

# 4R170 Sliding Adapter

Set socket flexion more accurately and easily

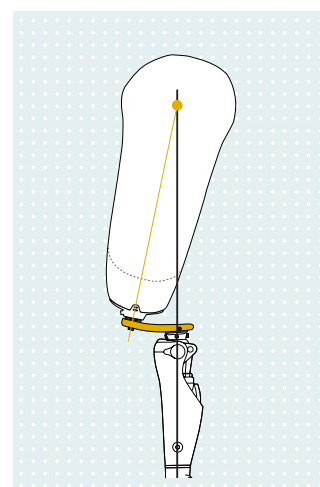
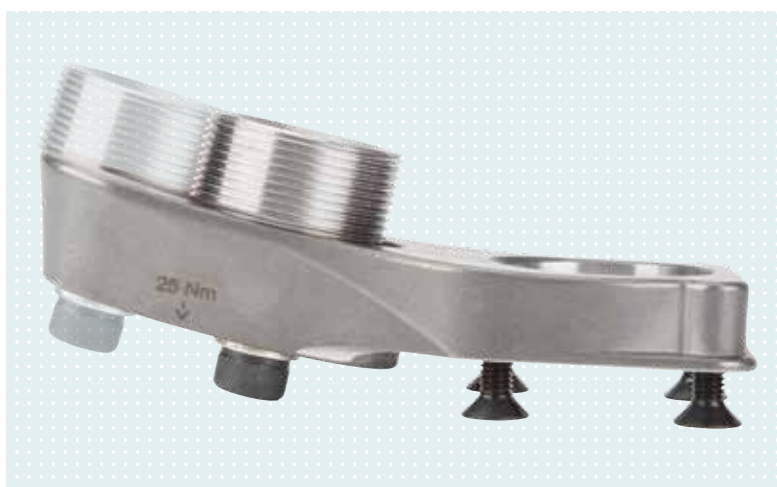


Quality for life

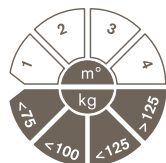
# 4R170 Sliding Adapter

4R170=1 and 4R170=2 Sliding Adapters help you optimise the alignment of your prosthesis so you get a better fitting quality.

These adapters can be slid along a circular path so you can make fine adjustments to the socket flexion position in transfemoral prostheses.



## Advantages at a glance



≤ 150 kg

- Fast, easy changes to socket flexion position in transfemoral prostheses are possible through the ability to make adjustments along a circular path
- Two adapter versions (for smaller and greater flexion positions)
- Suitable for use in trial prostheses as well as for permanent use
- 4° adjustment range, socket flexion angle can be changed at any time
- Complex operations for shifting socket adapter are only necessary when significant corrections are made to socket flexion position
- Precise adjustments can be made in sagittal plane
- Settings can be reproduced (scale)
- By positioning Sliding Adapter 300 mm under socket reference point, change in the length of prosthesis as socket flexion angle changes is negligible
- Can be used for a body weight of up to 150 kg (330 lbs)

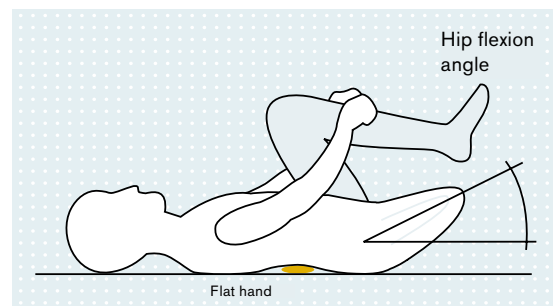
# Setting socket flexion position

## Prosthetic alignment basics

### 1 Determination of hip flexion angle through Thomas test

The patient's hip flexion angle should be determined before beginning the prosthetic alignment. This is necessary so that the socket takes into account the flexion position of the residual limb (and recommended angle addition, see item 3) and can therefore be positioned appropriately.

