MicroSpot™ CO2 Laser Micromanipulator
P/N 7009

INSTRUCTIONS FOR USE

Non-Sterile / Multiple Use

Caution: Please read all instructions prior to use.
INTENDED USE:

The ACCU-Beam® 7009 MicroSpot CO2 Laser Micromanipulator is intended to be used with articulated arm CO2 surgical lasers. The 7009 is also intended to be used with the Clinicon fiber cable when connected to the 7010G fiber coupler. The 7009 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, stapedectomy.

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 MicroSpot 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 or 7010G fiber coupler with Clinicon fiber cable) 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® 7009 MicroSpot Micromanipulator to gas, heat or liquid sterilization. If sterile procedures are indicated, use the appropriate sterile drape.

B The mirror-based lenses are enclosed in the zoom focus system and should not to be cleaned. The reflecting steering mirror can be cleaned with lens paper or a 100% cotton swab dipped in reagent grade acetone. 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 storage case 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 coloscope.

The zoom focusing system will accommodate focal distances ranging between 250mm and 550mm and can be easily defocused for larger spot sizes. The proprietary mirror-based zoom optics design produce a perfectly coincident Target and CO2 beam.

MOUNTING INSTRUCTIONS
⚠️ Caution: The ACCU-Beam® 7009 MicroSpot 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 coloscope.

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 with locking tool.

Thread the objective lens with the microscope adaptor firmly into the microscope body.

E -2-
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.

To Rotate the Micromanipulator body, loosen locking screw, rotate into position and tighten the locking screw.

Mount the handrest on the right or left side of the joystick assembly.

The zoom focusing system attaches to the manipulator main body and secured with a locking screw.

Remove the dust cap from the zoom focusing tower and attach appropriate thread adaptor, if necessary. Refer to page 5

Attach articulating arm to thread adaptor or directly to the zoom focusing assembly or attach the 7010G fiber coupler with Clinicon laser fiber.
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 though 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 focus ring of the zoom focusing system at the smallest spot engraving on the focus ring.

Turning the focus ring to larger spot engravings will defocus the laser and deliver larger spot sizes. Note: Increase the laser power when using larger spot sizes. To return to the smallest spot, turn the focus ring in the reverse direction until stopped by the locked indicator.
**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)
- #7027 - Zeiss® Vario, Sensera & Movina Adaptor
- #7028 - Zeiss® Microscope/Colposcope (48mm)
- #7029 - Zeiss® MD Microscope (65mm) 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 Adaptor
- #7044/2 - Moller-Wedel HI-R1000 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
- #7066 - Leica M60 Colposcope 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 LaserSonic 250Z/500Z
- #1103 - Heraeus/Merrimack LaserSonic/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 - LaserSonic LS-500

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

Metal - 6061 aluminum

Lenses – mirror-based, aspheric optics

Joystick - ambidextrous with tension control

Handrest – ambidextrous, removable and autoclavable

Mounting - may be rotated 360 degrees around optical axis of microscope

Mirror – Fused silica – coated – R >98% @ 10um, 45° AOI

Focusing system - continuously variable zoom, two lens beam expander.

Diffraction limited system performance

Beam coincidence - Target and CO2 beam strike on the same spot.

Focal Plane – Target and CO2 beam on the same focal plane

Spot size - (3mm beam diameter input)

<table>
<thead>
<tr>
<th>Working Distance (mm)</th>
<th>250</th>
<th>300</th>
<th>400</th>
<th>500</th>
<th>550</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Ø (mm)</td>
<td>.175</td>
<td>.180</td>
<td>.200</td>
<td>.230</td>
<td>.250</td>
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