

**ACCU-Beam®**

**TTI Medical**

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

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**INSTRUCTIONS FOR USE**

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**Non-Sterile / Multiple Use**

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

**TRANSAMERICAN TECHNOLOGIES INTERNATIONAL**

**2246 Camino Ramon • San Ramon • CA 94583 • USA  
Tel: (925) 355-0750 • (800) 322-7373 • Fax: (925) 355-0777**

## **INTENDED USE:**

The ACCU-Beam® Universal CO2 Laser Micromanipulator is intended to be used with articulated arm CO2 surgical lasers. It 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 surgeons 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 HeNe 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 4. 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 proprietary zoom optics and parabolic mirror design produce a perfectly coincident HeNe and CO2 beam. Surgical precision is ensured through the entire zoom range.**

## **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 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 (1 turn) and pull down the spring loaded locking screw located under the body. Turn the zoom focusing system 180 degrees. A pin in the spring loaded screw will engage a detent stop. Tighten the screw to secure in place.
- J** Remove the dust cap from the zoom focusing tower and attach appropriate thread adaptor, if necessary.
- K** Attach articulating arm to thread adaptor or directly to the zoom focusing assembly and turn laser on.

#### **PRE-OPERATIVE TEST INSTRUCTIONS**

The zoom focusing system is used to adjust the HeNe and CO2 beams to correspond with the focal length of the microscope's objective lens. Activate the laser HeNe aiming beam. 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 HeNe and CO2 beams. Set and lock the indicator of the zoom focusing system at the smallest reference spot on the outer barrel of the zoom system. Adjusting the zoom system to successively larger spot on the scale will defocus the laser and generate 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 located at the base of the joystick. The adjustment fitting can be rotated to tighten or loosen the joystick tension.

- #7016 - Applied Fiber Optics (Codman Colposcope III Adaptor)
- #7017 - Cabot/Cryomedics Colposcope Adaptor (Model MM6000)
- #7018 - Cabot/Cryomedics Colposcope Adaptor (Model MM4000)
- #7019 - Leisegang Colposcope Adaptor ( after S/N 37000)
- #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
- #7035 - Aus Jena Microscope Adaptor
- #7036 - Weck Microscope Adaptor
- #7037 - Topcon Microscope Adaptor
- #7038 - Elmed Type 1 Microscope Adaptor
- #7039 - Elmed Type 2 Microscope Adaptor
- #7041 - JedMed/Kaps Microscope/Colposcope Adaptor
- #7042 - Leica M680 Adaptor
- #7043- Leica M695, OHS, MS Microscope Adaptor
- #7044 - Moller-Wedel Microscope Adaptor
- #7045 - Zeiss® OPMI 99 Adaptor
- #7061 - Leisegang Adaptor for Video Colposcope (after S/N 37000)

**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)
- #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.**

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**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 proprietary right angle parabolic mirror. Can be used from either the right or left side.**

**Beam coincidence - HeNe and CO2 beam on the same focal plane**

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

<b>Working Distance (mm)</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>
<b>Minimum Ø (mm)</b>	<b>.40</b>	<b>.47</b>	<b>.55</b>	<b>.67</b>	<b>.87</b>
<b>Maximum Ø (mm)</b>	<b>2.5</b>	<b>3.0</b>	<b>4.5</b>	<b>5.5</b>	<b>7.0</b>

**For assistance, contact your local TTI Medical dealer or TTI Medical at:**



**ISO 9001/ISO 13485**

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e-mail: [info@ttimedical.com](mailto:info@ttimedical.com) • web site: [www.ttimedical.com](http://www.ttimedical.com)**

