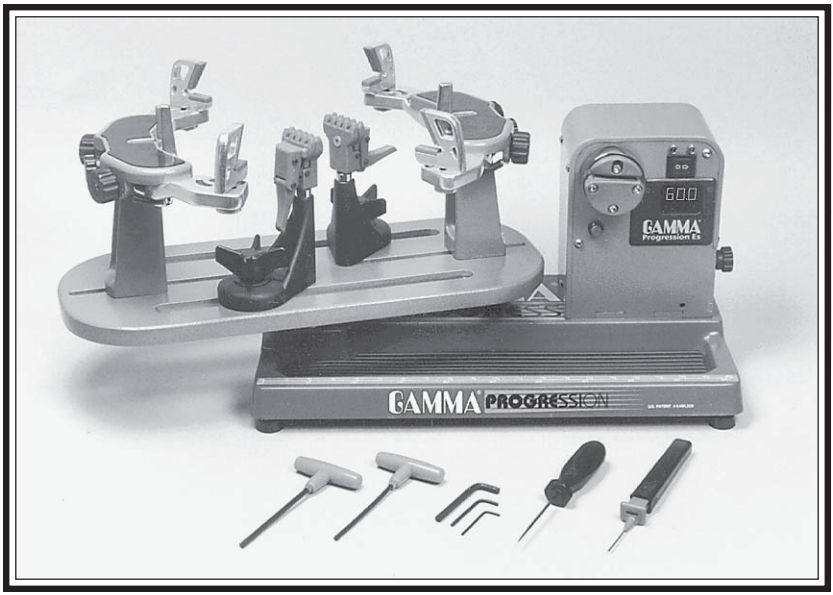
GAMMA

PROGRESSION

600ES - LED



OWNER'S MANUAL

Issue 3 / Version E - Oct. 28, 1997

GAMMA PROGRESSION600ES-LED

OWNER'S MANUAL

TABLE OF CONTENTS

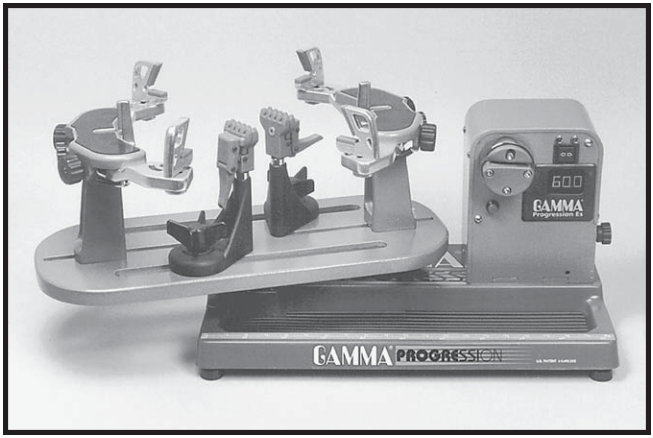
LIMITED WARRANTY

GAMMA SPORTS ("GAMMA") warrants to the original purchaser that the GAMMA PROGRESSION 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 electrical parts and string clamps), and for a period of one (1) year from the date of purchase for all electrical parts and 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. GAMMA will not be responsible for machines which are not sent in the original undamaged packaging.

FEATURES



Electric Constant Pull Tensioner w/ 11lb. to 89lb. Tension Range

Digital Tension Setting Display

Professional Six Point "Quick Mount" Racquet Mounting System - Accomodates All Racquets Without Adapters

Parallel Jaw Rotating Gripper w/ Diamond Dust Coated Gripping Surfaces

Professional Dual Action, Diamond Dust Coated, Fixed String Clamps

Durable Polystyrene Base Cover w/ Convenient Padded Tool Tray

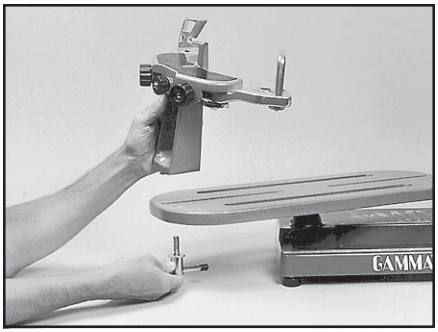
Strong, Light Weight, Powder Coated Molded Aluminum Construction

ASSEMBLY INSTRUCTIONS

Installing the Turntable

The turntable is located under the foam packing in the bottom of the shipping carton.

