

CLARINET FAMILY

CLARINET OVERHAUL SCHEDULE

by Lars Kimsler

The following overhaul schedule represents what I consider to be a logical repair sequence for the complete overhaul of the E^b, B^b, and A Soprano Clarinet. It is by no means meant to be entirely dogmatic however. When special or unusual conditions arise, the repairperson may find that it would be necessary to alter the sequence of the schedule. In such a case the technician would merely insert or delete any of the appropriate steps so as to conform to their unique situation. As you will see, there is an optional section in the schedule. Steps 7 through 15 are to be performed only if keys, posts, rings and accessories are to be replated.

1. REMOVE KEYS

- Swage each key or combination of keys as you remove them from the clarinet in the following order:

Upper Section

- Register Key (#1)
- Thumb Ring (#7)
- Side G^{*} Key (#5)
- Side A Key (#4)
- E/B Upper Ring Key (#6)
- D/A Ring Key (#9)
- C^{*}/G^{*} Key (#15)
- E^b/B^b Key (#13)
- 4 Side (Trill) Keys (#2, 3, 8, & 12)

Lower Section

- Right Hand Ring Keys (#16)
- B/F^{*} Key (#18)
- E/B and F^{*}/C^{*} Side Levers (#19 & 20)
- Low A^b/E^b and Low F/C Keys (#21 & 22)
- Low E/B Key (#24)
- Low F^{*}/C^{*} Key (#23)
- F/C Side Lever (#17)

- As each key is removed, replace the steels and pivots back in their relative post(s).

2. REMOVE STEELS

- Place all steels on the screwboard in the sequence that they appeared on the clarinet according to the rules for the use of the universal screwboard.

3. REMOVE PIVOT SCREWS

- Place all pivots on the screwboard in the sequence that they appeared on the clarinet according to the rules for the use of the universal screwboard.

4. REMOVE SPRINGS

- Place all springs on the screwboard in the sequence that they appeared on the clarinet according to the rules for the use of the universal screwboard (be sure to indicate whether they point up or down).

5. REMOVE WORN TENON CORKS

- Remove all traces of the cork adhesive and be careful not to remove ANY material (especially on wood bodied inst's).

6. REMOVE ADJUSTMENT CORKS AND FELTS FROM KEYS

- Go directly to step 16 if no replating is to be performed.

7. REMOVE BODY RINGS (Opt)

8. REMOVE POSTS (Opt)

- Place post-locking screws in vial on screwboard. 'String' posts in sequence on a steel wire as they are removed from clarinet body.

9. STRIP KEYS, POSTS, RINGS & ACCESSORIES OF PLATING (Opt)

10. BUFF POSTS, RINGS & ACCESSORIES WITH TRIPOLI (Opt)

- Use the square jaw pliers to hold the individual posts as they are removed. Maintain proper order on wire!

11. BUFF KEYS WITH TRIPOLI - WHITE COMPOUND - ROUGE (Opt)

12. DEGREASE KEYS, POSTS, RINGS AND ACCESSORIES (Opt)

13. REPLATE KEYS, POSTS, RINGS AND ACCESSORIES WITH BRIGHT NICKEL (Opt)

- Carefully run a small hinge tube file through the hinge tubing of the keys, to remove any excess plating residue, or buffing dirt inside. Check body posts and spring holes for buffing dirt and/or plating residue. String posts on copper wire for plating.

