ASI®
INSTRUMENTS

STEREOTAXIC SYSTEM
SAS-4100 (4120) SAS-5100 (5120)
SDA-3000 (OPTIONAL)

User Manual

Serial No.

INTRODUCTION

ASI INSTRUMENTS is dedicated to engineering products that satisfy the needs of everyday Research Scientists. With this system, we bring our commitment into reality, presenting a product that is both flexible and practical. It is made with the highest quality materials with precision manufacturing processes to ensure the best repeatability and accuracy in all research conditions.

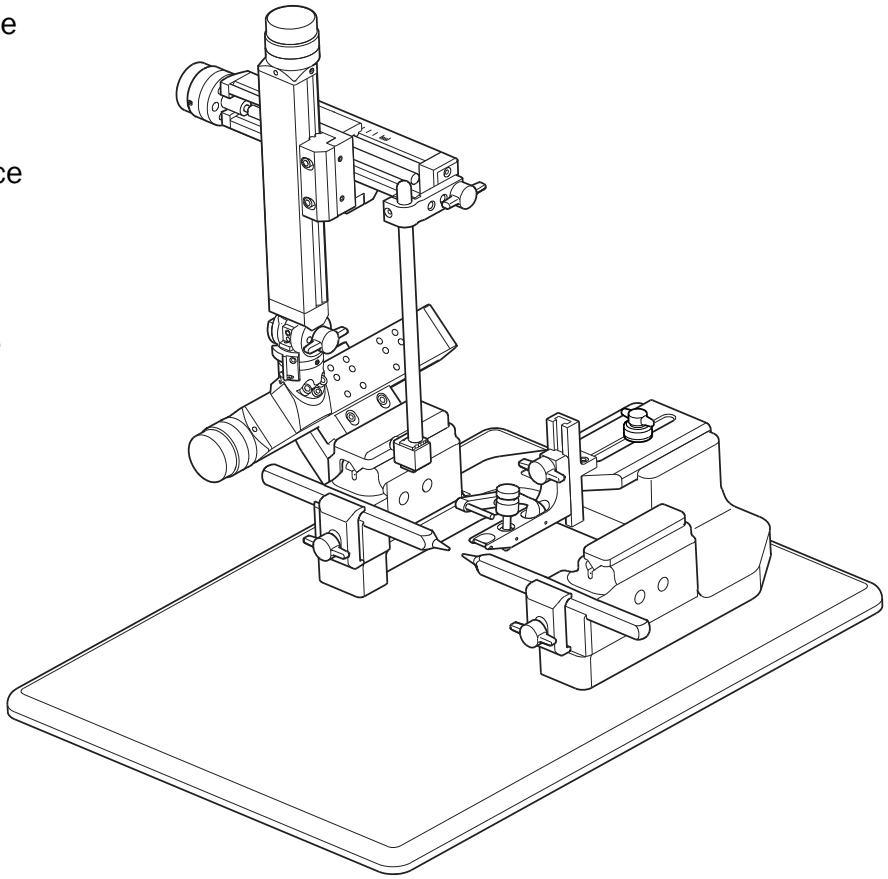
This system features Calibrated Knobs on all axes. This provides researchers with not only greater ease, but more accurate readings than standard vernier scales.

Advanced Slide Technology is integrated into the complete line of Stereotaxic Manipulators. This technology provides researchers with unparalleled precision, with a user-friendly interface.

At **ASI INSTRUMENTS**, our innovative Tilt-and-Swivel Mechanism includes 90^{o} of tilt and 360^{o} of swivel, and is both operated and controlled by an uniquely designed single-lever, locking mechanism. This is the easiest to use and highest quality locking universal joint available.

The Open "C" Frame gives users a pronounced sense of available space with increased ease of access to research specimens. In comparison to raised frame designs, our open frame provides heightened workplace efficiency.

Our Stereotaxic Systems provide an unsurpassed stereotaxic surgery platform. Subtle nuances guarantee reliability and enhance the entire research experience.



Chris Chiodo
CEO/Founder

WARNING

DO NOT AUTOCLOAVE! Autoclaving voids the warranty. Clean and disinfect with only alcohol, or an alcohol equivalent solution. If you have any questions, contact Activational Systems BEFORE cleaning your Sterotaxic System.

SPECIFICATIONS

CATEGORY	SMALL ANIMAL STEREOTAXIC SYSTEM
Model No.	SAS-4100, 4120, 5100, 5120
Animal Type	Rat and Mouse Specimens, Neonatal through Adult
Resolution	10 Microns (SAS-4120 & 5120), 50 Microns (SAS-4100 & 5100)
Specifications	• 1 Micromanipulator Set on SAS-4100 & 5100 2 Micromanipulator Sets on SAS-4120 & 5120 • 2 Ear Bars (EB-918) / 18° Tip • 1 Electrode Holder (EH-100) on SAS-4100 & 5100 2 Electrode Holders on SAS-4120 & 5120 • 1 Rodent Adaptor, Adult Rat (RA-100)
Lead Screws	1mm (SAS-4120 & 5120), 3mm (SAS-4100 & 5100)
Weight	Approximately 20 lbs (in box)
Material	Precision Ground Aluminum, Precision Ground Stainless Steel, White Delrin, Plastic (in Screw Heads), and Highly Durable Engineered Surface Material
	SEREOTAXIC DIGITAL SYSTEM (OPTIONAL)
Model No.	SDA-3000
	• Digital Readouts (Factory Install Only) • Three Axes • 0.01mm Resolution • Zero Reset • Battery Powered • Will fit on any post 2008 Model

LIMITED WARRANTY

Your ASI product is warranted against defective materials and workmanship for a period of 3 years from date of purchase. ASI does not warrant in the case of obvious abuse or misuse. In the event of failure of this product, please take the following action:

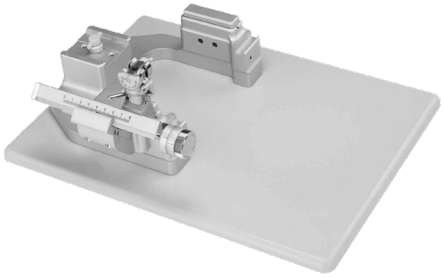
Create a written statement detailing the nature of the problem, include your contact information and E-mail or Fax the document to us: Email: **info@asi-instruments.com** Fax: **586-756-9737**

12900 E. 10 MILE RD, WARREN, MI 48089 USA
Tel: (800) 531-1105 ● Fax: (586) 756-1222
Email: info@asi-instruments.com ● Web: asi-instruments.com

Form No. 4100 05/17

WHAT'S IN THE BOX

The following is a list of all standard items that come with your purchase.