Insert the center post of the turntable into the bushing of the stringing machine base.

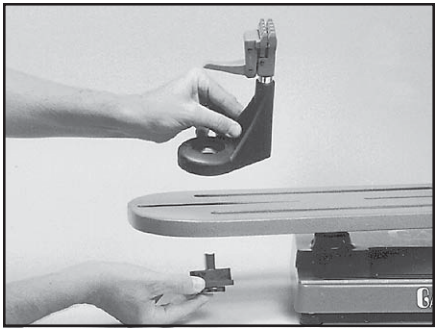


Installing the Frame Support Posts

The GAMMA 600ES support post assemblies are precision aligned at the factory and are marked for proper installation on the turntable.

Install the support post with the dot on its base to an identical dot on the turntable. Align the threaded hole in the bottom of the frame 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 the rounded edge toward the turntable.

Repeat procedure on the opposite side of the turntable.

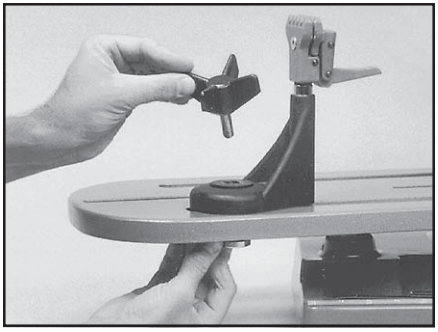


Fixed Clamp Installation

To install the clamps, remove the winged lock knob to separate the knob from the lower guide bushing. Be careful not to lose the radial 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.

ASSEMBLY INSTRUCTIONS

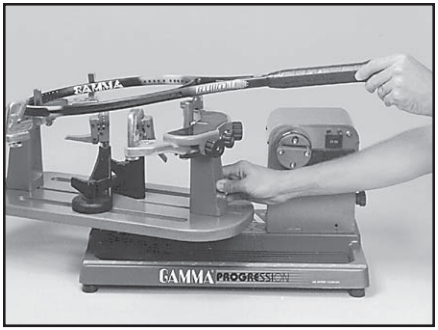


Fixed Clamp Installation - (cont.)

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.

The post of the string clamp head and tube of the string clamp base are treated with grease to provide protection against corrosion during shipping. Remove any excessive grease with a clean cloth prior to use. The post and tube may also be cleaned with isopropyl alcohol. After this type of thorough cleaning, the post and tube should be treated with a light coating of machine oil to protect the surfaces against corrosion and to ensure smooth operation.

MOUNTING THE FRAME

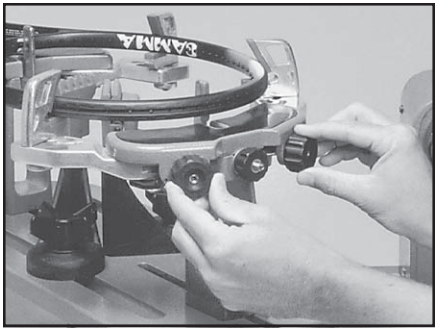


Adjusting the Frame Support Posts

Place the racquet frame over the center posts 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.

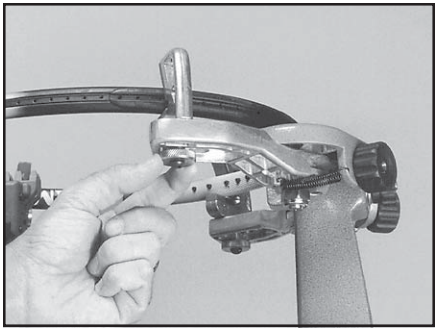
Adjust the opposite post using the same procedure.

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



Adjusting the Frame Shoulder Supports

Being sure the shoulder supports are free to swivel in their mountings, simultaneously rotate the shoulder support adjustment knobs clockwise until both shoulder supports gently and squarely contact the frame.



Securing the Frame

Lock the shoulder supports in position by turning the knob at the base clockwise.

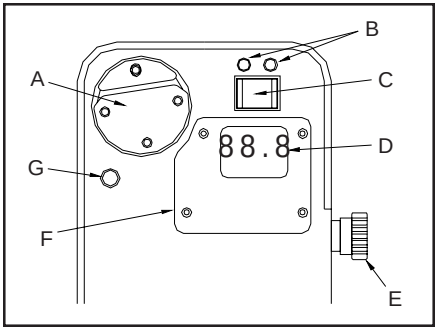
Repeat the adjustment procedure for the remaining support post.

