

CROZIER BAGPIPE DRONE REEDS

Instructions for Crozier Omega Drone Reeds

Thankyou for purchasing a set of Omega Drone Reeds. You will enjoy the same satisfaction as tens of thousands of pipers throughout the world who play Crozier Bagpipe Reeds products. The chief advantages that our revolutionary Omega Drone Reeds offer are as follows:

1. The major alterations of strength, tone, pitch and volume adjustments are made by bending the body of the reed instead of the tongue, which creates an instant and permanent adjustment until again altered by the piper.
2. There is never any springing of the tongues required, which means there is never any setting in period.
3. The reeds have the ability to provide pipers with the biggest range of strength, pitch, volume and tonal quality of any drone reed.
4. The reeds function immediately, and will always work all conditions that the reeds will ever be exposed to during playing.
5. The most efficient drone reeds of all time.
6. Extremely long lasting drone reeds with consistent tone, strength, pitch and reliability, due to the quality of the robust materials employed in the manufacture.
7. Reeds can be precisely matched for levels of strength, pitch, volume and tone, so as to have the best drone stability.
8. The most accurate adjustability of pitch, strength, volume and total quality of any reed ever developed.
9. There are no traditional bridles to loosen; instead we have the first fully adjustable and permanent tuning clips.
10. Striking in and cut-outs are easily achieved.

The Omega Drone Reeds have already been set-up to function straight out of the box, but we have designed the reeds to allow players to have the potential to set-up the reeds with a huge variety of strength, pitch, volume and tonal quality to suit their own needs.

PROBLEMS

Problems with a bass reed not striking in correctly

Due to the enormous variations in drone designs, some pipers might find some difficulty in striking the bass reed in, particularly when not played in a Canister Pipe Bag or a bag that has some form of air control device fitted to the stock. The striking-in problem is normally caused by too much air back-pressure being exerted on the reed by the drone being tuned too high at the bottom tuning section, but it can also be caused by the reed itself being set too strong. Set the bass reed so that the bottom tuning section is tuning lower down by lowering the pitch of the reed (see **Pitch Alteration** page 5), raise the upper tuning section, and ensure that you don't have the reed too strongly set. We have devised a very simple solution to any striking-in problems that you might encounter when playing the Omega Drone Reeds, it is a pair of rubber washers that control the amount of air flow that is exerted upon the bass drone reed. The washers are actually fitted to the rubber plug that is in the bass drone reed. You will find a pair of the washers located in the box that the reeds arrived in. Unfix the drawing pin, and remove the washers from the box, remove the plug from the bass drone reed, then place both washers over the plug, twist the plug back into the reed, and slide the washers hard up against the front steel cap of the bass drone reed as in Figure 1.

The washers have been designed to allow the user to adjust the amount of airflow to be exactly sufficient to resolve a striking-in problem. Each washer has a flat side, which when turned in line with each other will allow sufficient air flow through the reed to produce good tone, and in most cases will eliminate any striking-in problems. For more persistent striking in problem, you can progressively turn one washer against the other to restrict the air-flow even further until the problem is resolved, see Figure 2.

How to get rid of a motor-bike sound or rattle in your bass drone

The motor-bike or rattling sound in a bass drone can be caused by a few things, but is most prevalent in bass drones with larger bores, particularly the bottom section. Depending upon the type of drones you have, and the severity of the problem, there are a few solutions to the problem with Omega Drone Reeds. Fully inserting the rubber plug into the reed will usually alleviate the problem in most drones, but a combination of this plus ensuring the bottom tuning slide is tuning low, the top tuning slide is tuning high, having the tongue as long as possible by sliding the clip back towards the reed-seat end of the reed, having the grub screw in the 3rd position in the bar and also release the tongue by undoing the clip and cap grub screws, then slide the tongue forwards by 1mm to 2mm then resecure tongue, will eliminate the problem. We suggest you try any or all of the above, depending upon the severity of the problem in your bass drone.

