

Adante™

Orthopedic Surgical Platform

Owner's Manual



MIZUHO OSI
30031 AHERN AVENUE
UNION CITY, CA 94587-1234
USA
Inside USA: 1-800-777-4674
Outside USA: +1-510-429-1500
Fax: 1-510-429-8500

WWW.MIZUHOSI.COM



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1 Important Notices

1.1 Using This Manual



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 the warnings, cautions and instructions placed on the equipment or described in this manual.

NOTE: *These devices are intended for use by trained personnel only. To schedule an in-service, please contact your domestic Mizuho OSI sales representative, international distributor, or call 1-800-777-4674.*

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.*

1.2 Symbols Used

The following symbols are used on this product and/or in this manual.

Table 1: Symbols Used

Symbol	Meaning
 5840 Type B applied part ¹	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.
 3082 Manufacturer ²	This symbol indicates the manufacturer of the device.
 2497 Date of Manufacture ²	This symbol indicates the date of manufacture.
 0434B Caution ²	This CAUTION symbol indicates a potentially hazardous situation, which if not avoided could result in minor or moderate injury.

Table 1: Symbols Used (continued)

Symbol	Meaning
 W001 General warning sign ³	This WARNING symbol indicates a potentially hazardous situation, which if not avoided could result in serious injury or death.
 WEEE symbol ⁴	This symbol indicates separate Waste collection for Electrical and Electronic Equipment. See <i>Disposal of Electrical Components on page 14</i> for more information.
 2493 Catalog number ²	This symbol indicates a product number.
 2498 Serial number ²	This symbol indicates a serial number.
 1135 Batch code ²	This symbol indicates a lot number.
 	This symbol indicates contents or quantity
 1641 Consult instructions for use ²	This symbol indicates refer to operating instructions.
 M002 Refer to instruction manual/booklet ³	This symbol indicates the owner's manual must be read before use.

Table 1: Symbols Used (continued)

Symbol	Meaning
 5019 Protective earth; protective ground¹	This symbol indicates an internal ground stud.
 5021 Equipotentiality¹	This symbol indicates the terminals which, when connected together, bring the various parts of an equipment or of a system to the same potential, not necessarily being the earth (ground) potential, such as for local bonding.
	This symbol indicates a potential Pinch Point hazard.
 W012 Warning; Electricity³	This symbol indicates Warning, dangerous voltage (related to battery safety).
	This symbol indicates Do not touch, housing energized (related to battery safety).
 5009 Stand-by¹	This symbol identifies a Power/Standby switch.
	This symbol identifies the battery power status LED on the Power Inlet Assembly.
	This symbol indicates a problem or contact information in case of a problem.
 2501 Sterilized using ethylene oxide²	This symbol indicates the product was sterilized using ethylene oxide.

Table 1: Symbols Used (continued)

Symbol	Meaning
 2502 Sterilized using irradiation ²	This symbol indicates the product was sterilized using irradiation.
 	This label indicates patient weight limit.
 5534 Power plug and 5032 Alternating current ¹	This symbol identifies connecting means (for example, plug or cord) to the AC power source.
 1135 General symbol for recovery/recyclable ²	This symbol indicates that the marked item or its material is part of a recovery or recycling process.
 	This symbol indicates Battery charge status.
 W021 Warning; Flammable material ³	This symbol indicates warning of flammable material.
 6378 Foot control ¹	This symbol identifies a foot control device, connection or function.
 5114 Foot switch ¹	This symbol identifies a foot switch or the connection for a foot switch.
 	This symbol identifies a USB port.

Table 1: Symbols Used (continued)

Symbol	Meaning
	This symbol indicates lock.
	This symbol indicates unlock.
	This symbol indicates latch unlock.
	This symbol indicates toggle unlock.
S	This symbol indicates small size.
M	This symbol indicates medium size.
L	This symbol indicates large size.
R	This symbol indicates right side.
L	This symbol indicates left side.
	This symbol indicates connection interface.
	This symbol indicates alignment mark.
	This symbol indicates align connection.
	This symbol indicates foot connection.
	This symbol indicates foot unlock.
—	This symbol indicates decrease.

Table 1: Symbols Used (continued)

Symbol	Meaning
	This symbol indicates increase.
	This symbol indicates rotate clockwise to unlock and counterclockwise to lock.
	This symbol indicates rotation unlock.
	This symbol indicates traction decrease.
	This symbol indicates traction increase.
	This symbol indicates traction.

1 Standard symbol from "IEC 60417 Graphical Symbols for use with Equipment."

2 Standard symbol from "ISO 7000 Graphical symbols for use on equipment."

3 Standard symbol from "ISO 7010 Graphical symbols — Safety colours and safety signs — Registered safety signs."

4 Symbol from "Directive 2012/19/EU."

1.3 General Warnings, Cautions, and Notes



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: Use of the Adante AX Orthopedic Surgical Platform in knee or hip mode with patients weighing more than 400 lbs (227 kg) could result in damage to the platform, possible injury to the patient, or harm to the healthcare professionals.



WARNING: Medical electrical equipment needs special precautions regarding Electromagnetic Compatibility (EMC) and needs to be installed and put into service according to the EMC information provided in this manual (see *Electromagnetic Compatibility on page 240*).



WARNING: Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.



WARNING: The use of accessories, transducers, and cables other than those specified or provided by Mizuho OSI could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.



WARNING: Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the Adante AX Orthopedic Surgical Platform, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.



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: Before and after each use, inspect the table top, components, and accessories for possible damage, excessive wear, or non-functioning parts. Carefully inspect all critical, accessible 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 *Contact for Parts and Service on page 238*).



WARNING: The Adante AX Orthopedic Surgical Platform should not be operated in an oxygen-rich environment, or in the presence of flammable anesthetics, volatile substances, or other explosive gases, liquids, or atmospheres.



WARNING: The Adante AX Orthopedic Surgical Platform is to be used by personnel that receive training from either Mizuho OSI or from someone qualified by the medical facility to provide this training. Failure to comply with this requirement may result in damage to the device, possible injury to the patient, or harm to the healthcare professionals.



WARNING: No modification of the Adante AX Orthopedic Surgical Platform 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 professionals.



WARNING: Do not perform any service or maintenance work on the device while it is in use with a patient. Servicing the device while in use may cause injury to the patient.



WARNING: Use of components not manufactured or recommended by Mizuho OSI may result in harm to the patient, the device, or the healthcare professionals.



WARNING: Tipping Hazard – Exercise caution when transporting device over uneven surfaces.



WARNING: The Adante AX Orthopedic Surgical Platform should not be used for patient transport of patients over 400 lbs (181.4 kg). The platform can tip over and cause injury to the patient.



CAUTION: The table base is not for storage. Do not store anything on the table base. Storing any item here may result in damage to the table or the item being stored during table positioning.



CAUTION: Do not use the table to transport equipment between rooms. Using the table to transport any equipment may result in damage to the table or the equipment being transported.



CAUTION: Be careful when placing hands near movable parts, crevices, or locking mechanisms, as these areas may present a pinch hazard. Failure to do so may result in harm to the healthcare professional.



CAUTION: Use only compatible accessories for the intended procedure. Ensure compatible accessories used are securely attached and/or properly clamped to prevent detachment under load.



CAUTION: Always use the appropriate Adante Procedure Kit components with the Adante AX Orthopedic Surgical Platform. Failure to do so may compromise sterility, risk patient safety, damage the platform, and void the warranty.



CAUTION: As outlined in the AORN Guideline for Positioning the Patient, 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.

NOTE: *If high-frequency surgical equipment, cardiac defibrillators, or cardiac defibrillator monitors are to be used with the Adante AX Orthopedic Surgical Platform, refer to the instructions for use provided by the manufacturer of those devices. Potential hazards that must be considered include, but are not limited to, patient burns, explosion hazards, and electric shock of the patient or operator.*

1.4 Trademarks and Patents

Adante™ and FlexLation™ are trademarks of Mizuho OSI.

IntelliTouch® is a registered trademark of Mizuho OSI.

Tempur-Pedic® and TEMPUR® are registered trademarks of Tempur-Pedic North America, Inc.

Coban™ is a trademark of the 3M Corporation.

Patents Pending

1.5 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 regulations or returned to Mizuho OSI for proper disposal. Please contact Mizuho OSI Service at **1-800-777-4674** inside the US or **+1-510-429-1500** outside the US for further information regarding this requirement.

2 Introduction

2.1 General Description

The Adante AX Orthopedic Surgical Platform is designed to safely hold in proper position a patient undergoing lower-body orthopedic surgical procedures. The platform provides improved access to the surgical site for patients undergoing knee procedures.

It is an AC-powered, or internal battery-operated, platform designed to position a patient in the supine position during surgical procedures. The Adante AX Orthopedic Surgical Platform is equipped with two light-weight radiolucent Adante FlexLation Spars (left and right) that provide the user with an easy installation and allow for flexion of the knee, gross and fine traction, abduction, adduction, and hip flexion and extension. There are multiple interfaces, such as the Adante Traction Mount, the Adante IntelliTouch Hand Pendant, and the Spar Control Interface, that allow the user to handle spar motions.

The Adante AX Orthopedic Surgical Platform includes Mizuho OSI Tempur-Pedic Medical Pads. The material used in the manufacture of the pads has viscoelastic properties and is temperature sensitive, becoming softer where the patient's body makes the most contact with the surface and remaining firm in the areas where less body contact is made. Pressure is distributed evenly over the entire surface area. The pad is radiolucent and is not made with natural rubber latex. The benefits of using Mizuho OSI Tempur-Pedic Medical Pads are improved pressure redistribution, reduced shear forces, and enhanced patient comfort when used in ambient temperatures.



Figure 1: Adante AX Orthopedic Surgical Platform Configured for Knee Procedures



Figure 2: Adante AX Orthopedic Surgical Platform Configured for Hip Procedures

2.2 Intended Use

The Adante AX Orthopedic Surgical Platform is an electrically powered mobile operating table that is intended for use to temporarily (<24 hours) support and position a patient during orthopedic surgical procedures, including radiographic imaging during such procedures. The following procedures may be performed on the surgical platform:

- Anterior Approach Total Hip Arthroplasty
- Hip Arthroscopy
- Hip Fracture
- Total or Partial Knee Arthroplasty
- Knee Arthroscopy
- Tibia Fracture
- Femur Fracture

When properly positioned and configured, the Adante AX Orthopedic Surgical Platform is also intended for patient transport between rooms in a medical facility.

2.3 User Profile

The Adante AX Orthopedic Surgical Platform 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 Adante AX Orthopedic Surgical Platform, the user must read the NW1086 Adante™ Orthopedic Surgical Platform Owner's Manual.

It is required that personnel using the Adante AX Orthopedic Surgical Platform receive training by either Mizuho OSI or by someone qualified by the medical facility to provide this training.

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** inside the US or **+1-510-429-1500** outside the US.*



WARNING: Failure to ensure training prior to use of this device may cause harm to the patient, healthcare professional, or the device.

2.5 Conditions of Use

The Adante AX Orthopedic Surgical Platform may be used several times throughout the day and night in medical facilities; for example, hospitals, and outpatient surgery/imaging centers. The Adante AX Orthopedic Surgical Platform will be used in an operating room or other treatment room, and may be rolled between rooms.

2.6 Product Lifetime

The Adante AX Core Table is designed for a product life of ten (10) years of typical use. 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. The product's functionality depends on many factors, including but not limited to the frequency of use, maintenance and servicing, and how it's used. Therefore, Mizuho OSI recommends that the table undergo authorized preventive maintenance and repair throughout its lifetime. Contact Mizuho OSI Service for product end-of-life disposal instructions (see *Technical Support on page 238*). For product warranty information, see *Warranty on page 239*.

NOTE: *Expected end-of-life for Tempur-Pedic Medical Pads is three (3) years or sooner, based on use and care.*

2.7 Specifications

The Adante AX Orthopedic Surgical Platform has the following specifications:

- The surgical platform is designed to hold a maximum patient load of 500 lbs (227 kg) in a procedural position at any point within its physical range when in Hip or Knee Mode.
- The surgical platform has:
 - A height range of 32.4 to 51 inches (82.2 to 129.5 cm).
 - A width of 23 inches (58.4 cm), including the side rails.
 - A length range of 50 to 131 inches (127 to 332.7 cm).
- The surgical platform in the Home Position has a height of 32.4±0.4 inches (81.28 to 83.31 cm).
- The lateral tilt range is ±18 degrees.
- The maximum range is 14.7 degrees for Trendelenburg and 15 degrees for Reverse Trendelenburg.
- The Adante FlexLation Spars are:
 - Capable of positioning a patient's leg in up to 20 degrees of adduction and 40 degrees of abduction.
 - Capable of raising a patient's leg up to 21 degrees above level and lowering the leg 38 degrees below level.
 - Able to be translated up to 19.5 inches (superior) and up to 5 inches (inferior), with a total range of up to 24.5 inches.
- The surgical platform provides a pelvic imaging window up to 10 inches in length.
- The input power requirement is 100-240 VAC, ≤10A, and 50/60Hz.
- The surgical platform may also be operated under battery power.
 - The battery has an expected life of 5 years and is field replaceable.
 - The expected working life of a fully charged battery is approximately 28 hours at a 4% duty cycle.
- The wireless Adante IntelliTouch Hand Pendant operates under battery power.
 - The expected working life of a fully charged battery for the hand pendant is approximately 24 hours with typical use.
 - The hand pendant has a maximum operating range of 20±2 feet when using wirelessly.
- The surgical platform transmits and receives in the: 2.4 GHz ISM band (2.40 - 2.48 GHz) per IEEE 802 for Zigbee, UIC Wi-Fi, and Bluetooth connectivity.
- Operating Environment: ≥10≤ 35 °C, humidity ≥40-≤80%, RH, non-condensing, atmospheric pressure 75 to 105 kPa.
- The device is IPx4 rated per IEC 60529.
- The surgical platform is not suitable for use with flammable anesthetic gas mixtures.

2.8 Shipping and Storage

If required to be transported, the Adante AX Orthopedic Surgical Platform must be transported using the appropriate shipping crate. Unpacking instructions were included with the original shipping crate and should be included on the outer surface of the crate if the surgical platform must be transported.

When not in use, the surgical platform and all components should be stored in a clean, dry environment. The surgical platform and Adante IntelliTouch Hand Pendant should also be plugged in and charging when not in use.

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

- Ambient Temperature –5 to 45 °C for storage, –20 to 55 °C for shipping
- Relative Humidity 10 to 95%, non-condensing
- Atmospheric pressure from 75 to 105 kPa

3 Component Identification

3.1 Platform Orientation

The Adante AX Orthopedic Surgical Platform is described as having a Head-End and a Foot-End. The Power Inlet Assembly and Auxiliary Control Panel are located at the Head-End of the platform.

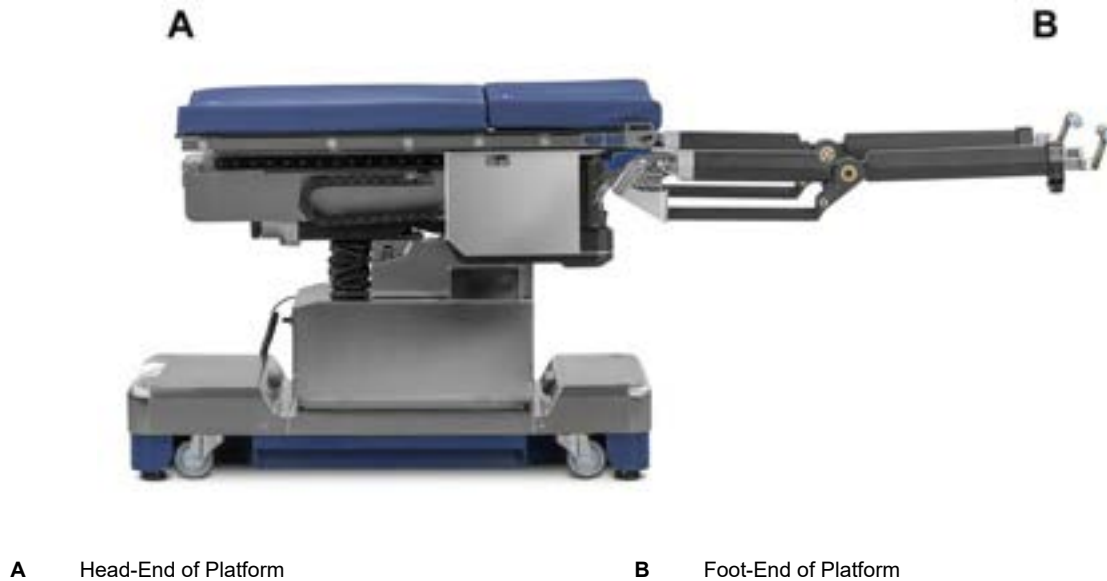
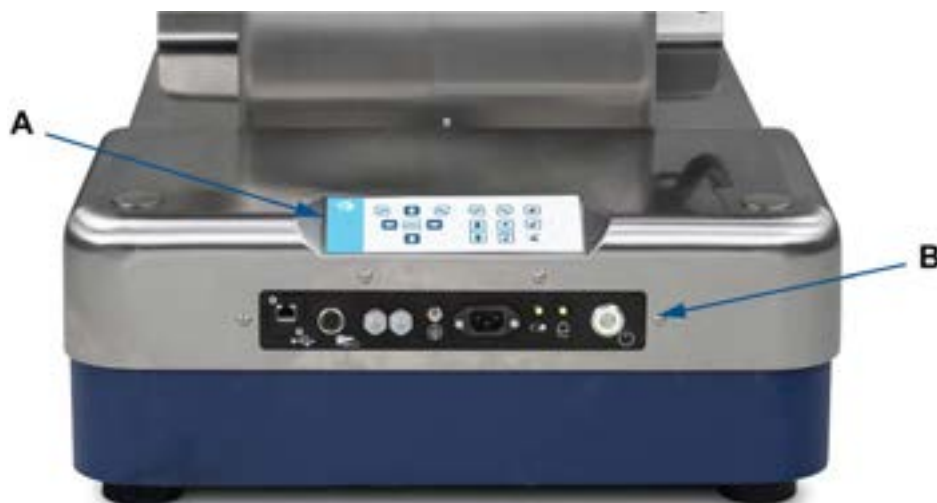


Figure 3: Side View of Adante Platform

3.2 Platform Base

The platform base houses the Power Inlet Assembly and the Auxiliary Control Panel. Both are located at the Head-End of the table.

**A** Auxiliary Control Panel**B** Power Inlet Assembly**Figure 4: Power Inlet Assembly and Auxiliary Control Panel on Platform Base**

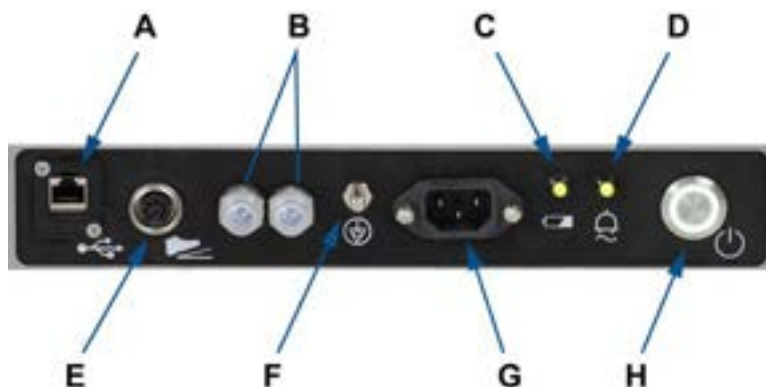
CAUTION: The platform base is not for storage. Do not place anything on the platform base. Storing any item here may result in damage to the platform or the item during platform positioning.

3.2.1 Auxiliary Control Panel

The Auxiliary Control Panel is located above the Power Inlet Assembly on the platform base. It provides a secondary option for controlling primary table motions and Floor Lock function. The Auxiliary Control Panel may be used to control platform Height, Trendelenburg/Reverse Trendelenburg, Lateral Tilt, and Floor Lock operation. The platform can also be moved to its Home position using the Auxiliary Control Panel. The indicator lights on the panel confirm that floor locks are locked or unlocked, indicate when the table is in home position, and when the table is in such an unstable condition that the floor locks are not available.

3.2.2 Power Inlet Assembly

The Power Inlet Assembly on the Platform Base is equipped with the following electrical features:



A	Service Port	B	Circuit Breakers (2)
C	Battery Status LED	D	AC Power Indicator LED
E	DO NOT USE	F	External Ground Stud
G	AC Power Cord Receptacle	H	Power Switch

Figure 5: Power Inlet Assembly

If the table is running on AC power, the AC Power Indicator LED will be illuminated green. The Battery Status LED will be illuminated in either green, indicating batteries are fully charged, or amber, indicating batteries are charging.

NOTE: See *Battery Status Area* on page 104 for battery status information displayed on the *Adante IntelliTouch Hand Pendant* touch screen.

3.2.3 USB Ports

There are eight (8) USB-C ports located on the platform column: four (4) on the front and four (4) on the back of the column. Two (2) ports support up to 20V, while the remaining six (6) ports support up to 5V (*Figure 6*). Use USB-C ports only to power or charge Mizuho OSI approved accessories or devices. Using USB ports with unapproved devices may cause damage to the platform.

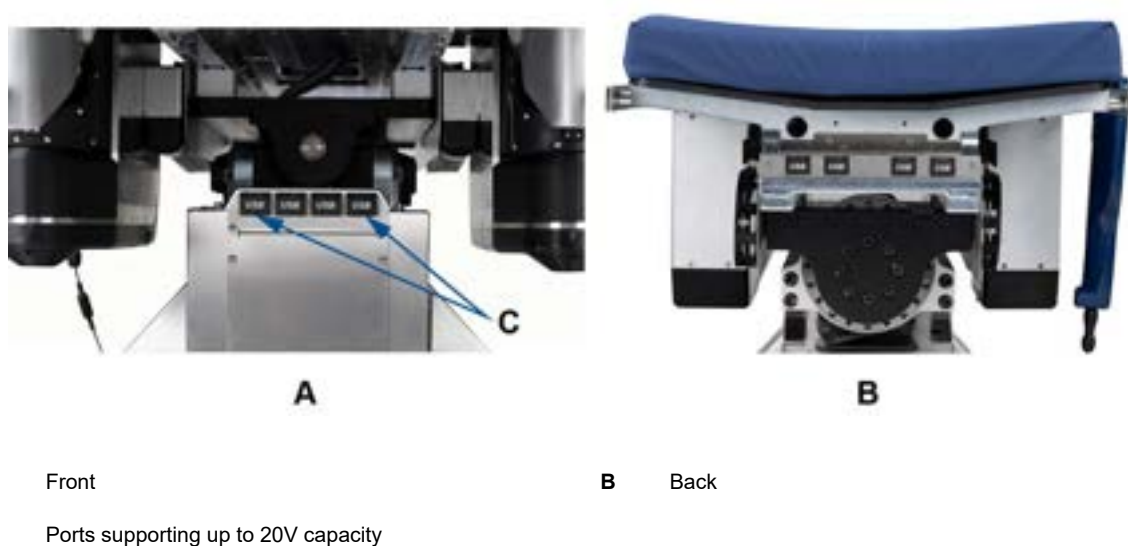


Figure 6: USB-C Ports on the Platform Column

3.3 Platform Top

The Adante AX Orthopedic Surgical Platform Top is contoured to improve support and safety for the patient.



Figure 7: Adante Platform

3.3.1 Adante FlexLation Spars

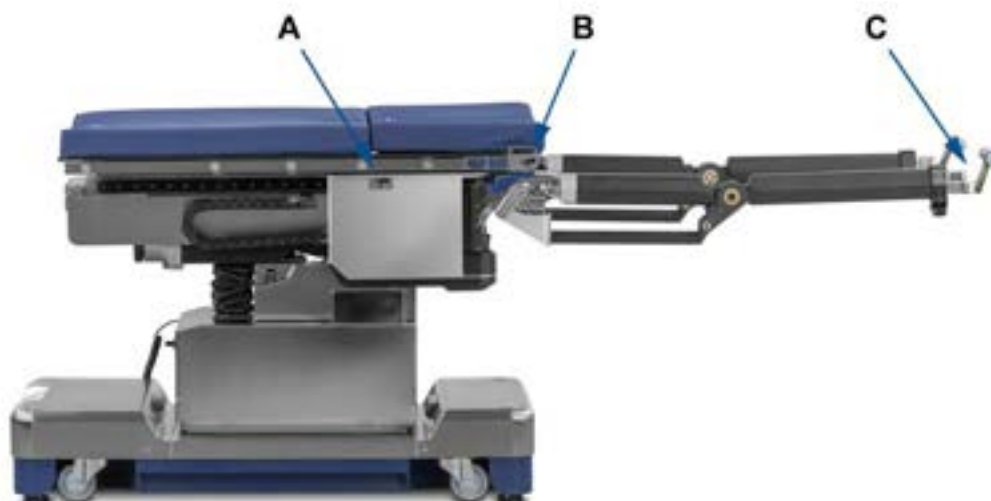
The left and right radiolucent Adante FlexLation Spars attach at the Foot-End of the Adante Platform. They support and suspend the patient's legs for surgery. The leg spars operate independently and allow for traction, abduction, adduction, hip flexion/extension, and knee flexion/extension.



Figure 8: Adante FlexLation Spar

3.3.2 Mizuho Accessory Interface (MAI)

The Mizuho Accessory Interfaces can detect when a specific accessory is connected to the platform. Once an accessory is connected to an MAI, it is detected by software and the Adante IntelliTouch Hand Pendant touch screen display will indicate the item installed. There are six (6) accessory attachment points: two on the outer edges of the inferior end of the platform, two on the spar bases (for future use), and two on the spar ends, each positioned on the left and right sides.



- | | | | |
|----------|--|----------|---------------------------|
| A | For Future Use | B | For Femur Lift attachment |
| C | For Adante Traction Mount and Adante Knee Mount attachment | | |

Figure 9: Mizuho Accessory Interface Locations

3.3.3 Spar Control Interface

The Spar Control Interface provides surgeons the ability to control spar functionality during surgery. The Spar Control Interface can be found on the left and right side of the platform for ease of access.



Figure 10: Spar Control Interface Location

3.4 Adante IntelliTouch Hand Pendant

The Adante AX Orthopedic Surgical Platform functions are controlled by the wireless Adante IntelliTouch Hand Pendant. The hand pendant is equipped with buttons and a touch screen that provide platform functions and motion controls.

The buttons on the hand pendant provide controls for Height, Translation, Trendelenburg/Reverse Trendelenburg, Lateral Tilt, Sagittal Motion, Coronal Motion, and locking/unlocking the floor locks. The graphical display of the hand pendant provides real time information about the platform's position: Height, Trendelenburg/Reverse Trendelenburg, Lateral Tilt angle. The hand pendant also informs the user of the platform's power and floor lock status. The platform's functions and settings, which include standard and user-defined preset positions, and language and unit display settings, are managed using the hand pendant touch screen. The spar functions, such as gross and fine traction, unlocking and locking adduction and abduction, can be controlled using the touch screen.

NOTE: *Table Translation, Pelvic Pitch, and Pelvic Yaw are not available for the Adante AX Core Table*

When the platform is in use, the current Height is identified on the display screen in inches/centimeters. The angle of Trendelenburg/Reverse Trendelenburg and Lateral Tilt is displayed in degrees.



Figure 11: Adante IntelliTouch Hand Pendant

3.5 Adante Durable Body Strap

The Adante Durable Body Strap secures the patient to the Adante Platform. The strap secures to the loop attachment points on the left and right sides of the platform.



Figure 12: Adante Durable Body Strap

3.6 Pivoting Arm Boards

The Pivoting Arm Boards support the patient's arms when the patient is in the supine position on the Adante Platform.



Figure 13: Pivoting Arm Board

3.7 Hip Components

The following components are only used during hip procedures. For components used during knee procedures, refer to *Knee Components* on page 30.

3.7.1 Adante Pelvic Center Board

The Adante Pelvic Center Board attaches to the static pelvic mount at the Foot-End of the platform. The pelvic center board provides pelvic support for the patient during hip procedures.



Figure 14: Pelvic Center Board

3.7.2 Adante Femur Lift

The Adante AX Orthopedic Surgical Platform uses the Adante Femur Lift to support and adjust the Femoral Hooks during Anterior Approach Total Hip Arthroplasty (AATHA). The height of the Femoral Hooks can be adjusted manually or through powered controls.



Figure 15: Femur Lift

3.7.3 Femoral Hooks and Femoral Hook Bracket

The Femoral Hook and Adante Femoral Hook Bracket provide support for the femur during Anterior Approach Total Hip Arthroplasty. The Femoral Hooks are imprinted with L and R to designate left and right.



A Femoral Hooks

B Classic Femoral Hooks

Figure 16: Femoral Hooks



Figure 17: Adante Femoral Hook Bracket

3.7.4 Adante Traction Mount

The Adante Traction Mount provides controls for gross/fine traction and rotation of the operative leg when the Adante Traction Sandal is attached to the mount.



Figure 18: Adante Traction Mount

3.7.5 Adante Traction Sandal

The Adante Traction Sandal secures the patient's foot to the Adante Traction Mount and provides skin traction during hip procedures.



Figure 19: Traction Sandals

3.8 Knee Components

The following components are only used during knee procedures. For components used during hip procedures, refer to *Hip Components on page 27*.

3.8.1 Adante Knee Extension Board

The Adante Knee Extension Board attaches to the static pelvic mount at the Foot-End of the platform. The Adante Knee Extension Board provides pelvic support for the patient during knee procedures.



Figure 20: Adante Knee Extension Board

3.8.2 Adante Knee Mount

The left and right Adante Knee Mounts hold the Adante Knee Foot Support in place. When an Adante Knee Mount is detected on a spar, spar flexion is enabled.



Figure 21: Adante Knee Mount

3.8.3 Adante Knee Pad Support Mounts

The left and right Adante Knee Pad Support Mounts provide support for the patient's non-operative leg during knee procedures when attached to the Adante FlexLation Spars. The Adante Knee Pad Support Mounts are designed to attach to a specific side of the table. Ensure that the correct pad and board are attached to either the left or right Adante FlexLation Spar.



Figure 22: Adante Knee Pad Support Mount

3.8.4 Adante Knee Foot Support

The Adante Knee Foot Support, in conjunction with the Knee Mount, holds the foot in place during knee procedures. Pressing the foot support's Spar Release Plate releases the operative leg spar's knee flexion capability.



A Spar Release Plate

Figure 23: Adante Knee Foot Support

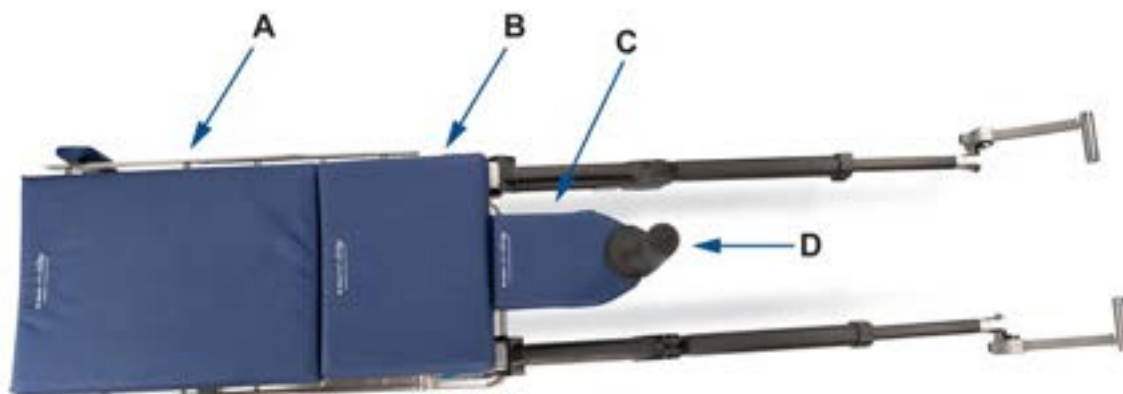
3.9 Tempur-Pedic Pads

The Adante AX Orthopedic Surgical Platform includes Mizuho OSI Tempur-Pedic Pads to support the patient's upper and lower body.

There are two pads that attach to the surgical platform and provide support for the patient's upper body: the Adante Superior Trunk Pad and the Adante Supine Trunk Pad.

There are two pad options that attach to the Adante Pelvic Center Board and provide support for the patient's pelvic region during hip arthroplasty and hip arthroscopy procedures. Attach the Adante Pelvic Center Pad when using a perineal post. Attach the Adante Pelvic Center Postless Pad when not using a perineal post.

The Adante Knee Extension Board Pad attaches to the Adante Knee Extension Board and provides support for the patient's pelvic region during knee arthroplasty and knee arthroscopy procedures. There are two Adante Spar Leg Pads that are side specific. They attach to either the left or right Adante Knee Pad Support Mount for non-operative leg.



A Adante Superior Trunk Pad

B Adante Supine Trunk Pad

C Adante Pelvic Center Pad

D Adante Saddle Post

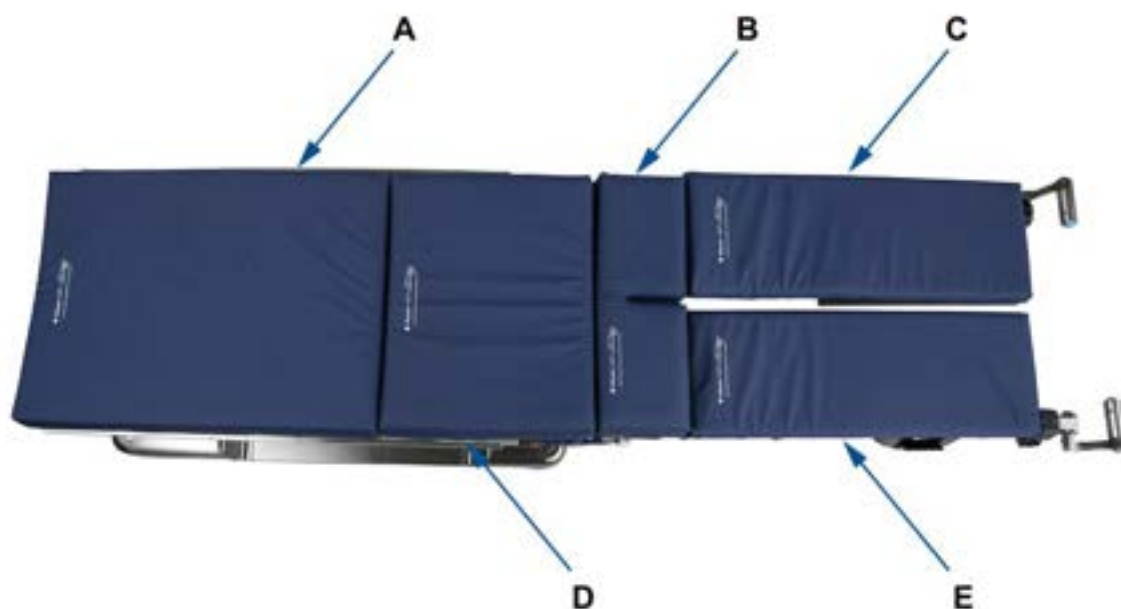
Figure 24: Tempur-Pedic Pads used for Hip Procedures



A Adante Pelvic Center Postless Pad

B Adante Pelvic Center Pad

Figure 25: Pelvic Center Board Pads

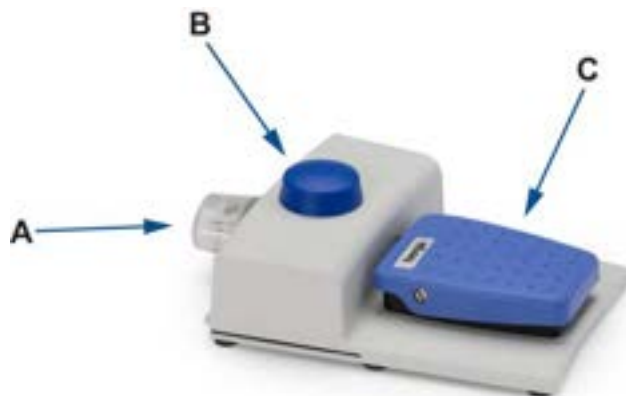


- | | | | |
|----------|----------------------------------|----------|---------------------------------|
| A | Adante Superior Trunk Pad | B | Adante Knee Extension Board Pad |
| C | Adante Spar Leg Pad, Knee, Left | D | Adante Supine Trunk Pad |
| E | Adante Spar Leg Pad, Knee, Right | | |

Figure 26: Tempur-Pedic Pads used for Knee Procedures

3.10 Adante Wireless Foot Pedal

The Adante Wireless Foot Pedal connects to the Adante AX Orthopedic Surgical Platform and allows the user to adjust the height of the Adante Femur Lift, the height of the surgical platform, Trendelenburg/Reverse Trendelenburg, and Tilt, as selected by the Adante IntelliTouch Hand Pendant.