Re-tighten all of the frame supports in the same order as before.

Do not overtighten any of the supports as racquet damage may occur.

The supports should be tightened to the point where the racquet frame will not move in the mounting system when the handle is grasped and attempts are made to move it. Should any supports lose contact with the frame while stringing, they should be re-tightened.

TENSIONER CONTROLS



Front Panel Features

A - String Gripper

B - Indicator lights

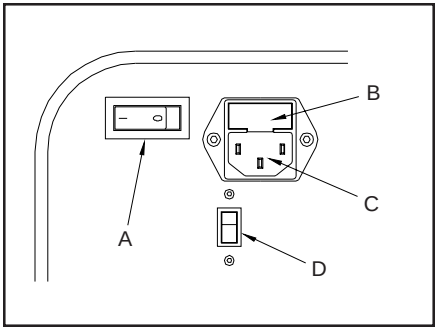
C - Tension Switch

D - L.E.D. Tension Display

E - Tension Adjustment Knob

F - Cover Plate

G - Gripper Reversing Switch



Rear Panel Features

A - Lighted Power Switch
To turn the power on, press the top half of the switch.

B - 5 Amp Fuse Holder (w/ spare fuse)

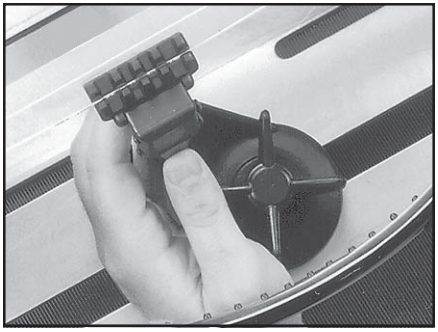
C - A/C Power Cord Socket
Insert the female end of the power cord into the socket.

D - 110V / 220V Select Switch

Setting Tension

The Progression 600ES stringing machine utilizes a rotary adjusting knob along with a digital L.E.D. display to indicate the set tension. To set the tension, rotate the adjustment knob clockwise to decrease the displayed tension, counter-clockwise to increase the displayed tension, until the desired tension is displayed on the digital display. Aramid fiber and Metallic strings will generally string up tighter on the Progression Es machine compared to synthetic or natural gut strings. Therefore, when stringing with Aramid (Kevlar, Technora) hybrid strings or metallic strings, we recommend setting tension 4-5 lbs. lower than you would normally use for synthetic or natural gut strings.

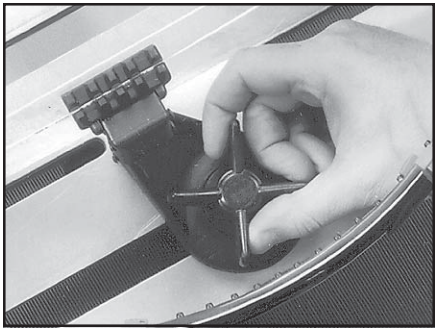
STRINGING THE FRAME



Fixed Clamp Operation *- Step 1*

The fixed clamps for the GAMMA 600ES 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. The clamping pressure applied to the string should be adjusted to provide sufficient pressure to secure the string when subjected to the desired pulling tension. The diamond coated gripper plates provide for increased friction between the clamps and the string to allow for reduced clamping pressure while securing and holding the string under tension.

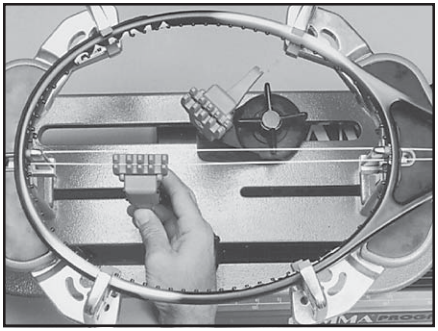


Fixed Clamp Operation *- Step 2*

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

Reverse the clamping procedure to unlock the string clamp.

