

# PURIST

+ SWISS MADE

## In-Service Summary (with DAA Top 360)

*The operator should read and understand the PURIST, IOT Accessories, and DAA Top 360 user manuals before using this equipment. This document serves only as a reference for setup and operation.*

### **Overview**

The PURIST Leg Positioning System is designed specifically for anterior hip replacement. It enables all essential leg movements for this procedure using a standard OR table. U.S. surgeon designed and Swiss made, the PURIST provides measurable, reproducible positioning, along with staff-friendly operation and a small storage footprint of only 60 x 90 cm.

The DAA Top 360 can be used with the PURIST Leg Positioning System to improve surgical access. Cutouts under the hips allow for soft tissue fall out, simplifying the reaming process and cup installation. The adjustable femoral support offers many height settings and acts as a fulcrum to push up the proximal end of the femur for femoral exposure.



Figure 1: PURIST



Figure 2: DAA Top 360

### **OR and Patient Setup**

Follow all requirements of the OR table used. Set up the OR table so that the patient's center of gravity is over the long portion of the table base for maximum stability. This can be achieved by translating the bed or flipping the table orientation 180°. Refer to the OR table user manual for setup configurations and weight limits.

## DAA Top 360

### Positioning

Remove OR table cushions and place the DAA Top 360 on the OR table. The edge of the OR table should align with the red line shown in Figure 3.

1. If the OR table is in the standard orientation, remove the leg section(s) and attach the DAA Top 360 to the middle section of the OR table.
2. If the OR table orientation is flipped 180°, remove the head section and attach the DAA Top 360 to the middle section of the OR table.

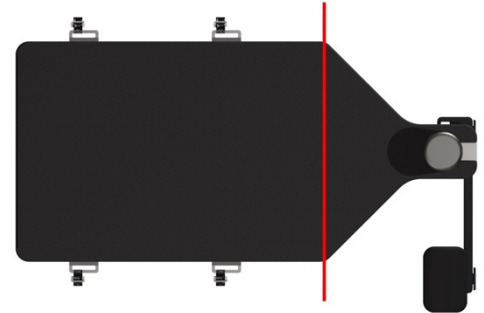


Figure 3: DAA Top 360 Positioning

### Mounting

All OR tables are different – make sure to properly fix the DAA Top 360 to the OR table used. The following shows an example of how it can be done.

Four straps secure the DAA Top 360 to the OR table. Each strap can be moved by loosening the screws (1) with a 4mm hex key, sliding the attachment (2), then re-tightening these screws. The attachments should be positioned above the side rail mounts (3) when possible, with the strap proximal (cephalad) to the mount.

Each attachment can be moved between the two stop screws (4). For simplest setup compatible with most OR tables, move each of the four attachments as far up (cephalad) as possible. This allows for maximum Opposite Leg Holder (OLH) engagement. Secure each strap as shown below. The thickest part of the strap (with the stitched X) should be positioned behind (medial to) the attachment. To tighten the strap, pull straight down on the excess strap hanging below the metal clasp. Make each strap as tight as possible to resist movement.

