

# **GAMMA**

## 6002

### STRINGING MACHINE



## **OWNER'S MANUAL**

Issue 3 - June 20, 1998

# **GAMMA**

## 6002

### OWNER'S MANUAL

#### **TABLE OF CONTENTS**

PAGE 1 .....	WARRANTY
PAGE 2 .....	FEATURES
PAGE 3 .....	ASSEMBLY INSTRUCTIONS
PAGE 9 .....	MOUNTING THE FRAME
PAGE 11 .....	STRINGING THE FRAME
PAGE 13 .....	PATHFINDER AWL
PAGE 14 .....	MAINTENANCE AND ADJUSTMENTS
PAGE 16 .....	TROUBLESHOOTING
PAGE 16 .....	CARE AND CLEANING
PAGE 17 .....	COMPONENT IDENTIFICATION
PAGE 18 .....	PARTS LISTING

#### **LIMITED WARRANTY**

GAMMA SPORTS ("GAMMA") warrants to the original purchaser that the GAMMA stringing machine ("EQUIPMENT") purchased is free from defects in materials and workmanship for a period of five (5) years from the date of original purchase for mechanical parts (excluding string clamps), and for a period of one (1) year from the date of purchase for string clamps. Should any defects develop under normal use within the specified time periods, GAMMA will at its option, repair or replace the defective EQUIPMENT provided it is returned to GAMMA prepaid at the purchaser's expense. This warranty does not apply to any damage or defect caused by negligence, abuse, misuse, unauthorized alteration, shipping, handling, or part wear and tear as a result of normal use.

GAMMA's obligation under this warranty is limited to repair or replacement of defective EQUIPMENT, and no one is authorized to promise any other liability. GAMMA shall in no event be liable for any incidental or consequential damages.

To return defective EQUIPMENT, a return authorization (RA#) must be obtained from a GAMMA customer service representative by calling 1-800-333-0337. The RA# must be marked on the outside of the shipping carton being returned. All returns must be shipped prepaid by the customer to GAMMA. Please retain the original shipping carton and packing materials for any future shipments.

# FEATURES



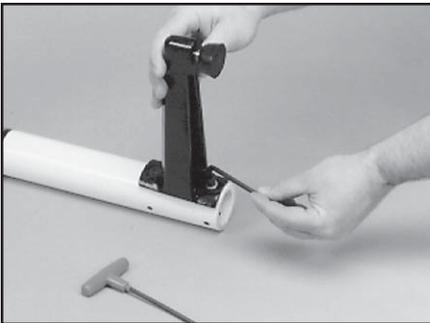
- ❖ Manual Spring Tensioner
- ❖ Diamond Coated String Gripper
- ❖ Tension Range: 11lbs. - 89lbs.
- ❖ 6 Point Suspension Mounting System ( 10 Point Support )
- ❖ Diamond Coated Dual Action Swivel Composite String Clamps
- ❖ Full 360 Degree Turntable Rotation
- ❖ Precision Bearing Mounted Turntable
- ❖ Large Convenient 141 sq. in. Tool Tray
- ❖ Height Adjustable From 36" to 48"

# ASSEMBLY INSTRUCTIONS

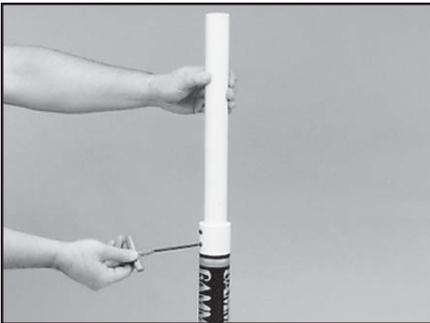


## ***Base Leg Assembly***

The GAMMA 6002 stringing machine uses a four leg base design. The legs must be assembled to the support post before use. Remove the lower column support from the carton. This is the larger of the two posts and has the GAMMA label.