A Battery Compartment

B Upper Pedal

C Lower Pedal

Figure 27: Adante Wireless Foot Pedal

3.11 Model Number and Serial Number

The manufacturer's label is located here:

Figure 28: Manufacturer's Label on Platform Base

This label includes the **REF** product number, **SN** serial number, and address and contact information for the manufacturer, Mizuho OSI.

NOTE: Additional product information may also be found on the manufacturer's label.

4 Basic Operations

4.1 Power the Surgical Platform



WARNING: To avoid the risk of electric shock, this equipment must only be connected to a Supply Mains with protective earth.



CAUTION: The AC Power Cord is the primary means for isolating the Adante AX Orthopedic Surgical Platform from the electric Supply Mains power. To ensure safe operation of the equipment, do not position the platform such that it is difficult to connect and disconnect the AC Power Cord.



WARNING: This symbol indicates an external ground stud that is required for use when the table is used under battery power when the AC power cable is not present. Failure to ensure ground may cause harm to the patient, healthcare professionals, or the device.

4.1.1 AC Power

To use the platform with AC power:

1. Plug the Power Cord into the platform and a properly grounded AC power receptacle.

Refer to the manufacturer's label at the Head-End of the table base for input voltage requirements.

NOTE: Only use the Power Cord supplied by Mizuho OSI with the platform or if necessary, one of equivalent rating.

2. Press the **Power Button** and verify that the switch flashes until the table is ready to use with a green ring indicating that power is applied to the platform (*Figure 29*).



A External Ground Stud

B Power Button

Figure 29: External Ground Stud and Power Switch on Power Inlet Assembly

NOTE: Pressing the Power Button a second time will power off the table. The green ring will flash on and off for approximately seven (7) seconds before the platform turns off completely.



CAUTION: Do not press the Power Button while the green ring is flashing. Doing so will put the system into an error state.

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

4.1.2 Power Button Use During an Emergency

In the event of an emergency, to interrupt the motion of the Adante AX Orthopedic Surgical Platform immediately, press the **Power Button** and verify that the green ring is no longer illuminated.

4.1.3 Battery Power

The expected working life of fully charged Platform batteries is approximately 28 hours at a 4% duty cycle (2.5 min on, 60 min off). While in storage, it is recommended that the platform be plugged in to charge the batteries. The platform does not need to be turned on.

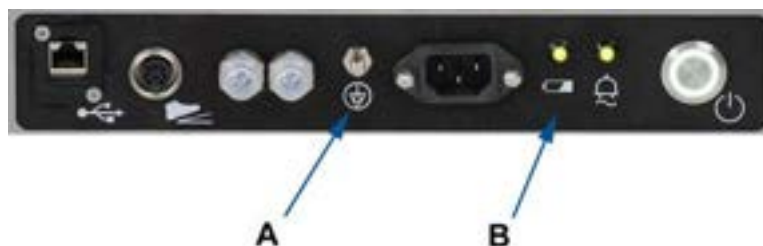
Fully depleted batteries will take approximately 12 hours to fully charge. (Normal charge time is approximately 8 hours.) This can be accomplished when using the platform under AC power.

Do not store the platform without plugging it into AC power. Doing so, especially with batteries at low or no charge, will degrade the overall battery life.

To use the platform with battery power:

1. Ensure that the table batteries have been properly charged (*Figure 31*).
2. Press the Power/Standby Switch and verify that the switch illuminates with a green ring indicating that power is applied to the platform.

The Battery Status LED on the Power Inlet Assembly will be illuminated, indicating that the platform is being used on battery power (*Figure 30*).



A External Ground Stud

B Battery Status LED

Figure 30: Battery Status on Auxiliary Control Panel

The platform battery status symbol on the upper right side of the Adante IntelliTouch Hand Pendant touch screen indicates the level of charge in the platform batteries. If the battery status symbol with one yellow bar appears, the batteries are nearing depletion and the platform should be connected to AC power. It can continue to be used while the batteries are charging.



A Battery Charge Status for Platform

B Battery Charge Status for Hand Pendant

Figure 31: Battery Status on Hand Pendant

3. When operating on battery without an AC Power Cord present, connect the external ground stud to earth ground via an equipotential connector/busbar.

4.2 Floor Locks

The Adante AX Orthopedic Surgical Platform has powered Floor Locks. Deploy the Floor Locks to prevent the table from moving and provide a stable platform during surgical procedures. Retract the Floor Locks to move or reposition the table within or between rooms. When the surgical platform is powered on, the Floor Locks will automatically return to their previous state of either being deployed or retracted.

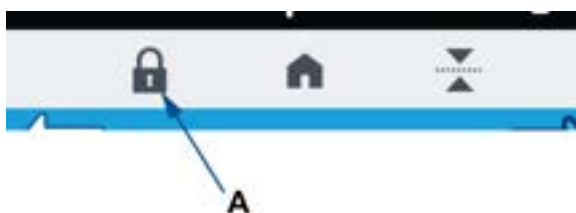
To lock the Floor Locks using the Adante IntelliTouch Hand Pendant or the Auxiliary Control Panel:

1. Press the **Lock Floor Locks** button once and release to deploy the Floor Locks.

Each Floor Lock will lower until making contact with the ground, raising the casters off the floor (*Figure 32*). The hand pendant will indicate in the Platform Status area of the touch screen when the Floor Locks are fully deployed and the platform cannot move on its casters (*Figure 33*). On the Auxiliary Control Panel, the Floor Lock LED will illuminate (*Figure 34*).



Figure 32: Floor Lock Engaged



A Floor Locks Locked

Figure 33: Hand Pendant Display when Floor Locks are Locked



A Lock Floor Lock Button and LED

Figure 34: Auxiliary Control Panel

NOTE: The powered motions of the surgical platform will not function until the Floor Locks are locked.

To unlock the Floor Locks using the hand pendant or the Auxiliary Control Panel:

2. Press the Unlock Floor Locks button once to and release to disengage the floor locks.

The floor locks will raise, allowing the casters to touch the floor (*Figure 35*). The hand pendant will display when the floor locks are disengaged (*Figure 36*).



Figure 35: Floor Lock Disengaged



A Floor Locks Unlocked

Figure 36: Hand Pendant Display when Floor Locks are Unlocked



A Unlock Floor Lock Button and LED

Figure 37: Auxiliary Control Panel

NOTE: Floor Locks will not disengage if the monitored position is unstable. If the hand pendant touch screen indicates instability, reposition the patient until the instability indicator turns off. Once the position is stable, Floor Locks can be disengaged.



WARNING: When the Floor Locks are disengaged, the surgical platform no longer monitors stability.

4.2.1 Floor Lock Override Using Adante IntelliTouch Hand Pendant

If the Floor Lock systems fail during surgical platform use such that powered platform motion is prevented, the Adante IntelliTouch Hand Pendant can be used to activate the Floor Lock Override function (see *Override Floor Locks on page 132*). The Floor Lock Override function allows for changes to Height, Trendelenburg/Reverse Trendelenburg, Lateral Tilt, and Return to Level functions via hand pendant and is intended for use in emergency situations only. Floor Lock Override will allow for 60 seconds of activity during which multiple actions can be taken.

NOTE: *Should a particular motion take longer than 60 seconds, the action will be completed as long as the function button continues to be depressed.*

4.2.2 Manual Floor Lock Override

In the event the floor locks do not unlock properly to allow for surgical platform transport, the floor locks can be manually unlocked (see *Manual Floor Lock Override on page 216*).

NOTE: *The manual Floor Lock override is intended only as a means of transporting the surgical platform should the Floor Lock systems fail. Use of this override will not allow the user to activate any of the surgical platform functions.*

4.3 FlexLation Spars

The Adante AX Orthopedic Surgical Platform is equipped with two radiolucent FlexLation Spars (left and right) that allow for traction, abduction, adduction, and raising or lowering of the leg, and knee flexion/extension. When attaching the spars, ensure that the Left Adante FlexLation Spar is installed on the left side of the platform and the Right Adante FlexLation Spar is installed on the right side of the platform.

The spars feature a spar length extension that slides out from the end of the spars to provide additional length for imaging support (see *Spar Length Extension on page 44*).

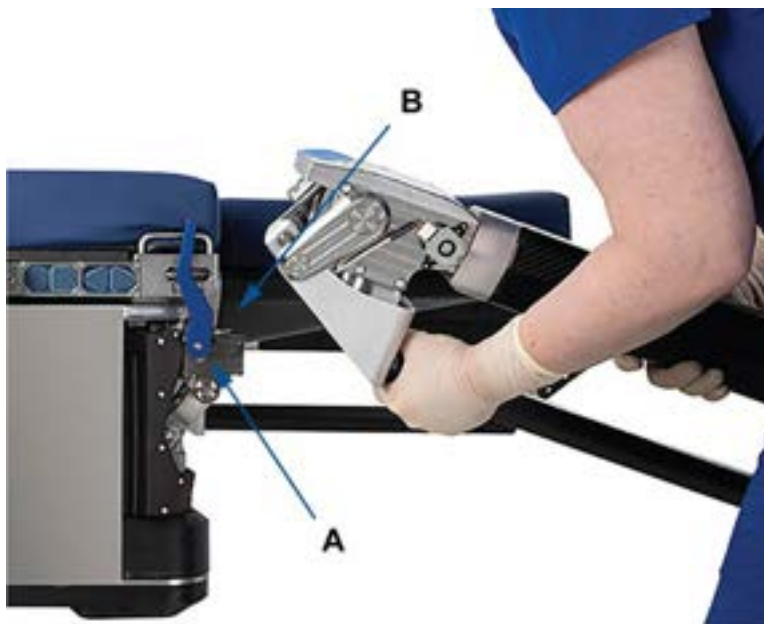
4.3.1 Install Adante FlexLation Spars

To install the Adante FlexLation Spars:

1. Lock the Floor Locks.
2. Adjust Platform height as necessary to facilitate installation.
3. Ensure the Spar Safety Latch is in the unlocked position.
4. Hold the Spar firmly at the proximal end.



CAUTION: Do not hold at the hinge or between metal crevices at the proximal end of the Spar as doing so may present a pinch hazard.



A Spar Safety Latch in unlocked position

B Spar Receiver

Figure 38: Properly Holding the Spar

5. Insert the proximal end of the Left or Right Leg Spar into the appropriate Spar Receiver until fully engaged.



CAUTION: If the wrong spar is installed on the wrong side, it will prevent the Spar Safety Latch from closing and will likely put the table in an error state.



Figure 39: Mounting the Leg Spar

6. Lock into place using the Spar Safety Latch.



Figure 40: Locking the Leg Spar into Place

4.3.2 Remove Adante FlexLation Spars

To remove the Adante FlexLation Spars:

1. Lock the Floor Locks.

2. Adjust Platform height as necessary to facilitate removal.
3. Ensure the Leg Spar is in the straight position.
4. Hold the Spar firmly at the proximal end.



CAUTION: Do not hold at the hinge or between metal crevices at the proximal end of the Spar as doing so may present a pinch hazard.

5. Unlock the Spar Safety Latch.



Figure 41: Unlocking the Spar Safety Latch

6. Lift the Spar out of the Spar Receiver.

4.3.3 Spar Length Extension

The Spar Length Extension is a carbon fiber component that slides out from the end of the spar. It is used during hip and trauma procedures to support imaging.

The top face of the Spar Length Extension features rectangular bar indicators labeled small (S), medium (M), and large (L), which serve as suggested starting points for adjusting the extension length based on patient height. The appropriate setting may vary, and some patients may fall between the marked positions.

4.3.3.1 Extend the Spar Length Extension

Before you begin: Ensure that the tip of the shoulder of the spar is aligned with the end of the platform.

To extend the Spar Length Extension:

1. Raise the Spar Control Handle, if necessary (*Raise the Spar Control Handle on page 47*).
2. Unlock the latch at the end of the spar.



A Latch

Figure 42: Unlock the Latch at the End of the Spar

3. Slide out the Spar Length Extension using the Spar Control Handle.



Figure 43: Slide out the Spar Length Extension Using the Spar Control Handle

4. Set the Spar Length Extension to the appropriate length for the patient's height.
5. Lock the latch to secure the length extension in place.



Figure 44: Locking the Latch to Secure the Length Extension in Place

4.3.3.2 Collapse the Spar Length Extension

To collapse the Spar Length Extension:

1. Unlock the latch at the end of the Spar (*Figure 42*).
2. Push the Spar Length Extension back into the Spar using the Spar Control Handle.
3. Lock the latch to secure the length extension in place.

4.3.4 Reposition the Spar Control Handle

The Spar Control Handle enables motions of the Adante FlexLation Spar and can be raised or lowered to facilitate optimal handle position when the Adante Traction Mount or Adante Knee Mount is installed.

Raise the Spar Control Handle when installing and using the Adante Traction Mount to avoid interference and keep the controls within reach. Lower the handle when installing and using the Adante Knee Mount for better access to controls.

See *Spar Motion and Leg Positioning* on page 87 for detailed spar motion adjustment options and configurations.



Figure 45: Spar Control Handle

4.3.4.1 Raise the Spar Control Handle

To raise the Spar Control Handle:

1. Press the unlock button at the base of the Spar Control Handle.



A Unlock button

Figure 46: Location of the Unlock Button

2. Pull the Spar Control Handle up until it reaches its end of travel and there is an audible click.



Figure 47: Spar Control Handle Raised for Hip Setup

4.3.4.2 Lower the Spar Control Handle

To lower the Spar Control Handle:

1. Press the unlock button at the base of the Spar Control Handle (*Figure 46*).
2. Push the Spar Control Handle down until it reaches its end of travel and there is an audible click.



Figure 48: The Spar Control Handle Lowered for Knee Setup

4.4 Install Pivoting Arm Board

The Pivoting Arm Board (REF 5356 or REF 5357) may be mounted onto the Adante AX Orthopedic Surgical Platform to provide support for a patient's arm. The Pivoting Arm Board provides 0 to 180 degrees of adjustment and is available with a 2 inch (5.1 cm) or 3 inch (7.6 cm) Tempur-Pedic Medical Pad.



Figure 49: Pivoting Arm Board

To install the Pivoting Arm Board:

1. Hold the locking lever of the Pivoting Arm Board at the base of the bracket in the open position and over the edge of the table side rail (*Figure 50*).



Figure 50: Holding Locking Lever on the Pivoting Arm Board in the Open Position

2. Lower the Arm Board into place and release the locking lever.
3. Pull the lever at the distal end of the Arm Board to release the latch, pivot the Arm Board to the desired position, and then release the lever to lock into position (*Figure 51*).



Figure 51: Pulling the Release Lever on the Pivoting Arm Board

4.5 Install Adante Durable Body Strap

The Adante Durable Body Strap is designed to secure the patient to the Adante Platform. It has hooks on both ends that secure to loop attachment points on left and right sides of the platform top.



CAUTION: The Adante Durable Body Strap is intended to secure the patient to the Adante Platform. It should not be removed unless the patient is being transferred off the platform.

To install the Adante Durable Body Strap:

1. Press the metal plate on the underside of the hook at one end of the strap.



Figure 52: Pressing the Metal Plate on the Underside of the Hook

2. Hook that end of the strap to one of the two loop attachment points on the platform.



Figure 53: Hooking One End of the Body Strap to the Loop Attachment Point

3. Position the Patient on the platform.
4. Place the Body Strap over the patient's abdomen and hook the other end to the second loop attachment point.
5. Tighten the padded portion of the strap around the patient's abdomen by pulling the black strap through the adjustment buckle.



Figure 54: Adjusting the Tightness of the Body Strap

6. Fold the slack of the strap and tuck the strap into the back of the body strap pad.



Figure 55: Fold the Slack of the Strap

7. Wrap the pad cover over the black strap and secure using the hook and loop fastener strips.



Figure 56: Closing the Body Strap Compartment

8. Confirm the patient is secure and cannot shift unintentionally.



CAUTION: The Adante Durable Body Strap is intended to secure the patient to the Adante Platform. It should not obstruct or constrict the patient's airways during use.

4.6 Pelvic Center Board

The Adante Pelvic Center Board attaches to the static pelvic mount at the Foot-End of the platform top. The center board is used during hip procedures.



A Connect point

Figure 57: Pelvic Center Board

4.6.1 Install Pelvic Center Board

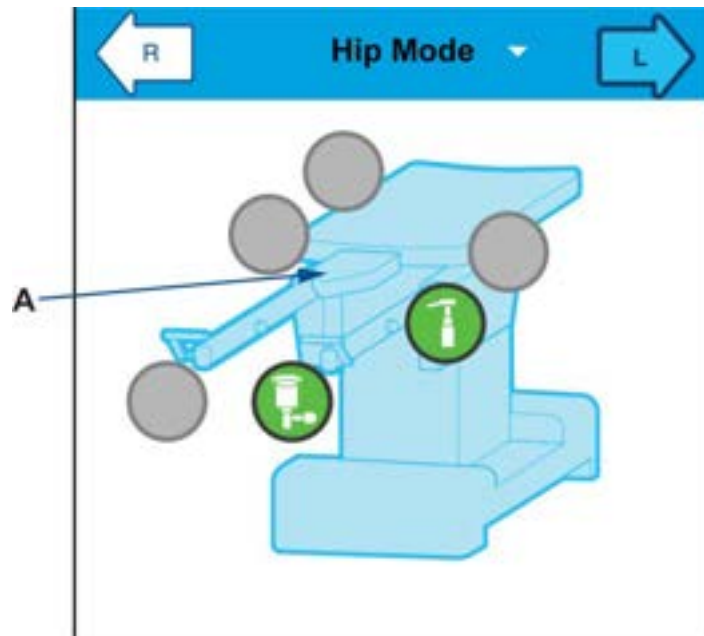
To install the Adante Pelvic Center Board:

1. Insert the Pelvic Center Board into the static pelvic mount found at the Foot-End of the platform top (*Figure 58*).



Figure 58: Inserting the Pelvic Center Board into the Static Pelvic Mount

2. Check the Adante IntelliTouch Hand Pendant Home Screen to ensure the Pelvic Center Board is blue and properly engaged into the static pelvic mount (*Figure 59*).



A Pelvic Center Board engaged into static pelvic mount

Figure 59: Hand Pendant Display Indicating Pelvic Center Board is Engaged in the Static Pelvic Mount

4.6.2 Remove Pelvic Center Board

To remove the Adante Pelvic Center Board:

1. Press and hold the blue release buttons on the underside of the board (*Figure 60*).



A Blue Release Button

Figure 60: Pressing and Holding Blue Release Buttons

2. Lift the board out of the static pelvic mount (*Figure 61*).



Figure 61: Removing the Pelvic Center Board

4.7 Saddle Posts

The Adante AX Orthopedic Surgical Platform comes with two carbon Perineal Posts, one standard Adante Saddle Post and one Adante Extended Saddle Post, that are used for hip procedures. The Saddle Post is used for Anterior Approach Total Hip Arthroplasty while the Extended Saddle Post is used for Hip Arthroscopy. The bolster provides counter-traction when needed.



Figure 62: Saddle Post and Extended Saddle Post

4.7.1 Install the Adante Saddle Post or the Adante Extended Saddle Post

To install the Adante Saddle Post or the Adante Extended Saddle Post:

1. Insert the Adante Supine Perineal Post into the Saddle Post or Extended Saddle Post (*Figure 63*).



Figure 63: Inserting the Supine Perineal Post into the Saddle Post

2. Align the Saddle Post attachment point with the insertion point on the Adante Pelvic Center Board (*Figure 64*).



A Insertion point

Figure 64: Saddle Post Insertion Point

3. Insert the Saddle Post through the hole in the Pelvic Center Board (*Figure 65*).

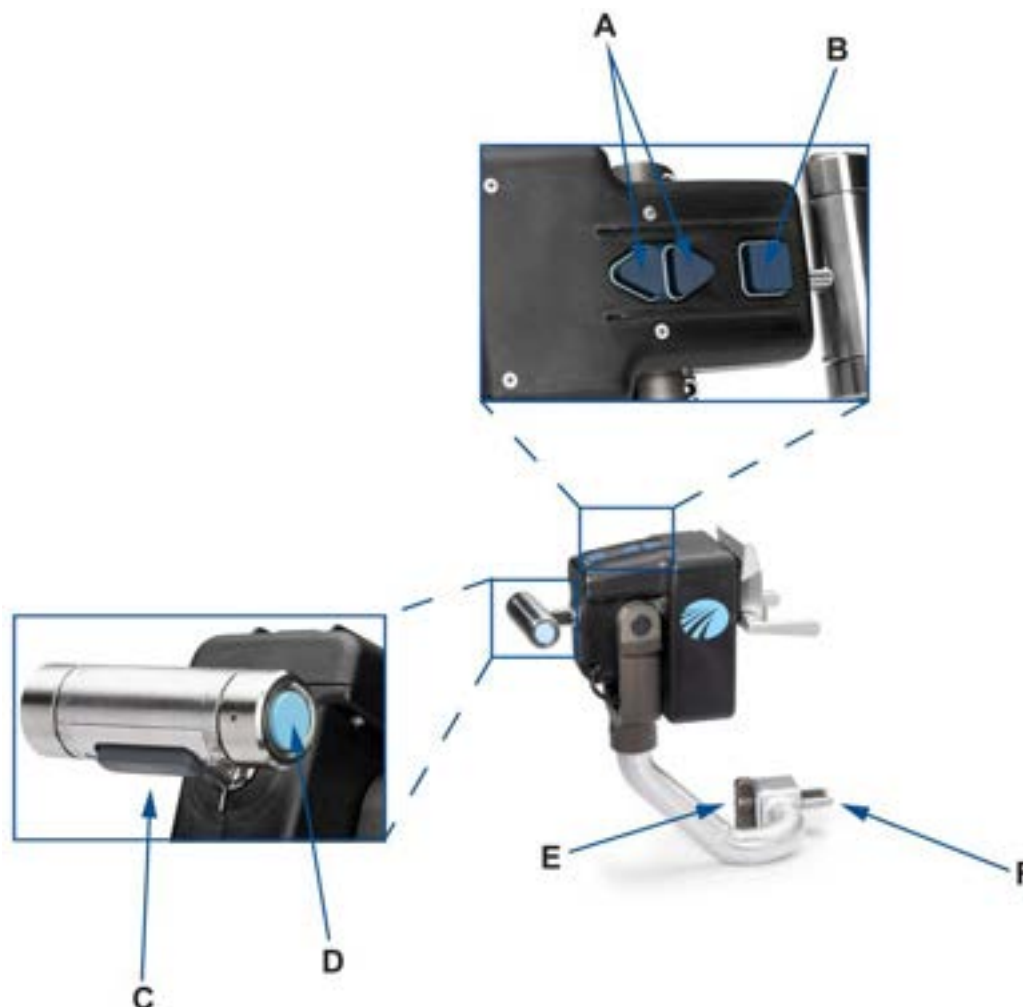


Figure 65: Installing Perineal Post

4.8 Adante Traction Mount

The left and right Adante Traction Mounts attach to the Mizuho Accessory Interface located at the end of the Adante FlexLation Spar. The Traction Mounts are side-specific. When attaching, use the appropriate

Traction Mount designed for use with the operative spar. They also hold the Adante Traction Sandals in place and provides controls for adjusting rotation and gross/fine traction of the patient's operative leg.



A Incremental Fine Traction Controls

B Release gross traction

C Enable gross traction

D Release rotation

E Lock Handle

F Mount Connector

Figure 66: Adante Traction Mount

4.8.1 Install Traction Mount

To install the Adante Traction Mount on the Adante FlexLation Spar:

1. Lower the Spar Control Handle on the Spar
2. Select the appropriate Traction Mount for the left or right Spar.

3. Insert the Traction Mount into the Mizuho Accessory Interface located at the end of the spar (Figure 67).

The LED lights on the Traction Mount will light up blue when properly connected.



Figure 67: Installing Traction Mount

4. Turn the Lock Handle clockwise to lock the Traction Mount into place (Figure 68).



Figure 68: Locking Traction Mount in Place

4.8.2 Remove Traction Mount

To remove the Adante Traction Mount:

1. Turn the Lock Handle counterclockwise to unlock the Traction Mount (*Figure 69*).



Figure 69: Unlocking the Traction Mount

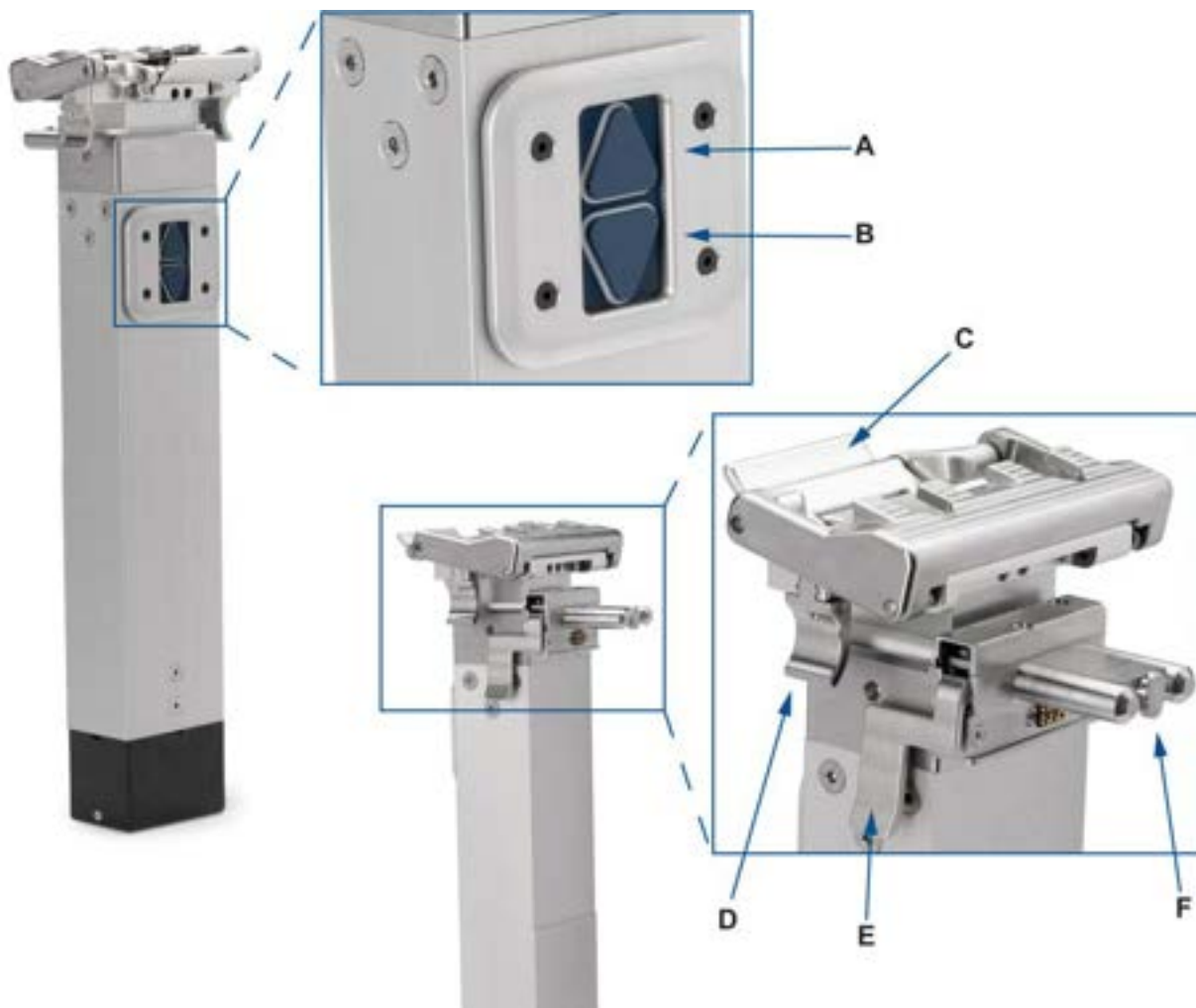
2. Pull the Traction Mount out of the Mizuho Accessory Interface (*Figure 70*).



Figure 70: Removing the Traction Mount

4.9 Femur Lift

The Adante Femur Lift attaches to the Mizuho Accessory Interface located on either side of the surgical platform's Foot-End (*Figure 9*). The height of the Femur Lift can be adjusted by pressing the Height buttons on the Femur Lift, pressing the Height Locking tabs on the side of the lift, or with the Adante Wireless Foot Pedal.



A Height Up

B Height Down

C Femoral Hook Support Lock

D Height Locking Tabs

E Locking Lever

F Femur Lift Connector

Figure 71: Adante Femur Lift

4.9.1 Install Femur Lift

To install the Adante Femur Lift:

1. Insert the Femur Lift into the Mizuho Accessory Interface located on either side of the platform's Foot-End (*Figure 72*).



Figure 72: Installing Femur Lift

2. Lower the Locking Lever into its locked position to lock the Femur Lift in place (*Figure 73*).
The LED lights on the Femur Lift will light up blue when it is connected properly.



Figure 73: Locking Femur Lift in Place

4.9.2 Adjust the Height of the Adante Femur Lift

The Adante Femur Lift has two mechanisms to adjust height:

- Manual - for gross height adjustments
- Powered - for fine height adjustments

NOTE: *The two adjustment mechanisms are not connected. Use the same mechanism to lower the height of the Femur Lift that was used when raising its height.*

For gross height adjustments:

1. Press and hold both Height Locking Tabs to unlock (Figure 74).



Figure 74: Adjusting the Femur Lift Manually

2. Lift up to raise the Femur Lift or press down to lower the Femur Lift.
3. Release the Height Locking Tabs to lock the Femur Lift in place.

For fine height adjustments:

4. Press the Height Up arrow to raise the Femur Lift until the desired height is reached (Figure 75).



Figure 75: Adjusting the Femur Lift with Powered Controls

5. Press the Height Down arrow to lower the Femur Lift until the desired height is reached.

4.9.3 Remove the Adante Femur Lift

To remove the Adante Femur Lift:

1. Raise the Locking Lever on the Femur Lift (*Figure 76*).



Figure 76: Raising the Locking Lever on the Femur Lift

2. Pull the Femur Lift out of the Mizuho Accessory Interface (*Figure 77*).



Figure 77: Removing the Femur Lift

4.10 Femoral Hooks and Femoral Hook Bracket

The Femoral Hooks and Adante Femoral Hook Bracket provide support for the femur during Anterior Approach Total Hip Arthroplasty. The Femoral Hooks are imprinted with L and R to designate left and right.



A Left and Right Femoral Hooks

B Left and Right Classic Femoral Hooks

Figure 78: Left and Right Femoral Hooks



Figure 79: Femoral Hook Bracket

The Femoral Hooks and Femoral Hook Bracket are supplied non-sterile and must be cleaned and sterilized before each use. For more information on proper cleaning and sterilization, see *Clean Femoral Hook Bracket and Femoral Hooks on page 207* and *Sterilize Femoral Hooks and Femoral Hook Support on page 208*. The choice of Femoral Hook or Classic Femoral Hook is at the discretion of the surgeon and surgical team

4.10.1 Install Femoral Hook and Femoral Hook Bracket

The Adante Femoral Hook Bracket is designed to attach securely to the draped Adante Femur Lift. Only install once the patient has been properly positioned and secured to the platform and drapes have been applied. See *Install Sterile Hip Drapes on page 183* for more information on how to attach the Sterile Drapes.

To install the Femoral Hook and Femoral Hook Bracket:

1. Ensure the Femoral Hook Bracket Lock is in the raised position.
2. Insert the sterilized Femoral Hook Bracket into the Femoral Hook Bracket Lock with the base of the support positioned away from the patient (*Figure 80*).



Figure 80: Attaching Femoral Hook Bracket to the Femur Lift

3. Lower the Femoral Hook Bracket Lock (*Figure 81*).

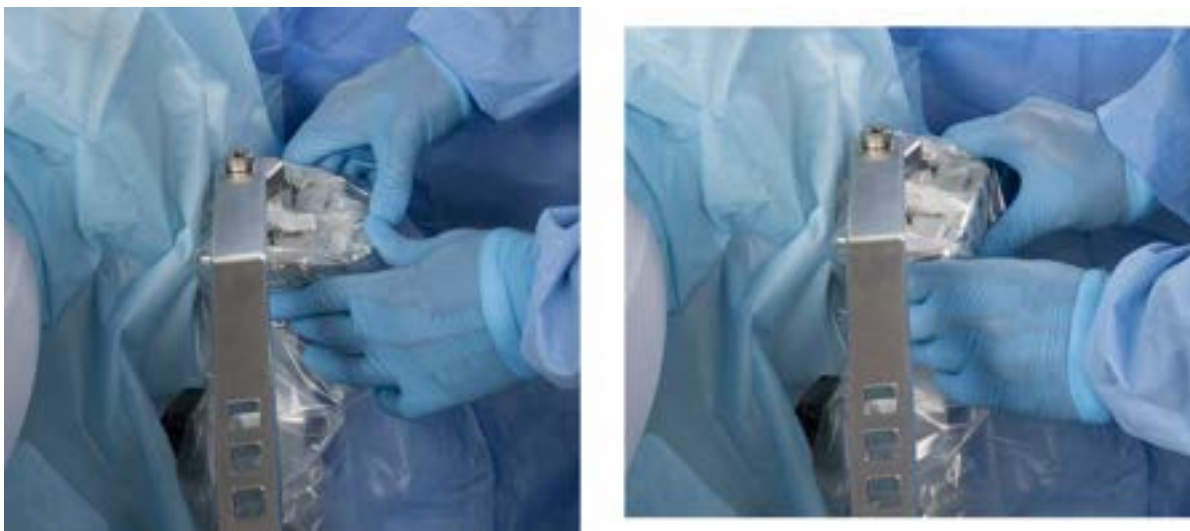


Figure 81: Locking the Femoral Hook Bracket in Place

4. Insert the sterilized left or right Femoral Hook in one of the notches on the Femoral Hook Bracket.

Select the notch based on the size and position of the patient that will allow the Femoral Hook to support the femur on the operative side during the procedure (*Figure 82*).



Figure 82: Femur Lift in Place for Use with the Femoral Hook Bracket and Femoral Hook

4.10.2 Remove Femoral Hook and Femoral Hook Bracket

To remove the Femoral Hook and Adante Femoral Hook Bracket from the Adante Femur Lift:

1. Lift the Femoral Hook out of the notch in the Femoral Hook Bracket.
2. Raise the Femoral Hook Bracket Lock.

3. Remove the Femoral Hook Bracket from the Femur Lift.

4.11 Traction Sandal

The left and right Adante Traction Sandals attach to the Adante Traction Mount on the end of the Adante FlexLation Spars. The Traction Sandals are side-specific. The Traction Sandals are attached to the patient's feet before being attached to the Traction Mounts.

