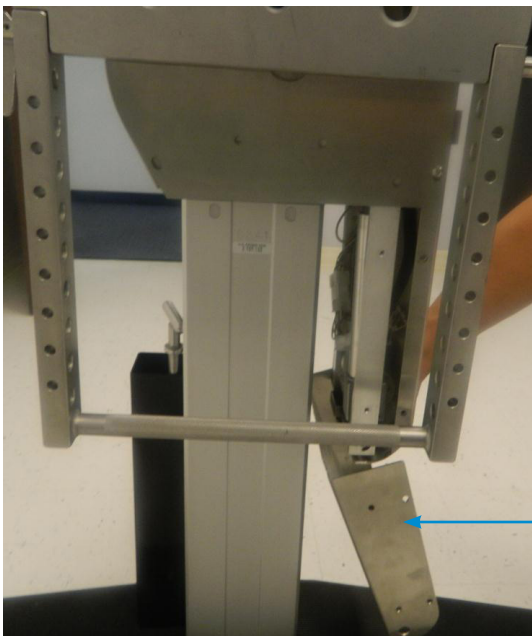
180 Degree Rotation Lock Indicator Light

8. Rotate the crossbar out of the way to access the screw on the inner side.
9. Remove the cover screws on both sides of the cover.



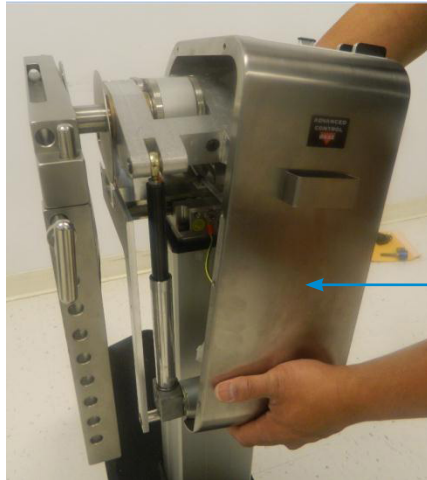
Screws on either side of the cover

10. Remove the inside panel of the Head-End cover.



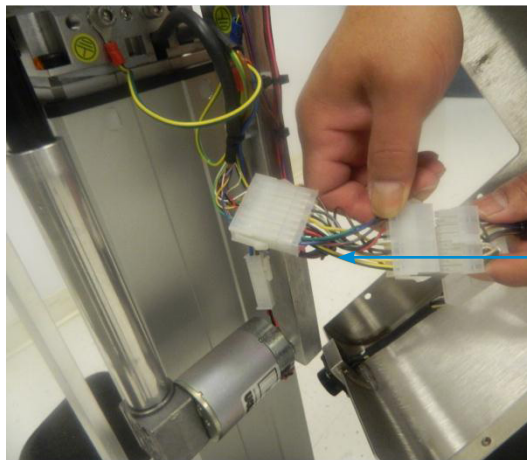
Inside panel of the Head-End cover

11. Carefully slide the cover away from the Base, along the tilt axis. The cover still remains suspended because wires are connected to the switches, to the lights on the cover, and to the Base.



Slide the cover away from the Base

12. Disconnect the 16-pin connector to completely remove the cover.



16-pin Connector

13. Complete the task for which the cover was removed.
14. Replace the cover and reassemble in reverse order.

11.1.5 Hand Pendant Module

Refer to Section 4.4 Hand Pendant.

11.1.6 Batteries



WARNING: Improperly installed batteries can leak, causing equipment damage or injury. See the procedures in Sections 11.1.6.1 and 11.1.6.2 to confirm correct installation and replacement of batteries.



WARNING: Incorrectly connected batteries can cause damage to equipment or injury. Bridging (shorting) of battery terminals can cause explosion of the battery or fire.



CAUTION: Rechargeable lead-acid batteries contain toxic materials. Batteries should be fully discharged prior to handling, or the terminals should be isolated to prevent accidental discharge.



CAUTION: Batteries should only be replaced with Mizuho OSI approved parts. Contact Mizuho OSI Service to obtain correct replacement batteries (see Section 13).



CAUTION: Do not attempt to connect AC power to the Advanced Control Base until correct battery connection is confirmed.



CAUTION: Remove metal jewelry and wristwatches when in proximity to batteries.



CAUTION: Always cover at least one terminal of each battery with insulating material if connectors are removed.



CAUTION: Use caution when employing metal tools in proximity to batteries. Metal tools create circuit bridges (electrical shorts) upon contact. When possible, use tools with insulated handles and ends.



CAUTION: Never place anything on top of batteries, whether batteries are mounted or removed from the product.

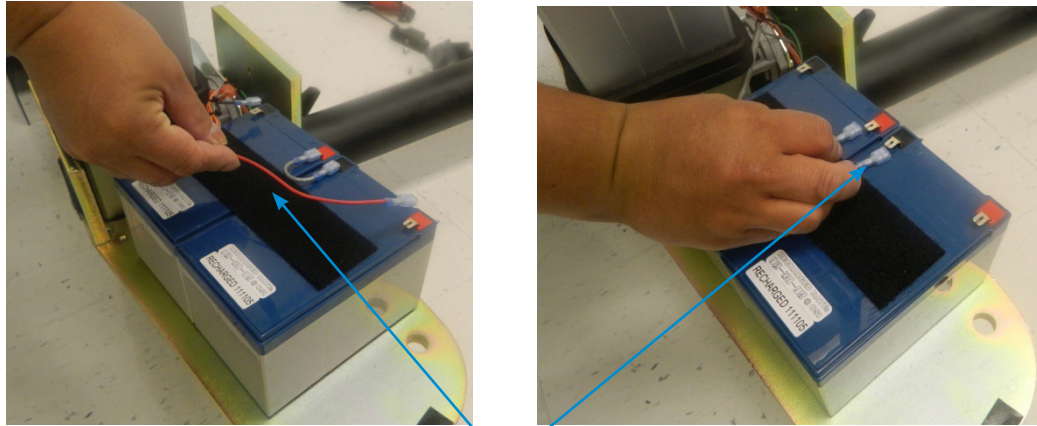
NOTE: Batteries contain sulfuric acid. In the event of a leak in the battery or fire, dilute spilled fluid with water. In case of skin contact, wash areas with water. In the event of eye contact, flush eyes with water for 15 minutes and consult a physician immediately.

NOTE: Always dispose of batteries properly. Do not incinerate batteries. Do not place rechargeable 12V batteries into a metal trashcan, toolbox, drawer or parts bin.



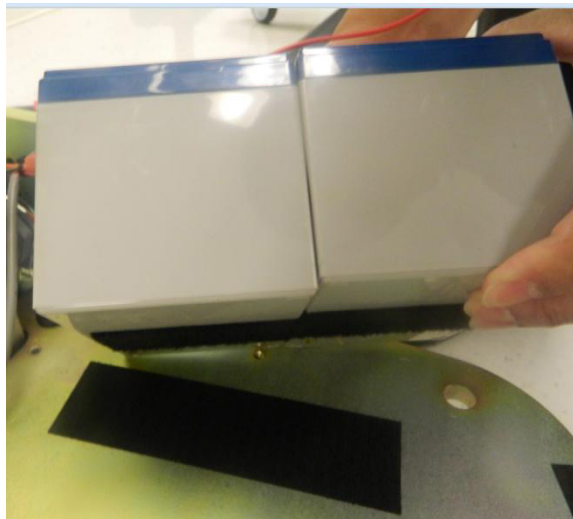
11.1.6.1 Battery Removal

1. Power OFF the table and wait for 30 seconds to discharge.
2. Remove the Base Cover, Foot-End (refer to Section 11.1.1, page 48) to expose the batteries.
3. Disconnect the wires at the battery terminals.



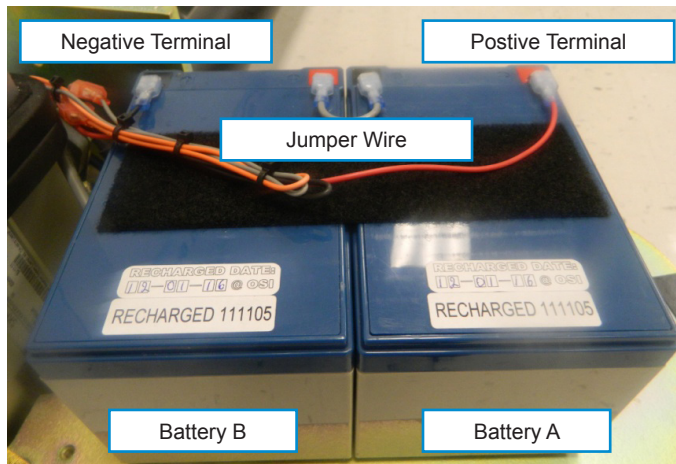
Disconnect these wires

4. Carefully lift the batteries out of the base.



11.1.6.2 Battery Replacement

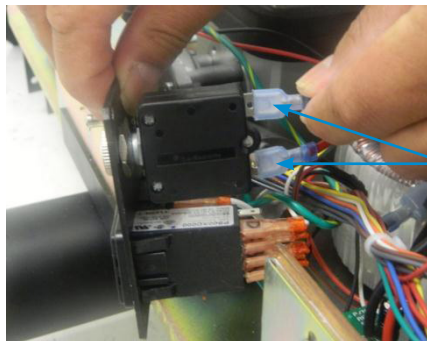
1. Place replacement batteries in the base.
2. Attach battery wires as follows:
 - a. Red wire to positive terminal of battery "A".
 - b. Jumper wire from battery "A" to battery "B".
 - c. Black wire to negative terminal of battery "B".



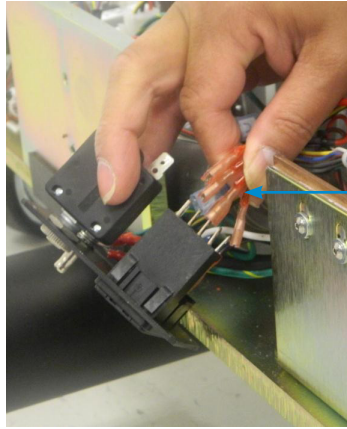
3. Dispose the batteries in accordance with domestic and international standards and requirements.