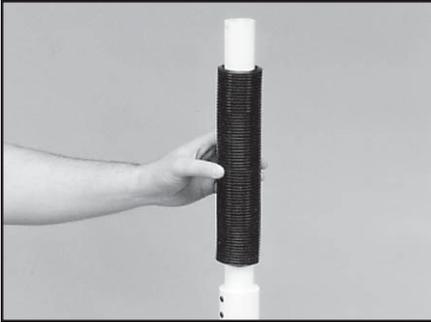
Align the holes in the leg flange with the matching holes in the lower column support post. Secure the leg with one FLAT HEAD cap screw through the upper hole, and one SOCKET HEAD cap screw through the bottom hole. Repeat this procedure for the three remaining legs.



## ***Upper Column Support Assembly***

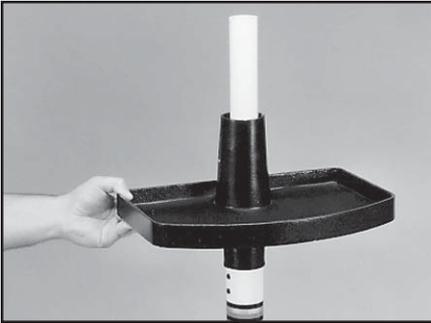
Insert the upper column support into the lower column support / base leg assembly. Leave the upper column extended to maximum height and lock in place with the two set screws located at the top of the lower column support.

# ASSEMBLY INSTRUCTIONS



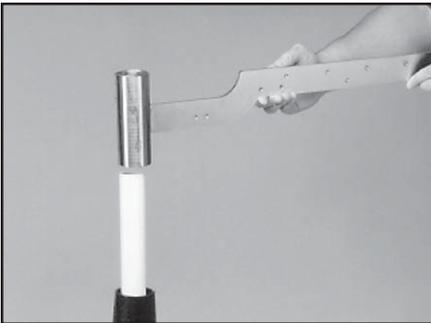
## ***Bellows Installation***

The bellows assembly is supplied in two pieces and should be assembled as follows. Place the bellows section with the flange over the upper support column with the flange on the top. Place the remaining bellows over the upper support column and mate it with the flange on the lower bellows.



## ***Tool Tray Installation***

Lower the tool tray over the top of the upper column support and let it rest loosely on the bellows assembly.



## ***Tension Track Installation***

Place the tube of the tension track assembly over the top of the upper column support. Align the tension track with the long leg of the base assembly. Securely tighten the two socket set screws on the tension track assembly tube, locking it to the upper column support. Align the notch in the tool tray with the tension track bar while raising the tool tray. Secure the tray with the set screws in the side of the tray casting.

# ASSEMBLY INSTRUCTIONS

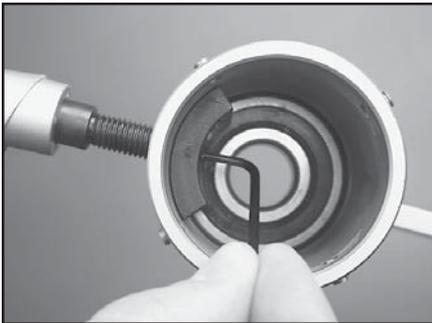


## Turntable Brake Installation

Remove the flat head screw from the end of the brake lever bolt and install the brake lever bolt into the threaded hole located on the side of the turntable tube.

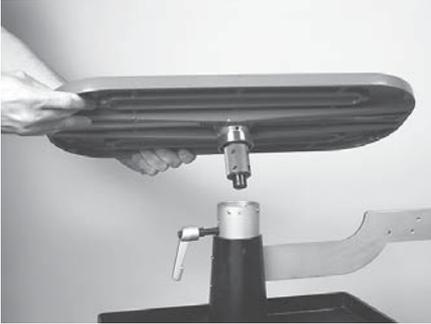


Place the brake pad into the turntable tube, then insert the end of the brake lever bolt into the hole of the brake pad so that the brake pad rests on the shoulder of the bolt.

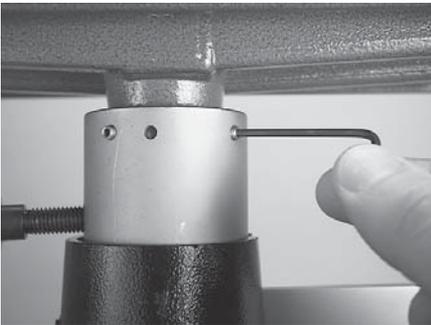


Insert the flat head screw into the end of the brake lever bolt from the inner side of the brake pad. While holding the head of the screw with the 2.5mm L-shaped wrench, turn the lever bolt to secure the brake pad against the shoulder of the lever bolt and set the head of the screw below the inner surface of the brake pad. Turn the lever to retract the pad until it sets against the inner surface of the turntable tube to provide clearance for installation of the turntable.