ASM-0809

Base & C-Frame Assembly

ASM-0523

Head Holder

EAR BARS

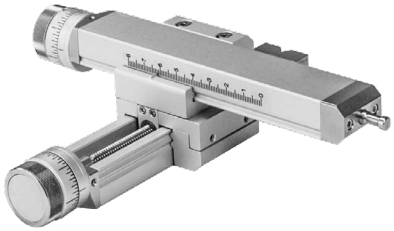
2 Bars Included

EAR PRESSURE PLATE

Set of Two

ASM-0522

Electrode Holder
STD EH-100



ASM-0522

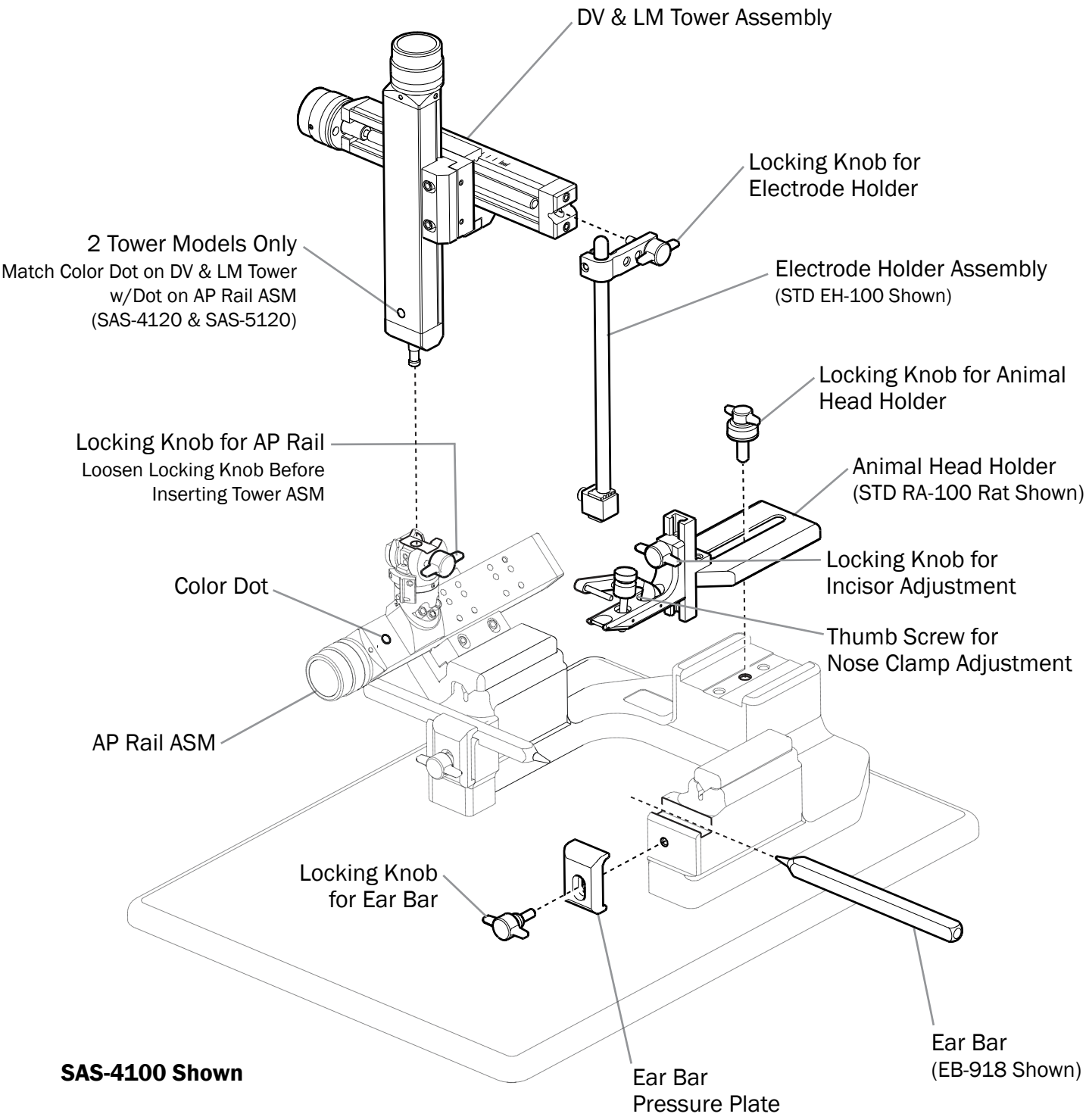
Tower Assembly

TOOL KIT

Hex Keys: .050, 1/16, 5/64, 3/32,
7/64, 9/64 and 1/16 x 1 SS Pin

ASSEMBLY INSTRUCTIONS

This view of the Stereotaxic System details all the common named items for referencing and understanding these terms through out user manual. Please assemble your system as shown.