11.1.7 Power Supply

1. Remove any tabletop and H-frame(s)
2. Power OFF the table and wait for 30 seconds to discharge.
3. Remove the Base Cover, Foot-End to disconnect the negative wires at the battery terminals (refer to Section 11.1.1, page 48).
4. Remove the Head-End base covers (refer to Section 11.1.3, page 50).
5. Disconnect all cables from the Power Cord Receptacle as identified below.



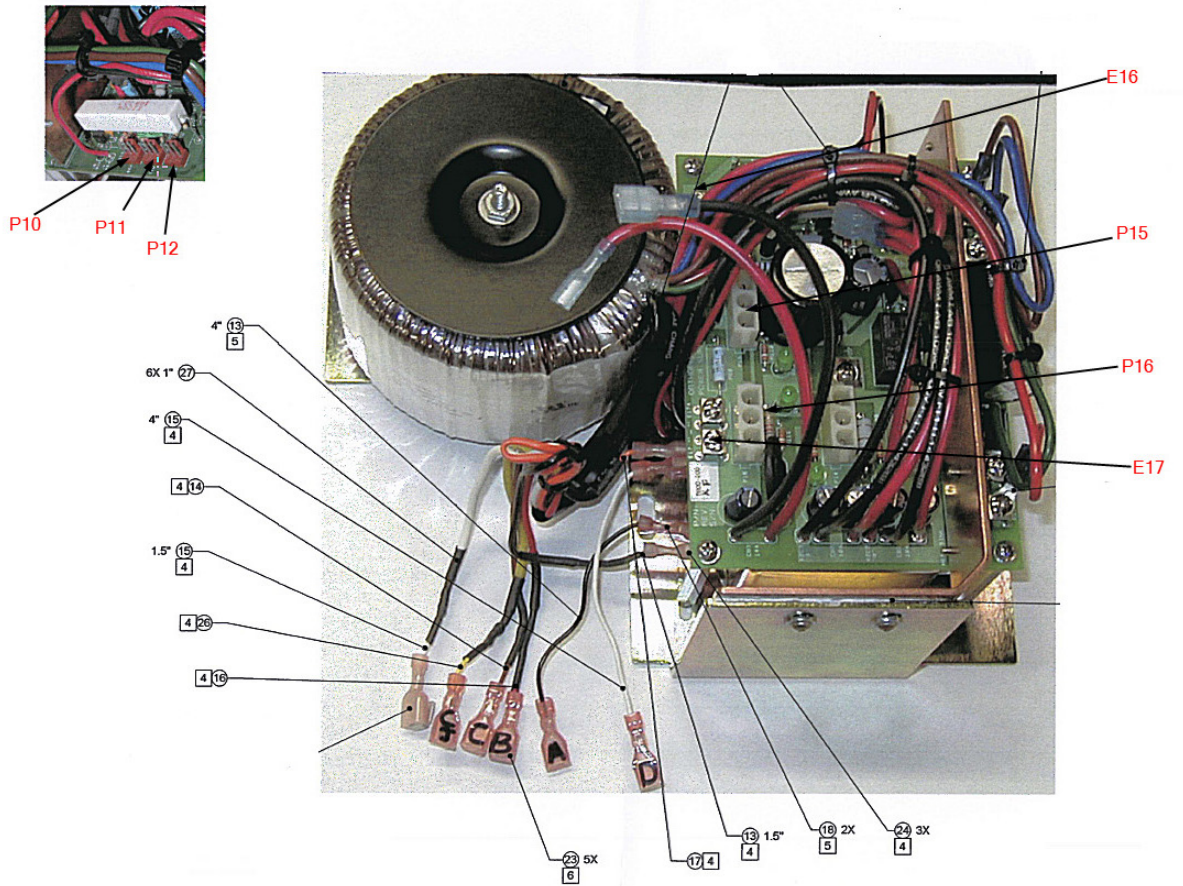
Disconnect 10 Amp Circuit Breaker connector



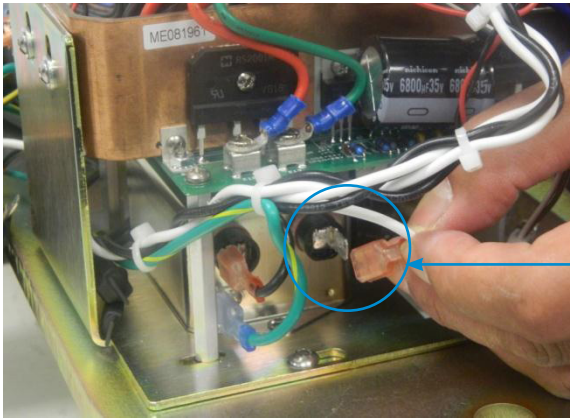
Disconnect A, B, C, D connectors

6. Disconnect these cables from the Power Supply board:

- P10, P11, P12, P15, P16, P17
- Unscrew E-16

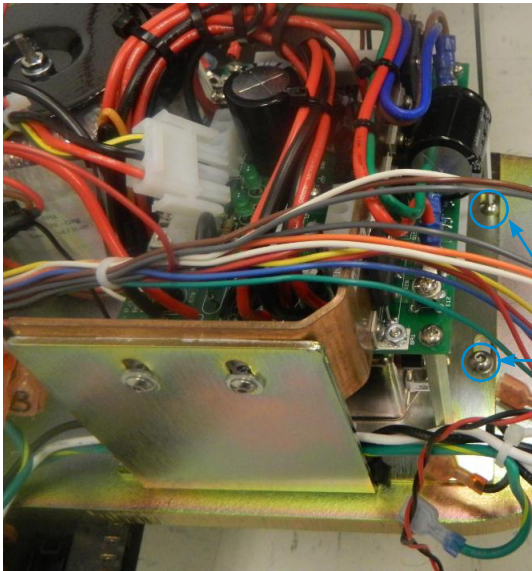


7. Disconnect the incoming connectors to the line filter.

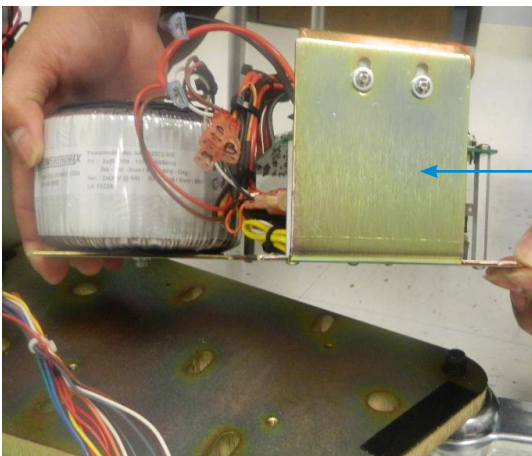


Connectors to the line filter

8. Remove the three power supply tray assembly mounting screws and remove the tray assembly.



Mounting screws. One screw is on the other side of the tray assembly.



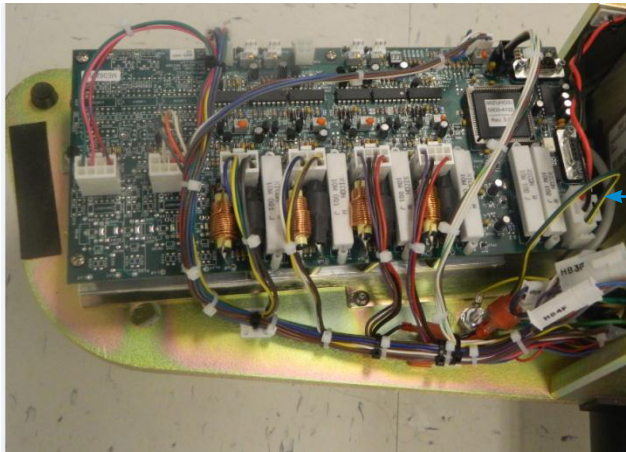
Remove the tray assembly

9. Install replacement and reassemble in reverse order.

NOTE: See wiring interconnect diagram in Section 12.1, pages 82–83.

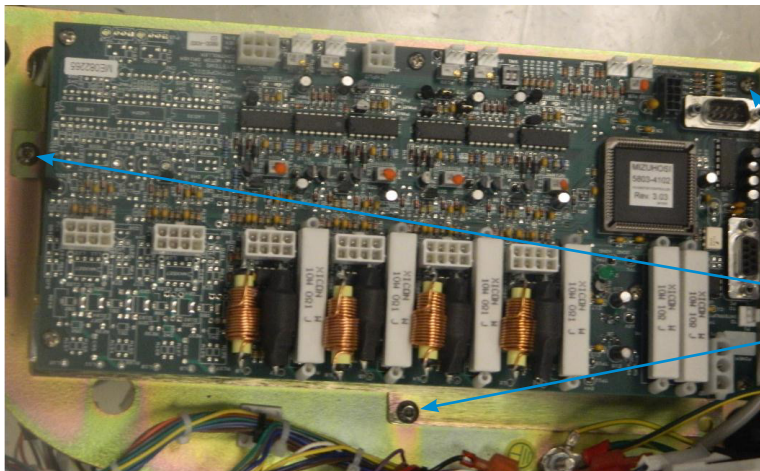
11.1.8 Control Circuit Board

1. Remove any tabletop and H-frame(s).
2. Power OFF the table and wait for 30 seconds to discharge.
3. Remove the Base Cover, Foot-End to disconnect the negative wires at the battery terminals (refer to Section 11.1.1, page 48).
4. Remove the Base Cover, Head-End (refer to Section 11.1.3, page 50).
5. Disconnect all cables from the Controller Circuit Board.



Controller Circuit Board

6. Remove the three screws mounting the Controller Circuit Board tray and then remove tray assembly.

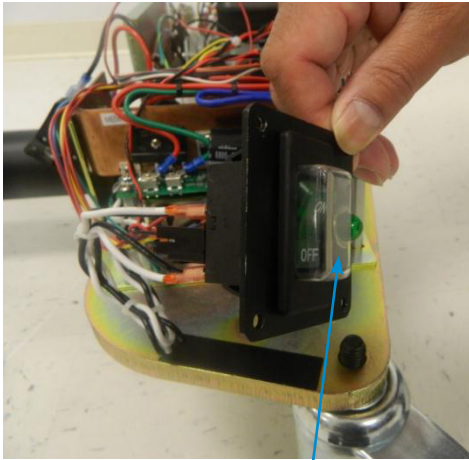


Location of the mounting screws

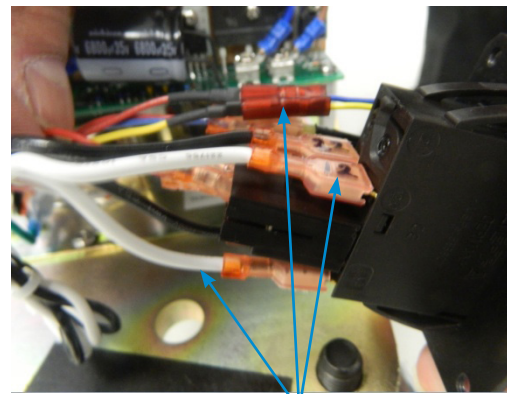
7. Install replacement and reassemble in the reverse order.

