

ACCU-Beam®

TTI Medical

**CO₂ Laser Easy Spot Micromanipulator
P/N 7008**

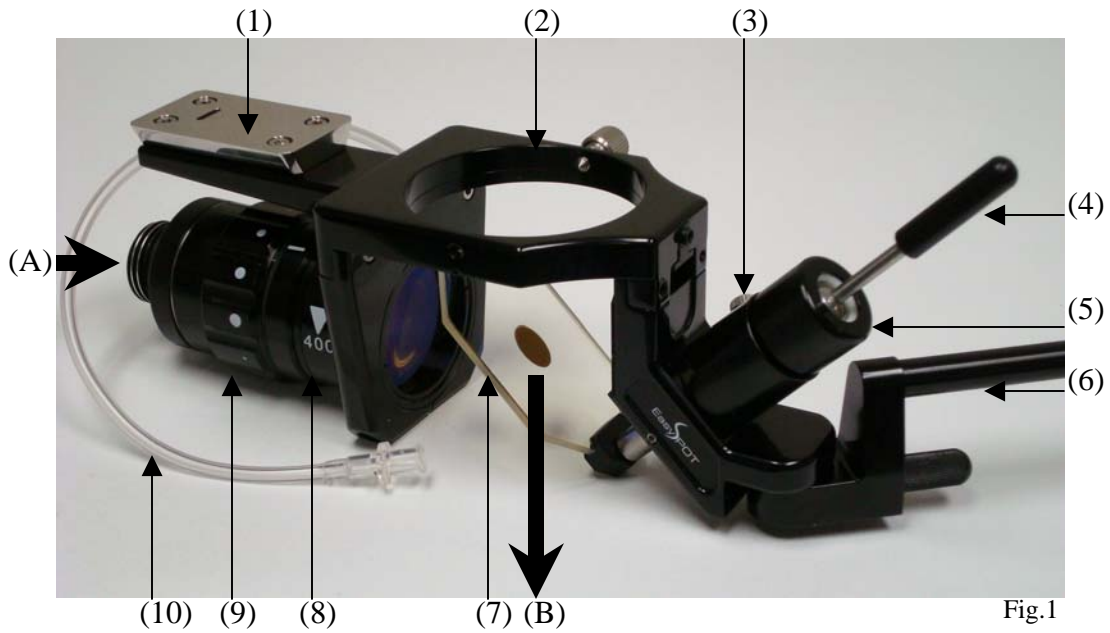
INSTRUCTIONS FOR USE

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

DESCRIPTION:



Legend:

- (1) Connection for Microscopes w/ Slide Coupling (Original Zeiss Dovetail)
 - (2) Microscope Adaptor Connector
 - (3) Operating Area Control Knob
 - (4) Joystick
 - (5) Tension Adjustment Ring
 - (6) Handrest
 - (7) Final Mirror
 - (8) Focus / Defocus Ring
 - (9) Focusing Zoom
 - (10) Positive Airflow Tube
-
- (A) Laser Input
 - (B) Laser Output



Fig. 2

INTENDED USE:

The ACCU-Beam® CO₂ Laser Easy Spot Micromanipulator is intended to be used with surgical microscopes and the articulated arm of CO₂ surgical lasers. It is a surgical tool used primarily for ENT and neurosurgery in treatment of disorders such as:

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 CO₂ Laser Easy Spot Micromanipulator. Refer to the user manual of the laser manufacturer for full clinical use information on cleared indications.

CARE AND HANDLING:

- 1) 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.
- 2) Always store Micromanipulator in a dust-free environment.
- 3) If sterile procedures are indicated, use the appropriate sterile drape.

Caution: The ACCU-Beam® CO₂ Laser Easy Spot 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.*****

WARNING

Always test fire the CO₂ laser (with the micromanipulator installed on the microscope and connected to the articulated arm) prior to surgery.

Never use if the CO₂ beam does not strike the same spot as the HeNe target beam.

INSTRUCTIONS FOR USE:

General Description:

The micromanipulator easily mounts on the optical axis of operating microscopes. Refer to the list of available mounting adaptors on page 8. 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 enables the user to adjust the focal point of the laser beam to match the focal length of the objective lens of the microscope.

The zoom focusing system will accommodate focal distances between 200mm and 400mm. The zoom optics can be easily defocused for larger spot sizes. Surgical precision is ensured through the entire zoom range.

