REEDS

CAL BARRY
HEAD TECHNICIAN

Reeds are often spoken about as a mystical and elusive product. Players are constantly searching for the 'perfect' reed. They can be responsible for a beautiful sound and make for a perfect performance or be the bane of the players existence. Temperamental and short lived. In this guide we aim to demystify them a little and look at some basic reed care and maintenance techniques and tools.

SOUND GENERATION

Why are reeds important? Essentially sound is just vibrations, in the case of saxophone or clarinet a vibrating column of air within the body of the instrument. We provide the air and pressure by blowing and the reed oscillates to product the vibration, the sound. The reed is right at the start of our instruments sound.

CANE

The main species our reeds come from is Arundo Donax. It is a large perennial cane from the grass family (not bamboo). It is grown in The Mediterranean Basin that provides the perfect amount of sun and water for the cane to grow. Trade winds, including the Mistral, flex the cane as it grows to provide strength and flexibility. It is the perfect climate for creating reeds.

Different growing conditions such as the amount of rain and sun from year to year can change the end product as the speed of growth effects the fibre structure. The harvest takes place in winter after two growing cycles when the cane is the driest and the sap has settled to the bottom of the plant.

HOW DO WE GET A REED?

While each company has there own process generally it looks like this:

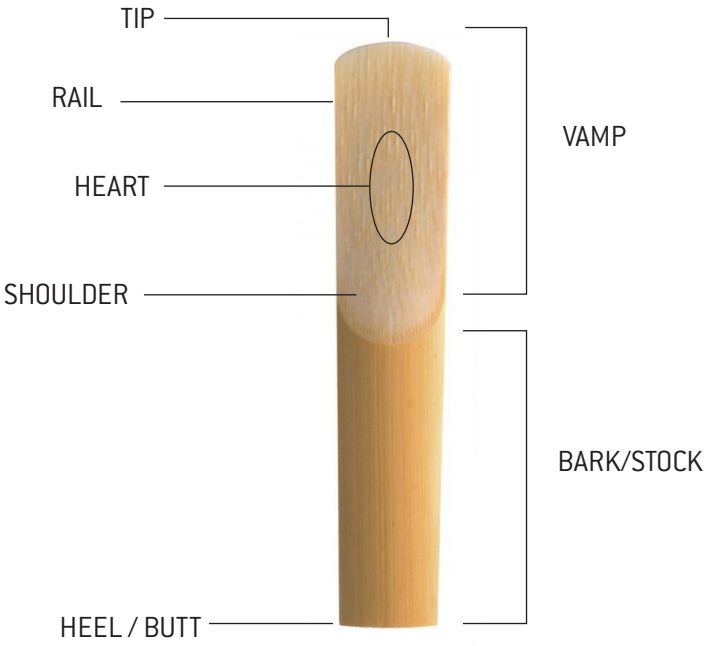
After approximately two years of growing the cane is harvested and sun dried for around 30 days (turned at intervals).

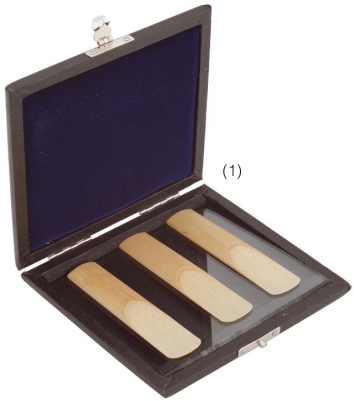
The cane is cut into tubes and sorted by size and thickness, then aged for around 2 years. After ageing the tubes are split into 4 segments then cut to the required length. Each segment is cut with high precision machinery that makes the base perfectly flat and smooth, ensuring correct support for the reed where it comes into contact with the mouthpiece. Then the sides are tapered and shaped in a machine that leaves the blank finished with a trapezoidal shape scraping according to the required width.

Each “blank” is profiled to create the vamp and finally the tip is cut into a curved shape. All by high precision machinery. The finished reeds are measured for strength and marked with branding then packed and shipped all around the world.

The reed size or strength - is actually a measurement of the flexibility of the tip. It is measured by precision machines that record the deflection of the tip under pressure. It is not the thickness of the reed, although this does usually have an impact on the flexibility.

ANATOMY OF A REED





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BREAKING IN A REED

Cane, being a plant will start to break down over time especially with water, saliva and bacteria so the second we start playing on a reed we start to break down the cane structure. Being wet and dried repetitively is also hard on the reed as the fibres expand and shrink.

There are lots of ways and methods used but generally the aim of all of them is the same - to stabilise the moister content.

