

Rolimeter™ 50A

# Operator's Manual

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for measuring anterior/posterior knee laxity





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## Introduction

The Aircast Rolimeter is designed for measuring anterior and posterior knee joint laxity during Lachman, anterior drawer, and “step off” tests. The device is constructed of stainless steel and can be sterilized if desired. Its simplicity of design, ease of use, and pricing make the Rolimeter an ideal cost-effective alternative.

## Design Philosophy

Measurements made with the Rolimeter have been found to be reliable by various authors: “The Rolimeter was as accurate as the KT-1000 in differentiating an ACL deficient knee from a normal knee. In patients with chronic ACL deficiencies, there were no significant differences between the two devices, with a strong correlation for side to side differences. We conclude that the Rolimeter, when compared with the KT-1000 is a valid method of assessing anterior laxity of the knee when using maximum manual force.”<sup>2</sup>

These findings are confirmed by another study, “The statistical evaluation[...] showed no significant difference between the exactitude of measurement between the Rolimeter and the KT-1000.”<sup>1</sup>

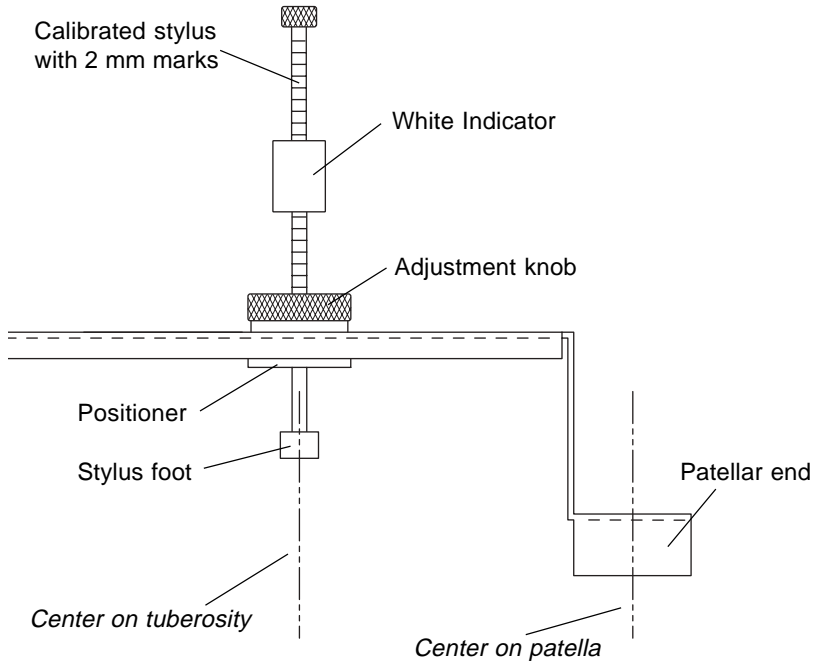
## Function

The Rolimeter is applied with the ends of the device positioned on the mid patella and tibia (*see Application*). A slide indicator on the calibrated stylus serves as a reference. The displacement of the stylus during knee manipulation provides a specific measurement of knee laxity.

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## Rolimeter Features



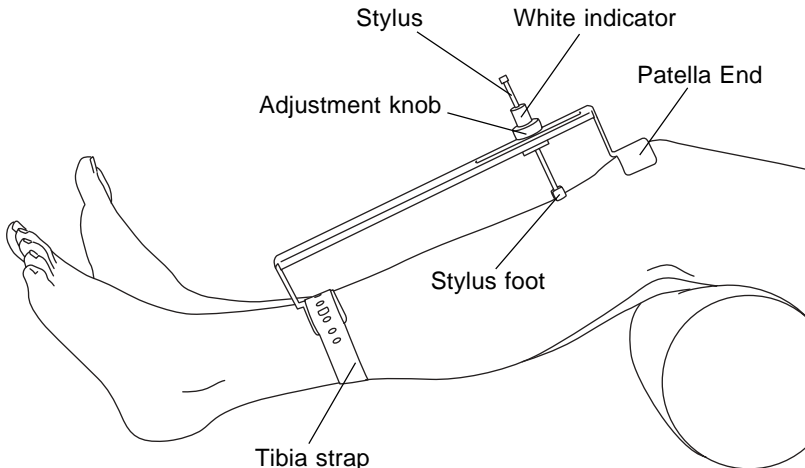
## Application

### ① Prepare Rolimeter

Open tibia strap.

