

## *Oboe Adjustment Guide*

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An important aspect of oboe performance is keeping the instrument in good working condition. In order to accomplish this task the instrument must undergo a series of procedures that include, but limited to, regular setting of adjustment screws, cleaning of octave vents, changing worn tenon corks, adjustment to the fit of the key-work as well as general cleaning and oiling of the wood and mechanisms. It is preferable that a qualified technician attends to these problems on a bi-annual basis. However, with the proper tools and instruction the performer can learn to adjust as well as clean and maintain the wood and mechanisms.

The adjustment screws of the oboe are a source of many problems for the oboist. Since the padding material between the screw point and the metal linkage wears continually, the screws are subject to change and must be re-adjusted periodically. Instruments equipped with teflon-tipped screws need adjusting less often than those equipped with cork, which wears and flattens more easily, creating a widening gap between the adjustment screw and the linkage. The teflon does, however, produce more noise than the conventional screw with cork and is more difficult to achieve an exact adjustment. Not only is it important to know when to make the adjustment but also how to make the adjustment. If even one screw is improperly turned the instrument may be unplayable. Most of the necessary adjustments can be made with only a slight turn.

Oboists are often confused about which pads should be closed when the instrument is at rest. The following pads should be closed when no keys are depressed: all octave keys, the C-sharp and D trill pads, the C, B-flat, G-sharp, F, F-resonance, E-flat, D-flat, and low B-flat resonance. *To be sure that all pads seat well each key should be depressed separately with a very light touch.* If any tone does not respond readily to the light touch and slow movement of the finger, the pads must be examined carefully. No adjustment can be accurate when the keys are pressed down forcefully.

The tools needed to properly set the adjustment screws are a screwdriver and cigarette paper. The tip of the screwdriver should be in good condition and of the correct size to turn the screws. The cigarette paper is cut into tapered pieces. One end should be about 3mm and the other about 20mm. The 3mm. end will be used for the testing. The test papers should always be inserted under the entire pad. The front of the pad is the part that is furthest from the pivot point.

When adjusting an oboe, two methods are used. First, use the cigarette paper to check that the adjustment is not too tight. Then play-test the oboe, feeling for vibrations on the secondary key to make sure nothing is too loose. The adjustment screws regulate the pressure of the keys that you do not touch during normal playing conditions.

The following is a guide to adjusting the screws that most greatly affect the playability of any oboe. Keys are named to correspond with the note that speaks from its tone hole. (i.e. first finger on the right hand is the G-key, because that is where the note G speaks on the oboe)

**Screw #1** effects how much space is between the G key and the bridge key that activates the B-flat, and C keys on the upper joint. There must be space between these two mechanisms. If there is no space then the B-flat, and C keys are being held open by the G key. Upon inspection of this screw one can notice it is a seesaw mechanism. To add space, turn the screw clockwise, tightening the screw and thereby raising the opposite end and producing a gap between the linkages. This size of this gap need only be big enough to be detected.

**Screw #2** regulates the tension on the B-flat and C pads. First depress the G key which allows the B-flat and C keys to come off their tone holes, then put the cigarette paper under the B-flat pad and release the G key. The tester paper should now be held by the pad against the tone hole. Pull the paper out and take notice of the resistance from the pressure of the pad. Next repeat this procedure for the C pad. You should feel more resistance under the B-flat pad than the C pad. The difference between them should only be enough that you are sure the B-flat pad has more resistance. If you detect the Bb pad has less resistance than the C pad turn the screw counter-clockwise 1/8 turn. If there is not enough resistance under the C pad turn the screw clockwise 1/8 turn. Repeat this process until the desired resistance is achieved between both pads.

**Screw #3** regulates the resistance between the B key and C key. First depress the G key allowing the C pad to rise off the tone hole. Keeping the G key depressed insert the tester paper under the C key and push down the B key using normal playing pressure. Pull the tester paper out and take notice of the resistance. Next insert the tester paper under the B key and push it down using normal pressure. Pull the tester paper out. There should be more resistance under the B key than the C key. The difference should be obvious. If you detect more pressure under the C key turn the screw counter-clockwise 1/8 turn and test again. If you detect not enough pressure under the C key turn the screw clockwise 1/8 turn and check again.

**Screw #4** regulates the pressure between the A key and B-flat key. Test and adjust the screw in the same manner and screw #3.

The **screw #5** regulates the G key in relation to the A-flat key. To start, turn the screw counter-clockwise one full turn then play an F# while depressing the A-flat key. If the tone stops or looses sound then turn the screw clockwise 1/8 a turn. Repeat this process until the F# does not quiver while the wiggling the A-flat key. If the screw is tightened too far then the G key will not go down all the way and therefore leak.

