

# ensemble

An integrated approach to the Yamaha Harmony Director™

## instructional blueprint

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# **ensemble**

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## INSTRUCTIONAL BLUEPRINT FOR THE HD-200

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### **The Basics:**

Temperament - The Basics	2
Sound - The Basics	3
Tuning - The Basics	5
Using the Harmony Director for Scale Study	7

### **The Exercises:**

Section A: unison	8
Section B: horizontal	11
Section C: vertical	15
Section D: holistic	19
Harmony Director Quick Tips	23

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## Temperament - The Basics

Throughout music history different tuning systems, or temperaments, were developed and improved as composers became more creative. Later compositions required musicians to be able to move freely from key center to key center, an impossible task in early temperaments. The subject of temperament is vast, and there are many great books devoted to its study. For wind groups, the two most commonly used temperaments are **equal temperament** and **pure (just) temperament**. In order for wind groups to perform “in tune,” a combination of both equal and pure temperaments must be used.

**Equal temperament** is the standard tuning system used today. The idea of an octave split equally into 12 half steps is a common and obvious system. In the course of music history, however, it is a fairly modern concept.

**Pure temperament** is a tuning system that involves the use of “Pure 5ths” and “Pure 3rds”. Pure intervals can be traced back to Pythagoras who used “perfect” mathematical ratios to create his tuning system. The use of these pure intervals gives major and minor triads a rich sonority that equal tempered 5ths and 3rds do not exhibit. The downside, however, is pure tempered chromatic pitches do not always sound sonorous with their neighbors.

Tempering involves the slight adjustment of scale degrees to fix unpleasant sounding intervals within a scale.

The Yamaha Harmony Director (HD) has the ability to change its tuning from equal to either pure major or pure minor temperament. This allows the subtle differences in sound and tuning within those temperament to be easily heard and demonstrated.

The chart below shows the alterations made from equal to the pure temperaments based in the key of C major and A minor. This chart corresponds to the settings on the Harmony Director.

**Individual cent value (cent)**

Display	Temperament Type	C	Db	D	Eb	E	F	F#	G	Ab	A	Bb	B
Equal	Equal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pure (Major)	Pure Major	0.0	-29.3	3.9	15.6	-13.7	-2.0	-31.3	2.0	-27.4	-15.6	17.6	-11.7
Pure (minor)	Pure Minor	15.6	-13.7	-2.0	31.3	2.0	13.7	-15.6	17.6	-11.7	0.0	33.2	3.9

**This book strives to give the user information and exercises for integrating the Harmony Director throughout the entire rehearsal. The exercises are not designed to be the destination, but the beginning of a journey to unlock the benefits of this incredibly useful tool.**

## A2: Pure Tone Exercise

A2: Pure Tone Exercise

\* Experiment with alternating full drone with "overtone only" drone

1. Set HD to **[PURE F MAJOR]** and using the **[HOLD]** button, sustain the appropriate drone. Set the metronome to a moderate tempo (82 - 90 bpm) and press **[START]**.
2. Have students sing the exercise with an appropriate syllable (dah, too, etc.)
3. Students should strive for a pure beginning, a consistent middle, and an organized ending to their sounds while singing.
4. After singing a number of times, students perform the exercise. The individual student sounds should be pure, consistent, and should “fit inside” the sounds on either side of them.

## A3: Pure Articulation Exercise

A3: Pure Articulation Exercise

A3: (continued)

# ensemble

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exercises

full score

A: unison

B: horizontal

C: vertical

D: holistic

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## A1: Pyramid Exercise

F Major Pure

Harmony Director

Flute

Oboe

Bassoon

Clarinet in B $\flat$

Bass Clarinet

Alto Sax

Tenor Sax

Baritone Sax

Trumpet in B $\flat$

Horn

Euphonium/Trombone

Tuba

\* On all exercises the octave and scoring of the drone can be altered to fit the ensemble and the exercise. It is important that the drone is clearly heard but does not over shadow the acoustic sounds in the room.

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### A1: Pyramid Exercise

F Major Pure

\* Experiment with alternating full drone with "overtone only" drone

### A2: Pure Tone Exercise

Overtone only drone - Pure F Major

Full drone - Pure F Major

### A3: Pure Articulation Exercise

Overtone only drone - Pure F Major

Full drone - Pure F Major





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Keep your pitch consistent with the fundamental of the drone

A1: Pyramid Exercise

A2: Pure Tone Exercise

A3: Pure Articulation Exercise

Use the "Quick Reference Guide" for details on pitch markings

B1: Pure F Major Mini-Scale

B2: Pure F Minor Mini-Scale

B3: Equal Decending Interval Exercise

B4: Equal Ascending Interval Exercise

m2 M2 m3 M3

P4 TT P5

B5: "Simple" Major Melodic Matching

B6: "Simple" Minor Melodic Matching

Use the "Quick Reference Guide" for details on chord adjustments

C1: Basic chord construction in F major

C2: Basic Chord Adjustments in F Major

R 5 R M3 R

C3: Basic Chord Adjustments in F Minor

R 5 R M3 R



## Quick Reference Guide - Flute

**Do this first!** Before rehearsal or your practice session starts, tune the following notes with your tuner. Be sure to use your best possible sound on all notes!



### Harmony Director Tuning Sequence

With a director or another student playing the Harmony Director part, play through this tuning sequence. Do not use strict rhythm with this exercise. The HD player should always be slightly ahead of the wind player to allow the student to hear the next pitch. Use this exercise to learn to tune more with your ears than your eyes!

### Section B Quick Reference:

- ▲ Slight adjustment up (+2 to +4 cents)
- ▼ Slight adjustment down (-2 cents)
- ▲▲ Significant adjustment up (+13 to +18 cents)
- ▼▼ Significant adjustment down (-11 to -16 cents)

### Section C/D Quick Reference:

<b>R</b>	Root of chord:	no adjustment
<b>5</b>	Fifth of chord:	slight adjustment up
<b>M3</b>	3rd of a major triad:	significant adjustment down
<b>m3</b>	3rd of a minor triad:	significant adjustment up
<b>M6</b>	Major 6th of a chord:	significant adjustment down
<b>m7</b>	Minor 7th of a chord:	significant adjustment down
<b>M7</b>	Major 7th of a chord:	significant adjustment down