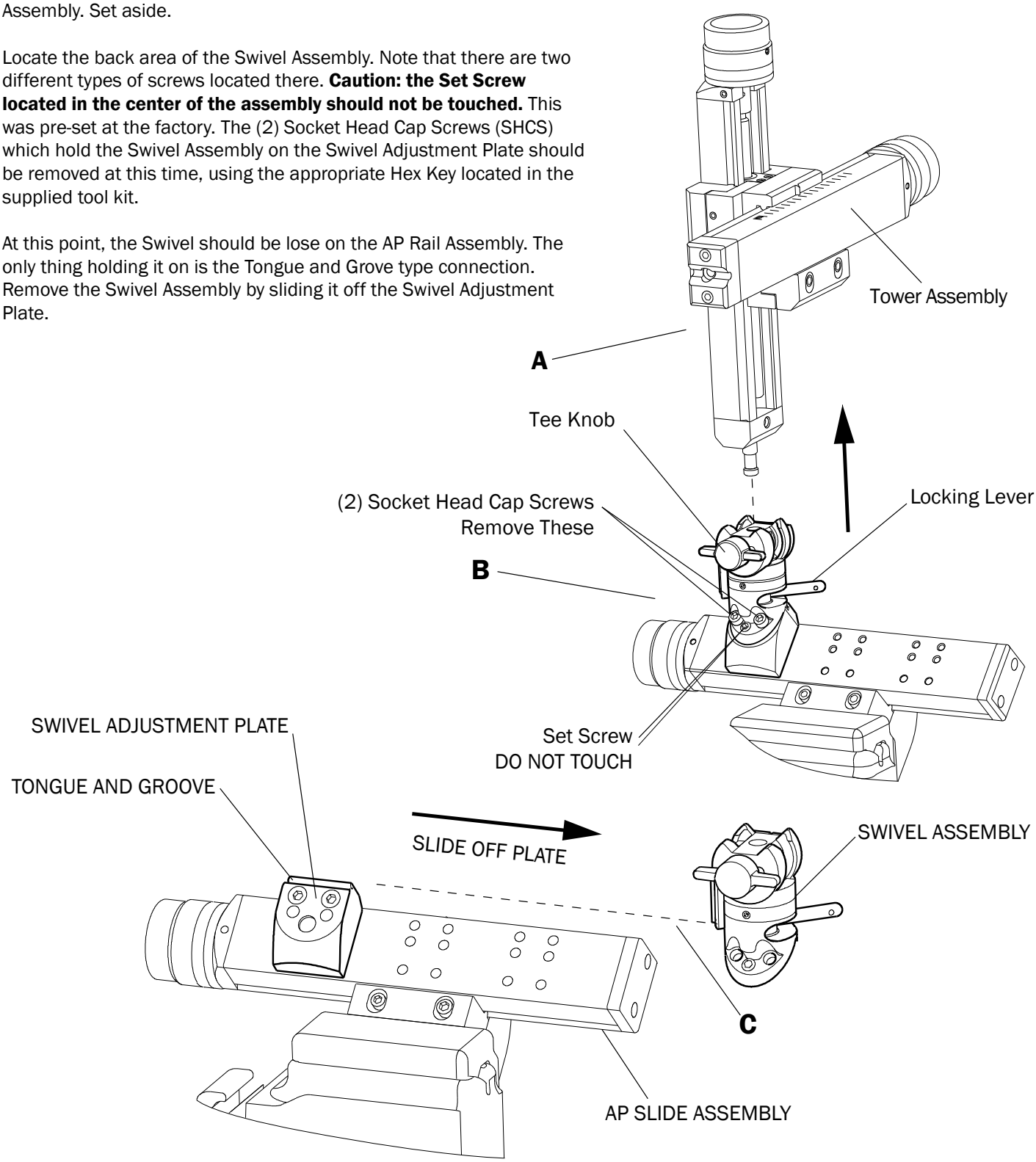
SAS-4100 Shown

Remove Swivel Assembly

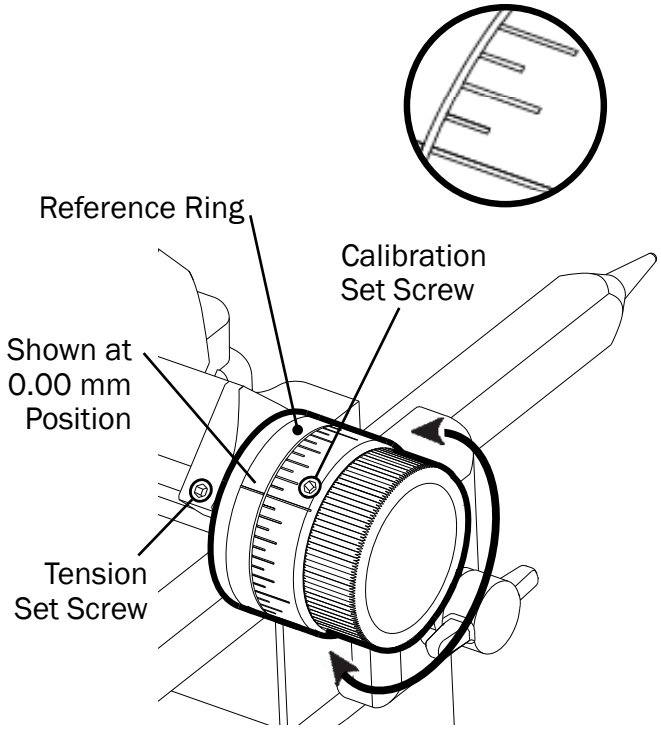
A Make sure that the Swivel Locking Lever is in the forward locked position. Remove the Tower Assembly portion of the Stereotaxic Manipulator by loosening Tee Knob and pulling up on the Tower Assembly. Set aside.

B Locate the back area of the Swivel Assembly. Note that there are two different types of screws located there. **Caution: the Set Screw located in the center of the assembly should not be touched.** This was pre-set at the factory. The (2) Socket Head Cap Screws (SHCS) which hold the Swivel Assembly on the Swivel Adjustment Plate should be removed at this time, using the appropriate Hex Key located in the supplied tool kit.

C At this point, the Swivel should be lose on the AP Rail Assembly. The only thing holding it on is the Tongue and Grove type connection. Remove the Swivel Assembly by sliding it off the Swivel Adjustment Plate.