### ② Apply Rolimeter

Place pillow under patient's thigh to achieve 25° of flexion. Make sure that the patient's muscles are relaxed. Position the Rolimeter on the injured lower leg aligning patella end on mid patella and wrapping the strap around the tibia. Loosen adjustment knob and slide stylus so that stylus foot rests against the center of the tibia tuberosity. Tighten adjustment knob to secure stylus position. Slide white indicator against the adjustment knob.



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## Operation

The Rolimeter is designed for measuring anterior and posterior knee joint laxity during Lachman, anterior drawer, and “step off” tests.

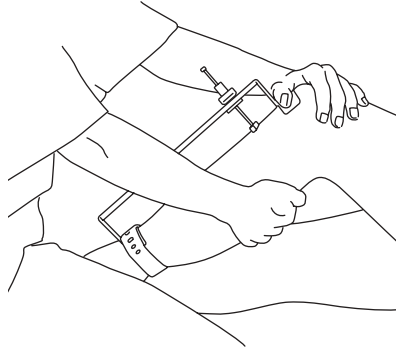
### Lachman Test

Apply the Rolimeter to injured leg. Place pillow or examiner’s knee under patient’s thigh to achieve 25° of flexion. Make sure that the patient’s muscles are relaxed. Precondition the knee by applying posterior translation force to the tibia three times. After preconditioning, ensure that the stylus foot rests against the center of the tuberosity, then slide the white indicator against the adjustment knob. The initial position is now calibrated. Perform a “manual max” by lifting the lower leg (anterior tibial translation). The extent of translation can be read on the calibrated stylus in 2 mm increments. Repeat procedure three times, with the patient fully relaxed, and take an average of the readings.



### Anterior Drawer Test

Apply the Rolimeter to the injured leg and hold the knee in 80° of flexion. Fix the foot in position by sitting on it. Precondition the knee by applying posterior translation force to the tibia three times. After preconditioning, ensure that the stylus foot rests against the center of the tuberosity, then slide the white indicator flush against the adjustment knob. While holding the Rolimeter in place, lift the tibia with a maximal manual force to perform the anterior drawer test. The extent of translation can be read on the calibrated stylus in 2 mm increments. Repeat procedure three times and take an average of the readings.

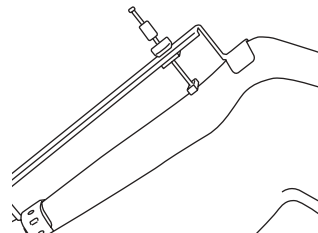
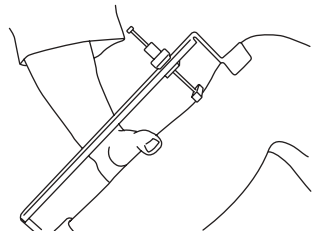


### “Step Off” Test

(assessment of the dorsal translation)

Calibrate the Rolimeter by applying it to the injured leg, adding a posterior force. Ensure that the stylus foot rests against the center of the tuberosity, then slide the white indicator against the adjustment knob.

Apply the Rolimeter to the uninjured leg (the stylus foot will displace anteriorly). The “step off” (side-to-side difference) can be read on the calibrated stylus in 2 mm increments.



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## Service

In the event of a problem occurring with the Rolimeter, return the unit, in the original container, to Aircast for repair or replacement. Replacement shipping containers are available through Aircast Customer Service.