11.1.9 ON/OFF Power Switch

1. Remove any tabletop and H-frame(s).
2. Power OFF the Base and wait for 30 seconds to discharge.
3. Remove the Base Cover, Foot-End to disconnect the negative wires at the battery terminals (refer to Section 11.1.1, page 48).
4. Remove the Base Cover, Head-End (refer to Section 11.1.3, page 50).
5. Disconnect all the wires from circuit breaker / ON-OFF switch terminals.



ON/OFF Switch

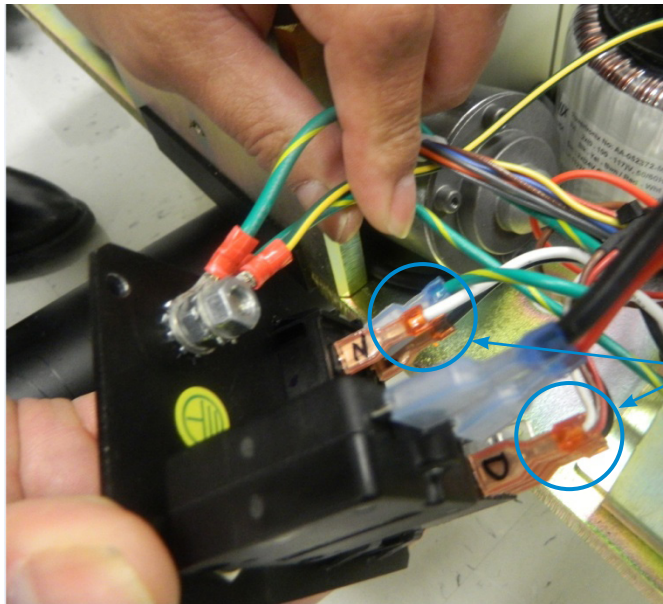


Remove these wires

6. Remove the circuit breaker / ON-OFF switch by pulling it towards you.
7. Install replacement and reassemble in reverse order.

11.1.10 Power Input Plate

1. Remove any tabletop and H-frame(s).
2. Power OFF the table and wait for 30 seconds to discharge.
3. Remove the Base Cover, Foot-End to disconnect the negative wires at the battery terminals (refer to Section 11.1.1, page 48).
4. Remove the Base Cover, Head-End (refer to Section 11.1.3, page 50).
5. Disconnect the wires from the Power Input Plate as shown.

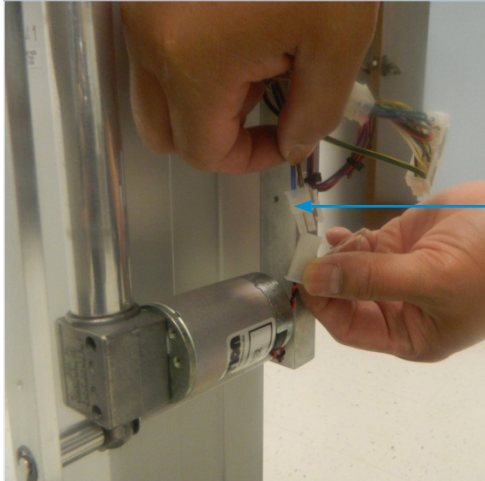


Disconnect these wires

6. Install replacement and reassemble in reverse order.

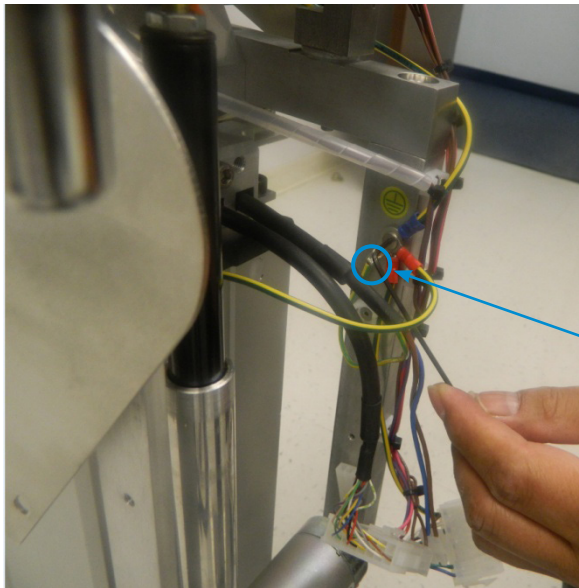
11.1.11 Head-End Assembly

1. Remove any tabletop and H-frame(s).
2. Power OFF the table and wait for 30 seconds to discharge.
3. Remove the Base Cover, Foot-End to disconnect the negative wires at the battery terminals (refer to Section 11.1.1, page 48).
4. Remove the Head-End cover (refer to Section 11.1.4, page 52).
5. Disconnect the connector to the tilt motor.

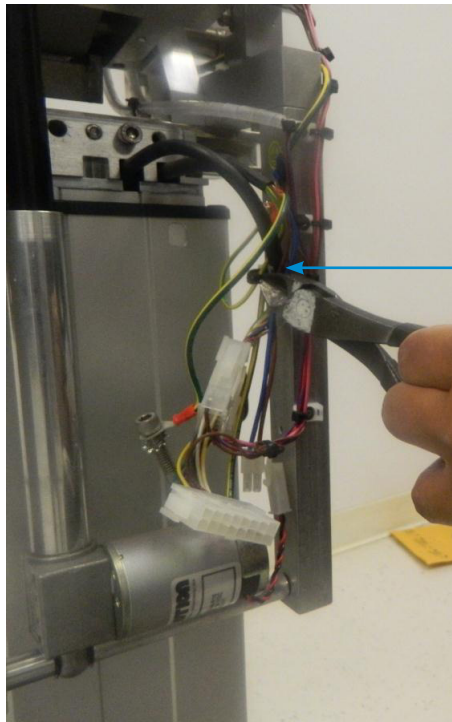


Disconnect connector to the tilt motor

6. Remove the ground wire screw.

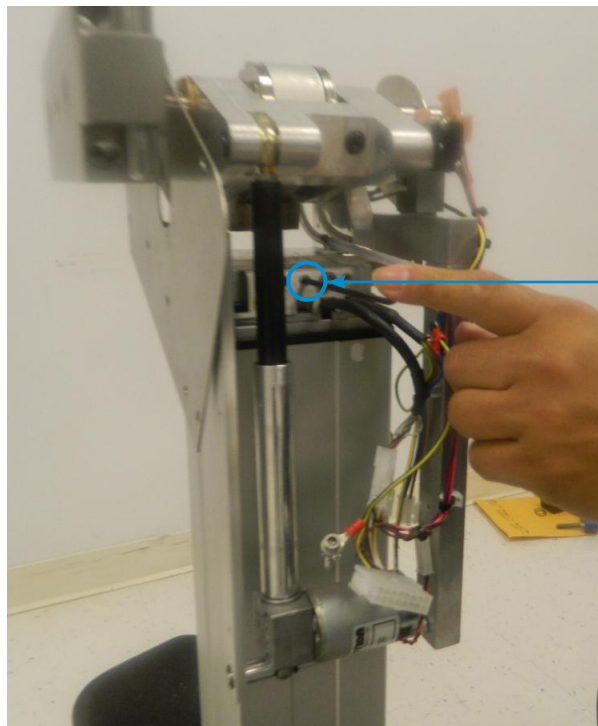


Remove this screw



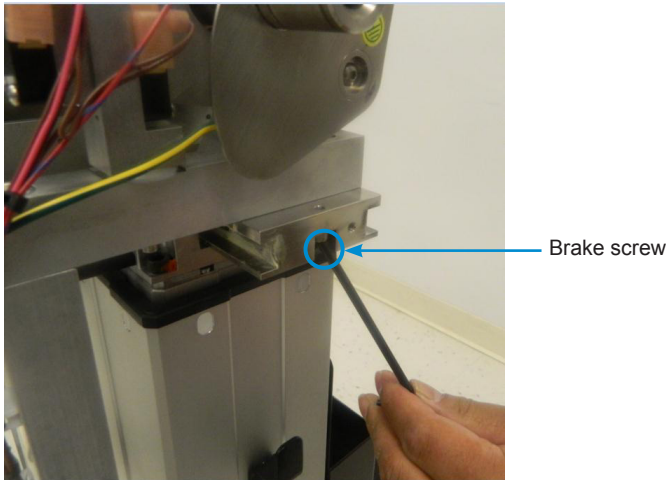
Tie Wrap

7. Cut the tie wrap.
8. Remove the cap screw and loosen the inner set screw located inside the cap screw.

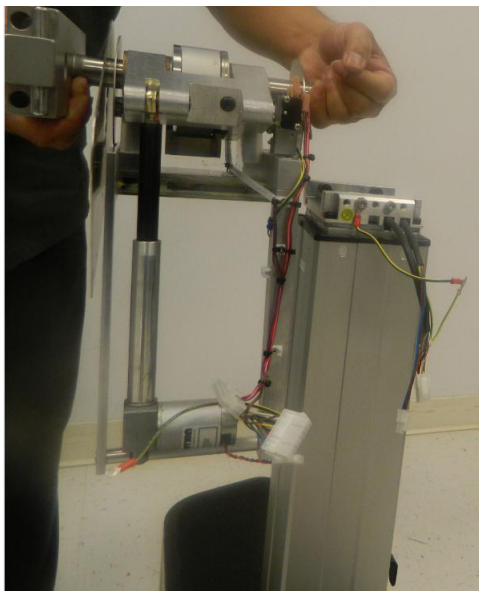


Cap Screw

9. Disconnect the 16-pin connector.
10. Remove the brake screw from the Head-End slider.



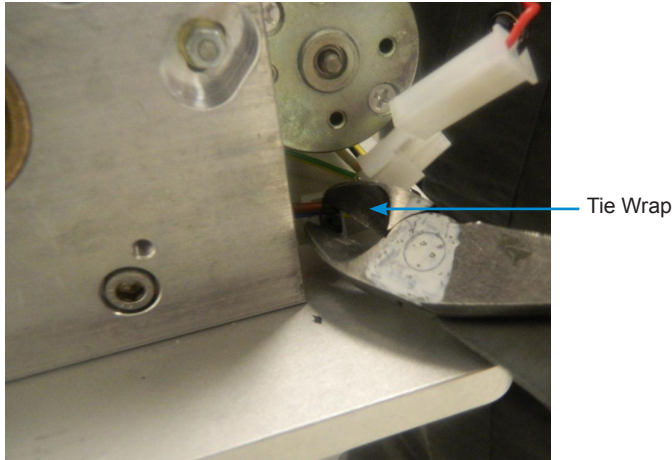
11. Slide the Head-End assembly away from you.