NOTE: For working distance between 200mm and 250mm a spacer ring (A) is installed between the manipulator body and zoom optics. Refer to Fig. 3 & 4.



Fig. 3

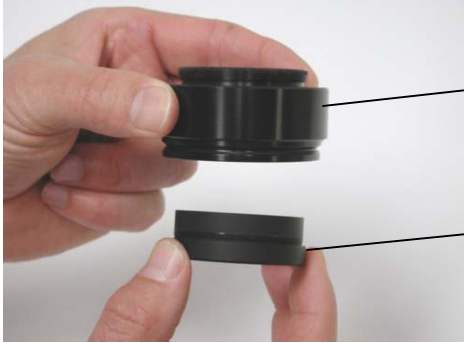


(A) Installed Fig. 4

NOTE: For working distances between 250mm and 400mm the spacer ring is removed.

MOUNTING INSTRUCTIONS - Remove the objective lens from the microscope

7080 Mount for Zeiss® 48mm Objective



Adapter

Lens

Fig. 5



Fig. 6

- 1) Hold the rim of the objective lens in one hand and with the other hand screw the adaptor completely onto the lens as shown in Fig. 5 & 6.
- 2) Screw the objective lens and adaptor into the microscope.

7081, 7082, 7087 and 7088 Mounts



Retaining Ring

Lens

Fig. 7

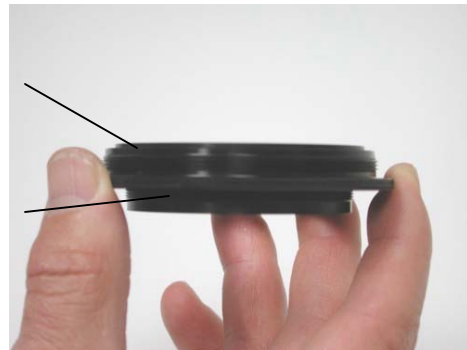


Fig. 8

- 1) Drop the objective lens into the retaining ring as shown in Fig. 7 & 8.



Adaptor Ring

Lens Thread

Fig. 9

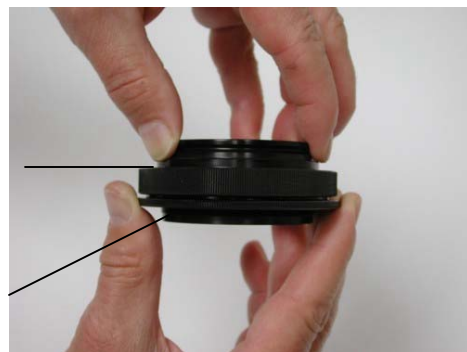


Fig. 10

- 2) Screw the retaining ring and lens into the adaptor ring until finger tight as shown in Fig. 9 & 10.
- 3) Screw the objective lens with adaptor into the microscope.

Attaching the Micromanipulator:



Fig. 11

Joystick
Tension
Adjustment
Cap



Fig. 12

- 1) Mount the micromanipulator onto the microscope adaptor and tighten the locking set screw Fig. 11 and thumb screw Fig. 12. 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.
- 2) To rotate the Micromanipulator body, loosen thumb screw, rotate into position and tighten thumb screw.
- 3) Mount the handrest on the right or left side of the joy stick assembly.
- 4) Remove the dust cap from the zoom focusing tower and attach the articulating arm of the laser.

NOTE: *Some laser models require a thread adaptor. Refer to page 8.*

PRE-OPERATIVE TEST INSTRUCTIONS

Operating Area

The operating area of the Micromanipulator can be adjusted by use of the Operating Area Control Knob. Operating area diameter can be increased by moving the Operating Area Control Knob clockwise. To decrease the diameter of the operating area for use inside the speculum / laryngoscope or similar, the Operating Area Control Knob would be moved in a counter clockwise direction. Fig. 13 (A)

