

# Model 40

## CONDENSED OWNERS MANUAL



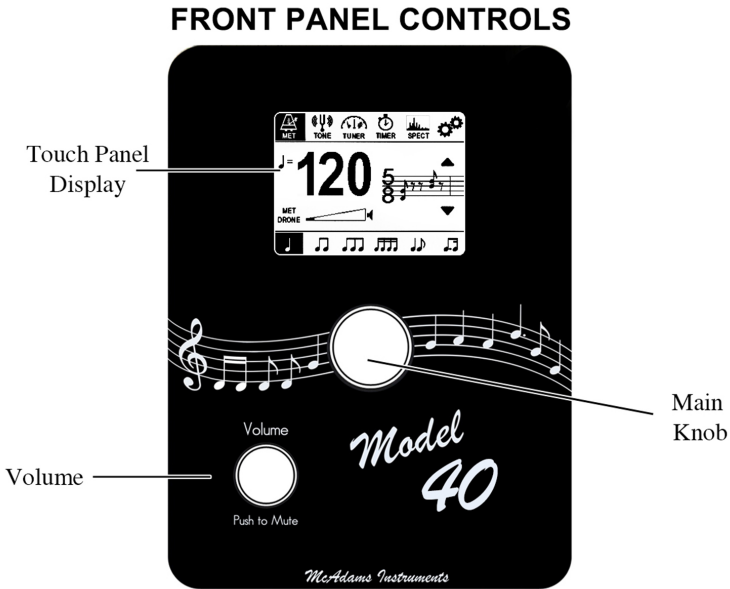
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# 1. OVERVIEW

The Model 40 functions as a metronome, a visual tuner, an audible pitch reference, a stopwatch, and a spectrum analyser. The front panel controls are shown below and their use is described in their corresponding sections.

Operation of the Model 40 is controlled by the touch panel display. The operating mode is always displayed in the menu on the top of the display.



## 2. SAFETY WARNINGS

### 2.1 It can be LOUD

Use caution and good sense in the placement of the Model 40 and adjustment of the volume control. **If the sound level is uncomfortable, it is too loud and, over time, can damage hearing. Respect your own hearing and that of others.**

### 2.2 Electrical Safety

Do not remove the round safety pin from the 3-pin power plug and avoid using the Model 40 in a wet environment. If used outdoors or near moisture, only plug it into a properly functioning ground fault protected outlet. If the power cord or plug gets damaged, throw it away and replace it. Not observing these precautions could result in a potentially fatal electric shock or fire.

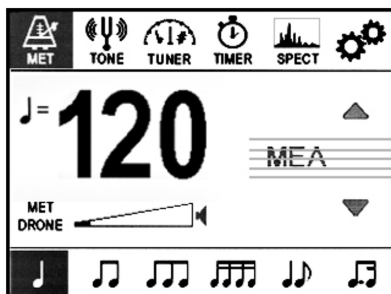
### 2.3 It is heavy

Don't drop the Model 40 on your foot or throw it at anyone. Use care if you place it on a high shelf since it could fall and injure someone. The absence of sharp corners is helpful, but it can still smash a toe.



### 3. METRONOME

For the Metronome mode, touch the MET icon at the top of the screen or press the MET button on the remote control.



#### 3.1 Rate

In the metronome mode, the tempo in beats per minute shows up in large digits on the left of the screen.

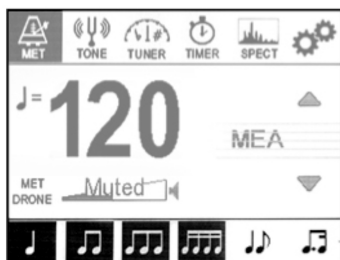
**Adjust the rate** by using the Main Knob or the ← and → buttons on the remote control to adjust the rate up or down.

**Tap the rate** by “tapping” the Main Knob (press it until it clicks), or “tap” the Tap button on the remote control in time to make the metronome adjust itself to your tempo. You can also “tap” the met rate directly on the display.

