

**ACCU-Beam®**

**TTI Medical**

**Universal CO2 Laser Micromanipulator**

**P/N 7004**

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**INSTRUCTIONS FOR USE**

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**Colposcope Models 935, 955, 985**

**Non-Sterile / Multiple Use** 

*Caution: Please read all instructions prior to use.*



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## INTENDED USE:

The ACCU-Beam® 7004 Universal CO2 Laser Micromanipulator is intended to be used with articulated arm CO2 surgical lasers and the Seiler Colposcope Model 935, 955, and 985. The 7004 is a surgical tool used primarily for GYN, ENT and Neurosurgery in treatment of disorders such as --

**GYN:** Cervicitis; carcinoma in situ; cervical polyps; condyloma acuminatum; vaginal adenosis; vulvar lesions; neoplasms of the vulva, urethral orifice and cervix; condyloma acuminatum of the vulva, vagina and cervix; leukoplakia of the vulva vagina and cervix.

**ENT:** Laryngeal stenosis; laryngeal granulomas; laryngocele; laryngeal polyps; carcinoma of the larynx, tongue, floor of mouth and palate.



**Neurosurgery:** Glioblastomas; astrocytoma; meningioma; plexuspapillomas; oligodendrogliomas; ependymomas; neurinoma; AV malformations; tuberculoma; metastases; arachnoid cysts; abscesses; cingulectomy; pituitary adenomas.

Pathology and/or surgeon choice will dictate the laser beam spot size and use of the Universal CO2 Laser Micromanipulator. Refer to the user manual of the laser manufacturer for full clinical use information on cleared indications.

## WARNINGS:

1. Always test fire the CO2 laser (with the micromanipulator installed on the microscope and connected to the articulated arm prior to surgery)
2. Never use if the CO2 beam does not strike the same spot as the target beam.

## CARE AND HANDLING

- A Never subject the ACCU-Beam® 7004 Universal Micromanipulator to gas, heat or liquid sterilization. If sterile procedures are indicated, use the appropriate sterile drape. 
- B The mirror and lens may need periodic cleaning. Clean with lens paper or a 100% cotton swab dipped in reagent grade acetone. Optics should be cleaned in a gentle circular motion from the center to the outside.
-  *Caution:* Do not use alcohol or other cleaning agents on optics.
- C Store Micromanipulator in its carrying case (# 7090) or in a dust-free environment.

## INSTRUCTIONS FOR USE:

### **General Description:**


The micromanipulator easily mounts on the optical axis of the Seiler Colposcope 935, 955, and 985 equipped with the 7055 adaptor (Fig.1). The 7055 adaptor is meant to be used with the original equipment handle bar supplied by Seiler. A spacer is provided in the event one does not want to use a handle bar.

The micromanipulator can be rotated 360° to accommodate the desired setup position. The ambidextrous hand rest can be mounted on either side of the joystick for right or left handed use. The fully integrated zoom optics enable the user to adjust the focal point of the laser beam to match the focal length of the objective lens of the microscope or colposcope.

The zoom focusing system will accommodate focal distances ranging between 200mm and 400mm and can be easily defocused for larger spot sizes.

The zoom optics and right angle turning mirror design produce a perfectly coincident HeNe and CO<sup>2</sup> beam.

### **MOUNTING INSTRUCTIONS**

 **Caution:** The ACCU-Beam® 7004 Micromanipulator is a precision instrument which contains delicate optical components and should be handled with care at all times.

**\*\*NEVER SUBJECT THE INSTRUMENT TO LIQUID, HEAT, OR GAS \*\***

**STERILIZATION.**\*\*\* If sterile procedures are indicated, use the appropriate sterile drape. 

**A.** At the distal end of the Seiler Colposcope and below the objective lens remove the fiber optic light cable (Fig 2.) are 2 screws (M4) Used to mount the Seiler handle bar. Remove the 2 screws (Fig.3) and set aside for safe keeping. The 2 holes are used to secure the scope adaptor 7055 and the Seiler handlebar.