4.11.1 Attach the Adante Traction Sandal to Patient's Foot

To attach the Adante Traction Sandal to the foot:

1. Ensure the straps of the Traction Sandal are loose.
2. Slide the patient's foot into the Traction Sandal, ensuring that the heel of the foot is pressed up against the back of the Traction Sandal (*Figure 83*).



Figure 83: Sliding Patient's Foot into the Traction Sandal

3. Attach the metal clip to the top strap (*Figure 84*).



Figure 84: Attaching Metal Clip to the Top Strap

4. Tighten the top strap with the fastener (*Figure 85*).



Figure 85: Securing the Top Strap of the Traction Sandal

5. Tighten the middle strap (*Figure 86*).
 - a. Pinch the tabs of the fastener.

- b. Pull the strap up and away from the patient.



Figure 86: Securing the Middle Strap of the Traction Sandal

6. Pull the bottom strap over the patient's foot and secure the hook and loop fastener (*Figure 87*).



Figure 87: Securing the Bottom Strap of the Traction Sandal

4.11.2 Install Traction Sandal

To install the Adante Traction Sandal onto the Adante Traction Mount:

1. Ensure the Locking Lever on the Traction Mount is lowered (*Figure 88*).



A Locking Lever

Figure 88: Locking Lever in Lowered Position

2. Slide the Traction Sandal into the connection point on the Traction Mount (*Figure 89*).



A Connection Point

Figure 89: Sliding Traction Sandal onto Traction Mount

3. Raise the Locking Lever to secure the Traction Sandal (*Figure 90*).



Figure 90: Raising the Locking Lever



Figure 91: Adante Traction Sandal Secured to the Adante Traction Mount

4.11.3 Remove Traction Sandal

To remove the Adante Traction Sandal from the Adante Traction Mount:

1. Lower the Locking Lever to unlock the Traction Sandal (*Figure 92*).



Figure 92: Lowering the Locking Lever

2. Lift the Traction Sandal out of the Traction Mount connection point (*Figure 93*).



Figure 93: Removing Traction Sandal From Traction Mount

4.11.4 Remove Adante Traction Sandal from Patient's Foot

To remove the Adante Traction Sandal from the patient's foot:

1. Peel the lower strap off the hook and loop fastener (*Figure 94*).



Figure 94: Peeling the Lower Strap off the Hook and Loop Fastener

2. Pinch the sides of the fastener and raise to loosen the middle strap.
3. Remove the metal clip from the top strap (*Figure 95*).

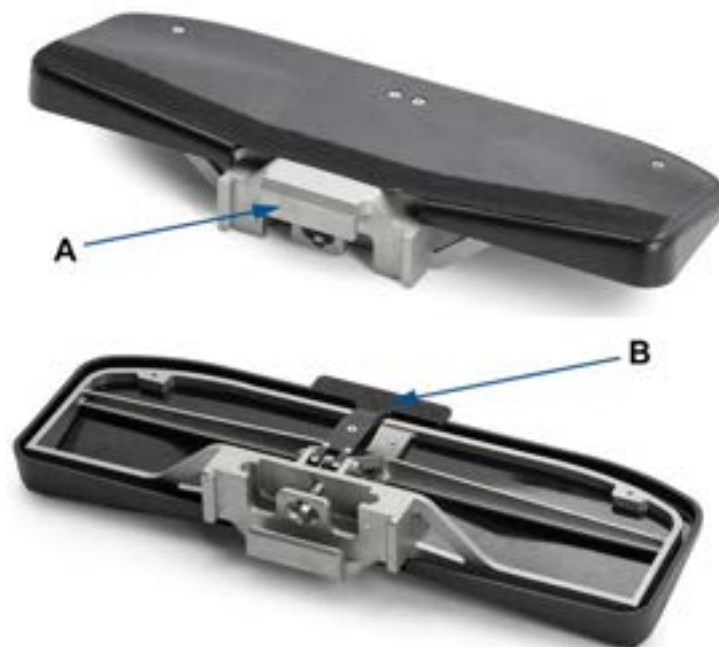


Figure 95: Removing the Metal Clip from the Top Strap

4. Pull the Traction Sandal off of the Patient's foot.

4.12 Adante Knee Extension Board

The Adante Knee Extension Board attaches to the static pelvic mount at the Foot-End of the platform.



A Connector

B Release Tab

Figure 96: Adante Knee Extension Board

4.12.1 Install Knee Extension Board

Install Adante Knee Extension Board:

1. Insert the Adante Knee Extension Board into the static pelvic mount found at the Foot-End of the platform top.



Figure 97: Inserting the Adante Knee Extension Board into the Static Pelvic Mount

2. Check the Adante IntelliTouch Hand Pendant Home Screen to ensure the Adante Knee Extension Board is blue and properly engaged into the static pelvic mount.



Figure 98: Adante Knee Extension Board Locked in Place

4.12.2 Remove Knee Extension Board

Remove the Adante Knee Extension Board:

1. Press the release tab on the underside of the Adante Knee Extension Board.



Figure 99: Adante Knee Extension Board release tab location

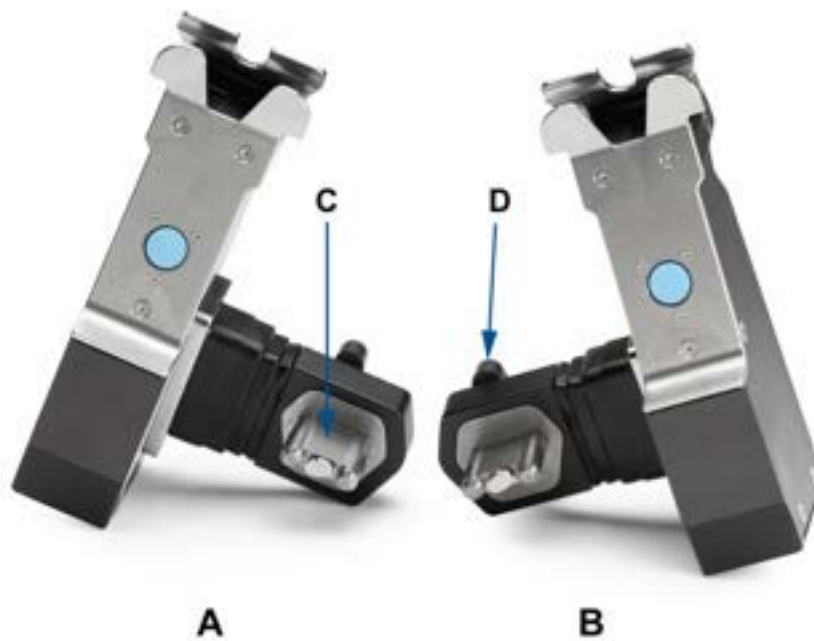
2. Lift to remove the Adante Knee Extension Board from the static pelvic mount.



Figure 100: Pressing the Release Tab on the Adante Knee Extension Board

4.13 Adante Knee Mount

The left and right Adante Knee Mounts attach to the MAI at the end of the spars. The knee mounts are side-specific. When attaching, use the appropriate mount designed for use with the operative spar.



A Adante Knee Mount, Left

B Adante Knee Mount, Right

C MAI Connector

D Lock Handle

Figure 101: Adante Knee Mounts

4.13.1 Install the Adante Knee Mount

Install the Adante Knee Mount on the operative Spar:

1. Ensure the Spar Control Handle is in its lowered position (see *Lower the Spar Control Handle on page 48*).
2. Insert the Adante Knee Mount into the MAI located at the end of the operative Spar.



Figure 102: Installing the Adante Knee Mount

3. Turn the lock handle clockwise to lock the Adante Knee Mount into place.



Figure 103: Locking the Adante Knee Mount in Place

4.13.2 Remove the Adante Knee Mount

1. Turn the lock handle counterclockwise to unlock the Adante Knee Mount.

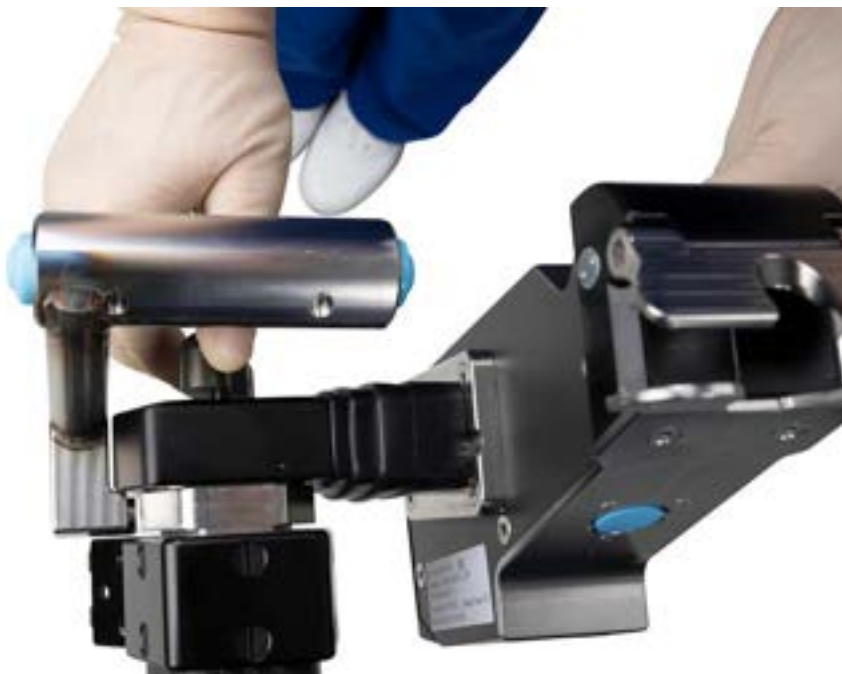


Figure 104: Unlocking the Adante Knee Mount

2. Pull the Adante Knee Mount out of the MAI.

4.14 Adante Knee Pad Support Mount

The left and right Adante Knee Pad Support Mounts support the non-operative leg during knee procedures. The support mount is side-specific. Be sure to install the appropriate support mount designed to secure to the non-operative spar. The locking latch should be on the outside of the Leg Spar and the extension should be facing the Head-End of the platform.



A Extension

B Locking Latch

Figure 105: Adante Knee Pad Support Mount

4.14.1 Install Adante Knee Pad Support Mount

To install an Adante Knee Pad Support Mount:

1. Ensure the Adante Knee Pad Support Mount bracket is unlocked.
2. Hold the support mount with both hands and slide it around the leg spar.



Figure 106: Adante Knee Pad Support Mount Approaching the Leg Spar

3. Place the distal edge of the Adante Knee Pad Support Mount at least 4 inches superior to the end of the leg spar.
4. Lock the Adante Knee Pad Support Mount into place.



Figure 107: Locking the Adante Knee Pad Support Mount into Place



CAUTION: Be careful when placing hands near movable parts, crevices, or locking mechanisms, as these areas may present a pinch hazard. Failure to do so may result in harm to the healthcare professional.

5. Expand the Adante Knee Pad Support Mount Extension.



Figure 108: Expanding the Extension on the Adante Knee Pad Support Mount

6. Attach the appropriate Adante Spar Leg Pads (See *Attach Tempur-Pedic Pads on page 92*) .

4.14.2 Remove the Adante Knee Pad Support Mount

To remove an Adante Knee Pad Support Mount:

1. Retract the Adante Knee Pad Support Mount Extension.



Figure 109: Retracting the Adante Knee Pad Support Mount Extension

2. Unlock the latch and remove the Adante Knee Pad Support Mount.



Figure 110: Unlocking the Latch to Remove the Adante Knee Pad Support Mount

4.15 Spar Motion and Leg Positioning

The Spars allow the leg to move in multiple directions to support surgical positioning. The Spars can make the following motions:

Abduction/Adduction	
Raising/Lowering the leg	

Gross/Fine Traction	
Flexion/Extension	

Several control options enable spar motions:

- The Spar Control Handle
- The Spar Control Interface
 - Platform
 - Traction Mount
- The Hand Pendant (see *Leg Screen* on page 117)

NOTE: When an Adante Traction Mount is attached to one or both leg spars, the Flexion/Extension motion is not available, but all other functions remain available.

4.15.1 Move the Spar Using the Spar Control Handle

Most motions can be made using the Spar Control Handle.

The handle controls behave differently when certain components are attached to the ends of the Adante FlexLation Spars.

The Spar Control Handle features two (2) release buttons and one (1) enable button. Pressing and holding the enable button alone, or together with a release button, facilitates specific spar motion adjustments.



A Enable button

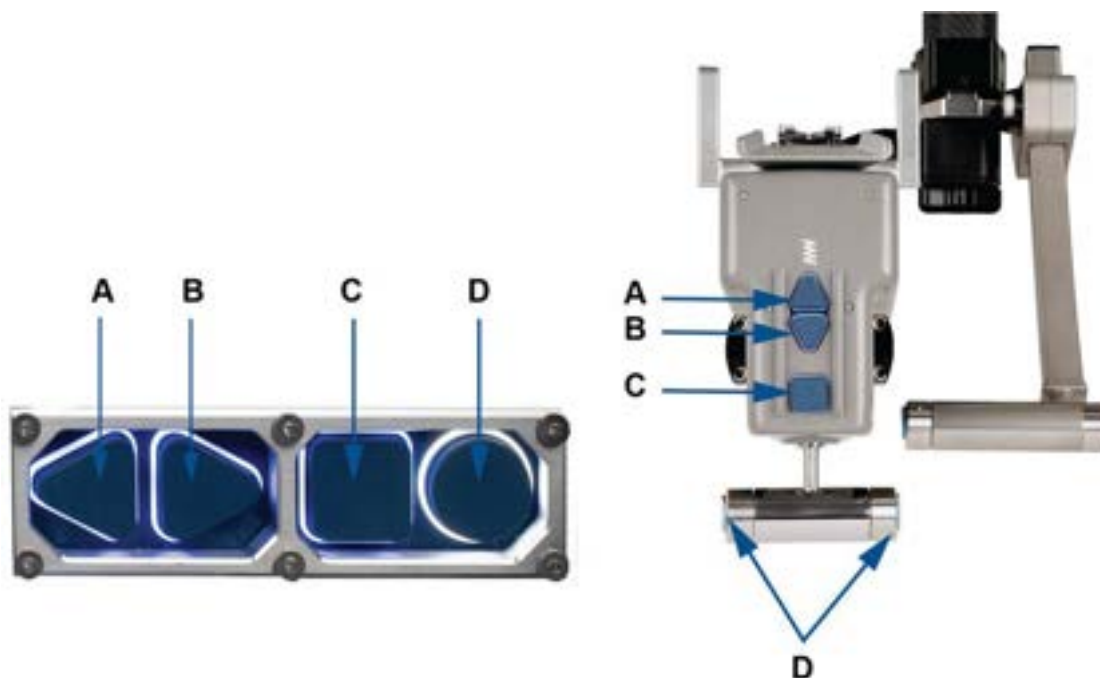
B Two (2) release buttons

Figure 111: Spar Control Handle

1. Press the enable button to unlock the spar to allow the following adjustments:
 - Abduction/Adduction
 - Translation
2. Press the enable button, together with a release button, to unlock the spar to allow the following adjustments:
 - Up/down motion
 - Left/right motion
 - Flexion/Extension (Only available when Adante Knee Mount is attached)
 - Translation

4.15.2 Move the Spar Using the Spar Control Interface

The Spar Control Interface can be found on the both sides of the platform and on the Traction Mount.



A Incremental fine traction, decrease

B Incremental fine traction, increase

C Release Gross Traction

D Release Rotation

Table 2: Spar Control Interface Options

Button	Description
Release rotation	This button toggles between locking or unlocking the traction sandal receiver on the Adante Traction Mount. The LED changes to white when unlocked. This feature is only available when the Adante Traction Mount is attached.
Release gross traction	This button toggles between locking and unlocking the spar to allow for gross traction adjustment.
Incremental fine traction, decrease	This button decreases fine traction in preset increments of 0.25 inches/0.63 centimeters.
Incremental fine traction, increase	This button increases fine traction in preset increments of 0.25 inches/0.63 centimeters.

4.15.3 Using Controls to Perform Spar Motion

To perform spar motions, specific buttons must be pressed depending on the control being used. The following section outlines specific motions and which buttons to use on the Spar Control Handle, Adante Traction Mount, and Spar Control Interface to enable and perform each motion.

4.15.3.1 Apply Gross Traction

To apply gross traction:

1. Press the release gross traction button on the Adante Traction Mount or the Spar Control Interface on the platform to unlock traction.
2. Pull the Spar Control Handle to move the leg spar as much as needed.
3. Press the release gross traction button again to lock traction.

4.15.3.2 Perform Fine Traction

To perform fine traction:

1. Press the incremental fine traction, increase button to increase fine traction.
2. Press the incremental fine traction, decrease button to decrease fine traction.

4.15.3.3 Perform Rotation of the Leg

To perform rotation of the leg:

1. Press the release rotation button on the Adante Traction Mount or the Spar Control Interface on the platform to unlock rotation (*Figure 112* and *Figure 113*).
2. Rotate the leg using the Adante Traction Mount handle (*Figure 112*).
3. Press the release rotation button again to lock rotation.



Figure 112: Unlocking and Rotating on the Traction Mount



A Rotation Release button

Figure 113: Rotation Release Button on Spar Control Interface

4.16 Attach Tempur-Pedic Pads

To attach the Tempur-Pedic Pads:

1. Align the hook and loop fastener on the Adante Superior Trunk Pad with the hook and loop fastener on the Adante Platform.
2. Secure the pad to the platform.
3. Align the hook and loop fastener on the Adante Supine Trunk Pad with the hook and loop fastener on the platform.



Figure 114: Aligning the Supine Trunk Pad with the Platform

4. Secure the pad to the platform.



Figure 115: Securing the Supine Trunk Pad to the Platform

5. Place the Adante Knee Extension Board Pad on the Adante Knee Extension Board with the hook and loop fastener flap untucked.



Figure 116: Placing the Knee Extension Board Pad with Hook and Loop Fastener Flap Untucked

NOTE: For hip procedures, use the Adante Pelvic Center Pad on the Adante Pelvic Center Board.

NOTE: If not using the Adante Saddle Post, use the Adante Pelvic Center Postless Pad.

6. Align the bottom of the Adante Supine Trunk Pad with the hook and loop fastener flap of the Knee Extension Board Pad.



Figure 117: Aligning the Adante Supine Trunk Pad with the Knee Extension Board Pad

7. Secure the pad to the platform.
8. Place the Adante Spar Leg Pads on the Adante Knee Pad Support Mounts with the flaps unsecured.

The Adante Spar Leg Pads are left and right specific. Ensure the hook and loop fastener strip on the flap is facing away from the middle of the table.



CAUTION: Placing the wrong pad on the Adante Knee Pad Support Mount may hinder proper adduction and abduction spar movement.



Figure 118: Placing Spar Leg Board Pads on the Adante Knee Pad Support Mounts

9. Secure the flaps underneath the Adante Knee Extension Board Pad.



Figure 119: Securing Flap Underneath the Adante Knee Extension Board Pad

10. Wrap and secure the hook and loop fastener on the Spar Leg Board Pads underneath the Foot-End of the Spar Leg Boards.



Figure 120: Securing the Adante Spar Leg Pads to the Adante Knee Pad Support Mount

4.17 Adante IntelliTouch Hand Pendant

The Adante AX Orthopedic Surgical Platform functions are controlled by the wireless Adante IntelliTouch Hand Pendant. When the platform is in use, the Adante IntelliTouch Hand Pendant touch screen provides the user with detailed real-time information on the status of each motion or function. This includes information on which components are installed. To activate a function or motion, press and hold the appropriate button until the function is complete and the desired position is achieved.

When using the wireless Adante IntelliTouch Hand Pendant to adjust platform position, stay within line of sight of the platform. This will allow the operator to visually verify that the platform is moving as intended.

Additional functions and settings are available through the Adante IntelliTouch Hand Pendant touch screen, including selecting fixed and custom preset positions, locking and unlocking floor locks, and changing display options. The hand pendant touch screen provides important information about the system's operational state, including Battery Charge status and Floor Lock status. The hand pendant also provides haptic feedback to the user when a requested action is not possible. This may occur under the following conditions:

- Floor Locks are unlocked and must be locked before continuing.
- The maximum range of a particular motion has been reached.
- Further movement in a given direction may cause the platform to become unstable.
- Floor Locks cannot be unlocked because the platform will be unstable when supported by the casters.

The hand pendant does not have an On/Off switch. After approximately 30 seconds of inactivity, the hand pendant will go into a Low Power mode, and the screen will dim. Touch the screen or press a button on the hand pendant to return the screen to full brightness from Low Power mode. When the battery reaches a critically low state, it will protect itself from damage by turning all power off. To recover operation from this state, plug the hand pendant into the platform with the charging cord.

The hand pendant may be stored on any part of the platform's side rail.

4.17.1 Charge the Hand Pendant

The Remote battery status symbol on the upper left side of the Adante IntelliTouch Hand Pendant touch screen indicates the level of charge in the Adante IntelliTouch Hand Pendant battery. If the battery status symbol with one yellow bar appears, the battery is nearing depletion and the Adante IntelliTouch Hand Pendant should be plugged into the platform to recharge the battery. The Adante IntelliTouch Hand Pendant can continue to be used while plugged in.

To charge the Adante IntelliTouch Hand Pendant:

1. Orient the charging cable connector so that the white guide arrow at the upper edge of the connector is on top and insert the connector into the port on the Adante IntelliTouch Hand Pendant.
2. Turn the head of the connector clockwise to lock it in place (*Figure 121*).

The battery status symbol will appear when the Adante IntelliTouch Hand Pendant battery is charging.

It should take 8 hours to completely recharge the battery from a fully depleted state.

NOTE: *The wireless Adante IntelliTouch Hand Pendant may still be used while it is charging. If in use while charging, it will take longer for the battery to completely recharge.*



Figure 121: Adante IntelliTouch Hand Pendant Plugged into Table (Connector Locked)

4.17.2 Pair the Hand Pendant

The wireless Adante IntelliTouch Hand Pendant is paired to the specific Adante Platform it ships with at the factory. No further configuration is required by the customer before use. The Adante IntelliTouch Hand Pendant will operate the platform if within the signal range of around 20 feet.

If a replacement Adante IntelliTouch Hand Pendant is received, it must be paired to the platform it will control. To pair the Adante IntelliTouch Hand Pendant to a platform:

1. Power OFF the platform base.
2. Plug the Adante IntelliTouch Hand Pendant into the platform using the charging cord.

3. Power ON the platform base.
4. Wait 10 seconds for hand pendant to pair with table, then unplug the hand pendant.

4.17.3 Hand Pendant Buttons

Figure 122 illustrates the layout of the buttons on the Adante IntelliTouch Hand Pendant.



Figure 122: Adante IntelliTouch Hand Pendant

Use the buttons on the Adante IntelliTouch Hand Pendant to perform the following functions:

Table 3: Hand Pendant Button Functions

Button	Description
Height Up 	Press and hold the Height Up button to raise the height of the surgical platform until the desired height is achieved. Real-time height information will display on the touch screen.
Height Down 	Press and hold the Height Down button to lower the height of the surgical platform until the desired height is achieved. Real-time height information will display on the touch screen.

Table 3: Hand Pendant Button Functions (continued)

Button	Description
Translate Inferior 	This function is not available for the Adante AX Orthopedic Surgical Platform (REF 6895AX-00).
Translate Superior 	This function is not available for the Adante AX Orthopedic Surgical Platform (REF 6895AX-00).
Home Position 	Press and hold the Home Position button to return the surgical platform to a level position. Any lateral or longitudinal tilt adjustments will return to 0. After a one second delay, the surgical platform height will raise or lower to 36 inches (91.4 centimeters). Real-time leveling and height information will display on the touch screen.
Trendelenburg 	Press and hold the Trendelenburg button to lower the Head-End and raise the Foot-End of the platform. Real-time positioning information will display on the touch screen.
Reverse Trendelenburg 	Press and hold the Reverse Trendelenburg button to lower the Foot-End and raise the Head-End of the platform. Real-time positioning information will display on the touch screen.
Left Lateral Tilt 	Press and hold the Left Lateral Tilt button to tilt the surgical platform to the left. Real-time positioning information will display on the touch screen.
Right Lateral Tilt 	Press and hold the Right Lateral Tilt button to tilt the surgical platform to the right. Real-time positioning information will display on the touch screen.

Table 3: Hand Pendant Button Functions (continued)

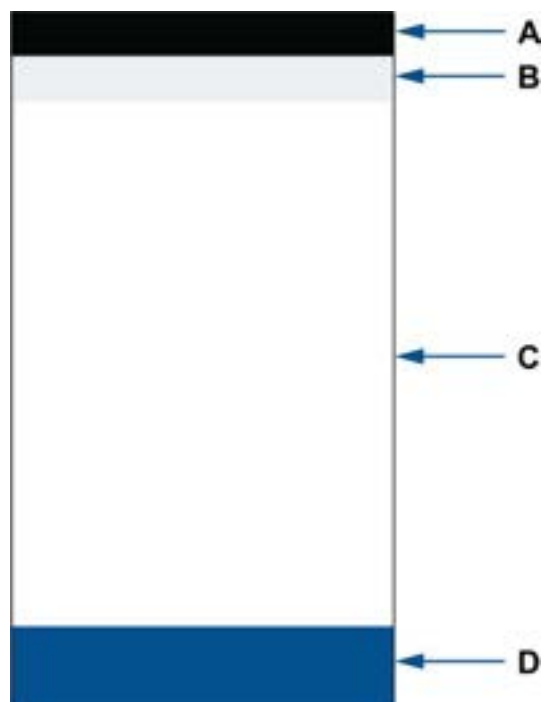
Button	Description
Pelvic Pitch 	This function is not available for the Adante AX Orthopedic Surgical Platform (REF 6895AX-00).
Pelvic Yaw 	This function is not available for the Adante AX Orthopedic Surgical Platform (REF 6895AX-00).
Lock Floor Locks 	Press the Lock Floor Locks button to engage the Floor Locks, preventing the surgical platform from moving on its casters. Floor Locks must be engaged for all surgical platform movement functions to operate. The current Floor Lock status will display on the touch screen.
Unlock Floor Locks 	Press the Unlock Floor Locks button to disengage the Floor Locks, allowing the surgical platform to move on its casters. Disengaging the Floor Locks will disable all surgical platform movement functions. The current Floor Lock status will display on the touch screen.

NOTE: These functions can also be accessed from the Auxiliary Control Panel (see Auxiliary Control Panel on page 148).

4.17.4 Touch Screen Display

The Adante IntelliTouch Hand Pendant touch screen display provides real-time status and positioning information for the surgical platform. It also provides access to additional surgical platform functions and display setting configuration options.

The touch screen is divided into four distinct areas (*Figure 123*).



- | | | | |
|----------|-----------------------|----------|----------------------|
| A | Battery Status Area | B | Platform Status Area |
| C | Platform Display Area | D | Navigation Panel |

Figure 123: Areas of the Touch Screen

4.17.4.1 Navigation Panel

Table 4 describes the menu options in the Navigation Panel at the bottom of the touch screen. Selecting from these menu items will change the information provided in the Platform Display Area of the screen.

Table 4: Navigation Panel Icons

Menu Item	Description
Home 	The Home screen displays real-time status and positioning information for the platform.
Leg 	The Leg screen displays information about the leg spars and provides controls to lock and unlock leg rotation and leg traction, and controls to make fine traction adjustments.
Pelvic 	The Pelvic screen displays controls for pelvic trauma. This function is not available for the Adante AX Orthopedic Surgical Platform (REF 6895AX-00).
Setup 	The Setup screen provides access to standard and user-defined table position presets.
Settings 	The Settings screen allows you to modify various touch screen display settings, including language and units. It also provides access to Floor Lock Override function, software version information, and detailed platform position information.

4.17.4.2 Platform Display Area

The Platform Display area provides a wide variety of information on the platform status, current configuration, and various setting and positioning options. The information presented is controlled by the Navigation Menu button selected.

See the following sections for more information:

- *Home Screen on page 106*
- *Leg Screen on page 117*
- *Pelvis Screen on page 119*
- *Setup Screen on page 121*
- *Settings Screen on page 129*

4.17.4.3 Platform Status Area

The Platform Status area displays icons that describe the overall platform status, including current Floor Lock status, Home Position and Level status, and motion error states. *Table 5* describes the symbols displayed in this area. This information is present on the Home, Leg, and Pelvis screens.

Table 5: Platform Status Symbols

Symbol	Description
	Indicates Floor Locks are deployed and the surgical platform cannot move on its casters.
	Indicates Floor Locks are released and the surgical platform can move freely on its casters.
	Indicates Floor Locks are in some intermediate state (either engaging or disengaging).
	Floor Lock Override; indicates lockout override is in effect.
	Indicates that the surgical platform is in or near the Home Position.
	Indicates that the surgical platform is away from the Home Position.
	Indicates that the surgical platform is in or near the level position.
	Indicates that the surgical platform is away from the level position.
	Indicates that the surgical platform is unable to execute a motion because the limit for the desired motion has been reached or Floor Locks are not engaged and platform motion is not allowed.
	Indicates that the surgical platform is unable to execute a motion because any further motion will make the platform unstable.

4.17.4.4 Battery Status Area

The Battery Status area displays the current charge of the Adante Platform on the left, the current charge of the Hand Pendant in the middle, and the current charge of the Wireless Surgeon Controls on the right. *Table 6* describes all symbols in the Battery Status area.

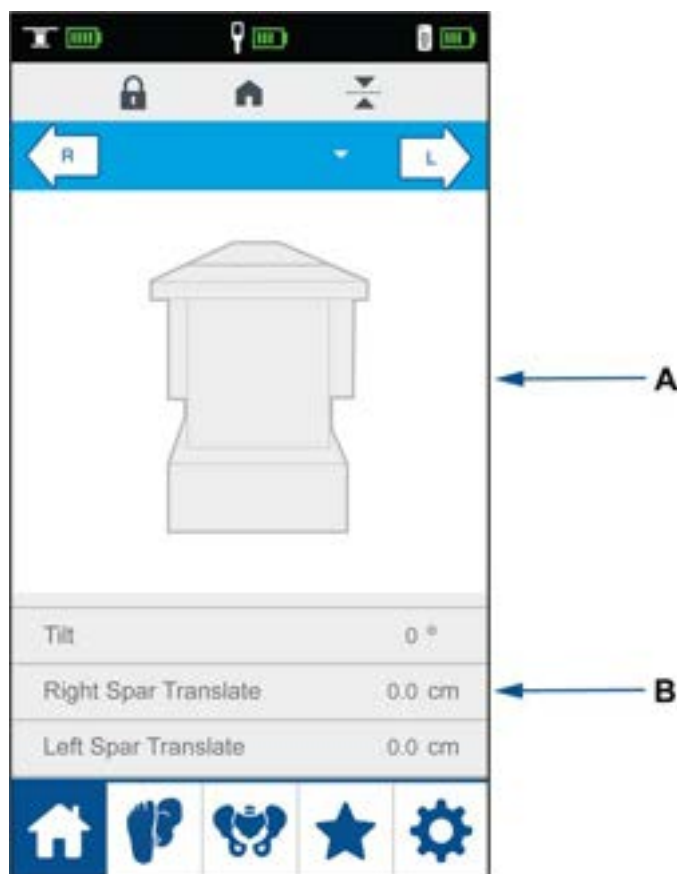
NOTE: Wireless Surgeon Controls are not available with the [REF 6895AX-00](#) Adante AX Orthopedic Surgical Platform.

Table 6: Battery Status Symbols

Symbol	Description
	Indicates the battery status for the platform.
	Indicates the battery status for the hand pendant.
	Indicates the battery status for the wireless surgeon control. This component is not available for the Adante AX Orthopedic Surgical Platform (REF 6895AX-00).
	Indicates component is running on battery power, and the battery voltage exceeds the 75% charge threshold. When paired with the platform icon, indicates the platform is running on battery power or AC power.
	Indicates component is running on battery power, and the battery voltage exceeds the 50% threshold but not the 75% threshold.
	Indicates component is running on battery power, and the battery voltage exceeds the 25% threshold but not the 50% threshold.
	Indicates component is running on battery power, and the battery voltage is below the 25% threshold and requires charging. When paired with the platform icon, indicates the platform must be connected to AC power.
	Indicates the battery is charging and the battery voltage is below the 25% threshold. When paired with the platform icon, indicates the platform is running on AC power. When paired with the hand pendant icon, indicates the hand pendant is running on corded power.
	Indicates the battery is charging and the battery voltage is below the 50% threshold but not the 25% threshold. When paired with the platform icon, indicates the platform is running on AC power. When paired with the hand pendant icon, indicates the hand pendant is running on corded power.
	Indicates the battery is charging and the battery voltage exceeds the 50% threshold but not the 75% threshold. When paired with the platform icon, indicates the platform is running on AC power. When paired with the hand pendant icon, indicates the hand pendant is running on corded power.
	Indicates the battery is charging and the battery voltage equals or exceeds the 75% threshold. When paired with the platform icon, indicates the platform is running on AC power. When paired with the hand pendant icon, indicates the hand pendant is running on corded power.
	Indicates the battery is absent. When paired with the platform icon, indicates the platform is running on AC power. When paired with the hand pendant icon, indicates the hand pendant is running on corded power.

4.17.5 Home Screen

The Platform Display area of the Home Screen is divided into two sub-areas (*Figure 123*).



A Platform Visual Display

B Platform Details

Figure 124: Home Screen

The Platform Visual Display area shows a visual representation of the current platform position and which components are installed. The Platform Visualization area changes depending on which side (Left or Right) is selected, what mode the platform is in, and what components need to be attached to the platform for the selected mode. It will also display when a platform motion is occurring, such as height adjustments, Trendelenburg/Reverse Trendelenburg, and Lateral Tilt.

The Platform Details area provides platform positioning information for hand pendant-controlled motion. Information presented includes:

- Height, reported in inches/centimeters/pouces
- Trendelenburg, reported in degrees
- Tilt, reported in degrees
- Pelvic Pitch, reported in degrees

NOTE: *Pelvic Pitch is not available for the Adante AX Orthopedic Surgical Platform.*

- Spar Translation, reported in inches/centimeters/pouces
- Traction Force, reported in pounds/kilograms

Scroll up or down to see more of the Platform Details list. Items in gray text are still in their Home position, while items listed in black are away from their Home Position.

4.17.5.1 Home Screen Buttons

The following table describes the buttons and icons displayed on the Home screen.

Table 7: Home Screen Buttons and Icons

Button/Icon	Function Description
	Press the Right Arrow button to select the right side of the platform (patient's right). The arrow will be blue when selected.
	Press the Left Arrow button to select the left side of the platform (patient's left). The arrow will be blue when selected.
	Press the triangle to display the following modes: • Hip Mode • Knee Mode • Trauma Mode (not supported by the REF 6895AX-00 Adante AX Orthopedic Surgical Platform) • Blank (No Mode)
	Indicates the Femur Lift when the Hip or Trauma modes are selected, the right side is selected, and is detected as properly installed in the Mizuho Accessory Interface. Icon will be grey when Femur Lift is not detected as installed.
	Indicates the Femur Lift when the Hip or Trauma modes are selected, the left side is selected, and is detected as properly installed in the Mizuho Accessory Interface. Icon will be grey when Femur Lift is not detected as installed.
	Indicates the left Traction Mount when the Hip mode is selected and is detected as properly installed in the Mizuho Accessory Interface. Icon will be grey when the Traction Mount is not detected as installed.
	Indicates the right Traction Mount when the Hip mode is selected and is detected as properly installed in the Mizuho Accessory Interface. Icon will be grey when the Traction Mount is not detected as installed.