**Set rate digitally** by using the keypad at the bottom of the remote control. Simply enter the desired rate using the keypad. Example: to set 120 beats per minute, press 1/A, then 2/B and finally 0. If you accidentally press the wrong number, just press Clear or wait a few seconds for the metronome to return to normal operation.

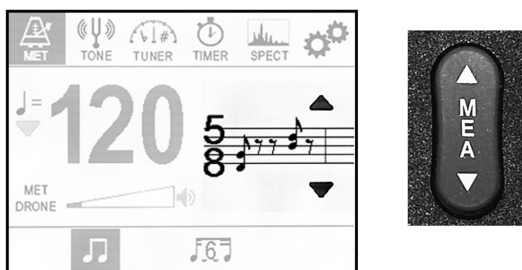
#### 3.2 Beat Subdivisions

The various subdivisions of the beat are selected by touching the icon display indicating the subdivision pattern. Selected subdivisions will be highlighted in blue.



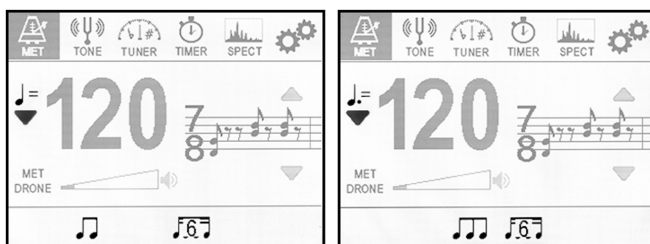
### 3.3 Time Signature and Measure Subdivisions

Touch the staff or time signature on the touch screen or press the MEA button on the remote to turn measure subdivisions on and off. Use the green arrows above and below the staff to cycle through the subdivision options or use the MEA rocker switch on the remote. Less used time signatures can be hidden from the main screen, see the Settings section for more information on how to hide time signatures.



### 3.4 X/4 and X/8 Meters

For time signatures of the form X/4 the tempo display always indicates the number of quarter notes per minute. For time signatures of the form X/8, the tempo can be based on the dotted-quarter note or the quarter note. This affects the speed of the eighth notes and the beat subdivisions that are available. Touch the arrow icon under the  $\text{♩}$  icon on the left of the touch screen to select dotted quarter or quarter note. Ex:  $\text{♩} = 100$  results in 300 eighth notes per minute.

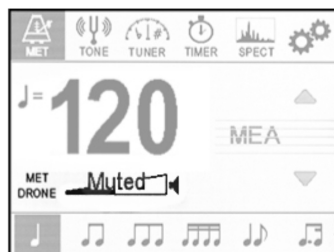


### 3.5 Volume

Use the Volume knob or the keys labeled VOL+ and VOL- on the remote control to adjust the volume up and down.

### 3.6 Mute

Press the Volume knob until it clicks, touch the volume bar on the display, or press the MUTE button on the remote control to mute and unmute the metronome. This works on all of the modes that make sound. When muted, the sound stops but the metronome continues to function silently with no interruption to the lights or the beat. The word “Muted” will show on the display.

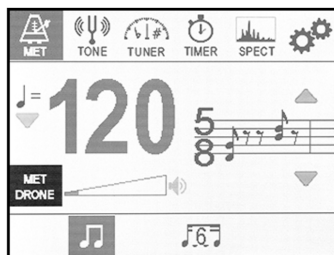


A second type of mute happens when you press STOP on the remote control. In Metronome Mode, STOP causes the metronome to be muted, but the metronome also halts and the blinking light stops. When stopped, as opposed to muted, the display will show the word “Stopped”.

After pressing STOP, if you then press START on the remote control (or “unmute” it in the standard way) the metronome resumes and instantly sounds the first beat of the measure. Using STOP to mute, the metronome is synchronized to the pressing of the START key.

### 3.7 Drone Function

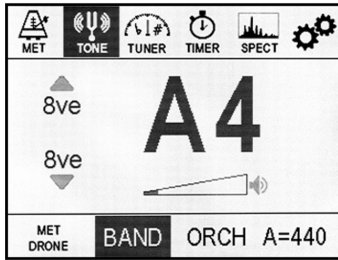
To play a tuning drone while using the metronome, touch the MET DRONE icon on the touch screen. Touch again to silence the drone tone. The volume ratio between the tuning drone and metronome can be adjusted in the Settings menu.