**B.** Using the supplied M4 x 60mm screws, push the screws through the Scope Adaptor 7055 Mounting posts and through the holes of the handle bar and secure to the colposcope Using the supplied 3mm Hex Driver (Fig.5). The scope adaptor should be centered over the objective lens and the ID of the adaptor should encircle the outer diameter of the objective lens.

**DO NOT OVER- TIGHTEN THE SCREWS.**



Fig.1



Fig.2



Fig.3



Fig.4



Fig.5



Fig.6

C. Mount the micromanipulator onto the circular groove of the 7055 scope adaptor (Fig.7) And lock by tightening the silver locking thumbscrew (Fig.8). The micromanipulator can be Positioned 360° relative to the objective lens. The preferred positioning is with the joystick Placed at the 6 o'clock position.(Fig.9)

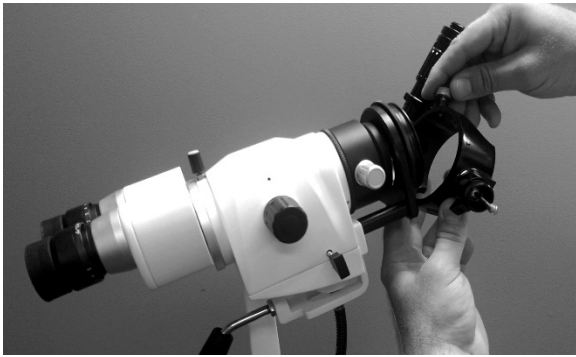


Fig.7

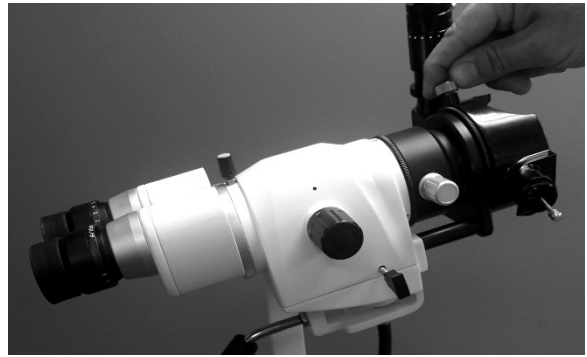


Fig.8

D. The joystick tension adjustment is located at the base of the joystick. The adjustment Fitting can be rotated to tighten or loosen the joystick tension.

E. To rotate the micromanipulator body, loosen the locking screw, rotate into position and tighten the locking screw.

F. Mount the hand rest on the right or left side of the joystick assembly

G. The Zoom Focusing System can be positioned at either the left or the right side of the micromanipulator body. To move the Zoom Focusing System, loosen the 2 lateral set screws and Lower Thumb Screw. Rotate the zoom focusing system 180 degrees. Engage the tip of the lower Thumb screw into the index hole in the right angle adaptor and tighten. Tighten the (2) lateral set screws.

**NOTE: Initially the micromanipulator is aligned to the right.**

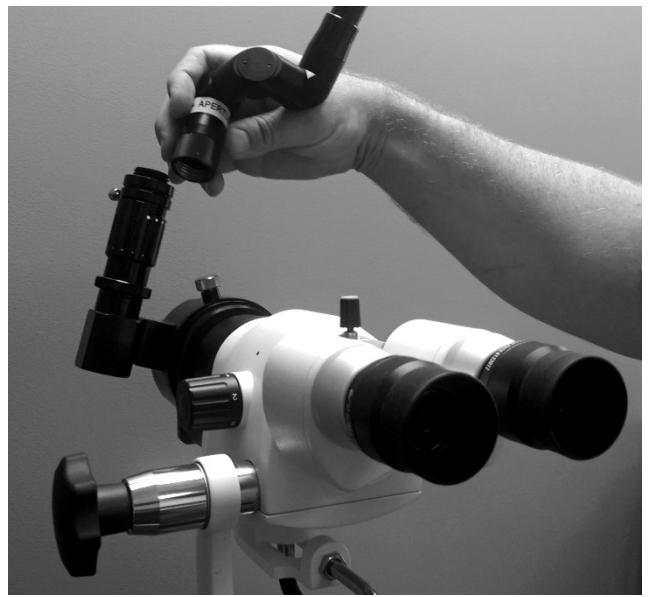
**Switching sides will affect the alignment. Consult your representative before changing.**

H. Remove the dust cap from the Zoom Focusing System and attach appropriate articulated arm thread adaptor, if necessary.