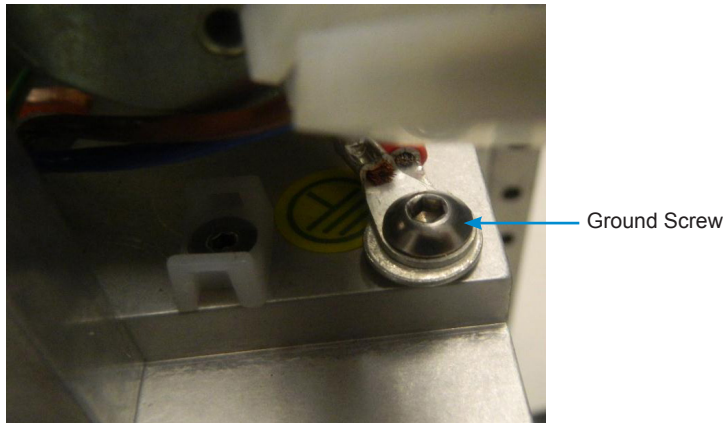
12. Install replacement and reassemble in reverse order.

11.1.12 Foot-End Assembly

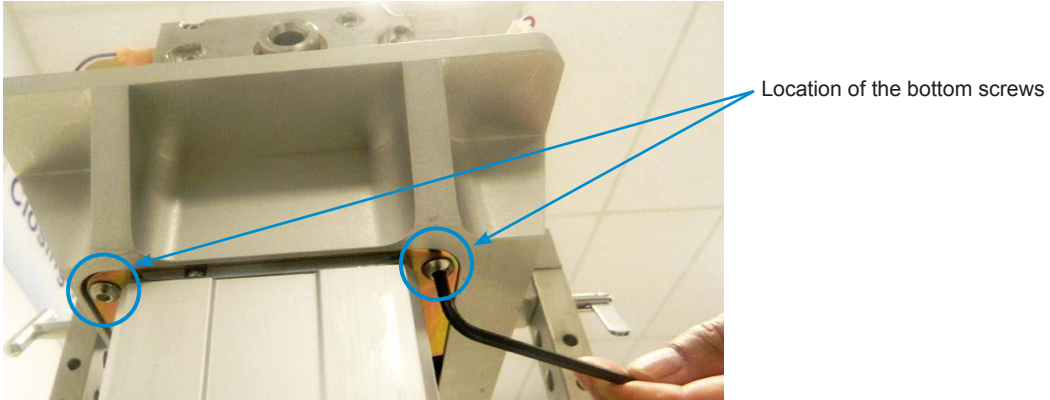
1. Remove any tabletop and H-frame(s).
2. Power OFF the table and wait for 30 seconds to discharge.
3. Remove the Base Cover, Foot-End to disconnect the negative wires at the battery terminals (refer to Section 11.1.1, page 48).
4. Remove the Foot-End cover (refer to Section 11.1.2, page 49).
5. Cut the tie wraps that hold the Power Connector to the motor and disconnect the connector.



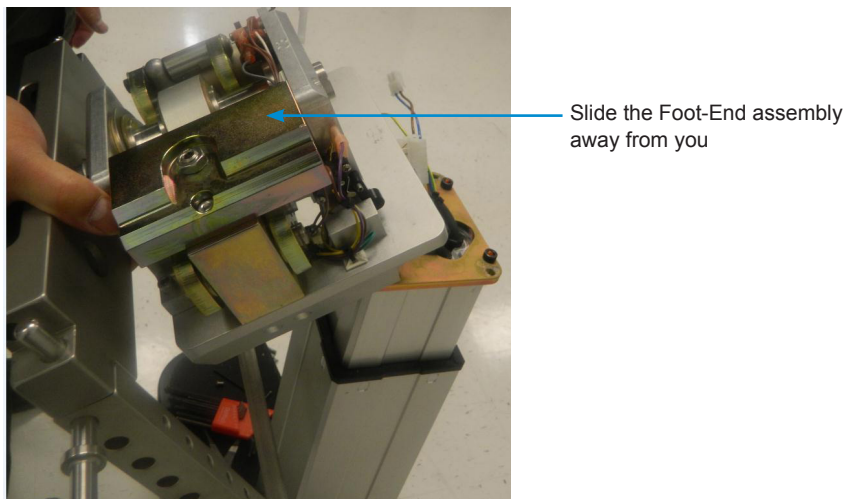
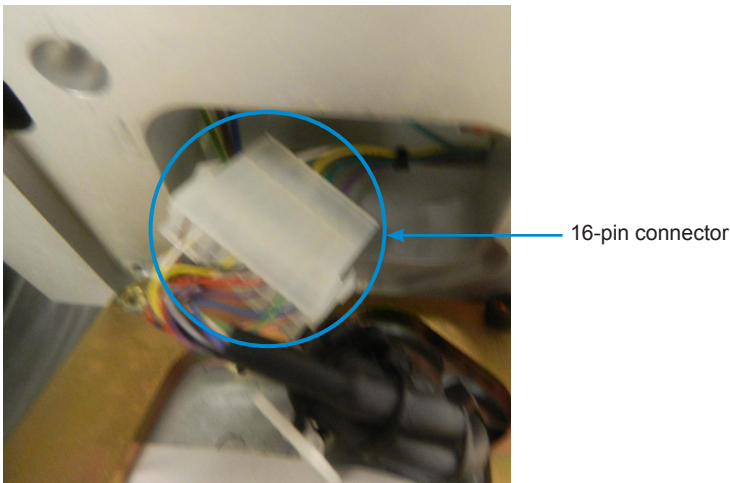
6. Remove the ground screw.



7. Manually raise the height of the Base so that you can reach the bottom screws holding the assembly in position.



8. Remove the screws holding the Foot-End assembly and tilt it to expose the 16-pin connector.
9. Remove the 16-pin connector (refer to Section 11.1.4, page 52).



10. Slide the Foot-End assembly away from you.

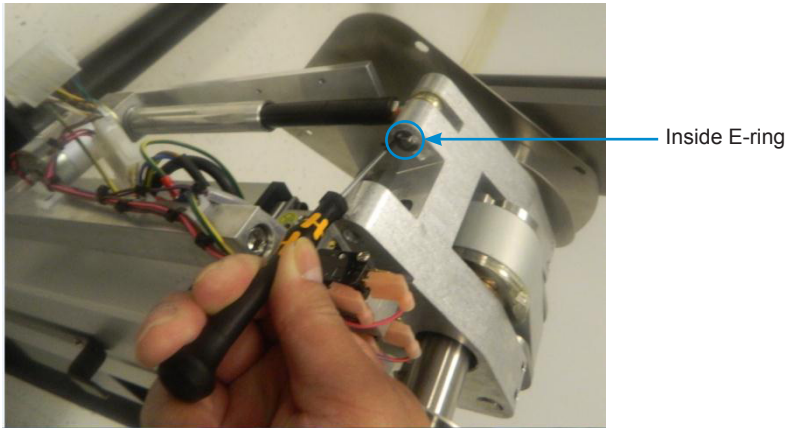
11.1.13 Head-End Tilt Motor Assembly

1. Remove any tabletop and H-frame(s).
2. Power OFF the table and wait for 30 seconds to discharge.
3. Remove the Base Cover, Foot-End to disconnect the negative wires at the battery terminals (refer to Section 11.1.1, page 48).
4. Remove the Head-End cover (refer to Section 11.1.4, page 52).
5. Disconnect the motor wire from the wire harness.

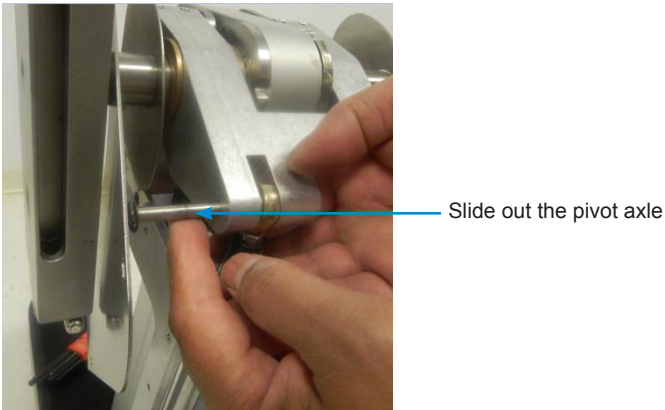


Disconnect this wire

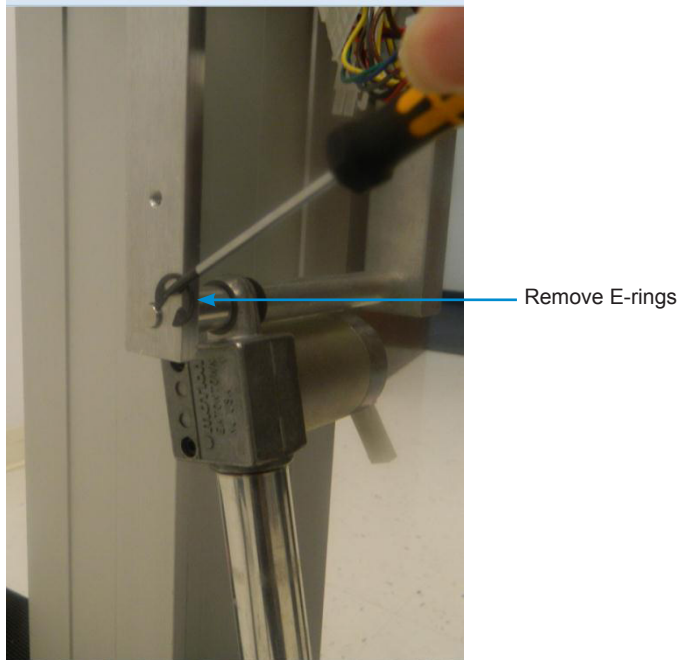
6. Remove the inside E-ring from the pivot axle at the actuator rod joint end.