Reading and Adjusting Calibration Knob

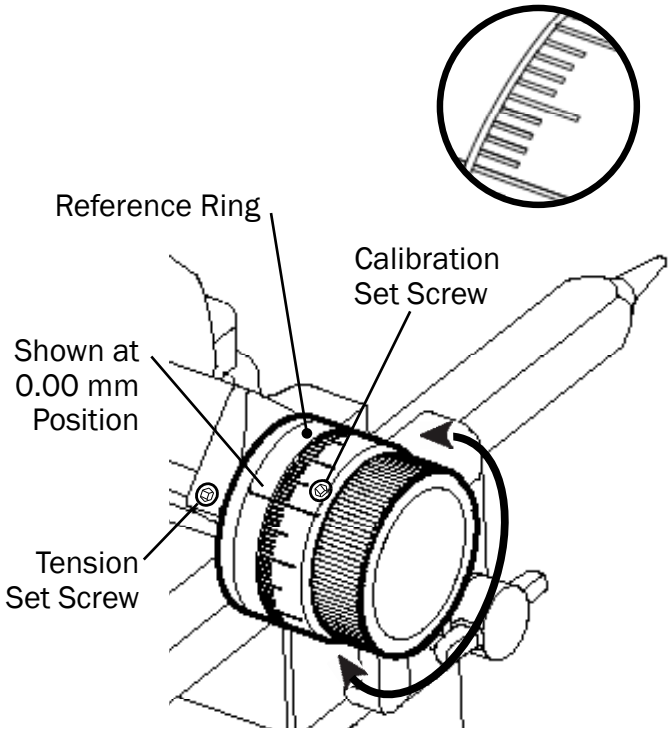


3mm/Rev Coarse Movement System:
One revolution of the right hand thread moves the axes 3 mm. The largest ticks represents a whole movement of 1.0 mm. The smallest tick represents a 50 micron movement.

The tension of the knob can be adjusted by the Set Screw located on the axis line of the screw system.

Calibration ring alignment can be adjusted by loosening and repositioning the Set Screw on the knob calibration ring. This should be accomplished at whole number divisible by 3; i.e. Set rail tick at 36mm. Adjust knob calibration ring to zero.

Reading position can also be adjusted in the same manor. There are 2 other ticks on the reference ring for this purpose.



1mm/Rev Fine Movement System:
One revolution of the right hand thread moves the axes 1 mm. The largest tick represents a whole movement of 1.0 mm. The smallest tick represents a 10 micron movement.

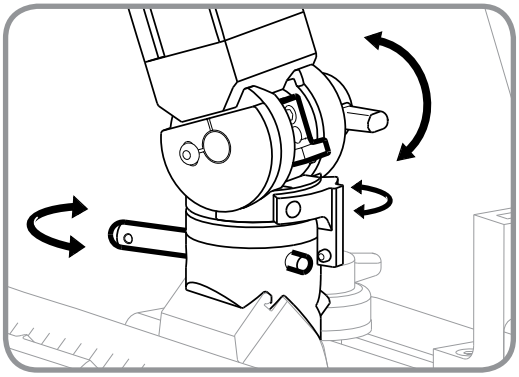
The tension of the knob can be adjusted by the set screw located on the axis line of the screw system.

Calibration ring alignment can be adjusted by loosening
and repositioning the set screw on the knob. This should be accomplished by a whole number.

Reading position can also be adjusted in the same manor. There are 2 other ticks on the reference ring for this purpose.

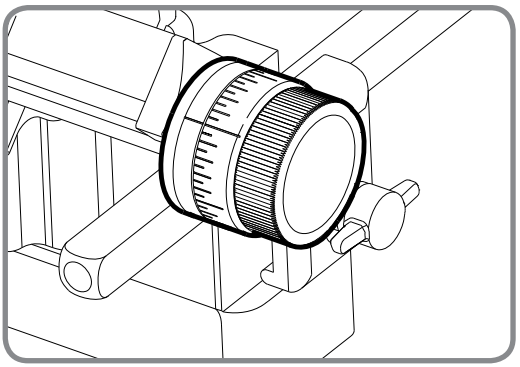
KEY DESIGN FEATURES

Working Details



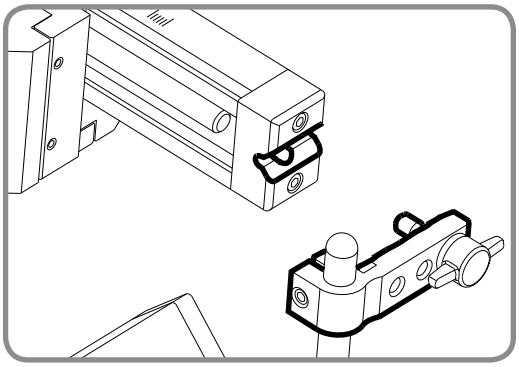
1. Tilt-and-Swivel

Our innovative Tilt-and-Swivel mechanism includes 90^{o} of tilt and 360^{o} of swivel, and is both operated and controlled by an intelligently single-lever locking mechanism. This is the easiest to use universal joint available and it provides superior locking ability.



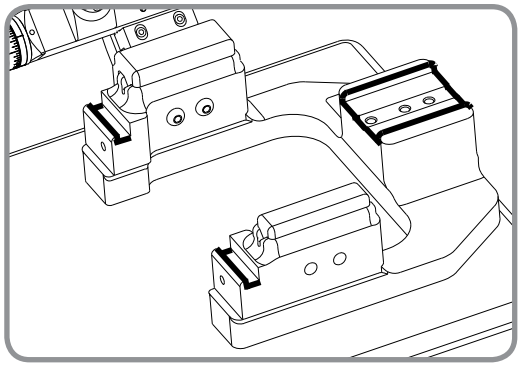
2. Calibrated Knobs

Our knobs include calibration on all axes which provide researchers with not only greater ease, but more accurate readings than the vernier scales commonly used in other designs.



3. Vee Notch

The Vee notch as were the electrode holder is positioned on the stereotaxic system. The electrode holder has three positions and is kept in place by a 10-32 x 3/4" SHCS (Captive). Vee notch is compatible with most of our competitors electrode holders, the length of the 10-32 screw may differ.