# ASSEMBLY INSTRUCTIONS

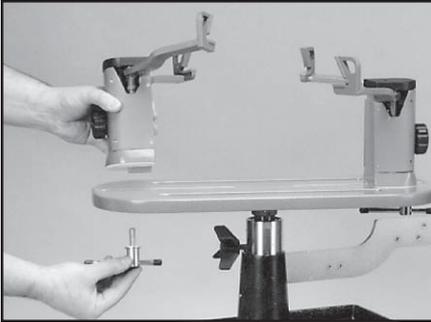


Retract the four set screws around the top of the turntable tube to provide clearance for installing the turntable. Carefully lower the turntable into the tube until it seats fully into the tube and rests against the bearing located at the bottom of the tube.



Tighten the four set screws located at the top of the turntable tube until they contact the bearing located on the turntable pin. Tighten the screws in a crossing pattern from one side to the next to keep the bearing on the turntable pin centered in the tube.

# ASSEMBLY INSTRUCTIONS

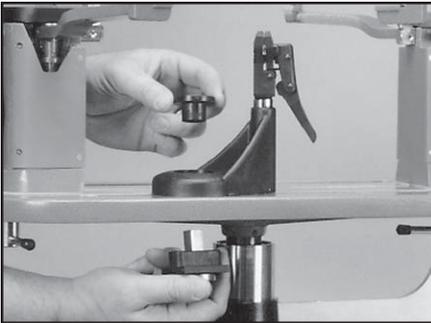


## Support Post Installation

The support post assemblies are precision aligned at the factory and are marked for proper installation on the turntable.

Install the marked support post on the marked side of the turntable. Align the threaded hole in the bottom of the support post with the slot in the turntable. Screw the lever lock bolt with washer into the bottom of the support post and tighten gently. Position the washer with the rounded edge toward the turntable.

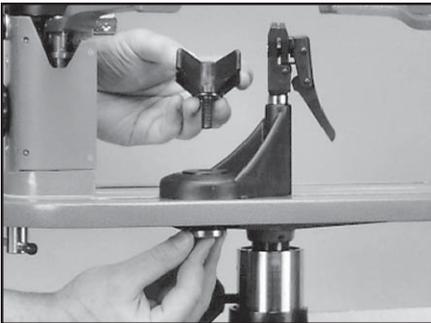
Repeat procedure on the opposite side.



## Installing the Fixed Clamps

To install the clamps, remove the winged lock knob to separate the knob from the lower guide bushing. Be careful not to lose the thrust bearing components located in the center recess of the knob.

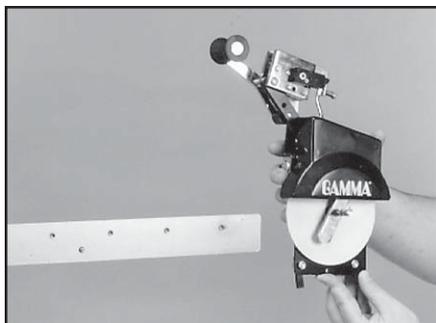
Align the clamp base with the clamp slot of the turntable base. Insert the clamp guide bushing into the clamp from the bottom of the turntable making sure to engage the guide with the clamp slot.



Place the load bushing into the top of the clamp base mating it to the lower guide bushing.

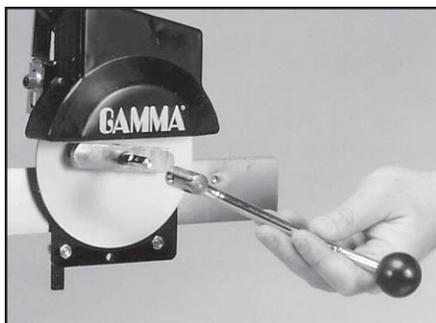
After checking that the thrust bearing is positioned correctly in the base of the winged lock knob, screw the knob into the base bushing until fully seated.