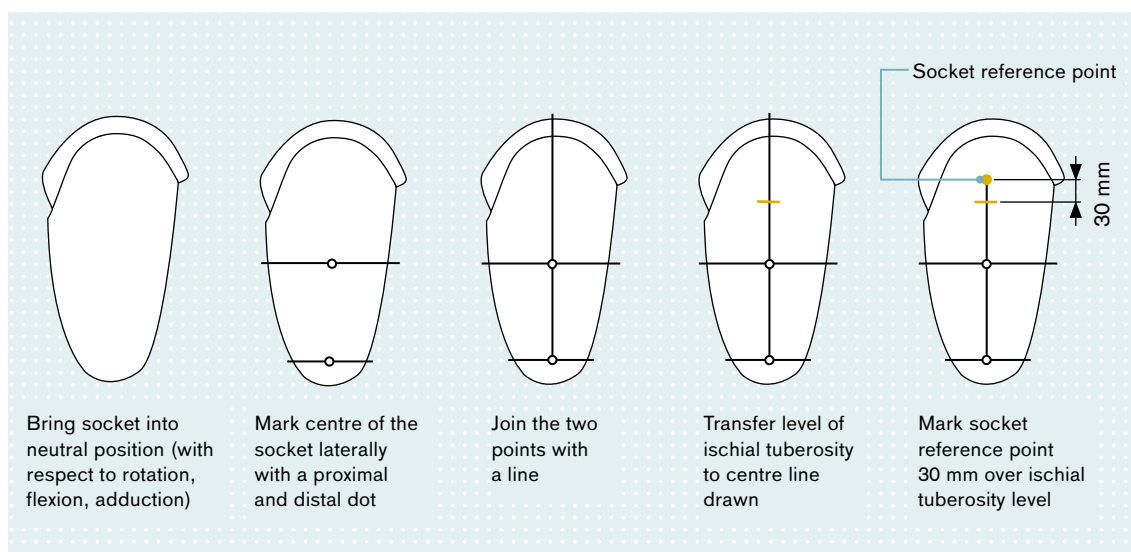
- Flex contralateral knee and hip joint
- Place flat hand under lumbar spine
- Flex residual limb until hollow back disappears
- Carefully bring residual limb into extension until lumbar spine starts to flex back in direction of hollow back
- Determine flexion angle in °



Thomas test

### 2 Marking socket to determine socket reference point

In preparation for socket positioning under the bench alignment of the trial prosthesis, the socket reference point must also be determined and marked on the socket.



Bring socket into neutral position (with respect to rotation, flexion, adduction)

Mark centre of the socket laterally with a proximal and distal dot

Join the two points with a line

Transfer level of ischial tuberosity to centre line drawn

Mark socket reference point 30 mm over ischial tuberosity level

### 3 Socket positioning

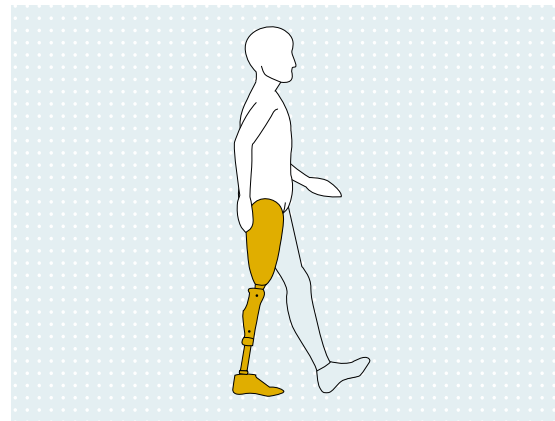
Two essential aspects should be noted in the following socket positioning at bench alignment:

- a) The socket reference point must be positioned on the alignment reference line in order to set socket flexion position and for further prosthetic alignment.
- b) The socket should take into account the flexion position of the residual limb as well as the recommended angle addition.  
The latter is a requirement for the patient to be able to walk through stance phase (terminal phase) with no compensatory movements or at least as few as possible.