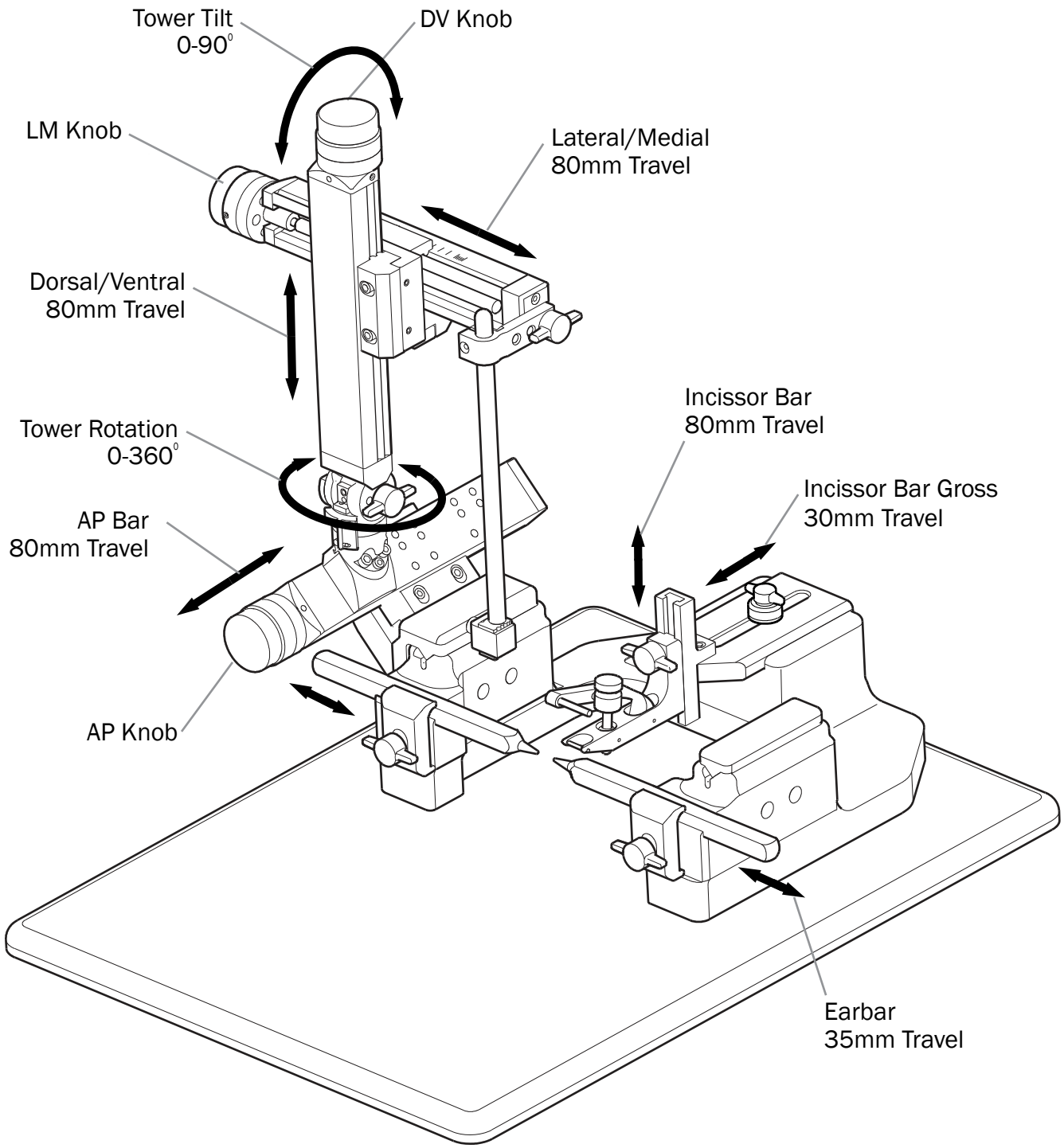


4. C-Frame

The open "C" Frame gives users a more pronounced sense of openness, as well as depth of access to research specimens. In comparison to raised frame designs, the open frame serves as a more reliable platform. Each C-Frame is machined to the highest standard from a billet of 6061-T6 Aluminum.

OPERATIONS

The following is a operational view of the Stereotaxic System. This references the knob names with corresponding directional outcome.