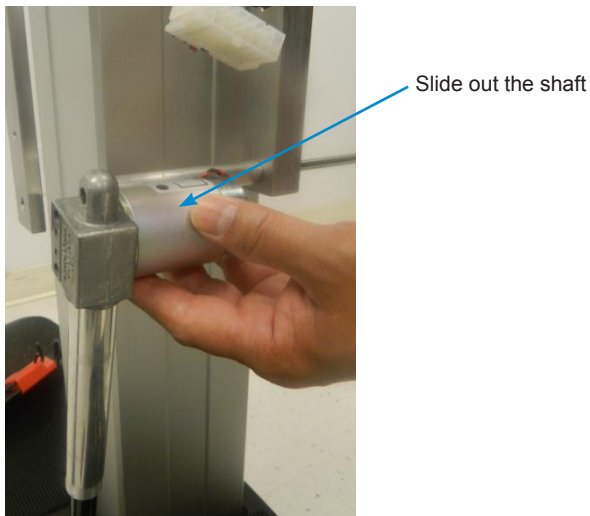
7. Slide the pivot axle out of the assembly.



8. Remove E-rings at the base of the actuators and remove the actuator.



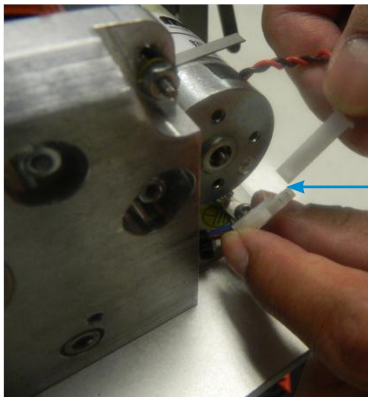
9. Slide out the shaft.



10. Remove the tilt motor assembly.
11. Install replacement and reassemble in reverse order.

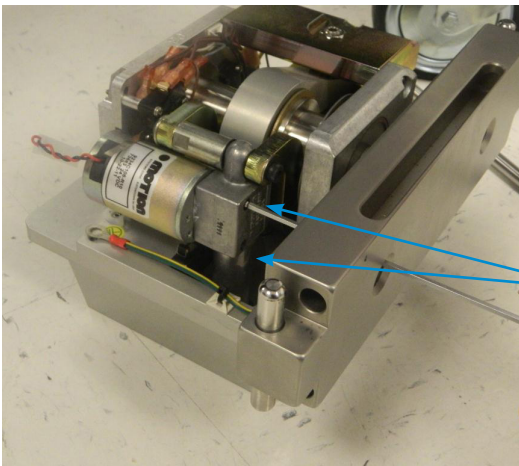
11.1.14 Foot-End Rotation Safety Lock Motor

1. Remove any tabletop and H-frame(s).
2. Power OFF the table and wait for 30 seconds to discharge.
3. Remove the Base Cover, Foot-End to disconnect the negative wires at the battery terminals (refer to Section 11.1.1, page 48).
4. Remove the Foot-End cover (refer to Section 11.1.2, page 49).
5. Disconnect the power connector to the motor.



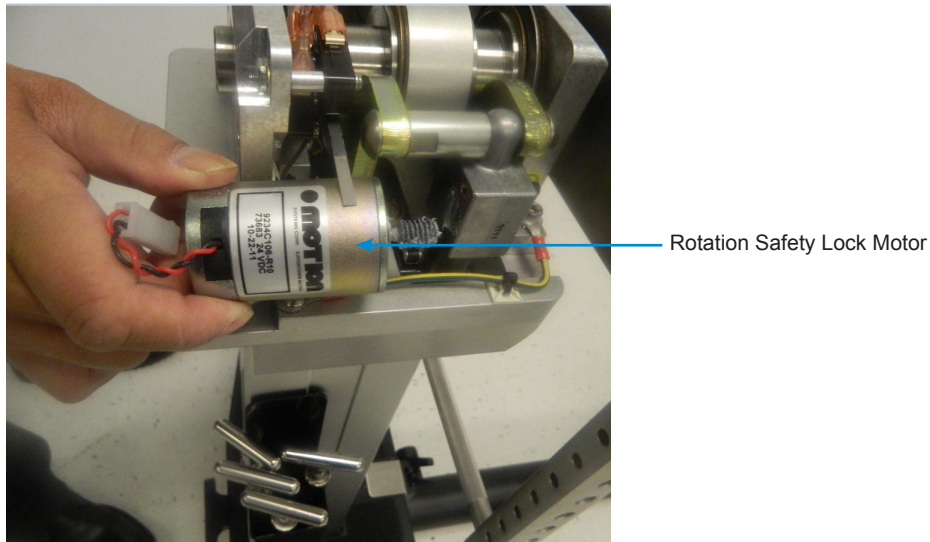
Disconnect this connector

6. Remove the two screws holding the spindle.



Screws holding the spindle

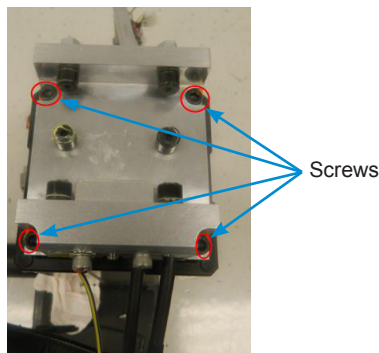
7. Remove the Rotation Safety Lock motor.



8. Install replacement and reassemble in reverse order.

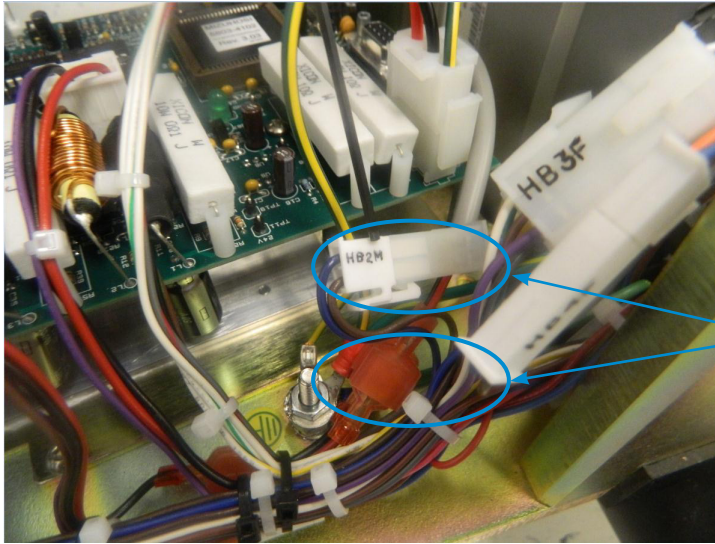
11.1.15 Head-End Column

1. Remove any tabletop and H-frame(s).
2. Power OFF the Base and wait for 30 seconds to discharge.
3. Remove the Base Cover, Foot-End to disconnect the negative wire at the battery terminals (refer to Section 11.1.1, page 48).
4. Remove the Head-End assembly (refer to Section 11.1.11, page 63).
5. Remove the Trolley Flange by removing the four screws.



6. Remove the Base Cover, Head-End (refer to Section 11.1.3, page 50).

7. Unplug the connectors and the secondary ground nut at the base of the Head-End Column. Do not remove the primary ground that is fastened with two nuts and a lock washer.

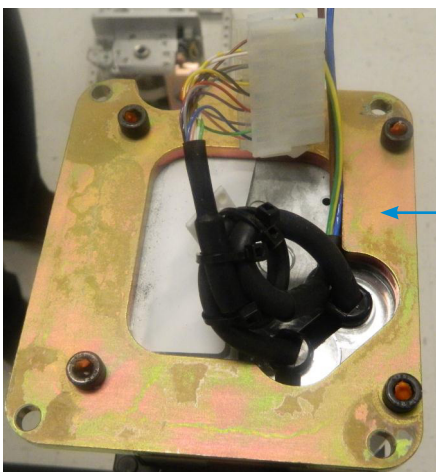


Connectors at the base of the Head-End column

8. Remove the four socket head screws attaching the column to the retractable beam.
9. Lift out the Head-End column.
10. Replace and reassemble in reverse order.

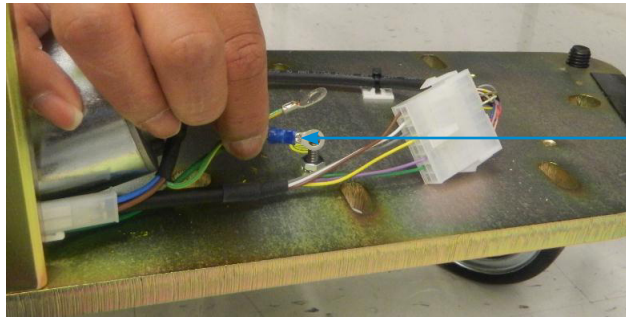
11.1.16 Foot-End Column

1. Remove any tabletop and H-frame(s).
2. Power OFF the table and disconnect the power cord.
3. Remove the Base Cover, Foot-End to disconnect the negative wire at the battery terminals (refer to Section 11.1.1, page 48).
4. Remove the Foot-End Assembly (refer to Section 11.1.12, page 67).
5. Remove the brass plate holding the Foot-End Assembly.



Brass plate

6. Unplug the connectors and the ground screws at the base of Foot-End column.



Connectors at the base of the Foot-End Column

7. Remove the four socket head screws attaching the column to the retractable beam.
8. Lift out the Foot-End column.
9. Install replacement and reassemble in reverse order.