Table 7: Home Screen Buttons and Icons (continued)

Button/Icon	Function Description
	Indicates the left Knee Mount when the Knee mode is selected, the left side is selected, and is detected as properly installed in the Mizuho Accessory Interface. Icon will be grey when the Knee Mount is not detected as installed.
	Indicates the right Knee Mount when the Knee mode is selected, the right side is selected, and is detected as properly installed in the Mizuho Accessory Interface. Icon will be grey when the Knee Mount is not detected as installed.
	Height status indicator displays on touch screen when Height Up or Height Down buttons on the Hand Pendant are pressed.
	Tilt status indicator displays on touch screen when Tilt Left or Tilt Right buttons on the Hand Pendant are pressed.
	Trendelenburg status indicator displays on touch screen when Trendelenburg or Reverse Trendelenburg buttons on the Hand Pendant are pressed.
	Indicates the Knee Extension Board when the Knee mode is selected and the right side is selected. Icon will be blue when the Knee Extension Board is properly installed in the static pelvic mount and detected.
	Indicates the Knee Extension Board when the Knee mode is selected and the left side is selected. Icon will be blue when the Knee Extension Board is properly installed in the static pelvic mount and detected.
	Indicates the right Leg Spar when the Knee mode is selected and the right side is selected. Icon will be blue when the right Leg Spar is properly installed and detected.
	Indicates the left Leg Spar when the Knee mode is selected and the left side is selected. Icon will be blue when the left Leg Spar is properly installed and detected.

Table 7: Home Screen Buttons and Icons (continued)

Button/Icon	Function Description
	Indicates the right Leg Spar when the Knee mode is selected and the right side is selected. Icon will be blue when the right Leg Spar is properly installed and detected.
	Indicates the left Leg Spar when the Knee mode is selected and the left side is selected. Icon will be blue when the left Leg Spar is properly installed and detected.
	Indicates the Pelvic Center Board when the Hip or Trauma mode is selected and the right side is selected. Icon will be blue when the Pelvic Center Board is properly installed in the static pelvic mount and detected.
	Indicates the Pelvic Center Board when the Hip or Trauma mode is selected and the left side is selected. Icon will be blue when the Pelvic Center Board is properly installed in the static pelvic mount and detected.
	Indicates the left Leg Spar when the Hip or Trauma mode is selected and the left side is selected. Icon will be blue when the left Spar Leg is properly installed in the spar receiver and detected.
	Indicates the right Leg Spar when the Hip or Trauma mode is selected and the right side is selected. Icon will be blue when the right Leg Spar is properly installed in the spar receiver and detected.
	Indicates the left Leg Spar when Hip or Trauma mode is selected and the right side is selected. Icon will be blue when the left Leg Spar is properly installed in the spar receiver and detected.

Table 7: Home Screen Buttons and Icons (continued)

Button/Icon	Function Description
	Indicates the right Leg Spar when Hip or Trauma mode is selected and the left side is selected. Icon will be blue when the right Leg Spar is properly installed in the spar receiver and detected.
	Indicates when the left side platform view is selected.

4.17.5.2 Select a Mode and Side on the Home Screen

To select a mode and side on the Home Screen:

1. Select the **Home** button on the Navigation Menu (*Figure 125*).

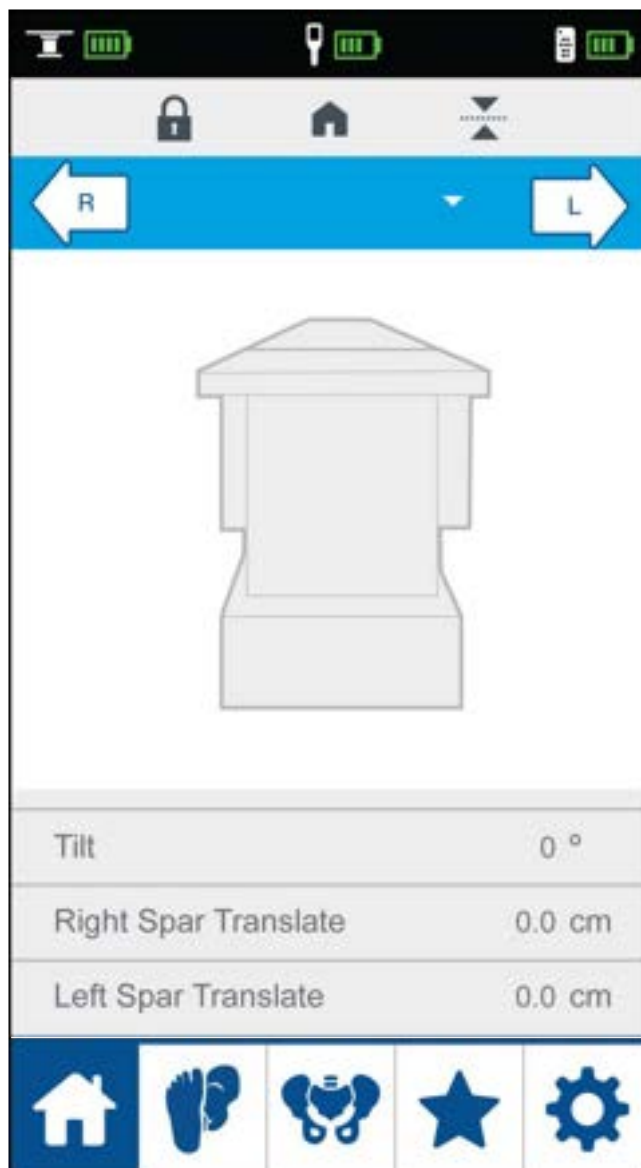


Figure 125: Home Screen

2. Press either the right or left arrow located at the top of the visual display area to select a side (*Figure 126*).

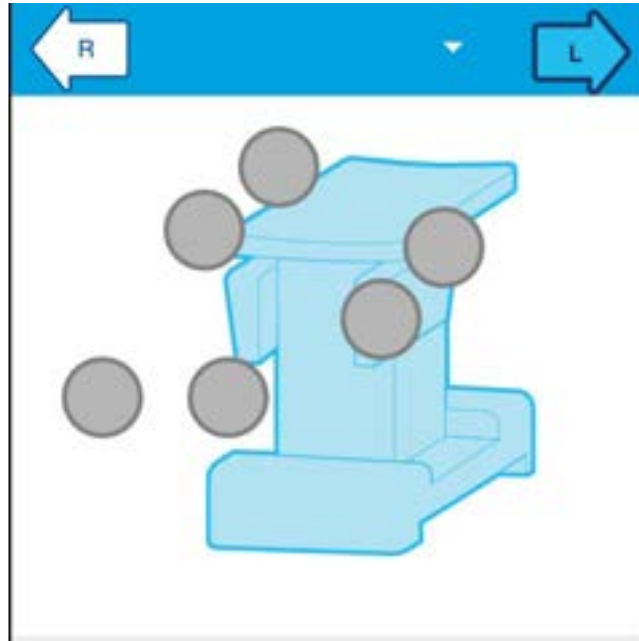


Figure 126: Platform Visual Display Area with Left Side Selected

3. Press the triangle located at the top of the visual display area and select the desired mode (*Figure 127*).

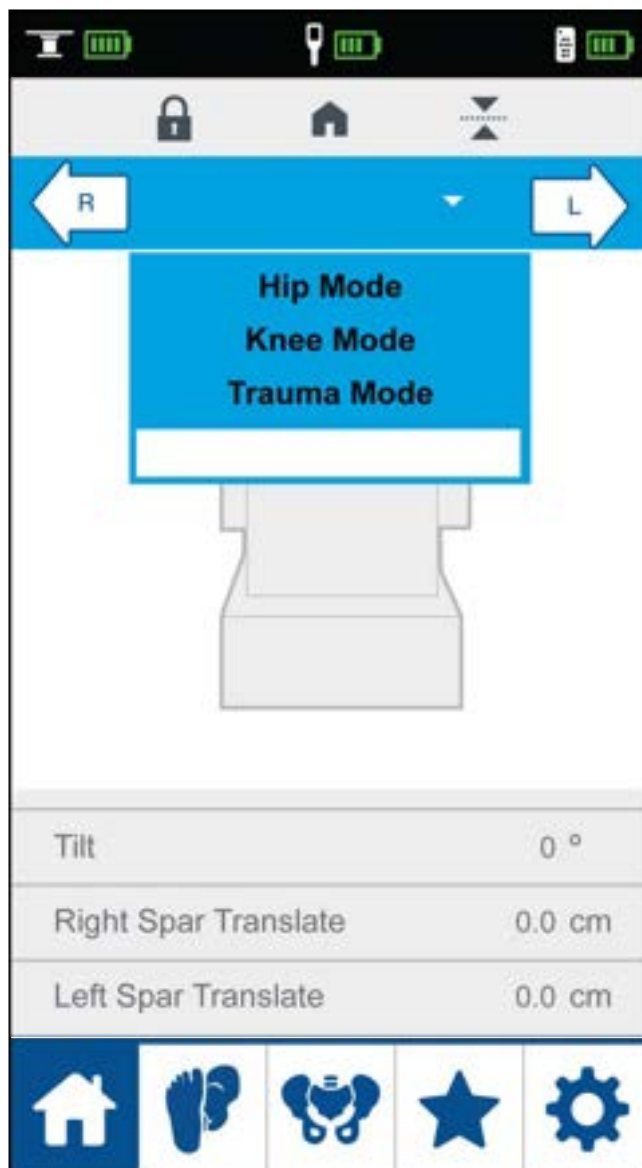


Figure 127: Platform Modes

When the side and mode are selected, the screen display will change to indicate what components are needed for the selected mode (*Figure 128*).

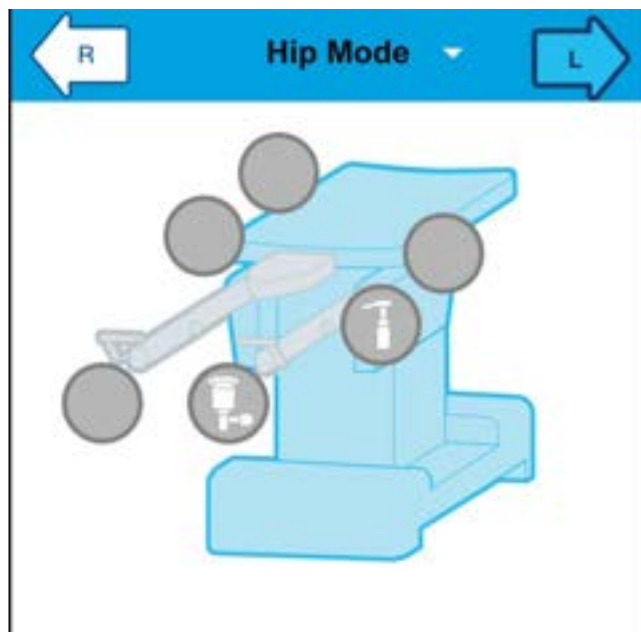


Figure 128: Platform Visual Display Area with Left Side and Hip Mode Selected

4. Attach the required components for the selected mode (*Figure 129*).

Once the components are installed, they will display either blue or green on the touch screen.

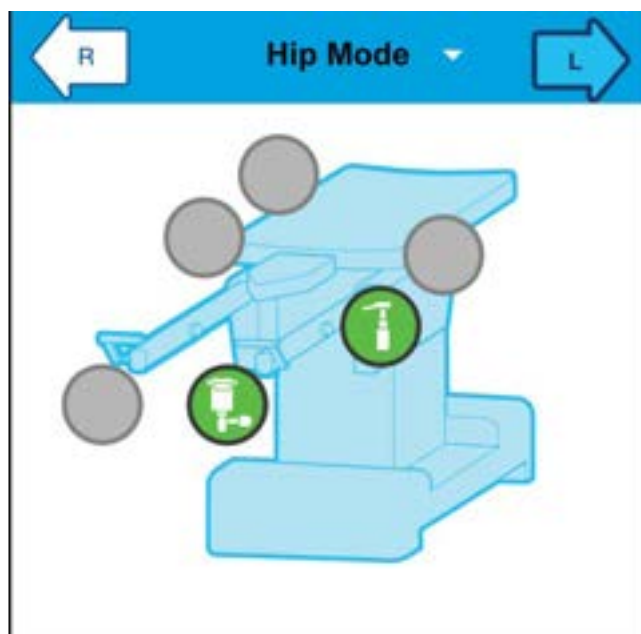


Figure 129: Platform Visual Display Area with Side and Mode Selected, Components Attached

4.17.5.3 Platform Visual Display Area when Motion Occurring

The Platform Visual Display area on the touch screen will change when a motion is occurring. For example, when raising the height of the surgical platform with the Hand Pendant or Wireless Foot Pedal, a blue motion indicator will appear on the touch screen (*Figure 130*).

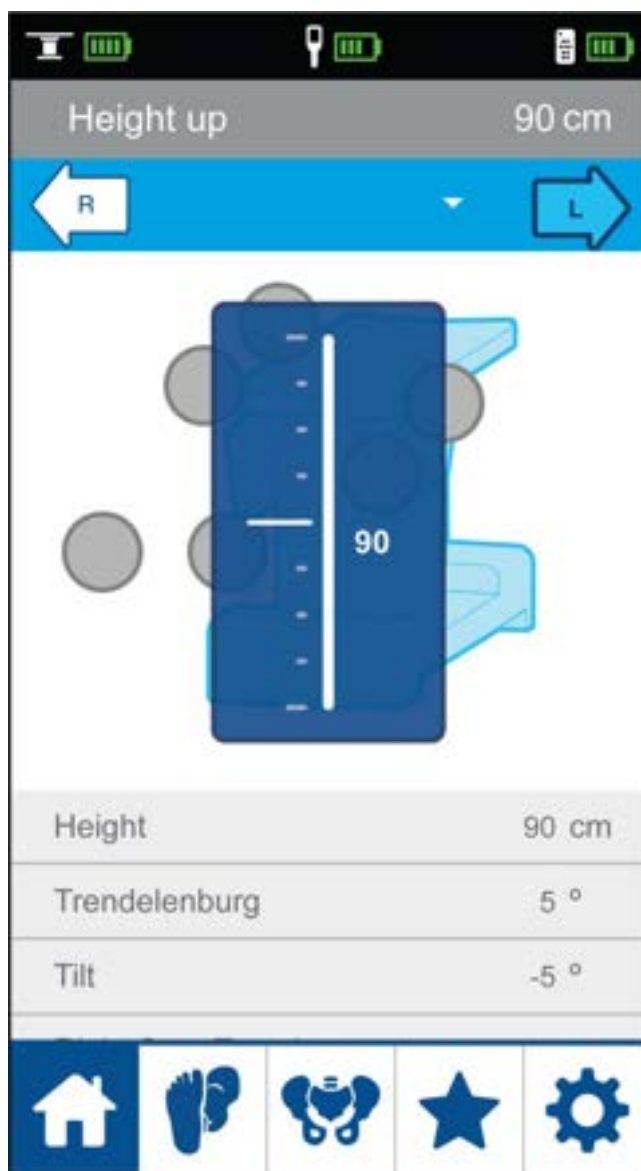


Figure 130: Platform Visual Display Area when Raising Height of the Surgical Platform

The Platform Status area will display real-time positioning information and will change from grey to purple when the motion has reached its limit.

The Platform Details area provides a list of platform position information.

A blue motion indicator will also appear on the touch screen when activating Trendelenburg/ Reverse Trendelenburg and Tilt (*Figure 131* and *Figure 132*).

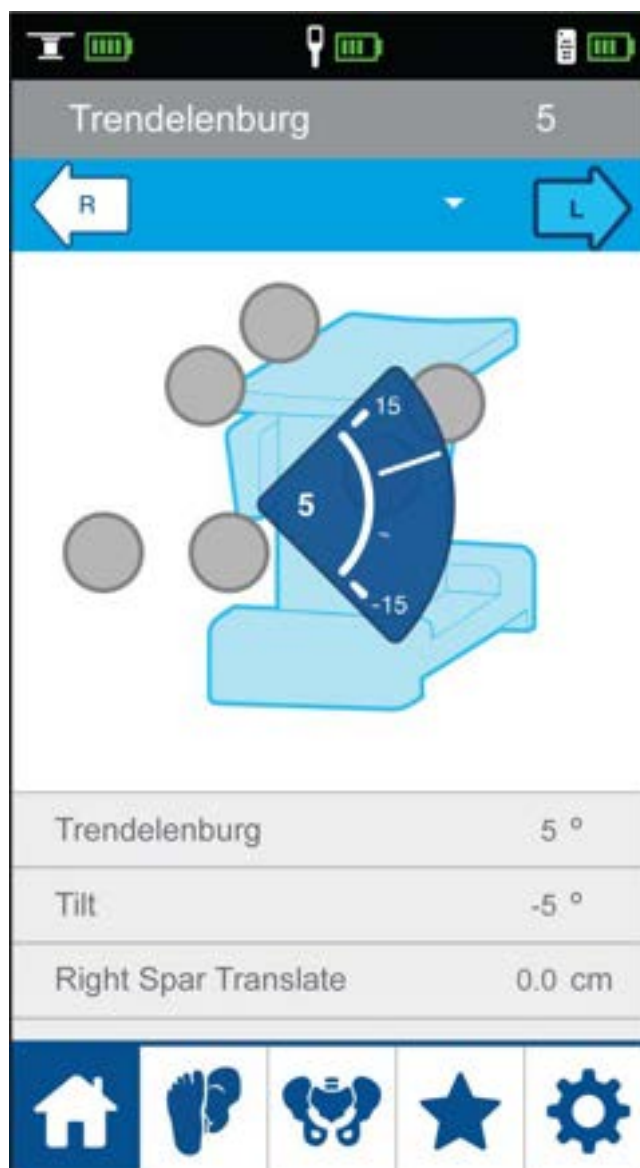


Figure 131: Platform Visual Display Area when Trendelenburg is Activated

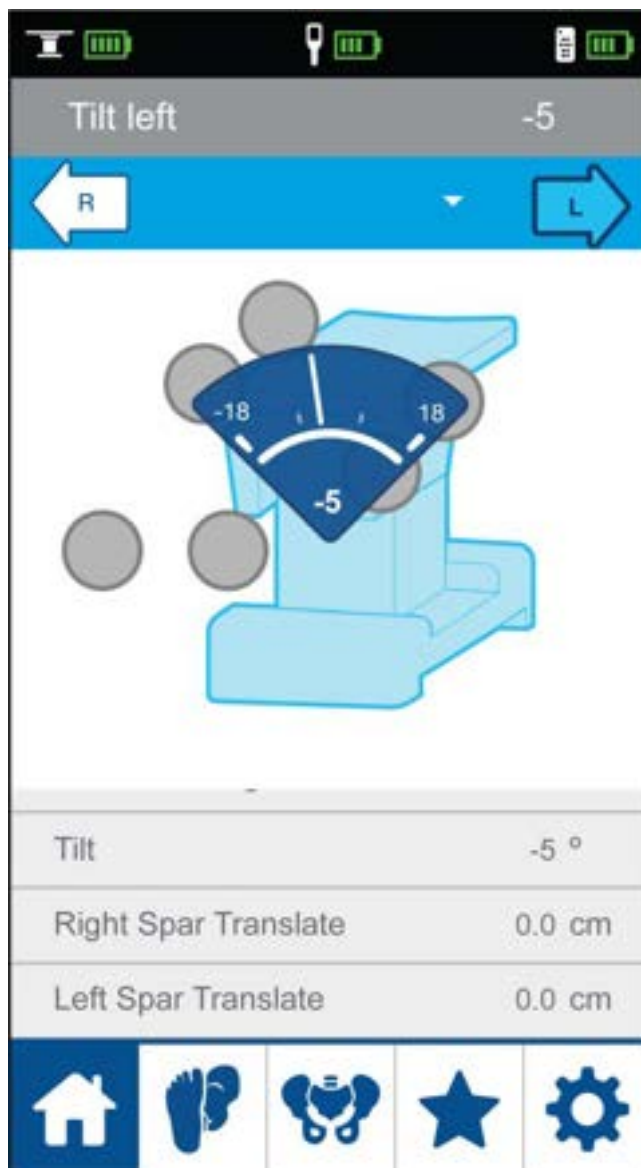


Figure 132: Platform Visual Display Area when Tilt is Activated

4.17.6 Leg Screen

The Leg Screen on the Adante IntelliTouch Hand Pendant displays options for leg adjustments on the touch screen that are equivalent to the Spar Control Interface buttons, such as unlocking/locking to allow for gross traction or rotation, or for making fine traction adjustments. The touch screen also displays buttons for Side Selection, Traction Force, and Lock All.

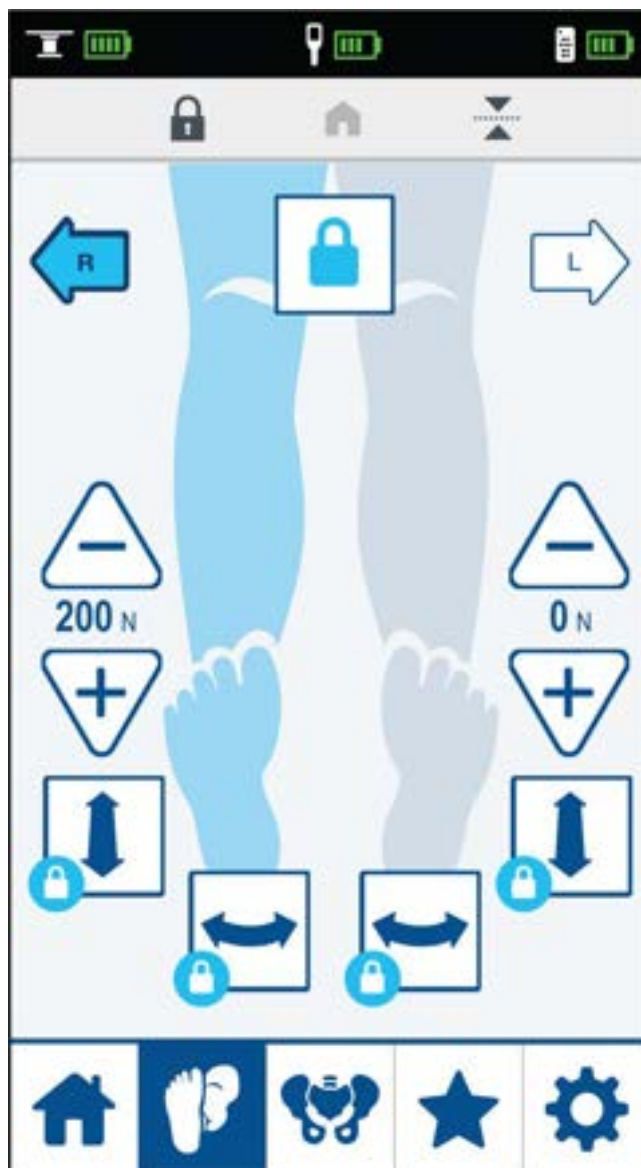


Figure 133: Leg Screen with the Right Side Selected

Table 8: Leg Screen Buttons

Button	Function Description
	Press the Right Arrow button to select the right side of the platform (patient's right). The arrow will be blue when selected.
	Press the Left Arrow button to select the left side of the platform (patient's left). The arrow will be blue when selected.
	Press the Lock All button to lock all functions on the display screen.

Table 8: Leg Screen Buttons (continued)

Button	Function Description
	Press the Retract button to make a fine adjustment to retract the leg spar. There are separate buttons for left and right spars. This is equivalent to the fine traction buttons on the Spar Control Interface on the left and right side of the platform and on the Traction Mounts.
	Press the Extend button to make a fine adjustment to extend the leg spar. There are separate buttons for left and right spars. This is equivalent to the fine traction buttons on the Spar Control Interface on the left and right side of the platform and on the Traction Mounts.
	This button indicates traction control for either left or right leg spar is locked. Press to unlock. This is equivalent to the Release Gross Traction button on the Spar Control Interface on the left and right side of the platform and on the Traction Mounts.
	This button indicates traction control for either left or right leg spar is unlocked. Press to lock. This is equivalent to the Release Gross Traction button on the Spar Control Interface on the left and right side of the platform and on the Traction Mounts..
	This button indicates leg rotation for either left or right leg spar is locked. Press to unlock. This is equivalent to the Release Rotation button on the Spar Control Interface on the left and right side of the platform and on the Traction Mounts.
	This button indicates leg rotation for either left or right leg spar is unlocked. Press to lock. This is equivalent to the Release Rotation button on the Spar Control Interface on the left and right side of the platform and on the Traction Mounts.

4.17.7 Pelvis Screen

The Pelvis Screen on the Adante IntelliTouch Hand Pendant displays options for pelvic motions on the touch screen, including abduction, adduction, and Hip Traction. The touch screen also displays buttons for Side Selection, Lock All, and Patient Break.

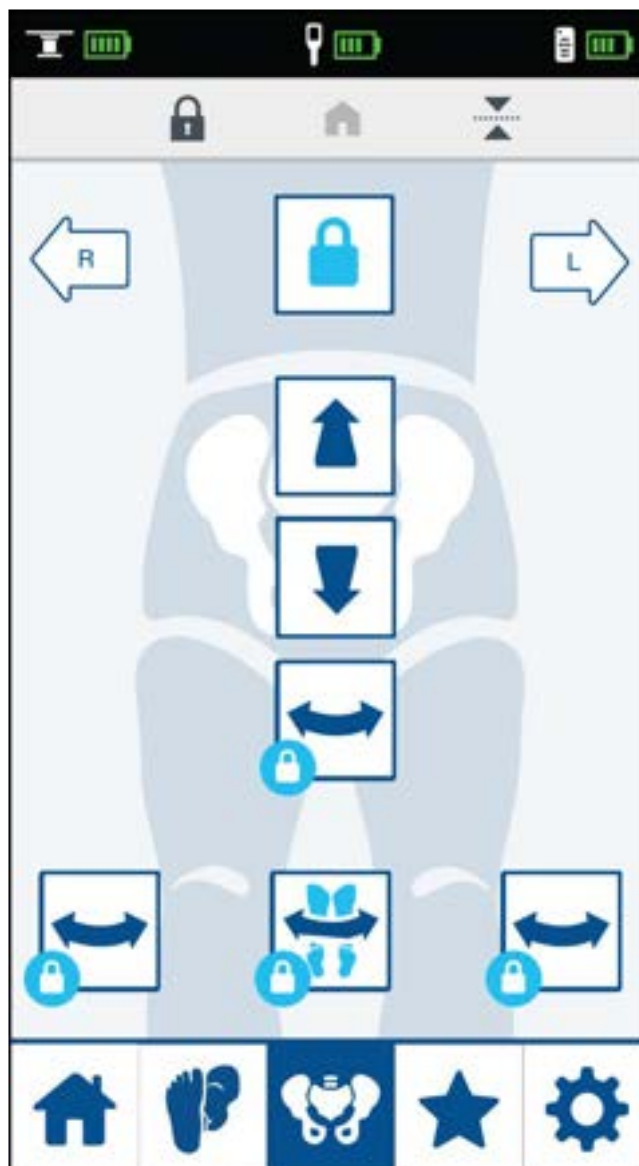


Figure 134: Pelvis Screen

Table 9: Pelvis Screen Buttons

Button	Function Description
	Press the Right Arrow button to select the right side of the platform (patient's right). The arrow will be blue when selected.
	Press the Left Arrow button to select the left side of the platform (patient's left). The arrow will be blue when selected.
	Press the Lock All button to lock all functions on the display screen.

Table 9: Pelvis Screen Buttons (continued)

Button	Function Description
	Press this button to adjust pelvic pitch up.
	Press this button to adjust pelvic pitch down.
	This button indicates neither left nor right leg control is selected and Patient Break Control is locked. Press to unlock.
	This button indicates neither left nor right leg control is selected and Patient Break Control is unlocked. Press to lock.
	This button indicates Pelvic Yaw Control for either left or right leg spar is locked. Press to unlock.
	This button indicates Pelvic Yaw Control for either left or right leg spar is unlocked. Press to lock.

4.17.8 Setup Screen

The Setup Screen on the Adante IntelliTouch Hand Pendant displays standard and custom preset position options. The touch screen displays five fixed positions on page 1 and five custom positions on page 2 that can be edited and saved. Navigating between these pages is done by pressing the arrows at the upper right of the screen.

4.17.8.1 Select a Fixed or Custom Position

To reposition the platform in a fixed or custom preset position:

1. Select the **Setup** button on the Navigation menu.



Figure 135: Fixed Positions on Setup Screen

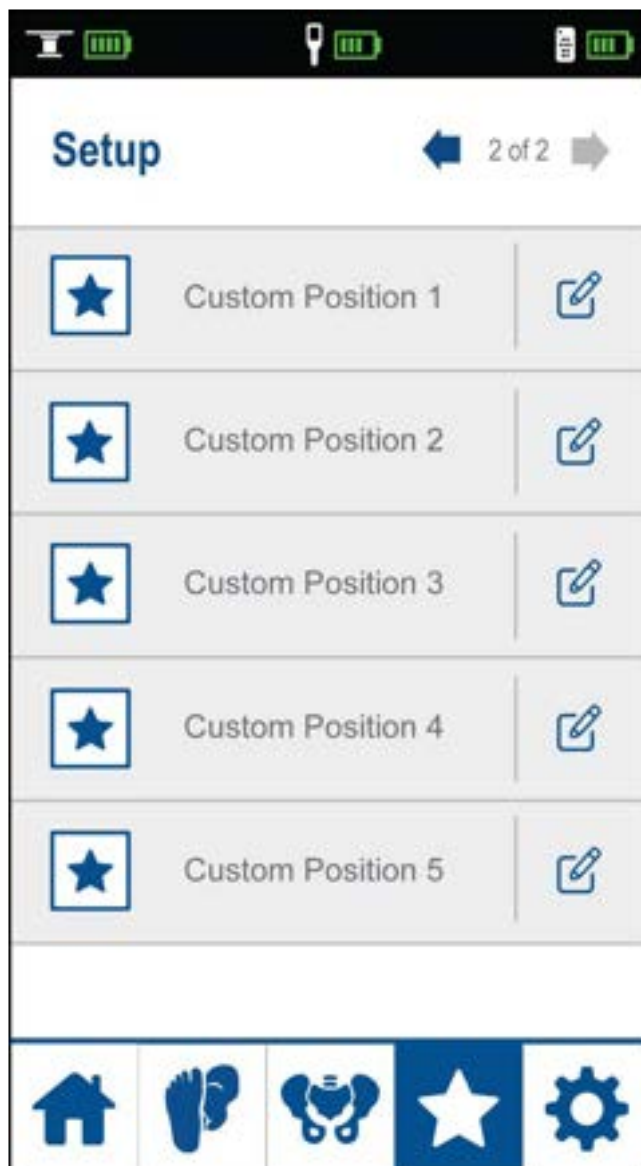


Figure 136: Custom Positions on Setup Screen

2. Go to Page 1 to select a fixed position or go to Page 2 to select a custom position.
3. Press and hold the icon for one of the fixed positions listed on page 1 or one of the custom positions on page 2 until the surgical platform has reached the selected position.

The Platform Status area will change when a button is pressed (*Figure 137*) and when the selected position is reached (*Figure 138*)

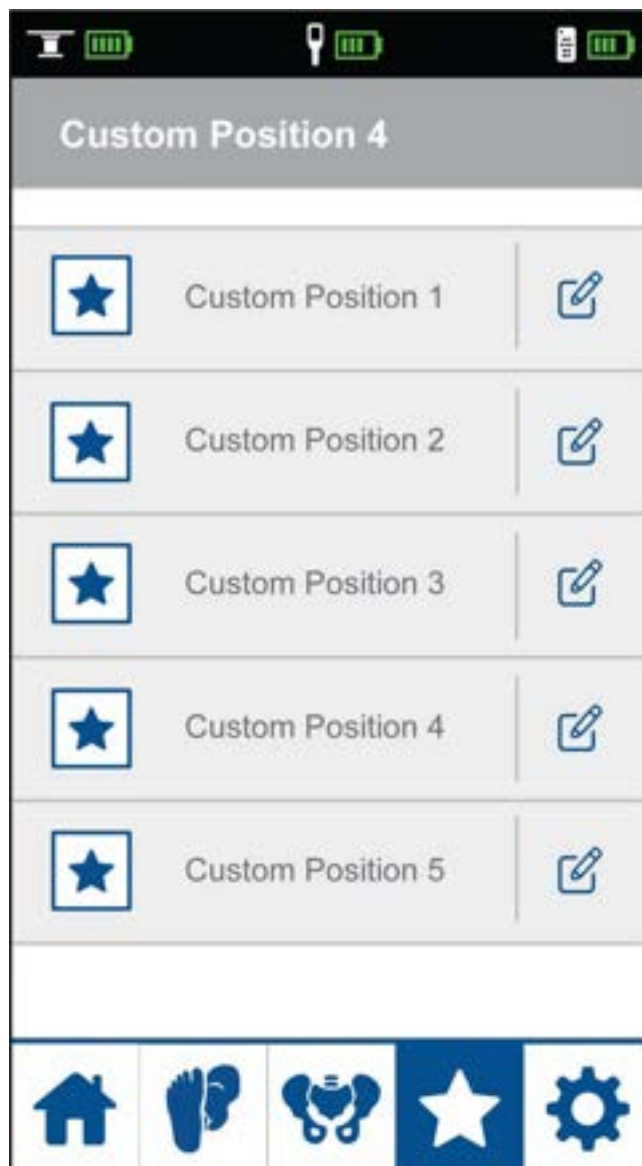


Figure 137: Selecting a Custom Position

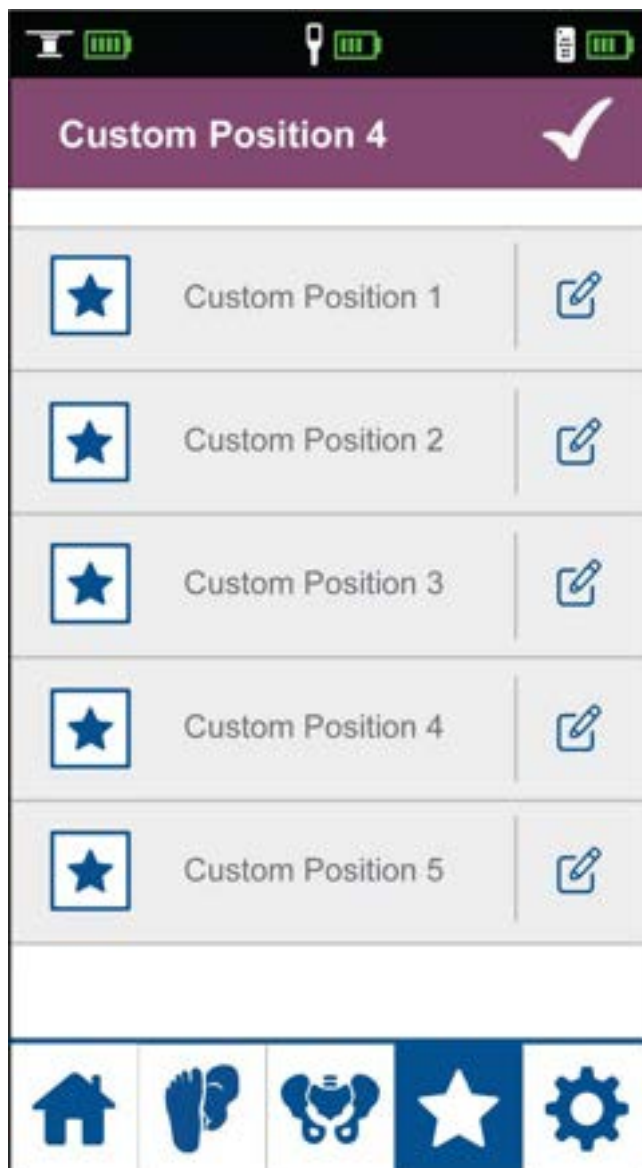


Figure 138: Hand Pendant Indicating Selected Position has been Reached

4.17.8.2 Save or Edit a Custom Position

Five custom positions can be stored by the hand pendant.