## 4. TONE

Tone mode plays tuning notes through the speaker. Touch the TONE icon on the touch screen or press TONE on the remote control to activate this mode.

The Tone mode covers 6 octaves from E1 (an octave below the bass clef) to E7 (above the treble clef). The note being sounded and its octave number are indicated in the center of the display.



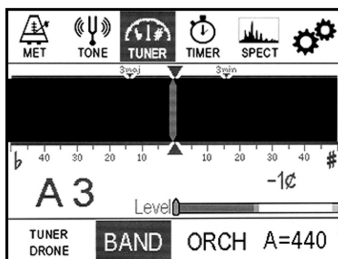
**Adjust the note** using the Main Knob or the ← and → buttons on the remote to scroll through the entire range of available notes. Use 8ve arrows on the touch screen or the 8ve rocker switch on the remote control to change the note by an octave at a time.

**Set the note directly** using the keypad at the bottom of the remote control. Simply press the button displaying the note you want to hear. The 8/# key moves the note up ½ step, while the 9/b key moves the note down ½ step.

See the Tuner section for an explanation of Band vs. Strings and A=440.

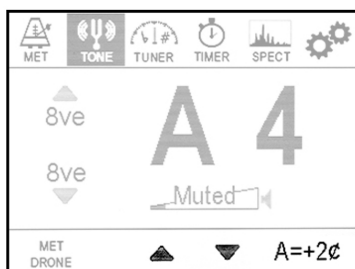
## 5. TUNER

To select the Tuner mode, touch the TUNER icon on the touch screen or press TUNER on the remote control. The tuner detects your note and displays the note name, octave, and how sharp or flat you are.



## 5.1 Pitch Reference

Touch A=440 on the touch screen to change the pitch reference from A=440Hz. After touching the icon, to make adjustments touch the up or down arrow that will appear. In the Tuner mode, the MEA rocker switch on the remote control will also change the pitch reference. Switching off power to the metronome will reset the pitch reference to A=440Hz. See settings to use a reference other than 440Hz.



## 5.2 Transposition

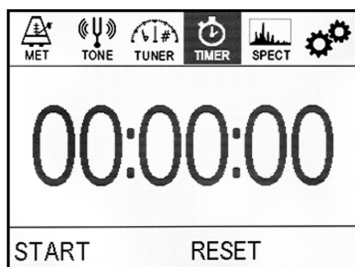
You can set the tuner to indicate notes in other than concert pitch (see Settings section.) When a transposition is in effect, the transposed note will appear in large letters, and the concert pitch note and octave will appear in smaller letters.

## 5.3 Band vs. Orchestra

Touch the BAND or ORCH icon on the touch screen or press the BAND or ORCH buttons on the remote control to select the temperament of the notes. Band tuning uses equal temperament and String tuning uses pure intervals for the open strings.

## 6. TIMER

The timer is simply a stop watch. It can be used to time anything while the Model 40 is being used for any other purpose. If you change to another mode, the timer continues to run. Touch the TIMER icon on the touch screen or press TIMER on the remote control to navigate to the timer.

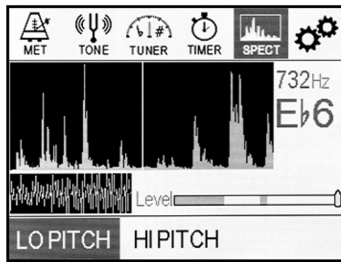


# 7. SPECTRUM ANALYZER

The Spectrum Analyzer mode allows you to view the harmonic structure of a sound. To select the Spectrum Analyzer mode, touch the SPECT icon on the touch screen or press SPECT on the remote control.

## 7.1 The Display

The horizontal axis of the large display corresponds to frequency. The vertical axis corresponds to loudness. Low frequencies are to the left, high frequencies to the right. The cursor is controlled by the main knob. The frequency and nearest note to the cursor is shown on the right side of the display.



