

The Saxophone – a guide to graduate, professional and vintage instruments

Graduate Saxophones

“Graduate” is a term used to describe instruments that are a step up from advanced student instruments but not quite professional instruments. They are aimed at students studying music at college and players who want a serious instrument but don’t want to stretch to the expense of a professional instrument.

Graduate Saxophones are superior to student instruments in a number of ways:

- they are more robust having been made of thicker and/or stronger metal – particularly the keys
- they have a more consistent tone throughout their compass and better intonation
- they have a linking arm directly from the *barrel* of the right hand F# key (the key cup between the F and G# key cups) to the G# key (instead of from the F# key *cup* directly to the G#)
- where the F# linking arm corresponds with the G# key cup and Bb arm there are adjusting screws
- they have a linking arm directly from the *barrel* of the Low B key to the Low C# key (instead of directly from the Low B key *cup* to the Low C#)
- they usually have more adjusting screws on the backs of the left and right hand mechanism keys (this enables the mechanism to be more easily tweaked if necessary)
- they usually have more felts to quieten the mechanism
- they usually have links on the table keys from B & C# keys to the G# key (allowing easier movement of the little finger from G# to Low B or C#)
- they sometimes have links from Low Bb to C# on the table allowing for easier movement of the little finger between these keys

The chief graduate instruments are: Jupiter 900 series; Trevor James signature series; Keilworth (various); Yamaha 475; and possibly the Yanigisawa 901 series (although the 901 series could be considered professional instruments). When trying graduate instruments the player should start with the graduate model made by the manufacturer of the student model that they already own; they should compare this with graduate models by other manufacturers.

Professional Saxophones

These instruments are made to the highest standards; they are fitted with a mechanism that has been manufactured to a higher tolerance than on graduate instruments so the keys are a better fit to the screws and rods. This means that there is less “play” on the keys i.e. they do not wobble. With less play in the mechanism the instrument feels more “positive” and the pads seat more reliably; also there is less noise from the mechanism and the mechanism lasts longer before it starts to wear. Most importantly the crook and bore of the instrument have been designed to produce the best possible response, intonation and tone.

Professional instruments have all the features of a graduate instrument but they should also have two other features:

- The Low C# key is an “articulated” key, this means there is a lever that indirectly operates the key. Where the lever corresponds with the key (hidden just behind the back of the C# key) the mechanism should incorporate an adjustable roller – this is an indication that the table keys have been designed to correctly operate with the Right hand mechanism.
- The linking arm from the barrel of the right hand F# key (between the F and G# key cups) has a small bar carrying the adjusting screws where the F# key corresponds with the Bb arm and G# key cup. The location of this small bar on the linking arm should be adjustable – this allows for the venting of the right hand action and left hand action to be set independently if necessary, but more importantly it is an indication that the right and left hand actions have been designed to operate together correctly.

Professional instruments will get a lot of use and they need to be reliable; there are two other aspects to the key mechanism that are worth checking in this regard.

- The high F lever should operate such that when depressed (to open the palm key and close the B key) it contacts the B key close to the centre of the key - not at the edge – this is because the finger pressure used to operate the high F lever is greater than used to operate the B normally, and if the lever pushes the key cup down from the edge the pad will eventually crush down at the edge and leak.
- For similar reasons the A pearl should close the Bb key (which lies directly below the A pearl) contacting close to the centre of the Bb key rather than at the edge.

Often manufacturers make several professional models. The models vary primarily in the metals used to make the instrument and the finish given to the instrument.

Various types of Brass or Nickel silver are commonly used in the construction of the tube of a Saxophone but types of bronze or solid silver are sometimes used as well. The tube is manufactured in 4 sections – crook, body, bow (or U-tube), and bell; and different metals can be used for each section.

A particular metal may be selected for a section of the tube for different reasons: perhaps because of the ease with which it can be worked; or its strength; or its resistance to corrosion; or its tonal quality. Players will choose a particular professional instrument chiefly for the tone it produces, but resistance to corrosion and the weight of the instrument can also influence their choice.

The finish on an instrument (usually either lacquer, nickel plate or silver plate) not only determines the appearance of the instrument but also how well the base metal is protected from water (from the players breath) and sweat (from the players fingers). The bore of the instrument is vulnerable to water and over time there can be a build up of verdigris and calcium salts as water reacts with the base metal particularly in the crook.

