

Drum Tuning

by Gene Okamoto, Pearl Corporation

Tuning: No Right or Wrong

When it comes to tuning drums, there's no right or wrong. If you take 10 drummers and ask them how they tune their drums, you'll get 10 different answers. For someone starting out, this can be confusing and contradictory. So to make things easier (ha, after you see all the verbiage below you'll say, "If he thinks this is easy, he's nuts!"), I will attempt to describe how I tune drums. Don't laugh.

Tuning in Opposites

Years ago a drummer friend, named George Rutter, and I were talking he mentioned "tuning in opposites." The proverbial "light bulb" went on in my head and the first chance I got, I tried it on my drums. Eureka, it worked! For the better part of my drumming career, I've used this method to tune drums with great success. This is how.

Step 1 (optional)

Start with a new head or take the existing one off your drum. With your thumbs, squash the rounded part of the head into itself all the way around. Do this with batter heads only, not snare heads. I don't quite understand why this works, but especially on two-ply heads, this makes them sound better.

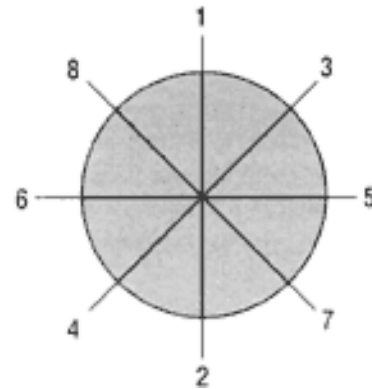


Step 2

Put the head on your drum and finger tighten the tension rods.

Step 3

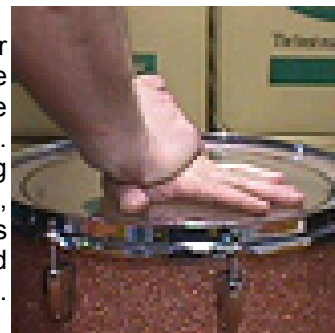
Using a criss-cross pattern (like the one shown at right), turn each tension rod 1/2 turn until the wrinkles are taken out of the head. Tighten the rods until a tone is produced.



Step 4

To seat the head, simply press the center with the palm of your hand like giving CPR. Seating the head pulls the flesh hoop (the ring around the heads) into the channels of the rims and helps the head conform to the shape of the bearing edges of the drums.

When you seat the head, you'll sometimes hear a cracking sound...don't be alarmed, this is normal. After you seat the head, you'll probably notice that the pitch of the head is now lower. This indicates that the head needed seating. Retighten the head and seat it again. If it stays at the same pitch, proceed with Step 5.



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WARNING: Don't press directly on bottom snare heads (2 to 3 mil*) unless you like to see your palm print permanently embossed in plastic! Even with 5mil heads, you are taking a chance. You can pretty much seat thicker, professional-quality (new) heads (10 mil and thicker) with wild abandon, but it never hurts to start with light pressure and increase as your confidence grows. This is sound advice to prevent damage to your heads, shells, yourself or others.

*1 mil = .001". Your typical plastic kitchen wrap is .002" or 2 mil thick.

Step 5

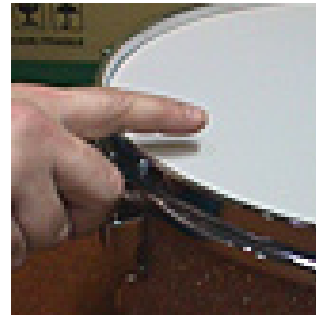
Put the drum on a clean surface, like a rug or bath towel, with the head to be tuned facing upwards.

This does two things: 1) it muffles the other head so you can hear just the head you're tuning and; 2) it allows you to spin the drum to get from lug to lug without marring the floor.

Step 6

Tap the head at each tension rod and listen to the sounds produced.

Drum sticks are the obvious "implement" to hit the head, but to "hear"* better, some drummers prefer to use their drum key, timpani or vibe/marimba mallets, "dowel" rods, etc. Me, I use my finger.** I play a (light***) rimshot with my finger at the second "notch" which allows me to hear the harmonics better and to hit the head at the same distance from the rim every time.



*Some drummers apply light and consistent pressure with their finger in the center of the head to make "hearing" better.

**If you try this yourself, make sure that your rims don't have any sharp edges.

***Hard rimshots are painful.

Step 7

Make a mental note of where the pitches sounded high and where they sounded low.

Usually, if a lug is "high" (or "low"), the one directly opposite it will also be equally "high" (or "low)*. *Except on drums with odd number lugs.

Step 8

Now for the good part! Loosen every rod (turn counterclockwise 1/8 turn) which were "high" and tighten every rod (turn clockwise 1/8 turn) which were "low."

This means that if your drum has 6 lugs, you'll make 6 adjustments; 8 lugs, 8 adjustments; and so on. This is what I mean by tuning in opposites: you're bringing the "highs" down and the "lows" up until they meet in the middle.

Step 9

Seat the head again.

Step 10

Repeat Steps 6 to 9 until the head has the same pitch all the way around; or is "in tune with itself."