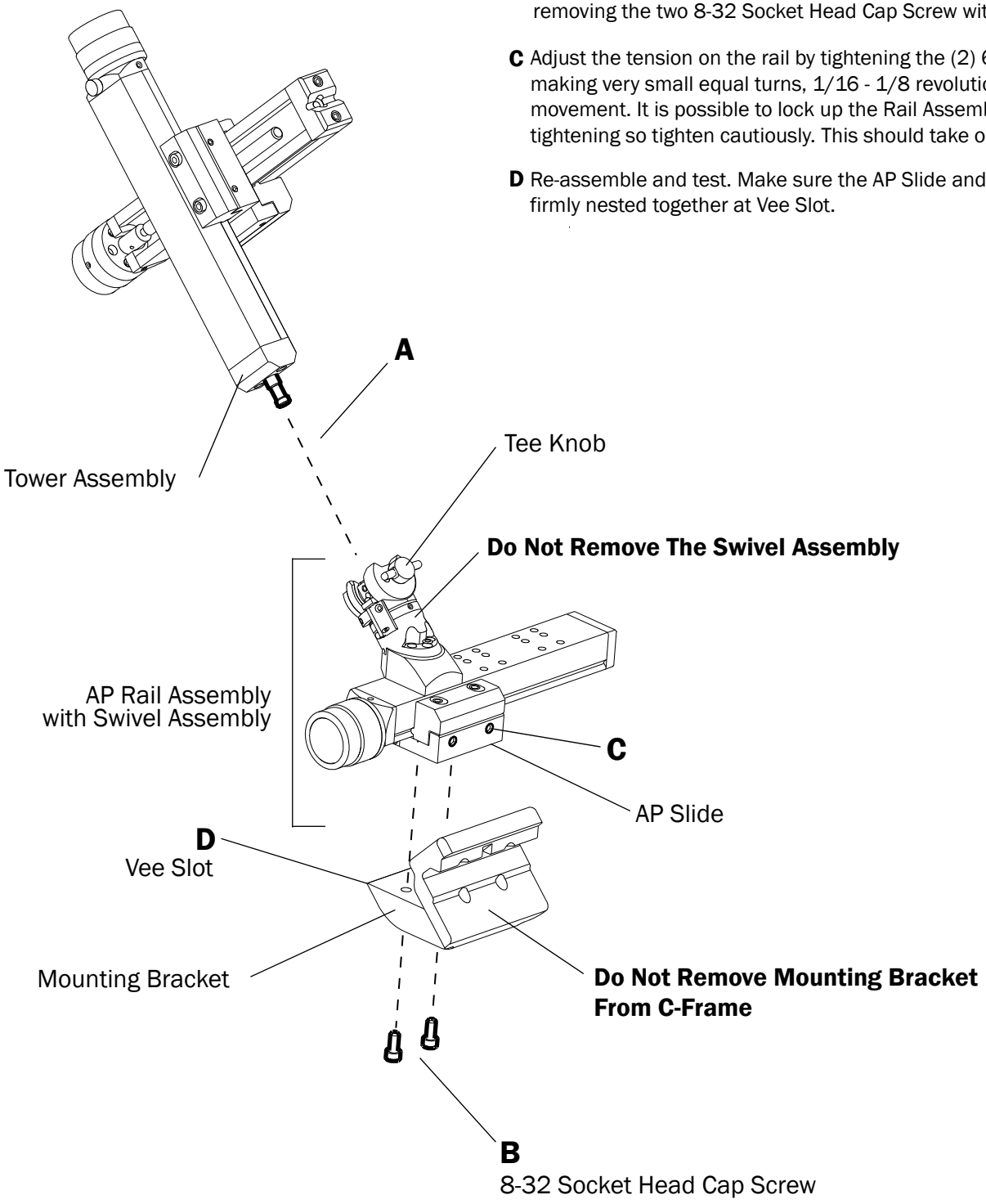
Adjust AP Slide Tension

A Loosen Tee Knob and remove Tower Assembly from Swivel.

B Remove AP Rail Assembly with Swivel assembly attached, by removing the two 8-32 Socket Head Cap Screw with an allen wrench.

C Adjust the tension on the rail by tightening the (2) 6-32 Set Screws making very small equal turns, 1/16 - 1/8 revolutions, and check Knob movement. It is possible to lock up the Rail Assembly by over tightening so tighten cautiously. This should take out the play in the slide.

D Re-assemble and test. Make sure the AP Slide and Mounting Bracket are firmly nested together at Vee Slot.

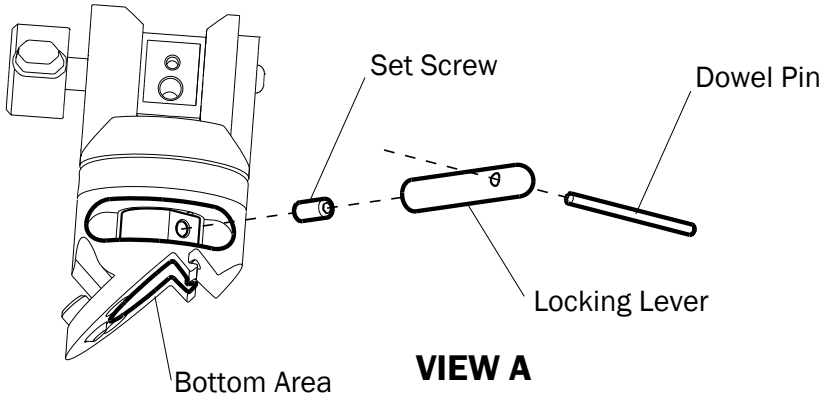


Reposition Collar and Reassemble

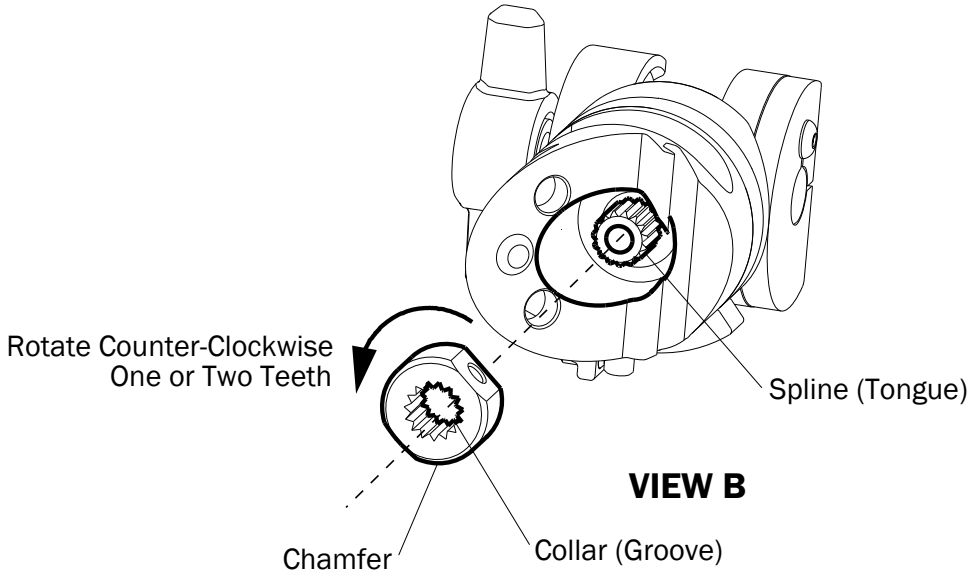
A Using the 1/16 diameter Dowel pin located in the tool kit, insert it into the small hole located on the Locking Lever and turn the Lever counter-clockwise, removing the Lever from the Swivel. Perform this operation over a bench in case the Collar slips off the Spline in the process. Remove the Set Screw from the Collar if it's still present, using the appropriate hex key supplied in the tool kit.

B Locate the bottom area of the Swivel Assembly and Slide Collar off of the Spline. Rotate the Spline counter-clockwise one or two teeth and slide back onto the spline. Make sure that the Chamfered edge is outwardly facing.

C Re-assemble the Swivel in the reverse order. Lock the Swivel Collar into position using the small set screw. Re-attach the Locking Lever by screwing it on and tighten using the 1/16 dowel pin. Remove Dowel Pin and place back into tool kit. Locate the Swivel Assembly back onto the Swivel Adjustment Plate by sliding the Swivel Assembly onto the plate, engaging the tongue and groove features. Re-assemble the parts using the two Socket Head Cap screws. It is important that you hand tighten both Screws first to seat the swivel assembly. Next, consecutively tighten the Screws a quarter at a time until the Screws are secured.

