

Gurbling Or Rattling Sound From The Bass Drone

This is a problem that is primarily to do with how the bass drone reed has been sprung, refer to the section on "Alteration Of Strength", and is usually associated with weaker cane but can also be a simple matter of moving the bridle back towards the reed seat end of the reed to make the tongue longer. The easiest way to eliminate the problem of gurgling or rattling is to very slightly increase the curvature in the central area of the tongue, this should eliminate the problem but be sure not to overdo the increased curvature or else you will end up with a much stronger or very tight sounding bass drone reed. Make sure you do not have the middle section of the bass drone tuning too high on the bottom section as this can also contribute to the problem.

Drones Not In Balance With Each Other

Ideally the pitch of the three drones should alter in unison with any variation of air pressure and this is what is generally referred to as having steady drones. There should be one unified tone to harmonically blend with the chanter, and to achieve this you must have all three drone reeds matched for strength and pitch. To test for this, place a stopper in the chanter stock and blow up the drones, exert greater than normal air pressure until one of the reeds cuts out. This reed is the weakest of the three and should be strengthened to equal the others to give you greater steadiness and unison of tone. After establishing equal strengths with the reeds, you may be left with differing pitched tenor reeds. This can be compensated for by utilising the tuning plugs and bridle positions to balance the reeds for pitch. You should end up with reeds that are matched in strength and pitch which will give you a more unified steady drone sound.

SPARE PARTS

Replacement parts such as tongues and bridles can be obtained via your place of purchase. The tongues are easily replaced by sliding the old tongue out and placing the new tongue under the bridle and fixed tongue support into position. The level at which the tongue must be initially sprung is substantial and makes the reed temporarily unplayable. It is advised that you GENTLY AND SLOWLY give a new tongue a hefty spring the day prior to when you intend to play or at least the night before as this will allow time for the tongue to settle. As previously stated, due to cane variations there cannot be a standard level of springing for all reeds, but the following illustration will give you some indication of what is required for the initial springing of a new tongue.



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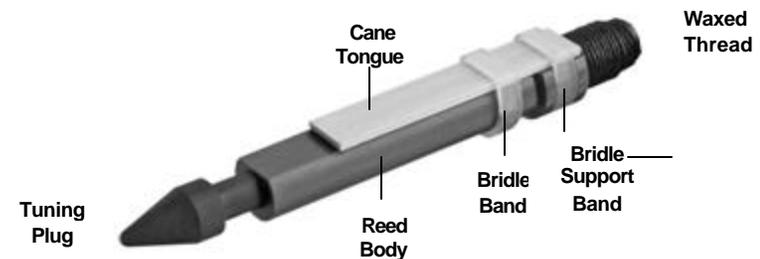
BAGPIPE DRONE REEDS

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CANE DRONE REED INSTRUCTIONS

Adjustments	Pitch	Tone	Volume	Strength	Striking In Difficulty
Pull reed out of reed seat	Lower	Smoother	Quieter		
Push reed into reed seat	Higher	More robust	Louder		
Pull tuning plug out	Lower	Smoother	Quieter		
Push tuning plug in	Higher	More robust	Louder		
Move bridle towards plug	Higher	Smoother	Quieter	Weaker	Increases
Move bridle away from plug	Lower	More robust	Louder	Stronger	Decreases
Increase tongue curve	Lower	More robust	Louder	Stronger	
Decrease tongue curve	Higher	Smoother	Quieter	Weaker	

Crozier Cane Drone Reeds combine a synthetic reed body with a waterproof sealed cane tongue, this ideal combination has all the advantages of synthetic reeds but with the superior tonal quality of natural cane reeds. Introduce the Crozier Drone Reeds one at a time to allow comparison of their pitch and tone to the reeds currently being played. When inserting Crozier Drone Reeds into the drones, add or remove some black waxed thread for a secure fit. Be sure that the reeds are firmly seated and straight, so as not to contact the inside of the drone stocks. The above quick reference chart lists all the adjustments and their effects for a desired set up. It is recommended that minor adjustments be made as they all have a significant effect on tone.



PITCH ALTERATION

To Raise The Pitch

1. Inserting the reed further into the reed seat and/or pushing the tuning plug further into the reed will raise the pitch, increase the volume and strengthen the overall tone. The tuning plugs can be inserted to any depth in order to help achieve a compromise between pitch, volume and tonal requirements. The bass tuning plug can also be used to help eliminate gurgling or rattling sounds that might be experienced with certain makes of drones.

2. Shorten the tongue by sliding the bridle towards the tuning plug end of the reed, this will produce a higher pitch along with a quieter and smoother tone.

To Lower The Pitch

1. If the reed is fully inserted into the reed seat and/or the tuning plug is fully inserted into the reed, by pulling them out partially or as far as possible will result in a lower pitch with a quieter and softer tone.

2. Lengthen the tongue by sliding the bridle towards the reed seat end of the reed, this will produce a lower pitch along with a louder and stronger tone.

