

ACCU-Beam®

TTI Medical

**Universal CO2 Laser Micromanipulator
P/N 7004**

INSTRUCTIONS FOR USE

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. 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 operating microscopes and colposcopes. Refer to the list of available mounting adaptors on page 5. The micromanipulator can be rotated 360° to accommodate the desired setup position. The ambidextrous handrest 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 CO² beam.

MOUNTING INSTRUCTIONS

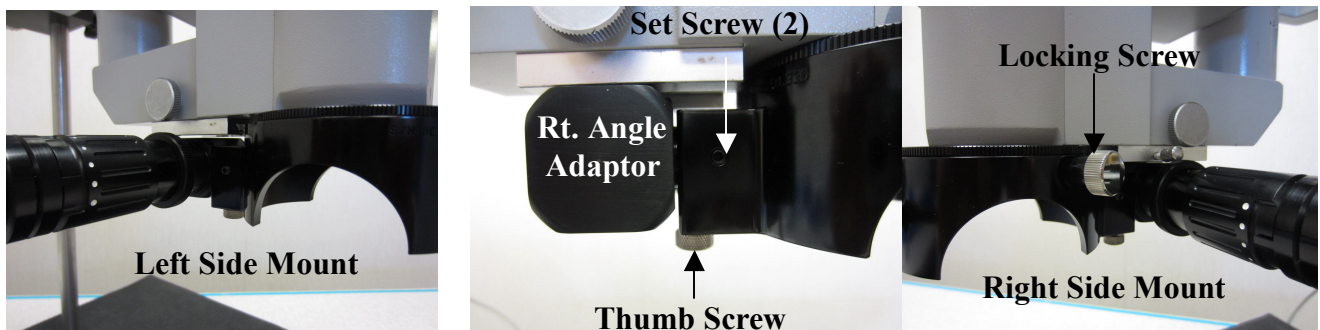
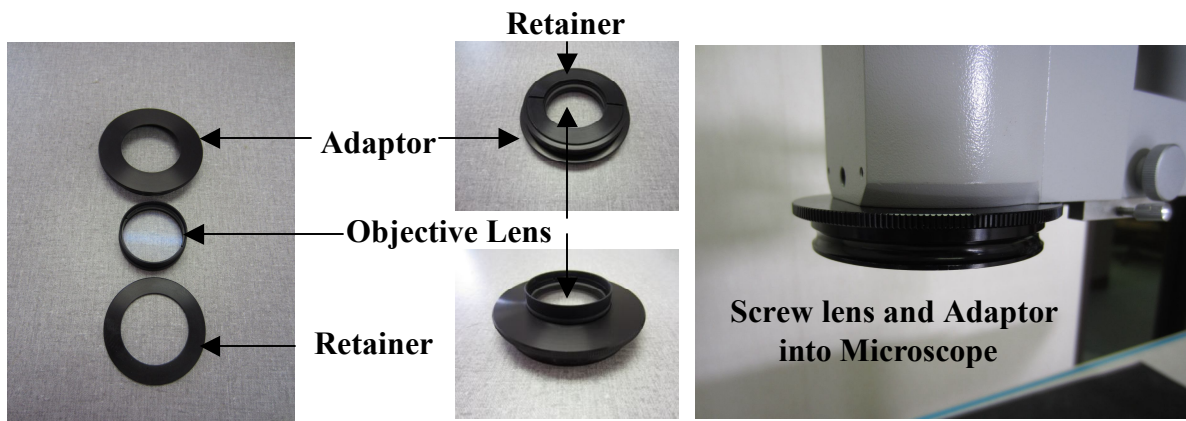
△ *Caution:* The ACCU-Beam® 7004 Micromanipulator is a precision instrument which contains delicate optical components and should be handled with care at all times. *****NEVER SUBJECT THE INSTRUMENT TO LIQUID, HEAT, OR GAS**

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

Most microscope adaptations involve encapsulating the objective lens into the microscope adaptor.

- A Remove the objective lens from the microscope or colposcope.
- B Remove the lens retaining ring from the microscope adaptor.
- C Insert the objective lens into the microscope adaptor. The objective lens threads will protrude from the flat side of the microscope adaptor.
- D Install the lens retaining ring over the objective lens and tighten firmly by hand. **DO NOT OVER-TIGHTEN THE LENS RETAINING RING** as this will make it difficult to remove the lens.
- E Thread the objective lens firmly into the microscope body with the microscope adaptor in place around it.