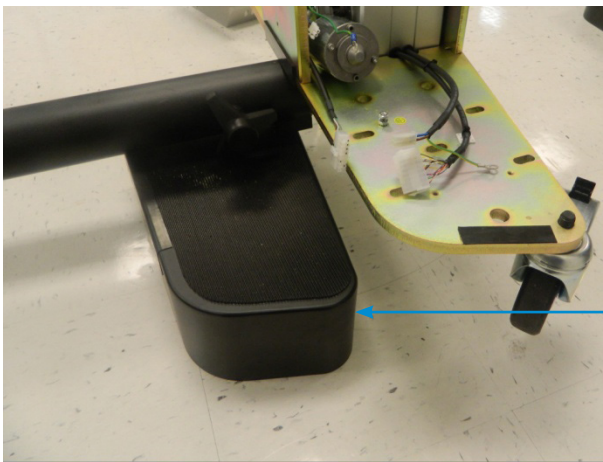
11.1.17 Retractable Center Beam

1. Remove any tabletop and H-frame.
2. Power OFF the table and disconnect the Power Cord.
3. Remove the Base Cover, Foot-End, and disconnect the negative wires at the battery terminals (refer to Section 11.1.1, page 48).
4. Remove the Head-End base cover (refer to Section 11.1.3, page 50).
5. Unplug the beam cables.
6. Remove the head and foot columns (refer to Section 11.1.15, page 73).

7. Remove the ¼-20 inch screws attaching the beam to Head-End and Foot-End bases.
8. Remove the center beam.
9. Install replacement and reassemble in the reverse order.

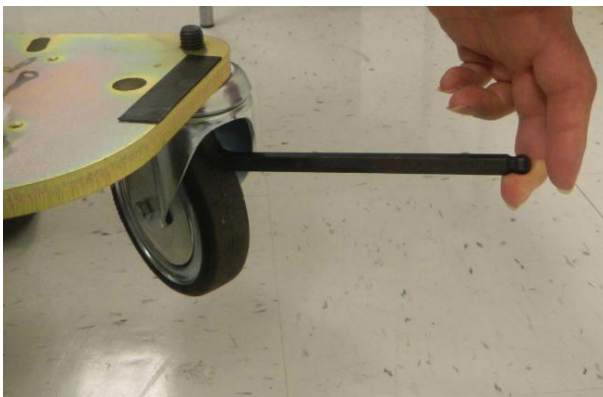
11.1.18 Casters

1. Power OFF the table and wait for 30 seconds to discharge.
2. Remove the Base Cover, Foot-End to disconnect the negative wires at the battery terminals (refer to Section 11.1.1, page 48).
3. With the assistance of two people, lift the corresponding column up.
4. Slide an elevated surface (like one of the base covers) under the retractable beam.



Column lifted up with support under the retractable beam

5. Remove the bolt from the outside of the base plate to remove the caster.



6. Install replacement and reassemble in reverse order.

11.2 Adjustment of Components

11.2.1 180 Degree Rotation Lock Sensor

1. Remove the blue 180° Rotation Lock Handle.
2. Remove the Head-End cover per procedure (refer to Section 11.1.3, page 50); do not unplug electrical connector, hang cover on the Power Cord Storage Bracket.
3. Loosen the 8-32 button head screw securing the 180° Rotation Sensor (micro-switch) mounting bracket. This is mounted just to the left of the blue 180° Rotation Lock Handle.
4. Tighten the blue 180° Rotation Lock Handle until rotating crossbar resists 95 ft/lbs of rotational force in both directions using a calibrated torque wrench and rotational test bar ([REF](#) T5890-21-23).
5. Adjust the 180° Rotation Sensor (micro-switch) mounting bracket until the micro-switch clicks on. The 180° Rotation Lock Indicator light should be illuminated blue. Tighten the 8-32 button head screw.
6. Test by unscrewing the 180° Rotation Lock Handle until 180° Rotation Lock Indicator is not illuminated. Retighten the 180° Rotation Lock Handle until 180° Rotation Lock Indicator light is illuminated.
7. Retest that rotating crossbar resists 95 ft/lbs of rotational force in both directions using torque wrench and rotation test bar.
8. If test fails, repeat adjustment procedure, otherwise, continue.
9. Install covers per procedure.
10. Insert the 180° Rotation Lock Handle and tighten until 180° Rotation Lock Indicator light illuminates blue.
11. Retest that rotating crossbar resists 95 ft/lbs of rotational force in both directions using a calibrated torque wrench and rotation test bar ([REF](#) T5890-21-23).
12. If test fails, repeat adjustment procedure.
13. If test passes, adjustment is complete.

11.2.2 Home and Tilt Left/Right Sensors

1. Turn the Base power on.
2. Tighten the 180° Rotation Lock Handle, and make sure that the indicator light is lit.
3. Using the Hand Pendant, drive the tilt mechanism to the right.
4. Loosen the 6-32 cap head screw beneath the sensor bracket and move the bracket closer to the pillow block until the left/right sensor switch clicks.
5. Using the Hand Pendant, drive the tilt mechanism to the left. Stop when the home sensor clicks. The indicator light should light up to confirm that the tilt drive is at home.
6. Tighten the 6-32 cap head screw.
7. Using the Hand Pendant, drive the tilt mechanism to the right for about three seconds.
8. Loosen the 180° Rotation Lock Handle. The tilt mechanism should drive to the center and stop.

9. If the tilt mechanism drives towards the center but stops before true level, the sensor switch is too close to the pillow block:
 - a. Tighten the 180° Rotation Lock Handle.
 - b. Loosen the 6-32 cap head screw beneath the sensor bracket and move the bracket away from the pillow block slightly.
 - c. Re-tighten the 6-32 cap head screw.
 - d. Check this readjustment by repeating the steps.
10. If it drives to the center but does not stop, either rocking back and forth or continuing past lever, the sensor switch is too far from the pillow block.
 - a. Slightly re-tighten the 6-32 screw.
 - b. Check this readjustment by repeating the steps.
11. If it does not drive at all when the 180° Rotation Lock Handle is loosened, there is an electronic fault in the Base. Check the wiring to the head end, and if this does not alter the condition of the Base, replace the controller PC board.

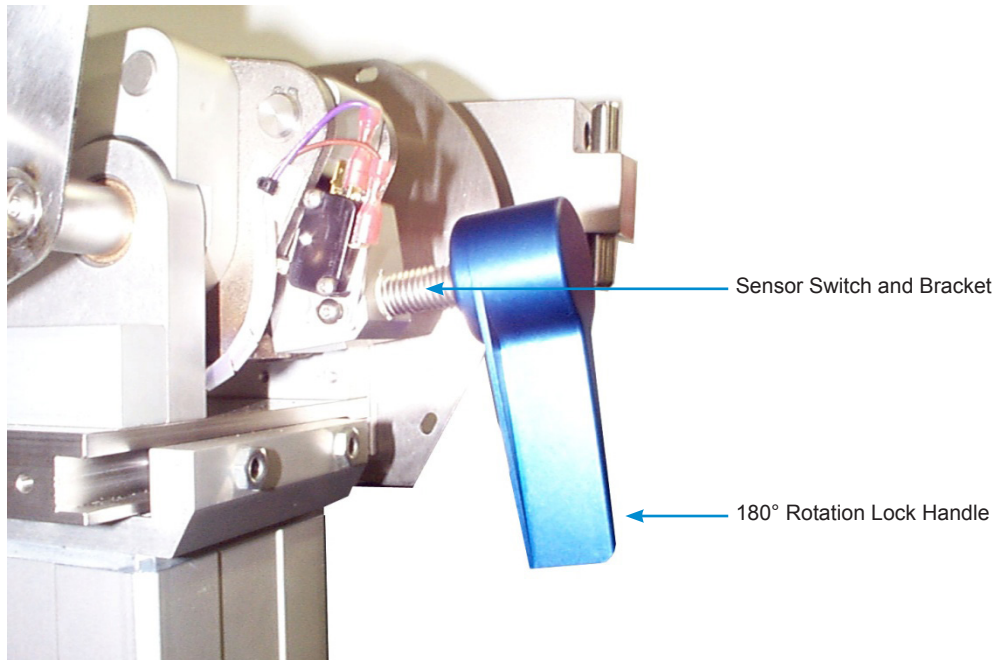


Figure 34: 180° Rotation Lock Indicator Light Limit Switch and Lock Handle

11.2.3 Head-End Slider Adjustment Procedure

Overview:

With one of the Mizuho OSI modular (interchangeable) table tops attached to the Advanced Control Base, in-line movement of the Head-End slider (or trolley assembly) is required to accommodate Trendelenburg and reverse trendelenburg positioning. Periodic adjustment may be needed to maintain proper function of movement.

Tools Required:

- Hex (Allen) Key, 5/64-inch
- Calibrated Force Gauge, to 25-pounds pushing force
- Calibrated Torque Wrench, to 125 ft/lbs

Procedure:

1. Power off the Base and wait for 30 seconds to discharge.
2. Remove the table top.
3. Remove the Head-End Assembly cover per procedure (refer to Section 11.1.11, page 63).
4. Some models may have a set screw installed in front of the spring plunger. This screw must be removed prior to adjustment. Using 5/64-inch hex key, adjust the Slider spring plunger (shown below) as needed.
5. Using Force Gauge pushing on the rotating crossbar, verify the Head-End slider assembly (without any top attached) moves in-line to its stop, in both directions, uniformly, with 20 to 25 pounds of force applied.