Heads that are "in tune with themselves" don't have "funny" overtones that require muffling and, in many cases, can be played "wide open."

Step 11

Turn the drum over and follow Steps 1 to 10 to get the other head tuned evenly or "in tune with itself."

Step 12

Now you can now tune either head up or down by turning each rod tighter or looser by the same amount.

This works much like a zoom lens on a camera: once it's in focus you can "zoom" in or out without affecting its focus. Being human, however, it's not always possible to be this precise, therefore, you may need to fine tune after making these adjustments.

Step 13

Do Steps 1 through 11 with the rest of your toms and bass drum(s). Save the snare drum for last.

WE'RE NOT DONE... YET!

Tuning the Top and Bottom Heads

Now it's time to tune the top and bottom heads relative to each other.

The bottom head is also called the "resonator head" and it plays a vital role in controlling resonance/sustain and pitch of the drum.

There're only three ways to tune double headed drums:

1. Tune the top and bottom heads to the same pitch. This gives a pure tone and long sustain.
2. Tune the bottom head lower than the top. This allows the drum to sound deep with good sustain while still maintaining good stick response. It also produces a "pitch drop" or "growl" sound.
3. Tune the bottom tighter than the top. This also produces a "pitch drop" or "growl" sound, but with a "shallower" sound and shorter sustain.



Step 1

Start with your smallest tom* and tune the top head close to the pitch where you "hear" it.

Don't tune this drum too low, otherwise your floor tom(s) will be subsonic. Many drummers like to tune their drums a 4th apart. If you sing the Wedding March, "Here comes the bride," the interval between "here" and "comes" is a 4th.

*Actually, you can start with any drum! Start with the smallest one first.

Step 2

Tune the bottom head using any one of the three methods described above. Remember to seat the heads after each adjustment.

If you're trying to tune both heads to the same pitch, try tuning in opposites. Example: if the top head is higher, loosen it and tighten the bottom head; and vice versa.

Step 3

"Tweak" the tuning of the top and bottom heads until the pitch and resonance/sustain are to your liking.

Step 4

Repeat Steps 2 and 3 on your remaining toms.

Try to get the intervals between the drums a 4th apart (or however you like them). Also, try to get the resonance/sustain to be as similar as possible.* *You want them to sound: boom, boom, boom, boom, etc.; not boom, boom, blat, boom!

Bass Drum

Your bass drum is like a (big) tom laid on its side, therefore the above tuning techniques also apply.* *I tune the "audience-side" head lower than the playing side.

However, unlike toms, bass drums usually require muffling and/or holes cut into the front head to achieve good sound.

Muffling can be in the form of pillows, blankets, foam, clamp-on devices, or self-muffling drum heads. Which type of muffling and how much you use depends on your preference or playing situation; for instance: recording vs. live.

As for cutting a hole in the front head, the ultimate hole is no head at all. Remember the "cardboard box" sound in the 70's when drummers took the front head off their bass drums and the bottom heads off their toms? Disco Duck! Here's the rule of thumb regarding hole size: As the hole gets smaller, the "boom" gets bigger; and conversely, as the hole gets bigger, the "boom" gets smaller. Experiment.

Snare Drum

Step 1

Tune the top head following Steps 1 to 10 in the section above called, "Tuning in Opposites."

Step 2

As with other drums, you can tune the bottom (snare) head three ways: top and bottom the same; the bottom lower than the top; and the bottom tighter than the top.

Hint: Most drummers tune the bottom head tighter than the top, but it's your drum... experiment.

Tuning the bottom snare head, however, introduces a new "wrinkle," literally. Have you noticed that the bottom bearing edge of your snare drum is not flat? It has two "cut-outs," one on each side of the drum where the snares cross. These are called snare beds and they help the snares lie flat against the head to prevent buzzing.

So what happens if you put a flat drum head on a not-so-flat surface like the bottom of a snare drum? You get wrinkles at the snare beds. There are two schools of thought regarding this. One school says, "Tune the head to itself and if you get wrinkles, so be it!" The other school says, "No big deal, take the wrinkles out!" Both ways are valid. Experiment to discover which works best for you.

If you choose the latter approach and take the wrinkles out, the head will be tuned tighter at the snare beds. You can still tune the rest of the head to itself by using the technique described in "Tuning in Opposites" above.

So, how tight is tight? I tune my snare head to the "G" above middle "C." I tune the batter head to the "E" or "F" below the "G" depending on my mood. A good friend of mine and a great drummer, Paul Yonemura...who has perfect pitch (he can hear any sound, for example: a brake squealing, and he'll tell you what note it is and whether it's sharp or flat)...suggested that I try these notes years ago. It turns out that he heard Ed Shaughnessy and Joe Morello tune their snare drums and with his perfect pitch was able to discern that both tuned their snare drums (at that time) to "G" on the bottom and "E" on the top (Morello) and "F" on the top (Shaughnessy). Just for fun, try these notes. Even if they're not "you," they can serve as a starting point. *The pitch of the head halfway between the snare beds.

NOW WE'RE DONE... ALMOST!

I forgot one important thing. When you put your toms on your holders, most likely the tuning will change. Simple "tweaking" should get them back to where you want.