For orders or service, please contact Aircast Customer Service at:

**Phone: (800) 526-8785**

**Fax: (800) 457-4221**

**Phone: (908) 273-6349**

**Fax: (908) 273-1060**

or write:

**Aircast Incorporated  
92 River Road  
P.O. Box 709  
Summit NJ/USA 07902-0709**

## Warranty

**Satisfaction** – Aircast will provide prompt refund for any product that does not satisfy the physician for any reason whatsoever.

**Durability** – Aircast will provide replacement parts for any Rolimeter that becomes unserviceable for any reason for a period of one year from date of sale provided the worn part is returned for analysis.

## Maintenance

The following procedures should be performed before each use of the Rolimeter.

1. Check that the stylus slides through the adjustment knob and positioner with only slight pressure, and does not bind.
2. Verify that the white indicator slides over the stylus with only slight pressure, and does not bind.
3. Verify that the stylus, adjustment knob, positioner, and white indicator remain in position when adjusted.
4. Examine strap for tears or cracks.

If the Rolimeter fails any of these procedures, return to Aircast for prompt repair or replacement. **Do not attempt to service Rolimeter.**

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## Cleaning

To ensure reliability and functionality of the Rolimeter, clean before initial use and after each procedure using either the Manual or Automated method.

### Manual Method

1. Soak in an enzyme cleaner suitable for stainless steel instruments.
2. Wash in surgical detergent and disinfecting solution at a temperature of 86°F to 95°F (30°C to 35°C). Remove any contamination from body fluids or tissues using a soft brush.
3. Place in an ultrasonic bath with fresh detergent solution for approximately 10 minutes, or follow “Automated Method” below if using an automatic washing cycle suitable for stainless steel devices.
4. Rinse thoroughly in a stream of fresh tap water followed by towel drying. The Rolimeter may be treated with instrument lubricant.

### Automated Method

This method is for use with an automatic washing cycle suitable for stainless steel devices.

<u>Cycle</u>	<u>Time</u>
1. Rinse/Wet Cycle Cold Water	1 minute(s)
2. Wash 176°F (80°C)	12 minute(s)
3. Rinse Cycle	1 minute(s)
4. Rinse Cycle	12 minute(s)
5. Final Rinse	2 minute(s)
6. Rinse with Demineralized water 176°F (80°C)	2 minute(s)
7. Dry 199.4°F (93°C)	10 minute(s)

## Sterilization

The Rolimeter is supplied unsterilized. To sterilize, steam autoclave prior to each use. Steam autoclave at a temperature of 270°F to 284°F (132°C to 140°C) for a minimum of 6 minutes (pre-vacuum). It is the responsibility of the end user to assure sterility of the product when using sterilization process recommended, since bioburden and sterilization equipment will vary.



**After steam sterilization, allow Rolimeter to cool before applying to patient.**

## Latex

All components of the Rolimeter 50A are latex-free.

## Sizing

The Rolimeter is one-size-fits-all.

## References

1. Balasch H, Schiller M, Friebel H, Hoffmann F: Evaluation of Anterior Knee-joint Instability with the Rolimeter. Submitted for publication.
2. Ganko A, Engebretsen L, Ozer H: The Rolimeter: A New Arthrometer Compared with the KT-1000. Submitted for publication.

## Notice

Use of the Aircast® Rolimeter™ ligament test device in the United States in any manner other than for the passive anterior drawer test specifically described in the 'Instructions for Using Your Aircast® Rolimeter™ Ligament Test Device' may result in a claim of patent infringement under U.S. Patent No. 4,583,555 which could result in a finding of willful infringement, making the infringer liable for increased damages and attorney fees. Aircast, Inc. expressly disclaims any duty, obligation, responsibility, or liability with regard to any claim of infringement that might arise from the use of the Aircast® Rolimeter™ ligament test device in the United States in any manner other than as described in the 'Instructions for Using Your Aircast® Rolimeter™ Ligament Test Device'."

## Notes



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