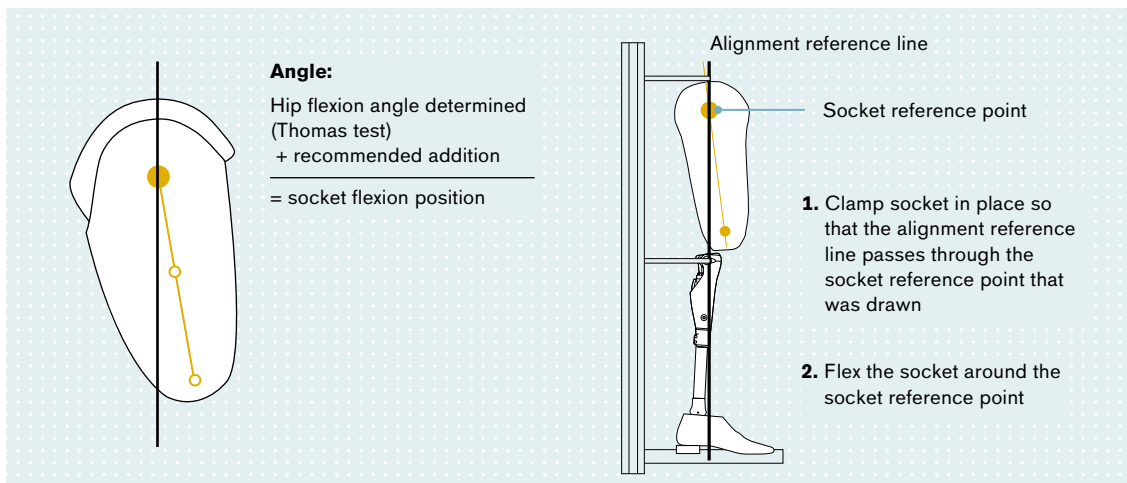
#### Recommended additions

Socket preflexion (addition in °) recommendations are based on clinical observations and allow the patient to stand with one leg retreated in terminal stance phase as best as possible without compensatory movements (e.g. hyperlordosis).

Hip joint state	Addition in °
Freely movable	+3° to +5°
With existing flexion position	+5° to +10°



#### Setting socket flexion



The bench alignment of the prosthesis, including socket positioning, can be carried out with equipment such as the PROS.A.Assembly 743A200 alignment device whose innovative socket fixture makes alignment work easier.

#### Related information:

- PROS.A.Assembly 646S1=3.08D
- 647H534

After socket flexion is set correctly in the socket receiver of the PROS.A.Assembly, the socket adapter can be put on the 4R170 sliding unit and positioned so that the sliding unit is in mid-position. As a result, an adjustment range of 2° is still possible if required, in both the flexion direction and extension direction.

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• **Tip:**

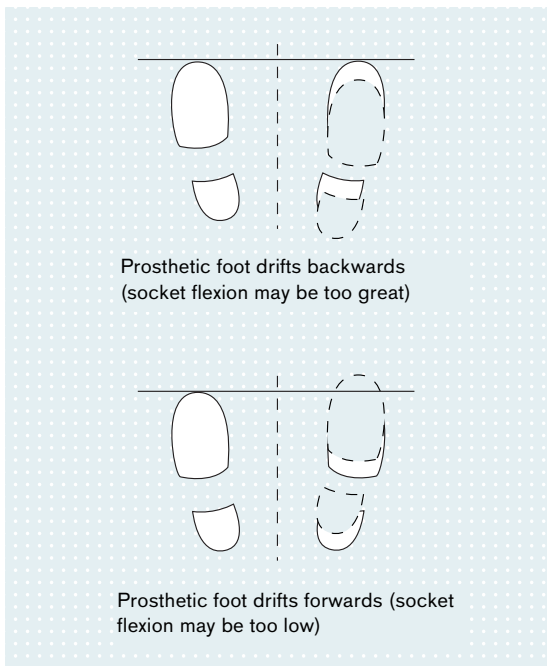
Position the 4R170 Sliding Adapter 300 mm distally from the socket reference point, or as close to that as possible. Depending on the design, the length of the prosthesis then remains virtually unchanged despite changes in socket flexion position.

## Setting socket flexion Testing and optimisation

After bench alignment and static alignment, appropriate clinical tests can be performed during the dynamic trial fitting to check socket flexion position and optimise it using the 4R170=1 or 4R170=2 Sliding Adapter.

### 1 Testing socket flexion through clinical tests

Tripping and step length tests are very well-suited for checking socket flexion position.



• **A Tripping test**

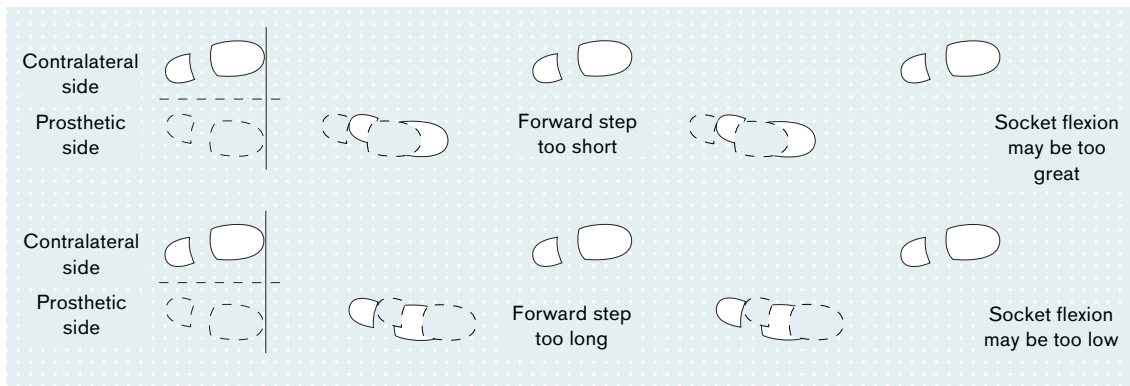
- The patient stands upright, facing front
- The patient lifts and puts weight on feet alternately
- As a result, the residual limb winds up in the most comfortable position

