

Modular Arm System - Endoskeletal



Modular Arm System

- **Lightweight Endoskeletal System**
- **Modular construction**
- **Strong and durable**
- **Simple, fast assembly**
- **Full range of movement**
- **Adjustable friction for**
 - **Wrist flexion and extension**
 - **Both shoulder rotations**
 - **Internal and external rotation**
- **Compatible with most TD's**
- **Excellent for trial fittings**
- **Button or Cable Release Elbow Lock**

The Modular Arm System is truly modular with many interchangeable parts. It is designed for rapid assembly and is light-weight and cosmetically appealing. It requires minimal harnessing. Two shoulder joint options are available for shoulder disarticulation prostheses. One is the Friction Shoulder Joint (MA150) and the other is the LTI Locking Shoulder Joint (SJ90). Three lamination housings are offered to connect the user's socket to the elbow with a connecting tube or threaded collar. An adjustable clamp on the collar provides humeral rotation friction. The elbow unit locks in one of four positions with a simple manual push-push lock-unlock or cable actuation. The forearm tube is an integral part of the elbow. It is cut to length and then

fitted with a wide choice of wrist and hand adapters enabling it to accommodate most manufacturer's hands and terminal devices. The Modular Arm System is finished with a soft and continuous surface. The inner cosmesis is built from four foam components, a cover for the upper arm, a cover for the lower arm and two soft wedges at the elbow. The arm foams are molded from Plastazote™. These foam covers are supplied over-sized so that they can be shaped to approximate the contralateral arm. The outer cover is available in a choice of two materials; colored elastic stockinet or reinforced silicone fabric. The latter is available in a choice of four colors. The silicone covers wipe clean with a light application of soap and water.

Shoulder Joints:



MA150 Friction Shoulder Joint L/R

*Flexion and abduction friction are adjustable
Motion limited to -15° in extension and 45° in flexion
Three steel attachment struts measure 1.5 x 12 x 100mm
Attaches to inside of Connecting Tube with wedge
Weight: 157 grams*

Modular Arm System - Endoskeletal

LTI Locking Shoulder Joint:

Many high level amputees like the comfort of a free swinging shoulder joint. The LTI Locking Shoulder Joint is fully described in the Shoulder Joint section. To fit it to the Modular Elbow MA150, you will need the SJ90 Shoulder Joint itself along with an SJ62 Endoskeletal Adapter Kit and a 10R2=1/2-20 Adapter which provides the 1/2-20 thread and friction collar. The female thread on this adapter attaches to the stud on the MA151 Elbow and the adjustment screw controls humeral rotation friction.



Above-Elbow Components: *(Select components according to residual limb length)*

Very Long Limb—Attach the MA163 1 1/2" Friction Housing directly to the 1/2-20 stud on the (MA151) Elbow. The top of the Housing will be 46mm above the Elbow axis. (The larger Housings prevent full elbow flexion.)

Long Limb—Attach the MA155 Extended Female Adapter to the Elbow stud. Any of the Housings, MA163 to MA165, can then screw onto the Adapter to give an axis to top of Housing length of 70 to 114mm.

Short Limb— Attach one of the three Housings to an MA153 Male Tube Adapter. The Adapter goes into the MA152 Connecting Tube which attaches to the Elbow stud with an MA154 Female Tube Adapter.



MA163 1 1/2" Friction Housing

MA164 1 3/4" Friction Housing

MA165 2" Friction Housing

*Friction adjustment requires hole in lamination
Only the MA163 will fit directly on top of the elbow*



MA154 Female Tube Adapter, 1/2"-20 Thread

*Adjustment screw to provide friction with 1/2-20 stud.
Attaches to inside of Connecting Tube with wedge*



MA153 Male Tube Adapter, 1/2"-20 Thread

Attaches to inside of Connecting Tube with wedge

Modular Arm System - Endoskeletal



MA155 Female Extension Adapter, ½"-20 Thread

*Adjustment screw to provide friction with ½-20 stud.
Threaded extension is 60mm (2.36") long*



MA152 Connector Tube, 230mm

*Used for humeral section
Outside diameter 15.8mm (5/8")
Inside diameter 12.7mm (1/2")
Cut to appropriate length*

Elbow Units:

The elbow can be positioned at four angles by pushing on the two mushroom shaped lock-unlock buttons on the forearm. These are normally recessed below the surface of the cosmetic covering. Components above the elbow screw onto the ½-20 stud where humeral rotation friction is adjusted by tightening the collar with the female thread.