STEPS IN SETTING UP THE OMEGA TENOR DRONE REEDS

If you already have drone reeds that are set up to a pitch that you are satisfied with, and suits your chanter, we suggest that you only remove one existing tenor reed from you pipes in order to have a reference to be able to gauge what pitch to set the Omega Reeds to. Take out one of the tenor reeds from the box, and if necessary, unravel some of the waxed red thread to enable the reed to fit securely into the reed seat of the drone. The exact positioning into the reed-seat will not only depend upon the pitch you require, but also the volume and tonal quality you wish to attain, yet for now, fully **TWIST (do not bend from side to side)** the reed into the reed-seat. Make sure the reed is positioned absolutely straight and secure within the reed-seat. Also when removing the reed from the reed-seat, always TWIST, do not force in a side to side movement.

Next, cork up your chanter stock and inflate the bag, stop the bass drone and tune the Omega Tenor Reed to your existing tenor reed. You now need a starting point to know how the pitch of the Omega Tenor Reeds compare to your existing reeds and drones, and thereby are in a much better situation to know if the Omega Reeds need to be adjusted for pitch and strength. If the Omega tenor reeds needs adjustment in pitch, then go to the section **Pitch Alteration** (page 5). If the reed requires a change of strength to match your existing reed, then see the section of **Changing the strength of the reeds** (page 4). Tenor drones should usually be tuned up at around the hemp line or above, depending upon the type of tone required, see the section of **Tonal quality manipulation** (page 5) for more details.

Once you have set-up one Omega tenor reed to match your existing reed/s for pitch and strength, it is now time to take out the other Omega tenor drone reed from the box, and then apply the same manipulations as have been applied to the Omega tenor reed now in your pipes. Tune the two tenor reeds together, and hopefully you should have a fairly closely matched set-up for the newly introduced Omega tenor drone reeds. If not, go to the section on **How to match up your drone reeds for strength and stability** (page 5).

STEPS IN SETTING UP THE OMEGA BASS DRONE REED

Now that you have tenor reeds set-up, the bass reed must be set-up to suit your tenor reeds for pitch, strength and also to match the tenor reeds for volume in order to provide a pleasing balance of the two differing octaves of drone sound. Once seated in the reed-seat, try blowing the bass reed in the drone by mouth. This is to ascertain whether you need to make any initial adjustments in strength prior to fully testing the bass reed in the bagpipes. Due to the large strength to come into line with what you have been used to with your existing reed, see the section on **Changing the strength of the reeds** (page 4). For instance, many older makes of drones such as McDougalls, Henderson's, Glens etc. have a very different requirement in setting up to the more modern day makes such as Nails, McCallums, Sinclairs etc. Most modern day makes will require a rather major reduction in strength set-up by comparison to the older makes due to the substantial variations in bore dimensions, which have their benefits and disadvantages.

After making any initial changes to strength, insert the bass drone into the bass stock, and again with the chanter stock stoppered up, inflate the bag and tune the bass to the already tuned Omega Tenor Reeds. The tuning position for a bass drone is usually best with the top tuning slide above the hemp line, and the bottom-tuning slide tuning approximately two finger widths above the projecting mount. The reasons for this are expanded upon in the section **Problems with a bass reed not-striking in correctly** (page 6). Apart from simply a strength set-up in order to function without stopping, the bass drone should be matched for strength in comparison to the two tenor drones to provide a pleasing balance of the two different octaves of drone sound. This might well mean a change of strengths of either the bass reed, and/or the two tenor reeds to attain this.

ABOUT THE OMEGA DRONE REEDS

We have developed and patented the world's first reed that has a bendable body, which does away with the need to bend or spring a tongue. This is done by increasing the degree of threading of the grub screw located in the stainless bar at the bottom of the reed. The screw can be put into any three positions, which will allow the pipers to have differing tonal qualities and pitch along with variations in strength. Exactly which position you should use is dependant upon the tonal quality and pitch you prefer or require for you own needs. Screwing in the grub screw in turn bends the body of the reed to increase the aperture between the tongue and the body, which then allows the air to vibrate the tongue. The degree to which the body of the reed needs to be curved is directly dependent upon the strength that you need to match the drone sound to your chanter strength.

How to fix squealing tenor reeds

Squealing tenor sound is usually caused by having the tuning clip positioned too far forward towards the front of the reed, causing the tongue to be too short for its strength. This can be remedied by loosening the clip and sliding it further back toward the reed-seat end of the reed, which gives the reed a longer tongue to vibrate. You might also need to reduce the strength of the reed at the same time to counter the extra strength gained by the longer tongue. To do this, alter the setting of the grub screw in the bar (see section on **Changing the strength of the reeds** (page 4).