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• **Note:**

- If the prosthetic foot moves back (see contralateral), socket flexion may be too great
- If the prosthetic foot moves forward (see contralateral), socket flexion may be too low

## B Step length test



- The patient walks at an average speed
- Observe step length symmetry between both sides

### Note:

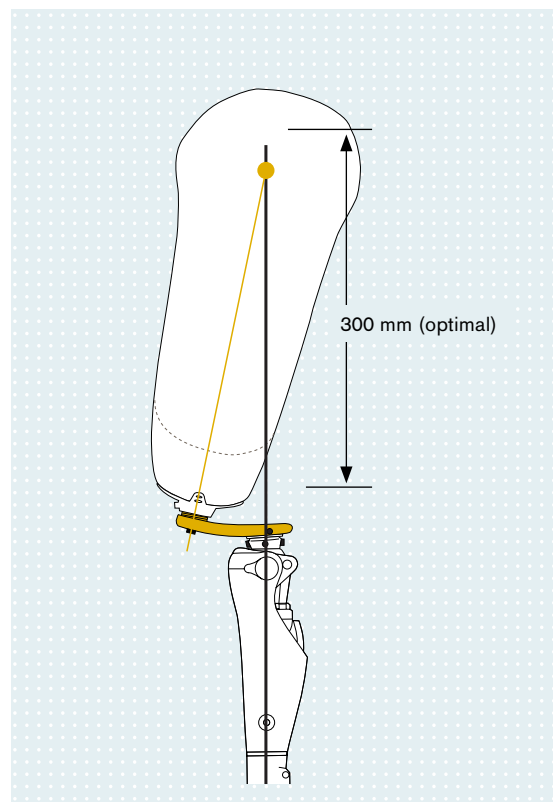
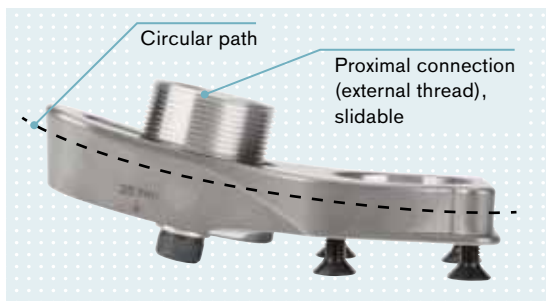
- If the prosthetic step is too short walking forwards and too long walking backwards (see contralateral), socket flexion may be too great
- If the prosthetic step is too long walking forwards and too short walking backwards (see contralateral), socket flexion may be too low

## 2 Using Sliding Adapter to optimise socket flexion position

The Sliding Adapter can be used to optimise socket flexion position in case the clinical tests show a need for this.

Optimisation may be performed in the extension and/or flexion direction, depending on how the sliding component is positioned.

All that is necessary to do this is to loosen the sliding proximal connection with an Allen wrench, move it along the circular path, then re-tighten it.



# Product features

## 1 Two product versions

Two adapter versions are available, depending on the fitting design:

**4R170=1** is suitable for fittings with a greater socket flexion position

**4R170=2** is suitable for fittings with a smaller socket flexion position

Both adapters have an adjustment range of 4°.



4R170\*

## 2 Three connection variants:

Adapters come from the factory with a sliding external thread fitted at the proximal end which can be screwed into the 4R111=N or 4R43 Lamination Anchor.

The 4R173 Pyramid Receiver is available as an accessory. This component allows a connection component with pyramid adapter to be joined to the unit.

A 4R50 Pyramid Adapter with interior thread can be used to produce the connection for the connection component with pyramid receiver.



External thread



4R173



4R50

### Tip:

You can find more information about prosthetic alignment in the following documents available for order:

**646F219=D** Poster, Alignment Recommendations per MOBIS for TF Modular Lower Limb Prostheses

**647H534** Instructions for use, PROS.A. Assembly 743A200 alignment device

**OK1896** Information for technicians, L.A.S.A.R. Posture

## 3 Technical data

Article number	4R170=1	4R170=2	4R173	4R50
Material	INOX stainless steel	INOX stainless steel	INOX stainless steel	Titanium
System height	15 mm	15 mm	42 mm	-1 mm
Weight	550 g	440 g	220 g	70 g
Adjustment range	4°	4°	-	-
Max. body weight	150 kg (330 lbs)	150 kg (330 lbs)	150 kg (330 lbs)	150 kg (330 lbs)

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