**Screws #6, #7 and #8** work together and must be adjusted carefully in order for the right hand notes to speak. To begin, turn screw #8 counter-clockwise one full turn. This deactivates the F-resonance key from the forked-F key and allowing you to test the relationship of the forked-F key and the F-sharp key without interference of the resonance key.

**Screw #6** regulates the pressure between the forked-F key and the F-sharp key. This screw works exactly like screws #3 and #4 on the top joint. Insert the paper under the F-sharp key and depress the forked-F key. Pull the paper out and notice the resistance. Next, place the paper underneath the forked-F key, depress the key and

remove the paper to notice the resistance. The forked-F key should have a greater resistance on the paper than the F-sharp key but only by very little. Turn the screw clockwise to add resistance to the F-sharp key and counter clockwise to add resistance to the forked-F key.

**Screw #7** regulates the pressure of the F-sharp key and the E key. Insert the tester paper under the F-sharp and depress the E key. Pull out the paper and notice the resistance. The grip on the paper should be less than the grip of the paper underneath the E key. To add resistance to the F-sharp key while the E key is depressed turn screw #7 clockwise 1/8 turn. The resistance under the F-sharp key while depressing the E key should be less than the resistance of the F-sharp key while depressing the forked-F key. Continue to check with the paper and adjust accordingly.

With screws #6 and #7 properly adjusted you can now move to **screw #8**. Depress the E key, which raises the F-resonance pad off the tone hole. Now depress the forked-F key, which should push the F-resonance pad back down. If you turned screw #8 back one turn before adjusting screw #6 and #7 then the F-resonance pad should not go down all the way. Turn screw #8 clockwise until the pad touches the tone hole. Raise the resonance pad again and insert the tester paper under the pad, depress the forked-F key (keep the D pad down) and pull the tester paper out. The resistance on the paper should be very little, only enough that you can feel the pad gripping the paper securely. Continue to turn screw #8 and test with the paper until correct.

**Screw #9** regulates the tension between the forked-F key and the D key. Insert the paper under the forked-F key and depress the D key. Remove the paper and notice its resistance. Now place the paper underneath the D key and check the resistance. There should be more resistance underneath the D key than the forked-F key. Turn the screw clockwise to add resistance to the forked-F and counter clockwise to add resistance to the D key. This adjustment is very important to the pitch of the high C-sharp.

**Screw #10** is located on the E-flat pad key and regulates the instrument's ability to play a D-flat or low C while depressing the left E-flat at the same time. Start by turning the screw counter clockwise 1 turn. Now play a D-flat and depress the left E-flat. The D-flat should not longer speak because the E flat key is now open. Turn screw #10 clockwise until you can play a D-flat while depressing the left E-flat and the same time. If screw #10 is too tight than the D key is being held open and notes below D will not speak.

**Screw #11** is located on the C-sharp pad key and regulates the instrument's ability to play a low B while depressing the C-sharp key. This screw works exactly like #10. Start by turning screw #11 counter clockwise 1 turn. Play a low B natural and slide your right pinky finger up to the C-sharp key. The low B should no longer speak because the C-sharp key is now open. Turn screw #11 clockwise until you can play low B with depressing the D key or the C-sharp key. If the screw #11 is too tight than the B key is being held open and low B and B-flat will not speak.

These eleven screws greatly affect the playability of any oboe and if adjusted in this order can make almost any instrument perform better. Keeping the mechanism in

proper adjustment allows the instrument to perform at its fullest potential. In order that the mechanisms work correctly it must be cleaned and oiled every 6 months. An unlubricated rod will cause significant problems in the future that can be expensive if repairable at all. In this regard one should think of the oboe like an automobile whose moving parts also need regular cleaning and oiling.

In order to clean the hinge tubes (inside the keys) and the rods you will have to disassemble the instrument. Take great care in not damaging the tone holes, bending springs, bending the rods, and keeping the rods with their appropriate keys. If you are at all uncomfortable with this procedure then take the instrument to your qualified oboe repair technician for regular cleaning.

If you choose to do this procedure yourself you will need a screwdriver, spring hook, pliers with smooth ends, paper towel, pipe cleaners, and key oil. It is best to do one joint at a time so not to get overwhelmed with loose parts. First unhook the springs and then take off the keys. Use the pipe cleaner for inside the hinge tubes and the wipe off all the rods. Oil the rods with fresh oil as you reassemble the instrument. Make sure to engage all the springs when complete. Repeat this process for the remaining joints.

To properly oil the bore of the oboe use sweet almond oil. Put a few drops on the end of a feather and run the feather through the joint several times, twisting it to apply the oil evenly. Allow the wood to absorb the oil over night before playing the instrument. It is not advisable to oil the outside of the wood. In the manufacturing process the wood is coated with a finish that combines several different waxes and hardening oils. This hard finish does not allow for the absorption of oil or any moisture. The effect is similar to waxing the paint of an automobile. After the wax is applying any moisture will bead up and roll off the finish.