To save a platform position:

1. Move the platform to the desired position.
2. Select the **Setup** button on the Navigation menu.
3. Go to page 2 of the Settings screen.
4. Press the **Edit** button for one of the five custom positions.

A confirmation pop-up window displays.

5. Select **Confirm** to save the current platform position.

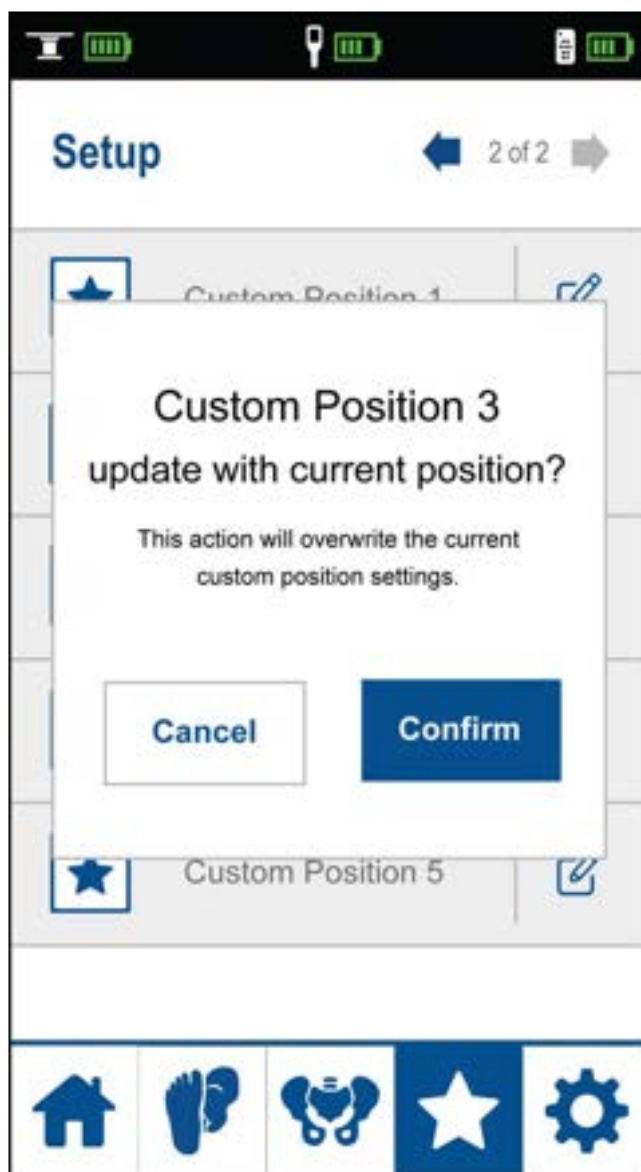


Figure 139: Confirming and Saving Custom Position

The confirmation window will close and the new position will be saved.

4.17.8.3 Move the Surgical Platform into Storage Position

To move the Surgical Platform into storage position:

1. Remove any components and accessories attached to the platform.

2. Collapse the Spar Length Extension, if extended (see *Collapse the Spar Length Extension on page 46*).
3. Select the **Setup** button on the Navigation menu on the Adante IntelliTouch Hand Pendant.
4. Press and hold the Storage Position icon until the surgical platform reaches the storage position.

A screen indicating the Storage Position has been reached and the position of the leg spars will open after the motion is completed (*Figure 140*).

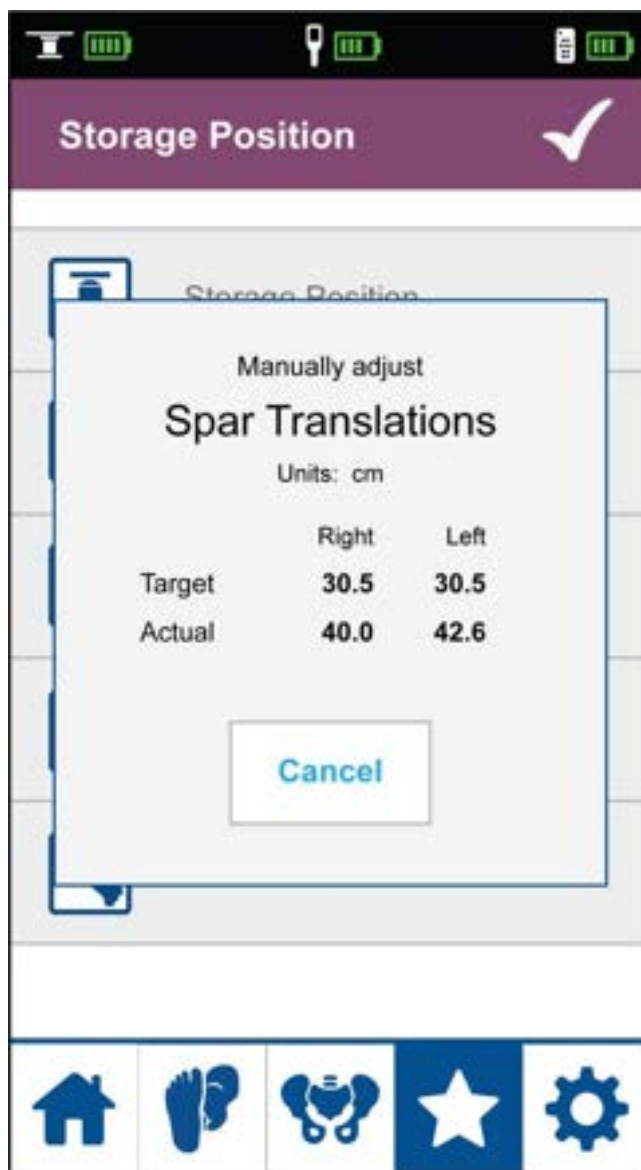


Figure 140: Leg Spars Position Screen

5. Press the **Enable** button on the Spar Control Handle to straighten out the Spars.
6. Ensure the Spars are parallel to the sides of the platform.

7. Press the **Enable** button on the Spar Control Handle and push the Spars back toward the Head-End of the platform until end of travel is reached.



Figure 141: Spars Straightened and Pushed Back Toward the Head-End of the Platform

8. Press the enable button and release button on the Spar Control Handle to flex the Spars.



Figure 142: The Spars Flexed in the Storage Position

4.17.9 Settings Screen

The Settings screen on the Adante IntelliTouch Hand Pendant provides options for changing or viewing various display options on the touch screen, including Language, Units, Versions, and Positions. The touch screen display also includes options for floor lock override functionality, UIC functionality, Adante Wireless Foot Pedal functionality and pairing options, and shipping modes for both the floor locks and Adante IntelliTouch Hand Pendant.

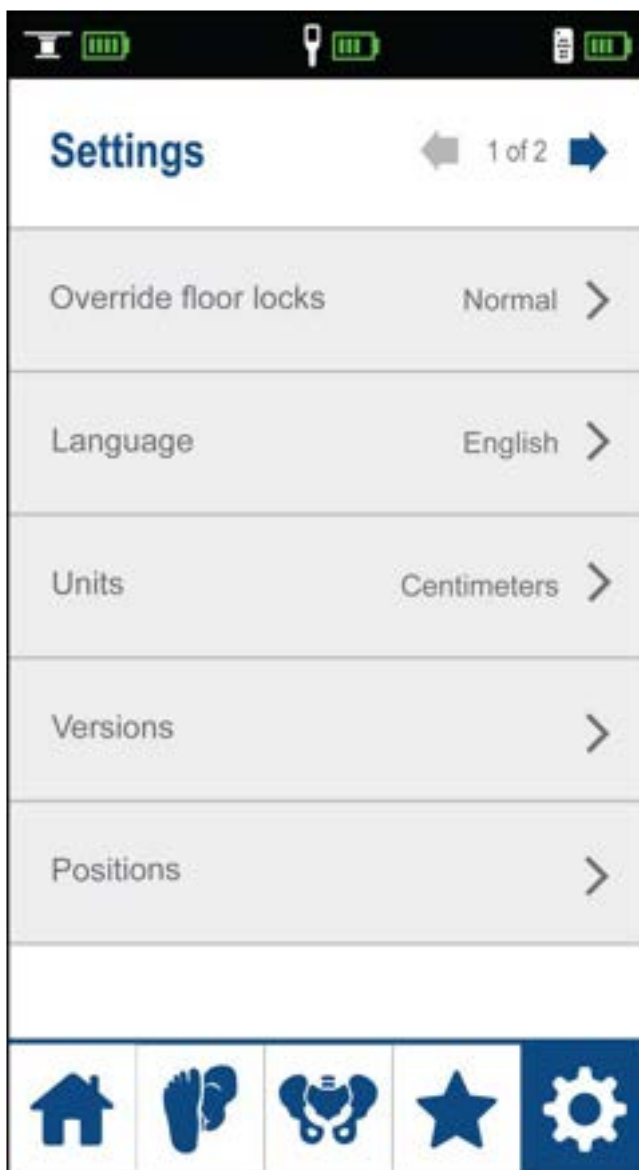


Figure 143: Settings Screen, Page 1

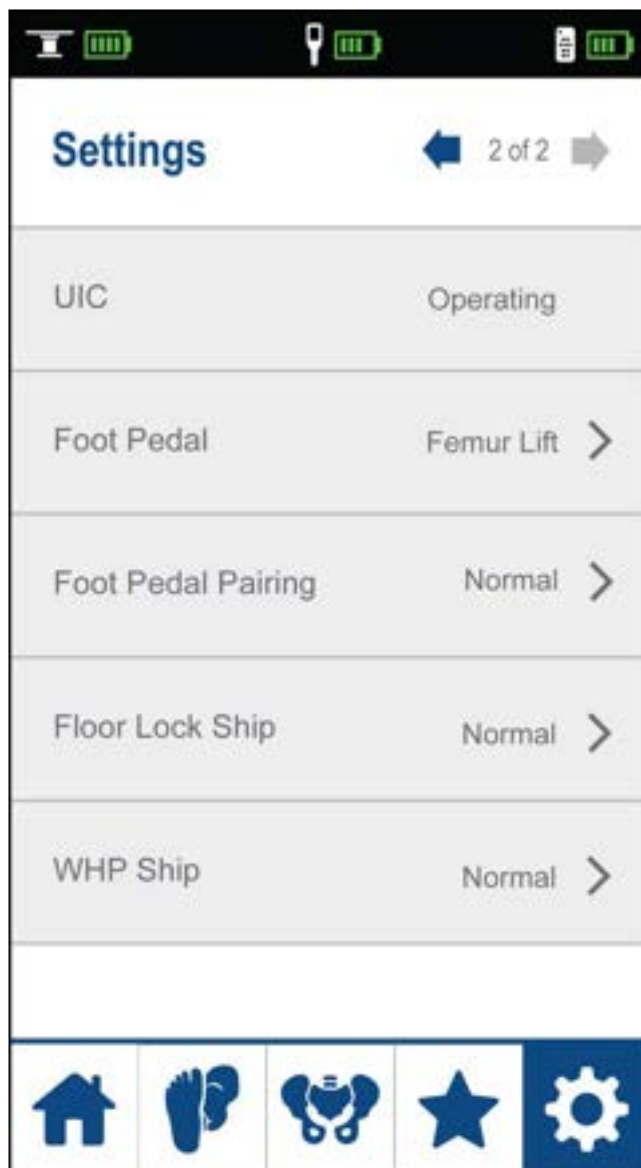


Figure 144: Settings Screen, Page 2

Table 10 describes all the available settings options on these screens.

Table 10: Settings Screens Options

Setting	Description
Override Floor Locks	Select this button to change the Override Floor Locks setting. • Normal (Default) • Override
Language	Select this button to change the language displayed on the Adante IntelliTouch Hand Pendant.

Table 10: Settings Screens Options (continued)

Setting	Description
Units	Select this button to change the units displayed on the Adante IntelliTouch Hand Pendant. • Inches • Centimeters • Pouces NOTE: Pouces is not available for the Adante AX Orthopedic Surgical Platform (REF 6895AX-00).
Versions	Select this button to view the current software version used by the platform.
Positions	Select this button to view a list of all platform position information.
Foot Pedal	Select this button to change the Adante Wireless Foot Pedal control setting. • Femur Lift • Height • Tilt • Trendelenburg
Foot Pedal Pairing	Select this button to view the Adante Wireless Foot Pedal pairing instructions.
Floor Lock Ship	Select this button to put the Floor Locks in shipping mode. NOTE: Floor Lock Ship raises the Floor Locks to their maximum height and is not intended to be used during surgery.
WHP Ship	Select this button to put the Adante IntelliTouch Hand Pendant in shipping mode. NOTE: To take the Adante IntelliTouch Hand Pendant out of shipping mode, plug the charging cable into the hand pendant.

4.17.9.1 Override Floor Locks

Under normal conditions, the powered motions of the Adante AX Orthopedic Surgical Platform will not function until the Floor Locks are engaged, preventing the surgical platform from rolling by raising the casters off the floor. If the Floor Lock System fails during platform use such that powered platform motion is prevented, activate the Override Floor Locks function to provide a 60-second window during which multiple powered platform motions can be performed. Should the desired action take longer than 60 seconds, the action will be completed as long as the motion button continues to be depressed. Should additional time be required beyond the 60 seconds to complete an additional function or if the motion button has been released once the 60 seconds have elapsed, the Override Floor Locks function will have to be reactivated starting with Step 1 of this procedure.

The Override Floor Locks function allows for changes to Height, Trendelenburg/Reverse Trendelenburg, and Tilt via the Adante IntelliTouch Hand Pendant or the Auxiliary Control Panel and is intended for use in emergency situations only.



WARNING: When the Override Floor Locks function is activated, the platform no longer monitors stability. Use extreme care when repositioning the platform using Override Floor Locks. Failure to do so may cause damage to the device, or injury to the patient or healthcare professionals.

To activate the Override Floor Locks function:

1. Select the **Settings** button from the Navigation menu.

The current Override Floor Locks setting, **Normal**, will be displayed.

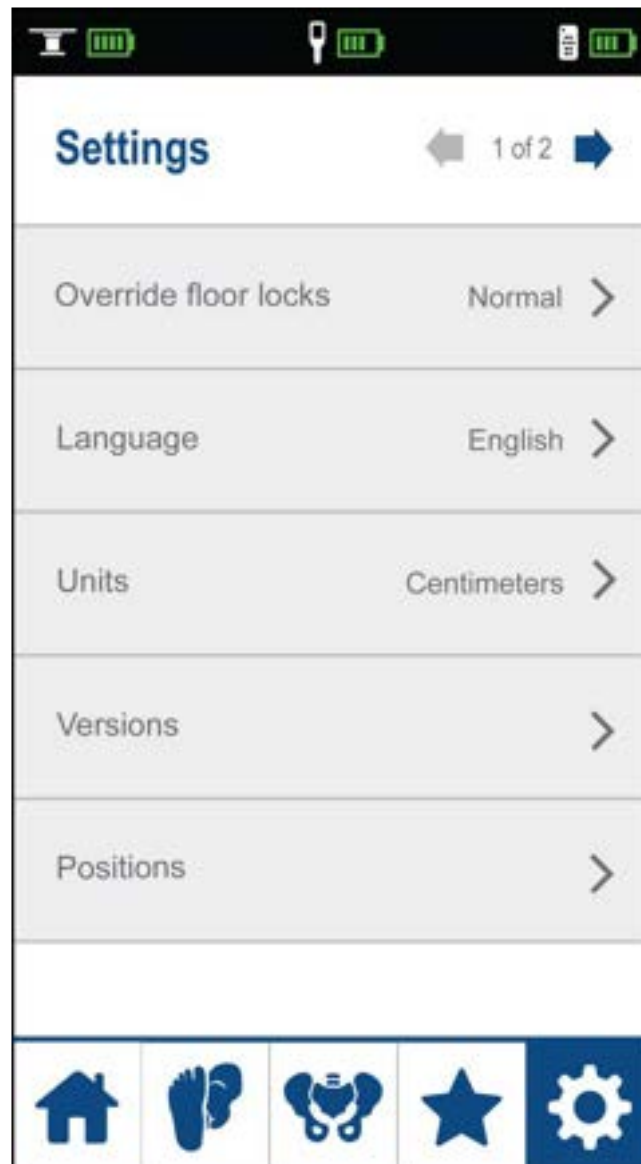


Figure 145: Override Floor Locks Set to Normal

2. Press the arrow to the right of the displayed Override Floor Locks setting.
The setting will change from **Normal** to **Override**.

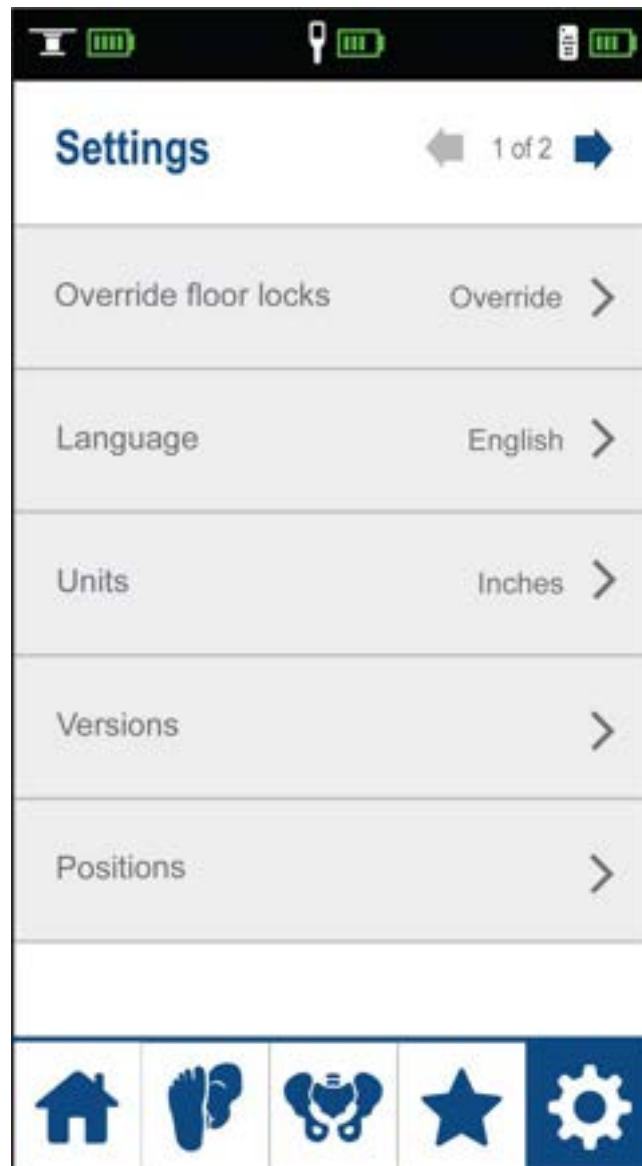


Figure 146: Override Floor Locks Set to Override

3. Select the **Home** button on the Navigation menu.

NOTE: *The Floor Lock icon in the Platform Status area will reflect the override state.*



A Floor Lock Override

Figure 147: Floor Lock Override Display on Home Screen

4. Press the appropriate motion button on the Adante IntelliTouch Hand Pendant to achieve the desired platform motion.

Once the Floor Lock Override function deactivates, the display in the Settings will change from **Override** to **Normal**.

5. **Optional:** If problems with the Floor Locks persist, contact Service (see *Contact for Parts and Service on page 238*).

4.17.9.2 Change the Language Displayed

Change the language displayed on the Adante IntelliTouch Hand Pendant:

1. Select the **Settings** button on the Navigation menu.

The Settings screen will display the current language in use.

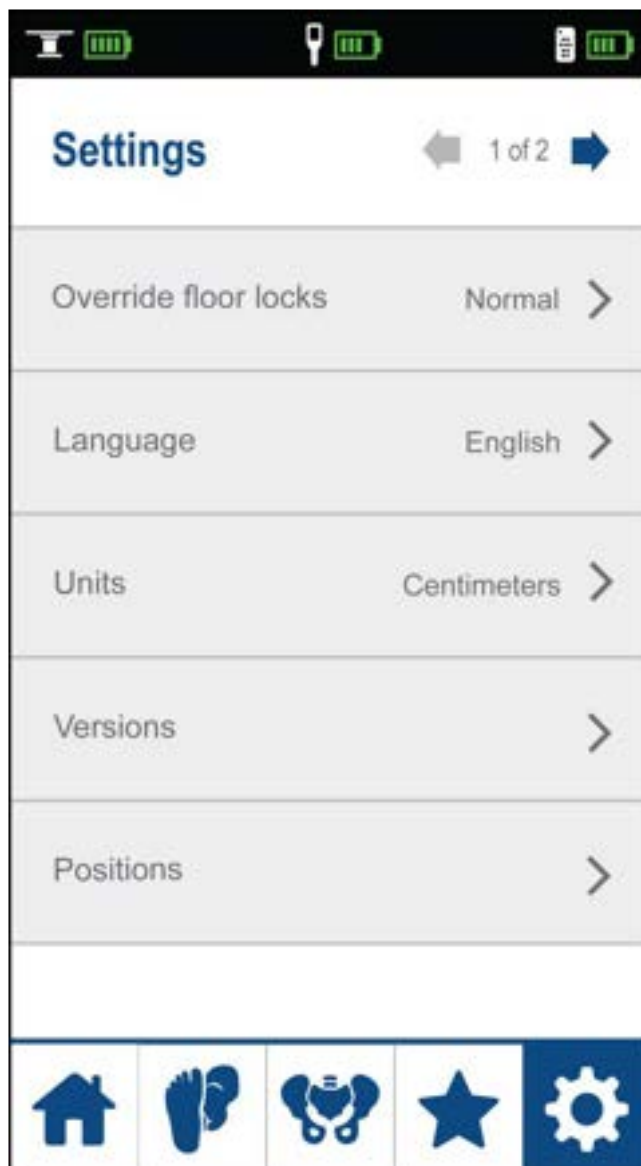


Figure 148: Language Set to English

2. Press the arrow to the right of the displayed language setting.

The Select Language screen will display. The active language will be identified with a check mark.



Figure 149: Language Screen (English Selected)

NOTE: French, Italian, German, and Spanish are not available with the [REF 6895-1 Adante AX Orthopedic Surgical Platform](#)

3. Press the button for the desired language.

The check mark will now display on the selected language.

4. Press the arrow to the left of Select Language to close the screen.

The Settings Screen will display with the selected language.

4.17.9.3 Change the Units Displayed

To change the units of measure displayed between inches and centimeters on the Adante IntelliTouch Hand Pendant:

1. Select the **Settings** button on the Navigation menu.

The current Units in use, either **Inches** or **Centimeters**, will be displayed.

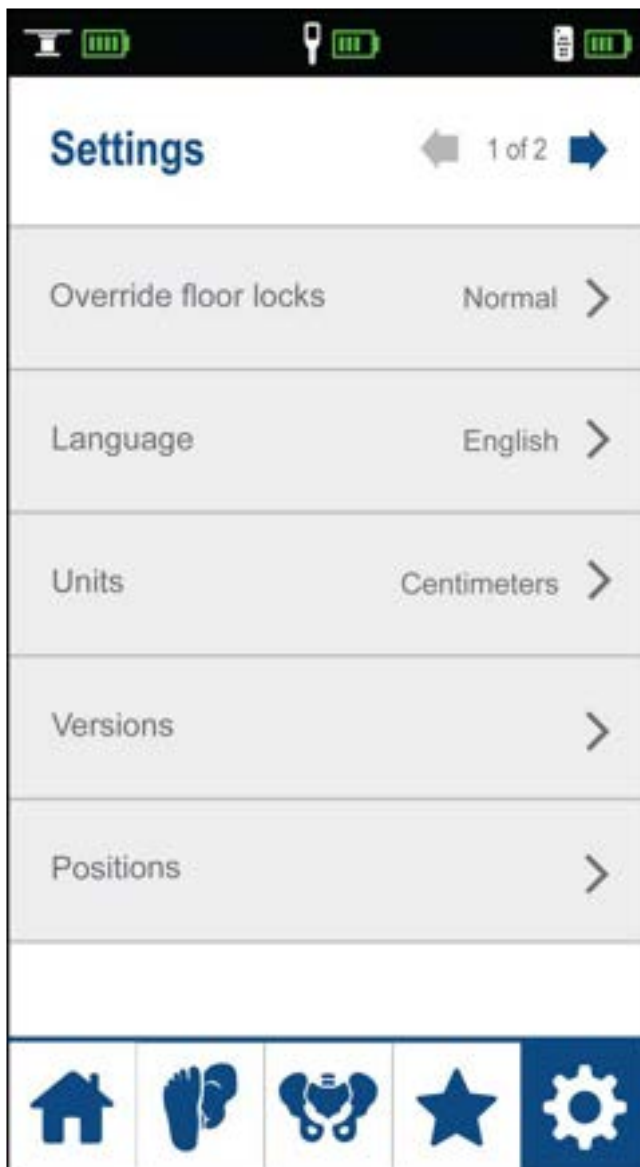


Figure 150: Units Set to Centimeters

2. Press the arrow to the right of the displayed Units setting.

The Units displayed will change to either **Inches** or **Centimeters**.

4.17.9.4 Version Information

To display the current software versions used by the platform:

1. Select the **Settings** button on the Navigation menu.
2. Press the arrow to the right of Versions.

The Version Information screen will appear.

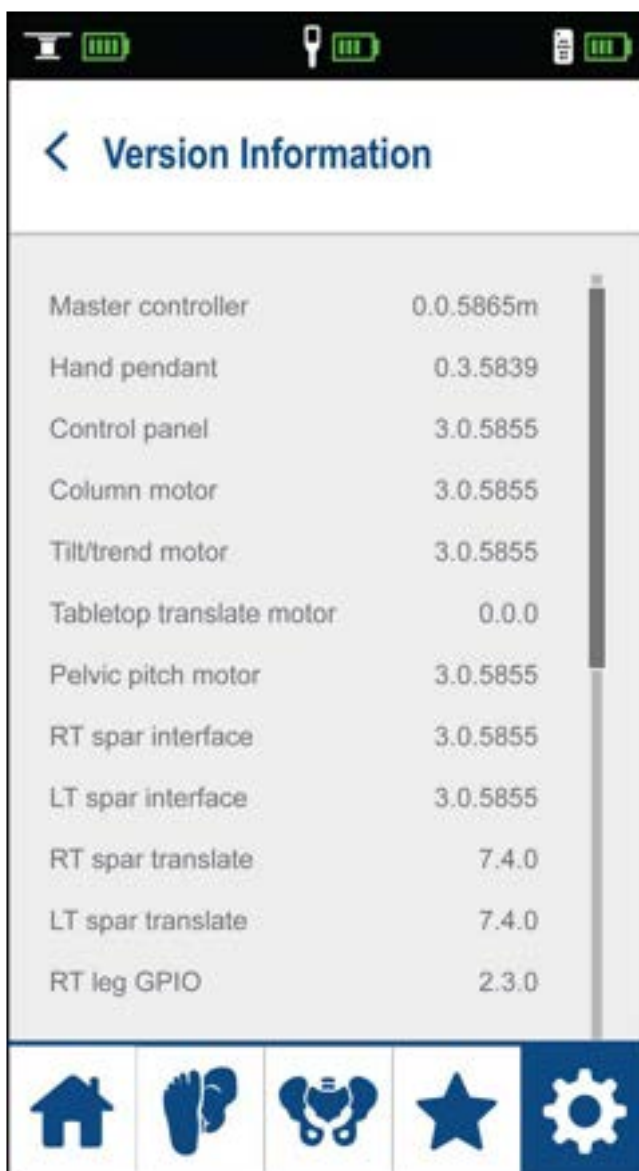


Figure 151: Software Version Information Screen

The following items are not applicable for Adante AX Orthopedic Surgical Platform:

- Tabletop Translate Motor
 - Pelvic Pitch Motor
 - Surgeon Control
3. Press the arrow to the left of Version Information to close the screen and return to the Settings screen.

4.17.9.5 Position Information

To view a list of all platform position information:

1. Select the **Settings** button on the Navigation menu.
2. Press the arrow to the right of Positions.

The Position Information screen will appear.



Figure 152: Position Information Screen

The following items are not applicable for Adante AX Orthopedic Surgical Platform:

- Translation
- Pelvic Pitch Angle
- Pelvic Yaw Angle
- RT Pelvic Wing Presence
- LT Pelvic Wing Presence

3. Press the arrow to the left of Position Information to close the screen and return to the Settings screen.

4.17.9.6 Pair the Wireless Foot Pedal

Materials Required:

- Small flat-bladed screwdriver

To pair the Adante Wireless Foot Pedal with the Adante Platform:

1. On the Adante IntelliTouch Hand Pendant, select the **Settings** button on the Navigation menu.
2. Go to page 2 and select the arrow to the right of Foot Pedal Pairing.

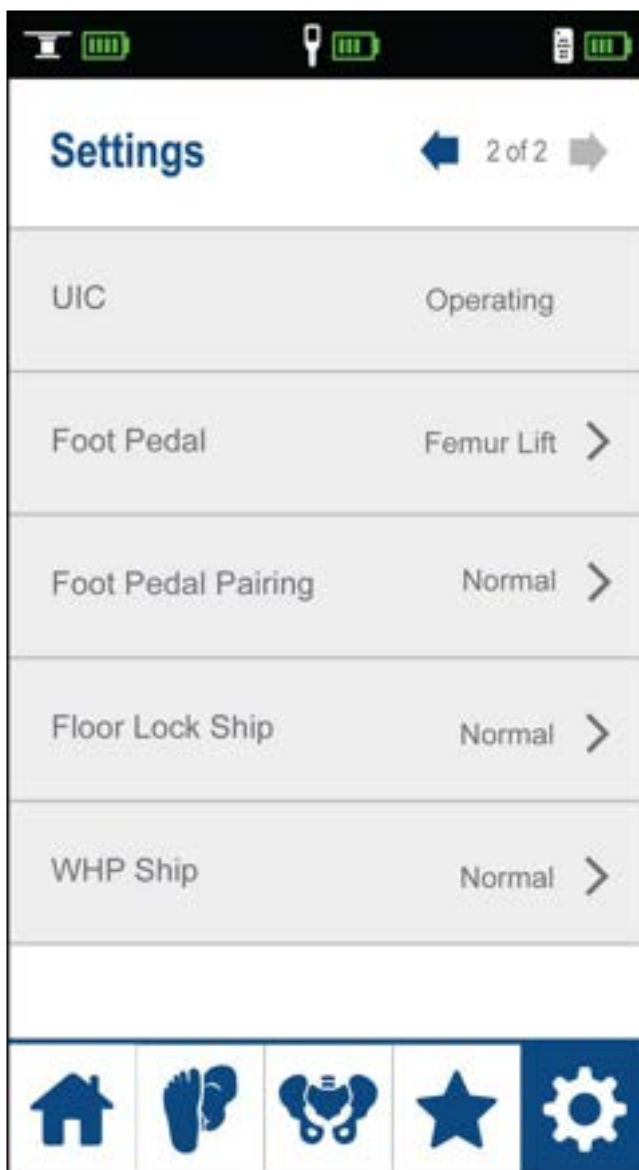
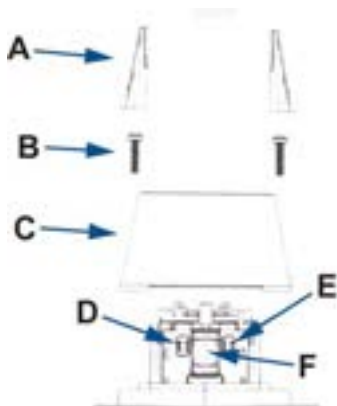


Figure 153: Settings Screen, Page 2

This will display pairing instructions on the Adante IntelliTouch Hand Pendant (*Figure 155*).

3. Remove the screw covers and use a flat bladed screwdriver to remove the screws from the battery compartment lid of the Adante Wireless Foot Pedal.



A	Screw Covers	B	Fixing Screws
C	Battery Compartment Lid	D	Battery Indication LED
E	Pairing LED	F	Pairing Button

Figure 154: Battery Compartment

4. Remove the battery compartment lid.
5. Press and release the Wireless Foot Pedal's **Pairing** button.

The blue pairing LED will begin to flash. This will time out after 30 seconds if no connection is made. If the LED stops flashing after 10 seconds, the Wireless Foot Pedal must be reset by following the unpairing procedure (see *Unpair the Adante Wireless Foot Pedal on page 145*).

6. Press the **Start** button on the Wireless Foot Pedal pairing screen on the Adante IntelliTouch Hand Pendant (*Figure 155*).

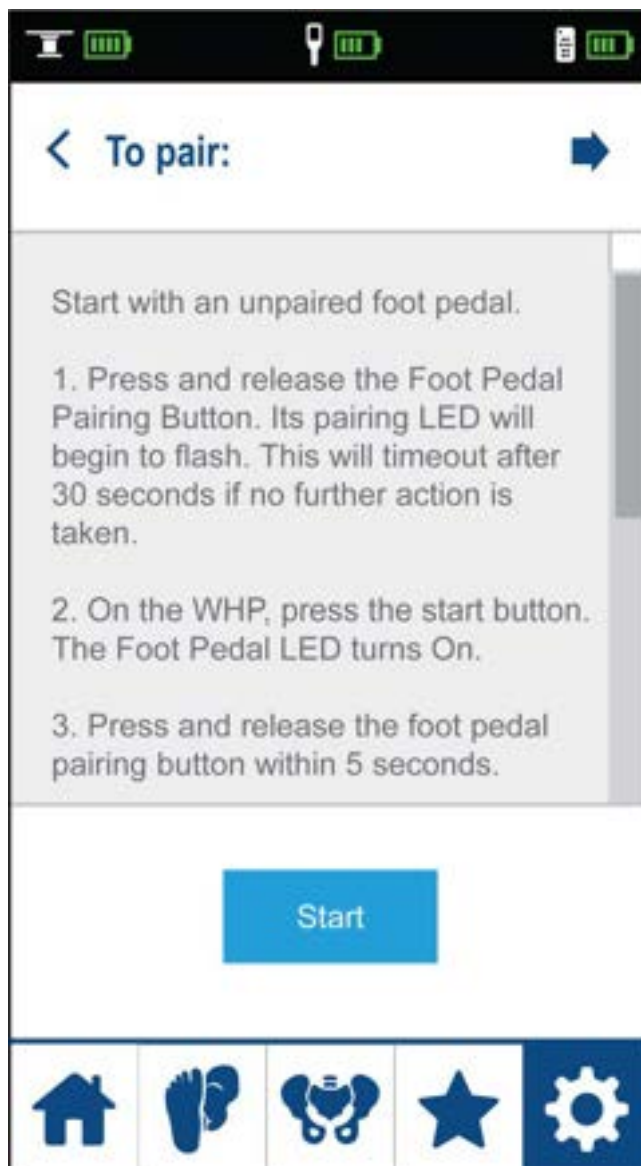


Figure 155: Wireless Foot Pedal Pairing Screen

The Wireless Foot Pedal's pairing LED will switch on for 5 seconds when it has found the surgical platform.

7. Press and release the Wireless Foot Pedal's pairing button a second time to confirm successful pairing.

The Wireless Foot Pedal's LED will momentarily pulse off as an indication that the button was pressed. If no action is taken after 5 seconds, the pairing procedure will be exited.

The Wireless Foot Pedal's LED will stay on for a few seconds and then flash 3 times to indicate a successful pairing.

NOTE: If the Wireless Foot Pedal is paired and the pairing LED flashes and is followed by 3-4 blinks, the Wireless Foot Pedal is out of range of the surgical platform and needs to be moved closer and pointed in the direction of the surgical platform.