Another factor that should be mentioned about squealing tenor drone reeds, is that a build-up of grit or dust can cause air-leakages between the tongue and the body of the reed, which in turn can cause the reed to squeal. So a periodical check for particles under the tongues is good practice. Refer to **Maintenance of the reeds** (page 7) lower down on this page for more details.

How to fix a strong double toning reed

See the section on **Changing the strength of the reeds** (page 4), and this will resolve the problem of a strong double tone.

How to fix a stopping reed

Stopping Omega drone reeds can almost be solely attributed to the reed/s being set-up too easy for the pressure that you are playing your chanter at. With the exception of reeds that have been set-up to be extremely easy, Omega drone reeds will not be affected by moisture content in terms of stopping. To remedy the problem of a drone reed stopping, refer to the section on **Changing the strength of the reeds** (page 4).

Restoring a drone reed to a near zero strength condition

If you ever have the need to reduce the air-intake of an Omega Drone Reed from a stronger pressure back a very low strength, and the pressure exerted by the grub screw in the bar has been completely reduced to nil, yet the reed continues to sound even slightly, this can be achieved by simply giving the body of the reed a slight bend to bring the plastic back to a straight condition.

MAINTENANCE OF THE REEDS

Omega Drone Reeds require very little maintenance apart from a periodical check under the tongues for any foreign particles that could be lodged there. Foreign particles or dust build-up can cause air-leakages, which can cause squealing tenor sounds, and possibly general striking-in problems. The tongues are easily cleaned by simply running a clean thin cloth between the underneath side of the tongues and the body of the reed, this should dislodge any particles located there.

It is also a good idea to make sure that the tongues are always in straight along the body of the reeds, which again can cause air leakages and associated striking-in problems.

CHANGING THE STRENGTH OF THE REEDS

Omega Drone Reeds can be set at any strength from nearly zero to lung-buster strength, and remain that way until you adjust the reed again. Locate the Allen Key inside the box that the reeds came in. Either end of the Allen Key can be used to tighten or loosen the grub screws. To increase the strength of the reed, insert the Allen Key into the grub screw in the bar, and tighten the grub screw clock-wise very slightly, then test the reed for the desired strength. To decrease the strength, turn the grub screw in an anti-clockwise direction. Be aware that the degree of turn is extremely sensitive and will alter the strength of the reed very rapidly. For instance, just an eighth of a turn will have a significant affect upon the strength of the reed. As the tongues of the reed remains straight and unaltered, and the body of the reed is held in a locked position, the alteration to the strength of the reed is permanent unless altered again, and hence there is no settling in period nor weakening of the reed. Omega Reeds are the first reeds to offer this degree of accurate and permanent control.

ALTERING THE TUNING CLIP TO ALTER THE STRENGTH, PITCH, AND TONAL QUALITY

Altering the tuning clip position can be done by using the Allen Key and loosening the grub screw in the tuning clip by turning the grub screw in an anti-clockwise direction. You can then slide the clip back toward the reed-seat end of the reed to strengthen the reed and lower the pitch, or forward towards the plug end of the reed to weaken it and raise the pitch. Please keep in mind that both these actions also affect the tonal quality of the reed, see **Tonal quality manipulation** (page 5) for details. When tightening the grub screw again after sliding the clip to the desired position, be sure not to over-tighten the grub screw, particularly the bass reed as it could cause squealing and/or striking-in problems. The minimum pressure required must be sufficient to prevent the clip from moving. Extra tension beyond this level will give you a stronger reed and reedier tone, but do not go too far with this as it can cause striking in problems. If you prefer the type of tone produced by exerting a little more pressure on the tuning clip's grub screw, then you will likely need to reduce the pressure of the grub screw in the bar to compensate for the extra strength now created, and this will also increase the pitch. Our unique adjustable tuning clip means that a constant never ending pressure can be exerted over the tongues at all times, giving you the greatest longevity and effectiveness of any bridle mechanism.

