

## OPERATING MANUAL FOR S300II STEREO MICROSCOPE

### OVERVIEW AND DESCRIPTION OF THE S300II



porcelain, contouring, and other QC functions. Its functionality is limited only by its power.

The S300II Stereo Microscope is designed for the discerning lab technician or operator, dentist, Q.C. personnel, hobbyist, naturalist, jeweler, or anyone looking for a simple, yet sophisticated method of viewing small items, objects that are hand held or on a platform and/or in isolated working areas not accessible to electricity. It offers portability, requiring minimal bench space. Dental applications include checking margins, ditching dies, checking for porcelain fractures, flaws, buildup of In other industrial applications, its

It is designed to work in ambient light. The optics (prisms and lenses) and housing are made by Olympus and it has extraordinary bright visibility. It seems to gather light. Additional or auxiliary light, such as a ring light or 'tensor' type of lighting will enhance the viewing, but it is not necessary for its operation.

The S300II comes with either an 8x power (10X lens) or 16x power (20X lens). The lenses are interchangeable by slipping them on or off the sleeves at the top of the housing.

#### **Viewing and Focus Adjustments:**

The housing of the optics rotates 360 degrees. The 30 cm (12 in.) flex-neck (standard) makes viewing and focusing simple and hands free with almost infinite adjustments of the viewing to match the requirements at the bench. Initially, the user will adjust the eye separation distance by moving one of the eyepieces further apart or closer, to match their own ocular space so that they are comfortable viewing through the eyepieces. The object should appear 3 dimensional, clean and clear. Only 1 of the optics (lens, eyepiece), moves relative to the other. Do not try to force the other to move. That will only damage the microscope.

The user is holding the object in their hand(s) while viewing the object, about 5 ½ inches below the base of the glass shield. A total distance from the top of the viewing lens to the object is about 11 inches. Viewing through the optics or eye pieces, the object is brought into focus by moving the object with the hand, in and out of the focal area below. This makes viewing of objects greater than the depth of field, easier to work with. The quick

hand movements holding the object, help the viewer see the entire area of interest without constantly manually refocusing as with other scopes. Using the eye shades, keeping the longer sides to the outside, keeps the eyes from seeing stray light.

The dental lab technician can readily hold the crown with one hand and the lab handpiece with the other to make necessary adjustments to the crown all while viewing from above. Initially, it may take a few minutes to become acclimated to working with the microscope, but second nature after that.

Any dust or debris created by grinding under the microscope is blocked from entering the optics or lower prism housing by an optical glass shield just below the bottom of the housing. It also protects the prisms from damage should the crown be thrown by the wheel.

The housing is easily removed from the stand by loosening and removing the 3 machined set screws. Never work without the shield in place so that the prisms are protected from dust or dirt contamination. Always make sure that the machined set screws are properly (not too tight) screwed back in place to allow for rotating movement of the housing. Should the housing itself begin to move by tilting left or right, the 1.5 mm Allen key (supplied) is required to tighten the housing onto the flexible shaft. By wiggling that housing left or right, while tightening with the Allen key or wrench, you will locate the groove in which the tiny set screw fits in better for tightening.

## **MAINTENANCE OF STEREO MICROSCOPE S300II:**

### **Cleaning and basic maintenance:**

Keep unit or head (housing and lens or optics) covered when not in use, to reduce dust accumulation on optics. Do not leave the lenses off of the housing, exposing the prisms to dust. If, for some reason, the lenses have to be removed for a few minutes or longer, seal the housing with a clean and clear plastic bag (Baggie), so that the housing is kept free of dust. This may be required when transporting the housing separately, e.g. sending it out for repairs. Always keep (spare) lenses in a sealed plastic bag.

Clean lenses using cleaning solutions and lint free cloth designed for cleaning glasses. Do not spray solutions onto optics, but onto cloth used to wipe the glass surfaces. Clean the optical glass shield weekly or as needed, so that viewing is not hindered by debris buildup. (Best to have a spare glass shield, just in case, to avoid down time should the glass shield break during use). Clean the housing, neck, and base, using regular cleaning solutions, nothing caustic, no solvents, no ammonia solutions. Again, do not spray directly onto the surfaces. Do not allow water or soap vapors to contaminate the internals of the housing. Use a small suction vacuum but do not blow dust around. Do not try to vacuum the prism area. Do not remove the optics and try to vacuum or dust the prisms.

Make sure unit is not close to open flame of Bunsen burner, to avoid damage to housing. Avoid conditions that could result in dropping the unit or having it fall or tilt forward, which



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could cause internal prisms to move from their moorings, resulting in not seeing the object clearly. Tilting forward can also result in damage to the optical glass shield.