4.17.9.7 Unpair the Adante Wireless Foot Pedal

To unpair the Adante Wireless Foot Pedal:

- Press and hold the **Pairing** button on the Wireless Foot Pedal for more than 5 seconds.

The pairing LED will switch on for 3 seconds, indicating the Wireless Foot Pedal has been successfully disconnected.

4.17.9.8 Adjust with the Adante Wireless Foot Pedal

To make adjustments using the Adante Wireless Foot Pedal:

1. Select the **Settings** button on the Navigation menu of the Adante IntelliTouch Hand Pendant.
2. Go to page 2 to view the current Foot Pedal control setting (*Figure 156*).

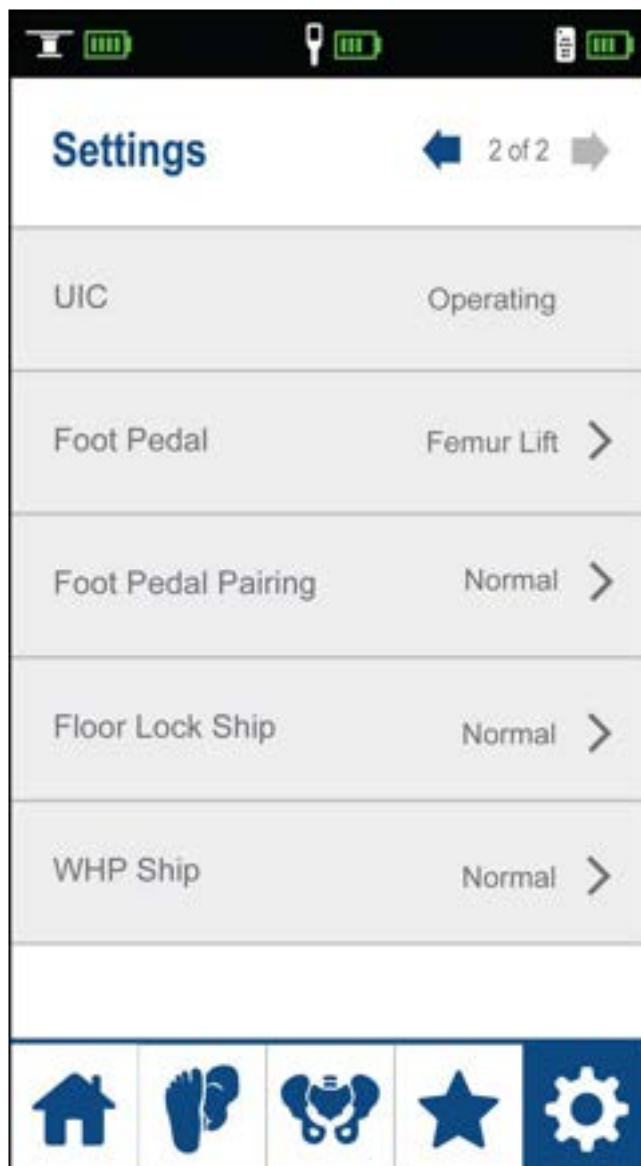


Figure 156: Current Control Setting

Proceed to the next step if you need to change the setting.

3. Select the arrow next to Foot Pedal to open Select Foot Pedal Control screen (*Figure 157*).

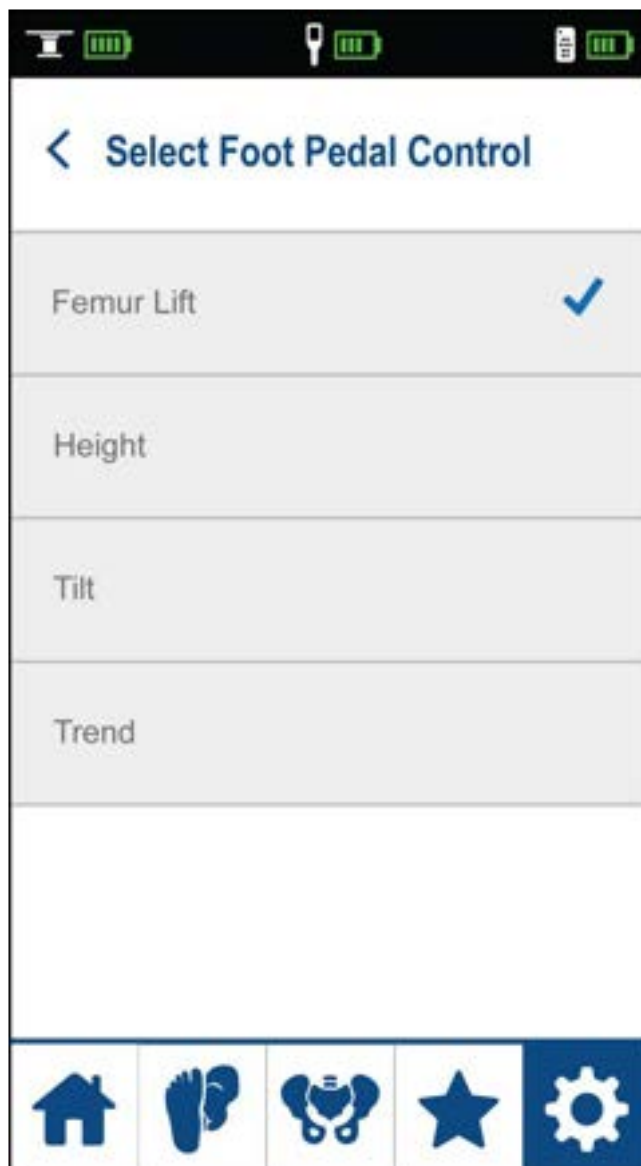
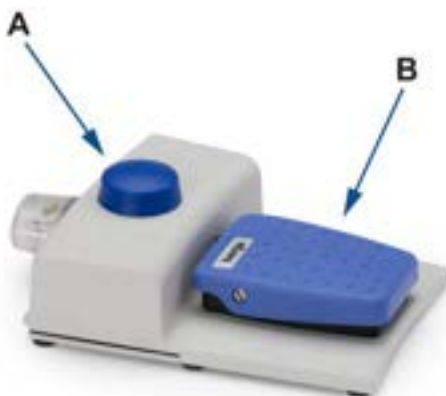


Figure 157: Select Foot Pedal Control Screen

4. Select the desired control option.
A checkmark will appear next to the selected option.
5. Press the appropriate pedal for the desired motion (see *Table 11*).



A Upper Pedal

B Lower Pedal

Figure 158: Wireless Foot Pedal

Table 11: Wireless Foot Pedal Adjustments

Function Selected	Upper Pedal	Lower Pedal
Femur Lift	Lower height of Femur Lift	Raise height of Femur Lift
Height	Lower height of platform	Raise height of platform
Tilt	Tilt platform left	Tilt platform right
Trend	Reverse Trendelenburg	Trendelenburg

4.18 Auxiliary Control Panel

The Auxiliary Control Panel provides a secondary option for controlling primary platform motions and the Floor Lock/Unlock function. The motion buttons control platform height, Trendelenburg/Reverse Trendelenburg, Lateral Tilt, Floor Lock operation, and Home Position. The button iconography is identical to that used on the Adante IntelliTouch Hand Pendant.

To activate one of the motion functions available on the Auxiliary Control Panel, press and hold a button until the desired motion is achieved. The Home screen on the Adante IntelliTouch Hand Pendant will display the current table position in real-time.

The Floor Locks must be deployed before any of the motion buttons on the Auxiliary Control Panel will function. To deploy the Floor Locks, press the Floor Lock button on the Auxiliary Control Panel or the Adante IntelliTouch Hand Pendant. Confirm the Floor Locks are deployed by observing that the green Floor Lock LED on the Auxiliary Control Panel illuminates. Verify that the Floor Lock symbol on the Adante IntelliTouch Hand Pendant touch screen changes to indicate Floor Locks are deployed.



Figure 159: Auxiliary Control Panel

5 Inspection

5.1 Acceptance and Transfer

1. Upon receipt of your Adante AX Orthopedic Surgical Platform, remove it from the shipping crate. Remove any protective wrapping or packaging. Visually inspect all surfaces for freight damage.

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 and serial number on the manufacturer's label.

The manufacturer's label is located on the platform base near the Auxiliary Control Panel.

3. Plug the power cord into a properly grounded receptacle to charge the table batteries.
4. Plug the wireless Adante IntelliTouch Hand Pendant into the table using the provided cord to charge the Adante IntelliTouch Hand Pendant battery.
5. Perform Function Check (see *Function Check on page 152*).

5.2 General Inspection

Before use, inspect the device for possible damage, excessive wear, or non-functioning parts. Visually inspect all accessible areas, electrical cords, and all movable parts for possible damage that may adversely affect the proper operation of the Adante AX Orthopedic Surgical Platform. Damaged or defective products should not be used or processed. Contact Mizuho OSI Service for repair or replacement of parts (see *Contact for Parts and Service on page 238*).

5.3 Pre-Procedure/Post-Procedure

- Inspect the table (see *General Inspection on page 150*).
- Perform a function test of the table (see *Function Check on page 152*).
- Inspect pad material for wear or damage.
- Thoroughly clean the table (see *Clean Device Exterior on page 206*). Pay special attention to the cleanliness of the controls as excessive soiling can affect function.
- Inspect the power cord for cuts in the insulation or damage to the connector.
- On a smooth surface with the floor locks engaged, push the table. The table should not move.
- If using the Femoral Hooks and Adante Femoral Hook Bracket:
 - Inspect the Femoral Hooks and Adante Femoral Hook Bracket for damage, wear, functionality (check for nicks, burrs, or bent parts).
 - Clean and sterilize the instruments according to your hospital's washing, decontamination, and sterilization procedure.

5.4 Preventive Maintenance

Cleaning the surfaces of the device after each use will assure many years of trouble-free service.

Before and after each use of the Adante AX Orthopedic Surgical Platform, visually inspect all accessible areas and all movable parts and components for possible damage that may adversely affect the proper operation of the device. Damaged or defective products should not be used or processed.

All components are lubricated for life at the factory and no other lubrication is required.

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

To obtain the PM checklist, contact Mizuho OSI Service (*Technical Support on page 238*). PM checklists will only be provided to service personnel with proper training.

6 Function Check

6.1 General Platform Function Checks

1. Plug the Power Cord into a properly grounded receptacle to use with AC power.
Refer to the manufacturer's label on the platform base for input voltage requirements.
2. Press the Power Switch on the Power Inlet Assembly.
 - a. Observe that a green ring illuminates and flashes around the switch as the platform is starting up, confirming power is applied to the platform.



CAUTION: Do not press the Power Button while the green ring is flashing. Doing so will put the system into an error state.



A External Ground Stud

B Power Switch

Figure 160: Power Inlet Assembly

- b. Verify that the platform battery status icon on the Adante IntelliTouch Hand Pendant indicates a charged battery.

NOTE: If the platform battery status icon on the Adante IntelliTouch Hand Pendant is yellow, the batteries are not adequately charged, and the platform should only be used with AC power.



CAUTION: When in use as an operating platform under battery power, an external ground cable connection is required between the external ground stud and protective earth ground to protect the patient, hospital staff, and the platform from possible electrical hazards.

3. Verify lockout mode: The electrically powered motions of the Adante Platform are only operational if the Floor Locks are engaged.
 - a. Press the **Lock Floor Locks** button on the Adante IntelliTouch Hand Pendant or the Auxiliary Control Panel.
 - b. Verify that the Floor Locks Locked LED is illuminated on the Auxiliary Control Panel.

- c. Verify that the Floor Lock icon on the Adante IntelliTouch Hand Pendant touch screen indicates the Floor Locks are engaged.
- d. Press the **Unlock Floor Locks** button on the Adante IntelliTouch Hand Pendant or the Auxiliary Control Panel.
- e. Verify that the Floor Locks Locked LED is no longer illuminated on the Auxiliary Control Panel.
- f. Verify that the Floor Lock icon on the Adante IntelliTouch Hand Pendant touch screen indicates the Floor Locks are disengaged.
- g. With Floor Locks disengaged, verify that neither the Adante IntelliTouch Hand Pendant functions nor the Auxiliary Control Panel functions operate except to activate the Floor Locks.

6.2 Floor Lock Checks

1. Press the **Lock Floor Locks** button on the Auxiliary Control Panel .
 - a. Observe that the Floor Locks Locked LED is illuminated on the Auxiliary Control Panel and the Floor Lock icon on the Adante IntelliTouch Hand Pendant touch screen indicates the Floor Locks are engaged.
 - b. Verify that the floor locks are deployed and the platform cannot be moved on its wheels.
2. Press the **Unlock Floor Locks** button on the Auxiliary Control Panel .
 - a. Observe that the Floor Locks Unlocked LED is illuminated on the Auxiliary Control Panel and the Floor Lock icon on the Adante IntelliTouch Hand Pendant touch screen indicates the Floor Locks are disengaged.
 - b. Verify that the floor locks are retracted and the platform can be moved on its wheels.
3. With the floor locks unlocked, use the Adante IntelliTouch Hand Pendant to select the **Floor Lock Override** function (see *Override Floor Locks on page 132*).
4. Use the platform motion functions on the Adante IntelliTouch Hand Pendant (**Height Up/Down, Right/Left Lateral Tilt, and Trendelenburg/Reverse Trendelenburg**).

These platform motion functions should operate with floor locks unlocked and the Floor Lock Override function active.

6.3 Adante IntelliTouch Hand Pendant Function Checks

With the Adante IntelliTouch Hand Pendant connected to the platform using the charging cable, complete the following checks:

1. Press the **Lock Floor Locks** button.
 - a. Observe that the Floor Locks Locked LED is illuminated on the Auxiliary Control Panel and the Floor Lock icon on the Platform Status area of the Adante IntelliTouch Hand Pendant touch screen indicates that Floor Locks are engaged.
 - b. Verify that the floor locks are deployed and the platform cannot be moved on its wheels.

2. Press the **Unlock Floor Locks** button.
 - a. Observe that the Floor Locks Unlocked LED is illuminated on the Auxiliary Control Panel and the Floor Lock icon on the Platform Status of the touch screen indicates that Floor Locks are disengaged.
 - b. Verify that the floor locks are retracted and the platform can be moved on its wheels.
3. Repeat step 1 to re-engage the Floor Locks, allowing the rest of the platform's functionality to be tested.
4. Press and hold the **Height Up** button.
 - a. Raise the platform through its entire range.
 - b. Confirm that the Platform Visual Display area on the Home Screen changes to display the current platform height in real time.

NOTE: *The Platform Status Area on the Home Screen will change from gray to purple when the motion limit is reached.*

5. Press and hold the **Height Down** button.
 - a. Lower the platform through its entire range.
 - b. Confirm that the Platform Visual Display area on the Home Screen changes to display the current platform height in real time.

NOTE: *The Platform Status Area on the Home Screen will change from gray to purple when the motion limit is reached.*

6. Press and hold the **Reverse Trendelenburg** button.
 - a. Observe that the Foot-End of the platform top moves down through its entire range.
 - b. Confirm that the Platform Visual Display area on the Home Screen changes to display the current platform top angle in real time.

NOTE: *The Platform Status Area on the Home Screen will change from gray to purple when the motion limit is reached.*

7. Press and hold the **Trendelenburg** button.
 - a. Observe that the Head-End of the platform top moves down through its entire range.
 - b. Confirm that the Platform Visual Display area on the Home Screen changes to display the current platform top angle in real time.

NOTE: *The Platform Status Area on the Home Screen will change from gray to purple when the motion limit is reached.*

8. Press and hold the **Left Lateral Tilt** button.
 - a. Observe that the platform top tilts to the left through its entire range.
 - b. Confirm that the Platform Visual Display area on the Home Screen changes to display the current platform top angle in real time.

NOTE: *The Platform Status Area on the Home Screen will change from gray to purple when the motion limit is reached.*

9. Press and hold the **Right Lateral Tilt** button.

- a.** Observe that the platform top tilts to the right through its entire range.
- b.** Confirm that the Platform Visual Display area on the Home Screen changes to display the current platform top angle in real time.

NOTE: *The Platform Status Area on the Home Screen will change from gray to purple when the motion limit is reached.*

10. Press and hold the **Home Position** button.

- a.** Observe that the platform top returns to level and the height adjusts to 32 inches (81.3 cm).

11. Disconnect the Adante IntelliTouch Hand Pendant from the platform and repeat the Adante IntelliTouch Hand Pendant function checks to verify wireless functionality.

NOTE: *If the Adante IntelliTouch Hand Pendant does not control the platform wirelessly, pair it to the platform and then verify wireless functionality (see Pair the Hand Pendant on page 98).*

7 Standard Components

7.1 Order Information

To place an order for standard components, contact Mizuho OSI Sales Operations at 1-800-777-4674 within the US. At the prompt, select **option 1**.

NOTE: *If a part needs repair, contact Mizuho OSI Service (see Contact for Parts and Service on page 238).*

7.2 List of Standard Components

Table 12: Standard Components for Adante Platform

Component	Description
REF 6895-1 Adante AX Core Table 	The Adante AX Core Table consists of the base of the table, the column, and platform top.
Adante Platform Top Tempur-Pedic Pads  REF 6895-1300 Adante Superior Trunk Pad REF 6895-1301 Adante Supine Trunk Pad	The Adante Superior Trunk Pad and Adante Supine Trunk Pad attach to the Adante Platform Top. They provide enhanced support for the patient's upper body. Hook and loop fasteners secure the pad to the platform top. Align the hook and loop fastener on the bottom of the pad with the hook and loop fastener on the platform top when installing.

Table 12: Standard Components for Adante Platform (continued)

Component	Description
REF 6896 Adante IntelliTouch Hand Pendant 	The Wireless Adante IntelliTouch Hand Pendant controls the Adante Platform table functions, including table top height, Trendelenburg/Reverse Trendelenburg angle, and lateral tilt angle. It also provides information about the system's operational state, including Battery Charge status and Floor Lock status.
Adante FlexLation Spars  REF 6895-70 Left Adante FlexLation Spar REF 6895-71 Right Adante FlexLation Spar	The Left and Right radiolucent Adante FlexLation Spars attach to the Foot-End of the platform and support the patient's legs while in supine position. The Adante FlexLation Spars allow for traction, abduction, adduction, raising and lowering of the leg, and knee flexion/extension.
REF 5356 Pivoting Arm Board 	The Pivoting Arm Board may be mounted onto the platform to provide support for the patient's arm.
REF 6895-501 Adante Pelvic Center Board 	The Adante Pelvic Center Board attaches to the Foot-End of the platform and supports the patient's pelvis when positioned supine on the Adante Platform.
REF 6895-1307 Adante Pelvic Center Pad 	The Adante Pelvic Center Pad attaches to the Adante Pelvic Center Board and is used in conjunction with a Saddle Post or Extended Saddle Post.

Table 12: Standard Components for Adante Platform (continued)

Component	Description
REF 6895-1306 Adante Pelvic Center Postless Pad 	The Adante Pelvic Center Postless Pad attaches to the Adante Pelvic Center Board and is used when a Saddle Post or Extended Saddle Post is not required.
REF 6895-1345 Adante Saddle Post 	The standard Adante Saddle Post is made of a urethane material and provides counter-traction during hip procedures. The urethane foam helps relieve pressure on the perineal area.
REF 6895-1347 Adante Extended Saddle Post 	The Adante Extended Saddle Post is made of a urethane material and provides counter-traction during hip arthroscopy procedures. The urethane foam helps relieve pressure on the perineal area.

Table 12: Standard Components for Adante Platform (continued)

Component	Description
REF 6895-543 Adante Supine Perineal Post (2) 	The Adante Supine Perineal Post is inserted into either the Saddle Post or Extended Saddle Post.
REF 6895-560 Adante Knee Extension Board 	The Adante Knee Extension Board extends the edge of the platform and provides pelvic support when the platform is configured for knee procedures.
REF 6895-1327 Adante Knee Extension Board Pad 	The Adante Knee Extension Board Pad attaches to the Adante Knee Extension Board.
Adante Knee Mounts  REF 6895-90 Adante Knee Mount, Left REF 6895-91 Adante Knee Mount, Right	Each Adante Knee Mount is specific to the left or right side of the platform. An Adante Knee Mount, in conjunction with the Adante Knee Foot Support, holds the foot securely in place during knee procedures. At the top of the Adante Knee Mount is a gripper that holds the Adante Knee Foot Support in place. The gripper also opens to allow the surgeon to manually adjust the foot and leg as needed.

Table 12: Standard Components for Adante Platform (continued)

Component	Description
Adante Traction Mount  REF 6895-1147 Adante Traction Mount, Left REF 6895-1148 Adante Traction Mount, Right	Each Adante Traction Mount is specific to the left or right side of the platform and holds the Adante Traction Sandal in place. It allows for rotation of the leg, in addition to other leg manipulation provided by the spar.
Adante Traction Sandal  REF 6895-82 Adante Traction Sandal, Left REF 6895-83 Adante Traction Sandal, Right	The Left and Right Adante Traction Sandals attach to the Adante Traction Mounts and secure the patient's feet during hip procedures. The Traction Sandals are available in one universal size designed to fit most patients.
REF 6895-1110 Adante Femoral Hook Bracket 	The Adante Femoral Hook Bracket mounts on the Adante Femur Lift. It provides eight notches for insertion of the Femoral Hook. This allows flexibility in positioning the hook to accommodate the size of the patient.

Table 12: Standard Components for Adante Platform (continued)

Component	Description
Femoral Hooks  REF 6850-919 Femoral Hook, Left REF 6850-918 Femoral Hook, Right	Two (2) Femoral Hooks come standard with the Adante AX Core Table: one left and one right. The Femoral Hook is used during Anterior Approach Total Hip Arthroplasty. It inserts into one of the eight notches on the Adante Femoral Hook Bracket. The choice of Femoral Hook or Classic Femoral Hook is at the discretion of the surgeon.
Classic Femoral Hooks  REF 6850-140 Classic Femoral Hook, Left REF 6850-144 Classic Femoral Hook, Right	Two (2) Classic Femoral Hooks come standard with the Adante AX Core Table: one left and one right. The Femoral Hook is used during Anterior Approach Total Hip Arthroplasty. It inserts into one of the eight notches on the Adante Femoral Hook Bracket. The choice of Femoral Hook or Classic Femoral Hook is at the discretion of the surgeon.
REF 6895-1060 Adante Femur Lift 	The Femur Lift raises and lowers the Adante Femoral Hook Bracket for use during Anterior Approach Total Hip Arthroplasty.

Table 12: Standard Components for Adante Platform (continued)

Component	Description
REF NV1705 Adante Wireless Foot Pedal 	The Adante Wireless Foot Pedal can control a variety of platform motions: • Height of the platform • Lateral tilt of the platform • Trendelenburg of the platform • Height of the Femur Lift The desired motion is controlled using the Adante IntelliTouch Hand Pendant.
REF 6895-910 Adante Knee Foot Support (2) 	The Adante Knee Foot Support, in conjunction with the Knee Mount, holds the foot in place during knee procedures.
Adante Knee Pad Support Mount  6895-93 Adante Knee Pad Support Mount, Left 6895-92 Adante Knee Pad Support Mount, Right	The Adante Knee Pad Support Mounts support the patient's legs during knee procedures.

Table 12: Standard Components for Adante Platform (continued)

Component	Description
Adante Spar Leg Pads  REF 6895-1317 Adante Spar Leg Pad, Knee, Left REF 6895-1318 Adante Spar Leg Pad, Knee, Right	The Left and Right Adante Spar Leg Pads provide enhanced support to the patient's legs during knee procedures. Hook and loop fasteners secure the pads to the Adante Knee Pad Support Mounts.
REF 6895-1330 Adante Durable Body Strap 	The Adante Durable Body Strap secures the patient in place when positioned on the platform. The strap hooks engage to the loop attachment points on both sides of the platform.

8 Single-Use Accessories

8.1 Order Information

The following are single-use accessories designed specifically for use with the Adante AX Orthopedic Surgical Platform. To place an order for standard components or single-use accessories, contact Mizuho OSI Sales Operations at **1-800-777-4674** within the US. At the prompt, select **Option 1**.



CAUTION: Always use the appropriate Adante Procedure Kit components with the Adante AX Orthopedic Surgical Platform. Failure to do so may compromise sterility, risk patient safety, damage the platform, and void the warranty.

8.2 Adante Friction Pad

The Adante Friction Pad (REF 6895-1364) is designed to provide a safe method of supine patient positioning on the Adante AX Orthopedic Surgical Platform with or without a perineal post. It is a friction-based pad system that adheres to both the platform and the patient's skin. The pad must be in direct contact with the patient's skin when applying traction. It can also be used to facilitate the transfer of a patient from a transport gurney or anesthesia induction platform to the surgery table.

Refer to the  Instructions for Use provided with the Adante Friction Pad for details on proper use and handling. A case of five (5) individually packaged Adante Friction Pads is included when ordering REF 6895FP-5.



Figure 161: Adante Friction Pad

8.3 List of Adante Procedure Kits

Procedure kits include one protection kit and one drape set depending on configuration. Each procedure kit contains enough components to support five procedures. Order the appropriate kits for the procedures being performed.

Table 13: List of Procedure Kits

Part Number	Kit Name	Includes
REF 6895K-L	Adante Knee Procedure Kit, Left	• REF 6895TKA-L-CS Adante Knee Drape System, Left (box of 5) • REF 6895-75-5 Adante Knee Protection Kit (box of 5)
REF 6895K-R	Adante Knee Procedure Kit, Right	• REF 6895TKA-R-CS Adante Knee Drape System, Right (box of 5) • REF 6895-75-5 Adante Knee Protection Kit (box of 5)
REF 6895AH-L	Adante DAA Hip Procedure Kit, Left	• REF 6895THA-L-CS Adante DAA-THA Drape, Left (box of 5) • REF 6895-76-5 Adante Hip Protection Kit (box of 5)
REF 6895AH-R	Adante DAA Hip Procedure Kit, Right	• REF 6895THA-R-CS Adante DAA-THA Drape, Right (box of 5) • REF 6895-76-5 Adante Hip Protection Kit (box of 5)
REF 6895HS	Adante Hip Arthroscopy Procedure Kit (box of 5)	REF 6895-77 Adante Hip Arthroscopy Procedure Kit

8.4 List of Sterile Drape Sets

There are two main sterile drape sets: Knee and Hip. The Knee drape set includes four (4) individually packaged sterile items, while the Hip drape set contains a single sterile item.

Drape sets are not intended to be sold separately.

Table 14: Knee Drape Options

Part Number	Kit Name	Packaged Qty	Includes
REF 6895TKA-L-CS	Adante Knee Drape System, Left	5 per box	• 1 Lower U Drape • 1 Upper U Drape, Left • 1 Knee Drape, Left • 1 Knee Foot Support Liner
REF 6895TKA-R-CS	Adante Knee Drape System, Right	5 per box	• 1 Lower U Drape • 1 Upper U Drape, Right • 1 Knee Drape, Right • 1 Knee Foot Support Liner

Table 15: Hip Drape Options

Part Number	Kit Name	Packaged Qty	Includes
 6895THA-L-CS	Adante DAA-THA Drape, Left	5 per box	1 Hip Drape, Left
 6895THA-R-CS	Adante DAA-THA Drape, Right	5 per box	1 Hip Drape, Right

8.5 List of Adante Protection Kits

Protection kits consist of non-sterile components to support surgeries on the Adante AX Orthopedic Surgical Platform.

Protection kits are included with procedure kits and not intended to be sold separately.

Table 16: List of Adante Protection Kits

Part Number	Description	Adante Knee Protection Kit	Adante Hip Protection Kit	Adante Hip Arthroscopy Protection Kit
 6895-1331	Body Safety Strap, Disposable	•	•	•
 6895-1332	Arm Strap, Disposable	• (x2)	• (x2)	• (x2)
 6895-1333	Leg Strap, Disposable	•	•	•
 6895-1341	Spar Cover, Shoulder	•	•	•
 6895-1342	Spar Cover, Elbow	•		
 6855-10	Adjustable Arm Board Pad	• (x2)	• (x2)	• (x2)
 1902	Supine/Lateral Head Rest	•	•	•
 6895-1344	Saddle Post Liner		•	
 6895-1349	Extended Saddle Post Liner			•

Table 16: List of Adante Protection Kits (continued)

Part Number	Description	Adante Knee Protection Kit	Adante Hip Protection Kit	Adante Hip Arthroscopy Protection Kit
Individual Protection Kit Numbers (Not for Reorder)		 6895-75	 6895-76	 6895-77
Bundled Protection Kits (case of 5), included in Procedure Kits (Not for Reorder)		 6895-75-5	 6895-76-5	N/A

8.6 Install the Disposable Body Safety Strap



CAUTION: The Body Safety Strap, Disposable is intended to secure the patient to the Adante Platform. It should not be removed unless the patient is being transferred off the platform.

To install the Body Safety Strap, Disposable:

1. Position the patient on the Adante Platform.
2. Place the foam cushion over the patient's abdomen.
3. Fully extend the Body Safety Strap, Disposable and position at the center of the foam cushion.
4. Insert each end of the strap through the securing loops on the left and right side of the platform.
5. Fasten the strap ends over the patient's abdomen using the hook and loop fastener strips.
6. Confirm the patient is secure and cannot shift unintentionally.



CAUTION: The Body Safety Strap, Disposable is intended to secure the patient to the Adante Platform. It should not obstruct or constrict the patient's airways during use.



A Body Safety Strap, Disposable

B Foam Cushion

Figure 162: Patient Secured to the Platform using the Body Safety Strap, Disposable

8.7 Install the Elbow Spar Cover

To install the Elbow Spar Cover:

1. Identify the correct spar cover.

The Elbow Spar Cover has one side that is L-shaped.

2. Position the cover centered along the spar's elbow.

Ensure that the L-shaped flap is distal to the elbow joint of the spar and is pointing down, and that the hook and loop fastener on the side of the spar cover proximal to the elbow joint is visible between the upper and lower portions of the spar.



Figure 163: Positioning the Spar Cover Centered Along the Spar's Elbow

3. Wrap the main rectangular section of the cover tightly around the spar (on the side proximal to the elbow joint) and secure with the hook and loop fastener.



Figure 164: Securing Spar Cover around Spar (on Side Proximal to Spar Elbow Joint)

4. Pinch together the end of the spar cover in the gap between the upper and lower portions of the spar (on the side proximal to the elbow joint) to secure the hook and loop fastener strip.

Ensure there is no gap between spar cover and upper and lower portions of the spar.



Figure 165: Pinching the Elbow Spar Cover between Upper and Lower Portions of the Spar

5. Pull the L-shaped part of the cover and wrap tightly around the spar (on the side distal to the elbow joint) and secure with the hook and loop fastener.



Figure 166: Securing L-Shaped Flap of Spar Cover around Spar (on Side Distal to Spar Elbow Joint)



Figure 167: Elbow Spar Cover Secured to the Spar

8.8 Install Shoulder Spar Cover

To install the Shoulder Spar Cover:

1. Identify the correct spar cover.

The Shoulder Spar Cover is rectangular.

2. Position the spar cover between the elbow and shoulder of the spar.

Ensure that the long hook and loop fastener strip is at the top of the spar cover and that the smaller hook and loop fastener strip on the distal end is visible between the upper and lower portions of the spar.



Figure 168: Positioning the Cover Between the Elbow and Shoulder of the Spar

3. Wrap the the bottom and top of the spar cover tightly around the spar and secure with the long hook and loop fastener strip.



Figure 169: Wrapping Spar Cover around the Spar

4. Slide the spar cover over the shoulder of the spar until the cover reaches the tip of the Spar Safety Latch.



Figure 170: Sliding the Spar Cover over the Spar Shoulder

5. Pinch together the end of the spar cover in the gap between the upper and lower portions of the spar to secure the hook and loop fastener strip.

Ensure there is no gap between spar cover and upper and lower portions of the spar.



Figure 171: Pressing the Hook and Loop Fastener Strip in Place



Figure 172: Shoulder Spar Cover Installed

8.9 Install Saddle Post Liners

To install the Saddle Post Liner or Extended Saddle Post Liner:

1. Extend both sides of the liner opening.



Figure 173: Extending Both Sides of the Saddle Post Liner Opening

2. Lower the liner over the Post.



Figure 174: Lowering the Saddle Post Liner over the Adante Saddle Post

3. Continue to lower the liner until it completely covers the lower part of the Post.



Figure 175: Pulling the Saddle Post Liner over the Lower Part of the Adante Saddle Post

4. Wrap the blue flap of the liner around the bottom of the Post.

Remove the Post from the Adante Pelvic Center Board, if necessary.



Figure 176: Wrapping the Blue Flap around the Bottom of the Post

- 5.** Reinsert the Post into the Adante Pelvic Center Board, if necessary.



Figure 177: Inserting Saddle Post with Liner into the Adante Pelvic Center Board

9 Platform Setup for Hip Procedures

9.1 Introduction to Positioning for Hip Procedures



WARNING: Use of components not manufactured or recommended by Mizuho OSI may result in harm to the patient, the device, or the healthcare professionals.



CAUTION: Inspect all components and accessories for signs of wear or damage before installing on the table.



CAUTION: When applying safety straps, monitor patient contact points for pressure points that could cause circulatory or other impairment.

The following instructions are a suggested setup sequence. Final determination of patient positioning and setup is at the discretion of the surgeon and surgical team.

NOTE: For detailed information on installing and adjusting standard components, see *Basic Operations* on page 36. For detailed information on installing single-use items, see *Single-Use Accessories* on page 164. For detailed information on using sterile drapes for Hip Arthroplasty, see *Install Sterile Hip Drapes* on page 183.

9.2 Hip Setup - Traction Procedures



Figure 178: Adante Platform Configured for AATHA

NOTE: The Adante Femoral Hook Bracket and appropriate Femoral Hook must be sterilized before use during surgery (see Clean Femoral Hook Bracket and Femoral Hooks on page 207).

NOTE: The Adante Friction Pad may be used instead of or in conjunction with the Adante Saddle Post for this setup. If not using a Saddle Post, use the Adante Pelvic Center Postless Pad. Refer to the  Instructions for Use provided with the Adante Friction Pad for details on proper use and handling.

NOTE: If performing Hip Arthroscopy, use the Adante Extended Saddle Post instead of the Saddle Post and do not attach the Femur Lift, Femoral Hook Bracket, or Femoral Hooks.

1. Ensure all four (4) floor locks are in the locked position.
2. Attach both left and right Adante FlexLation Spars to the platform and lock in place.
3. Wrap the elbow and shoulder spar covers around the leg spar joints.
4. Place the Adante Supine Trunk Pad and Adante Superior Trunk Pad on the platform.
5. Install the Adante Pelvic Center Board.
6. Place the Adante Pelvic Center Pad on the Pelvic Center Board.
7. Install the Left and Right Adante Traction Mounts on the Leg Spars.
8. Install the Adante Femur Lift to platform on the operative side.

9. Secure the Adante Durable Body Strap or the Disposable Body Safety Strap to the attachment loop on one side of the platform.
10. Place the Supine Head Rest where the patient's head will be positioned on the platform.
11. Secure the Adante Traction Sandals or Traction Boots to the patient's feet while the patient is on the stretcher.
12. Transfer the patient to the platform in the supine position and secure with the Durable Body Strap or the Disposable Body Safety Strap.
13. Attach the Traction Sandals or Traction Boots to the Traction Mounts.
14. Install the Saddle Post Liner on the Saddle Post.
15. Insert the Saddle Post into the Foot-End of the Pelvic Center Board.
16. Install the arm boards to both the left and right sides of the platform.
17. Place the arm board pads on the arm boards and position the patient's arms on the arm boards.
18. Secure the patient's arms using the arm straps.
19. Place the Adante Wireless Foot Pedal near the platform, if using.
20. Adjust the height of the Femur Lift.
21. Install the sterile hip drapes.