A good and relatively easy process for breaking in a reed is to place the reed in your mouth at the tip end and wet it then reverse placing the butt of the reed in your mouth and suck, this will draw moister through the reed and help to eliminate air pockets.

Play for about 5 minutes maximum for the first time, long notes can be good. This helps loosen the fibres and gets as much moister into the reed as will be likely. Leave to dry in a reed case ideally on glass or very flat surface (1).

Burnish the vamp and table to seal fibres. For the table, just rubbing it on a piece of clean printer paper over a flat surface (such as glass plate) will be enough.

ADJUSTING A REED

What are we aiming for? Often reeds are not quite balanced, one side might be a little harder than the other, maybe the vamp is cut off centre. Or maybe the reed is just too hard or soft for us. The reed might also not be the right profile for our mouthpiece.

Ideally when held to the light we will see an inverted U shape through the heart of the reed. If we don't we want to take a little material out to try to get to this.

At this point it is also worth checking your mouthpiece - is it damaged? Are the rails and tip even? If your mouthpiece is damaged attend to this first as no amount of work on the reed will make up for it.

With all the below adjustments **Go Slow!** Removing small amounts of material can make a big difference.

THE TABLE

It is important that it is flat to avoid bad contact with the mouthpiece table which can cause air leaks and unresponsiveness. Generally on a new reed this part will need very little work aside from a light burnish. On older reeds where warping has occurred, it may be necessary to smooth out again. The best way to do this is to place the table of the reed on a glass plate and gently rub or massage the reed from the vamp towards the tip with your finger to flatten out.

You can also gently and carefully scrap along the table from the butt end towards the tip to help level but it will be very hard to achieve the same level of precision that is produced at factory. Often once reed a requires this amount of work it is past its usefulness.

VAMP - BALANCING

Tools: Reed Geek / Sand Paper / Reed Knife / Reed Rush or Resurfacer Stick
This is where we address the 'u' shape of the heart. Ideally we want both rails to be the same, symmetrical. When held up to light you will often be able to see one side has darker areas than the other. Balancing is exactly that, removing a small amount of material to make both sides the same.

Place the reed on a glass plate. Scrape or rub from the butt end of reed towards the tip. Only remove material from where you have already ascertained it needs to be removed from.

HEART - TOO HARD

Tools: Reed Geek / Reed Knife
Often if a reed is too hard for you taking a little bit of material out of the heart will help. Place the reed on a glass plate. In one continuous movement scrape along the vamp from the butt end of reed towards the tip. Take a little bit at a time.

THE TIP

Tools: Reed Trimmer
There are two main reasons for adjusting the tip of a reed; when a reed is too soft or starting to soften up from playing or if the profile of the reed doesn't match your mouthpiece.

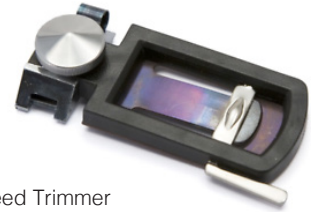
The trickiest part here is finding a reed trimmer with the profile that suits your mouthpiece and/or reed you are using. Ideally the tip of the reed should

match with the tip of the mouthpiece as this is what it comes into contact with. As there are a huge range of reeds and mouthpieces some experimenting is recommended. Once you have worked out what is best for you find a trimmer that will match this profile. The actual trimming or clipping is relatively easy. Place the reed in trimmer, position and activate. Ensure you only take off a small amount as moving the tip too far up the reed will make it unplayable.

Reed Geek

Reed Resurfacer

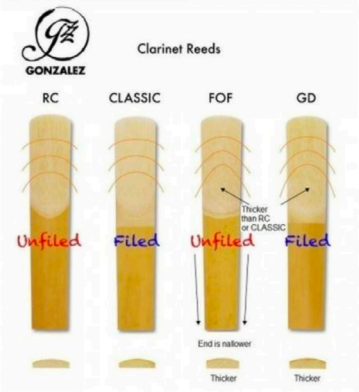
Reed Stick



Reed Trimmer

Reed Knife

Reed Trimmer



STORAGE

There are lots of options and opinions on what is the ideal way to store reeds.

The main styles are:

Ridged for airflow: Protec / Reed guard / Bambu. Usually at the cheaper end of reed cases these protect the tips from damage and allow airflow to dry out the reed. Doesn't necessarily help prevent warping.

Very Flat: Forestone (2). Glass is the most common. A good way to prevent reeds warping as they dry.

Humidity Controlled: Vandoren / D'Addario. Usually airtight, aims to keep a consistent humidity level inside the reed case to maintain the reeds at optimal moister level, prevents them drying out completely and warping. Can allow mould to grow quicker.

