USING THE G84 SMALL TENON SET

The G84 Set is an extremely versatile tool which will replace upper joint tenons on soprano, alto and bass clarinets and shorten barrels for soprano clarinets.

Select brass pilot to fit bore of joint. Pilot should push into bore snugly - but without binding. One pilot comes with the tool which fits the majority of soprano clarinets. Three uncut pilots are also supplied with the tool which may be machined down to fit other bore sizes.

Machining Brass Pilots

SOPRANO & ALTO CLARINETS

1. Remove all parts from G84 tool arbor. Chuck large end of arbor in lathe. Slip uncut pilot over small end of arbor. Screw long Allen Set Screw into small end of arbor and tighten securely with Allen Key. Bring up tail stock, equipped with our E32 Ball Bearing Live Center, to fit into recess in head of Allen Screw.

2. Use blunt tool bit and run lathe 300 - 600 rpm to turn down pilot to proper size.

BASS CLARINETS

1. Slip uncut pilot over G70 Clarinet Barrel Centering Tool. Tighten knurled nut securely on threaded end. Bring up tail stock, equipped with our E32 Ball Bearing live Center, to fit into open end of knurled nut.

2. Use blunt tool bit and run lathe 300 - 600 rpm to turn down pilot to proper size

Replacing Soprano Clarinet Upper Joint Tenons

1. Remove keys and the posts nearest the broken tenon. Use G63 Hacksaw to saw off damaged portion of tenon. Remove octave tube if damaged at barrel tenon.

2. Thread Tenon Cutter (stamped "T") on G84 arbor. Slip pilot over small end of arbor. Screw long Allen Set Screw into small end of arbor but do not tighten down - pilot must turn free on arbor.

3. Slip large Face Off Cutter over large end of arbor - cutter edges first. Set the cutting edges of the Face Off Cutter exactly 1" from the cutting edges of the threaded Tenon Cutter. Use a depth gauge to insure absolute accuracy of this measurement. Tighten Allen Set Screw in Face Off Cutter.

4. Chuck large end of arbor in lathe. Slip broken end of joint over pilot. Run up tail stock equipped with E32 Ball Bearing Live Center into undamaged end of joint.

5. Hold joint in left hand to prevent joint from turning. Run lathe at moderate speed and feed tail stock very slowly. Continue cut until large Face Off Cutter comes flush with shoulder of joint.

6. Back off tail stock. Remove joint from arbor. Remove arbor from lathe.

7. Select either G72A Hard Rubber Tenon Plug for composition and plastic joints, or G72B Grenadilla Wood Tenon Plug for wood joints.

8. Slip scored end of plug into joint and check for fit. Plug should fit perfectly. DO NOT FORCE plug into joint. If plug is slightly oversize, chuck up large end of plug in lathe and cut down the scored end to obtain perfect fit.

9. If plug does not bottom properly in cut, chuck up large end of plug in lathe ano turn back shoulder until plug fits.

10. Try smooth end of plug for fit in socket. If oversize, chuck up socred end of plug and cut down to fit. If too long, cut off to proper length. Cut cork groove.

11. Grind a E31 Boring Bar to a slightly rounded or blunt shape. Mount boring bar in tool post and bore out hole through plug to match inner diameter of joint. Use G14 Inside Calipers to obtain this measurement.

12. Make a slot 3/4" deep in end of $\frac{1}{4}$" steel rod which is about 4" long. Chuck rod in bench motor. Slip a 1" length of fine emery cloth (H88 or 89) into slot and sand bore of plug smooth. Finish with R46 Tripoli on rag.

13. Mix a small amount of G20 Jet Magic and apply to both surfaces. Press in place. Wipe off excess cement. Allow 24 hours for cement to harden.

14. Mount joint on G74 or G78 Jig. Use D102 Fractional drill to drill out tone holes. Use D101 Numbered Drill or E55 Post Body Drill to deepen post holes into new tenon plug. DO NOT DRILL THRU INTO BORE! Cut threads with Bottoming Tap. Install posts.

NOTE:
Hard rubber and plastic (Resonite and Resotone) are so tough that they are very hard on cutter edges. The cutters will require frequent sharpening when working on these materials. Use a bench grinder and sharpen the lead cutting edge only. The cutter may be sent in for factory resharpening. Replacement cutters.can be purchased if desired.

Replacing Alto Clarinet Upper Joint Tenons

1. Proceed as outlined above for Soprano Clarinets.

2. Substitute special G84A cutter (marked "A") for "T" cutter in STEP 2. Use special G848A pilot.

3. Substitute special "Alto Clarinet Upper Joint Tenon Plug - Wood or Rubber" for G72A plug in STEP 7. Plugs available upon request.

Replacing Bass Clarinet Upper Joint Tenons

1. Remove keys and the posts nearest the broken tenon. Use G63 Hacksaw to saw off damaged portion of tenon.

2. Remove all parts from G84 tool arbor. Chuck small end of arbor in lathe. Slip large Facing Cutter over arbor - cutting edges last. Tighten Allen Set Screw to position cutter about 3/4ths of the way down the large diameter of the arbor.

3. Push special G848B brass pilot about 2" into bore. Slip damaged tenon and pilot over arbor. Run up tail stock equipped with E32 Ball Bearing Live Center into undamaged end of joint.

4. Hold joint in left hand to prevent joint from turning. Run lathe at moderate speed and feed tail stock very slowly. Continue cut until 1" deep exactly.

5. Proceed with STEPS 6 thru 14 as outlined above for Soprano Clarinet. Substitute special "Bass Clarinet Upper Joint Tenon Plug - Wood or Rubber" for G72A plug in STEP 7.