Figure 179: Patient Positioned on the Adante Platform

Adante FlexLation Spar 	Spar Cover, Shoulder 	Spar Cover, Elbow 
Adante Supine Trunk Pad 	Adante Superior Trunk Pad 	Adante Pelvic Center Board 
Adante Pelvic Center Pad (option 1) 	Adante Pelvic Center Postless Pad (option 2) 	Adante Saddle Post (option 1) 
Adante Extended Saddle Post (option 2) 	Saddle Post Liner 	Extended Saddle Post Liner 

Adante Traction Mounts 	Adante Femur Lift 	Adante Durable Body Strap (option 1) 
Body Safety Strap, Disposable (option 2) 	Supine Head Rest 	Adante Traction Sandals 
Pivoting Arm Boards 	Adjustable Arm Board Pad 	Arm Strap, Disposable 
Adante Wireless Foot Pedal 	Adante Femoral Hook Bracket 	Femoral Hooks (option 1) 

Classic Femoral Hooks (option 2) 		
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9.3 Install Sterile Hip Drapes



WARNING: The Hip Drape System is single use only. Re-use of this drape system will result in a non-sterile field and cross-contamination.



WARNING: Do not use the Hip Drape System near flammable anesthesia gases.



CAUTION: Always use the appropriate Adante Procedure Kit components with the Adante AX Orthopedic Surgical Platform. Failure to do so may compromise sterility, risk patient safety, damage the platform, and void the warranty.

NOTE: Refer to guidelines and standards of practice provided by the Association of Surgical Technologists (AST) and the Association of Perioperative Registered Nurses (AORN) for proper aseptic technique for handling, installation, and removal of sterile surgical drapes.

The Hip Drape System includes one (1) drape designed for either the right or left side. Determine which drape side is needed based on the operative site.

Before you begin: The assistance of two (2) or more people may be necessary during installation.

NOTE: The Adante Femur Lift should be in a raised position to allow for the drape to fit over it properly.

Refer to the following instructions, in conjunction with facility standard draping protocol, when using the Hip Drape System.

1. Prepare the surgical site to receive the Hip Drape System per facility sterile handling protocol.
2. Remove the drape from its external packaging per AORN protocol.
3. Orient the drape so that the orientation label aligns with the orientation of the patient, and with the adhesive side down (*Figure 180*).



Figure 180: Drape Oriented Properly, Aligned with the Orientation of the Patient

4. Remove the adhesive backing from the drape (*Figure 181*).



Figure 181: Exposing Adhesive

5. Lower the drape onto the patient and secure the adhesive to the patient.
The top of the surgical window should be placed above the iliac crest on the operative site.
6. With the assistance of two (2) people, continue to unfold the drape on the right and left sides (*Figure 182*).



Figure 182: Unfolding the Left and Right Sides of the Drape



Figure 183: Left and Right Sides of the Drape Unfolded

7. Unfold the Head-End of the drape and gently pull it over the patient's upper body and the drape rods (*Figure 184*).



Figure 184: Pulling the Head-End of the Drape over the Patient

8. Peel the tabs off the upper part of the drape to release the Arm Board sleeves (*Figure 185*).



Figure 185: Peeling the Tabs off the Drape to Release Arm Board Sleeves

9. Unfold the Foot-End of the drape and gently pull it over the patient's legs and traction mounts (*Figure 186*).



Figure 186: Pulling the Foot-End of the Drape over the Patient

- 10.** Slide the Femur Lift cover over the top of the Femur Lift (*Figure 187*).



Figure 187: Sliding Femur Lift Cover Over the Top of the Femur Lift

- 11.** Peel the tab on the operative side to detach the Adante Femur Lift cover (*Figure 188*).



Figure 188: Detaching Femur Lift Cover

- 12.** Slide the Sterile Interface Connection over the Femoral Hook Bracket Lock (*Figure 189*).



Figure 189: Sliding Sterile Interface Connection over the Femoral Hook Bracket Lock

- 13.** Insert the Adante Femoral Hook Bracket into the Sterile Interface Connection (*Figure 190*).



Figure 190: Inserting Femoral Hook Bracket to the Femur Lift

- 14.** Press down on the Femoral Hook Bracket Lock to secure the Femoral Hook Bracket (*Figure 191*).

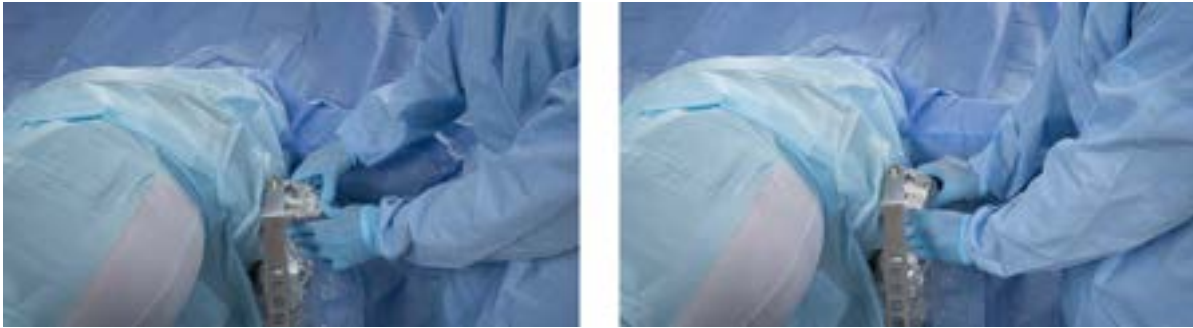


Figure 191: Locking the Femoral Hook Bracket

10 Positioning for Knee Procedures

10.1 Introduction to Positioning for Knee Procedures



WARNING: Use of components not manufactured or recommended by Mizuho OSI may result in harm to the patient, the device, or the healthcare professionals.



CAUTION: Inspect all components and accessories for signs of wear or damage before installing on the table.



CAUTION: When applying safety straps, monitor patient contact points for pressure points that could cause circulatory or other impairment.

Instructions provided are for suggested setup. Final determination of patient positioning and setup is at the discretion of the surgeon and surgical team.

NOTE: *The following setup instructions make use of many standard components. For detailed information on installing and adjusting standard components, see .*

10.2 Knee Setup



Figure 192: Adante Platform Configured for Knee Procedures

1. Ensure all four (4) floor locks are in the locked position.
2. Attach both left and right Adante FlexLation Spars to the table and lock in place.
3. Install elbow and shoulder spar covers on the leg spars.
4. Place the Adante Supine Trunk Pad and Adante Superior Trunk Pad on the surface of the platform.
5. Install the Adante Knee Extension Board.
6. Place the Adante Knee Extension Board Pad on the Adante Knee Extension Board.
7. Attach an Adante Knee Pad Support Mount to the non-operative leg's Adante FlexLation Spar.



CAUTION: Be careful when placing hands near movable parts, crevices, or locking mechanisms, as these areas may present a pinch hazard. Failure to do so may result in harm to the healthcare professional.

8. Expand the extension on the Adante Knee Pad Support Mount.
9. Place an Adante Spar Leg Pad on the Adante Knee Pad Support Mount.
10. Install the appropriate Adante Knee Mount based on the operative side.
11. Install the Adante Durable Body Strap or Body Safety Strap, Disposable to the attachment loop on one side of the platform.
12. Place the Supine Head Rest where the patient's head will be positioned on the platform.

13. Transfer the patient to the platform in the supine position.
14. Secure the patient with the Adante Durable Body Strap or Disposable Body Safety Strap.
15. Secure the patient's non-operative leg to the Adante Knee Pad Support Mount with a leg strap.
16. Install an arm board with a pad to both left and right sides of the table.
17. Position the patient's arms on the arm boards and secure with an Arm Strap, Disposable.
18. Drape the patient using the Knee Drape System (see *Install Knee Drape System on page 197*).

NOTE: The Adante Knee Foot Support is secured to patient's foot and installed during draping.



Figure 193: Patient Positioned on the Adante Platform, Configured for Knee Procedures

Adante FlexLation Spar 	Spar Cover, Shoulder 	Spar Cover, Elbow 
Adante Supine Trunk Pad 	Adante Superior Trunk Pad 	Adante Knee Extension Board 

Adante Knee Extension Board Pad 	Adante Knee Pad Support Mount 	Adante Spar Leg Pads 
Adante Knee Mounts 	Adante Durable Body Strap (option 1) 	Body Safety Strap, Disposable (option 2) 
Supine Head Rest 	Pivoting Arm Boards 	Leg Strap, Disposable 
Arm Strap, Disposable 	Adante Knee Foot Support 	

10.3 Install Knee Drape System



WARNING: The Knee Drape System is single use only. Re-use of this drape system will result in a non-sterile field and cross-contamination.



CAUTION: Always use the appropriate Adante Procedure Kit components with the Adante AX Orthopedic Surgical Platform. Failure to do so may compromise sterility, risk patient safety, damage the platform, and void the warranty.



WARNING: Use of drapes not manufactured by Mizuho OSI may result in breaking of the sterile field.



WARNING: Do not use the Knee Drape System near flammable anesthesia gases.

NOTE: Refer to guidelines and standards of practice provided by the Association of Surgical Technologists (AST) and the Association of Perioperative Registered Nurses (AORN) for proper aseptic technique for handling, installation, and removal of sterile surgical drapes.

The Knee Drape System (REF 6895TKA-L or REF 6895TKA-R) includes:

- 1 Adante Lower U-Drape
- 1 Adante Upper U-Drape (left or right)
- 1 Adante Knee Drape (left or right)
- 1 Knee Foot Support Liner

Determine which drape system set (left or right) is needed based on the operative side. See *List of Sterile Drape Sets on page 165* for Knee Drape System re-order information.

The assistance of three (3) or more people may be necessary during installation. One person should hold and support the operative leg until the foot is secured to the Adante Knee Foot Support and the Adante Knee Foot Support is attached to the Adante Knee Mount.

Refer to the following instructions, in conjunction with facility standard draping protocol, when using the Knee Drape System.

Prior to bringing the patient into the OR:

1. Prepare the surgical setup space to receive the Knee Drape System per facility sterile handling protocol.
2. Determine the operative site (left or right).
3. Remove the left or right Knee Drape System components from its external packaging per AORN protocol.

Prior to transferring the patient to the table:

4. Prepare the Adante Knee Foot Support.
 - a. Peel off the adhesive tabs from the Knee Foot Support Liner
 - b. Insert the Knee Foot Support Liner into the Adante Knee Foot Support, starting with the heel.



Figure 194: Attaching Knee Foot Support Liner to the Adante Knee Foot Support

After the patient is secured to the platform, apply the lower and upper U-Drapes.

NOTE: *The order in which the lower or upper U-Drape is applied may vary depending on the specific case.*

5. Align the Adante Upper U-Drape with the patient's upper thigh/tourniquet.

NOTE: *Placement of a tourniquet is at the discretion of the surgeon.*

NOTE: *The drape can be used to isolate the tourniquet from the sterile field.*

6. Remove the adhesive backings and stick the adhesive around the mid thigh or edge of the tourniquet.



Figure 195: Aligning U-Draper with Patient's Mid Thigh/Tourniquet



Figure 196: Unfolding the Draper on the Left and Right Sides



Figure 197: Wrap the Adhesive End Around the Mid Thigh or Edge of the Tourniquet

7. Unfold the drape on the left and right sides as needed to apply the adhesive to patient's mid thigh.
8. Continue to unfold the drape on the left and right sides.
9. Unfold the top portion of the drape over the patient's torso.
10. Drape the non-operative leg.



Figure 198: Drape the Non-Operative Leg

11. Remove the Adante Lower U-Drape from its external packaging per AORN protocol.
12. Unfold the drape on the left and right sides.

13. Remove the adhesive backing.



Figure 199: Remove Adhesive Backing

14. Wrap the adhesive end around the patient's leg ensuring that it overlaps the tourniquet and the Adante Upper U-Drape.



Figure 200: Wrapping Adhesive Around the Patient's leg and Overlapping the Tourniquet and Adante Upper U-Drape

- 15.** Pull the clear drape down over the knee mount.



Figure 201: Pull the Clear Drape Down Over the Adante Knee Mount

- 16.** Proceed to prepare the extremity according to the surgeon's preference and AORN protocol.

Set up the Knee Drape:

- 17.** After the extremity is prepped, place the patient's foot in a stockinette.



Figure 202: Place Patient's Foot in Stockinette

18. Pull the tabs to unfold the clear drape down to the Foot-End of the platform, thus removing it from the field.

NOTE: *The clear drape is designed to protect against excess preparation solution and serves as a disposable layer that should be removed before positioning the leg.*



Figure 203: Using Tabs to pull the Clear Drape Down to the Foot-End of the Platform

19. Remove the Adante Knee Drape from its external packaging per AORN protocol.
20. Unfold the drape on the left and right sides.
21. Place the patient's leg through the opening at the center of the drape.



Figure 204: Placing Patient's leg Through the Center of the Drape

22. Pull the top half of the drape over the patient's body and Head-End of the platform.
23. Pull the lower half of the drape toward the Foot-End of the platform.
24. Secure the Knee Mount Drape Cover over the Knee Mount.



WARNING: Use of a liner not manufactured by Mizuho OSI may result in breaking of the sterile field.



Figure 205: Placing the Knee Mount Drape Cover over the Knee Mount

25. Place the patient's foot into the Adante Knee Foot Support.
26. Secure the foot to the support using Coban™ Self-Adherent Wrap.

Pay careful attention not to accidentally wrap the Spar Release Plate with Coban™ Self-Adherent Wrap.



A Spar Release Plate

Figure 206: Foot being Secured with Coban™ Self-Adherent Wrap



WARNING: The Spar Release Plate must be free to open and close to facilitate spar movement. (*Adante Knee Foot Support on page 31*).

27. Place the Adante Knee Foot Support in the Knee Mount Gripper.



Figure 207: Placing the Adante Knee Foot Support in the Knee Mount Gripper.

11 Cleaning and Sterilizing

11.1 Clean Device Exterior

After each use, disinfect the exterior surfaces.

1. Use a quaternary ammonium disinfectant compound according to the manufacturer's directions for use.
2. Wipe dry with a soft lint-free cloth.
3. Ensure the solution is labeled for as a surface disinfectant.

11.2 Clean Mizuho OSI Tempur-Pedic Medical Pads

NOTE: The Mizuho OSI Tempur-Pedic Medical Pads should always be stored in a flat position. The pads can become stiff in cold temperatures and can crack and break if in a rolled position. It is important that you allow the pads to warm to room temperature before attempting to use or handle.

When handling a Tempur-Pedic Medical Pad, always grasp by the entire thickness of the pad.



CAUTION: DO NOT lift, slide, or carry Mizuho OSI Tempur-Pedic Medical Pads by grabbing the fabric cover. The cover may tear or rip.

The pads are intended to be cleaned in place. They do not need to be rotated or removed.

Clean with standard hospital disinfectants labeled for use on table pads. Always dilute and rinse per manufacturer's label instructions. Wipe dry with a lint-free cloth. DO NOT soak or autoclave the pads.

When cleaning the bottom of the pad on the table top:

1. Lift one end of the pad and fold it over onto the other end.
2. Clean the pad on the table top.
3. Wipe dry with a lint-free cloth.
4. Reposition the pad to lie flat on the table top.

Cleaning agents compatible with the pads include soap and water, alcohol, chlorine and compounds, glutaraldehyde, hydrogen peroxide, ortho-phthalaldehyde (OPA), and quaternary ammonium compounds. Refer to the  Instructions for Use included with the pads for further information.

NOTE: The use of bleach or highly concentrated chemicals may discolor the cover and will void the warranty on the pad.

11.3 Clean Femoral Hook Bracket and Femoral Hooks

Immediately following each patient use, inspect, clean, and sterilize the Femoral Hooks and Adante Femoral Hook Bracket according to the following instructions for use. Always wear protective apparel when handling soiled instruments to avoid exposure to blood-borne pathogens.

Pre-treat/Holding

- Wipe or rinse immediately after use.
- Pre-treat for at least 1 minute with a medical grade cleaning/enzymatic solution labeled "neutral" or "mild" pH at point of service. Follow the selected cleaning solution manufacturer's instructions for use.

Rinsing

- Rinse thoroughly with clean water after pretreatment.
- Ensure that the instrument is at least triple-rinsed or rinsed under clean running water for at least 15 seconds.

Cleaning

- "Neutral" or "mild" pH detergent recommended.
- Mechanical cleaning (ultrasonic or automatic washer) of surgical instruments is the preferred cleaning method.
 - Ultrasonic cleaning: Follow ultrasonic cleaner manufacturer's operating instructions.
 - Automatic washer: Follow manufacturer's operating instructions.
- If mechanical cleaning is not available, manually clean the Femoral Hook/Femoral Hook Support.
 - Manual cleaning: Submerge in clean luke-warm water with neutral pH detergent/enzymatic solution for 10 minutes. Follow the selected cleaning solution manufacturer's instructions for use.
 - After a 10-minute soak, use a soft nylon brush or soft sponge to scrub manually until no soil remains. DO NOT USE wire brush or steel wool.
 - Repeat until there is no visible sign of soil on the instrument.

After Cleaning

- Rinse thoroughly with clean water to remove cleaning solution.
- Ensure that the instrument is at least triple-rinsed or rinsed under clean running water for at least 15 seconds.

NOTE: *Rinsing with distilled water is preferred but not required.*

- Use a clean, lint-free cloth to dry.
- Wrap in a double-layer of lower-lint Spunbond Meltblown Spunbond (SMS) fabric prior to pouching and sterilization.

11.4 Sterilize Femoral Hooks and Femoral Hook Support

The Femoral Hook Support and Femoral Hook(s) must be sterilized before use. Sterilization of these components is accomplished by steam. To achieve a sterility assurance level of 10^{-6} , Mizuho OSI recommends the sterilization parameters listed below:

Table 17: Recommended Sterilization Parameters

Sterilization Method	Temperature	Containment Type	Minimum Exposure Time Range
Gravity Steam	270 °F/132 °C	Wrapped	10 Minutes
Pre-Vacuum Steam	270 °F/132 °C	Wrapped	4 Minutes
Gravity Steam	250 °F/121 °C	Wrapped	30 Minutes

Other sterilization cycles may also be suitable. However, individuals or hospitals not using the recommended methods are advised to validate any alternative methods using current good laboratory practices (cGLP).

NOTE: *Mizuho OSI does not recommend flash or chemical sterilization of the Femoral Hooks and Femoral Hook Support.*

12 Electrical System

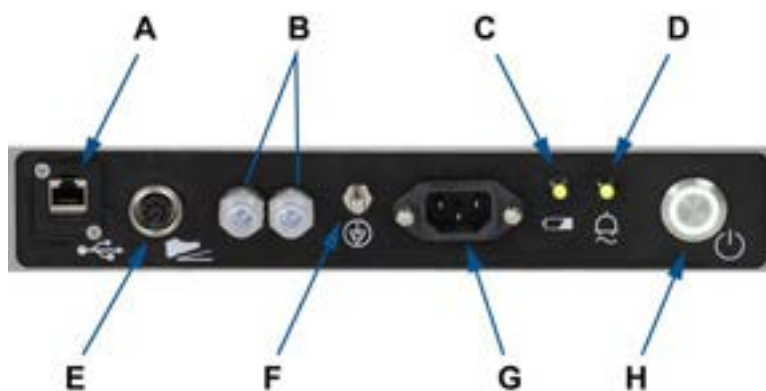
12.1 Description

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

- Power Cord
- Circuit Breakers
- Electrical Motors
- Battery System
- Adante IntelliTouch Hand Pendant
- Service Port
- Wireless Communication

12.2 Power Cord

The platform is equipped with a detachable Power Cord. The Power Cord is connected to the table at the Power Cord Receptacle located on the Power Inlet Assembly at the Head-End of the platform base.



A Service Port

C Battery Status LED

E DO NOT USE

G AC Power Cord Receptacle

B Circuit Breakers (2)

D AC Power Indicator LED

F External Ground Stud

H Power Switch

Figure 208: Power Inlet Assembly



WARNING: Use only Power Cords supplied by Mizuho OSI.

12.3 Circuit Breakers

Two circuit breakers, located in the Power Inlet Assembly, provide overload protection to the platform. The Circuit Breakers pop out if the platform experiences power overload. Before proceeding to reset the Circuit Breakers, investigate the cause of the occurrence. To reset the Circuit Breakers, push them in.

12.4 Platform Battery System

The platform is equipped with a lithium battery system that provides power to all functions and consists of two battery packs, one on each side of the column. The expected working life of a fully charged battery is approximately 28 hours at a 4% duty cycle (2.5 min on, 60 min off).

To maintain table battery life, always store the table with the batteries charging, as described in *Battery Power* on page 37.

12.4.1 Recharge Platform Battery

When the Table Battery Status symbol on the Adante IntelliTouch Hand Pendant touch screen indicates low charge, platform batteries require charging. To charge, plug the Power Cord into the platform and connect it into a hospital-grade AC outlet. The platform may still be used while the platform batteries are charging.

NOTE: For a full description of all the platform battery icons on the Adante IntelliTouch Hand Pendant, see Table 6.

The battery will be fully charged from a completely depleted state within 12 hours (normal charge time is approximately 8 hours). If the battery fails to hold charge, it should be replaced. Replace both battery packs at the same time (see *Replace Platform Battery* on page 210).

12.4.2 Replace Platform Battery

The platform batteries are not a user-serviceable part. Contact Mizuho OSI Service to replace the platform batteries (see *Contact for Parts and Service* on page 238). At minimum, the batteries should be replaced once every five (5) years.

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

NOTE: Failure to use a Mizuho OSI approved battery voids the warranty and can cause harm to the platform.



WARNING: Servicing and replacement of lithium batteries should only be performed by trained personnel. Failure to restrict this activity to those with proper training may result in physical harm to personnel, including electric shock.

12.5 Adante IntelliTouch Hand Pendant

The Adante IntelliTouch Hand Pendant provides primary user interface to the Base.

12.5.1 Recharge Adante IntelliTouch Hand Pendant Battery

The wireless Adante IntelliTouch Hand Pendant runs on a lithium battery. Normal battery operation is approximately 1 day with typical use.

If the Adante IntelliTouch Hand Pendant Battery Status display on the touch screen indicates the battery has a low charge, plug the Adante IntelliTouch Hand Pendant into the platform using the stored cable (see *Charge the Hand Pendant on page 98*). The Adante IntelliTouch Hand Pendant may be used while it is charging.



CAUTION: If the Adante IntelliTouch Hand Pendant is not in use and not charged when the Battery Status displays on the touch screen, the Adante IntelliTouch Hand Pendant will run out of charge and stop functioning.

If after recharging for 8 hours, the Adante IntelliTouch Hand Pendant battery still does not hold a charge, the Adante IntelliTouch Hand Pendant must be replaced. Contact Mizuho OSI Service (see *Technical Support on page 238*).

12.6 Service Port

The service port is located on the Power Inlet Assembly at the Head-End of the platform base.

12.7 Wireless Communication

There are three types of wireless connections used with the platform:

1. Zigbee wireless protocol allows the Control Panel and the wireless hand pendant to communicate with each other.

NOTE: Zigbee communication will stop if the charging cable is plugged into the wireless hand pendant. Using the charging cable reduces radiation exposure.

2. Bluetooth connection between the foot pedal transmitter and the platform's receiver.
3. The platform uses a special wireless network called UIC WiFi to connect to the hospital's wireless network for communication.

12.8 Replace the Adante Wireless Foot Pedal Batteries

The Adante Wireless Foot Pedal runs on two AAA batteries.

The yellow battery indication LED will begin to flash once every two seconds when the remaining battery capacity is approximately 1 week of constant use or 168 hours. It will then change to 2 flashes per second when the capacity has been reduced to approximately 2 days or 48 hours.

Materials Required:

- Small flat-bladed screwdriver

To replace the batteries in the Adante Wireless Foot Pedal:

1. Remove the screw covers and use a flat bladed screwdriver to remove the screws from the battery compartment lid of the (Figure 209).



Figure 209: Removing the Screw Covers

2. Remove the battery compartment lid.
3. Carefully pull the clip posts outwards to release the battery clip hinge and remove the old batteries (Figure 210).



Figure 210: Releasing the Battery Clip Hinge

4. Fit the replacement batteries, taking care to align the polarity with markings on the printed circuit board (Figure 211).



Figure 211: Fitting the Batteries

5. Press the sides of the clip back into place.

NOTE: Do not clip back into place by pushing on the antenna (Figure 212).



Figure 212: Do Not Push on the Antenna

6. Screw the lid back into place (Figure 213).

Tighten the screws until the lid fits evenly with the enclosure to maintain the IP rating of the battery compartment.



Figure 213: Screwing the Lid Back Into Place

7. Replace the screw covers on the screws.

13 Troubleshooting

13.1 Platform

Condition	Remedy
Table will not turn on and none of the indicators on the Power Inlet Assembly are lit.	1. Verify that the table's Power Cord is plugged into an appropriate AC receptacle and into the Power Cord receptacle. 2. Verify that the Power/Standby Switch is ON and illuminated green. 3. Verify that the Power Cord and Power Cord receptacle are not damaged. 4. If the table still does not power on, contact Mizuho OSI Service (See <i>Technical Support on page 238</i>)
Table Battery Status Indicator on Power Inlet Assembly is red.	1. Verify that the Power Cord is plugged into an appropriate AC receptacle and into the Power Cord receptacle. 2. Verify that Adante IntelliTouch Hand Pendant indicates the table batteries are charging. Leave the table plugged in for approximately 12 hours, which is the typical time required to fully charge the batteries. 3. If table batteries do not recharge after 16 hours, contact Mizuho OSI Service to replace the batteries (see <i>Technical Support on page 238</i>).
Adante IntelliTouch Hand Pendant battery will not recharge.	1. Verify that the table's Power/Standby Switch is On and illuminated green. 2. Verify that the Adante IntelliTouch Hand Pendant is plugged into the table. 3. Verify that the Adante IntelliTouch Hand Pendant touch screen indicates that the battery is charging. 4. If after 8 hours the Adante IntelliTouch Hand Pendant battery has not recharged, the Adante IntelliTouch Hand Pendant may need to be replaced. Contact Mizuho OSI Service (see <i>Technical Support on page 238</i>).

13.2 Hand Pendant

Condition	Remedy
Adante IntelliTouch Hand Pendant table motion functions will not work.	1. Verify that the table's Power/Standby Switch is On and illuminated green. 2. Verify that the Adante IntelliTouch Hand Pendant is paired to the platform. a. Plug the Adante IntelliTouch Hand Pendant into the table with a charging cord. b. Power on the platform. The Adante IntelliTouch Hand Pendant should be paired after 10 seconds. 3. Verify that the Adante IntelliTouch Hand Pendant does not display an error message. If it does, see <i>Software Troubleshooting on page 218</i>. 4. Verify that Floor Locks are engaged (check Floor Lock symbol on Adante IntelliTouch Hand Pendant and verify that Floor Locks Locked LED on the Auxiliary Control Panel is lit). 5. Check the Adante IntelliTouch Hand Pendant battery status. If the battery needs to be recharged, plug the Adante IntelliTouch Hand Pendant into the table. Battery should be fully charged after 8 hours. NOTE: <i>The Adante IntelliTouch Hand Pendant can be used while its battery is charging.</i> 6. Optional: If the problem persists, the Adante IntelliTouch Hand Pendant may need to be replaced. Contact Mizuho OSI Service (see <i>Technical Support on page 238</i>).
Adante IntelliTouch Hand Pendant battery will not recharge.	1. Verify that the table's Power/Standby Switch is On and illuminated green. 2. Verify that the Adante IntelliTouch Hand Pendant is plugged into the table. 3. Verify that the Adante IntelliTouch Hand Pendant touch screen indicates that the battery is charging. 4. If after 8 hours the Adante IntelliTouch Hand Pendant battery has not recharged, the Adante IntelliTouch Hand Pendant may need to be replaced. Contact Mizuho OSI Service (see <i>Technical Support on page 238</i>).

13.3 Manual Floor Lock Override

13.3.1 Condition

Floor locks cannot be unlocked using the Adante IntelliTouch Hand Pendant or Auxiliary Control Panel.

13.3.2 Remedy

To manually unlock each floor lock:

1. Remove the gray metallic plugs on the upper surfaces of the base covers.

There are a total of four gray metallic plugs, one near each corner of the platform base above each Floor Lock (*Figure 214*).



Figure 214: Location of Plugs for Manual Floor Lock Override

2. Insert a 22-mm socket wrench to capture a hex feature on the top surface of the floor lock motor drive pulley.
3. Rotate the pulley clockwise to raise the floor locks.

When all four (4) floor locks are raised, the platform will unlock from the floor.

4. After transporting the surgical platform, rotate the pulley counterclockwise to lower the floor locks.

When all four (4) floor locks are lowered, the platform will lock to the floor.

NOTE: *Observe the motion of the floor lock as the pulley is rotated. Once the lock has retracted into the base of the caster, stop rotating. Do not over-torque.*



Figure 215: Plug Removed

5. Remove socket wrench and reinstall the gray metallic plugs, taking care to ensure that they form a watertight seal.
6. **Optional:** If Floor Lock error persists, contact Mizuho OSI Service (see *Technical Support on page 238*).

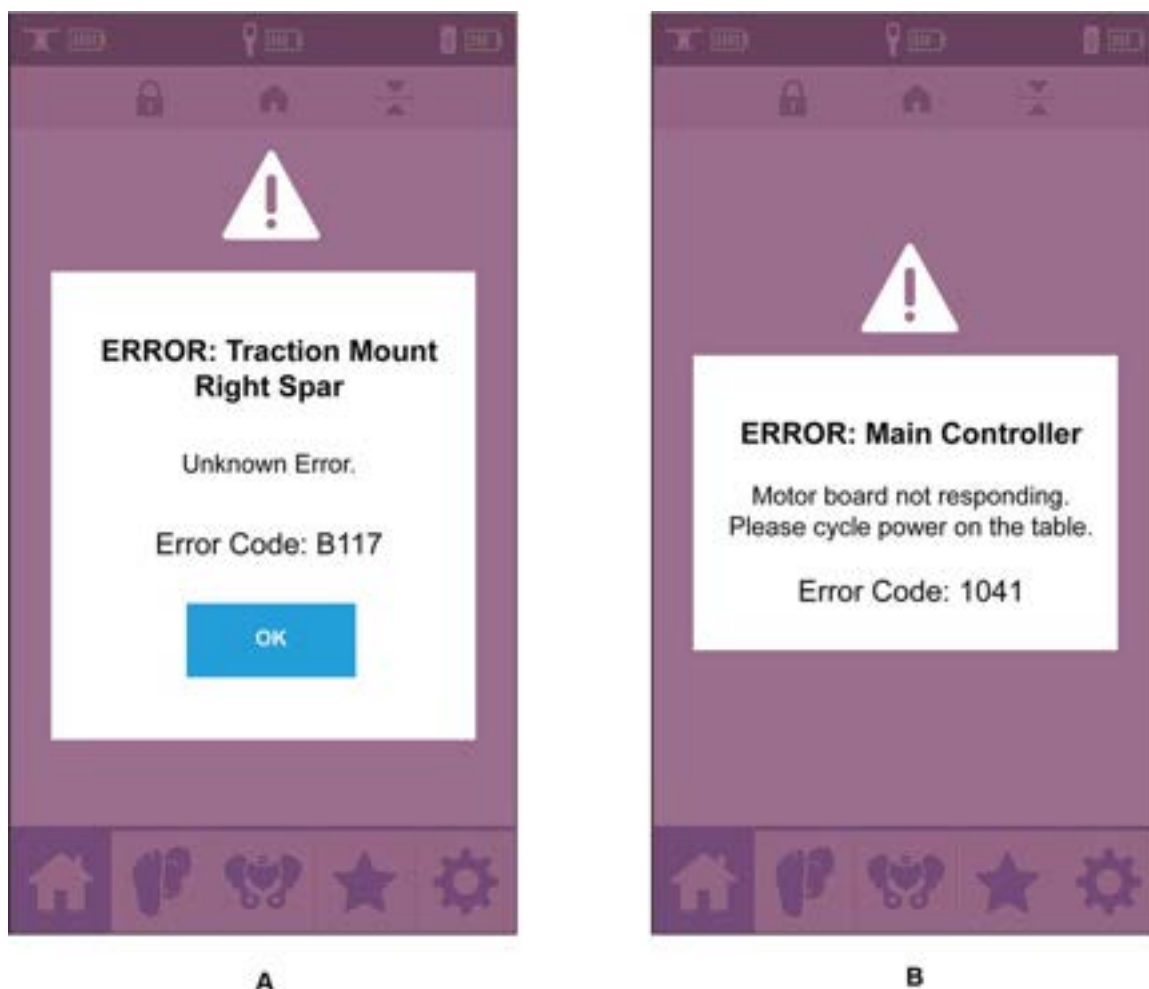
14 Software Troubleshooting

14.1 Software Error Codes

When the Adante IntelliTouch Hand Pendant detects a system issue, it displays a four-digit hexadecimal error code with a brief vibration. These messages help users identify the issue and may limit certain functions based on severity.

The error messages received can be categorized into three different types of errors:

1. **Recoverable Error:** An error that can be cleared by selecting **OK** and continuing with the desired table functions.
2. **Reboot Error:** An error that can be cleared by turning the table power off and back on.
3. **Call for Service Error:** An error that prevents the table from properly operating. In such instances, the user must contact Mizuho OSI Service immediately.



A Recoverable Error

B Reboot Error

Figure 216: Error Message Formats Displayed on the Adante IntelliTouch Hand Pendant

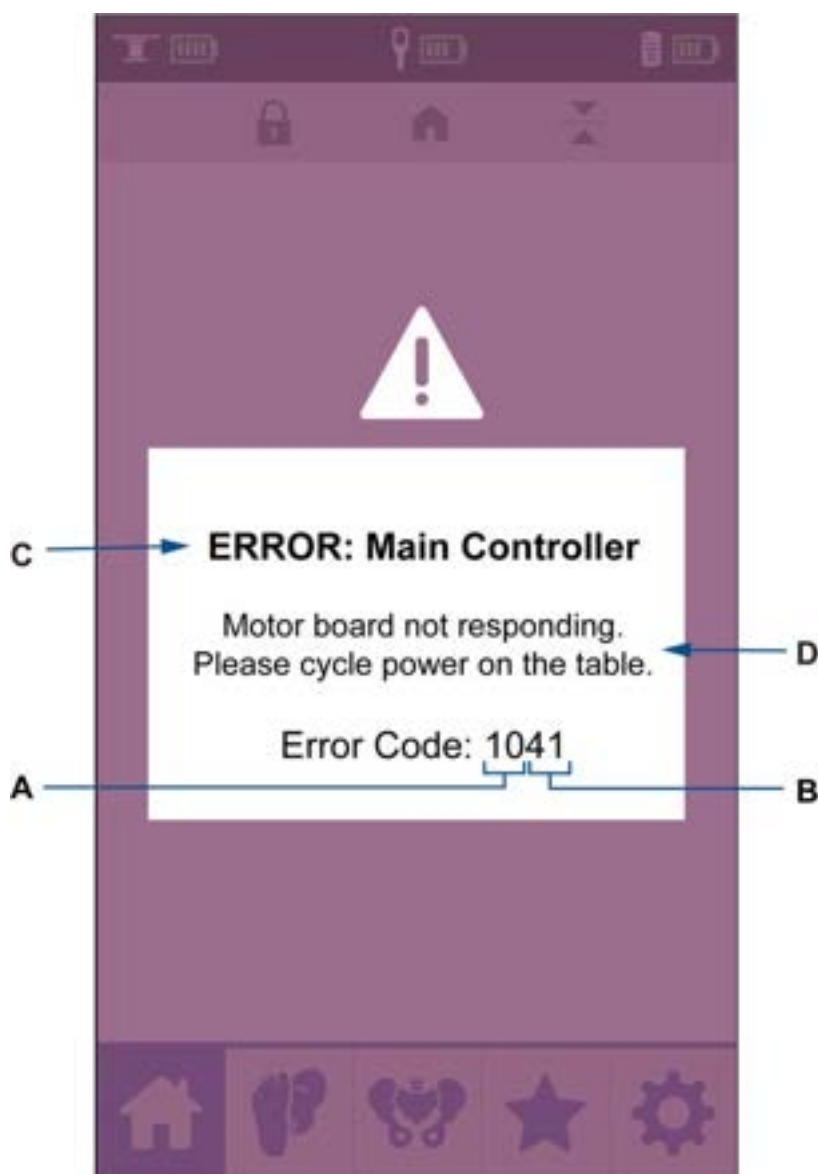
NOTE: Call for Service error messages appear similar to Reboot error messages, but include the text "Call for Service" in place of reboot instructions. These errors cannot be cleared by the user and require assistance from Mizuho OSI Service.

