G74 CLARINET TONE HOLE JIG

G74S for Soprano Clarinets and Oboes
G74A for Alto and Bass Clarinets

Chipped and broken tone holes present a problem to the repairman in that the leakage resulting from this condition must be repaired before any other work can be performed.

These jigs are designed to permit you to duplicate the exact specifications of the manufacturer. This is accomplished by complete removal of a portion of the old tone hole and it's replacement with an insert of hard rubber machined to exactly match the original.

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Raised (Ring Key) Tone Holes

1. Measure diameter of tone hole at it's widest point where it flares down and is countersunk into the body.

2. Select the G75 hard rubber rod which is the same diameter as the measurement obtained in Step 1. If the rod does not duplicate this measurement, take next largest size.

3. Chuck rod in lathe. Turn rod down to correct diameter. Make cut about 1/2" long.

4. Select a D102 fractional drill which fits the tone hole exactly. Insert this drill into the tail stock chuck and drill about 1/2" into rod.

5. With a Narrow Blunt tool bit, turn down the end of the rod to match the contour of the original tone hole. Test for fit with ring key.

6. Use a cut off tool to cut finished insert from rod. Allow 1/32" to 1/16" of straight shank below the edge of the contour cut.

7. Clamp joint in G74 jig. Turn threaded, recessed center about half way down the thread. Always place lower joint tenon in recessed center to prevent splitting. Slide tapered center into place and lock the thumb screw.

8. Place G74 jig on drill press bed. Insert centering pin in chuck. Lower spindle and line up centering pin in tone hole to be repaired.

9. Lock drill press spindle in the down position. Swing G74 jig to bring as much of the jig to bear on the drill press bed as is possible.

10. Clamp jig to bed with a pair of "C" clamps. Check alignment carefully be raising and lowering the centering pin to see how it trues up to the tone hole. Check to see that the tone hole is straight up and not off to one side.

11. Raise spindle and remove centering pin. Insert fly cutter in chuck.

12. Lower fly cutter and adjust so that it projects at an exact right angle and just far enough to countersink the tone hole.

13. Run drill press at a moderate speed and feed spindle very slowly. Face off raised portion of old tone hole. Raise spindle. Place new insert in tone hole.

14. Lay G10 scale across insert and adjoining raised tone holes to determine how much out must be deepened. Remove insert and cut to proper depth.

15. 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.

Bevelled (Pad Seat) Tone Holes

1. Insert depth gauge or wood dowel rod into damaged tone hole and seat against opposite wall of bore. Make mark on dowel rod at undamaged edge of tone hole.

2. Measure diameter of tone hole at it's widest point where it flares down and is countersunk into the body.

3. Select the G75 hard rubber rod which is the same diameter as the measurement obtained in Step 2. If the rod does not duplicate this measurement, take next largest size.

4. Chuck rod in lathe. Turn rod down to correct diameter. Make cut about 1/4" long.

5. Select a D102 fractional drill which fits the tone hole exactly. Insert this drill into the tail stock chuck and drill about 3/8" into rod.

6. With a Narrow Blunt tool bit, turn the end of the rod to match the contour of the original tone hole.

7. Use a cut off tool to cut finished insert from rod. Allow 1/32" to 1/16" of straight shank below the edge of the contour cut.

8. Clamp joint in G74 jig. Turn threaded, recessed center about half way down the thread. Always place lower joint tenon in recessed center to prevent splitting. Slide tapered center into place and lock the thumb screw.

9. Place G74 jig on drill press bed. Insert centering pin in chuck. Lower spindle and line up centering pin in tone hole to be repaired.

10. Lock drill press spindle in the down position. Swing G74 jig to bring as much of the jig to bear on the drill press bed as is possible.

11. Clamp jig to bed with a pair of "C" clamps. Check alignment carefully be raising and lowering the centering pin to see how it trues up to the tone hole. Check to see that the tone hole is straight up and not off to one side.

12. Raise spindle and remove centering pin. Insert fly cutter in chuck.

13. Lower fly cutter and adjust so that it projects at an exact right angle and just far enough to countersink the tone hole.

14. Run drill press at a moderate speed and feed spindle very slowly. Face off raised portion of old tone hole. Raise spindle. Place new insert in tone hole.

15. Insert depth gauge or wood dowel rod into tone hole to determine how much cut must be deepened. Remove insert and cut to proper depth.

16. Mix a small amount of G20 jet magic and apply to both surfaces. Press in place. Wipe off any excess cement. Allow 24 hours for cement to harden.

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