14. REINSTALL REPLATED POSTS BACK ON THE BODY (Opt)

15. REINSTALL REPLATED BODY RINGS (Opt)

16. LIGHTLY BUFF THE KEYS AND LEVERS WITH A CENTER-STITCHED MUSLIN BUFF & WHITE COMPOUND

17. DEGREASE KEYS AND LEVERS

- Run a pipe cleaner through the hinge tubing.
- 18. BUFF CLARINET BODY PARTS**
- Use a center-stitched muslin buff with white compound. Caution should be taken to minimize heat generated when buffing plastic or hard rubber instruments (especially mouthpieces).
- 19. RAG CLARINET BODY PARTS**
- Run a folded pipe cleaner through the tone holes to remove buffing dirt. Treat wood-bodied instruments with bore oil.
- 20. CLEAN BODY PARTS**
- Plastic bodies may be cleaned by scrubbing with a soft plating brush with mild detergent in tepid water. Be sure to clean out the bore and all tone holes in the process. After cleaning, be sure that all body parts are thoroughly dried with the air gun. Try to keep the detergent off the tenon corks (they will disadhere).
 - Under no circumstances should you *submerge* wood parts in water or other harmful solutions. Usually, the wood body sections and posts may be ragged with a thin piece of ragging tape (using white compound). However, if the body parts are particularly soiled, you may scrub the outside surface and inside bore with a soft brush and Murphy's Oil Soap. Rinse thoroughly with tepid water and blow dry IMMEDIATELY. Be sure to clean out all tone holes with a Q-tip or pipe cleaner.
- 21. INSTALL NEW TENON CORKS**
- 22. REFACE TONE HOLES (AS REQ.)**
- 23. RESPRING BODY JOINTS**
- Use the original springs only if they are in perfect condition, otherwise install all new springs.
- 24. RECORK AND REFELT THE KEYS AND LEVERS**
- 25. INSTALL NEW PADS INTO PAD CUPS**
- Make sure pad cups are level.
- 26. CLEAN, STRAIGHTEN AND LUBRICATE STEELS WITH THEIR RESPECTIVE KEYS AND LEVERS**
- Lubricate lightly after cleaning the hinge tube and before 'freeing-up'. Replace steels on screwboard.
- 27. ASSEMBLE, ADJUST AND LEVEL THE KEYS & LEVERS AS FOLLOWS:**
- ALL pads must be leveled and adjusted as they go on the instrument! **DO NOT** try to put all the keys back on an entire upper or lower section without adjusting and leveling each key **AS** you put it on the instrument. In the case of the four trill keys, the Low A^b/E^b and F/C Keys, and the Low E/B and F[#]/C[#] Keys, you will be required to place all the keys in the "articulated system" before you adjust and level the "system". When a key is individual however, always level and regulate before the next key in the sequence is placed on the instrument!

Upper Section

- Register Key (#1)
- Thumb Key (#7)
- E^b/B^b Key (#13)
- C[#]/G[#] Key (#15)
- E/B Ring Key (#6)
- D/A Ring Key (#9)
- Side A Key (#4)
- Side G[#] Key (#5)
- 4 Side Trill Keys (#2, 3, 8 & 12)

Lower Joint *

- F/C Side Lever (#17)
- B/F[#] Key (#18)
- Right Hand Section (#16)
- Low F[#]/C[#] Key (#23)
- Low E/B Key (#24)
- Low A^b/E^b and Low F/C Keys (#21 & 22)
- E/B and F[#]/C[#] Side Levers (#19 & 20)

*** REASSEMBLY OF THE LOWER SECTION****A. INSTALL THE LOW F/C SIDE LEVER (#17)**

- This lever is (almost without exception) retained on to the clarinet between 2 pivot screws.
- A cork is affixed to the bottom side (next to the body) of the lower short extension (beneath the F/C Key Tone Arm).
- If the F/C tone arm is without an adjustment screw (at the place where the F/C lever contacts it) then a thin silencer cork (or leather) is affixed to the F/C Lever Arm. This cork or leather is meant only as a silencer while the cork next to the body (on the F/C Lever) will be regulated to a thickness sufficient to eliminate any lost motion between the F/C Lever & F/C Key.

