

Finding Your FIT

Formant Identification and Tuning

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“There is no reason to have a Stradivarius sound like a cigar-box violin so that both will sound the same. Instead of removing the resonance from voices that have it, one should try to establish the formant in all voices of the choir in which it is lacking.”

- Berton Coffin

Part 1: How to Listen and Place the Individual Singers

Resonance is the intensification and enriching of a musical tone by supplementary vibration. The human voice is a free resonance. The sound source is the vibrating vocal folds and the energy input is the breath. As sound passes through the vocal tract, it is amplified due to the pattern of compressions (reduction of volume causing an increase in pressure) and rarefactions (diminution of density) timed with the input of the energy source.

- Place the section in a circle or arc.
- Ask the singers to sing “Row, row, row your boat” as a group.
- Choose a key that avoids general passaggi issues.
- Your goal is to begin near the speech range, so think of the beginning of the melody (do, re, mi) being in the middle voice.

In general: Soprano G, Alto E, Tenor F#, and Bass D.

As you listen to the voice, you are going to gauge the fundamental (F1). Listen for the fundamental frequency. Is it high, middle, or low? Is it clear or opaque?

Place the singers in order from the highest fundamental frequency to the lowest fundamental frequency. When voicing a larger group, it may be helpful to place the singers in general high, middle, low categories.

Once you have a basic order, change the pitch and repeat the process. In the repeated times listen for the overtones or partials (F2 -). Which partials does this voice ring? Do you hear a small spectrum? A wide spectrum? No spectrum?

For sopranos and tenors, try moving the pitch up by half step or step. You may get a similar reading or it may be very different. Some voices will naturally gravitate to certain keys. Your goal is to find the mean average. For altos and basses, you may want to assess the chest register or low register. Choose a pitch that allows them to have to use this register such as Bb or C. In lower voices let this be a lesser part of your assessment. This entire process focuses on the tessitura and not the range.

Hints:

- Visualize the frequency on the body.
- Think of the overtones like a window shade. How far does this voice pull up or down the shade?
- Visualize the actual shape, especially length, of the vocal tract.
- Think of a graphic equalizer with high, middle, and low levers.

Part 2: Formant Tuning

To apply this to more than one voice, begin by hearing the voices in pairs while maintaining the order that you have just achieved. Using the same tune, have them sing in pairs and trios.

Listen for:

- Balance of volume
- Reduction of vibration
- Pitch clarity
- Ease and efficiency of production

Once you have an order, go back and number the section from high to low.

Notice that this voicing is based on tessitura, *not* range. You may still want to adjust extreme high and low notes according to range. For instance, if you have a baritone that happens to have the only low D, balance those rare chords on an individual basis. Most of our repertoire is spent in the non-extreme ranges.

Once you have done this, you will see that the need to call someone a first soprano or a second tenor may have less importance. It can be encouraging for all of your singers to explore their full ranges, if you talk to them about the fact that the voice continually changes throughout our lives. In a mixed-age ensemble this awareness of finding your own place in every ensemble is more important than “but I always sing the top part!”

Step 3: Placement of Sections Within the Ensemble

Standard Two Rows (Home)

B5 B4 B3 B2 B1 T5 T4 T3 T2 T1
S1 S2 S3 S4 S5 A1 A2 A3 A4 A5

Columns

S7 S8 S9 A7 A8 A9 T7 T8 T9 B7 B8 B9
S4 S5 S6 A4 A5 A6 T4 T5 T6 B4 B5 B6
S1 S2 S3 A1 A2 A3 T1 T2 T3 B1 B2 B3

Quartets

T8 A8 B8 S8 T7 A7 B7 S7 T6 A6 B6 S6 T5 A5 B5 S5
S1 B1 A1 T1 S2 B2 A2 T2 S3 B3 A3 T3 S4 B4 A4 T4