

PURIST

+ SWISS MADE

In-service Summary

The operator should read and understand the owner's manual in its entirety before using the PURIST.

Overview

The PURIST Leg Positioning System is designed specifically for anterior total 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 2 x 3 ft.



Figure 1: PURIST Model

OR and Patient Setup

Follow all requirements of the OR table. Set up the OR table so that the patient's center of gravity is over the table pedestal for maximum stability. This can be achieved by translating the bed or flipping the table orientation 180°.

Opposite Leg Holder

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 from the pivot bearing and the 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.

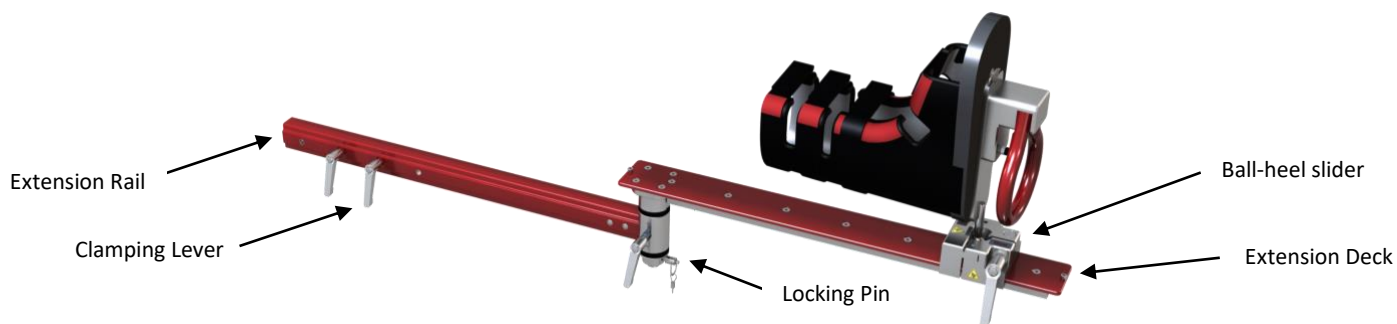


Figure 2: Opposite Leg Holder

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.

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 allows for full adjustment of foot plantar flexion, dorsiflexion, inversion, and eversion.

Perineal Operative Post

The Perineal Operative Post (POP) attaches to the OR table side rail (operative leg side) and provides counter-traction. The sidebar is radiolucent, allowing for C-Arm use. The femoral support is designed to enhance femoral exposure. The center of the femoral support is offset, allowing for 3 different height settings based on its rotation. These height settings are locked in place with the adjustment teeth. The femoral support assembly height should be set so there is a gap between the patient's leg and the femoral support pad when the leg is not extended. When the leg is extended the leg contacts the femoral support pad, which functions as a fulcrum to lift the femur and improve exposure. The POP can be configured for the opposite hip by removing the adapter rail, flipping it 180°, then reattaching it to the rest of the POP. **Note: POP not used with MP XRAYCER.*

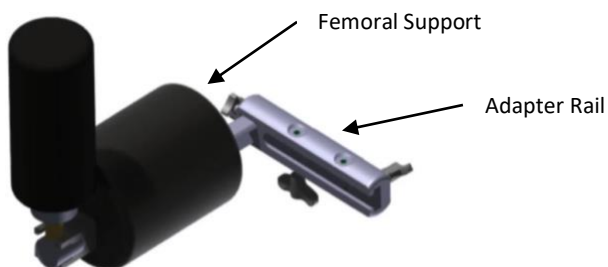


Figure 3: Perineal Operative Post

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, simplifying changeover for bilateral THR. 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.

This boot quick connect allows the staff to put on the boots with the patient's legs on the OR table, then simply 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 4: 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 when applying traction. To set 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.



Figure 5: 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. Simply 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 and maintain sterility.

**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 6: 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 – pulling more than 100mm of traction is rarely useful. To reduce traction, the operator must use the fine traction hand wheel. Sometimes the operator needs to push the traction slider block toward the patient while rotating the hand wheel to remove all 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

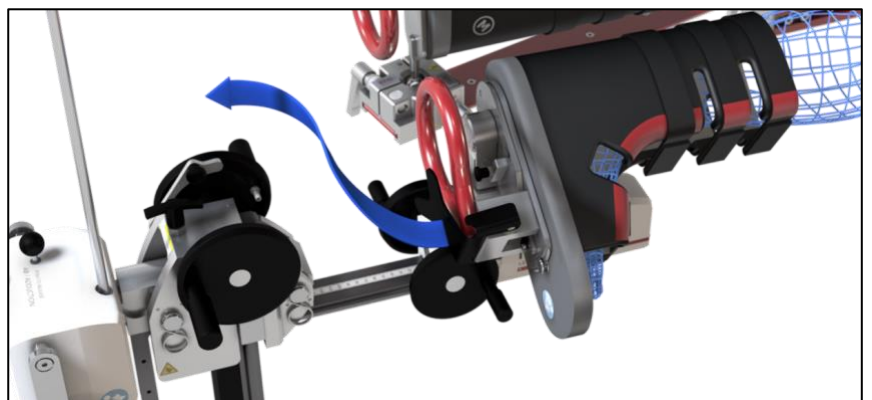


Figure 7: Combined Traction and Rotation Function

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 extension pendulum is designed to make it impossible to drop the leg. It also automatically removes traction during extension and automatically restores traction at 0° extension. These safety features are unique to the PURIST.

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. Maximum extension is not always necessary to provide optimal femoral exposure. 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°. Maximum adduction (40°) is not always necessary to provide optimal exposure.

Storage and Maintenance

After the case, clean all components and attach the POP and OLH to the PURIST side rails for simple storage.

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 8: PURIST Components