# ASSEMBLY INSTRUCTIONS



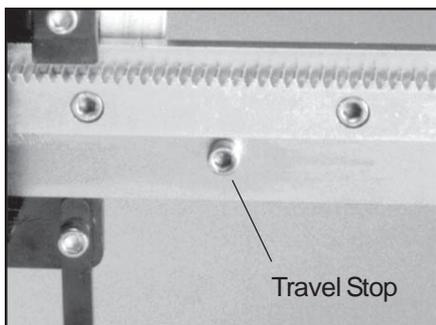
## Installing the Tensioner

Remove the button head screw and washer located at the end of the tensioner bar with the 3 mm hex wrench provided. Slide the tensioner onto the bar, being careful to align the bar with all of the bearings and the drive gear with the gear track. Replace the button head screw and washer in the end of the tensioner bar.



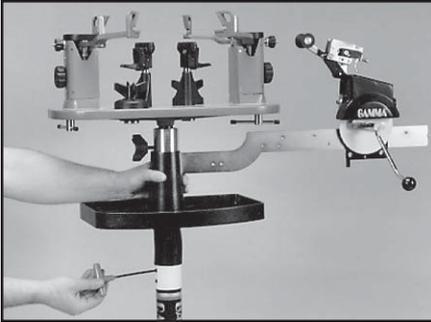
## Installing the Crank Arm

Remove the flat head screw located on the crank shaft with the 2.5mm wrench provided. Slide the crank handle over the crank shaft while aligning the holes. Replace the flat-head screw.



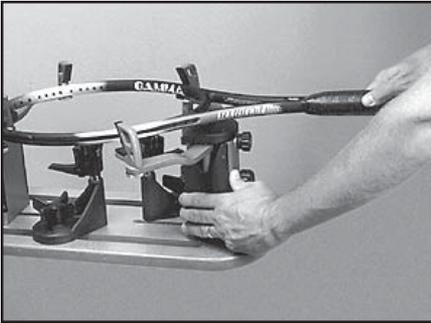
**Note:** The tensioner bar is equipped with a tensioner travel stop screw to limit travel of the tensioner along the bar and prevent contact between the tensioner and the racquet mounting system while stringing. The stop screw is located about midpoint along the tensioner bar below the gear track. To engage the stop, turn the stop screw clockwise until fully seated against the bar. To disengage the stop screw, turn it counter clockwise until it no longer protrudes beyond the surface of the bar.

# MOUNTING THE FRAME



## Height Adjustment

The turntable height of the GAMMA 6002 can be adjusted to suit the stringer. To adjust, loosen the two set screws on the lower column support post below the bellows assembly. Adjust the amount of engagement between the upper and lower column supports until the desired height is attained. Make sure that the tension track is still aligned with the long leg of the base and tighten the two set screws to lock the upper support column into place.

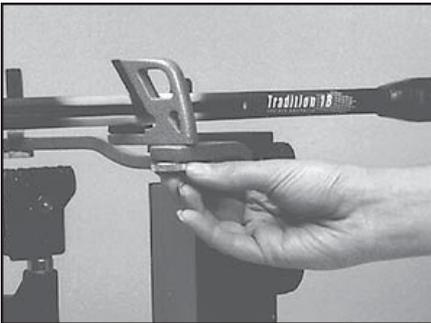


## Adjusting the Frame Support Posts

Place the racquet frame over the center support slide and onto the frame support. Loosen the lever lock bolt on one support post. Slide the post outward until the center support of the racquet support slide is positioned near the inside surface of the racquet frame. Securely tighten the lever lock bolt.

Adjust the opposite post using the same procedure.

Caution: To avoid racquet damage, the support slide should not contact the racquet prior to fixing the support posts.



## Shoulder Support Adjustment

The shoulder supports on the GAMMA 6002 are adjustable to provide support to the racquet frame. Loosen the knurled knob at the bottom of the shoulder support and swivel the support so that the pads will contact the frame squarely when the arms are closed against the racquet. Should the shoulder supports block string holes, adjust the position of the racquet between the arms until the shoulder supports contact the racquet between grommet holes.