The winged lock knob should be tightened enough to prevent clamp base slippage on the turntable, when the desired tension is placed on the string. To go from the loose position to the clamped position and back, generally requires about 1/2 to 3/4 quarters of a turn. Although when stringing at extremely high tensions, additional tightness may be required. **Note: If the string slips in the string clamp while tensioning, adjust the gap between the clamp jaws as per the instructions on page 11.**

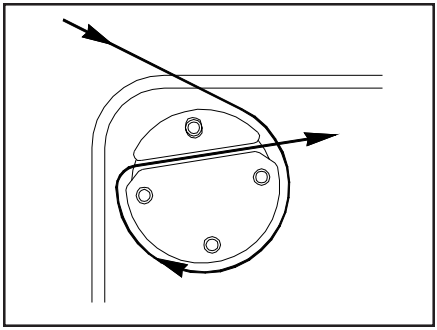


Clamping the First Main String

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.

STRINGING THE FRAME

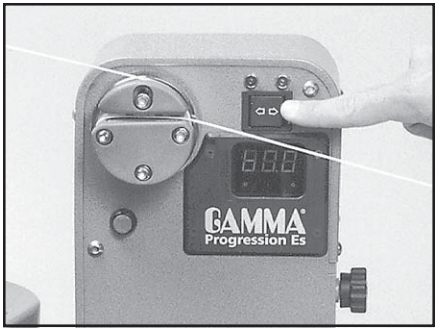


Pulling Tension

To pull tension, wrap the free string clockwise around the gripper drum and position the string between the gripper jaws.

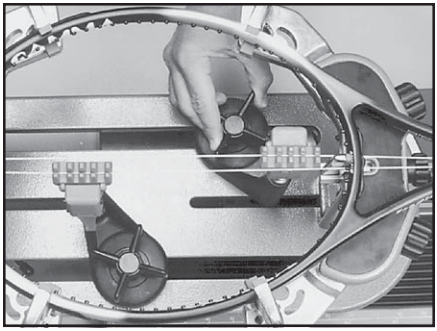
The string must pass over the top half of the gripper before being placed between the gripper jaws, as the tension on the string provides the clamping force to the gripper jaws.

Gently pull the string until all slack is removed.



Push the Tension Switch toward the right side of the machine. The string gripper will rotate and slowly apply tension to the string. When the set tension has been attained, the gripper will stop rotating and the green LED will light. As the tensioned string stretches, the gripper may rotate intermittently, maintaining the set tension.

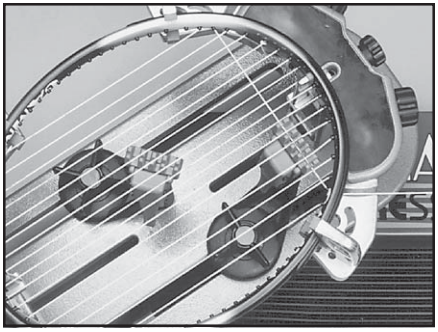
To release the string after clamping, push the tension switch toward the left side of the machine. If the string gripper does not release the string, depress the Gripper Reversing Switch once to release the string.



Secure the tensioned main string using the remaining fixed clamp. Repeat the procedure for all of the remaining main strings and tie off following the racquet manufacturers recommendations.

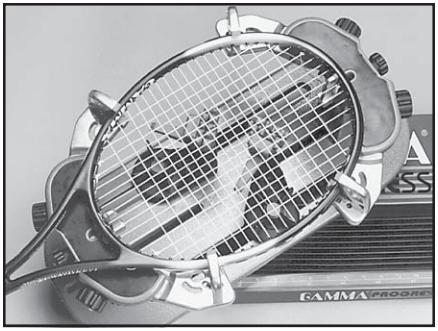
Follow the manufacturer's recommended stringing pattern for one or two piece stringing. This will determine the starting point for the cross strings. If applicable, tie the first cross string using an appropriate starting knot.

STRINGING THE FRAME



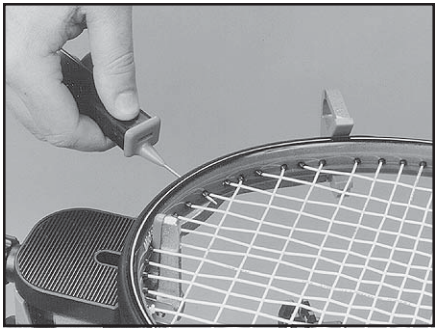
Weaving the Cross Strings

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.