3. Springing the tongue as explained in the following section on "To Increase The Strength" will also lower the pitch dramatically and be proportionate to the extent of the springing but with a much stronger volume and tone.

ALTERATION OF STRENGTH

To Increase The Strength

1. Spring the tongue by holding the body of the reed in one hand, then with the thumb and middle finger of the other hand, lift the tongue while using your index finger to regulate the exact positioning of the bend, (see illustration). The movement must be done very slowly and carefully as the individual strength of each particular piece of cane will dictate the location and extent of springing required. This is very important and can not be stressed enough as it can determine the success or failure of the reed. If a tongue is made from a relatively strong piece of cane, the location where you would spring the tongue is quite different to that of a reed which has a weaker tongue. A stronger tongue would need to be sprung around the mid-to-back area (toward the reed seat end) of the reed, whereas the weaker tongue would need to be sprung in the mid-to-front area of the reed. If a strong tongue has too much curve towards the front of the reed, it will almost certainly squeal and have a high-pitched lifeless tone that will usually not strike in properly. If a weak tongue is sprung towards the back end of the reed, the sound will be very low pitched and have a tendency to stop after being played for a while. This fact is particularly important for bass drone reeds which have the added problem of gurgling or rattling if not sprung correctly. The exact position and amount of springing that a reed requires can't be predetermined, it is totally subject to the natural strength of each piece of cane.

2. Lengthen the tongue by moving the bridle back toward the reed seat end of the reed, this will lower the pitch and cause the reed to be slightly stronger in both blowing pressure and tone.

To Weaken The Reed

1. Weakening the reed is basically the reverse of the procedures explained in "To Increase The Strength". To reverse the springing or excessive curvature on a tongue, lift the centre of the tongue upwards whilst pushing the front tip of the tongue down towards the reed body. As with springing, the amount of pressure and movement needed is determined by the natural strength of the cane and also by the degree in which the reed had been sprung in the first place. It is best to reverse the curve small

amounts at a time and test the reed for suitability. The effect of lessening the curvature is an easier reed which gives a quieter and smoother tone.

2. Shorten the tongue by moving the bridle towards the tuning plug end of the reed, this will weaken the reed, raise the pitch, and also give a quieter and smoother tone.

PROBLEMS AND SOLUTIONS

Drones Stopping Under Normal Blowing Pressure

1. Ensure that the reeds are seated firmly and straight and are not in contact with the inside of the drone stocks as this can cause a reed to stop very easily.

2. The most common cause of a reed stopping is that it is too weak can be remedied by increasing the strength, refer to the section "To Increase The Strength".

Drones Not Striking In Properly

1. Tenor drone squealing is caused by not having enough curve on the back end of the tongue (towards the reed seat end) and too much curve at the front end of the tongue. The problem can be remedied by increasing the curve at the back end of the tongue and also reversing the curve at the front end of the tongue. Spring the back end of the tongue and then lift the centre of the tongue upwards whilst pushing the front tip of the tongue down towards the reed body. The tongue may also be too short which can cause squeals and a tight lifeless tone. The positioning of the bridle is very much determined by the strength of the cane and the desired pitch, but it is not recommended that the length of the tongue ever be shorter than 25mm or 1" for tenor reeds and no shorter than 40mm or 1 5/8" for bass drone reeds.

2. The reeds are leaking by having the tongue off centre and/or foreign particles lodged between the tongue and the body surface. These types of air-leakages can cause squealing and air loss, it is recommended to periodically check reeds for such problems and clean when necessary.

3. If a reed is over sprung you will certainly experience striking-in difficulties which can be remedied by weakening the reed. Refer to the section "Weakening The Reed".

4. If any of the above solutions don't appear to be the cause of the striking-in problems, it may be that you have the tenor drones tuning too low, or the bass tuning too high. The latter is particularly a problem with having the middle section of the bass drone tuning too high on the bottom section. There are specific reasons why this is so and you cannot always go by hemp line positioning for tuning. There are many different makes of bagpipes which have varying lengths and dimensions of internal bores that greatly affect the relative pitch and tuning positions. Bass drone striking-in problems can also be remedied by installing an air flow control device i.e. drone valves, they will adjust the air flow to the reed and eliminate any striking-in difficulties.

Unsteadiness In One Or More Drones

The prime cause of unsteadiness is usually due to fluctuations in air pressure, if the air pressure was absolutely constant, then no matter what reeds you played, the result would be a steady tone. All pipers vary the air pressure to some degree which is primarily caused by the arm not equaling the blowing pressure and not "unsteady blowing" as it is often referred to. Drone reeds are in most cases much more stable than chanter reeds i.e. will remain more constant in pitch with increased or decreased air pressure, but cane being a natural fibre can vary tremendously in strength and stability which means that any reeds made from it will also vary in strength and stability. To improve the steadiness or stability of a drone reed, the vibrating part of the reed must be strengthened and/or shortened. This can be done by sliding the bridle towards the tuning plug end of the reed to shorten the tongue, and/or strengthening the reed by following the instructions in the section "To Increase The Strength".