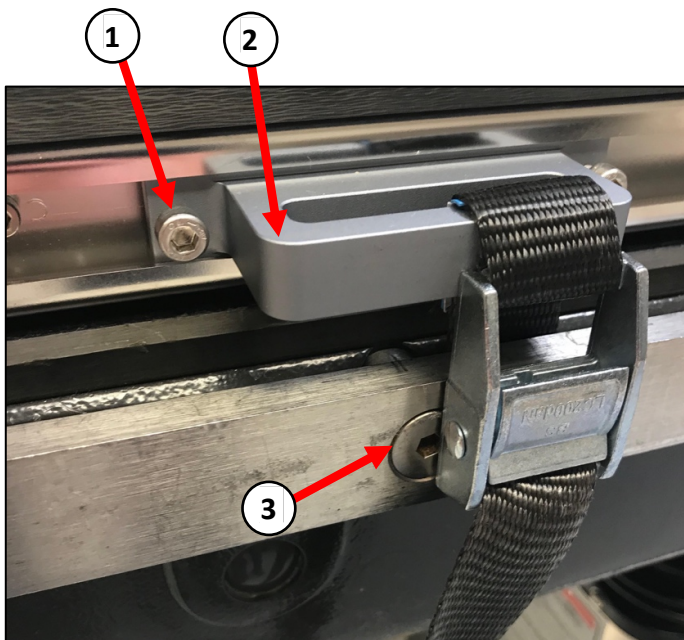


Figure 4: Strap Positioning

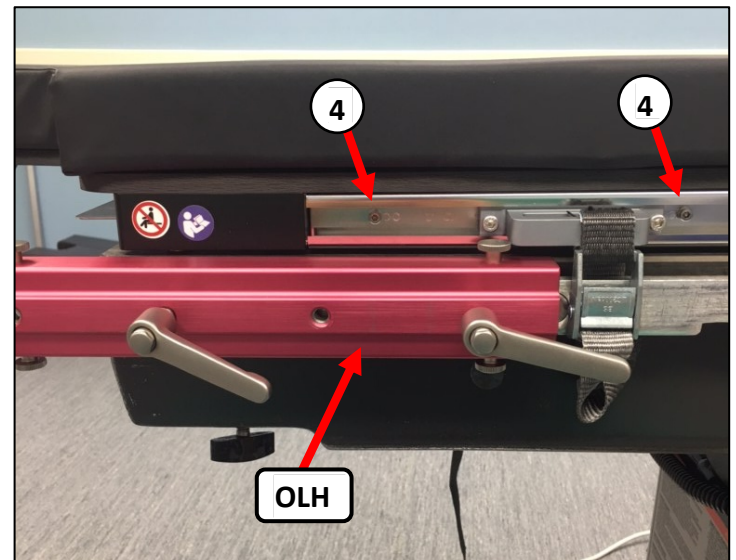


Figure 5: Strap Positioning near OLH

## Final Assembly

Ensure the DAA Top 360 cushion is attached and correctly aligned to the DAA Top 360 using the Velcro attachments. For taller patients, use pads beyond the DAA Top 360 to support the patient's head. Ensure the pads beyond the DAA Top 360 match the height of the DAA Top 360 pad.

Install the transverse support (7). To install the transverse support (7), pull the pin (8) and push the cross element (6) with the transverse support (7) into the T-Slot guide (5).

It is usually easiest to install the perineal post after the patient has been transferred onto the DAA Top 360. The perineal post simply slides into the holder on the tabletop. Once the patient is on the tabletop, put the traction boots on the patient (explained in detail later in this document), install the perineal post, then slide the patient down until the patient's perineum is tight against the post. The traction boots can then be attached to the PURIST and Opposite Leg Holder.

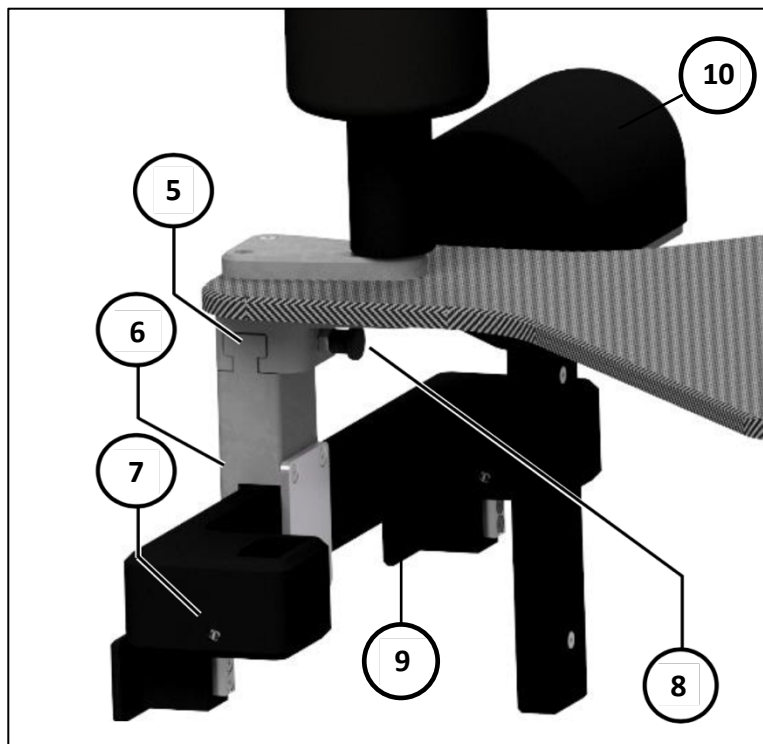


Figure 6: DAA Top 360 Detail View

## Femoral Support Adjustment

The femoral support should be placed on the operative side (shown set up for right hip arthroplasty in Figure 6). It will act as a fulcrum and push up on the femur during leg extension.