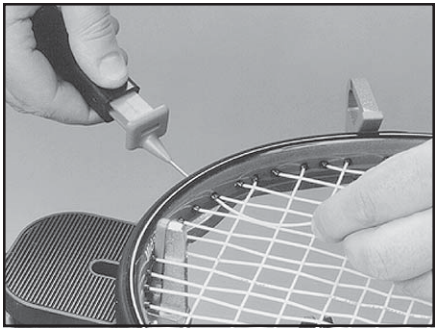
Once the final cross string is tensioned and clamped, tie off at the appropriate hole specified by the racquet manufacturer.

PATHFINDER AWL

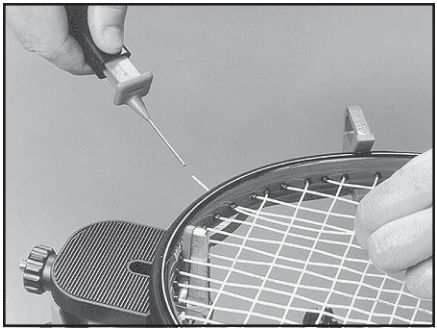


The GAMMA 600ES includes the new Pathfinder stringing awl which creates a pathway between or around strings to make inserting a string through tight gromets easier and quicker.

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

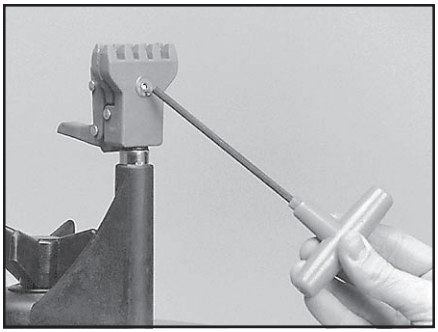


Once the awl is inserted, pull the handle of the awl outward while holding the tip section in place, leaving the outer sheath in the grommet hole.
Insert the end of the string into the center of the sheath.



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

MAINTENANCE and ADJUSTMENTS

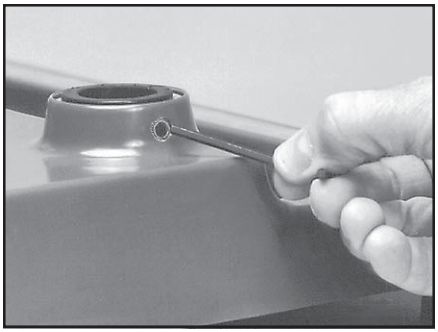


Adjusting the String Clamps

The clamps provided with your stringing machine will need minor adjustments according to what string type, construction, and gauge you are using.

To adjust, route the string through the racquet as if you were beginning the main strings. Clamp the strings and pull tension. If the string slips through the jaws of the clamp, tighten the clamp by turning the hex screw opposite of the handle, in the clockwise direction. If the clamp leaves impressions or damages the string, it is too tight and must be adjusted by turning the hex screw counterclockwise. The clamp jaws must be clean and free from dirt, oil, and any string coating for them to grip properly.

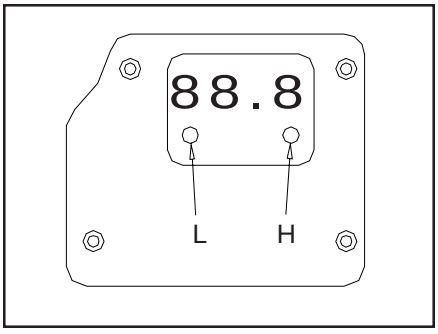
Note: The string clamps supplied with your Gamma stringing machine can accomodate tight string patterns such as badminton. Depending on the string pattern, the clamp may spread the strings slightly which will not compromise the quality of the string job.



Turntable Bushing Adjustment

The GAMMA 600ES is adjusted at the factory for optimum performance. After time and use, the turntable bushings may need minor adjustment. An adjustment is indicated when noticeable turntable looseness or wobble occurs while stringing.

To adjust the fit between the turntable pin and the bushings, tighten the set screw at the top of the bushing using a 3mm hex wrench. Tighten until the turntable rotates smoothly without excessive free play.



Tension Calibration Procedure

If you suspect that your 600ES is not pulling the correct tension, you should check the tension with a Gamma Tension Calibrator which provides a measurement of the actual pulling tension being applied by the machine.

With the 600ES machine tension set at 20 lbs., place one end of a calibrator equipped with synthetic string into a string clamp. Place the opposite end into the string gripper and apply tension. If the measured tension is inaccurate, remove the 2 small caps from the L.E.D. display cover plate cover. Rotate screw (“L”) in small increments until the displayed tension matches the tension indicated on the calibrator. Set the machine tension to 75 lbs. and apply tension to the calibrator. If the measured tension is innacurate, rotate screw (“H”) in small increments until the displayed tension matches the tension indicated on the calibrator. Replace the 2 caps in the L.E.D. display cover plate.