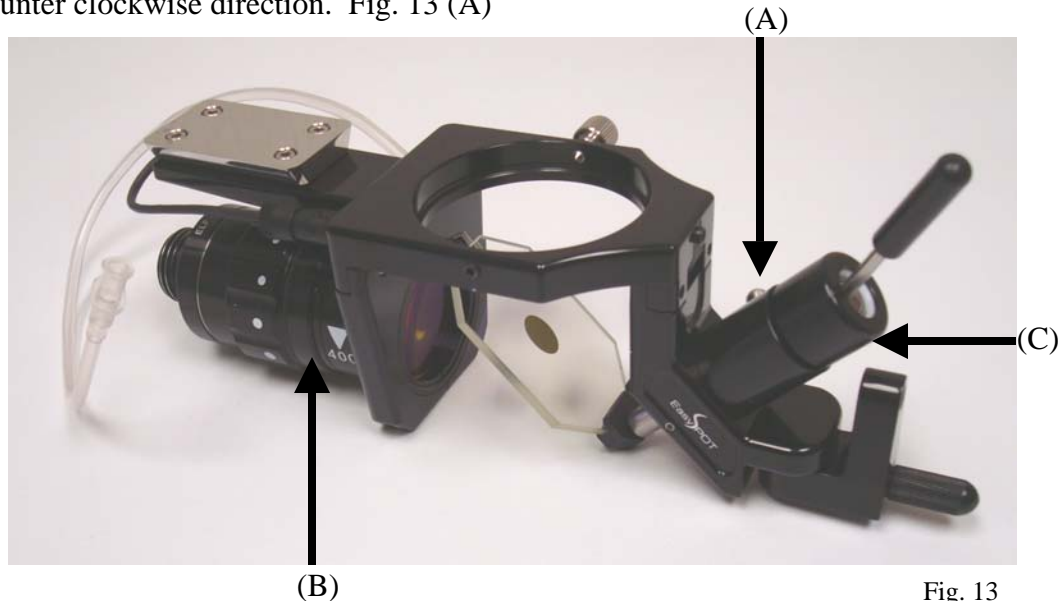


Fig. 13

Focusing the Laser Beam

After installation of the micromanipulator, the initial focusing of the unit is required prior to first use. 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. :

- 1) Set the microscope or colposcope at maximum magnification.
- 2) Activate the laser HeNe aiming beam.
- 3) Loosen the thumbscrew on the Focus / Defocus Ring.
- 4) While viewing through the microscope, adjust the zoom focusing system to set the desired spot size.
- 5) Test fire the CO₂ beam on a moist tongue blade depressor to confirm coincidence between the HeNe and CO₂ beams.
- 6) Lock thumbscrew in place.

Once focused, the laser beam can be defocused for coagulation / vaporization / etc. by rotating the Focus / Defocus Ring. Fig. 13 (B)

Joystick

The joystick tension adjustment cap is located at the base of the joystick. The tension adjustment cap can be rotated to tighten or loosen the joystick tension. Fig. 13 (C)

Microscope Adaptors:

Part Number

- 7080 - Zeiss® 48mm
- 7081 - Zeiss® 65mm
- 7082 - Leica M650, M690, M400
- 7083 - Zeiss® Vario / Sensera / Movina
- 7084 - Leica M520
- 7085 - Olympus OEM 7000
- 7086 - Leica OH, MS
- 7087 - Storz / Global
- 7088 - Jed Med / Kaps

Articulated Arm Thread Adaptors:

Thread Adaptors are used to connect the zoom focusing system to the articulated arm of the following lasers -

Part Number

- 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)
- 1110 - Union Medical
- 1111 - Lasering
- 1112 - LaserSonics LS-500
- 1116 - JH Laser

Note: Sharplan 1060 has two arm versions – 1101 & 1109. Thread Adaptors are not required for Surgilase, Laser Engineering, Dornier 401 LaserSonics Illumina 40 (black arm) and Sharplan 720, 733A, 734 and 743 CO₂ lasers.

Specifications:

Type	Description
Focal Range	From 250mm to 400mm
Operating area (@ 400mm)	Minimum: radii of 14x10mm Maximum: radii of 70x55mm
Spot size of the laser beam on the focal plane	250µm (250mm EFL) 300µm (300mm EFL) 400µm (400mm EFL)
Diameter of the laser beam (at mirror's output)	12.5mm
Lenses	ZnSe (Zinc Selenide) coated
Joystick	Ambidextrous with tension control
Handrest	Ambidextrous and removable
Connection to microscope	Easy and fast via the appropriate adaptor. The micromanipulator can be rotated (360°) around the microscope axis and can also be attached to microscopes with slide coupling, (4) in Fig. 2.
Mounting	May be rotated 360° around the optical axis of microscope
Focusing system	Continuously variable zoom with focal range from 250mm to 400mm. Can be used from either the right or left side.
Movement of the laser beam	Manual via precision joystick
Weight	600g; 1.3lbs



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