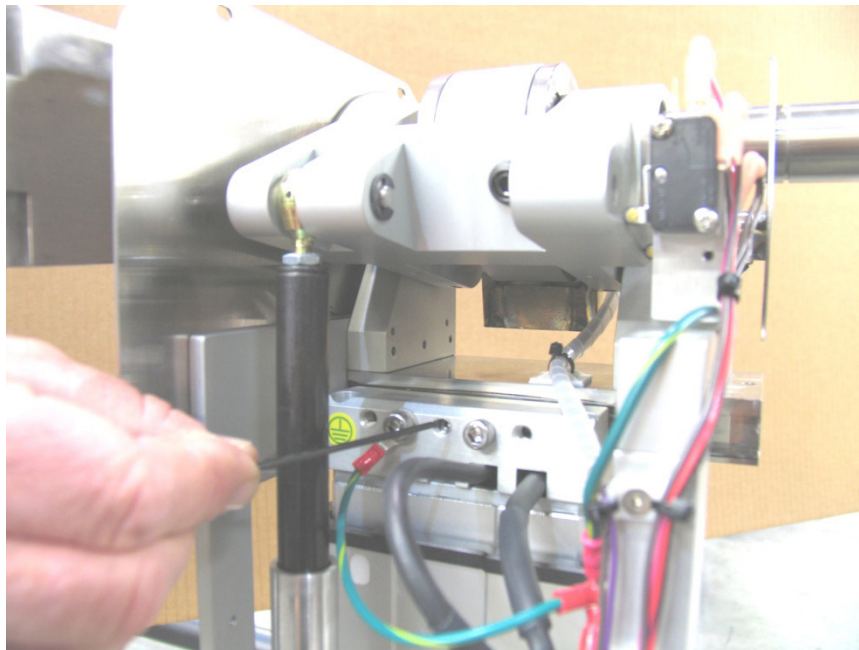


Figure 35: Head-End Pivot Assembly, Left Side (cover removed)

11.2.4 180 Degree Rotation Safety Lock

As the safety lock wears, adjustment may be required to achieve complete locking. Follow these steps to adjust the lock:

1. Ensure that the Base is upright.

2. Power off the Base and wait for 30 seconds to discharge.
3. Remove the Foot-End cover.
4. Supply power to the Base and turn the Circuit Breaker on.
5. If the sensor does not indicate that the Rotation Safety Lock is on when crossbar is secure, loosen the lock nut by one turn, then turn the adjustment setscrew counter-clockwise, while maintaining the setscrew position, and tighten the lock nut. Verify operation of the Rotation Safety Lock by turning it OFF and then ON again.
6. If the crossbar is not adequately secure when the sensor indicates that the Rotation Safety Lock is ON, loosen the lock nut and turn the adjustment setscrew clockwise. Then, while maintaining the setscrew orientation, tighten the lock nut. Verify operation of the Rotation Safety Lock by turning it OFF and back ON again.
7. The crossbar is secure when it resists 93 foot-pounds of torque without slippage, using torque wrench and rotation test bar **REF** T5890-21-23.
8. Replace the Foot-End cover.

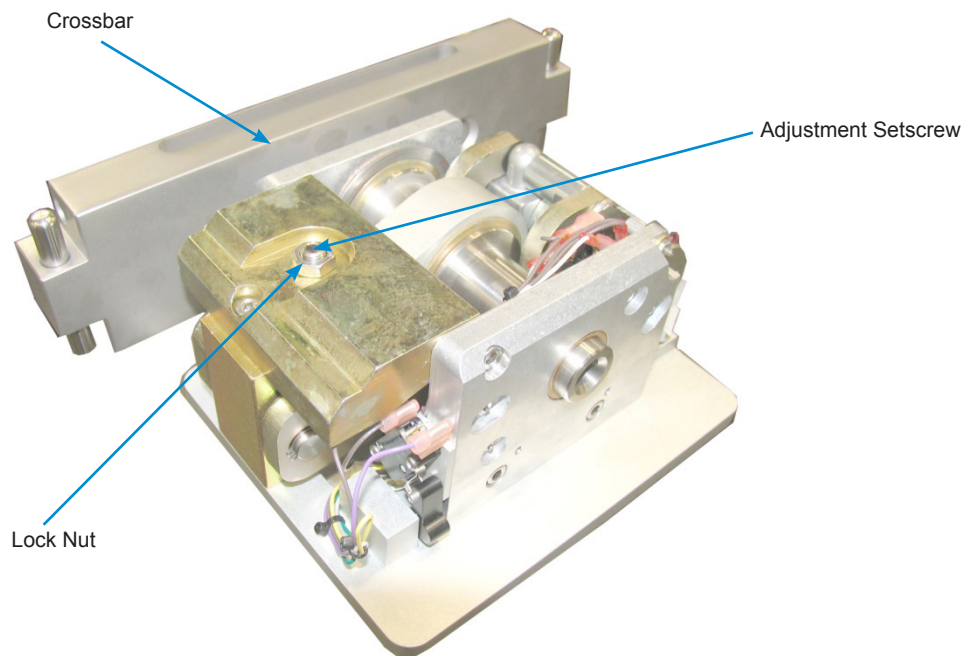


Figure 36: Foot-End Assembly

11.2.5 Rotation Safety Lock (Brake) “ON” Sensor Setting

1. Remove the Base Cover, Foot-End (refer to Section 11.1.1, page 48).
2. Disconnect the battery wire.
3. Turn off the Rotation Safety Lock switch on the Head-End cover.
4. Supply power to the Base and turn the Circuit Breaker on. Verify that the brake off sensor is closed. If it is not, the system may have an electrical fault.
5. Remove the foot end cover. Loosen the lock nut by one turn, then turn the adjustment setscrew counter clockwise (see Figure 36, Adjustment Setscrew).

6. Turn off the power to the Base (either unplug or turn off the Circuit Breaker). Wait until all the system lights go out.
7. Locate the brake on sensor. Loosen the screw that holds the mount plate for the sensor to the brake lever.
8. Set the sensor all the way away from the motor housing. Snug the screw.
9. Restore power to the Base (plug back in and turn ON the Circuit Breaker).
10. Turn the Rotation Safety Lock switch on; the brake motor will drive upward until locked. If it does not drive up, the system has an electrical fault. The fault light will be lit due to improper switch adjustment ignore this problem.
11. Loosen the sensor bracket. Push the sensor body closer to the motor housing until a click can be heard. Re-snug the mount screw.
12. Toggle the Rotation Safety Lock switch OFF; the brake motor will drive down until the brake off sensor switch closes.
13. Toggle the Rotation Safety Lock switch ON.
14. Verify that the switch is closed when the motor stops.
15. Reconnect the battery wire.
16. Replace the Base Cover at the Foot End.