MA151 Hand Operated Elbow Unit

*Attaches to above-elbow components with ½-20 stud
Elbow axis is only 20mm from plastic guard
Ring on forearm tube may attach a lift post
Push-push lock-unlock moves 10mm side to side
Forearm tube is 5/8" diameter and 300mm long
Forearm may be cut to 210mm (8 ¼") from axis
Weight: 257 grams*



MA15X Cable Operated Elbow Unit

*Attaches to above-elbow components with 25mm clamp
Elbow axis is only 20mm from plastic guard
Ring on forearm tube may attach a lift post
Harness-activated cable to unlock/lock elbow
Forearm tube is 5/8" diameter and 300mm long
Forearm may be cut to 210mm (8 ¼") from axis
Weight: 257 grams*

Modular Arm System - Endoskeletal



MA144 Flexion Bar, Manual Arm

Replace screw on the ring below the elbow mechanism with this post to mount a lift assist cable or a cable for a terminal device

Below Elbow Components:

To use the Modular System for a transradial amputation, attach the Connector Tube (MA152) to the Lamination Collar (MA166) below. For larger diameter forearms, consider the larger Lamination Collars (MA164, MA165). Then select an adapter for the TD. The Elbow forearm tube and the Connecting Tube are the same diameter.



MA166 Lamination Adapter, no rotation

*Supplied with Spring Pin for attachment
May also be used for attaching humeral socket*



MA154 Female Tube Adapter, 1/2"-20 Thread

*Provides pro-supination only
For use with 1/2"-20 male-thread terminal device
Attaches to inside of forearm tube with wedges
With adjustment screw to provide rotation friction*



MA156 Universal Wrist Tube Adapter

*Provides wrist flexion and extension
TD rotation occurs distal to wrist flexion
For use with 1/2"-20 male-thread terminal devices
Attaches to inside of forearm tube with wedges
Two adjustment screws
1st provides friction for 90° wrist flex-extension
2nd provides friction with respect to any 1/2"-20 TD inserted into the collar*

Modular Arm System - Endoskeletal



MA177 Adapter Stud, M12 to 1/2-20 Thread

*Convert passive hand to operate with the Adapters above
by adding this thread Adapter Stud
8.5mm center hole will pass most connectors*



MA162 Spare Spring Pin

Use with MA141, MA142, MA143, MA145 & MA166



MA142 2" Wrist Housing

MA143 2.13" Wrist Housing

*For use with wrist collars that cement in place
MA142 will accept an Otto Bock 10S1=45 Wrist Collar
MA143 will accept an Otto Bock 10S1=50 Wrist Collar
A hole is provided to pass wires
Supplied with spring pin for attachment*



MA141 Oval Hand Connector Plate, no rotation

Supplied with spring pin for attachment

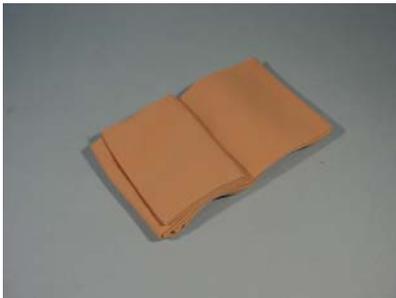
Modular Arm System - Endoskeletal

Cosmetic Covering Options:



MA131 Foam Cosmeses

Two Plastazote™ sleeves & two foam elbow wedges (not shown)



MA132 Stockinet, elastic



MA172 Silicone Cover, medium, dark brown

MA173 Silicone Cover, medium, light brown

MA174 Silicone Cover, medium, light flesh pink

MA175 Silicone Cover, medium, suntan

Note: smaller and larger sizes available on request