# MOUNTING THE FRAME

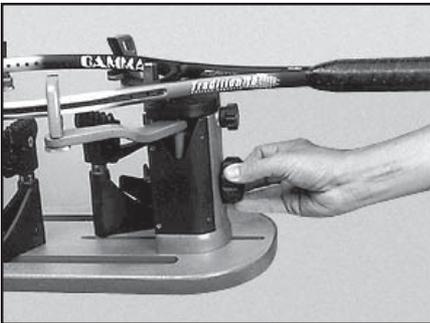


## Support Slide Adjustment

Once the frame support posts are secured, lightly tighten the support slides by turning the knobs on the outside of the slides clockwise. Adjust the slides in equal increments until slight resistance is felt.

Apply a final adjustment to all racquet support points until the racquet is firmly secured in the mounting system.

Should the frame supports lose contact with the frame while stringing, they should be adjusted, as needed, to maintain contact with the frame.

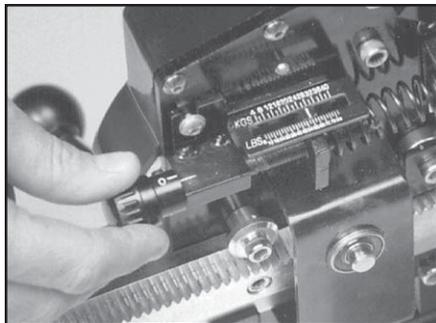


## Securing the Shoulder Supports

Secure the racquet frame with the shoulder supports by rotating the large adjustment knobs on the outside of the support post assemblies clockwise. Adjust the supports until firm contact is made between the shoulder supports and the frame.

**The tear drop shaped holes towards the back of the shoulder supports are handy for holding the loose end of the string while pulling the string through the racquet. Simply insert the loose end into the tear drop shaped holes and slide the string into the point of the hole.**

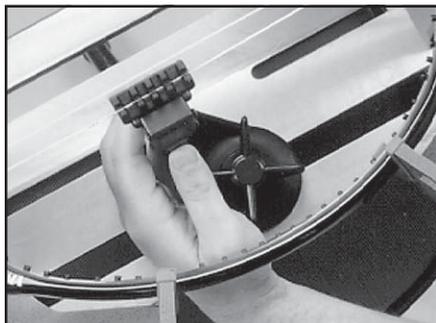
# STRINGING THE FRAME



## Setting Tension

The GAMMA 6002 utilizes a rotary adjusting knob along with a linear tension scale to indicate the tension setting. The scale is divided into 3 lb increments and each 1/3 turn of the tension knob changes tension by 1 lb. To set the desired tension, rotate the tension knob and align the mark on the spring guide with the desired tension setting on the scale. When the "0" mark on the knob aligns with the line on the knob support the tension will be that indicated on the scale. To increase tension by 1 or 2 lbs turn the knob counterclockwise until the "1" or "2" mark on the knob

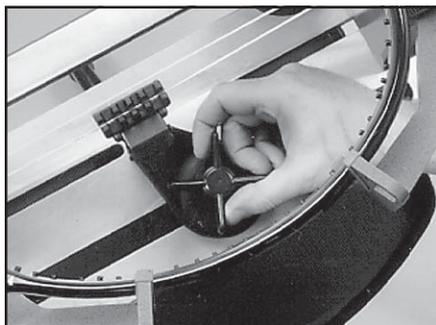
aligns with the line on the knob support. To decrease tension by 1 or 2 lbs, turn the knob clockwise until the "2" or "1" mark on the knob aligns with the line on the knob support.



## Fixed Clamp Operation

The fixed clamps supplied with your GAMMA 6002 are of a dual action design. The string clamp and the clamp base operate independently of one another.

To clamp a string, lift the clamp head and place the string between the jaws. Depress the clamp head lever to secure the string.



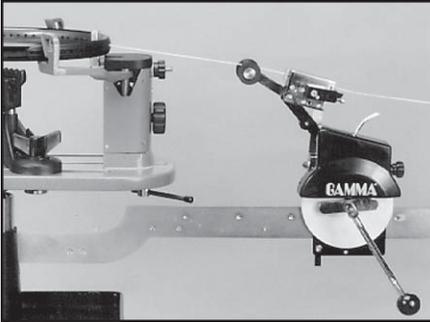
## Fixed Clamp Operation

Rotate the winged lock knob clockwise to secure the clamp base to the turntable.

