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Why does my guitar rattle when i strum

So, you've got a guitar you love and it looks, feels, and sounds great... but, some (or all) of your strings are buzzing against the frets and it's driving you nuts. Let's take a look at some common causes of fret buzz is the annoying sound caused by a guitar string rattling/buzzing against a fret wire when the guitar string is being plucked or played. There are three common causes of fret buzz: Frets are not level with each other (some are taller, some are shorter) String Action is too low Neck does not have enough "relief" (neck is too straight, or bowing backwards) Note: Technique is not listed as a cause of fret buzz, but it is worth mentioning because, at a certain point, the cause of fret buzz is the player and not the guitar. If the player attacks the string too aggressively on a perfectly fine guitar, fret buzz will still occur. CAUSE #1 - Frets Are Not Level With Each Other The frets are supposed to be level with each other (they should all be the same height). There is an exception to this rule (upper fret "fall-away"), but we won't be getting in to that here. When the frets are not level with each other, that means some of the frets are shorter and some of the frets are shorter and some of the frets are taller. It's the tall frets that are the problem because the string comes in to contact with them and it results in fret buzz. The string does not buzz against the low frets. The diagrams below help illustrate. Let's start with what we want to see: The gray line is the guitar string is being fretted at the first fret (by an invisible finger). Great. The frets are exactly the same height off the fretboard, which results in there being a space between the top of Fret #2 and the bottom of the guitar string. Because a guitar string vibrates when plucked, there needs to be enough space between itself and the fret to allow for that vibration to occur without the two coming in to contact with each other. Here's what we don't want to see: The gray line is the guitar string. The guitar string is being fretted at the first fret (by an invisible finger). Uh oh. Fret #2 and the bottom of the guitar string will rattle/buzz against Fret #2 every time the guitar is fretted and played at Fret #1. In extreme cases, there will be no gap at all (they're touching) between Fret #2 and the guitar string, and the result is a dead fret... the guitar string is being fretted at the first fret (by an invisible finger). Remember how the string doesn't actually buzz against the low frets? We should be able to see clearly as to why. Fret #2 is so low that it actually increases the space between itself and the bottom of the guitar string. That means the string to vibrate... But, what if we want to play a half step up (at the second fret)? Because Fret #2 is so low, we can be almost certain that Fret #3 would be relatively taller and so the problem of fret buzz is still present; it just got shifted up the neck! So, that's why it's super important all the frets on a guitar are the same height, or level, with each other. At Halo, every instrument gets a full fret leveling procedure done to it and it's performed by one of our pro quitar techs at our shop in Cupertino, California. This allows us to set up our quitars with very low string action while still being able to offer buzz-free playing. SOLUTION #1 - How to fix fret buzz caused by uneven fret heights: Perform a full fret leveling procedure. This is a multi-step process and can take a professional between 1-2 hours depending on the condition of the frets themselves. CAUSE#2 - String action is Too Low Let's define "string action measurement by itself; it's necessary to know the string action measurement and the fret at which that measurement was taken. It's common to take string action. Some players prefer relatively high action, while others prefer very low (aka "slammed") action. There is a threshold, though, to how low the string action can be set before it starts causing problems. String action is difficult to measure with standard rulers, so we recommend this String action is difficult to measure with standard rulers, so we recommend this String action. We like to take our action measurements at the seventeenth fret for all our electric guitars. Our string action threshold is around 0.050" for the treble strings (GBE), and around 0.080 for the bass strings (EAD). Setting the action lower than this is not advisable as it will likely result in fret buzz. SOLUTION #2 - How to fix fret buzz caused by low string action: Loosen the strings a bit to relieve tension, then increase the string action by making adjustments at the string saddles (located on the bridge). CAUSE #3 - Neck Does Not Have Enough Relief A guitar neck is supposed to be close to perfectly straight, but not quite. Assuming the guitar is strung and tuned to pitch, it should have a slight dip in the middle (around the 8th fret). That dip is measurable and we call it "neck has a dip in the middle, we say that neck has "forward bow". If a neck has bow is always bad. Back bow means there is not enough relief in the neck and it often causes all or most of the open strings to buzz on the first fret. Neck Relief (image from SOLUTION #3 - When you experience all or most of the strings buzzing when played open, then it is likely the neck is back bowed (there's not enough relief). The strings are buzzing when played open, then it is likely the neck is back bowed (there's not enough relief). The strings are buzzing against the first fret. The fix is simple: increase the amount of relief in the neck by loosening the truss rod. Halo instruments are equipped with two-way adjustable truss rods. On many of our guitars, the truss rod is adjusted at the headstock side with a 4mm hex wrench, which is supplied with two-way adjustable truss rods. On many of our guitars, the truss rod is adjusted at the headstock side with a 4mm hex wrench, which is supplied with two-way adjustable truss rods. On many of our guitars, the truss rod is adjusted at the headstock side with a 4mm hex wrench, which is supplied with our guitars. There are guitar necks out there that can only be adjusted in one direction, and some necks that can't be adjusted all (nylon-string, classical guitars). Two-way adjustability is handy because we can increase and decrease neck relief depending on the condition of the neck, we can use the string as a straight edge by pressing and holding down on the first and last fret of the 4th string, and then looking very closely to see if there is a gap between the bottom of the 4th string and the top of the 8th fret wire. This is an imprecise method, but it can be helpful if you have nothing else better. If there is a huge gap (say, 0.5mm or more), then the neck is probably back-bowed. With the guitar strung and tuned to pitch, truss rod adjustments can be made until only a very small gap can be seen and you'll probably be able to eliminate the open string fret buzz. For reference, the gap should be smaller than the thickness of a regular High E string. There are better and more precise ways to measure relief. Straight edges and relief gauges are available at Stewart MacDonald, but the average player probably doesn't want or need to purchase these specialized tools for this purpose, and that's why I described the method above. Halo does not use the above method in setting neck relief. We always use straight edges and gauges. By the way, if you've ever seen somebody pick up a guitar (to inspect it) and look down the neck while squinting and moving their head side to side a bit... they were "sighting" the neck in order to check the condition of the neck and/or the amount of relief. Learning how to sight a neck is helpful in that it enables you to make the necessary truss rod adjustment without any specialized tools. For neck relief, it would be really nice if we could just set it and forget it. But, the amount of relief in a neck is bound to change over time due to a variety of reasons such as: temperature humidity elevation tuning string gauge There you have it. Three common causes for fret buzz: (1) uneven frets (2) excessively low string action, and (3) a back bowed neck. Just one of these problems all at once. Halo instruments are always shipped with level frets and proper string action, so if you're getting any fret buzz on your new Halo guitar, you only need to make a simple truss rod adjustment!