B. INSTALL THE B/F[#] KEY (#18)

- This key may be affixed to the clarinet by either 2 pivot screws or 1 long screw. Adjust pivots/steels appropriately.
- Precision-level the pad.
- Set for proper key opening.
- The pad will open approximately 3 to 3 1/2 mm. The pad arm will be such that when the key is at rest (closed) the narrow finger spatula will be approximately 2 to 2 1/2 mm above the adjacent ring keys.
- Adjust the spring tension.
- Lightly moisten the pad skin & carefully 'seat-in' with heat.

C. INSTALL THE RIGHT HAND RING KEYS (#16)

- This key is usually held between two pivots. Adjust pivots as necessary.
- Precision-level the B^b/F Pad.
- Adjust the pad opening to be approximately 3 1/2 mm. This adjustment is achieved by regulating the thickness of the cork beneath the lower bridge arm (next to the body).
- Regulate the relative position of each Ring Key with respect to its tone hole chimney.
- The inside edge of the ring should be approximately 1/2 mm above the outside edge of the chimney, thus allowing

the natural curvature of the finger pad to easily seal the tone hole while, at the same time, completely closing the B^b/F pad.

- Re-check the key travel of the B^b/F key. Adjust as necessary.
- Set the spring tension.
- Lightly moisten the B^b/F pad skin and gently wedge in a closed position (not too heavy!) only simulate normal finger pressure; apply a little heat to seat-in pad.

D. INSTALL THE LOW F[#]/C[#] KEY (#23)

- This key is generally held on to the clarinet via 2 pivot screws; adjust pivots appropriately. (Be careful to avoid damaging the lower ring key or the lower tone hole chimney. The spring is engaged as you place the keys on the clarinet)
- Precision-level and seat the pad.
- Since the 'crowsfoot' of the F/C key limits the opening of the F[#]/C[#] key spatula, the opening of this key will be regulated later off the F/C 'crowsfoot'.
- Check the spring tension.

E. INSTALL THE LOW E/B KEY (#24)

- This key is generally held on the clarinet in an open position suspended between pivot screws—adjust appropriately.
- Precision-level and seat the pad.
- Adjust the spring tension as necessary.
- The opening of this pad is adjusted via the cork on the bottom of the Low E/B side lever (occasionally on the bottom of the Low E/B key tone arm).

F. INSTALL THE LOW A^b/E^b (#21) and LOW F/C KEYS (#22)

- These 2 keys are generally held on the clarinet with one long screw (steel). Often the better-designed instruments have a narrow supporting post between the two keys to protect the keys from a blow to the action.

28. LIGHTLY MOISTEN AND HEAT-IN THE PADS

- Lightly moisten and wedge-closed all naturally "open" pads. Apply a little heat directly to each pad cup being very careful not to burn any of the pads, corks, or springs! Don't use so much heat that the shellac oozes out of the cups. The amount of pressure that the wedge provides should be similar to that amount of pressure that your fingers would normally subject to the key under normal playing conditions.
- After the instrument has set over night, remove the wedges and allow the instrument to set for at least one hour before making the final adjustments and the final inspection.

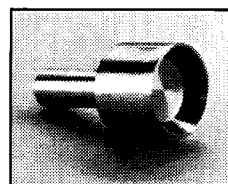
29. MAKE THE FINAL INSPECTION AND BLOW TEST

30. WIPE THE INSTRUMENT CLEAN

31. REPAIR THE CASE AS NECESSARY

32. BLOW LINT AND DIRT FROM CASE

33. SHIP IT!

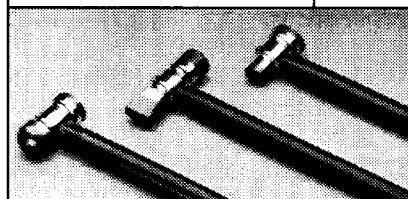
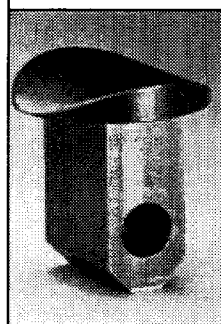


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✦ "Obstacles are those frightful things you see when you take your eyes off your goals." ✦