If you press the Main Knob until it clicks, or press the Mute button on the remote control, the frequency scale around the cursor is magnified by 2.5 times. This lets you see and measure peaks in more detail. To return to the normal scale, press the Main Knob again. The small display shows the wave shape in time.

## 7.2 Lo Pitch – Hi Pitch

Touch the LO PITCH or HI PITCH icons on the touch screen or use the MEA “rocker” switch on the remote control to select Lo Pitch or Hi Pitch.

Lo Pitch is best for lower instruments and the human voice. Hi Pitch is best for higher voices and whistles. If you play a sound above the high frequency limit it will not be visible on the spectrum analyzer display.



## 12. SPECIFICATIONS AND SUMMARY OF FUNCTIONS

<b>Size &amp; Weight</b>	8.5" H 6.5" W 9.5" L - 6.5 pounds	
<b>Power Required</b>	110V 60 Hz, under 50 watts	
<b>Speaker</b>	Power Mechanical	Greater than 200 watts peak (metronome) 4"x6" oval, heavy duty magnet for high efficiency
<b>Remote Control</b>	Infrared, full function 2 receivers, one on front and one on back of the instrument	
<b>Memory Locations</b>	Metronome, Tuner, and Tone generator each has 9 memory locations.	
<b>Tempo Range</b>	30 to 220 beats per minute	
<b>Tempo Resolution</b>	30 to 100 102 to 180 184 to 220	1 beat per minute 2 beats per minute 4 beats per minute
<b>Tap Function</b>	Tempo can be set by tapping Tap controls are the large knob on the front panel, the tempo indicator on the touch panel, and the tap button on the remote control	
<b>Time Signatures</b>	2/4 through 7/4 and 5/8 through 9/8	
<b>Audio Output</b>	1/4" stereo phone jack (will drive headphones) Metronome 1.8V peak 1.27 VRMS, 2dBv, 4.3 dBu Tone 0.5V peak 0.35 VRMS, -9dBv, -6.9dBu	
<b>Stop Watch</b>	Time up to 99 hr : 59 min : 59 sec	
<b>Accuracy</b>	Tempo Tuning Notes	better than 0.1 % better than 0.25 cents
<b>Visual Tuner</b>	Tuning meter range $\pm 50$ cents	
<b>Pitch Reference</b>	Hertz mode Cent Mode	A = 435 Hz to 446 Hz in 1 Hz steps A = 440 Hz $\pm 20$ cents in 1 cent steps
<b>Tuning Notes</b>	Range Band mode String mode	6 octaves, E1 through E7 All notes in even tempered intervals C, G, D, A, and E in perfect intervals for the open strings (notes other than open strings are in tempered intervals)
<b>Transposition</b>	Can indicate written notes for instruments in any key	
<b>Spectrum Analyzer</b>	View the harmonic structure of sounds Measure approximate frequency of sounds	



## 13. LIMITED WARRANTY

McAdams Instruments warrants the Model 40 Metronomes to be free from defects in material or workmanship for a period of one year from the date of the original retail purchase. In the event of a failure during this time that is attributable to faulty workmanship or material, McAdams Instruments will repair or replace components to the extent deemed necessary to restore said Model 40 metronome to proper operating condition at no charge for parts or labor.

This warranty does not cover repairs made by any party other than McAdams Instruments or damages that, in the opinion of McAdams Instruments, are the result of modification, abuse or neglect.

All implied warranties, including warranties of merchantability and fitness for a particular purpose are hereby limited to the period of one year from the date of the original retail purchase. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

McAdams Instruments assumes no liability in any event arising from the use of whatever technical information may be supplied to any party.

McAdams Instruments assumes no liability for any damages resulting from delay or loss of use in repair or for incidental or consequential damages caused by malfunction, defect, or otherwise, and with respect to breach of any express or implied warranty. Furthermore, to the extent permitted by law, McAdams Instruments assumes no liability for any damages or bodily injury that may result from the use or misuse of its products by the purchaser or others. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you.

McAdams Instruments reserves the right to discontinue models at any time, or to change specifications, price, or design without notice and without incurring any obligation.

This warranty gives you specific legal rights and you may also have other rights that vary from state to state. This warranty is given in lieu of all other express warranties.