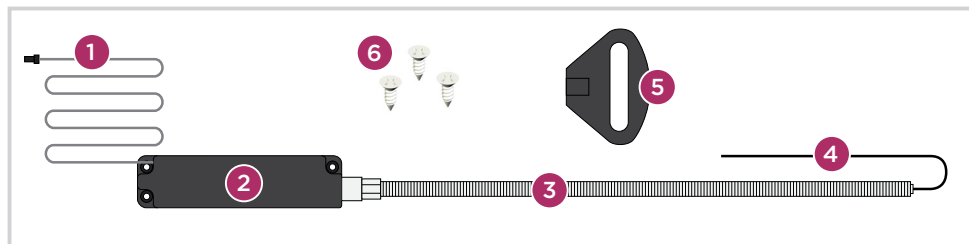


# Linear Transducer

## Technical Instructions



## KEY COMPONENTS



### Linear Transducer Components

- 1 592mm (23.5") in Integrated Cable with Connector
- 2 Linear Transducer Housing
- 3 203.2mm (8") Bowden Sheath with Internal Poly Sleeve
- 4 584mm (23") Spectra® Cord
- 5 25.4mm (1") Plastic Hanger
- 6 (3) #2 x 6.35mm (1/4") Phillips Flat Head Self-Tapping Screws

## COMPATIBILITY

Compatible with the Espire Elbow Pro and Hybrid models.

## OVERVIEW

The Steeper Linear Transducer provides proportional servo control to a prosthetic elbow. It consists of a linear potentiometer in a small housing with an attached 200mm (8") Bowden sheath. A Spectra cord (about 584mm or 23") exits the sheath and is supplied with a 1" plastic hanger for attaching to the harness. Pulling the cord changes the resistance of the potentiometer, thus changing the speed and position of the device.

## MOUNTING THE TRANSDUCER

Care should be taken to mount the transducer in a location which will not require the Bowden cable to have sharp bends, thus minimising friction of the Spectra cord.

### METHOD 1 TEST SOCKET

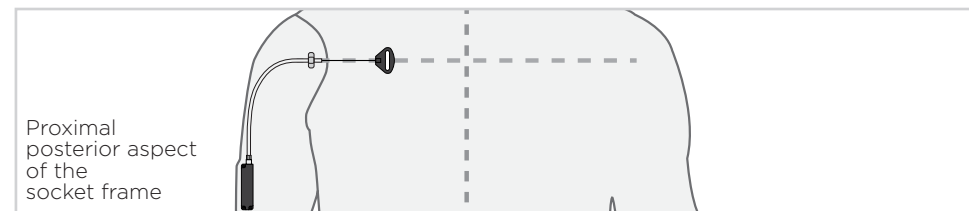
Locate or create a flat surface on the prosthesis and mount the transducer using the provided self-tapping screws (finger-tighten).

### METHOD 2 FINAL LAMINATION

A cavity can be moulded into the outer socket and the transducer can be placed between the inner and outer sockets to conceal it. A hole exiting the socket must be provided.

## ROUTING THE SPECTRA CORD

The transducer is supplied with the Bowden sheath attached. Route the sheath along the socket to the desired anchor point. The anchor point is usually placed right over the abduction axis of rotation on the posterior wing of the socket.



## ADJUSTING THE SPECTRA CORD LENGTH

The Spectra cord should remain at full length until you are satisfied with the operation. It can be shortened after the preferred length has been determined. Prevent the Spectra cord from fraying by applying a drop of CA glue to the cut-end of the threads.

## CONNECTION TO THE ESPIRE ELBOW

Refer to the **Espire Elbow Technical Manual - Pro and Hybrid** for information on connecting the linear transducer to the input connector board ([www.steepergroup.com](http://www.steepergroup.com)).

Refer to **Espire Elbow Hub App Instructions** for information on programming the linear transducer ([www.steepergroup.com](http://www.steepergroup.com)).

## ACTUATION OF THE TRANSDUCER

Prosthetists should instruct the user on the appropriate motion sequence. Forward motion of one or both shoulders (protraction) takes the slack out of the cord and then moves the transducer mechanism.

- If the user pulls the transducer cord rapidly, the prosthesis moves rapidly
- If the user pulls the transducer cord gently, the prosthesis moves more slowly
- The maximum travel of the Spectra cable is 13 mm (1/2 inch)

## WARRANTY

The Steeper Linear Transducer is covered for one year. Refer to Steeper Group Limited Warranty - Elbows for more information or visit [www.steepergroup.com](http://www.steepergroup.com).



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