Vintage Saxophones

There have been many models of Saxophone originally intended as student, graduate, or professional instruments that are no longer manufactured. The student models are usually of poor quality; however the graduate and professional models, which were manufactured to higher standards, can be very desirable instruments.

These older models of Saxophone are sometimes referred to as “Vintage Saxophones”. These instruments were made to a lower quality than today’s graduate and professional instruments, and sometimes their mechanisms are missing features that would be considered standard even on today’s student instruments, and often their intonation is not as precise as current models; however it is the tone that they produce that players are interested in.

Vintage instruments have to be checked for the effects of age. Almost certainly the lacquer and/or plating will be heavily worn but as long as the bore of the instrument is relatively smooth and clean this should only affect the appearance of the instrument.

The chief areas that require scrutiny are:

- The **solder-work**: this has a limited lifetime depending on the solder used and how well it was done in the first place – if there is evidence of several re-soldering jobs then steer clear of the instrument – obviously things keep falling off it
- **Denting** to the body or crook: some minor denting is acceptable but be wary of excessive denting or denting near the top of the body or on the crook – this can affect the tuning and tone of the instrument.
- The **mechanism**: this will inevitably have some wear but check for excessive key wobble or movement – this will have to be removed (if possible) if the mechanism is to operate properly. Also vintage instruments tend not to have articulated keys (such as the side Bb and C keys and the table keys) which means the seating of the pads is less reliable and the springing of the keys may not be as balanced as on a modern instrument.
- The **padding**: a vintage instrument should have had various pads, if not all of them, replaced several times during its lifetime. If the pads are old and the leather is hard, crusted, or broken then they will need replacing.

Play-testing a Saxophone before purchase

Before testing a new Saxophone it is best for the player to ensure their existing instrument is playing well. Commonly players compare a new Saxophone (which should be in good condition) to their own Saxophone (which is not); instead of comparing Saxophones they are actually comparing the *condition* of the two Saxophones. If the player's Saxophone is in good condition (i.e. it fully serviced less than a year ago) then they can truly assess the differences between the Saxophones (ensuring an instrument is playing well is even more important when testing mouthpieces – a player might select a mouthpiece because it alleviates a problem that would otherwise be solved by having the instrument serviced, what is more, once the instrument is serviced the player might find the mouth-piece disagreeable).

A player trying out graduate or professional Saxophone will already own a mouthpiece but first the player should test the new Saxophone with the manufacturer's recommended mouthpiece (e.g. a Yamaha mouthpiece for a Yamaha instrument) but bear in mind that the particular mouthpiece normally supplied with the new instrument might not have the same tip opening/length of lay as the player's existing mouthpiece. Mouthpieces usually come in a range of tip openings/lengths of lay and the player should request a mouthpiece with a tip opening/length of lay as close as possible to their own mouthpiece – this way the mouthpiece will be correct for the instrument and will feel more or less the same to the player. If the recommended mouthpiece is not available with a tip opening/length of lay similar to the player's existing mouthpiece then the player will have to use the supplied mouthpiece and try softer or harder reeds to compensate for the difference.

If the player's mouthpiece is a professional mouthpiece then the player should use this to test the instrument as well. However there can be a problem if the cork on the crook is too thin or too thick to locate the player's own mouthpiece in the right position on the crook. If the cork is too thin then wrap some plumber's PTFE tape around the cork – if the cork is too thick then it will have to be sanded down – if the vendor allows.

The exact location of key touch-pieces on a Saxophone varies from model to model and therefore different models will feel better under the fingers to different players. When selecting an instrument a player should check the following:

- The (thumb) Octave key- it should be in a comfortable location and should not "travel" too far when operated

- The location of the crook when playing sitting down and standing up – the player may have to swivel the crook around slightly but the octave mechanism should still operate properly.
- The location (and effectiveness) of the first finger high F spatula (if the mechanism for this key has a “rocker key” linking the spatula to the palm key then preferably the spatula key has an adjustable roller). The high F should sound easily
- The location of the Bb “bis” pearl – it should be level with, and close to, the B key pearl so that the player’s first finger can comfortably hold down the B key and the Bb key at the same time.
- The location and springing of the “table keys” (G#, Low C#, Low B, and Low Bb) – the player’s left hand little finger should be able to comfortably operate all of these keys.
- The height of the Palm keys – they should be easily operated but they should not be in the way.

If the player is having difficulty with the instrument even if they feel at ease with the mouthpiece and the layout of the touch-pieces, it could be down to how well the instrument is working (bear in mind that sometimes brand new instruments have not been set up properly).