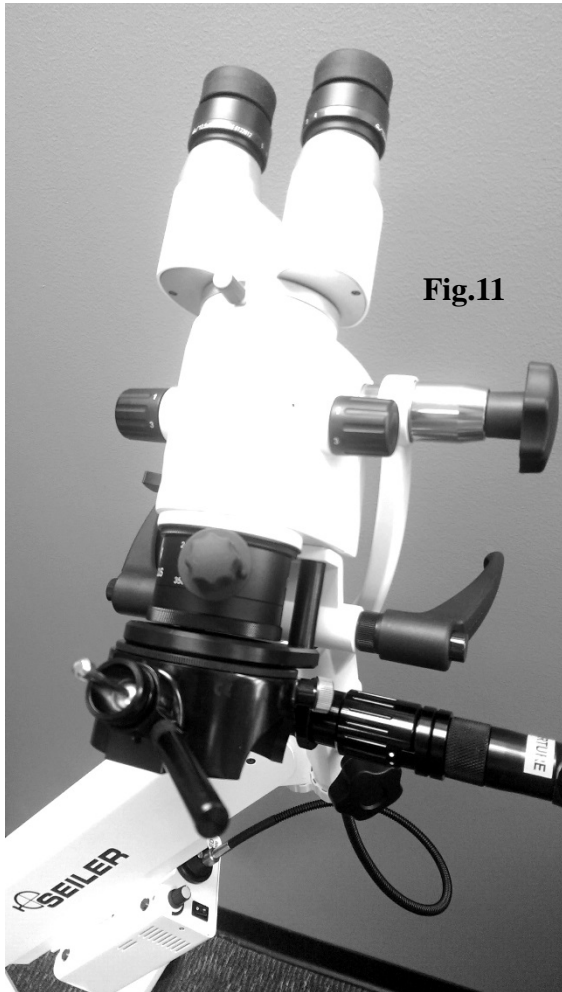
I. Attach articulating arm to thread adaptor or directly to the zoom focusing system and turn on laser. (Fig.10)



**Fig.9**



**Fig.10**



**Fig.11**



**Fig.12**

## PRE-OPERATIVE TEST PROCEDURE

The zoom focusing system is used to adjust the Target and CO2 beams to correspond with the focal length of the microscope's objective lens. Turn laser on.

While viewing through the microscope, adjust the zoom focusing system to set the smallest spot size. Test fire the CO2 beam on a moist tongue blade to confirm coincidence between the Target and CO2 beams. Continue to fire the CO2 beam and adjust the zoom focusing system until the smallest CO2 spot size is confirmed. Set and lock the indicator collar on the outer barrel of the zoom focusing system at the smallest reference spot on the outer barrel. (Fig.13)

Adjusting the zoom system to successively larger spots on the outer barrel will defocus the laser and deliver larger spot sizes accordingly. To return to the smallest spot, turn the outer barrel until stopped by the locked indicator.

The joystick tension adjustment is the ring located at the base of the joystick. The adjustment ring can be rotated to tighten or loosen the joystick tension.