The femoral support has multiple height settings. To adjust the height, press the push knob (9) and adjust the femoral support (10) to the required height in 10mm increments.

Height setting dependent on surgeon preference.

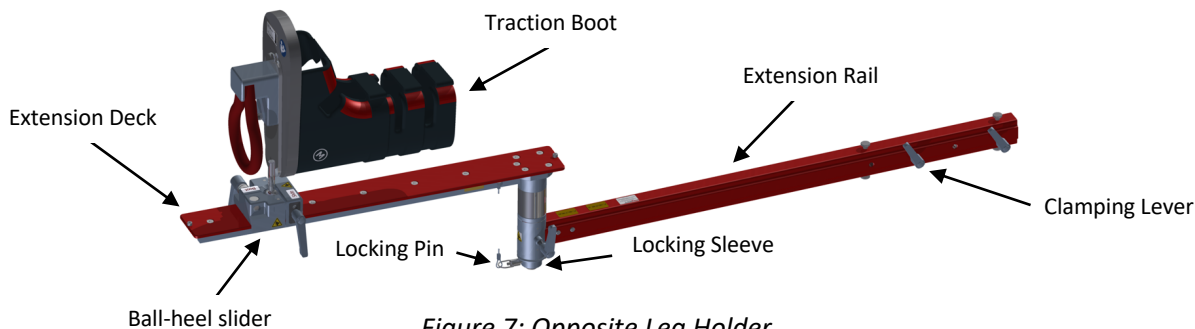
## Weight Limit

The DAA Top 360 is designed for a maximum patient weight of 227 kg (500 lb.). This weight limit is also dependent on the OR table weight limit.

## **PURIST and Accessories**

### **Opposite Leg Holder Overview**

The Opposite Leg Holder (OLH) attaches to the OR table side rail and is fully adjustable based on patient leg length. All adjustments are made using clamping levers. The OLH has two main components, the extension deck which holds the traction boot/ball-heel slider assembly, and the extension rail which attaches to the OR table. To change the OLH from one side rail to the opposite side rail (ex: right hip setup to left), remove the locking pin and locking sleeve in the middle of the OLH. Place the locking sleeve aside. Remove the extension deck from the extension rail, flip the extension rail 180°, then put the extension deck back into the extension rail and reattach the locking sleeve and locking pin. The OLH is now configured for the other hip.



*Figure 7: Opposite Leg Holder*

The position of the clamping levers can be changed without releasing the clamping bolt. To move the lever, first pull the clamping lever away from the fixing profile and then turn into the desired position without turning the clamping bolt. All IOT levers have this functionality.

Clamping levers on the extension rail and the clamping lever on the boot slide can be adjusted for patient leg length. The lever in the middle of the OLH controls non-operative leg abduction and adduction. The locking ball-and-socket joint on the ball-heel slider allows for adjustment of foot position and angle.

### **Opposite Leg Holder Installation**

The OLH used with the DAA Top 360 is slightly different than the OLH used without the DAA Top 360. Ensure the OLH is configured for use with the DAA Top 360.

<i>Standard OLH</i>	<p>A diagram showing the standard OLH assembly, which includes the extension rail, extension deck, traction boot, and ball-heel slider.</p>
<i>OLH for use with DAA Top 360</i>	<p>A diagram showing the OLH for use with the DAA Top 360. It features a taller rotation axis and a longer extension rail. Labels with arrows point to the Taller Rotation Axis and Longer Extension Rail.</p>

*Figure 8: OLH Variations*

Slide the extension rail of the OLH onto the non-operative side OR table siderail after the DAA Top 360 is secured in place. Slide the extension rail as far as possible (see Figure 5). Then place the extension deck with ball-heel slider and traction boot into the extension rail and insert the locking sleeve and pin to hold the two components together. It is best to handle the extension rail and extension deck separately for easy setup and breakdown.