Reverse the clamping procedure to un-clamp the string.

Note: If the string slips in the string clamp while tensioning, adjust the gap between the clamp jaws as per the instructions on page 14.

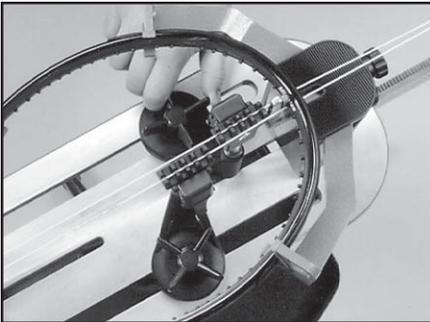
# STRINGING THE FRAME



## **Pulling Tension**

Wrap the loose section of string once around the DIABLO and insert the string between the diamond dust coated string gripper plates. Pull the string perpendicular to the gripper plates while slowly rotating the tensioner crank clockwise until the brake lever pops out of the latching block. The string is now tensioned and can be clamped in place with the remaining fixed clamp.

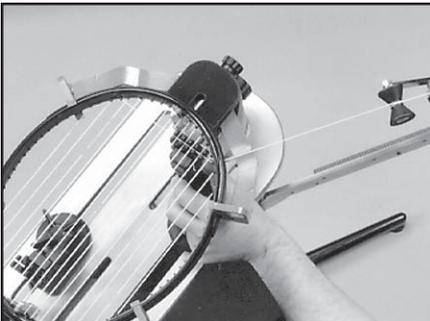
Repeat the above steps until all main strings are installed. Tie off ends of main strings as per racquet manufacturers recommendations.



## **Clamping the First Main String**

To begin stringing the main strings, thread the two ends of the string through the two center holes at the appropriate end of the frame and continue through the opposite center holes. Thread one end of the string through the adjacent grommet hole and pull excess by hand.

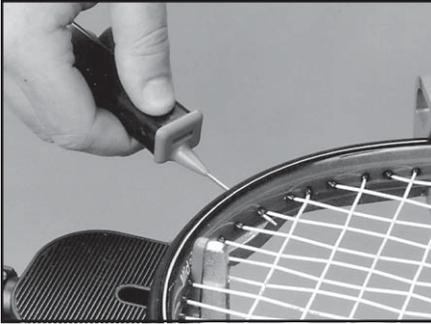
Secure one of the strings using a string clamp.



Weave the cross strings over and under the main strings being careful to alternate the weave direction of each consecutive cross string so as to be opposite of the previously installed cross string.

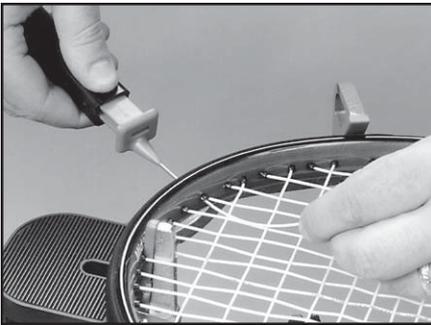
Once the final cross string is tensioned and clamped, tie off at the appropriate hole specified by the racquet manufacturer.

# PATHFINDER AWL



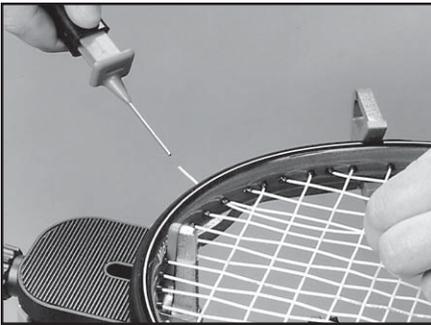
The GAMMA 6002 includes the new Pathfinder stringing awl which creates a pathway between or around strings and through tight grommets.

Insert the awl through the grommet hole in the same manner as for traditional awls. The Pathfinder awl must be closed before insertion.