- F** Mount the micromanipulator onto the microscope adaptor and tighten the locking screw. 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.
- G** To Rotate the Micromanipulator body, loosen locking screw, rotate into position and tighten the locking screw.
- H** Mount the handrest on the right or left side of the joy stick assembly.
- I** The zoom focusing system can be positioned at either the left or right side of the micromanipulator body. To move the zoom focusing system loosen the 2 lateral set screws and bottom thumb screw. Turn the zoom focusing system 180 degrees. Tighten the thumb screw and two set screws. Note: The thumb screw is to engage the hole in the right angle adaptor.
- J** Remove the dust cap from the zoom focusing tower and attach appropriate thread adaptor, if necessary. Refer to page 5
- K** Attach articulating arm to thread adaptor or directly to the zoom focusing assembly and turn laser on.



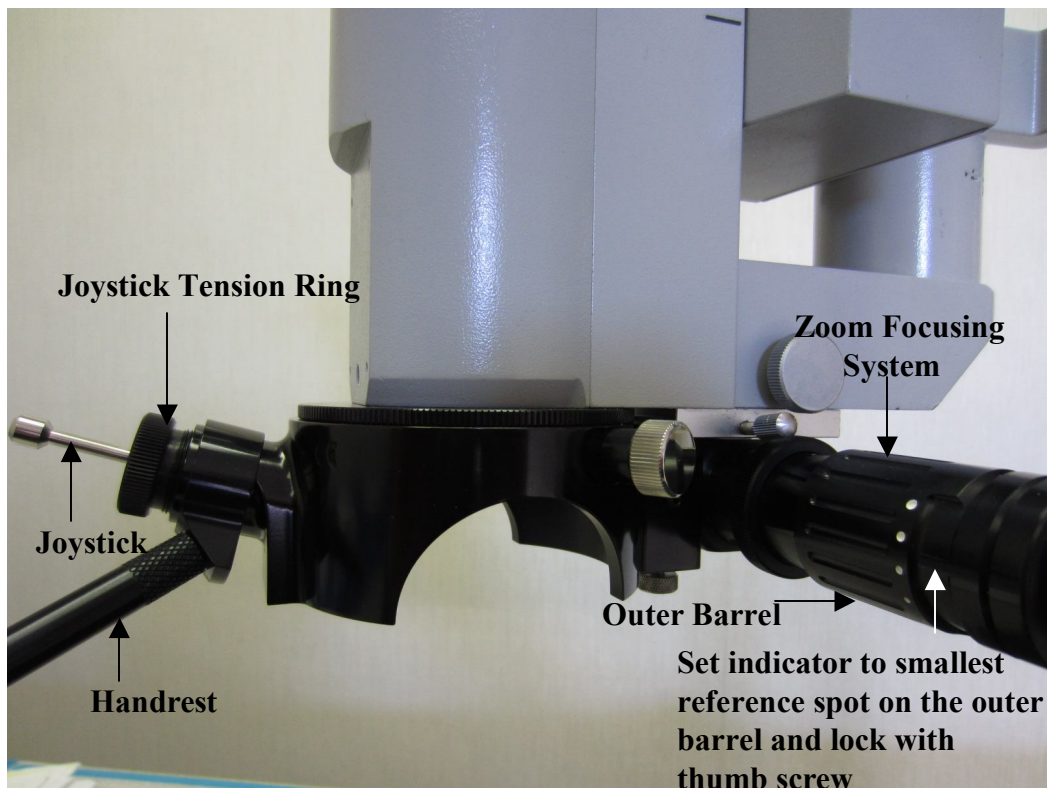
PRE-OPERATIVE TEST PROCEDURE

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.

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.



Microscope/Colposcope Adaptors

- #7012 - Wallach Penta Star Adaptor
- #7013 - Cooper Surgical Colposcope Adaptor
- #7014 - Wallach Tri Star Adaptor
- #7015 - Wallach Zoom Scope Ring and Spacer Block Adaptor
- #7020 - Leisegang Colposcope Adaptor (prior to S/N 37000)
- #7023 - Leisegang Photo-Colposcope Adaptor (after S/N 37000)
- #7025 - Leisegang Photo-Colposcope Adaptor (prior to S/N 37000)
- #7028 - Zeiss Microscope/Colposcope (48mm)
- #7029 - Zeiss MD Microscope Adaptor and Topcon OMS70
- #7031 - Leica M650, M690 Microscope Adaptor
- #7032 - Olympus Microscope Adaptor
- #7033 - Storz Microscope Adaptor
- #7036 - Weck Microscope Adaptor
- #7037 - Topcon Microscope Adaptor
- #7041 - JedMed/Kaps Microscope/Colposcope Adaptor
- #7042 - Leica M680 Adaptor
- #7043 - Leica M695, OHS, MS Microscope Adaptor
- #7044 - Moller-Wedel Microscope Adaptor
- #7050 - Zeiss® Colposcope F150 Adaptor
- #7051 - Zeiss® OPMI 99 Adaptor
- #7054- Ecleris Colposcope Adaptor
- #7062 - Leisegang Colposcope Adaptor (after S/N 37000)
- #7063- Leisegang Colposcope 3MV 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

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



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