## Traction Boots and Foot Preparation

The PURIST Traction Boot has a deep-heel design along with four Velcro straps that are intended to hold the foot firmly in place. The same boots are used for the operative and non-operative legs. Prepare the feet by using boot liners or another soft wrap. Coban wrap is also recommended to reduce slippage. The middle strap (across the ankle) is the most important strap to hold the foot in place. After placing the wrapped foot in the boot, fix this strap first by tightly pulling across, then folding the strap over. After this strap, fix the remaining straps.

## Boot Quick Connect

Both the PURIST and the OLH boots are attached via a boot quick connect. To connect the boot, simply guide the lower fixing knob into the lower recess of the boot holder, then slide the boot downwards to fix the upper fixing knob. To disconnect the boot, pull the black locking pin, then pull the boot upwards and away from the boot holder (as shown in Figure 9).

This boot quick connect allows the staff to put on the boots with the patient's legs on the OR table, then pull the patient down and clip both boots into place. The boot quick connect also allows the surgeon to easily check range of motion and hip stability intraoperatively and return the leg to its exact original position.



Figure 9: Boot Quick Connect

## Suction Cups and Locking Castors

The PURIST has 4 locking castors that should all be locked once the PURIST is in position. In addition to the locking castors, The PURIST has suction cups that add stability to the device. To engage the suction cups, the operator should pull the booms all the way out, stand on the boom, then flip the toggle lever down with their other foot. The suction cups have loss-of-vacuum indicators – ensure that these are depressed (no red showing) for proper suction cup attachment. If these indicate loss of vacuum (show red), clean the floor and each suction cup and try to engage them again.



Figure 10: Suction Cups

## Height Adjustment

PURIST height is controlled by the height adjustment hand wheel. Use this to match the height of the operative traction boot (attached to the PURIST) and the non-operative boot (attached to the OLH and OR table). The height adjustment hand wheel can also be used to apply leg flexion if necessary.

## Drape Holder

The drape holder helps ensure that the PURIST functions are easily accessible during the operation. Roll the drape and clip it to the drape holder to create a free space under the drape for the operator to function the PURIST.

*\*Note: Before each case, review the PURIST Pre-op Checklist.*

## Surgical Functions

The PURIST has 4 surgical functions: **Traction, Rotation, Extension, and Adduction / Abduction**. The operator should stand directly behind the PURIST for simplest operation of these functions.