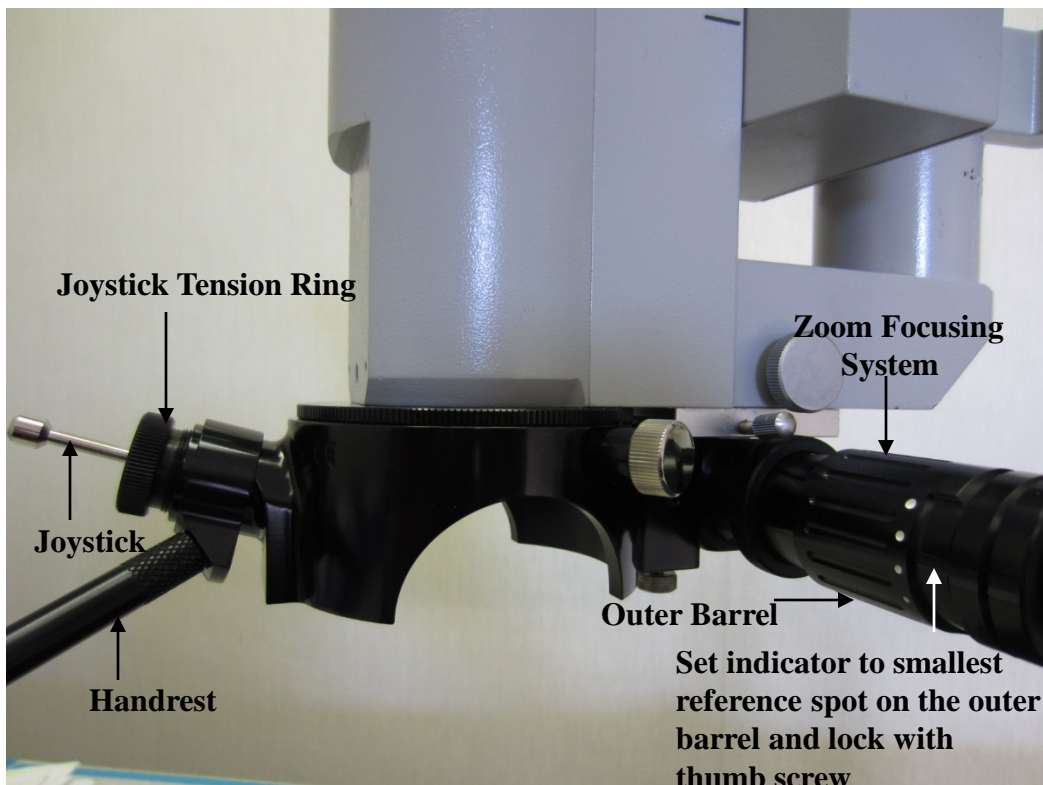
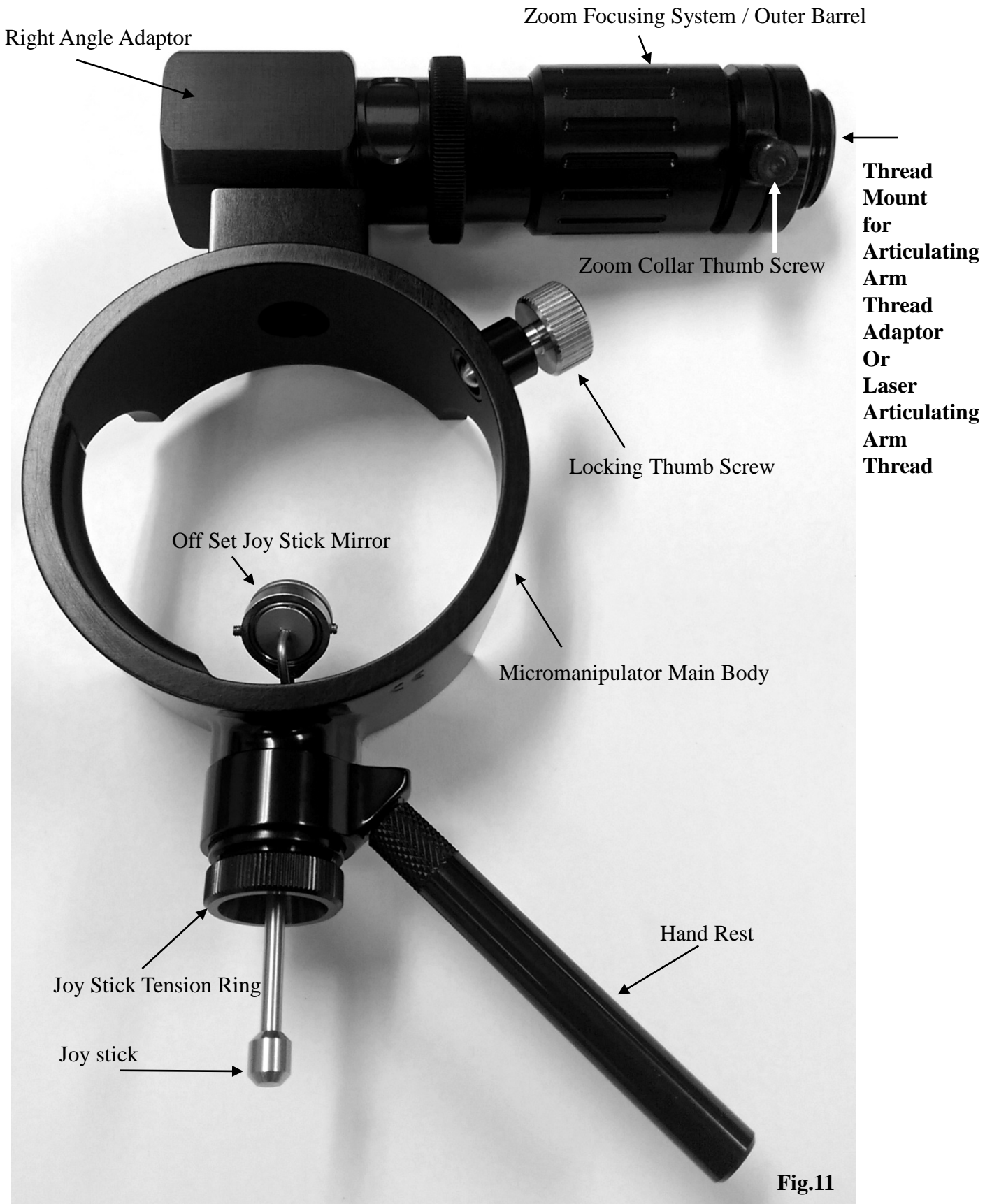