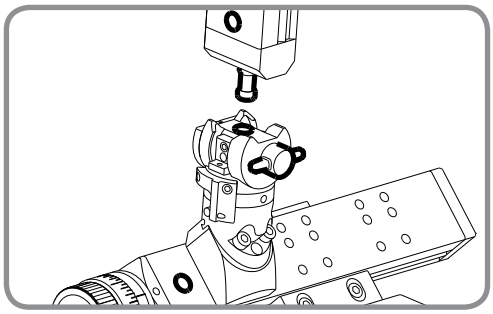


VIEW A



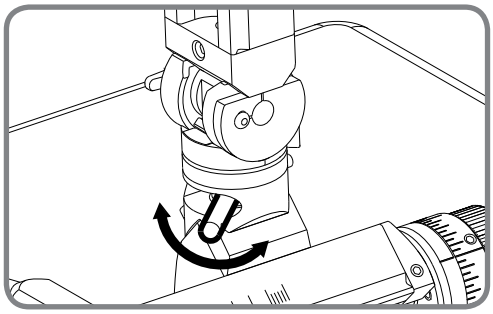
VIEW B

QUICK START GUIDE



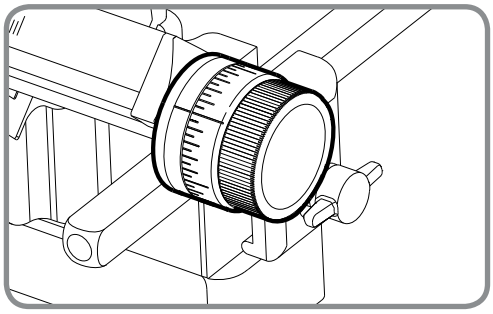
1. Aligning Tower to Swivel

Loosen Locking Knob to allow insertion of Tower. To align the tower assembly to swivel assembly, arrange the locating pin in a straight line with the swivel assembly. Gently push until the two surfaces are flush. Re-tighten using attaching screw.



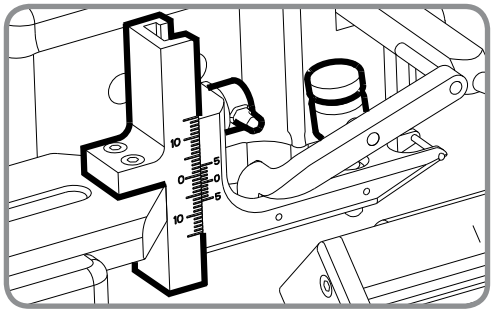
2. Swivel Lock

Use the one-piece swivel locking system for effortless multi repositioning of the tower in research and surgery.



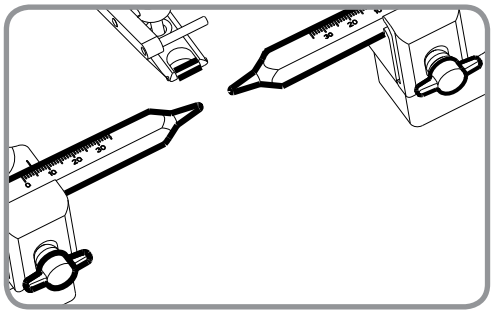
3. Calibration Knobs

The Calibration Knobs are adjustable through the use of a 1/16” hex key. This gives the user the option of repositioning the zero point on the knob for versatility in research.



4. Adjusting the Animal Head

Loosen the Locking Knob on the incisor bar and adjust the height of the animal head as needed. Change the pressure on the animal’s nose by adjusting the Thumb Screw Assembly on the Incisor.