PITCH ALTERATION

Omega Drone Reeds have an exceptional ability to offer pipers a huge variety of pitch. Depending upon the make of drones, the pitch can be made to vary by as much as 30hz with a tenor, 20hz with a bass, and this is without any alteration to the drones, simply reed adjustments. This means the variety of pitch open to pipers playing Omega Drone Reeds is enormous. Any one or a combination of the following can attain pitch variation:

- 1 Twisting the plug into the reed further will raise the pitch, and positioning the plug further out will lower the pitch.
- 2 Fully inserting the reed into the reed-seat will raise the pitch, and positioning it further out of the reed-seat will lower the pitch.
- 3 Moving the tuning clip toward the front of the reed will raise the pitch, and moving it towards the reed-seat end will lower the pitch. Please note that having a tongues too short will cause striking-in problems, particularly with a bass reed.
- 4 Moving the grub screw located in the bar to the 1st position (the plug end) will raise the pitch. Moving the grub screw to the 3rd position (reed-seat end) will lower the pitch. All four options will cause a relative increase or decrease in volume and tonal quality.

TONAL QUALITY MANIPULATION

Tonal quality is very much a personal preference issue, yet Omega Drone Reeds have the ability to offer pipers the tools with which to accomplish their own preference in tone. Pipers can easily switch and reverse their settings of tone at any time, and know that their changes will remain that way until they alter the reed set-ups again. It is this feature that makes our drone reeds truly unique. There has to be a trade-off with pitch to change tonal quality, but with the Omega Reeds the restoration of the original pitch can be easily accomplished.

How To Attain A Smoother, Quieter Tone

A smoother, quieter tone can be attained by twisting out the rubber plug to its minimal insertion, seating the reed into the reed-seat no more than half-way, putting the grub screw into the 1st hole position at the plug end of the bar, and then sliding the tuning clip forward towards the plug end to compensate for the lower pitch created by the changes to the plug and reed-seating. You will need to adjust the strength of the reed to your requirements, and also fine tune the position of the tuning clip to suit. Another method that will accomplish a smoother tone is to undo the grub screws in both the back cap and tuning clip so that the tongue

can be slid forward by approximately 1mm to 2mm. Re-tighten the two grub screws, and then make suitable adjustments in both the strength and pitch to reach the desired result.

How To Attain A More Vibrant And Robust Tone

A more vibrant and robust tone can be attained by fully inserting the plug into the reed, and selecting the 3rd grub screw position in the bar (reed-seat end), sliding the tuning clip back slightly towards the reed-seat end of the reed, and fully inserting the reed into the reed-seat. This will give you a much more robust and vibrant sound.

The above methods of attaining two extremes of tonal quality are obviously not to everyone's taste, and can be readily modified and varied by slight amounts to achieve your own personally desired tone. For instance you can leave the plug untouched and only vary the reed-seating and grub screw positioning in the bar to make lesser changes in tone, but you will probably have a greater change in pitch than you might like. It all gets down to degrees and combinations of changes made, and preferences of tone you are seeking to attain.

How to adjust the volume of the Omega Drone Reeds

Volume is very much linked to the strength of the reeds, and usually whatever changes are made to strengthen a reed, an accompanying increase in volume is made. Also fully inserting the plug into the reed, and the reed fully into the reed-seat can magnify the volume significantly in tenor drones, and to a lesser extent with bass drones.

HOW TO MATCH UP YOUR DRONE REEDS FOR STRENGTH AND STABILITY

Ideally the pitch of the three drones should alter in unison with any variation of air pressure, but this alteration should be minimal. This is what is generally referred to as having steady drones, and there should be just one unified tone to harmonically blend with the chanter. To achieve this, you must have all three drone reeds matched for strength and pitch. To test for this, it is best to plug up the chanter stock and stop the bass drone, then blow up the bag and tune the two tenor drones exactly in tune with each other at a relatively low pressure. Once tuned, exert greater than normal air pressure, and listen for any separation in pitch, which will also be indicated by having to tune one of the tenor drones higher up from its previously tuned position. The weaker, or more unstable reed, will move more in pitch, and will be in the drone that you were required to tune higher up (flatten off). To make this reed more stable, and thereby more in line with the other tenor reed, see the section on **Changing the strength of the reeds** (page 4) to learn how to strengthen it. The same principle applies to the bass drone reed, yet it is best to stop one of the tenors first to make the assessment easier and more accurate.