Fig.13



**Fig.11**



Microscope/Colposcope Adaptors

#7055 - Seiler Colposcope (935, 955, 985) Adaptor

Articulated Arm Thread Adaptors

Thread Adaptors are used to connect the Zoom Focusing System to the articulated arm of the following lasers -

- #1101 - Sharplan quick disconnect (1040, 1060, 1100)
- #1102 - NIIC and Heraeus LaserSonics 250Z/500Z
- #1103 - Heraeus/Merrimack LaserSonics/Illumina 40 (Silver Arm)
- #1104 - Coherent/Xanar
- #1106 - Coherent 451
- #1108 - Zeiss
- #1109 - Sharplan Twist-Lock (1020, 1050, 1055, 1075 and Ultra Pulse)
- #1111 - Lasering
- #1112 - LaserSonics LS-500
- #1115 - Coherent XA50
- #1116 - JH Laser
- #1117 - SWOT ML030
- #1118 - Ellman / Sandstone
- #1121 - Intermedic
- #1122 - Syneron CORE
- #1123 - Bison (Korea)

**Note: Sharplan 1060 has two arm versions – 1101 & 1109. Thread Adaptors are not required for Surgilase, Laser Engineering, LaserSonics Illumina 40 (black arm) and Sharplan 720, 733A, 734 and 743 CO2 lasers.**

## PRODUCT SPECIFICATIONS

**Metal - 2024 and 6061 aluminum**

**Lenses - ZnSe (zinc selenide) coated**

**Joystick - ambidextrous with tension control**

**Handrest - ambidextrous and removable**

**Mounting - may be rotated 360° around optical axis of microscope**

**Mirror – 98% reflective index per 100W, 400W energy threshold**

**Focusing system - continuously variable zoom, two lens beam expander combined with a right angle turning mirror. Can be used from either the right or left side.**

**Beam coincidence - Target and CO2 beam on the same spot**

**Spot size - (6mm beam diameter input)**

**Working Distance (mm) 200 250 300 350 400**

**Minimum Ø (mm) .40 .47 .55 .67 .87**

**Maximum Ø (mm) 2.5 3.0 4.5 5.5 7.0**



Authorized Representative per Medical Device Directive

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