Along with oiling the bore, whether or not the instrument needs to be broken in and how is also a controversy among technicians and players. Breaking in an oboe is process that is done to new instruments as well as any instrument that is new to you. The process of breaking in an oboe is meant to condition the wood so that it does not crack, or at least does not crack severely. Play the instrument for a limited time and gradually increase the time played per day over a long period. It is best to have long breaks between playings. The entire process should take place over a period of about six months. During this period the wood will acclimate itself to the air pressure, temperature and moisture.

Adjusting, cleaning and oiling the oboe are tasks that can be done by the performer. However, this does not mean the instrument should not be checked by a qualified oboe technician annually. The repairman should clean and seal the octave vents, replace worn bumper corks, check for and repair cracks, replace loose tenon corks, adjust and replace pads, adjust mechanisms (so they neither bind nor have too much movement), adjust and replace springs as well as adjust tuning problems that present themselves as the instrument ages.

**OBOE TOP JOINT**

**SCREW # 3**

**SCREW # 2**

**SCREW # 1**

**SCREW # 4**

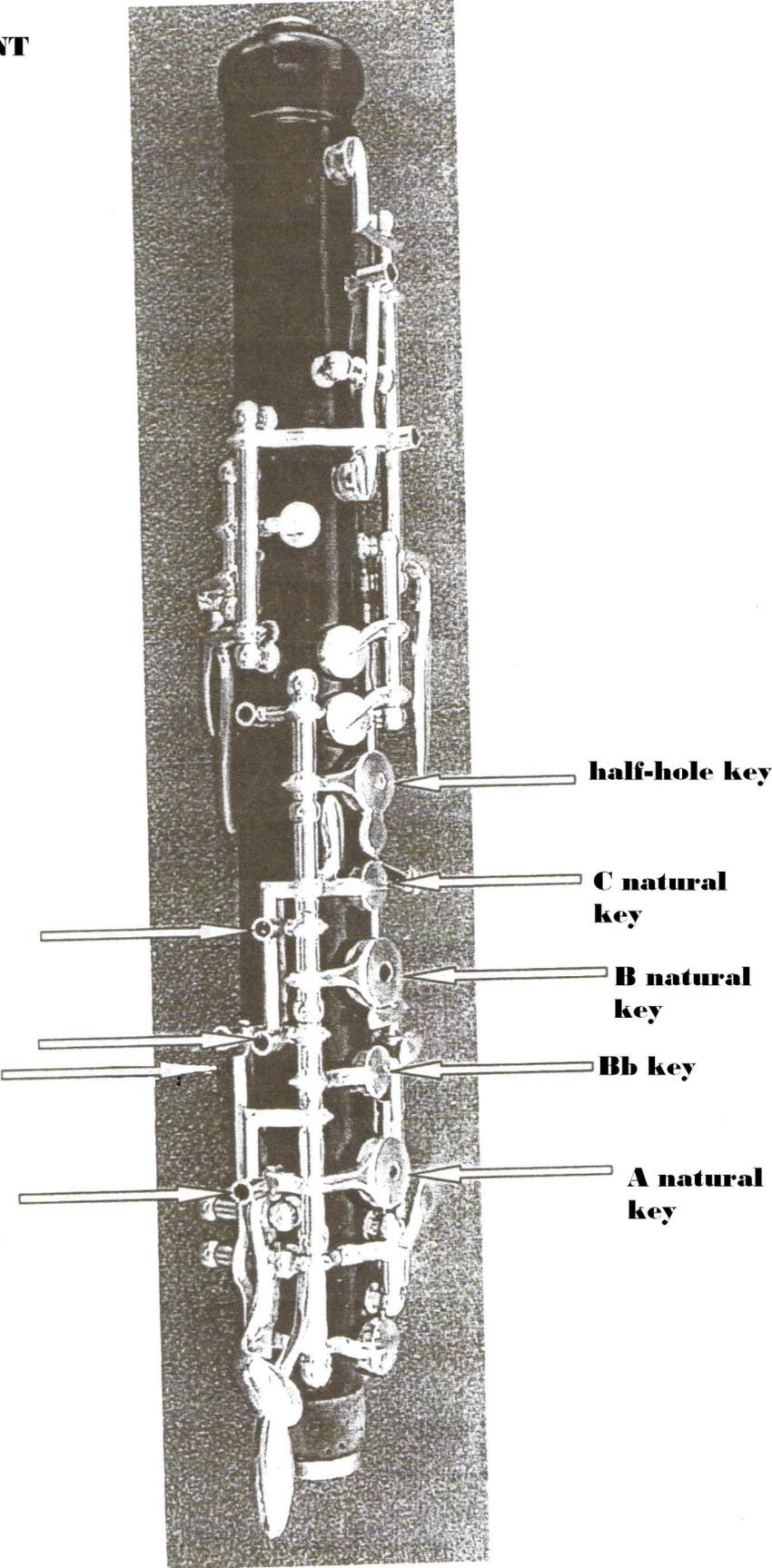
**half-hole key**

**C natural key**

**B natural key**

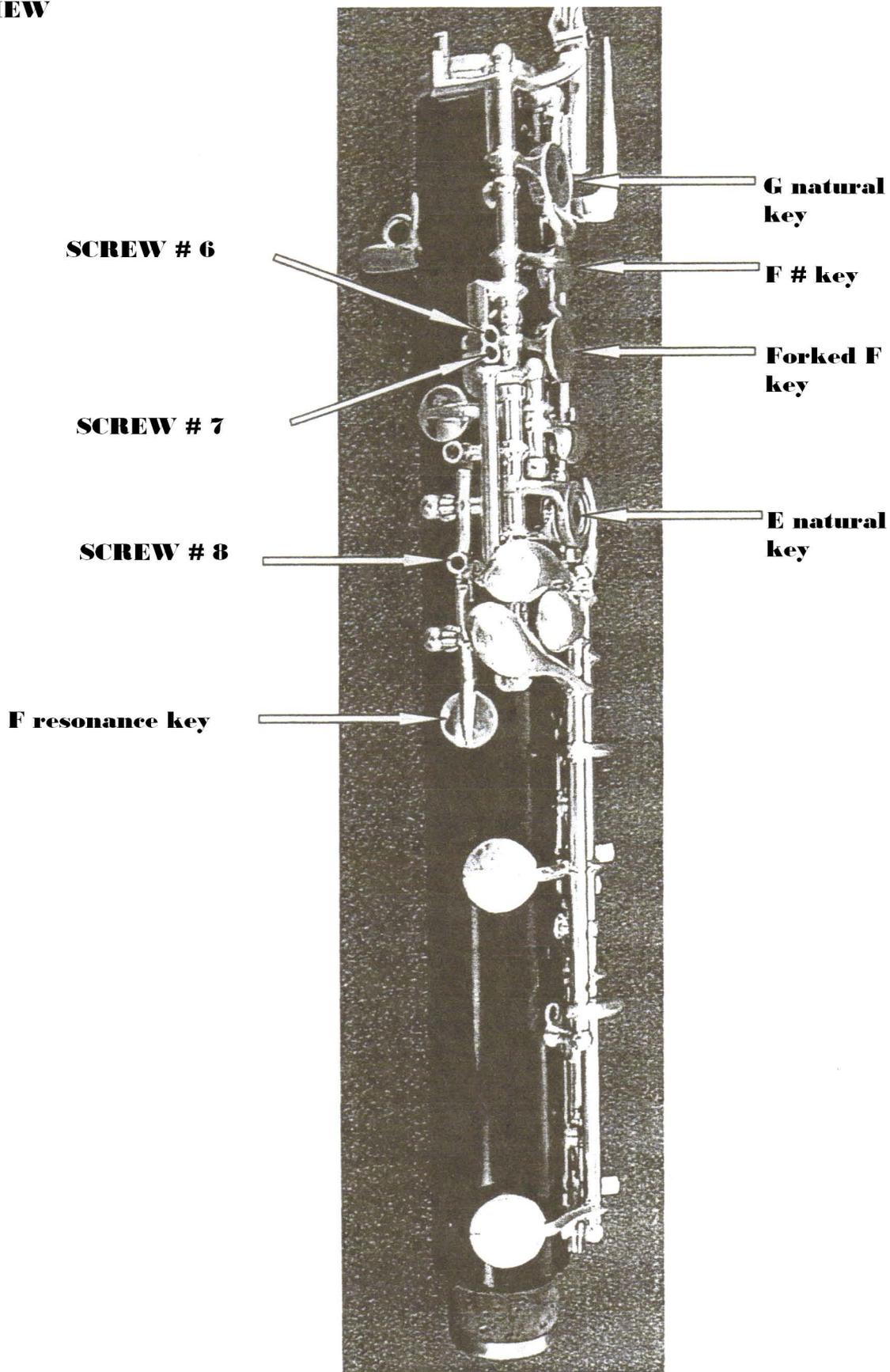
**Bb key**

**A natural key**



# OBOE BOTTOM JOINT

## SIDE VIEW



**OBOE BOTTOM JOINT  
FRONT VIEW**

**SCREW # 5**

**Low B natural  
key**

**Low Bb Key**

**D natural key**

**C#/Db key**

**Eb key**

**SCREW # 9**

**Eb Pad Key**

**SCREW # 10**

**C#/Db Pad Key**

**Low C key**

**SCREW # 11**