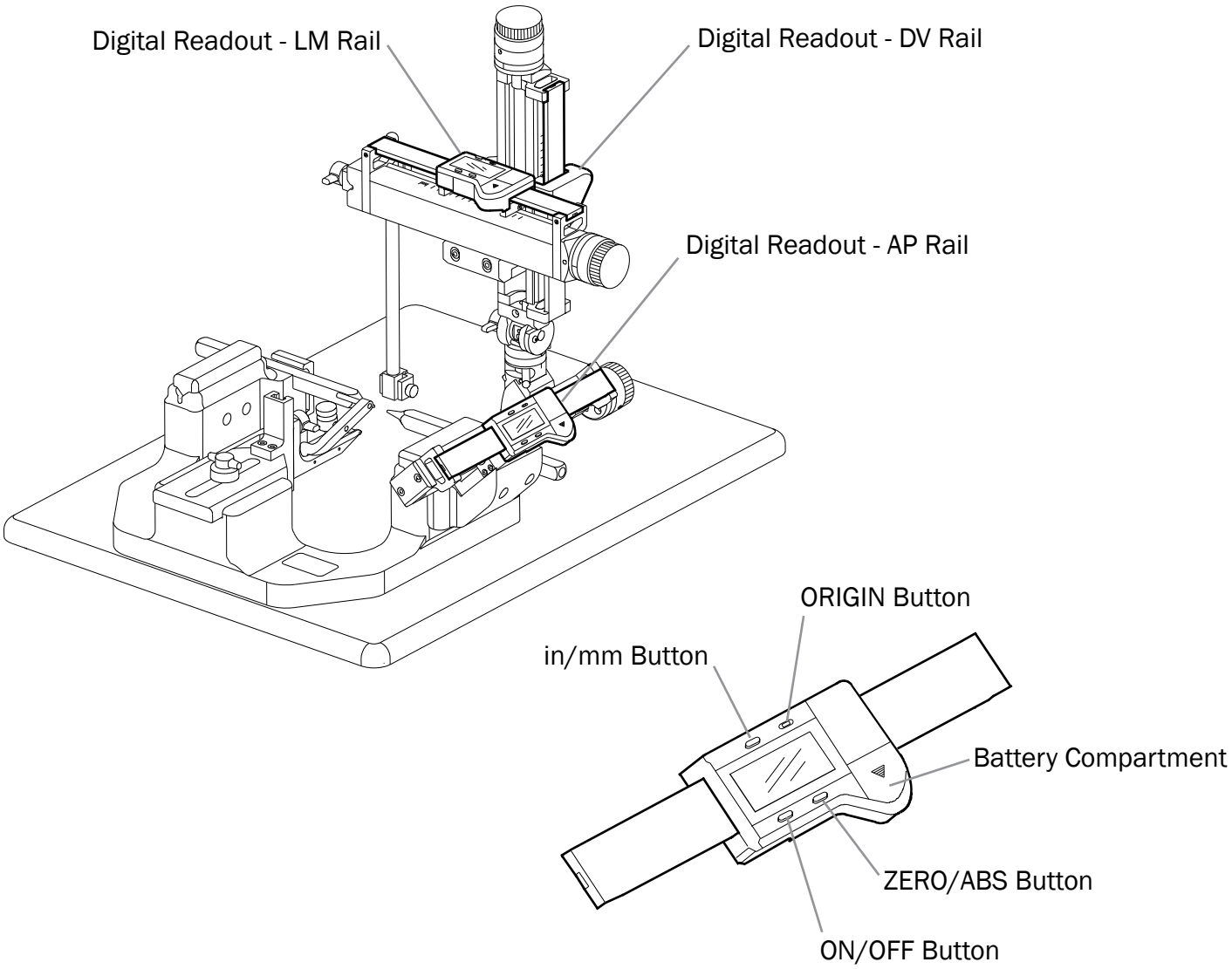


5. Ear Bar Positioning

Before positioning animal’s teeth on the Incisor Bar, position Ear Bars to animal to insure immobilization of head. Use the calibration on the Ear Bars to center animal specimen on the frame. Tighten Attaching Screw to secure the pressure plates to Ear Bars.

DIGITAL READOUT OPTION

Digital Readouts are available for all Stereotaxic Systems made after the year 2009. These Readouts give the user an unsurpassed level of versatility and ease of use when doing stereotaxic research. With a 0.01mm resolution and a zero reset, you are equipped to achieve precise research goals. You can order a Sterotaxic System with Digital Readouts or they made be ordered separately. If ordered separately, you will need to ship your Stereotaxic System back to us, so that we can install the Digital Readouts. Digital Readouts are factory installed only.

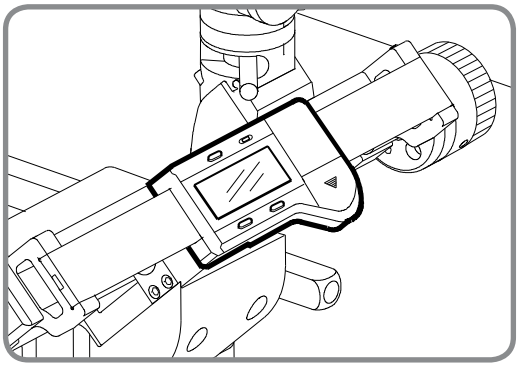


WARNING

Do not leave in extreme temperature conditions for extended periods of time. Do not alter unit in any way, including scratching, engraving, cutting, use of permanent marker, or re-finishing in any way. Do not submerge in water. Do not bend or distort. If scale is not being used for an extended period of time, remove battery and store in a dry place, with a comfortable temperature (around 70^0F).

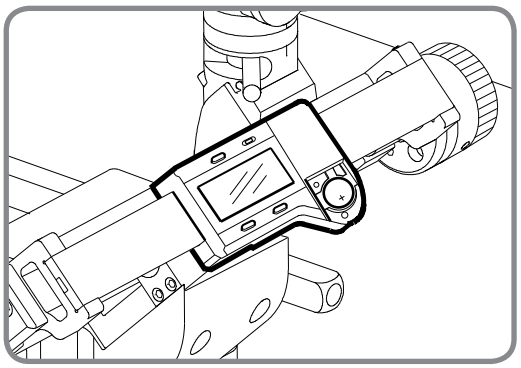
DIGITAL FEATURES

Working Details



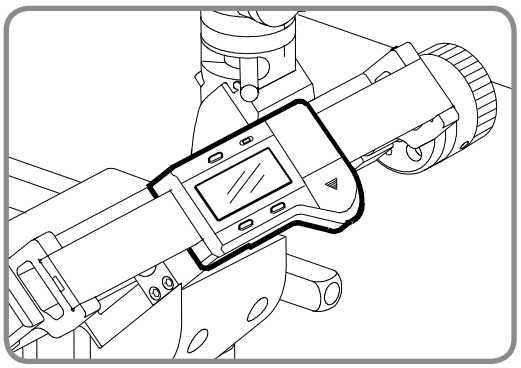
1. Setting the Origin

Unit comes with battery installed. Turn Digital Readout on, using ON/OFF button. Move scale to it's Zero referencing point on the aluminum Slide Dial. Set the Origin by pressing the ORIGIN button until display reads "0.00". This finishes your Origin setting, The setting will be retained throughout research, whether Readout is on or off. Select "in/mm" button to convert to inches or millimeters. *Origin set at factory.



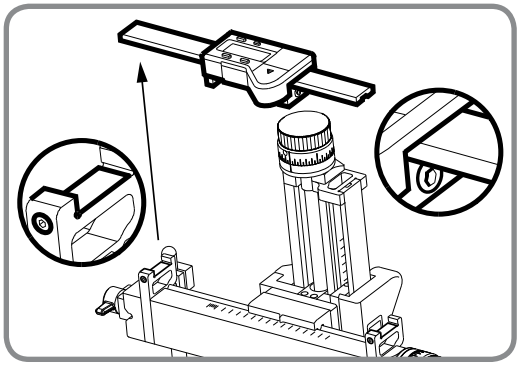
2. Changing Battery

Remove Battery Cover, and remove old battery from compartment area. Install a SR44 battery into the compartment with positive side facing up. Reposition battery cover. Use only SR44 batteries in the Digital Readout.
*Re-set Origin after replacing battery.



3. Zero Reset

Zero Reset functionality gives user increased versatility within research conditions. The display can be set to Zero at any position by pushing the ZERO/ABS button. To convert back to origin measurements, hold down the ZERO/ABS switch for one second.



4. Removing Scale for Deep Cleaning

Removing the digital scale when doing a deep cleaning is accomplished by loosen the (2) 4-40 set screws clamping the rail scale and loosening the nylon (1) 6-32 set screw located on the inteface bracket. When replacing or putting the rail back on it is good practe to put on scale at zero and then put the unit on. Tighten the set screws and reset the digital unit origin.

TWO TOWER MODLES

The Two Tower Models are the same as the SAS-4100 and the SAS-5100 except a second Tower Assembly is added. These Systems are available in a 3mm Lead Screw: SAS-4120 and a 1mm Lead Screw: SAS-5120. Use the Color Dots for referencing Compound Assemblies.