

Lug-by-lug tuning

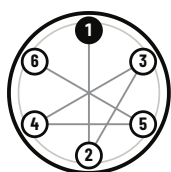
Toms, snare and kick. All it takes is a drum key, a stick and your ears.

Print it, tape it in the case,
hand it to a student.

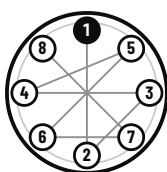
1 Seat the head

1. Centre the head on the shell so the collar sits evenly all round, then fit the hoop.
2. Turn every rod in by hand until its washer just touches the hoop. Use the same light pressure on each: **finger-tight** is your even start.
3. Give each rod half a turn with the key, in star order (below). Then press the centre of the head firmly with your palm a few times. A crackle is the glue at the collar settling. That's normal.
4. Back every rod off to finger-tight and start again. A seated head holds its pitch.

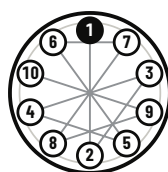
2 Tighten in a star



6 lugs



8 lugs



10 lugs

The numbers are the order. Go straight across the drum, then move about a quarter of the way round. Every rod gets the same turn on each lap.

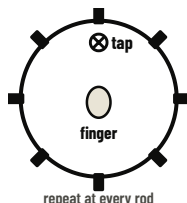
Half turns
to get up into range

Quarter turns
once it's close

Eighth turns
for the final match

If one rod needs far more turns than the rest, the head is probably off-centre. Reseat it.

3 Match the pitch at every lug



- Rest a finger lightly in the centre of the head.
- Tap softly with the stick tip **about 1 inch (2-3 cm) in from each rod.**
- Every rod should give the same note. **Lower** than the rest? Tighten a little. **Higher**? Loosen just past it, then tighten back up to the note. Rods hold better when the last move is a tighten.
- Opposite rods pull on each other, so check the one across after every change.
- Finish with one hit in the middle. You want a single clear note with no wobble.

7 Troubleshooting

You hear or see	Likely cause	Try
Note wobbles after a hit	Lugs not matched	Re-check every rod softly, 1 inch in
Wrinkles by some rods	Those rods too slack	Bring them up to match the rest
Pitch keeps dropping	New head still stretching	Retune after a day; finish on a tighten
Long "boing" on toms	Reso far below the batter	Bring the two heads closer

4 Batter and resonant head

Reso vs batter	What you hear
Same pitch	The longest sustain and the clearest single note. Big, open toms.
Reso higher	Shorter and more focused, with more punch. A slight bend in pitch as the note dies away.
Reso lower	Shorter and fatter. The pitch drops noticeably as it rings: the classic tom "growl".

How strong the bend is depends on the drum, the heads and the gap, and guides disagree on the details. Try a small gap (about 3 semitones) before a big one, and let your ears decide.

5 Spacing the toms

Gap	Sound
Fourth (5 semitones)	The common default. Clear, musical steps, for example A, E, B from the top down.
Major third (4)	Closer steps. Good when three or four toms share a narrow range.
Fifth (7)	Wide steps, for two toms that should sound far apart, such as rack and floor.

Tune the highest and the lowest tom to where each one sounds best on its own, then fit the others in between.

6 Snare: choked or flappy?

Setting the wires: loosen the strainer knob, flip the throw-off on, then tighten while tapping softly near the centre. Stop just after the loose buzz turns crisp. More tension than that only chokes the drum.

Choked short, dull, tom-like, ghost notes vanish

- Back the strainer off a quarter turn at a time.
- Check the wires lie flat and centred.
- Very high batter? Bring it down evenly.

Flappy no crack, wires slow, the buzz hangs on

- Raise the batter in even quarter turns.
- Slack snare-side head? Tighten it until the wires answer fast.
- Then set the wires again.