12 Technical Drawings and Parts List

12.1 Electrical Interconnect Diagram, 100/120/220-230V

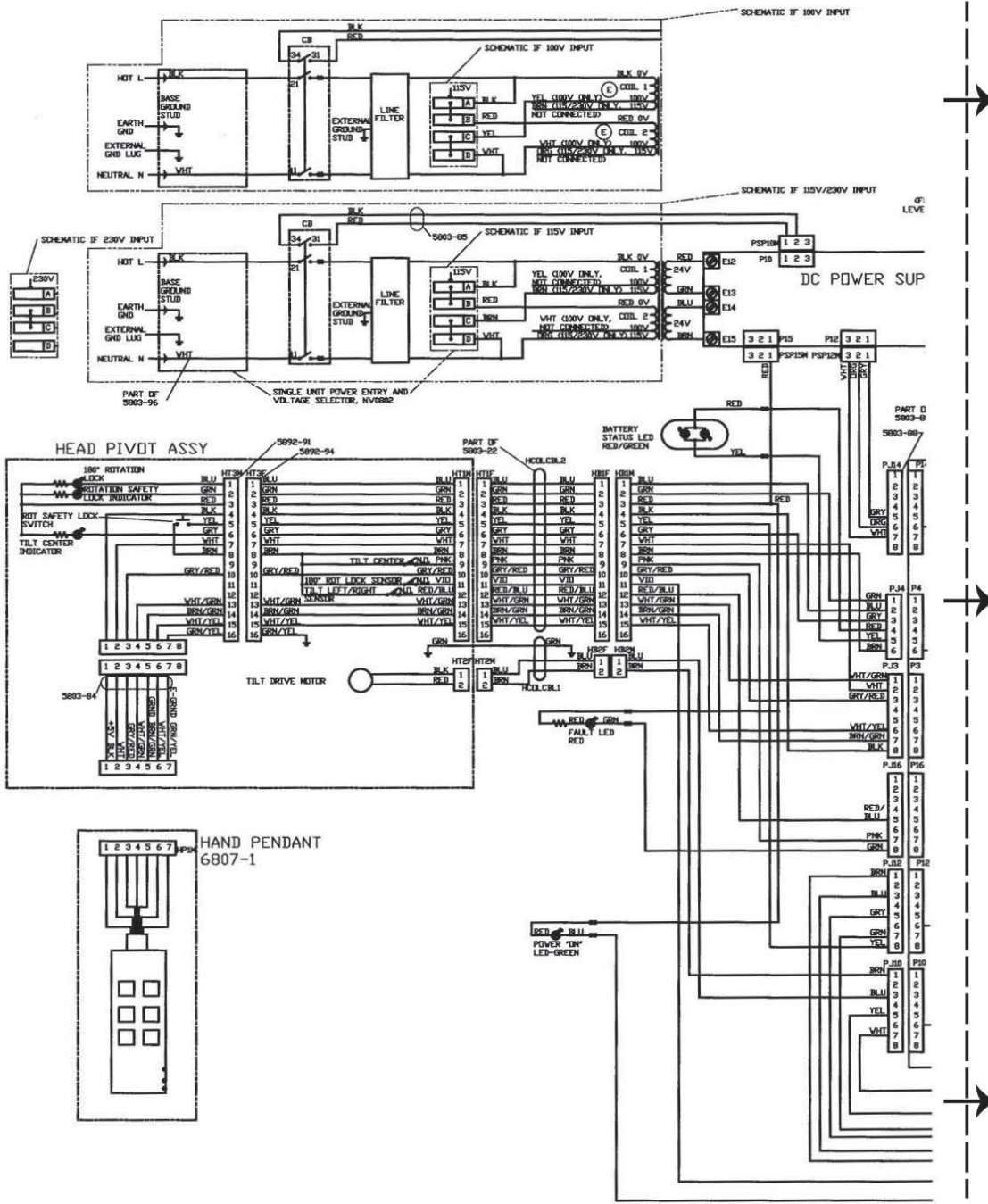


Figure 36a: Interconnect Diagram 100/120/220-230V

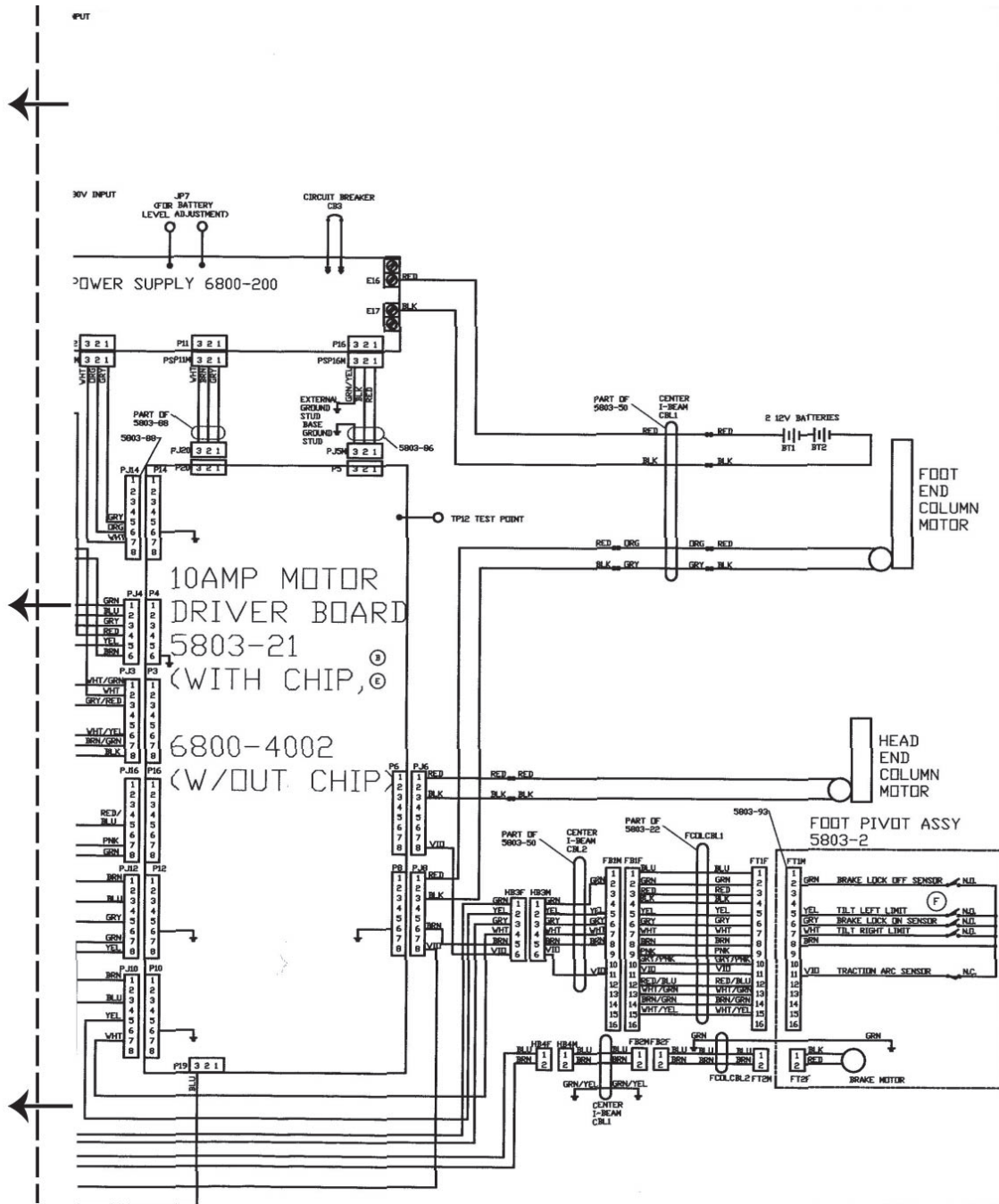


Figure 36b: Interconnect Diagram 100/120-/220-230V (con't)

12.2 Replacement/Spare Parts List

10-Amp Motor Control PCB	REF 5803-21
180-Degree Rotation Indicator	REF 5803-90
180-Degree Rotation Lock Lever	REF 5892-100
Battery Set	REF 5803-503
Brake Actuator (foot-end)	REF 5892-16
Brake Caster	REF ND0437
Hand Control	REF 6807-1
Bracket Clip A	REF 6807-17
Bracket Clip B	REF 6807-18
Screw	REF AAAM037BAC
Screw	REF AAAM025BAC
ON/OFF Power Switch	REF NV0603 (For Serial Numbers 4000 and above)
	REF NV0834 (For Serial Numbers 3000 - 3999)
Power Cord	REF NV0584
(Hospital Grade Tag)	REF NP1559
Power Supply	REF 5803-48 (For Serial Numbers 4000 and above)
	REF 5803-20 (For Serial Numbers 3000 - 3999)
AC Power Entry	REF NV0802
Retracting Lock Lever	REF 5890-70
Rotation Test Bar	REF T5890-21-23
Rotation Safety Lock Switch	REF 5803-92
Steering Caster	REF ND0436
Tilt Actuator (Head-End)	REF 5892-17
Indicator, modified	REF 5803-90
Traction Pulley Assembly	REF 5892-79

NOTE: *Country specific Power Cords are available. Please contact Mizuho OSI Service (see Section 13) for proper selection.*

12.3 Replacement Parts



REF 6807-1 Hand Pendant



REF ND0437 Brake Caster

REF ND0436 Steer Caster



REF 5890-70 Retracting Lock Lever

Additional Part Numbers: (see Section 12.2)



REF 5892-100 Rotation Lock Lever

13 Technical Support

13.1 Contact for Parts and Service

For detailed repair information or to order replacement parts, call Mizuho OSI Service at **1-800-777-4674** for calls within the USA or **+1-510-429-1500** for calls outside the USA. At the prompt, select **Option 2**.

A Service line is available from 5 AM to 5 PM Pacific Time, Monday through Friday. Please leave a message after business hours.

Please state slowly your name, phone number, your facility name and city, affected equipment model number, and serial number.

An email message may be left anytime at service@mizuhosi.com or through the web site: www.mizuhosi.com.

13.2 Order Replacement Parts

If unable to identify part please call, fax, or e-mail Mizuho OSI Service before placing an order. Once the part number is obtained, follow the instructions below to order the replacement part.

If part is known, please telephone, fax or e-mail part number and description to Mizuho OSI Service for price and availability.

To place Replacement Parts (RP) order please telephone, fax or e-mail Mizuho OSI Service with the part number, description, price, customer number and method of shipment with purchase order. Indicate that order is for Replacement Parts (RP).

13.3 Return Damaged Parts

Identify the part or part number to be returned.

Telephone, fax or e-mail Mizuho OSI Service with the part number and description of the part for return to obtain a Return Goods Authorization (RGA) number.

Complete the Certificate of Decontamination provided by Mizuho OSI Service.

Return the part with RGA number clearly marked on the outside of the package, and include the Certificate of Decontamination with the shipment.

13.4 Send a Part for Repair

If unable to identify part please call, fax or e-mail Mizuho OSI Service for assistance.

If the part number is known, please call, fax, or e-mail Mizuho OSI Service with the part number and description of problem to obtain a Repair Authorization (RA) number.

Clean/disinfect parts prior to shipping, and complete the Certificate of Decontamination provided by Mizuho OSI Service.

Ship the part with the RA number clearly marked on the outside of the package, and include the Certificate of Decontamination with the shipment.

The part will be evaluated and the customer will be contacted with the cost of repair, if not covered under table warranty.

After customer approval of repair cost, the part will be repaired and returned to the customer.

13.5 Warranty

Mizuho OSI products come with a one (1) year warranty against manufacturer defect. All expenses for parts and labor for product service calls are covered free of charge for the warranty period, except those products that are misused, altered or damaged. All Tempur-Pedic® Medical Pads come with a two (2) year warranty against manufacturer defect. Defective merchandise will be credited or replaced.

13.6 European Union EC Representative

Emergo Europe
Prinsessegracht 20
2514 AP The Hague
The Netherlands

14 Appendix

14.1 Electromagnetic Emissions


Guidance and manufacturer’s declaration – electromagnetic emissions		
The Advanced Control Base is intended for use in the electromagnetic environment specified below. The customer or the user of the Advanced Control Base should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The Advanced Control Base uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The Advanced Control Base is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A (230 V) Not applicable (100 V)	
Voltage fluctuations / flicker emissions	Complies (230 V)	
IEC 61000-3-3	Not applicable (100 V)	

14.2 Electromagnetic Immunity

Guidance and manufacturer's declaration – electromagnetic immunity			
The Advanced Control Base is intended for use in the electromagnetic environment specified below. The customer or the user of the Advanced Control Base should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESD) IEC 61000-4-2	± 6 kV contact ± 8kV air	± 6 kV contact ± 8kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient / burst IEC 61000-4-4	± 2kV for power supply lines ± 1kV for input / output lines	± 2kV for power supply lines ± 1kV for input / output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV line(s) to line(s) ± 2 kV line(s) to earth	± 1 kV line(s) to line(s) ± 2 kV line(s) to earth	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles <5% U_T (>95% dip in U_T) for 5 s	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles <5% U_T (>95% dip in U_T) for 5 s	Mains power quality should be that of a typical commercial or hospital environment. If the user of the Advanced Control Base requires continued operation during power mains interruptions, it is recommended that the Advanced Control Base be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
Note: U_T is the a.c. mains voltage prior to application of the test level.			

Guidance and manufacturer's declaration – electromagnetic immunity

The Advanced Control Base is intended for use in the electromagnetic environment specified below. The customer or the user of the Advanced Control Base should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 V	<p>Portable and mobile RF communications equipment should be used no closer to any part of the Advanced Control Base including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p>Recommended separation distance</p> $d = 1.2\sqrt{P}$
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	$d = 1.2\sqrt{P} \text{ 80 MHz to 800 MHz}$ $d = 2.3\sqrt{P} \text{ 800 MHz to 2.5 GHz}$ <p>Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,^a should be less than the compliance level in each frequency range.^b</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> <div style="text-align: center;">  </div>

Note 1: At 80 MHz and 800 MHz, the higher frequency range applies.

Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

^a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephone and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the Advanced Control Base is used exceeds the applicable RF compliance level above, the Advanced Control Base should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or re-locating the Advanced Control Base.

^b Over the frequency range of 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

14.3 Recommended Separation Distances

Recommended separation distances between portable and mobile RF communication equipment and the Advanced Control Base			
The Advanced Control Base is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Advanced Control Base can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Advanced Control Base as recommended below, according to the maximum output power of the communication equipment.			
Rated maximum output power of transmitter W	Separation distance according to frequency transmitter m		
	150 kHz to 80 MHz $d = 1.2\sqrt{P}$	80 MHz to 800 MHz $d = 1.2\sqrt{P}$	800 MHz to 2.5 GHz $d = 2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.37	0.37	0.74
1	1.2	1.2	2.3
10	3.7	3.7	7.4
100	12	12	23
For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.			
Note 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.			
Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			