Antibacterial: Silverstein (1) / ReedJuvinate. Basically these try to kill any microbial bacteria that can breakdown the cane. Silverstein's Reedcure incorporates a battery operated uv cycle that sterilises the reeds in the case. A Bovida humidity pack is then also kept in the case to control humidity level. The ReedJuvinate uses a sponge soaked in Listerine to sterilise the reeds and control moister level.

It will depend on how fussy you are as well as atmospheric conditions as to what is the most practical for you.

(1)

(2)

SYNTHETICS

There is nothing like a great cane reed, the way the fibres resonate, the response and the sound! But great cane reeds are rare and often only a couple in the box. By working on them we can increase this but it's still not consistent. I am yet to find a synthetic reed that plays as well as a great cane reed, but there are some that play better than most cane reeds. If you need consistency and reliability they could be a good option.

There are a number of different brands of synthetic reeds available and they all play differently - just like regular cane reeds. Find one that suits you and your set up. Check out the Forestone range in store.

Some of the main benefits:

Consistency: being manufactured from synthetic materials there aren't the natural variances that are found in cane

Play straight away: because they are impermeable they won't absorb moister so don't need to be sucked on, or played in. This is also great for doublers who's instrument might sit on a stand for most of a show before being required.

Last longer: The materials used tend to deteriorate much slower than cane

Even if you don't love them, it can be a good idea to find one that works for you to keep as an emergency in your case - it will always work when you need it.

THE DIFFERENT CUTS OF CLARINET REEDS

A topographical diagram of each cut. All points on the same level curve have the same thickness. The more pointed the arch, the thicker the spine and heart, and conversely, the thinner the side bevels.

Traditional™

Tip Thickness: 0.09 mm (0.0035 inch)
Heel Thickness: 2.8 mm (0.110 inch)

V.12™

Tip Thickness: 0.10 mm (0.0040 inch)
Heel Thickness: 3.15 mm (0.124 inch)

56 RUE LEPIC™

Tip Thickness: 0.11 mm (0.0045 inch)
Heel Thickness: 3.25 mm (0.128 inch)

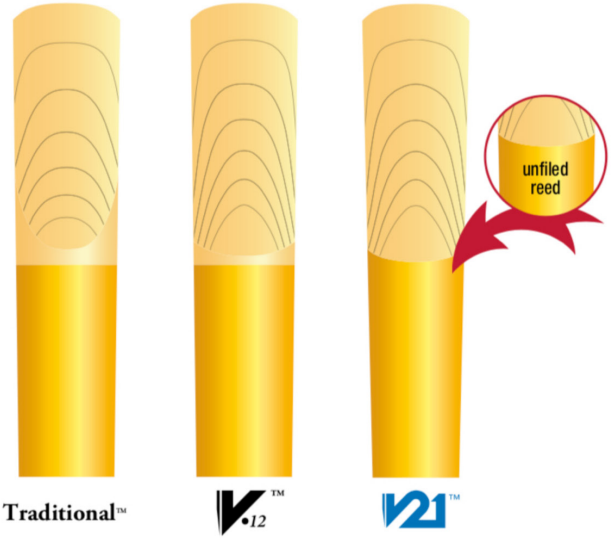
V21™

Tip Thickness: 0.10 mm (0.0040 inch)
Heel Thickness: 3.25 mm (0.128 inch)

THE DIFFERENT CUTS OF SAXOPHONE REEDS

3D diagram showing the comparative level curves of the 7 reed series. All points on the same level curve have the same thickness. The more pointed the arch, the thicker the spine and heart, and conversely, the thinner the side bevels.

SAXOPHONE REEDS



Traditional™

Traditionals feature the thinnest tip with the thickest heart, resulting in crisp articulation with a full, dark sound.

V•12™

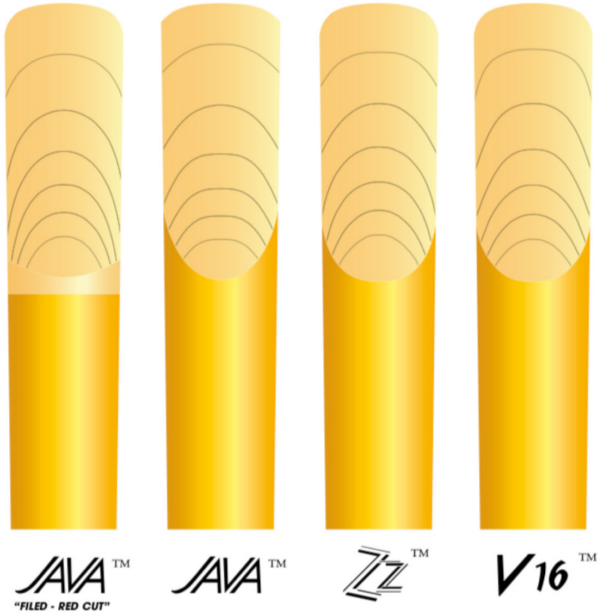
Produced from cane selected for its specific proportions, the **V•12** reeds have a thicker heel and are cut on a longer palette with a slightly thicker tip than the Traditional. The longer palette means that more of the reed is vibrating, resulting in a deeper, richer sound. The thicker tip gives body to the attack and also increases the longevity of the reed.