NOTE: If a recoverable error displays, as shown in Figure 216, all other Adante IntelliTouch Hand Pendant functions will be locked out until **OK** is pressed on the touch screen.

In the event that the Adante IntelliTouch Hand Pendant presents an error message, first identify the code and error message that appear on the screen (Figure 217). The error codes contain four hexadecimal digits, SDCC.

- The first two characters displayed (SD) are numeric codes representing the source of the error, and correspond to the text information provided on the top of the screen. In the example in Figure 217, the SD code is 10, which indicates the source of the error is the Main Controller.

- The last two characters displayed (CC) indicate the specific error, and correspond to the text information provided in the center of the screen. In the example in *Figure 217* the CC code is 41, which indicates the error is loss of communication with the Motor Board.



- | | | | |
|----------|-------------------------------------|----------|-------------------------------------|
| A | Source and Detail Error Code (SD) | B | Specific Error Code Message (CC) |
| C | Text Corresponding to SD Error Code | D | Text Corresponding to CC Error Code |

Figure 217: Structure of a Hexadecimal Error Code

NOTE: When an error message displays on the touch screen, the Adante IntelliTouch Hand Pendant will also vibrate briefly three times.

14.2 SD Error Codes

The following table lists the SD error codes and error source messages that may appear on the Adante IntelliTouch Hand Pendant.

Table 18: SD Error Codes

Source and Detail (SD) Error Code	Source (S) Error Code	Source (S) Code Description	Detail (D) Error Code	Detail (D) Code Description
Main Controller SD Code				
10	1	Main Controller	0	There can only be one Main Controller per table.
Motor Controller SD Code Category (2x)				
21	2	Motor Controller	1	Column
22	2	Motor Controller	2	Tilt
23	2	Motor Controller	3	Trendelenburg
24	2	Motor Controller	4	Dual Mixed Controller (DMC)
Floor Lock SD Code Category (4x)				
41	4	Floor Lock	1	Head-End
42	4	Floor Lock	2	Foot-End
Hand Pendant SD Code				
50	5	Hand Pendant	0	There can only be one Hand Pendant paired per table.
Auxiliary Control Panel SD Code				
60	6	Auxiliary Control Panel	0	There can only be one Auxiliary Control Panel per table.
Spar Interface SD Code Category (Ax)				
A1	A	Spar Interface	1	Right
A2	A	Spar Interface	2	Left
CANopen SD Code Category (Ex)				
E1	E	CANopen	1	Left Push Traction Motor Control
E2	E	CANopen	2	Right Push Traction Motor Control

Table 18: SD Error Codes (continued)

Source and Detail (SD) Error Code	Source (S) Error Code	Source (S) Code Description	Detail (D) Error Code	Detail (D) Code Description
E3	E	CANopen	3	Left General -Purpose Input/Output (GPIO)
E4	E	CANopen	4	Right General - Purpose Input/Output (GPIO)

14.3 CC Error Codes

The following tables list CC error code information for each SD code or SD code type and messages that may appear on the Adante IntelliTouch Hand Pendant, along with the corresponding potential causes and actions to take to troubleshoot the problem.

Some CC error codes are common to all SD codes. These are listed under General Errors.

For the User Action that states “Acknowledge Error”, do the following:

1. Press **OK** on the touch screen (*Figure 216*).
2. If the problem persists after the user presses **OK** on the touch screen to “Acknowledge Error”, contact Mizuho OSI Service (see *Technical Support on page 238*).

For the User Action that states, "Turn table power off and back on.", do the following:

1. Press the Power Button.
The green ring will flash for approximately seven (7) seconds.
Once the flashing stops, the table is completely off.
2. Wait at least five (5) more seconds before powering the table on again.

14.3.1 General Errors

The CC codes in the following table are common to all SD codes.

Table 19: General Errors (SD Code xx)

Code (CC)	Error Message	Potential Causes	User Actions
C0	Board reset (Power on)	Normal during initialization. After ready state is achieved: • Power issue: If all daughter boards display this error, it may indicate a problem with the MCPDU. • Wiring issue: A single board and/or the downstream boards displaying this error could mean an intermittent bad wire in the 9v motor bus or ground wiring.	Acknowledge error.
C1	Brown out reset	Board temporarily lost power.	Acknowledge error.
C2	Watchdog reset	Internal software error.	Acknowledge error.
C3	Software reset	Internal software error.	Acknowledge error.
C4	External reset	Internal software error. Daughter board was power cycled, a programming device was connected, or the board lost power.	Acknowledge error.
C5	Illegal opcode reset	Internal software error. Daughter board was warm booted or reset.	Acknowledge error.
C6	Trap conflict reset	Internal software error.	Acknowledge error.
C7	Unknown reset	Internal software error.	Acknowledge error.
C8	Stack overflow reset	Internal software error.	Acknowledge error.
C9	Stack underflow reset	Internal software error.	Acknowledge error.
D0	Low Logic supply voltage	The logic voltage into the board is low.	Acknowledge error. Contact Mizuho OSI Service.
D1	Low (5V) supply voltage	The command bus supply voltage of 5V is low.	Acknowledge error. Contact Mizuho OSI Service.
D2	Low Drive supply voltage	The drive voltage into the board is low.	Acknowledge error. Contact Mizuho OSI Service.
D3	Communications lost with Main Controller	Internal software error.	Acknowledge error.
D4	Communications transmit buffer overflow	Internal software error.	Acknowledge error.

Table 19: General Errors (SD Code xx) (continued)

Code (CC)	Error Message	Potential Causes	User Actions
D5	Communications receive buffer overflow	Internal software error.	Acknowledge error.
E0	Invalid state transition	Internal software error.	Acknowledge error.
E1	Internal trap error	Internal software error.	Acknowledge error.
E2	Incompatible hardware	Internal software error.	Acknowledge error.
E3	Invalid board ID	Internal software error.	Acknowledge error.
E4	Invalid command received	Internal software error.	Acknowledge error.
E5	Internal software error	Internal software error.	Acknowledge error.

14.3.2 Main Controller Errors

The CC codes in the following table apply to Main Controller errors (SD code 10).

Table 20: Main Controller Errors (SD Code 10)

Code (CC)	Error Message	Potential Causes	User Actions
23	Move not stopped	User requested motion, but the system timed out waiting for one or more boards to be ready.	Acknowledge error.
24	Invalid Position	One or more of the positions reported by the various motor absolute sensors after self-test is not valid.	Turn table power off and back on.
2C	Maximum tilt angle	The table moved past the allowed maximum tilt angle.	Acknowledge error. Contact Mizuho OSI Service.
2D	Minimum tilt angle	The table moved past the allowed minimum tilt angle.	Acknowledge error. Contact Mizuho OSI Service.
2E	Table not ready to start new motion. Please cycle power on the table.	The user requested motion, but one of the boards was not ready for motion for a period that exceeded the timeout.	Turn table power off and back on.

Table 20: Main Controller Errors (SD Code 10) (continued)

Code (CC)	Error Message	Potential Causes	User Actions
2F	Maximum column height	The table moved past the allowed maximum height of the column.	Acknowledge error. Contact Mizuho OSI Service.
31	Minimum column height	The table moved past the allowed minimum height of the column.	Acknowledge error. Contact Mizuho OSI Service.
33	Maximum Trendelenburg angle	The table moved past the allowed maximum Trendelenburg angle.	Acknowledge error. Contact Mizuho OSI Service.
34	Minimum Trendelenburg angle	The table moved past the allowed minimum Trendelenburg angle.	Acknowledge error. Contact Mizuho OSI Service.
41	Communication lost with Motor board [0, 1, 2, or 3]	One or more motor boards are not communicating with the main controller.	Turn table power off and back on. Contact Mizuho OSI Service.
43	Communication lost with Floor Lock board [A or B]	One or both floor lock boards are not communicating with the main controller.	Turn table power off and back on. Contact Mizuho OSI Service.
45	Table failed Initialize Stage One	The main controller failed to initialize properly.	Turn table power off and back on. If problem persists, contact Mizuho OSI Service.
46	Table failed Initialize Stage Two	The main controller failed to initialize properly.	Turn table power off and back on. If problem persists, contact Mizuho OSI Service.
47	Table failed to Initialize	The main controller failed to initialize properly.	Turn table power off and back on. If problem persists, contact Mizuho OSI Service.

Table 20: Main Controller Errors (SD Code 10) (continued)

Code (CC)	Error Message	Potential Causes	User Actions
48	Self-Test timed out	The main controller failed to initialize properly.	Turn table power off and back on.
49	Hand Pendant not connected	Hand Pendant is not communicating with the main controller.	Connect the IntelliTouch Hand Pendant to the table via the IntelliTouch Hand Pendant cable.
4A	Control panel not connected	Auxiliary Control Panel is not communicating with the main controller.	Turn table power off and back on. If problem persists, contact Mizuho OSI Service.
4B	Weight System Failure.	The weight measured by the table is not reasonable. Either it is too light because one or more sensors are not reporting a weight, or the reported weight is impossible because one or more sensors are disconnected.	Turn table power off and back on. If problem persists, contact Mizuho OSI Service.
50	Floor locks are in an indeterminate state.	Either the floor locks were manually moved or the table is becoming unstable, with less than 100 pounds on one or more of the floor locks, due to off-center loading on the table.	Rebalance the load on the table, likely toward the superior end. After the table stability light turns off on the Auxiliary Control Panel, press the lock or unlock floor locks button as needed, then press OK .
51	Communication lost with Spar Interface board [4 or 5]	One or more Spar interface boards are not communicating with the main controller.	Turn table power off and back on. Contact Mizuho OSI Service.
60	Motor board version mismatch	The software programmed into one or more motor boards is incompatible with the main controller software.	Contact Mizuho OSI Service.
62	Floor lock version mismatch	The software programmed into one or more floor lock boards is incompatible with the main controller software.	Contact Mizuho OSI Service.
64	Hand pendant version mismatch	The software programmed into the hand pendant is incompatible with the main controller software.	Contact Mizuho OSI Service.

Table 20: Main Controller Errors (SD Code 10) (continued)

Code (CC)	Error Message	Potential Causes	User Actions
65	Control panel version mismatch	The software programmed into the auxiliary control panel board is incompatible with the main controller software.	Contact Mizuho OSI Service.
68	Spar Interface version mismatch	The software programmed into the Spar Interface board is incompatible with the main controller software.	Contact Mizuho OSI Service.
70	ADC failed self-test	The analog-to-digital converter timed out during self-test.	Acknowledge error.
71	Multiple keys depressed at the same time	Multiple keys were depressed for longer than a specific period after a multiple key press.	Acknowledge error.
72	Possible stuck key on Hand Pendant or Control Panel	A single key was still depressed for longer than a specific period after a multiple key press.	Acknowledge error. If problem persists, contact Mizuho OSI Service.
74	Foot Control not responding. Please cycle power on the table.	Foot control not communicating with the main controller.	Turn table power off and back on. If problem persists, contact Mizuho OSI Service. (May require new Main Controller.)
76	FLASH Version invalid.	Internal software error.	Turn table power off and back on. If problem persists, contact Mizuho OSI Service. (May require reloading calibration constants.)
77	FLASH hardware failure.	Main controller board is probably damaged.	Acknowledge error. Contact Mizuho OSI Service.
80	Battery voltage high	Something is wrong with the battery and the voltage being delivered is too high.	Acknowledge error. Contact Mizuho OSI Service.

Table 20: Main Controller Errors (SD Code 10) (continued)

Code (CC)	Error Message	Potential Causes	User Actions
81	Battery voltage low	Something is wrong with the battery and the voltage being delivered is too low.	Acknowledge error. Contact Mizuho OSI Service.
82	Power Supply voltage high	Something is wrong with the Power Supply and the voltage being delivered is too high.	Acknowledge error. Contact Mizuho OSI Service.
83	Power Supply voltage low	Something is wrong with the Power Supply and the voltage being delivered is too low.	Acknowledge error. Contact Mizuho OSI Service.
84	Motor bus voltage high	Something is wrong with the Main Controller power regulators or the loads and the voltage being delivered is high.	Acknowledge error. Contact Mizuho OSI Service.
85	Motor bus voltage low	Something is wrong with the Main Controller power regulators or the loads and the voltage being delivered is too low.	Acknowledge error. Contact Mizuho OSI Service.
86	Current high	Main Controller activity resulted in drawing too much current from the power source that was in use (either 24 V supply or the batteries).	Acknowledge error. Contact Mizuho OSI Service.
A0	Real time clock battery failure	The small coin-cell battery on the main controller board is not working.	Acknowledge error. Contact Mizuho OSI Service to replace battery.
A2	Clock not incrementing	Internal software error.	Acknowledge error.
A3	Clock failed self-test	Internal software error.	Acknowledge error.
B0	IMS red	A jumper came loose off of the Main board.	Contact Mizuho OSI Service.

14.3.3 Motor Controller Errors

The CC codes in the following table apply to Motor Controller errors (SD code 2x).

Table 21: Motor Controller Errors (SD Code 2x)

Code (CC)	Error Message	Potential Causes	User Actions
01	Motor fault	The motor board detected a problem with the motor driver. The system may have attempted to change motor speed too abruptly or the motor position sensors may have failed. The DMC is not in static mode when no pelvic motors are attached, or motor hall position sensors or electrical wiring may have failed, or 24 volts may be missing or too low on this board. When the detail (D) error code is 4, DMC is missing the jumper. Check for the static mode jumper on the DMC.	Acknowledge error.
02	Motor stall	The motor board detected no motor movement while driving the motor very hard. The position encoder may have failed, the gear train may be sluggish or locked, the table may be overloaded, or the electrical wiring has an open. Check for opens in the electrical wiring.	Acknowledge error. Contact Mizuho OSI Service.
03	Brake engaged current too high	The motor board detected more current flowing than expected in the brake while it should be engaged (de-energized).	Acknowledge error. Contact Mizuho OSI Service.
04	Brake disengaged current too low	The motor board detected less current flowing than expected in the brake while it should be disengaged (energized).	Acknowledge error. Contact Mizuho OSI Service.
05	Absolute encoder fault	The motor board failed to read the absolute encoder, the electrical wiring has an open, or there is an illogical absolute encoder value. Check for opens in the electrical wiring.	Acknowledge error. Contact Mizuho OSI Service.
06	Relative encoder fault	During self-test, the motor board determined the relative encoder was disconnected. Check for opens in the electrical wiring.	Acknowledge error. Contact Mizuho OSI Service.
07	Encoder synchronization	The relative encoder and the absolute encoder disagree about the table position by more than what is acceptable.	Acknowledge error. Contact Mizuho OSI Service.

Table 21: Motor Controller Errors (SD Code 2x) (continued)

Code (CC)	Error Message	Potential Causes	User Actions
08	Motor Overcurrent	The motor board detected the current in the motor above acceptable levels.	Acknowledge error. Contact Mizuho OSI Service.
0C	Accelerometer Timeout.	The motor board lost communication with the accelerometer.	Acknowledge error. Contact Mizuho OSI Service.

14.3.4 Floor Lock Errors

The CC codes in the following table apply to floor lock errors (SD code 4x).

Table 22: Floor Lock Errors (SD Code 4x)

Code (CC)	Error Message	Potential Causes	User Actions
03	Motor 1 overcurrent	The floor lock motor was drawing more current than expected	Acknowledge error.
04	Motor 2 overcurrent	The floor lock motor was drawing more current than expected	Acknowledge error.
05	Motor 1 unlock timeout	The floor lock motor took longer than expected to unlock the floor lock and has not fully unlocked.	Acknowledge error.
06	Motor 2 unlock timeout	The floor lock motor took longer than expected to unlock the floor lock and has not fully unlocked.	Acknowledge error.
07	Motor 1 lock timeout	The floor lock motor took longer than expected to lock the floor lock and has not fully locked.	Acknowledge error.
08	Motor 2 lock timeout	The floor lock motor took longer than expected to lock the floor lock and has not fully locked.	Acknowledge error.
0B	Motor 1 Unlock Switch is stuck on.	The motor unlock switch is stuck on and Floor Locks will not engage or Floor Lock is jammed and cannot move.	Acknowledge error.
0C	Motor 2 Unlock Switch is stuck on.	The motor unlock switch is stuck in and Floor Locks will not engage or Floor Lock is jammed and cannot move.	Acknowledge error.

Table 22: Floor Lock Errors (SD Code 4x) (continued)

Code (CC)	Error Message	Potential Causes	User Actions
0F	Motor 1 Encoder Failure.	No floor lock encoder counts were detected after a time period of the motor attempting to move. The Floor Lock may be jammed and unable to move.	Acknowledge error.
10	Motor 2 Encoder Failure.	No floor lock encoder counts were detected after a time period of the motor attempting to move. The Floor Lock may be jammed and unable to move.	Acknowledge error.
11	Weight 1 sensor Failure.	The weight sensor in this specific board is reporting an illegal value. If the Floor Lock Unlocked switch is not adjusted properly, the weight sensor can see a negative weight.	Acknowledge error Contact Mizuho OSI Service.
12	Weight 2 sensor Failure.	The weight sensor on this specific board is reporting an illegal value. If the Floor Lock Unlocked switch is not adjusted properly, the weight sensor can see a negative weight.	Acknowledge error Contact Mizuho OSI Service.
13	Weight 1 sensor out of Range.	The weight sensor analog voltage that is presented to the Floor Lock ADC is out of range, either too high or too low.	Acknowledge error Contact Mizuho OSI Service.
14	Weight 2 sensor out of Range.	The weight sensor analog voltage that is presented to the Floor Lock ADC is out of range, either too high or too low.	Acknowledge error Contact Mizuho OSI Service.

14.3.5 Hand Pendant Errors

The CC codes in the following table apply to Hand Pendant errors (SD code 10).

Table 23: Hand Pendant Errors (SD Code 50)

Code (CC)	Error Message	Potential Causes	User Actions
01	Stuck pendant keypad button	The Hand Pendant detected a button press during self-test.	Turn table power off and back on. Contact Mizuho OSI Service to replace pendant.
02	Hand Pendant battery failure.	The wireless Hand Pendant battery cannot be charged and needs to be replaced.	Contact Mizuho OSI Service. Hand Pendant can continue to be used wired.
03	Hand Pendant touch screen failure.	The touch screen is not being sensed by the wireless Hand Pendant. It may be disconnected in the Hand Pendant or it may have failed.	Contact Mizuho OSI Service. Hand Pendant motion buttons can continue to be used.
04	Hand pendant failed selftest.	The wireless Hand Pendant selftest has failed and is not reliable for use.	Contact Mizuho OSI Service. Table can continue to be used with the Auxiliary Control Panel.
05	Hand pendant wireless module is not responding.	The wireless Hand Pendant microprocessor is not talking to the wireless ZigBee processor or the wireless ZigBee processor has lost its program.	Contact Mizuho OSI Service. Hand Pendant can continue to be used wired.

14.3.6 Auxiliary Control Panel Errors

The CC codes in the following table apply to Auxiliary Control Panel errors (SD code 60).

Table 24: Auxiliary Control Panel Errors (SD Code 60)

Code (CC)	Error Message	Potential Causes	User Actions
01	Stuck keypad button	The Auxiliary Control Panel detected a button press during self-test.	Acknowledge error.
02	Table wireless module is not responding.	The Auxiliary Control Panel microprocessor is not talking to the wireless ZigBee processor or the wireless ZigBee processor has lost its program.	Contact Mizuho OSI service. Table can continue to be used with the Hand Pendant or with the Auxiliary Control Panel.

14.3.7 Spar Interface Error Codes

The CC codes in the following table apply to spar interface errors (SD code Ax).

Table 25: Spar Interface Error Codes (SD Code Ax)

Code (CC)	Error Message	Potential Causes	User Actions
01	Brake 1 Engaged Current High	There may be a bad board or an electrical short has occurred. Check for electrical shorts that may cause the brakes to stay stuck or replace spar interface board.	Acknowledge error. Contact Mizuho OSI Service.
02	Brake 1 Disengaged Current Low	There may be an open in the electrical wiring or the brake. Check for opens in either the electrical wiring or the brake itself. Replace the spar interface board if necessary.	Acknowledge error. Contact Mizuho OSI Service.
03	Brake 2 Engaged Current High	There may be a bad board or an electrical short has occurred. Check for electrical shorts that may cause the brakes to stay stuck or replace spar interface board.	Acknowledge error. Contact Mizuho OSI Service.
04	Brake 2 Disengaged Current Low	There may be an open in the electrical wiring or the brake. Check for opens in either the electrical wiring or the brake itself. Replace the spar interface board if necessary.	Acknowledge error. Contact Mizuho OSI Service.

Table 25: Spar Interface Error Codes (SD Code Ax) (continued)

Code (CC)	Error Message	Potential Causes	User Actions
05	Brake 3 Engaged Current High	There may be a bad board or an electrical short has occurred. Check for electrical shorts that may cause the brakes to stay stuck or replace spar interface board.	Acknowledge error. Contact Mizuho OSI Service.
06	Brake 3 Disengaged Current Low	There may be an open in the electrical wiring or the brake. Check for opens in either the electrical wiring or the brake itself. Replace the spar interface board if necessary.	Acknowledge error. Contact Mizuho OSI Service.
07	Brake 4 Engaged Current High	There may be a bad board or an electrical short has occurred. Check for electrical shorts that may cause the brakes to stay stuck or replace spar interface board.	Acknowledge error. Contact Mizuho OSI Service.
08	Brake 4 Disengaged Current Low	There may be an open in the electrical wiring or the brake. Check for opens in either the electrical wiring or the brake itself. Replace the spar interface board if necessary.	Acknowledge error. Contact Mizuho OSI Service.
09	Absolute Encoder 1 Fault	Fault in absolute/Hall sensor 1. Check the electrical wiring for opens or replace the encoder.	Acknowledge error. Contact Mizuho OSI Service.
A	Absolute Encoder 2 Fault	Fault in absolute/Hall sensor 2. Check the electrical wiring for opens or replace the encoder.	Acknowledge error. Contact Mizuho OSI Service.
B	Absolute Encoder 3 Fault	Fault in absolute/Hall sensor 3. Check the electrical wiring for opens or replace the encoder.	Acknowledge error. Contact Mizuho OSI Service.
C	Gripper Motion Timeout	Gripper knee mount motion operation timed out.	Order a replacement Adante Knee Mount

14.3.8 CANopen Error Codes

The CC codes in the following table apply to CANopen errors (SD code Ex).

Table 26: CANopen Error Codes (SD code Ex)

Code (CC)	Error Message	Potential Causes	User Actions
01	Crown Stuck Button	Crown Buttons are stuck when the table is turned on. Check for a physically stuck button or an electrical short.	Turn table power off and back on.
02	Master Init Failure	Failed to initialize CANopen Master. Internal software error.	Turn table power off and back on.
03	Node Init Failure	Failed to initialize CANopen Slave Node. Internal software error, but could be a bad CAN node.	Turn table power off and back on.
04	Node Self Test Failure	Failed to perform self-test with a Slave Node. Internal software error, but could be a bad CAN node.	Turn table power off and back on.
05	Operational State Failure	Failed to enter OPERATIONAL state. Internal software error, but could be a bad CAN node.	Turn table power off and back on.
06	Execute Failure	Failed to execute CcmProcess(). Internal software error.	Turn table power off and back on.
07	Comm Lost	Failed to receive any communication with CANopenThread. Probable open in the CAN cable. Also, check Termination	Turn table power off and back on.
08	Recovery Failure	Failed to resolve recoverable error; should proceed to reboot. Internal software error.	Turn table power off and back on.
10	SDO Abort	SDO transfer is aborted. Probable open in the CAN cable. Also, check Termination.	Turn table power off and back on.
20	Connection Lost	Heartbeat Error, Connection lost. Probable open in the CAN cable. Also, check termination.	Turn table power off and back on.
30	EMCC Error	Emergency Error. Need to expand. Probable open in the CAN cable. Also, check termination.	Turn table power off and back on.

Table 26: CANopen Error Codes (SD code Ex) (continued)

Code (CC)	Error Message	Potential Causes	User Actions
40	CDRV Bus Off Error	SocketCAN driver error, Bus OFF. Probable open in the cable. Check Bus termination and replace the MCPDU board.	Turn table power off and back on.
50	Thread Error	CCM error, thread error. Internal software error.	Turn table power off and back on.
51	Nmt State Error	CCM error, network state error. Internal software error.	Turn table power off and back on.
52	PDO Error	CCM error, PDO error. Internal software error.	Turn table power off and back on.
60	Motion Ctrl Fault	AMC Motion Controller is at FAULT state. Check the relative encoder, hall sensors, and 24 volts electrical wiring for opens or electrical shorts.	Turn table power off and back on.
61	Motion Ctrl Pos Range Error	Requested Position out of range (0 - 1507328 counts). Internal software error. Check the push traction absolute and relative encoder devices and electrical wiring.	Turn table power off and back on.
62	Motion Ctrl Invalid State	Generic. Invalid state (table state, local state machine state). Internal software error.	Turn table power off and back on.
63	Load cell Exceed Max	Loadcell measurement exceeds max allowable value (LOADCELL_VALUE_MAX_LBS). Check for opens or electrical shorts. Replace the loadcell, if necessary.	Turn table power off and back on.
64	Invalid Node Status	Invalid node status. Internal software error.	Turn table power off and back on.

Table 26: CANopen Error Codes (SD code Ex) (continued)

Code (CC)	Error Message	Potential Causes	User Actions
65	Invalid Board Id	Invalid board ID. Internal software error.	Turn table power off and back on.
70	IO Mod Invalid Coarse Pos	Invalid Coarse Position, IO Module. Internal software error. Check the push traction absolute encoder device and electrical wiring.	Turn table power off and back on.

15 Technical Support

15.1 Contact for Parts and Service

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

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

Please state slowly your name, phone number, your facility name and city, the 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.

15.2 Order Replacement Parts

Before you begin: If unable to identify a part, please call, fax, or email 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 call, fax, or email Mizuho OSI Service with the part number and description to obtain price and availability.

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

15.3 Return Damaged Parts

1. Identify the part or part number to be returned.
2. Call, fax, or email Mizuho OSI Service with the part number and description of the part to obtain a Return Goods Authorization (RGA) number.

Service will provide a Return Goods Authorization (RGA) number and a Certificate of Decontamination.

3. Complete the Certificate of Decontamination provided by Mizuho OSI Service.
4. Return the part with the RGA number clearly marked on the outside of the package and include the Certificate of Decontamination with the shipment.

15.4 Send Part for Repair

Before you begin: If unable to identify a part, please call, fax, or email Mizuho OSI Service for assistance.

1. Please call, fax, or email Mizuho OSI Service with the part number and description of the problem.

Service will provide a Repair Authorization (RA) number and a Certificate of Decontamination.

2. Clean/disinfect parts prior to shipping and complete the Certificate of Decontamination provided by Mizuho OSI Service.
3. 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 customer will be contacted with the cost of repair, if not covered under warranty.

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

15.5 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. Defective merchandise will be credited or replaced.

Appendix A: Electromagnetic Compatibility

A.1 Electromagnetic Emissions



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



WARNING: Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.



WARNING: The use of accessories, transducers, and cables other than those specified or provided by Mizuho OSI could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.



WARNING: Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the Adante AX Orthopedic Surgical Platform, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.

NOTE: *The emissions characteristics of this equipment make it suitable for use in industrial areas and hospitals (CISPR 11 class A). If it is used in a residential environment (for which CISPR 11 class B is normally required) this equipment might not offer adequate protection to radio-frequency communication services. The user might need to take mitigating measures, such as relocating or re-orienting the equipment.*

Guidance and Manufacturer's Declaration — Emissions		
The Adante AX Orthopedic Surgical Platform is intended for use in the electromagnetic environment specified below. The customer or user of the Adante AX Orthopedic Surgical Platform should ensure that it is used in such an environment.		
Emissions Test	Compliance	Electromagnetic Environment — Guidance
RF emissions CISPR 11	Group 1	The Adante AX Orthopedic Surgical Platform uses RF energy only for its internal functions. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class A	The Adante AX Orthopedic Surgical Platform is suitable for use in all establishments other than domestic 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	
Voltage Flicker/Flicker emissions	Complies	

A.2 Electromagnetic Immunity

Guidance and Manufacturer's Declaration — Immunity			
The Adante AX Orthopedic Surgical Platform is intended for use in the electromagnetic environment specified below. The customer or user of the Adante AX Orthopedic Surgical Platform 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	±8 kV Contact ±15 kV Air	±8 kV Contact ±15 kV Air	Floors should be wood, concrete or ceramic tile. If floors are synthetic, the relative humidity should be at least 30%.
Electrical Fast Transient (EFT) IEC 61000-4-4	±2 kV Mains ±1 kV I/O	±2 kV Mains ±1 kV I/O	Mains power quality should be that of a typical commercial or hospital environment.

Guidance and Manufacturer's Declaration — Immunity			
Surge IEC 61000-4-5	± 1 kV Differential ± 2 kV Common	± 1 kV Differential ± 2 kV Common	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	Voltage Dips 30% reduction, 25/30 periods At 0° Voltage Dips > 95% reduction, 0.5 period At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° Voltage Dips > 95% reduction, 1 period At 0° Voltage Interruptions > 95% reduction, 250/300 periods	Voltage Dips 30% reduction, 25/30 periods At 0° Voltage Dips > 95% reduction, 0.5 period At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° Voltage Dips > 95% reduction, 1 period At 0° Voltage Interruptions > 95% reduction, 250/300 periods	Mains power quality should be that of a typical commercial or hospital environment. If the user of the Adante AX Orthopedic Surgical Platform requires continued operation during power mains interruptions, it is recommended that the Adante AX Orthopedic Surgical Platform be powered from an uninterruptible power supply or battery.
Power Frequency 50/60 Hz Magnetic Field IEC 61000-4-8	30A/m	30A/m	Power frequency magnetic fields should be that of a typical commercial, or hospital environment.
Proximity Magnetic Fields IEC 61000-4-39	65 A/m, PM at 2.1 kHz, 50% duty cycle, 134.2 kHz; 7.5 A/m, PM at 50kHz, 50% duty cycle, 13.56 MHz	65 A/m, PM at 2.1 kHz, 50% duty cycle, 134.2 kHz; 7.5 A/m, PM at 50kHz, 50% duty cycle, 13.56 MHz	

Guidance and Manufacturer's Declaration — Immunity			
The Adante AX Orthopedic Surgical Platform is intended for use in the electromagnetic environment specified below. The customer or the user of the Adante AX Orthopedic Surgical Platform 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	3Vrms 150 kHz to 80 MHz (6Vrms in ISM radio Bands within 150kHz-80MHz)	3Vrms	Portable and mobile RF communications equipment should be used no closer to any part of the Adante AX Orthopedic Surgical Platform, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance $d = 1.2\sqrt{P}$
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.7 GHz	3 V/m	$d = 1.2\sqrt{P}$ 80 MHz to 800 Mhz $d = 2.3\sqrt{P}$ 800 MHz to 2.7 GHz 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 metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey ¹ , should be less than the compliance level in each frequency range. ²
NOTE: At 80 MHz and 800 MHz, the higher frequency range applies. NOTE: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			

- Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones 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 Adante AX Orthopedic Surgical Platform is used exceeds the application RF compliance level above, the Adante AX Orthopedic Surgical Platform should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the Adante AX Orthopedic Surgical Platform.
- Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

A.3 Recommended separation distances between portable and mobile RF communications equipment and Adante AX Orthopedic Surgical Platform

Recommended separation distances between portable and mobile RF communications equipment and the Adante AX Orthopedic Surgical Platform			
The Adante AX Orthopedic Surgical Platform is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Adante AX Orthopedic Surgical Platform can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Adante AX Orthopedic Surgical Platform as recommended below, according to the maximum output power of the communications equipment.			
Rated maximum output power of transmitter (W)	Separation distance according to frequency of transmitter (m)		
	150 kHz to 80 kHz $d = 1.2\sqrt{P}$	80 MHz to 800 MHz $d = 1.2\sqrt{P}$	800 MHz to 2.7 GHz $d = 2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
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: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.			
NOTE: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			

A.4 Immunity to RF Communications Equipment

Guidance and Manufacturer's Declaration — Immunity						
The Adante AX Orthopedic Surgical Platform is intended for use in the electromagnetic environment specified below. The customer or the user of the Adante AX Orthopedic Surgical Platform should ensure that it is used in such an environment.						
Test Frequency	Band ¹	Service ¹	Modulation ²	Maximum Power	Distance	Immunity Test Level
MHz	MHz			W	Meters	(V/m)
385	380 – 390	TETRA 400	Pulse modulation ² 18 Hz	1.8	0.3	27
450	430 – 470	GMRS 460, FRS 460	FM ³ ±5 kHz deviation 1 kHz sine	2	0.3	28
710 745 780	704 – 787	LTE Band 13, 17	Pulse modulation ² 217 Hz	0.2	0.3	9
810 870 930	800 – 960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5	Pulse modulation ² 18 Hz	2	0.3	28
1720 1845 1970	1 700 – 1 990	GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1, 3, 4, 25; UMTS	Pulse modulation ² 217 Hz	2	0.3	28
2450	2 400 – 2 570	Bluetooth, WLAN, 802.11 b/g/ n, RFID 2450, LTE Band 7	Pulse modulation ² 217 Hz	2	0.3	28
5240 5500 5785	5 100 – 5 800	WLAN 802.11 a/n	Pulse modulation ² 217 Hz	0.2	0.3	9

1 For some services, only the uplink frequencies are included.

2 The carrier shall be modulated using a 50% duty cycle square wave signal.

3 As an alternative to FM modulation, 50% pulse modulation at 18 Hz may be used because while it does not represent actual modulation, it would be worst case.

A.5 FCC/IC Compliance

This device complies with part 15 of the FCC Rules and the Innovation, Science and Economic Development Canada's license-exempt RSS(s) rules. Operation is subject to the following two conditions:

1. This device may no cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.



WARNING: Unauthorized antennas, modifications, or attachments could impair call quality, damage the device, or result in violation of FCC and ISED regulations.

MPE/SAR/RF exposure information: This device was verified and found to comply with FCC Part 1.1310 and IC RSS-102 Issue 5 RF exposure requirements set forth for an uncontrolled environment.

This device includes a radio transmitter and receiver which is designed and manufactured not to exceed the emissions limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission (FCC) and Industry Canada (IC). These limits are part of comprehensive guidelines and establish permitted levels of RF energy for the general population. These guidelines are based on the safety standards previously set by the U.S., Canada, and international standards bodies. The standards include a substantial safety margin designed to assure the safety of all persons, regardless of age and health.



WARNING: While this device is in operation, a separation distance of at least 20 cm (8 inches) must be maintained between the radiating antenna and the bodies of all persons exposed in order to meet the Maximum permissible Exposure (MPE) guidelines. Making changes to the antenna or the device is not permitted. Doing so may result in the installed system exceeding RF exposure requirements.

NOTE: *This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.*

This Class A digital apparatus complies with Canadian ICES-003.