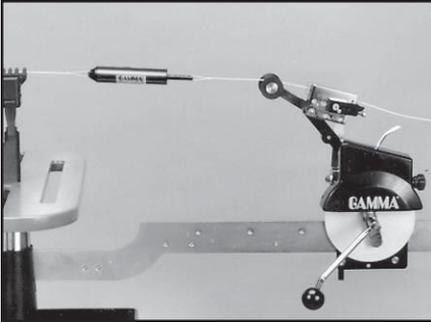
Once the awl is inserted, pull the handle of the awl outward while holding the tip section in place, leaving the outer sheath in the grommet hole.

Insert the end of the string into the center of the sheath.



While holding pressure on the string, slowly pull the sheath out of the grommet hole to leave the end of the string exposed.

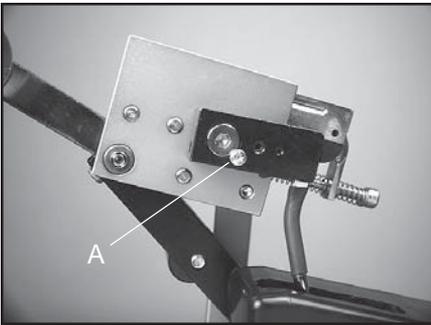
# MAINTENANCE



## Tension Calibration Procedure

### Step 1

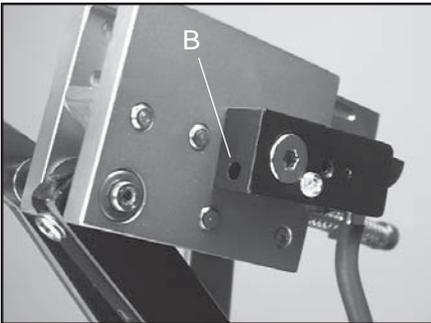
Set the tension to 60 lbs. as indicated by the linear scale and rotary knob. Place the string on one end of a tension calibrator into a string clamp and secure. Place string located on the other end of the calibrator into the string tensioner and apply tension. If the brake lever releases before 60 lbs. or after 60 lbs., the tension head should be calibrated as follows.



## Tension Calibration Procedure

### Step 2

Loosen the plastic locking screw (A) located on the side of the latching block as shown. The plastic screw is used to hold the adjustment screw in place.



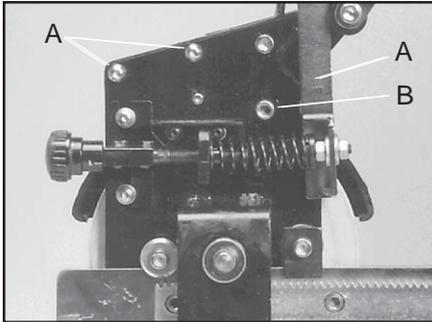
## Tension Calibration Procedure

### Step 3

If the lever releases before 60 lbs., using the supplied L-shaped hex wrench, turn the adjustment screw (B) located on the left side of the latch block counter-clockwise to increase the engagement of the brake release latch with the brake lever. Repeat step 1 and adjust until the correct tension is indicated on the calibrator.

If the tension indicated in step 1 is greater than 60 lbs., turn the adjustment screw clockwise to reduce the engagement of the brake release latch with the brake lever. Repeat step 1 and adjust until the correct tension is indicated on the calibrator.

# MAINTENANCE



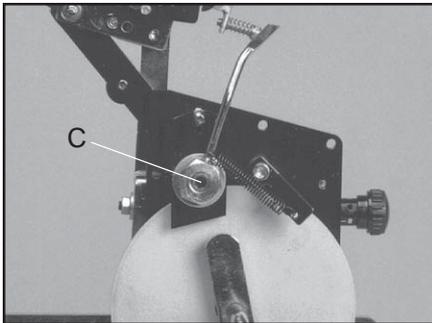
A - Cover Screws

B - Lock Bolt

## Adjusting the Tensioner Brake

### Step 1

After stringing many racquets, the brake of the tensioner may need to be adjusted. To tighten the braking mechanism, the cover of the tensioner must be removed. To remove the cover, remove the 2 button head screws located on the back side of the tensioner frame near the top of the frame, and the flat head screw located behind the tensioner lever on the back side of the tensioner frame using the 3 mm hex wrench. With the brake lever released remove the cover.