V21™

This unfiled reed offers a clean sound, a precise articulation and a great ease in achieving large interval leaps.

JAZZ SAXOPHONE REEDS

All points on the same level curve have the same thickness. The more pointed the arch, the thicker the spine and heart, and conversely, the thinner the side bevels.



A relative of the **JAVA** reed family, the **JAVA "Filed - Red Cut"** is the first file cut Vandoren reed for jazz and popular music. It also benefits from a completely new design.

JAVA reeds are more flexible than **Traditionals** and **V16s** and vibrate on a long palette, creating a bright sound with immediate response.

ZZ reeds combine the medium-thick heart, spine, and rounded tip of the **V16** with the flexible palette design of the **JAVA**, giving the player a rich, colorful sound with quick response.

V16 reeds have a medium-thick heart (more than **JAVA** but less than **Traditionals**), with a profile designed for producing a strong attack with a deep, rich sound.

COMPARISON CHART

VANDOREN																		
JAVA	1		1.5		2		2.5		3	3.54	3.5		4					
ZZ	1		1.5		2		2.5		3		3.5		4					
V16				1.5		2		2.5		3		3.5		4				
TRAD			1		1.5		2		2.5		3		3.5		4		5	
V12									2.5		3		3.5		4	4.5	5	
V21										2.5		3		3.5		4	4.5	5
FORESTONE																		
BLACK BAM/HK/TRAD	S		MS		M		MH		H		XH							
WHITE BAMBOO			2		2.5		3		3.5		4		4.5					
GONZALEZ																		
RC				1.5		2		2.5	2.75	3	3.25	3.5		4		4.5		
CLASSIC				1.5		2				3		3.5		4		4.5	5	
627 JAZZ		1.5		2		2.5		3		3.5		4		4.5				
D'ADDARIO																		
ORANGE	1	1.5	2		2.5		3		3.5		4							
ROYAL	1	1.5	2		2.5		3		3.5		4		5					
RESERVE					2		2.5		3		3.5		4		4.5			
HEMKE					2		2.5	3	3.0+	3.5		4						
JAZZ SELECT			2S		2M		2H	3S	3M	3H	4S	4M	4H					
LA VOZ			S		MS		M		MH			H						
PLASTIC COVER	1	1.5	2		2.5		3		3.5			4	5					

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SAXOPHONE REEDS

COMPARISON CHART

VANDOREN																		
TRADITIONAL			1		1.5		2		2.5		3		3.5		4		5	
V12									2.5		3		3.5	3.5+	4	4.5	5	5+
V21										2.5		3		3.5		4	4.5	5
RUE LEPIC 56									2.5		3	3.5	3.5+	4		4.5	5	
FORESTONE																		
BLACK BAM/HK/TRAD	S		MS		M		MH		H		XH							
WHITE BAMBOO			2		2.5		3		3.5		4		4.5					
GONZALEZ																		
RC				1.5		2		2.5	2.75	3	3.25	3.5		4		4.5		
CLASSIC				1.5		2		2.5		3		3.5		4		4.5	5	
GD								2.25	2.5	2.75	3	3.25	3.5	3.75	4	4.5	4.75	5
FOF								2.25	2.5	2.75	3	3.25	3.5	3.75	4	4.5	4.75	5
D'ADDARIO																		
ORANGE			1.5		2		2.5		3		3.5	4						
ROYAL	1		1.5		2		2.5		3		3.5	4		5				
RESERVE							2		2.5		3		3.5	3.5+	4	4+	4.5	
RESERVE CLASSIC						2		2.5		3		3.5	3.5+	4	4+	4.5		
MITCHELL LURIE			1.5		2		2.5		3		3.5	4	4.5	5				
LA VOZ			S		MS		M		MH		H							
PLASTIC COVER	1		1.5		2		2.5		3		3.5	4		5				
GRAND CONCERT							2		2.5		3		3.5	4		4.5		

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