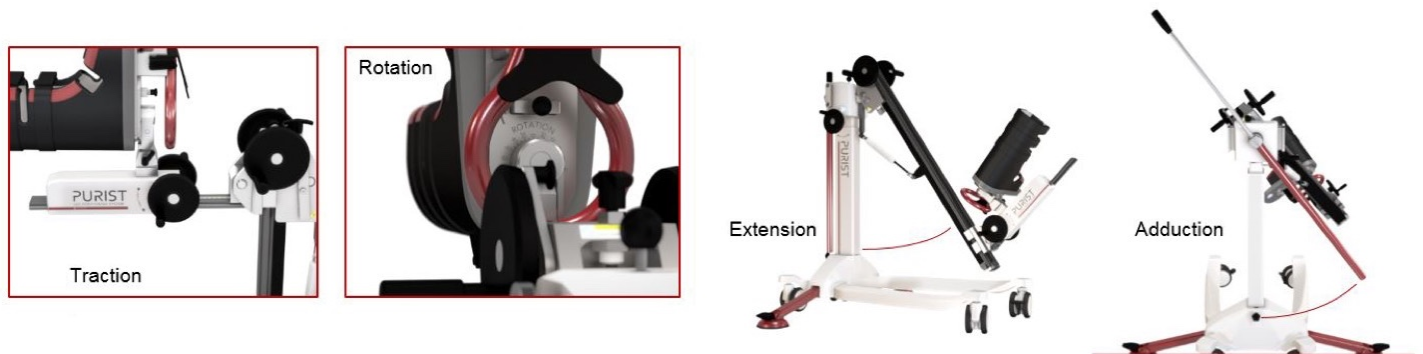


Figure 11: PURIST Surgical Functions

### 1. Traction

The PURIST has controls for fine and gross traction. Fine traction is controlled with the traction hand wheel, and gross traction is controlled by pulling the red handle. All traction is measurable in millimeters on the traction rail up to 130mm. Most surgeons use less than 80mm of traction. To reduce traction, the operator must use the fine traction hand wheel. The operator should push the traction slider block toward the patient while rotating the hand wheel to remove traction. Less traction often provides better results than more traction.

### 2. Rotation

Rotation is controlled by the rotation lever in increments of 10°. While holding the red handle (rotation grip) with both hands, depress the thumb-operated rotation lever, rotate to the surgeon-specified angle, and release the rotation lever to lock in the desired position (you will notice the mechanism click into place). Normal boot positioning allows 120° of rotation, while offset +/- 20° boot positioning allows 140° of rotation with the rotation function alone. Rotation of up to 180° is possible when using the offset boot position and 40° of adduction.

The surgeon can control gross traction and rotation through the drape. The PURIST operator can also simultaneously apply gross traction and rotation – a useful function when the surgeon is reducing and dislocating the hip.

#### **Reduce Hip:**

*Traction and Internal Rotation*

#### **Dislocate Hip:**

*Traction and External Rotation*

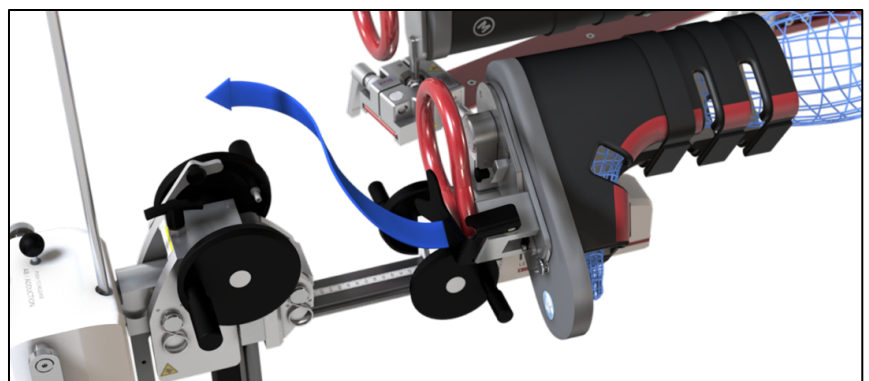


Figure 12: Combined Traction and Rotation Function

### 3. Extension

The extension locking lever must be unlocked before the case (lift up lever and rotate a quarter turn). This allows the pendulum to extend away from the PURIST base and follow the natural arc of the leg during extension. The gas strut supports this compensating movement. The PURIST automatically removes traction during extension and automatically restores traction at 0° extension as a safety feature.

Leg extension is controlled by the extension hand wheels. To extend the leg, pull up on the extension latch with the left hand and rotate the extension wheel clockwise with the right hand. To return the leg to the neutral position, use both hands to rotate both hand wheels counter-clockwise. There is no need to hold the extension latch when raising the leg due to its ratcheting design.

### 4. Adduction / Abduction

Adduction and abduction are controlled with the black release knob and red lever at the back of the PURIST. To abduct or adduct the leg, first pull up on the adduction / abduction lever handle. The added length will give the operator more leverage. Then push the release knob and move the lever. The operator can use his/her leg on the bottom red part of the lever and their hands on the top part to get more leverage if necessary. The amount of adduction / abduction can be read on the back of the PURIST – in increments of 10°, up to 40°.

## Storage and Maintenance

After the case, clean all components and attach the OLH to the PURIST side rails for simple storage. Replace the perineal post pad on the DAA Top 360 after ten uses.

## **Modular Design and Simple Serviceability**

The PURIST has a modular design and can be assembled and disassembled without tools. If an issue arises with any specific component, IOT can ship you a new component quickly, minimizing any service downtime. Please let us know if you have any other questions about the PURIST Leg Positioning System.



*Figure 13: PURIST Components*