TROUBLESHOOTING TIPS

PROBLEM	SOLUTION
String slips in clamps	- Adjust gap between jaws - Clean clamp jaws
String slips in gripper	- Clean gripper jaws - Make sure string is wrapped over top jaw of gripper prior to inserting between gripper jaws
String clamp slips on base	- Clean base of clamp and top of turntable
String clamp winged lock knob is difficult to turn	- Check for proper position of thrust bearing in the base of the winged lock knob
Electrical system does not function	- Check power source - Check power cord connection - Check stringing machine fuse - Call Gamma Sports customer service
String tension too tight or too loose	- Check tension using a tension calibrator and adjust machine calibration if necessary

Fuse Replacement

To change the fuse, remove the power cord and pull the fuse holder straight out. Remove the old fuse from the holder and replace it with the supplied spare. Replace the fuse holder into the machine and check for proper operation.

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

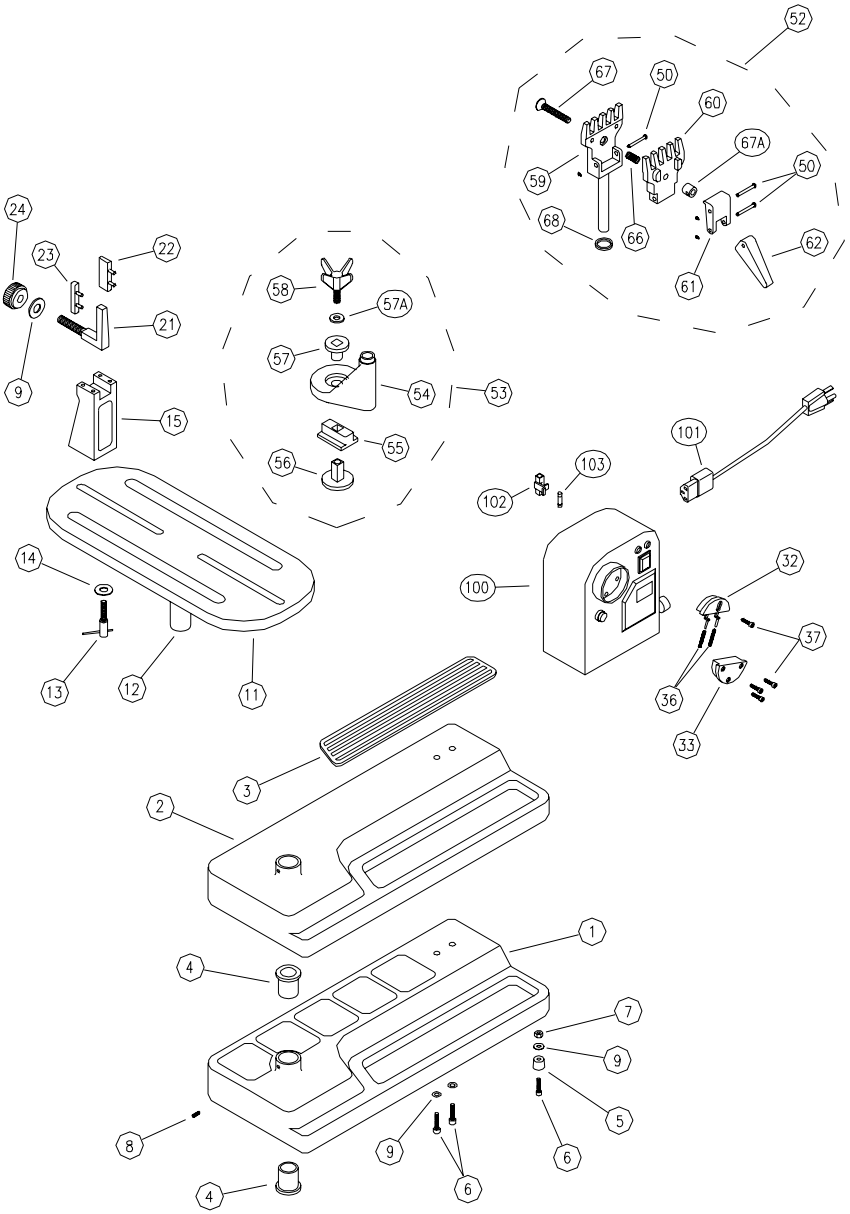
Follow the same procedure for cleaning the string clamps.