Should the optics head start to move or wobble side to side, use the 1.5 mm Allen wrench, to tighten the tiny Allen screw that holds the round (top) base of the optics housing to the flexible neck. You will see the tiny hole that the Allen key fits into. While tightening, move the head back and forth until the screw fits into the groove.

Only one of the two optics move to adjust for viewing. The other is permanently held in place. Do not try to make the other optic move as it would change the viewing pattern through the prisms as well as damage the microscope.

#### **Unit Disassembly and Prism Alignment:**

To check to see if optics are properly aligned, view a grid of lines or a single line under the optics, both vertically and horizontally. If line appears as a single line, then it is good. If the line appears as parallel lines or two lines that cross one another, then the prisms have to be adjusted internally (by us or the factory). To view for clarity or check continuity of both optics, remove a single machined set screw and place under the microscope to view. It should appear crisp and clean and 3 dimensional. It should not appear as if viewed in two directions simultaneously.

#### **Steps below ONLY to be performed by a qualified service technician.**

Unscrewing the top base plates (not recommended) will expose the top prisms. It is best that this be done by a qualified technician as the prisms can become damaged, or moved or contaminated with fingerprints or dust, obstructing the image or making it unacceptable. One or both of the prisms would have to be adjusted, repositioned and refastened. Only a silicone cement material can be used to hold the base of the prisms, once correctly positioned. **DO NOT** use a cyanoacrylate material or any other cement that can create a vapor that will fog or damage the prisms.

Do not try to access the lower parts of the optics by unscrewing the bottom level.

## SPECIFICATIONS FOR STEREO MICROSCOPE S300II

Weight: 3.14 kg (7 lbs). Shipping weight 9 lbs. DIM Shipping weight 11 lbs

Base Diameter: 5 5/8"

Typical working height (from base on table to viewing through optics), 12" or less depending on angle or bend of flexible neck.

Working distance approximately 5 1/2" beneath optical glass shield or about 11" below viewing lens.

Flexible neck: 30 cm (12")

Mirror Body (Housing for prisms)

Net power factor of Mirror Body: 0.8

Eye Contact Lens:

10X lens Total enlargement 8 times. Visible (viewable) area across 20-25mm  
Working Depth of Field: about 13mm

20X lens Total enlargement 16 times. Visible (viewable) area across 10-12 mm  
Working Depth of Field: about 10 mm.

Object contact lens: 0.8 x focus depth: 120mm

Counter prism system 12 degree angulation

Eye-stereo distance, adjustable movement of one optic from other one

10x lens 55-68 mm ocular space (center to center of optics)

20x lens 53-63 mm ocular space (center to center of optics)

## PART NUMBERS FOR MICROSCOPE AND SPARE PARTS

Part No.	Description
35-1000	Stereo Microscope S300II S 8 x Power, Standard weighted base
35-1001	Stereo Microscope S300II S 16 x Power, Standard weighted base
35-1010	Stereo Microscope S300II M 8 x Power, Magnetic base
35-1011	Stereo Microscope S300II M 16 x Power, Magnetic base
35-2000	Stereo Microscope 8 x power lens, set of 2
35-2010	Stereo Microscope 16 x power lens, set of 2
35-2030	Stereo Microscope Eyeshades 2 pack
35-2040	Stereo Microscope Optical Round glass shield/gasket assembly
35-2050	Stereo Microscope Optional 20" Gooseneck
35-2061	Stereo Microscope Machined Set Screw for swivel head, each
35-2062	Stereo Microscope Allen wrench SET SCREW



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## **WARRANTY OF STEREO MICROSCOPE S300II**

George Taub Products & Fusion Co. (TAUB Products) warrants the microscope for a period of one (1) year against manufacturing defects. The warranty does not cover damage from dropping or misuse or abuse of the microscope, or for breakage due to negligence. TAUB Products offers a service to repair damaged units out of warranty as well as units under warranty.

On occasion, we offer loaner units while repairing the returned units. The loaner unit is generally only the optics housing, minus lens and eyeshades and optical glass shield. This minimizes the cost of shipping the bulk of the microscope body and optical glass shield that could break during shipping.

Repairs are quoted out prior to the service performed. When sending in a unit for repairs, we request that only the optics housing be returned minus the optical glass shield, lens and eye shades. The optics housing must be sealed in a plastic bag to prevent dust or dirt from entering the prism area and well protected from rough handling during shipping. Also include a note indicating the nature of the problem and contact information, including name, address, telephone number and email address. It is best to contact us first prior to sending in the unit, so we are aware of its return.