

# Mounting New Mylar Heads

## Mounting New Mylar Timpani Heads

*Seven Steps to Heaven*

**Theory:** Provided the physical integrity of the head is superior, and the mechanical integrity of a timpano is within tolerance, when a strong, sustained [principal tone](#) is generated in the extreme low range of the drum (via head centering, even stretching/tensioning), a *harmonicity* of the partials can be maintained throughout the functional playing range of the instrument.

### Proof:



1) For each head, determine *centering marks*. Take half the difference of the diameter of the bowl (measured diametrically from lip center to lip center) and the diameter of the head. (e.g. if the bowl is 28" and the head is 31" a) take  $31" - 28" = 3"$  b) then  $3" \div 2 = 1.5"$  The centering marks will 1.5" in from the edge of the head.)

Place a *centering mark* at eight points on the head. The distance between each mark is determined by taking the circumference of the head divided by eight.  $X = \pi d / 8$ . These marks should line up dead center on the lip of the bowl at eight equidistant points around the head if the bowl is in round. The marks can (if desired) correspond to the individual lug positions when the head has been mounted. The larger the bowl, the more deviation to the tolerances is likely to be found.

If the bowl is found to be not *in-round*, (or the bearing is uneven) steps should be taken to repair or replace the bowl. Proceed to the next steps only if the bowl is found to be in-round, and the bearing edge is even (in plane). If the bowl is in-round, but the head is not evenly centered, it will not be possible to evenly tension the head throughout the range of the drum. This centering step is crucial in the overall outcome of the mounting/tempering process.

Steps two and three should be omitted if the bowl is equipped with Teflon tape. Clean the tape thoroughly with a non-caustic solvent to remove any dirt and grime and buff with a with a lint free cloth sprayed with PTFE.

2) Prepare the lip of each bowl. If any minor pitting is encountered with the bowl lips, use varying grits of wet/dry silicon carbide paper to smooth the lip. Final polish the lip with a 1200 grit paper. Always use a "shoe-shine" motion when working with abrasive materials on the lip of the bowl in order to keep the striations in the same plane as the head as it moves across the lip.

3) After thoroughly cleaning the lip with mineral spirits, apply PTFE spray in multiple thin coats to the lip of each drum. Allow each coat to dry completely and then gently buff with a lint free cloth. Once the PTFE has been buffed, the lip surface should be tested for “squeaks” with a strip of old head by moving around the drum in a *shoe-shine* motion.

4) Even though the under side of Evans Strata heads are smooth, a #00000 fine grade steel wool should be used to prepare the inside of the heads. It is highly recommended that you prepare Remo Renaissance heads in this same manner because they have a strong tendency to make noise when using PTFE as a lip lubricant. Wipe the underside of the head clean of all residues before mounting.

5) Check the counterhoop liner for wear or for severe channeling and replace if needed. Center the head inside of the counterhoop with temporary cardboard tabs (if necessary). Once the preliminary tensioning of the head is done, remove the tabs. The insert ring will make an indent in the material used to line the underside of the counter hoop, helping to keep the head centered in the counterhoop.

6) Mount and [center the heads](#) using the *centering marks* described above. Align the centering marks on the head with the tension rods on the counterhoop. Once mounted, seat the heads and apply the preliminary tension by hand or via the use of a [Drum-Dial](#). Find the best playing spot and rotate the head if necessary. Once the best playing spot has been determined, with the pedals set at the lowest functional pitch of each drum, and the master tuning rod engaged at **approximately ten percent only**, set a consistent tension at each lug point with the Drum-Dial. As you work with the [Drum-Dial](#), you may find that some of the tension rods don't engage at low tension. This is OK. An even reading is the objective. When mounting new heads, the author likes to end with a Drum-Dial reading between 65-70. Once the tension at each lug point has been equalized either by hand or with the help of a Drum-Dial, begin your tempering of each drum via the use of an [electronic tuner](#) or [your ear](#), if you are able to discern extremely low pitches. Bring the head up to the initial pitch (at each lug point) with the individual tension rods as follows:  $31/32 = B1$ ,  $28.5/29 = D2$ ,  $25.5/26 = F2$ ,  $22.5/24 = A2$ . The initial pitch should be approximately one octave below the highest note you will be using on that particular drum. At this point, each drum should have a clear, sustained principal tone although the drums are not really usable yet because they are still not in range. If the tolerances of the drum are somewhat weak, let the drums set idle for up to two weeks (if at all possible) and check/adjust the initial pitch daily with the tension rods only. For drums with good tolerances, the time can be shortened. Drums with weak tolerances may give inconsistent readings when using tools such as a [Drum-Dial](#) or electronic tuners. Once the head has had a chance to do some gentle stretching, the head will be easier to temper.

7) After the heads have had a chance to do some initial stretching and consummate with the bearing edge (two weeks ideally for drums with weak tolerances),\* with the pedals set at the lowest functional pitch of each drum, use the master tuner to bring the drum up to the pitch set for the normal pedal placement. Temper the drum by finding the [virtual pitch](#) of each lug point via the use of an [electronic tuner](#) or [your ear](#) if it has been developed to that point. For more information on Virtual Pitch and Timpani, please visit the [Virtual Pitch & Timpani](#) section of this **WEBook**.

**\*Notes:** With this method, consumer model drums should left at a low pitch for a period of up to two weeks (if at all possible) to do some initial stretching. Thus gives the head a chance to consummate with the lip. Each day or two, the drums should be checked and brought back up to the initial pitch. Even at low tension, new heads will stretch and yet conform to the lip of the bowl. If you don't have the luxury of a two week window, take at least two to three days to complete the initial tempering process. Drums with good tolerances will take less time to stabilize. Every drum will be different. Patience is key.

The objective is to get the heads to stretch slowly and evenly without over-stretching any part of the head. As the drum is being played regularly, the original *centering marks* will move as the head begins to stretch. It is imperative to not put too much tension on the head via the pedal or the master tuner until the head has been seated to the lip at low tension. Once a head is unevenly stretched at any point to any significant degree, the integrity of the principal tone is severely diminished especially in the low range.

Ironically, what the manufacturers of synthetic timpani heads don't publish about their products is that excessive stretching and flexing are the primary cause of deterioration with Mylar. Mylar's ability to stretch and return to its normal state (tensile strength) makes it a great replacement for natural skin heads. However, the constant fluctuation in tension and beating of the head contributes to an elongation of the material causing it to become brittle and shortening its service life. This is the primary reason why you can't remount Mylar heads on drums different from the ones they were originally mounted with any great success; the collar crease is too brittle and has lost all malleability. Other culprits contributing to deterioration are heat and humidity, especially direct sunlight and water. Applying a polymeric coating to the head surface occasionally can extend the chemical integrity of the Mylar. Heat guns, hair dryers, irons etc. will all suck the life right out of a head and the dollar\$\$ out of your wallet.