PARTS LIST

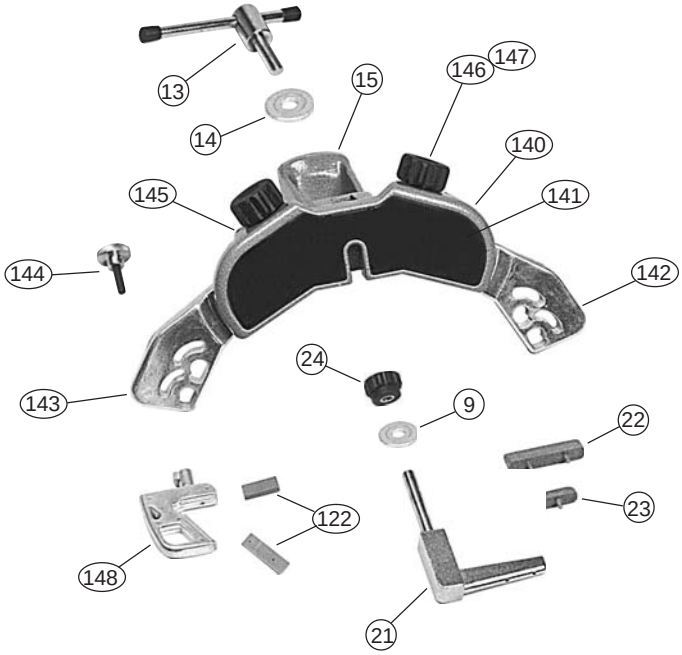
PART #	DESCRIPTION
1	ALUMINUM BASE
2	BASE COVER
3	TRAY PAD
4	TURNTABLE BUSHING
5	RUBBER FEET
6	CAP SCREW
7	FOOT NUT
8	BUSHING SET SCREW
9	WASHER
11	TURNTABLE
12	TURNTABLE PIN
13	POST LOCK LEVER
14	WASHER
15	SUPPORT POST
17	CAP SCREW
21	FRAME SUPPORT SLIDE
22	BADMINTON ADAPTER
23	TENNIS ADAPTER
24	KNOB
32	UPPER GRIPPER JAW
33	LOWER GRIPPER JAW
36	GRIPPER JAW SPRING
37	CAP SCREW
100	TENSIONER ASSEMBLY
101	A/C POWER CORD
102	FUSE HOLDER
103	5A FUSE

PART #	DESCRIPTION
50	PIVOT PIN
52	CLAMP HEAD ASSEMBLY
53	CLAMP BASE ASSEMBLY
54	CLAMP BASE
55	GUIDE BUSHING
56	GUIDE BUSHING NUT
57	LOAD BUSHING
57A	RADIAL BEARING
58	WINGED KNOB
59	FIXED JAW
60	LOOSE JAW
61	PIVOT BLOCK
62	LEVER
66	RETURN SPRING
67	HEX SCREW - FLAT HEAD
67A	PIVOT BLOCK NUT
68	O-RING
99	HEX WRENCH / 2.5MM
69	HEX WRENCH / 3MM
70	HEX WRENCH / 4MM
71	HEX WRENCH / 5MM
72	HEX WRENCH / 6MM
73	PATHFINDER AWL
74	STRINGERS AWL

EXPLODED PARTS VIEW



MOUNTING STAND PARTS



PART #	DESCRIPTION	PART #	DESCRIPTION
9	WASHER - M8	141	MTNG. STAND PAD
13	POST LOCKING LEVER	142	SUPPORT ARM - LEFT
14	WASHER - M10	143	SUPPORT ARM - RIGHT
15	SUPPORT POST	144	SHOULDER SUPP. LOCK KNOB
21	FRAME SUPPORT SLIDE	145	SUPP. ARM RETURN SPRING
22	BADMINTON ADAPTER	146	ARM ADJUSTMENT KNOB
23	TENNIS ADAPTER	147	ARM ADJUSTMENT SCREW
24	SUPPORT SLIDE KNOB	148	SHOULDER V-CLAMP
140	MTNG. STAND TOP PLATE		