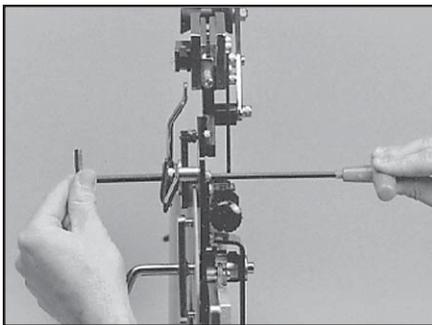


C - Brake Adjustment Bolt

## Adjusting the Tensioner Brake

### Step 2

With the cover removed, and the brake lever engaged, loosen the lower hex bolt located on the back side of the tensioner frame with the 10 mm box wrench. Note: The hex bolt should only be loosened until loose enough to be turned by hand and must not be removed completely.



## Adjusting the Tensioner Brake

### Step 3

With the hex bolt loosened and the brake lever engaged in the latch, insert the 6 mm hex wrench into the set screw locted inside the nut located at the base of the brake lever. To tighten the braking mechanism, turn the set screw counter clockwise by about 1/8 turn. Retighten the hex bolt on the back side of the tensioner frame and check for brake tightness. The tensioner should move freely along the track with the brake lever engaged and should hold tension with the brake lever

released. If more adjustment is needed, repeat steps above until properly adjusted. After adjustment is complete, replace the tensioner cover by aligning the holes of the cover with the holes in the tensioner frame and secure with the 2 button head screws and flat head screw.

# TROUBLESHOOTING TIPS

<u>PROBLEM</u>	<u>SOLUTION</u>
String slips in clamps	<ul style="list-style-type: none"><li>- Adjust gap between jaws</li><li>- Clean clamp jaws</li></ul>
String slips in gripper	<ul style="list-style-type: none"><li>- Clean gripper jaws</li><li>- Adjust Gripper Jaw Stop Screw</li></ul>
String clamp slips on base	<ul style="list-style-type: none"><li>- Clean base of clamp and top of turntable</li></ul>
String clamp winged lock knob is difficult to turn	<ul style="list-style-type: none"><li>- Check for proper position of thrust bearing in the base of the winged lock knob</li></ul>
String tension too tight or too loose	<ul style="list-style-type: none"><li>- Check tension using a tension calibrator and adjust machine calibration if necessary</li></ul>

For additional assistance, contact Gamma Sports Customer Service at 1-800-333-0337

## CARE and CLEANING

With time and use, the clamping surfaces of your machine may become oily or dirty and result in string or clamp slippage while stringing. Periodic cleaning of the following parts is recommended.

### **String Clamps**

Clean the inside gripping surfaces of the string clamp jaws by inserting a cloth or pipe cleaner soaked with isopropyl alcohol between the jaws and rub back and forth. If the build-up is excessive, dismantle the string clamp jaws to expose the gripping surfaces by removing the adjustment screw. Using a small nylon brush, (such as a toothbrush), scrub the inside surfaces until all debris is removed. Clean the jaws with isopropyl alcohol and re-assemble.

### **String Clamp Base**

Clean the base of the clamps and the top of the turntable with isopropyl alcohol.

### **String Gripper**

Clean inner gripping surfaces with isopropyl alcohol soaked cloth or pipe cleaner.



# GAMMA

## 6002

### Parts Listing

<b>Part #</b>	<b>Description</b>
6B	Cap Screw - M8 x 30
9	Washer - M8
13	Locking Lever
21A	Frame Support Slide SM Tennis
21B	Frame Support Slide SM Badminton
22A	Support Adaptors Black
52	Clamp Head Assembly
54A	Clamp Base
55	Guide Bushing
56	Guide Bushing Nut
57	Load Bushing
57A	Radial Thrust Bearing
58	Winged Knob
104	Tensioner Assembly
106	Wing Locking Knob Screw
111	Tensioner Track
112	Tool Tray
113	Long Leg
114	Short Leg
115	Flat Head Cap Screw -M8 x 25
116	Lower Column Support
117	Tensioner Cover
118	Turntable
119	Bellows
120	Upper Column Support
121	Leveling Foot
122A	Shoulder Support Pads
132	Mounting Arm Adjustment Knob SM
133	Support Slide Adjustment Screw SM
134	Suspension Mounting Arms
135	Shoulder Support Adjustment Knob SM
136	Shoulder Support SM